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(1)

INSTALLATION RESTORATION PROGRAM
STAGE 3
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
ELMENDORF AIR FORCE BASE, ALASKA

AD-A227 503

PREPARED BY:

BLACK & VEATCH, ENGINEERS-ARCHITECTS

4370 West 109th Street

OVERLAND PARK, KANSAS 66211

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OCT 0 3 1990
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MAY 1990

FINAL REPORT

VOLUME 4 OF 6

APPENDICES D - F

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Approved for public release;
Distribution Unlimited

PREPARED FOR:

HEADQUARTERS ALASKAN AIR COMMAND

ELMENDORF AFB, AK

UNITED STATES AIR FORCE

OCCUPATIONAL & ENVIRONMENTAL HEALTH LABORATORY (AFSC)

TECHNICAL SERVICES DIVISION (AFOEHL/TS)

BROOKS AIR FORCE BASE, TEXAS 78235-5501

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IRP STAGE 3 RI/FS
ELMENDORF AFB, ALASKA
FINAL REPORT

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J
By per call
Dist
A-1

STATEMENT "A" per Lt. Rebecca Bartine
AF Occupational & Environmental Hineth
Laboratory/HSD-YABQ, Bldg. 624 West
Brooks AFB, TX 78235-5501
TELECON 10/2/90 VG

IRP STAGE 3 RI/FS
ELMENDORF AFB, ALASKA
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IRP STAGE 3 RI/FS

ELMENDORF AFB, AK

APPENDIX D

RAW FIELD DATA

Ground Penetrating Radar

GROUND PENETRATING RADAR

SURVEY PARAMETERS

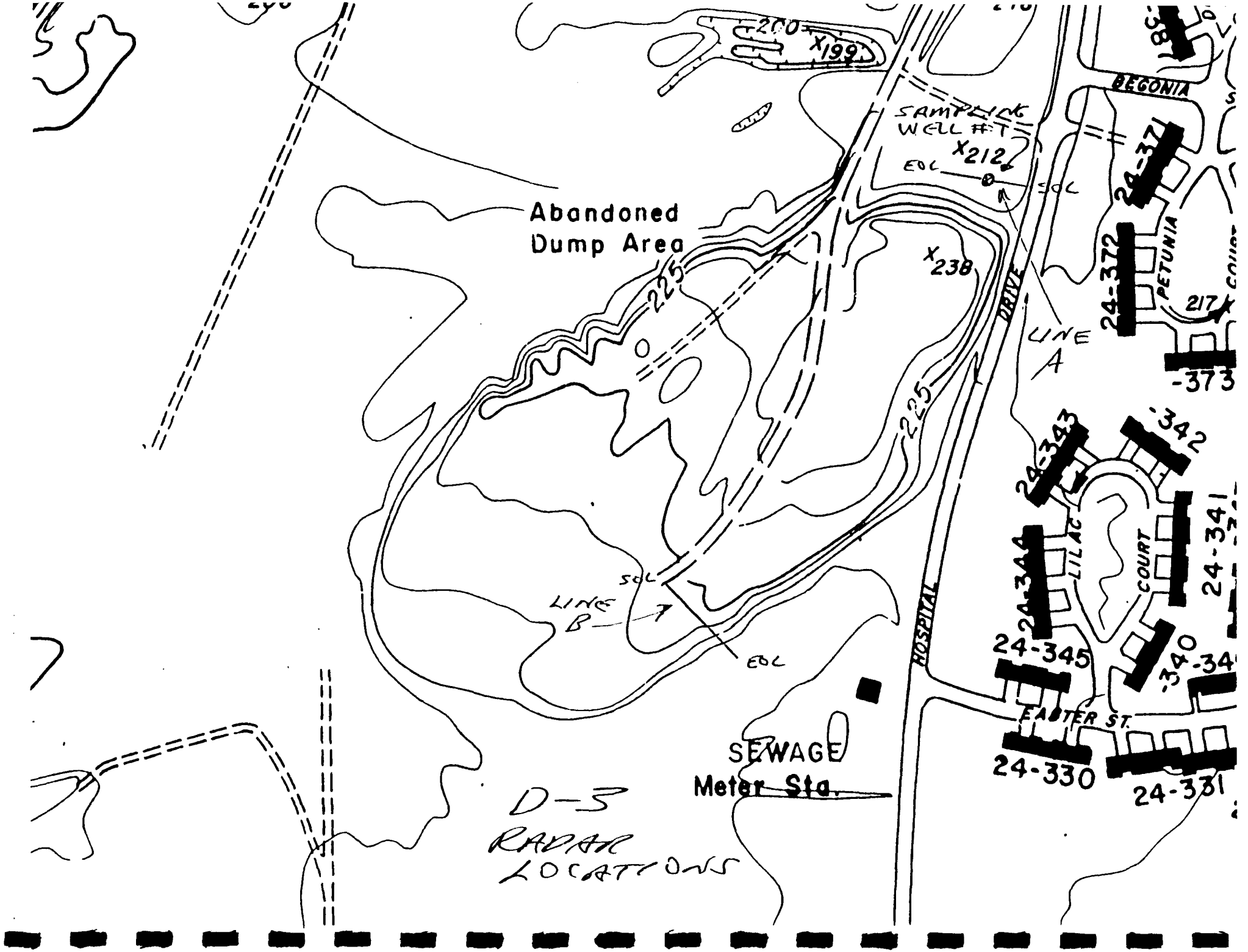
SITES D-3, D-13, D-15
I.S. 1 → 8

INSTRUMENTATION

GEOPHYSICAL SURVEY SYSTEMS, INC
GSSI SIR System-3
ANTENNA - 500 mHz

PRINT POLARITY ±
RECORDER 100 LINES/INCH
RADAR 16 SCANS/SEC
FULL SCALE RANGE 50 NS

SITE TESTING AT SP-5
PROVIDED A VELOCITY OF
6.67 NS/FOOT TWO-WAY
TIME. THEREFORE, 10NS
= ABOUT 1½ FEET OF
DEPTH. TIME BETWEEN
ANY 2 TIMING LINES IS
5 NS (50 NS FULL SCALE)


200
X199
SAMPLING WELL #1
X212
EOL
SOL
BEGONIA
Abandoned Dump Area
X238
225
225
24-372
24-371
PETUNIA
217
-373
LINE A
DRIVE
24-343
342
24-344
LILAC
COURT
24-341
24-345
340
-34
EASTER ST.
24-330
24-331
HOSPITAL
LINE B
SOL
EOL
SEWAGE Meter Sta.
D-5 RADAR LOCATIONS

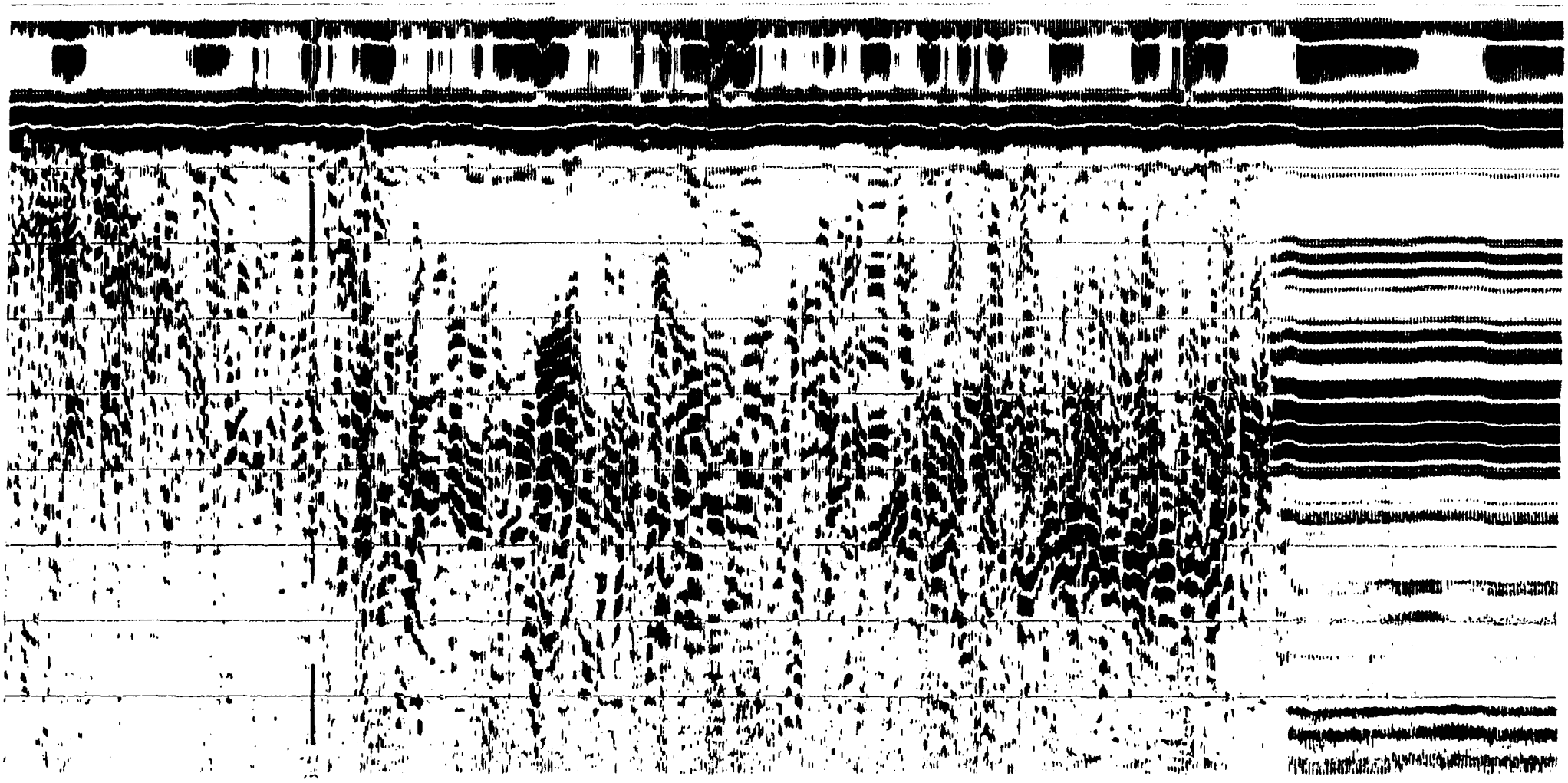
D-3
LINE A

SOL

WELL

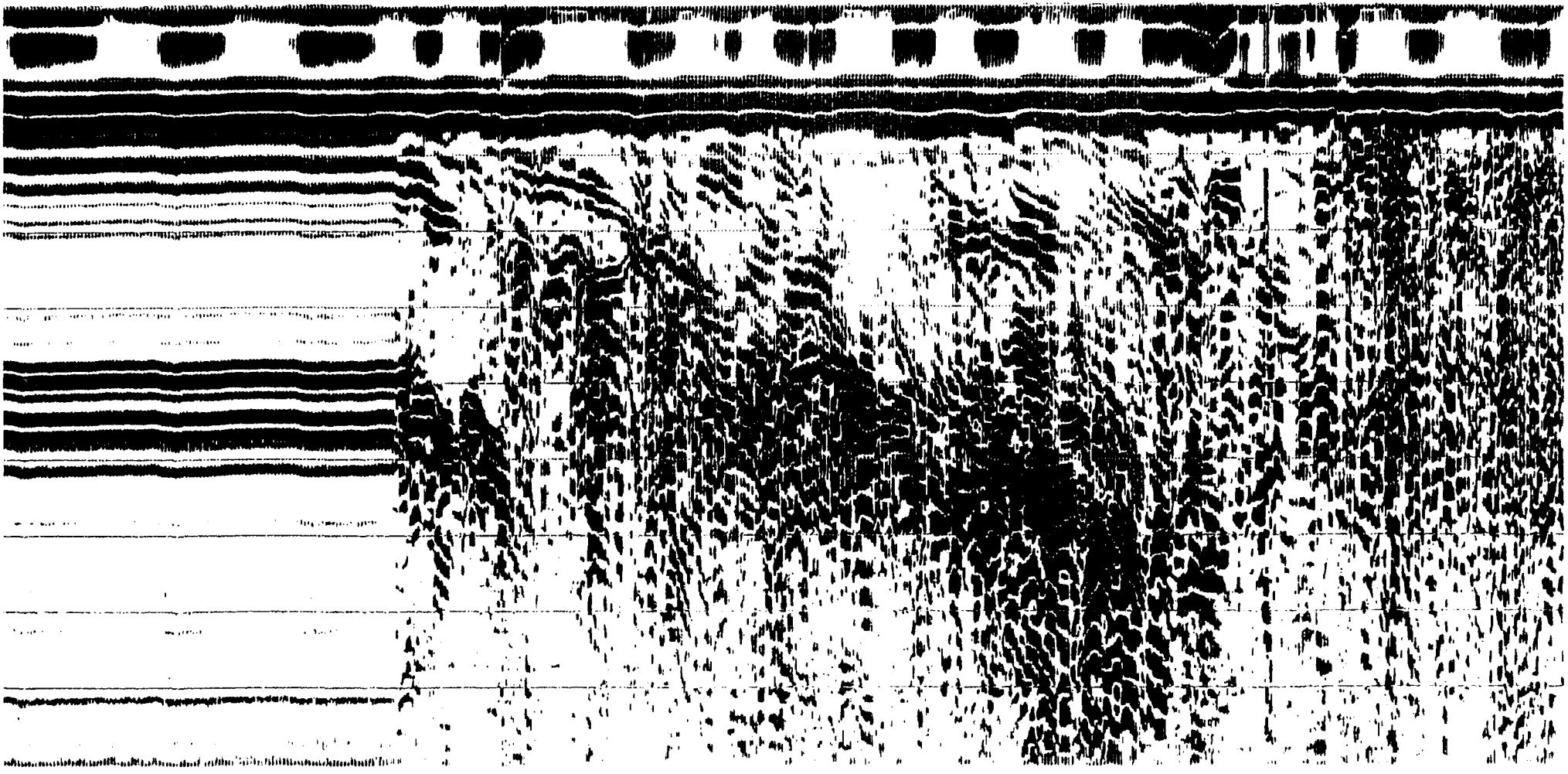
A

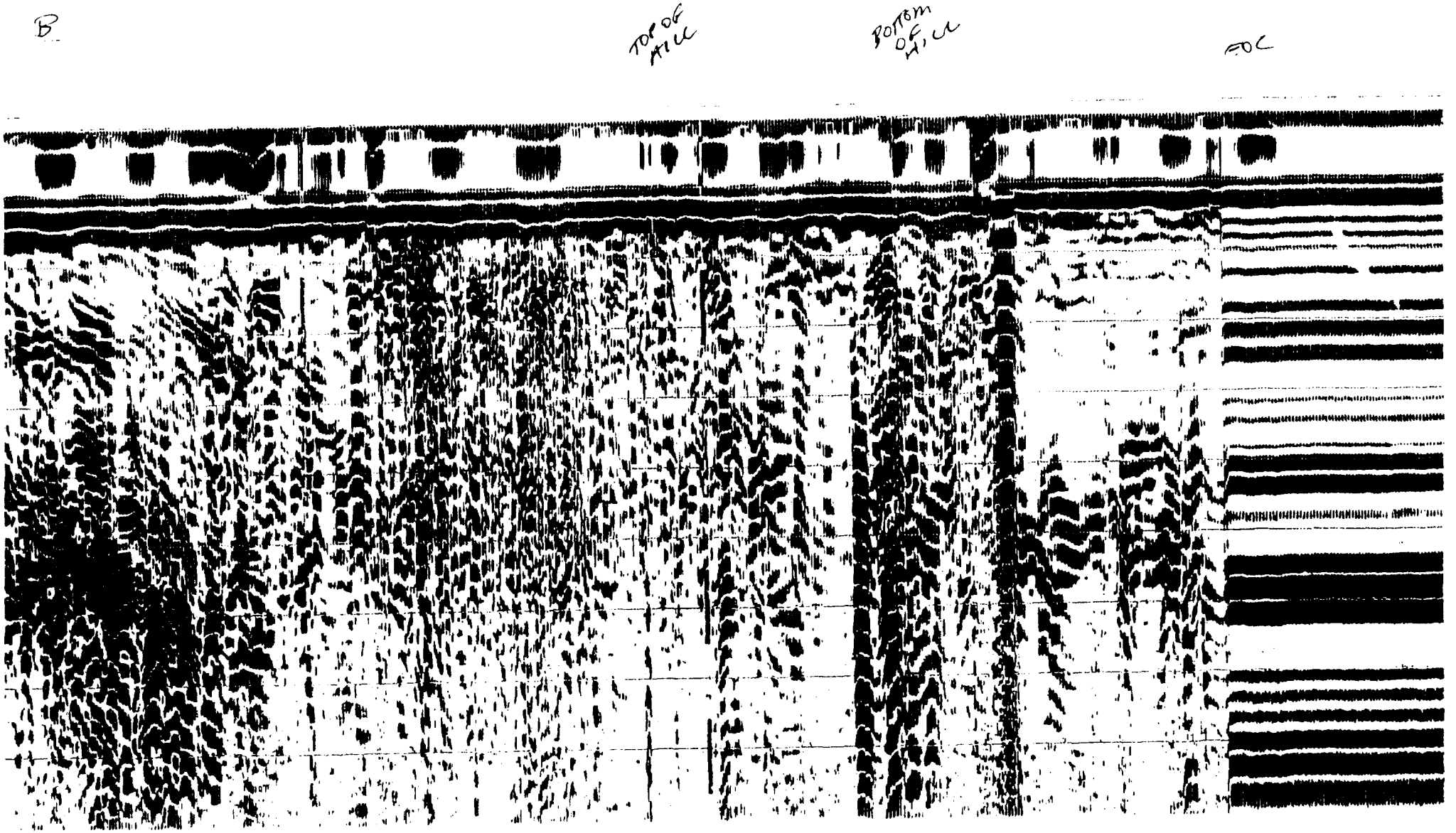
EOC



D-3
LINE B

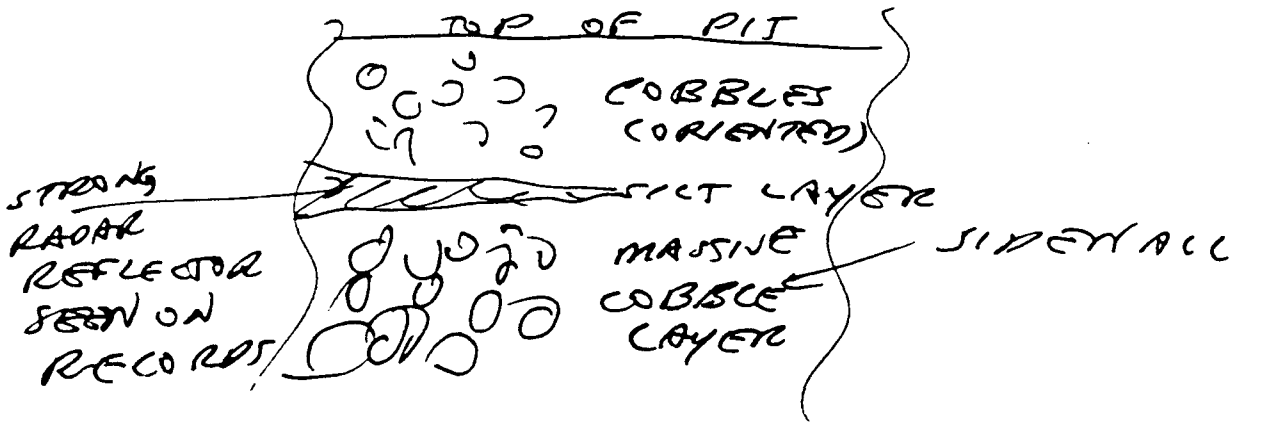
SOL (EDGE OF ROAD)



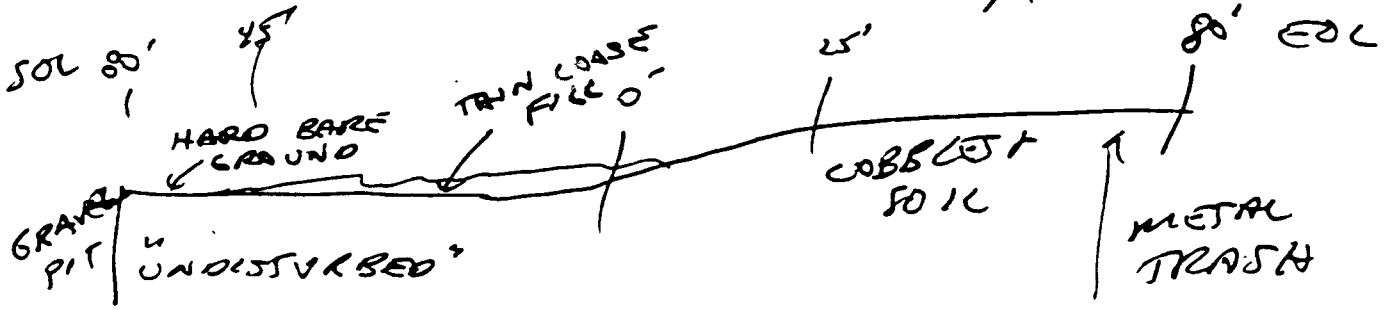

B
TOP OF ATTIC
BOTTOM OF ATTIC
EOC

D-13

LINE H RUNS E→W FROM THE EDGE OF THE GRAVEL PIT - WHICH VISUALLY CAN BE DOCUMENTED IN SIDEWALL AS UNDISTURBED (NATURAL)

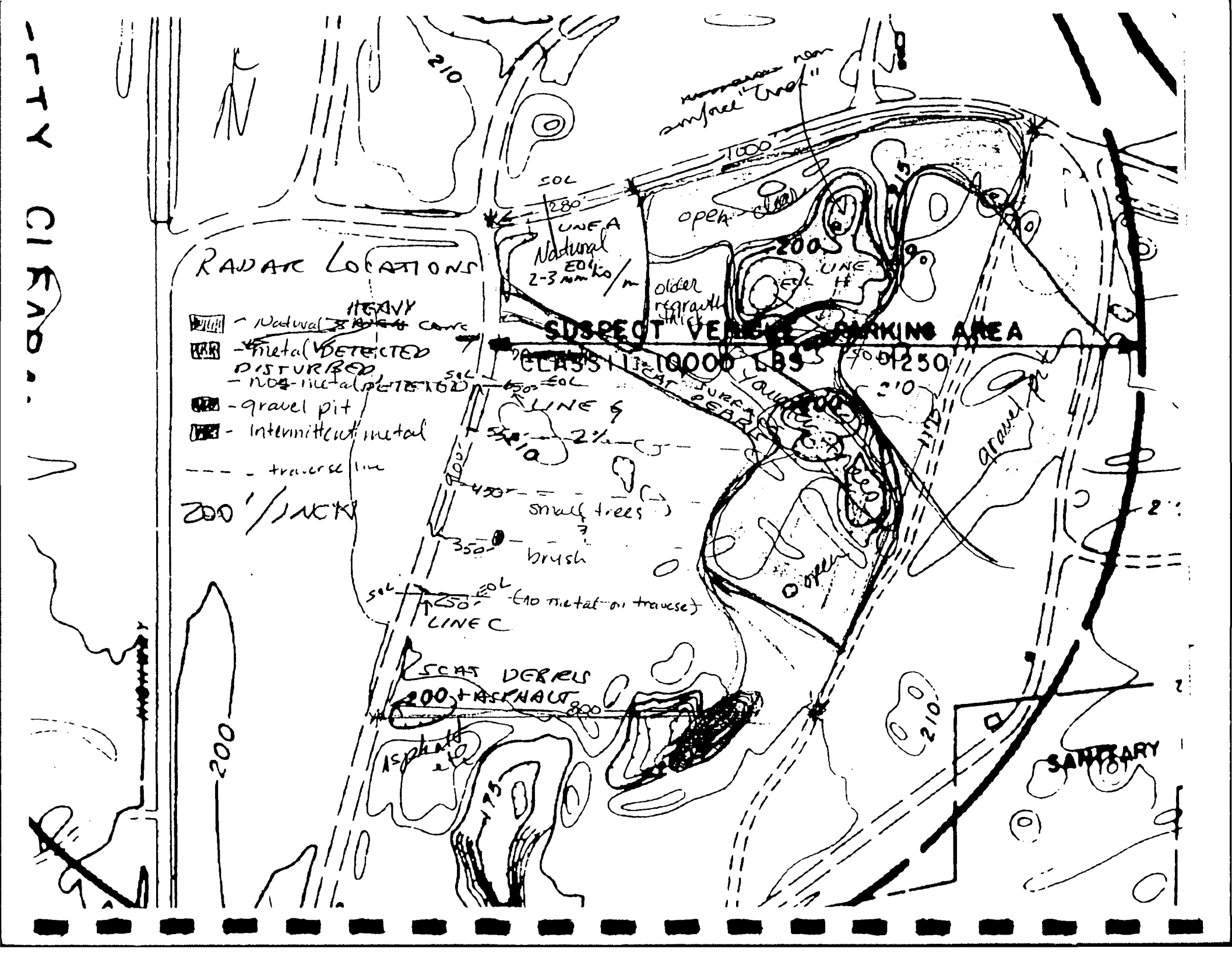


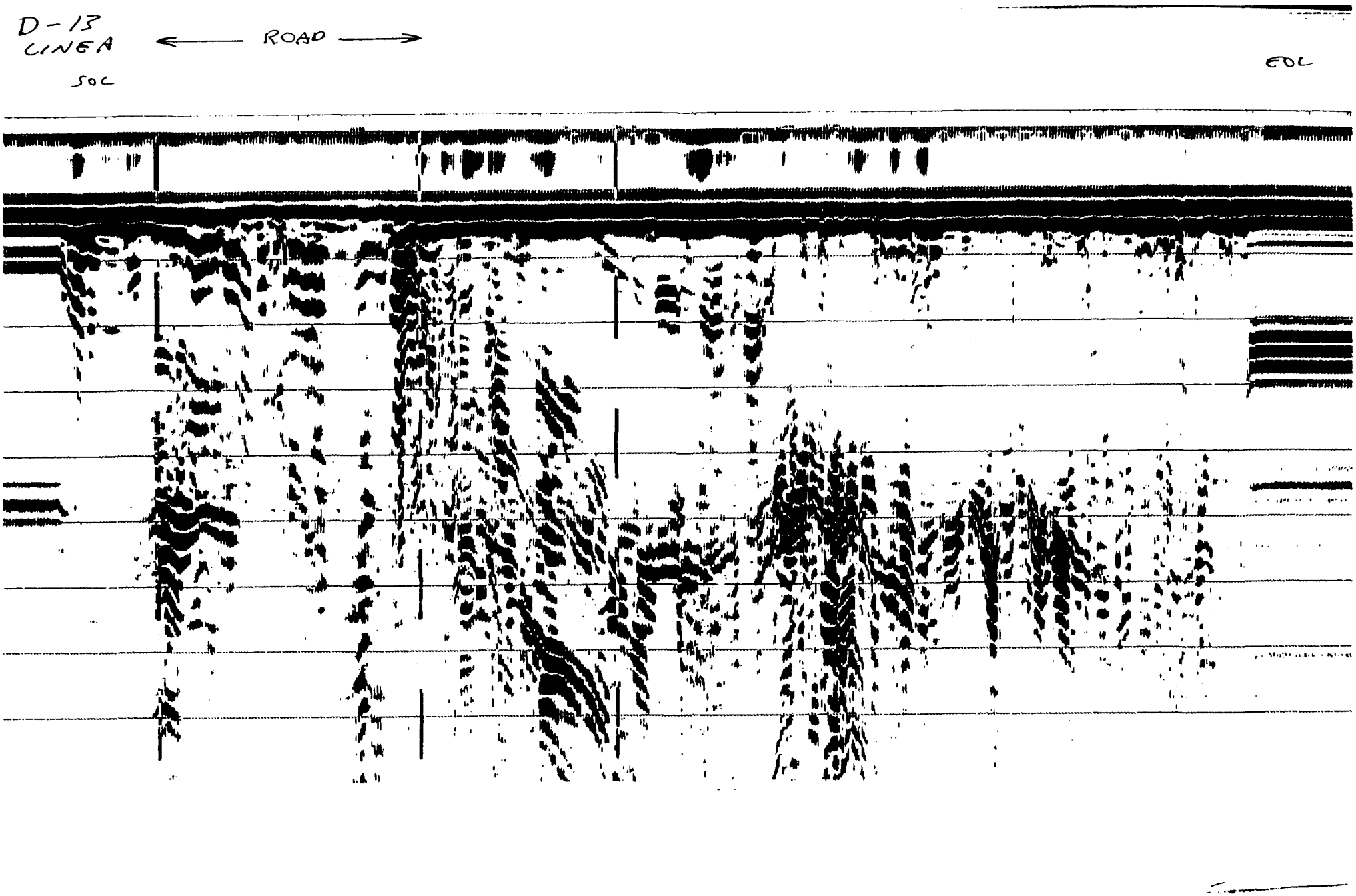
PROFILE ALONG LINE H



E

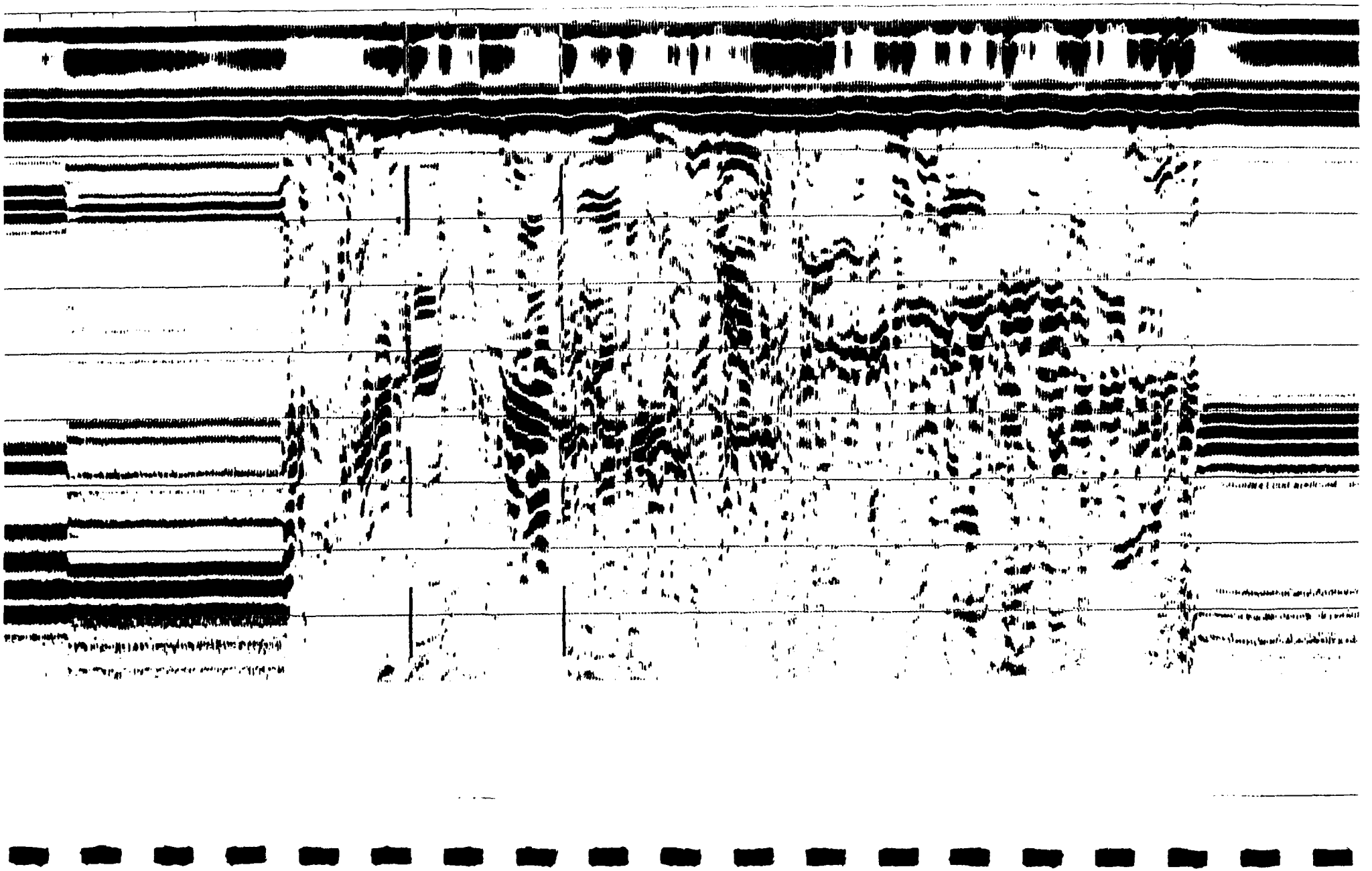
W


RADAR LOCATIONS
- Natural HEAVY
- metal DETECTED
DISTURBED
- non-metal DETECTED
- gravel pit
- Intermittent metal
- traverse line
200'/INCH
SOL
EOL
LINE A
LINE C
LINE G
Natural
2-3 mm EQ Ko/m
older regrowth timber
open
SUBJECT VE
PARKING AREA
CLASS I 10000 LBS
1250
2%
small trees
brush
(no metal on traverse)
SCAT DEBRIS
200+ ASPHALT
Asphalt
gravel
SANITARY
200
210
175
1000


D-13
LINEA
SOL
ROAD
EOL

D-13
LINE C

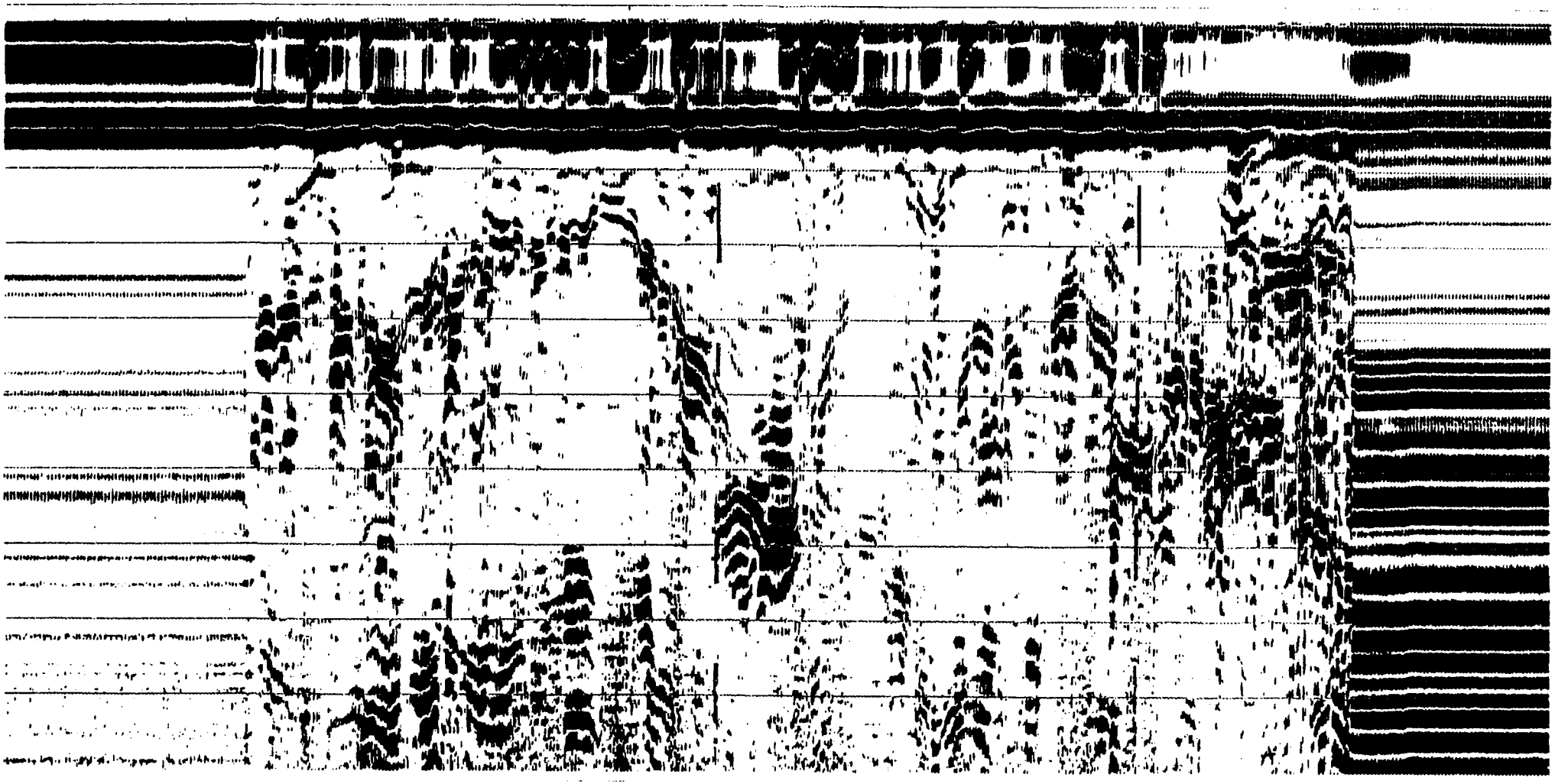
SOC ← ROAD → EOC



D-13
LINE F
(REVERSE OF 9)

SOL

EOL



D-13
LINE 5
JOC

ROAD ←

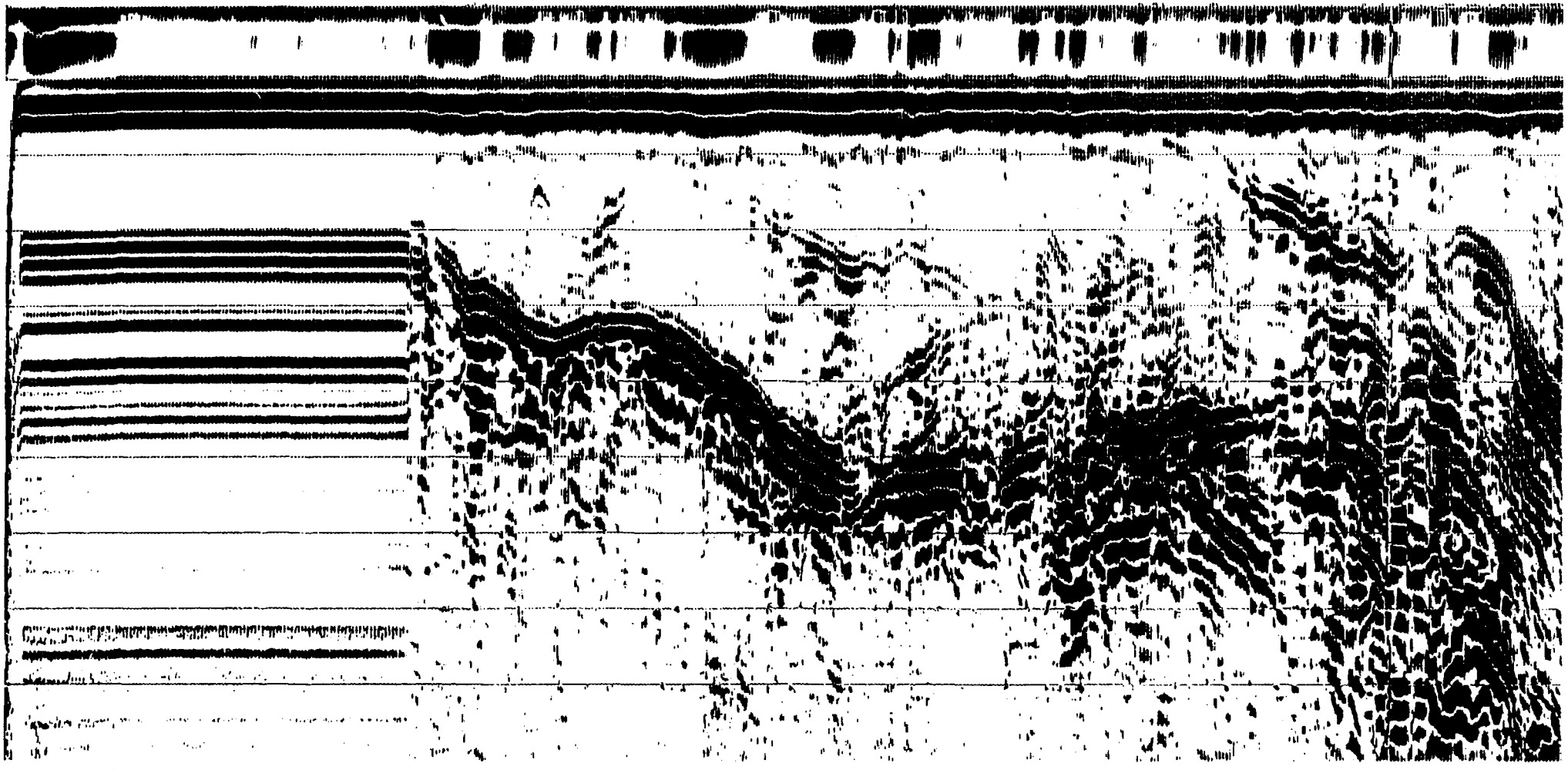
RAVINE

BYLL

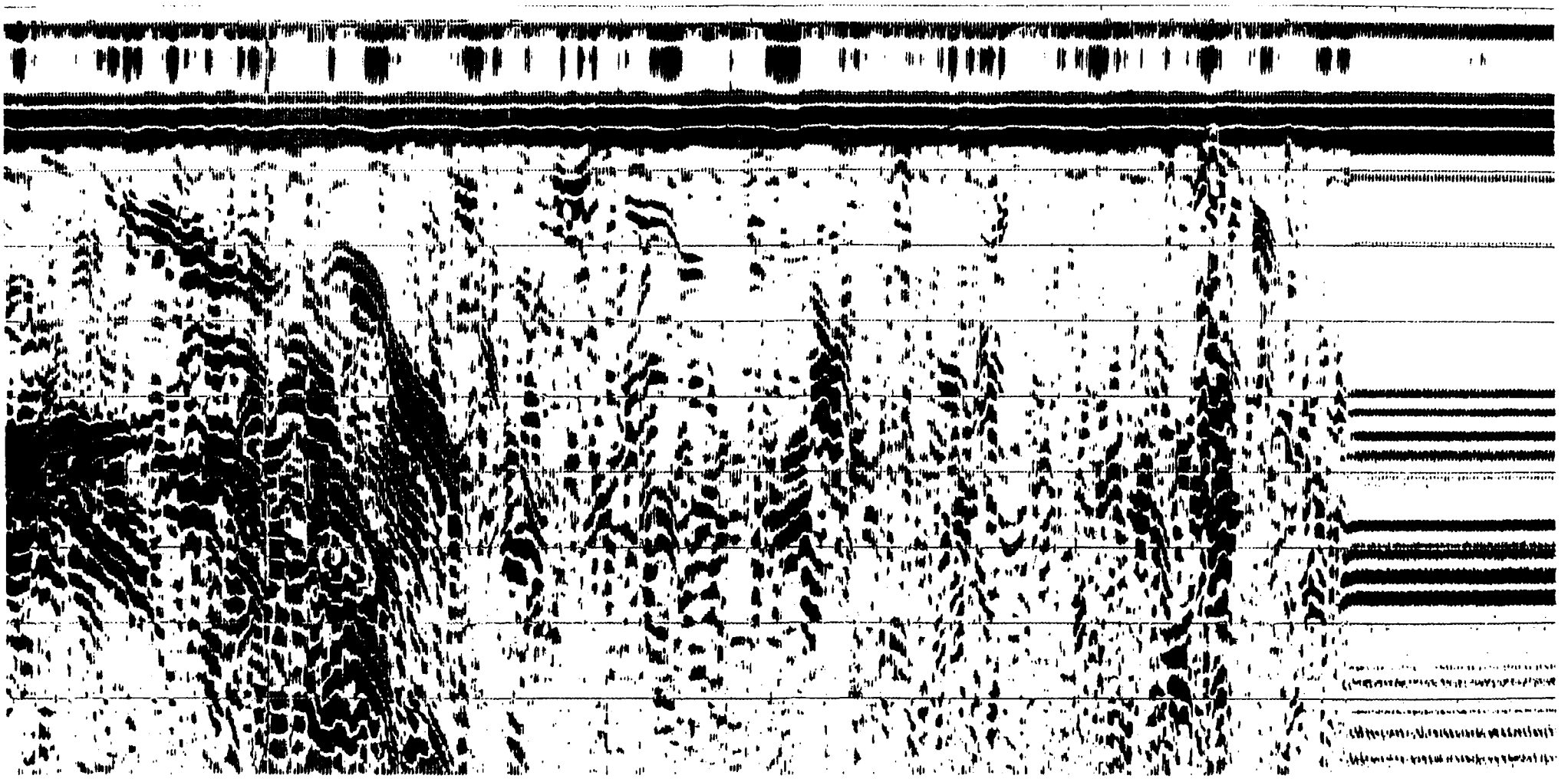
EOL

D-13
LINE H

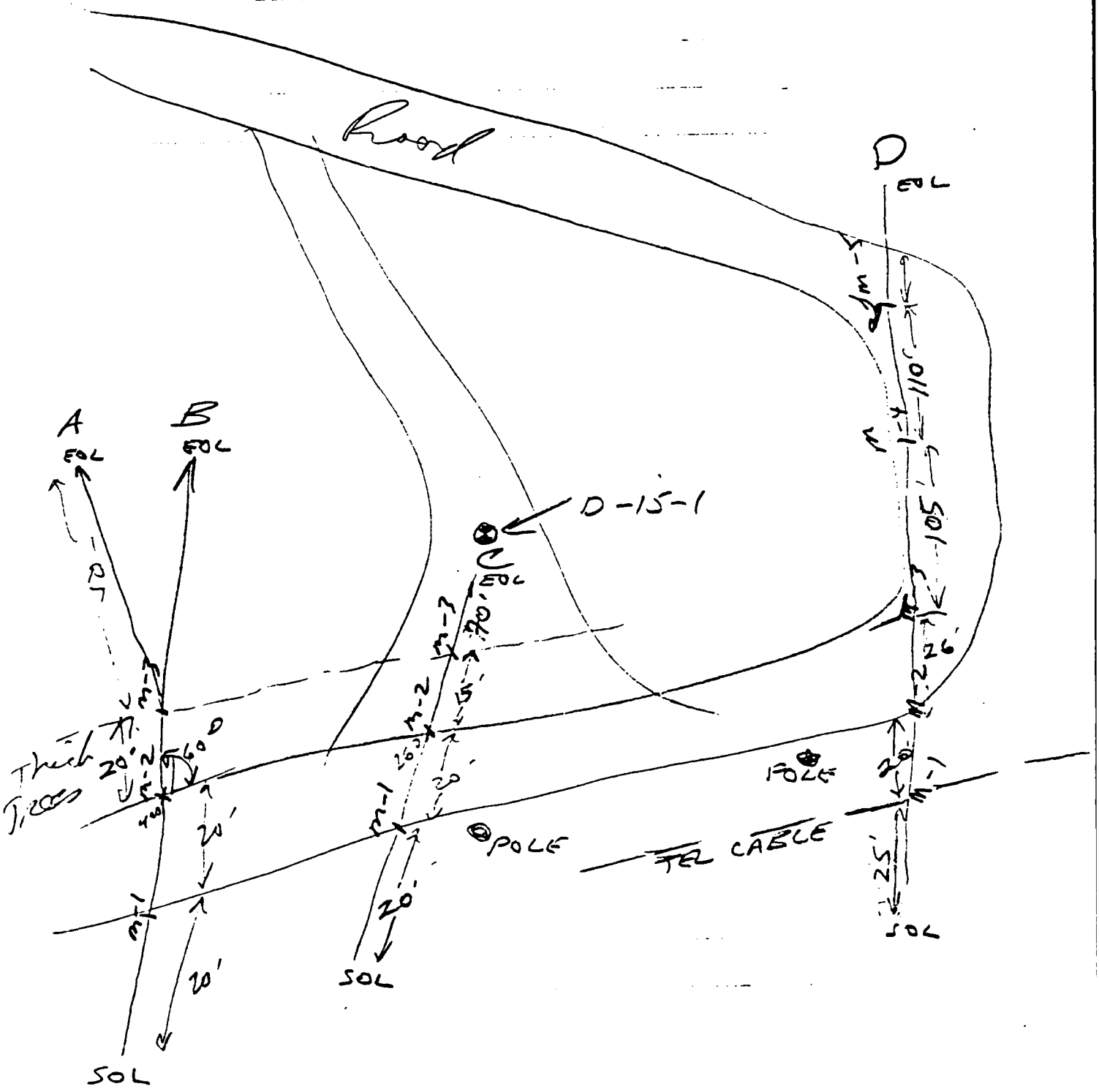
SOL



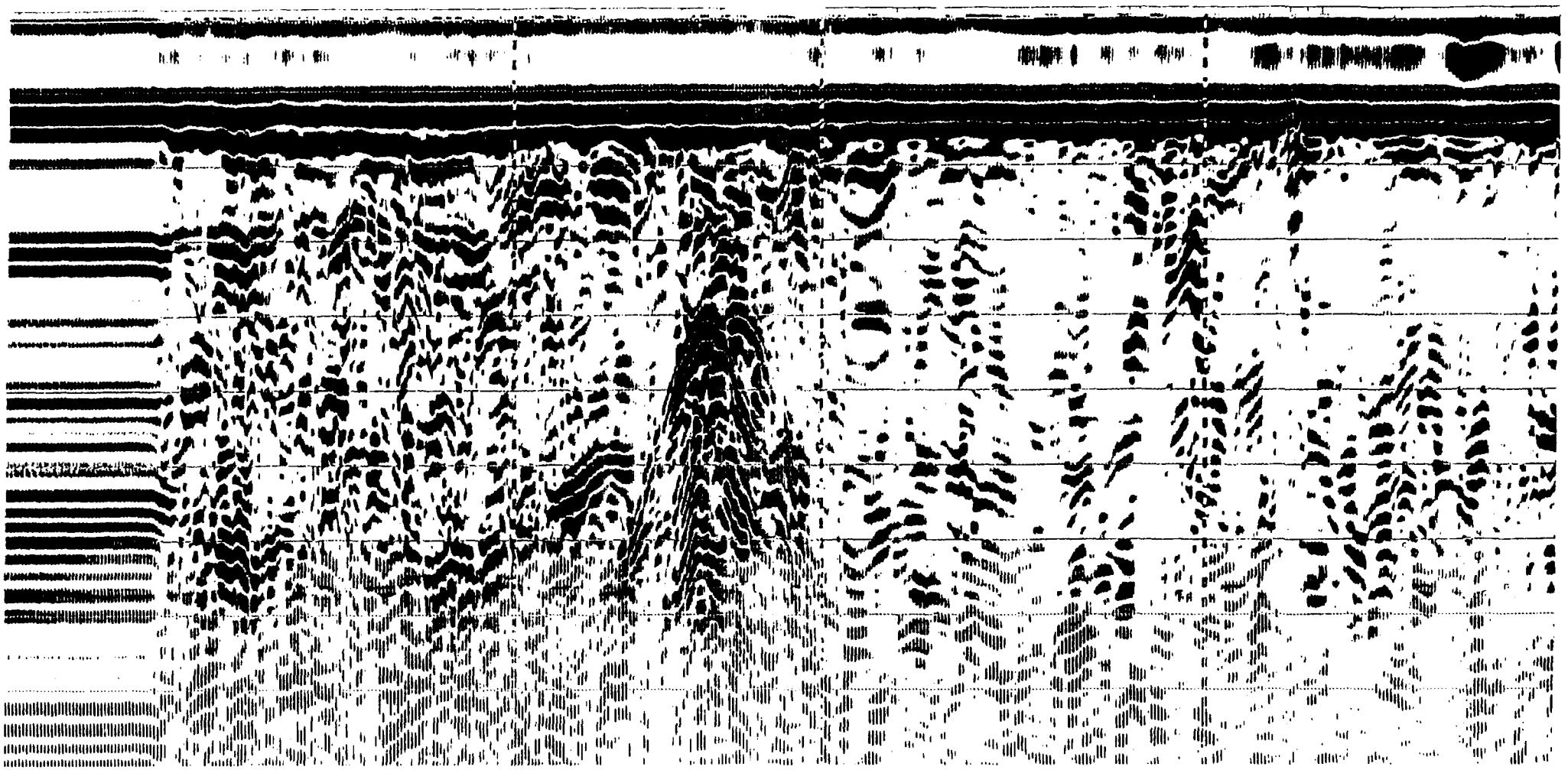
N



D-15 Radar Profile Locations



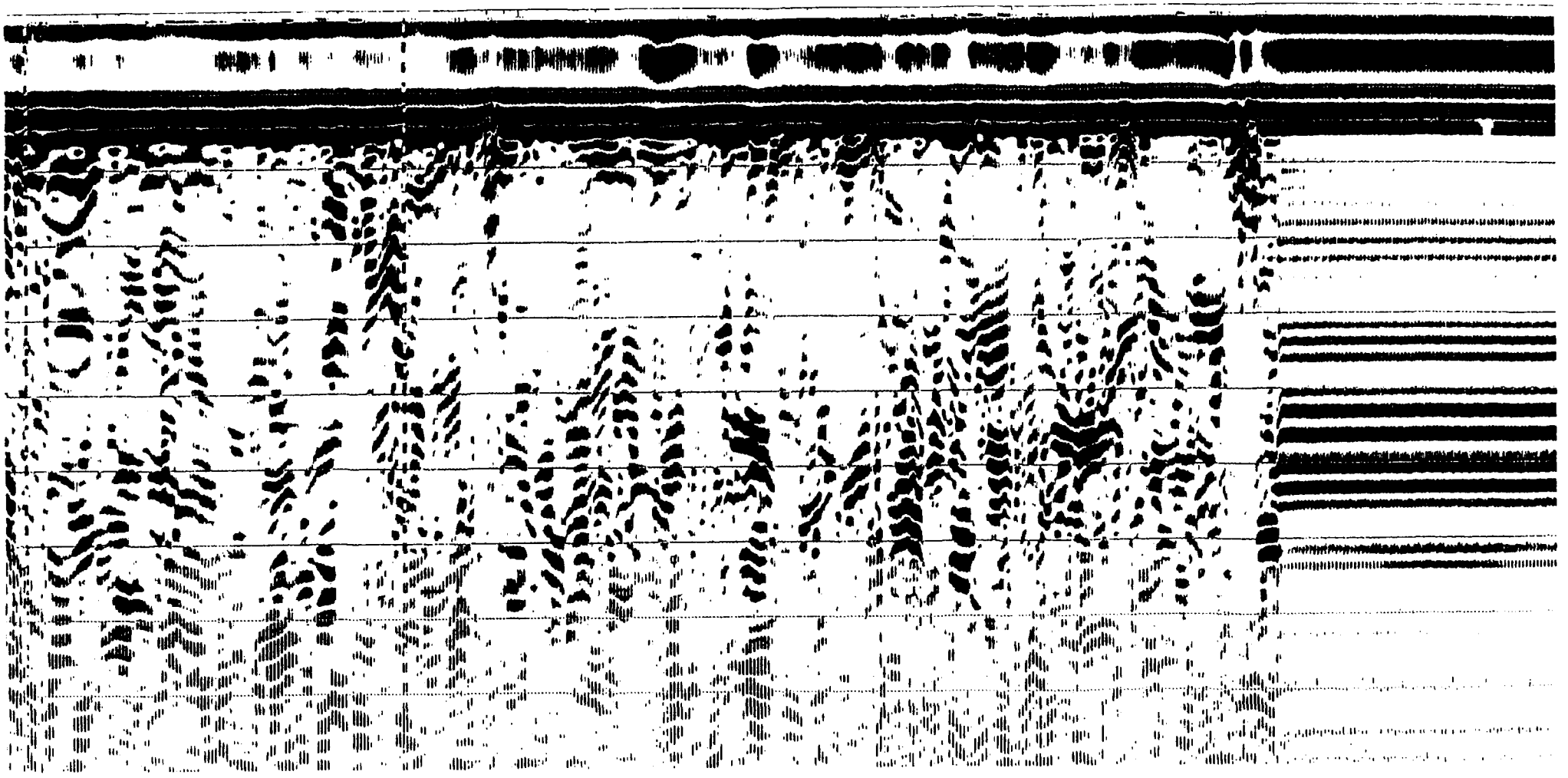
D-15
UNGA SOC



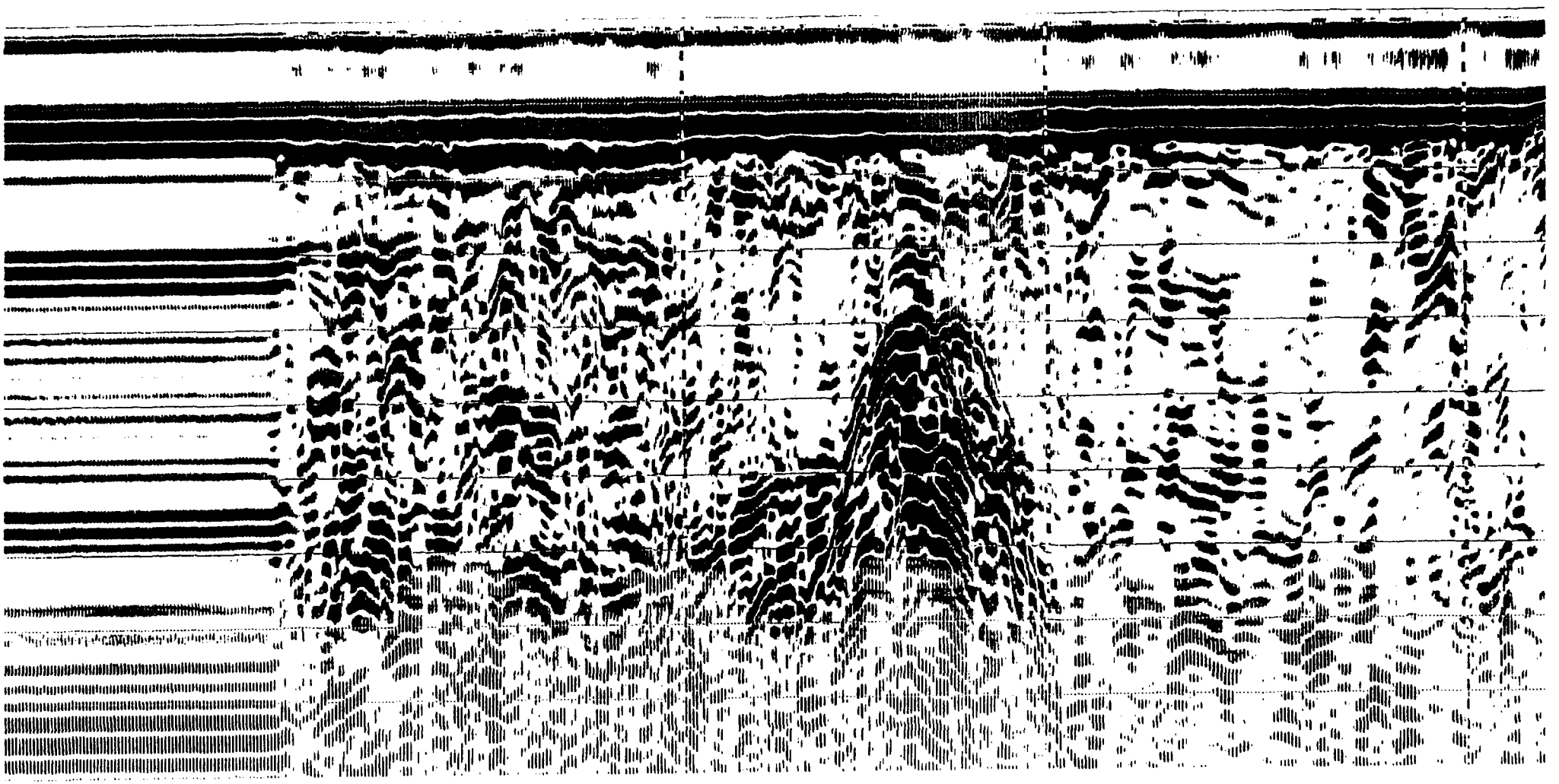
A

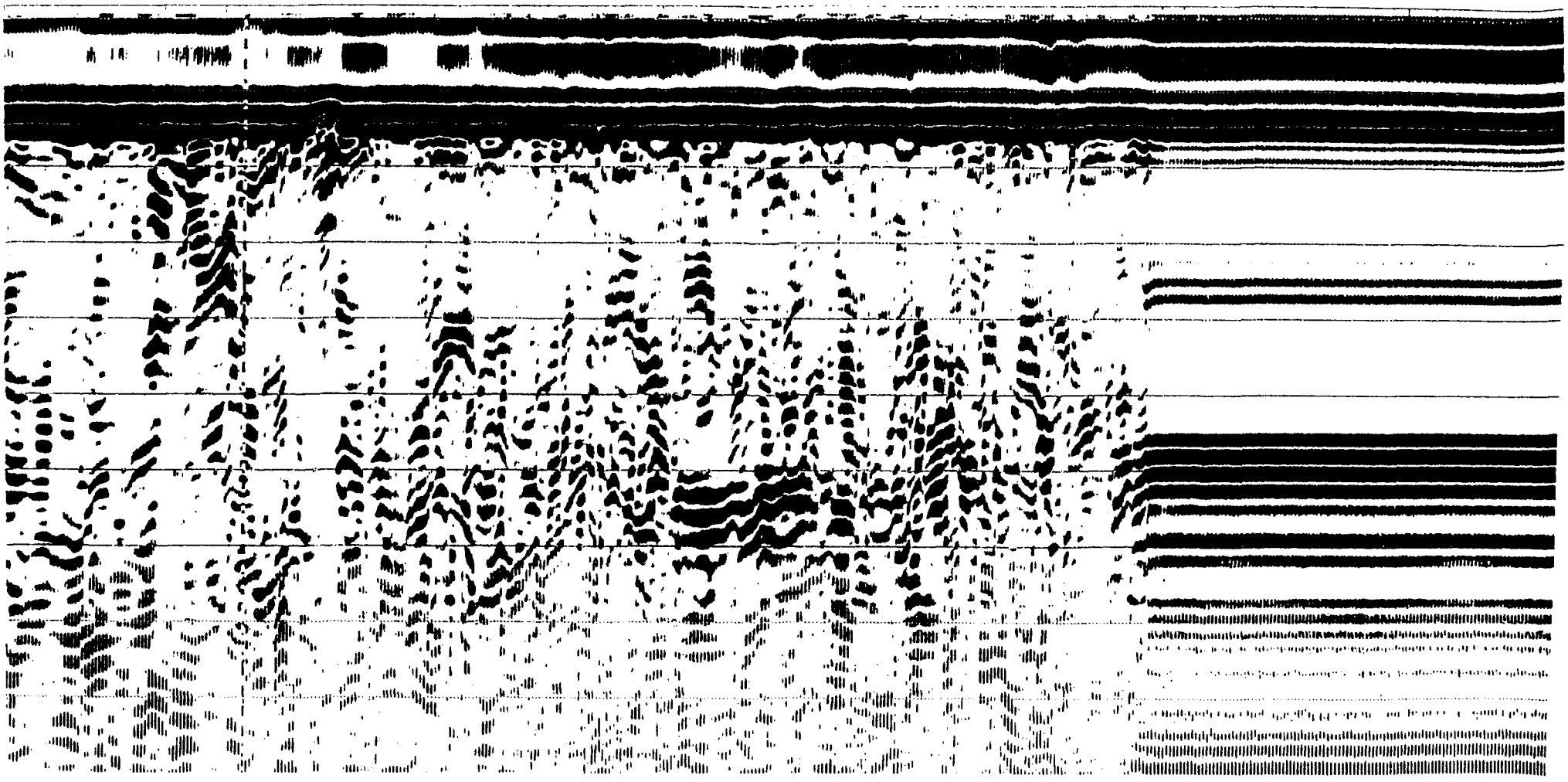
2

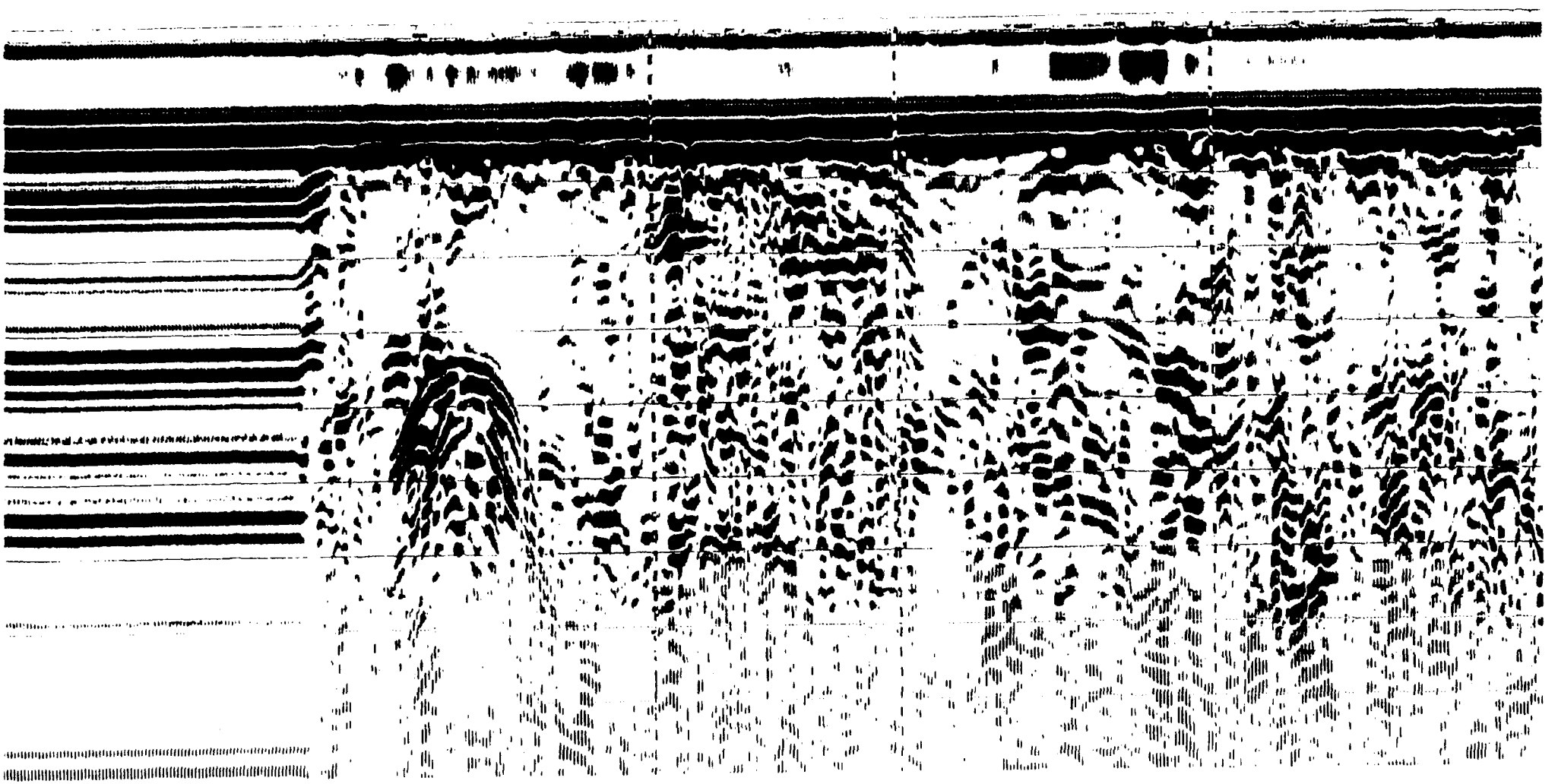
3



2-15
INE B SOL 1 2 3





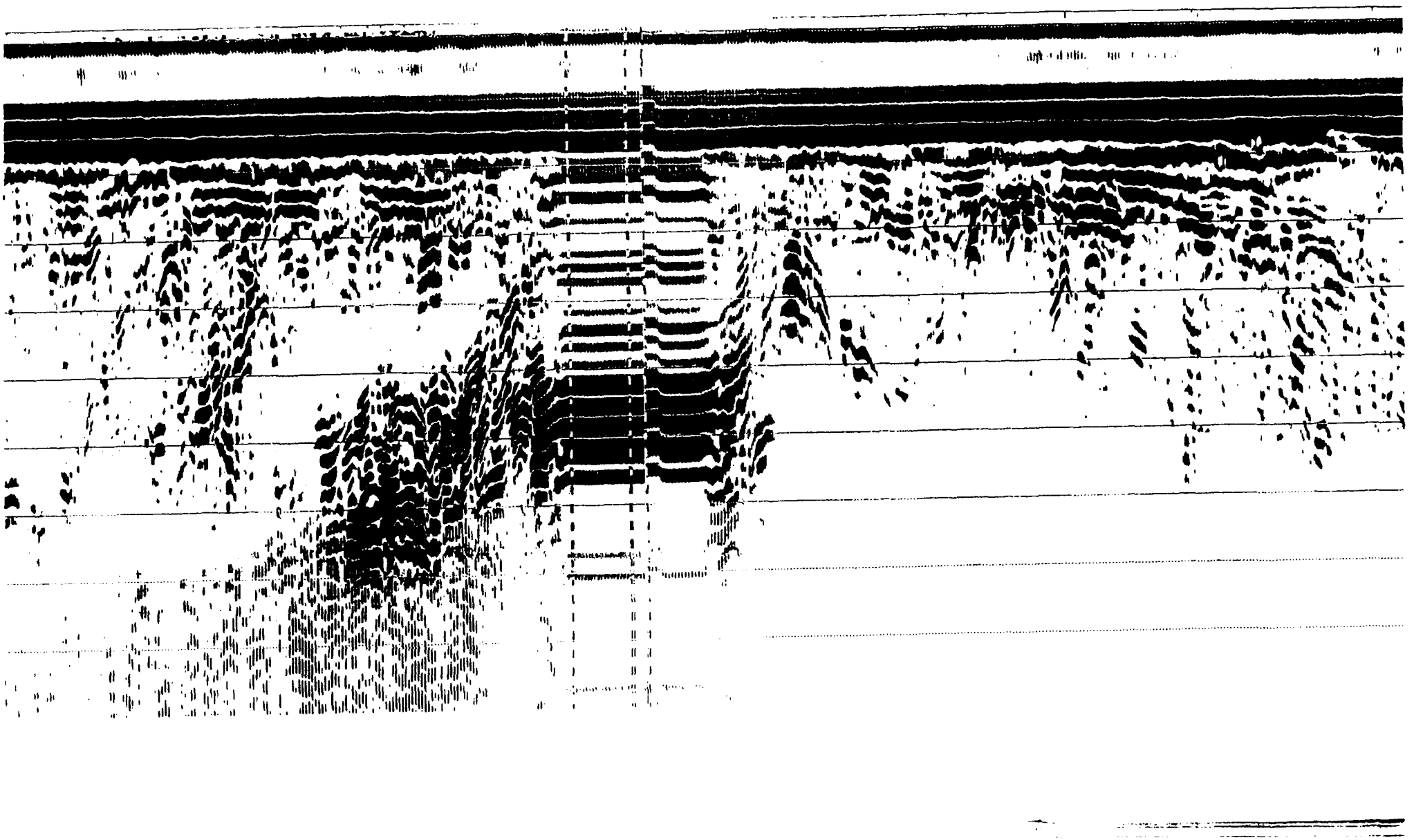


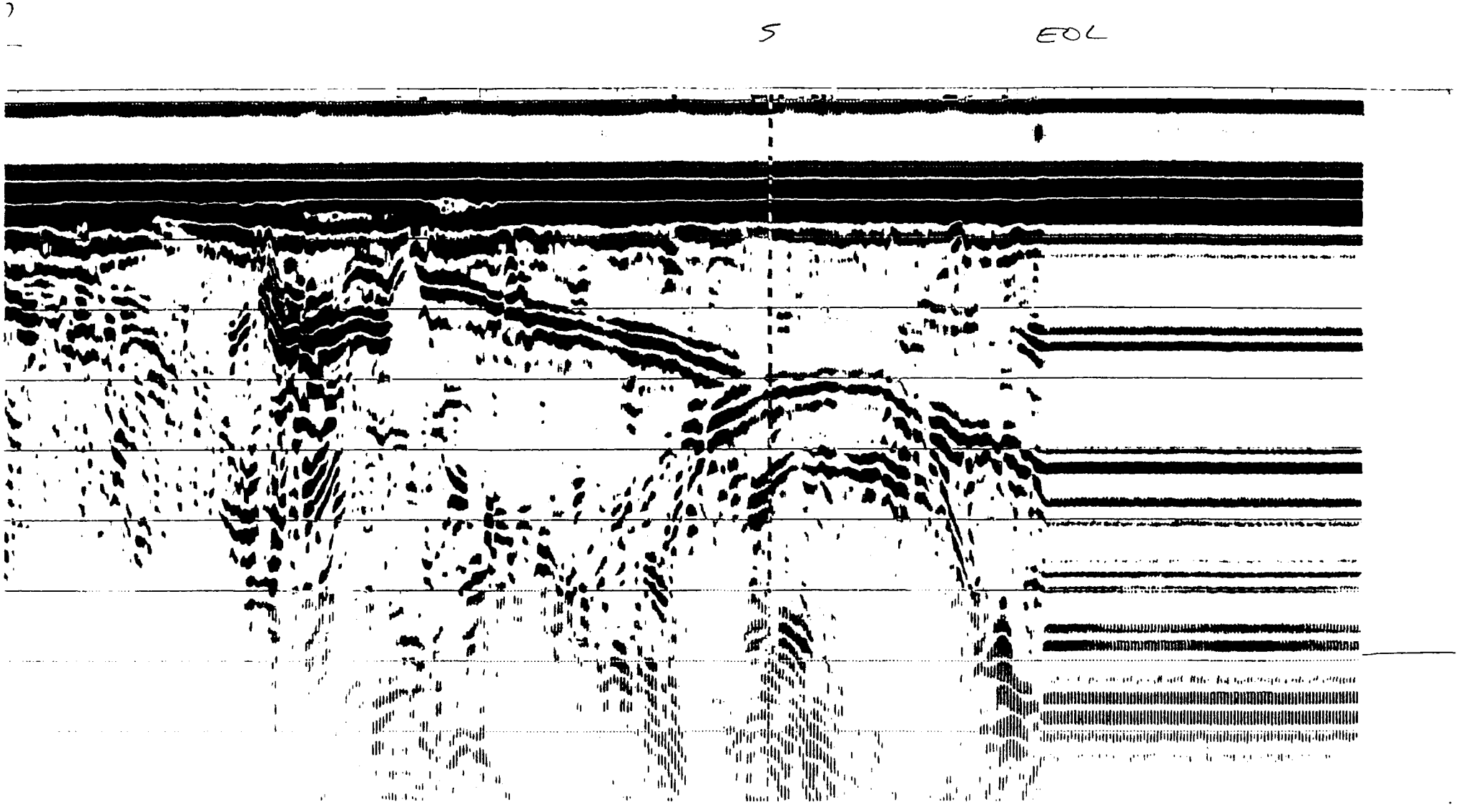
D-15
LINE D

SOL 1 2 3

D

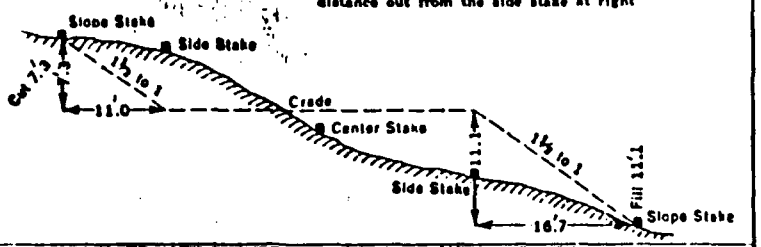
←STOP→




5
EOL

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	10

ELMENDORF
AIR FORCE BASE
ANCHORAGE, AK

PROJECT NO. 88500358
TASK 0210

GEOPHYSICS

Robert M. Beer
Consulting Geophysicist

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

203 North Golden Circle Drive
Santa Ana, California 92705
(714) 835-6886 (213) 581-7164
Telex 68-3420

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J. L. DARLING CORPORATION
TACOMA, WASHINGTON 98421 U.S.A.

24 JUNE 1988 FRIDAY

0800 ARRIVE CLOUDWARD - CLOSE OFFICE ACCOUNTING TRANSIT FROM SOUTHERN CALIFORNIA THE PREVIOUS DAY.

PROJECT INTRODUCTION

1030 PICK UP GEOPHYSICAL EQUIPMENT AT ARMORED HARDNESS FREIGHT DOCK.

1145 REVIEW SCOPE OF WORK

1350 SITE VISIT TO EDWARDS AFB WITH ROBIN STANCOT (BLACKS BEACH). MET WITH MIKE DRENNETT (CIVIL ENGINEER - USAF CIVILIAN EMPLOYEE) AND LT LOWREY (USAF FIRE SAFETY) PROCEEDED TO SITE SPOTS FOR

INITIAL VISUAL ASSESSMENT & LAYOUT OF WORK FOR SCOPE OF WORK. MEET WITH ONSITE FUELS PERSONNEL.

1650 RETURNED TO WCC OFFICE, REVIEW WORK SCOPE OF WORK IN LIGHT OF SITE VISIT WITH WCC PERSONNEL, REVIEWED HAZCON & SAFETY PLAN AND QAPP

1900 DEPARTED OFFICE

25 JUNE 1988 SATURDAY

1800 LOGISTICS & MOBILIZATION OF EQUIPMENT AT UNCC OFFICE. NO FIELD WORK

2200 COMPLETED TASK

26 JUNE 1988 SUNDAY

0600 ARRIVE OFFICE AND CHECK OVER SITE MAPS

0700 VERIFY THE CONFIDENCE

0710 MET BLACK & VEATCH PERSONNEL (ROBIN HANCEY & KERRY ROSE) AT MAIN GATE AND PROCEEDED TO SP-5

0730 ONSITE, SITE ORGANIZATION, LAY OUT AND CHECK OUT GEOPHYSICAL INSTRUMENTS, RECONSITE W/ NEW MAPS ACQUIRED FRIDAY PM FROM MIKE DRESCOTT TEST EQUIPMENT AND LOCATE LOOP PIPING & CHARACTERIZE SITE WITH EDM-3. AVERAGE CONDUCTIVITIES ≈ 25-30 MMHO/M.

R

1000 TEMP ≈ 56°F, LIGHT WINDS, OVERCAST

1030 BEGIN RAINING

1100 DEPARTED SITE FOR OFFICE

1120 ARRIVE OFFICE, WRAP UP TASK FOR TODAY.

27 JUNE 1988 MONDAY

0600 ARRIVE OFFICE

0830 REVIEW DESIGN DRAWINGS AND INSPECTION REQUIRED BY INTERNAL ELECTRIC. ARRANGE TO HAVE GAS SHIPPED TO ANCHORAGE

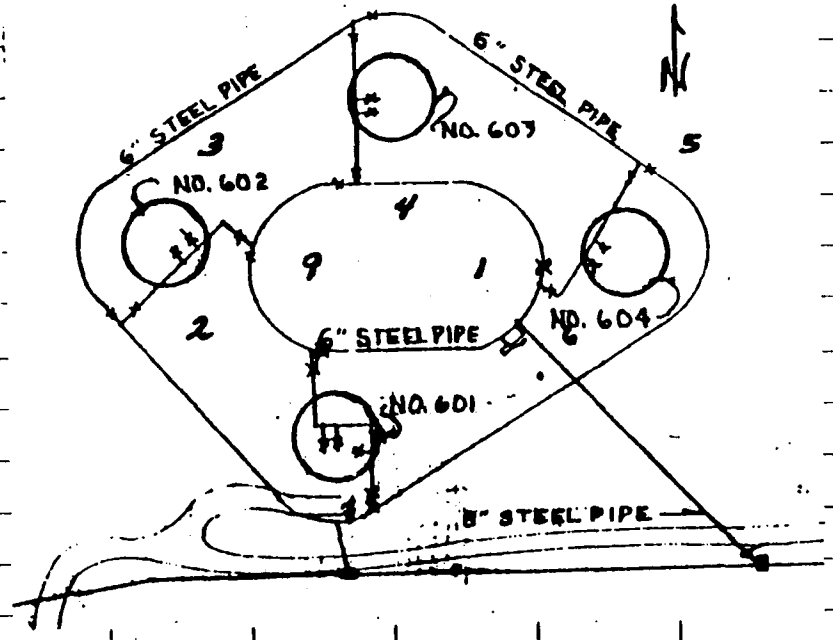
1030 DEPART FOR ETHERIDGE COMPLETE BACKING & VEHICLE CLEARANCE TEMP MID 30's F, LIGHT STEADY RAIN, OVERCAST, WINDS 0-5 KTS

1200 BEGIN FIELDWORK ON SP-5, MARKING U/G FUEL PIPING, CLEARED 7 BORING LOCATIONS. COORDINATE W/ VSP FUELS PERSONNEL. HOLD 8TH BORING.

1600 DEPART OFFICE TO RETURN

R

CCMRED PROPOSED
LOCATION OF 8 BORINGS



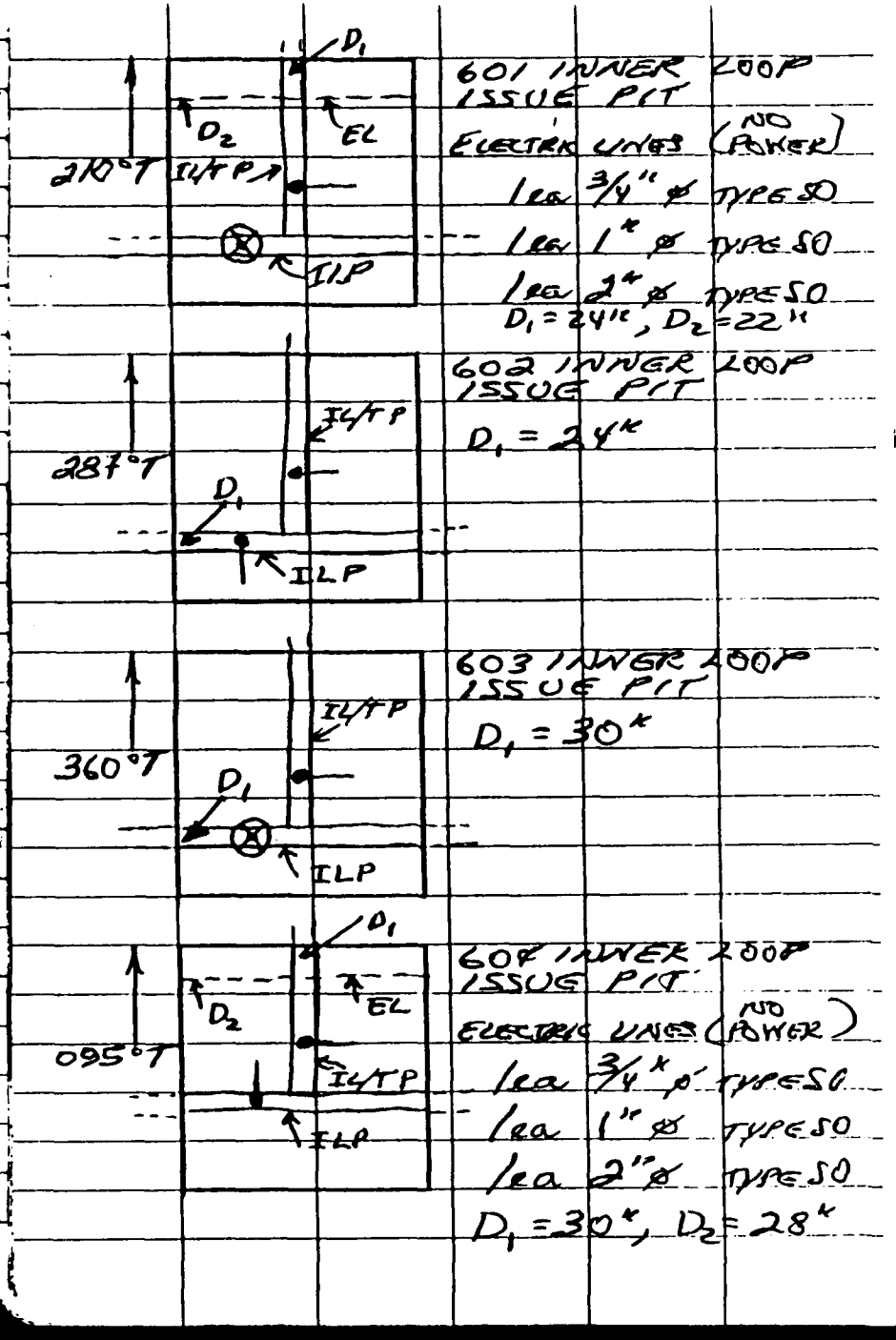
BORING	SOILS*	NOTES
#1	8	
#2	34/12*	MOVED *NEW LOCATION
#3	18*	OVER EL LINE - MOVED
#4	10	
#5	8	
#6	17-18	
#7	24-25	ELECTRICAL CABLES AND FUEL PIPES NEARBY
#9	7	

* APPARENT GROUND CONDUCTIVITY IN MMHO/M

FUELS MAPS PROVIDED AND OCP MAPS OF HV ELECTRIC U/G LINES.

1800 COMPLETE TASK FOR ADDY.

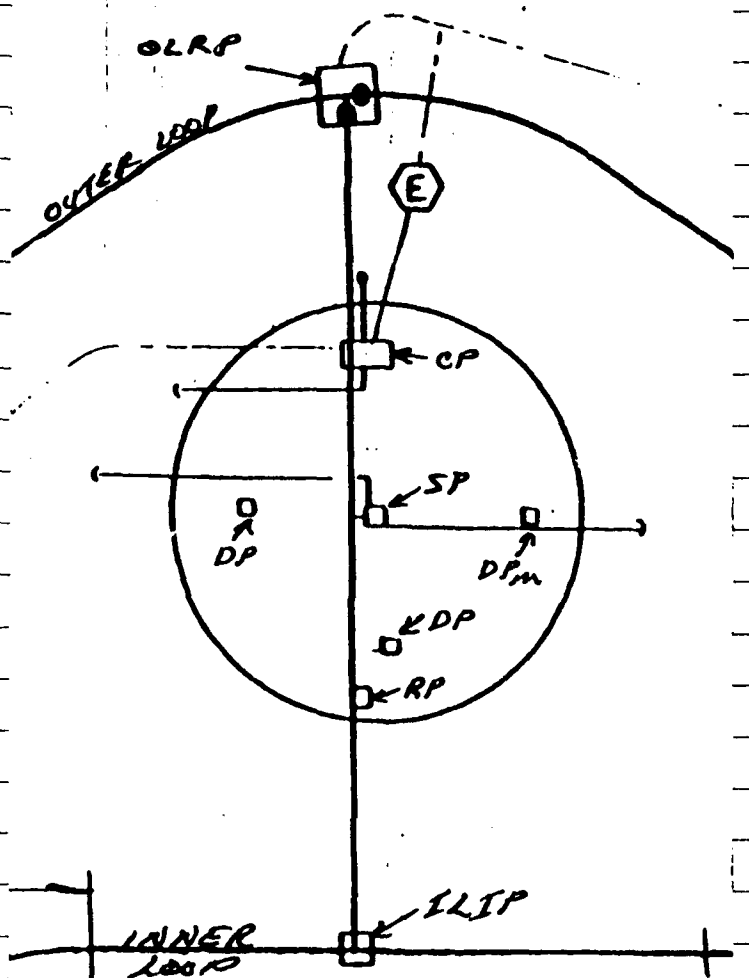
C



28 JUNE 1988 TUESDAY

0600 ARRIVE OFFICE
MORNING WEATHER
TEMP - 49°F RH - 70%
BARO - 30.18 DP - 44°
WINDS CALM
MOSTLY CLOUDY

0800 ONSITE SIP - 5. LOCATE AND MAP FUEL PIPING - INNER & OUTER LOOPS, INTERCONNECTING LINES, DOCUMENT PHYSICAL CONDITIONS AT LOCATIONS FUEL PIPING & ACCESSABLE
CODING FOR DRAWINGS AT LEFT AS FOLLOWS:
ILP = 6" ø INNER LOOP PIPE
ILP/TP = INNER LOOP → TANK PIPE
⊗ = VALVE & WHEEL
● = VALVE & HANDLE
EL = OBSERVED ELECTRICAL LINES
D_x = DEPTH TO TOP OF UTILITY REFERENCED TO ADJACENT GROUND ELEVATION



TYPICAL ABOVE-GROUND LAYOUT OF POL AREA STORAGE TANKS (1 of 4)
TANK 603 IS SHOWN

CODING FOR DRAWING AT LEFT AS FOLLOWS:

OLRP = OUTER LOOP RECEIVING PIT
ILIP = INNER LOOP ISSUE PIT
CP = CONTROL PIT
RP = RECEIVING PIT
SP = SUMP PIT
DP = DOME PIT
DP_m = DOME PIT W/METER

DEPTH TO TOP OF TANK RELATIVE TO ADJACENT GROUND SURFACE - MEASURED IN OPPOSING DOME PITS AT OUTER TANK EDGE SIDE OF PIT.

TANK	DP	DP_m
601	58"	65"
602	59"	64"
603	63"	56"
604	52"	67"

NOTE: A 2" WIDE CRACK WAS OBSERVED @ 1 FOOT

ABOVE ELEVATION OF TOP OF TANK INNER DOME PIT (DP) 602. A REPAIR HAD BEEN ATTEMPED. CRACK APPEARS TO BE THE RESULT OF FROST HEAVE POSSIBLY FAILING THE CONCRETE PIT BOX AT A LEVEL OF PREFERENTIAL WEAKNESS

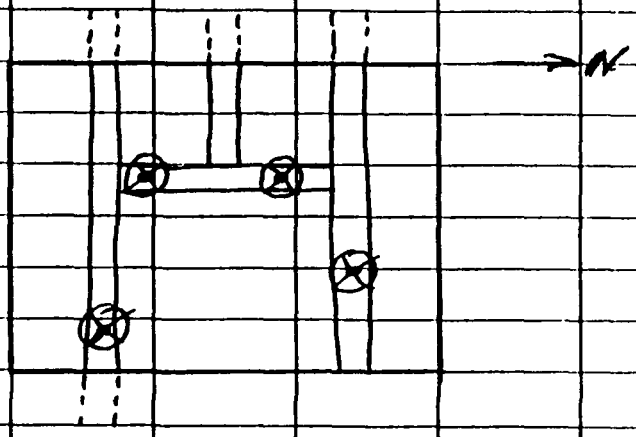
1700 DEPART FOR OFFICE TO COMPLETE SITE DOCUMENTATION

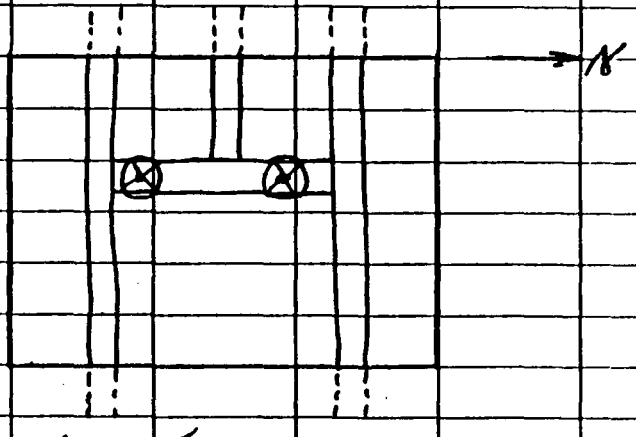
1800 COMPLETE TASK FOR TODAY

29 JUNE 1988 WEDNESDAY

0600 ARRIVE OFFICE
MORNING WEATHER
TEMP - 51°F RH - 80%
BARO - 29.86 DP - 46°
WINDS 5 KTS FROM 160°
CLOUDS - 5000 SCT, 8000 BKN, 12000 BKN
GENERALLY OVERCAST & MISTY

0900 ONSITE SUP-5, LOCATED AND MARKED HV 4160 ELECTRICAL LINES CURRENTLY IN SERVICE - RUNNING FROM CONTROL ROOM TO EACH TANK'S CONTROL PIT AND SUMP PIT. LINES ARE 4160 VAC 3 Ø AND REPORTED TO BE STANDARD BURIED, UNPROTECTED TYPE SO CABLE UNABLE IN COORDINATION WITH MR. HAIK OF USAF/EAFB INTERNAC ELECTRIC GROUP. MR HAIK LOCATED AND





MATCHED CON VOLTAGE CIZUDC-IN RIGID CONDUIT) CONTROL WIRING. HE WAS RESPONSIBLE FOR THE INSTALLATION OF THIS SYSTEM SEVERAL YEARS AGO. DELINEATED THE ABANDONED Y&O WIRING RUNNING AROUND OUTER COIL, DIAGRAMMATICALLY SHOWN IN USAF DRAWING #62E022 DATED 2/16/62. DELINEATED COVER PIPELINES RUNNING FROM OCEAN DOCK - SOUTH OF POL AREA - FROM VICINITY VP-14 & 15.

1700 DEPART FOR OFFICE TO COMPLETE SITE DOCUMENTATION

1800 COMPLETE TASK FOR TODAY

30 JUNE 1988 THURSDAY

0500 ARRIVE OFFICE
MORNING WEATHER
TEMP - 53°F RH - 65%
BARO - 29.79↓ DP - 41°
WINDS 7 kts FROM 160°
COVER 4000 SCT, 8000 BKN, 12000 BKN
GENERALLY OVERCAST
SITE DOCUMENTATION ON SF-5

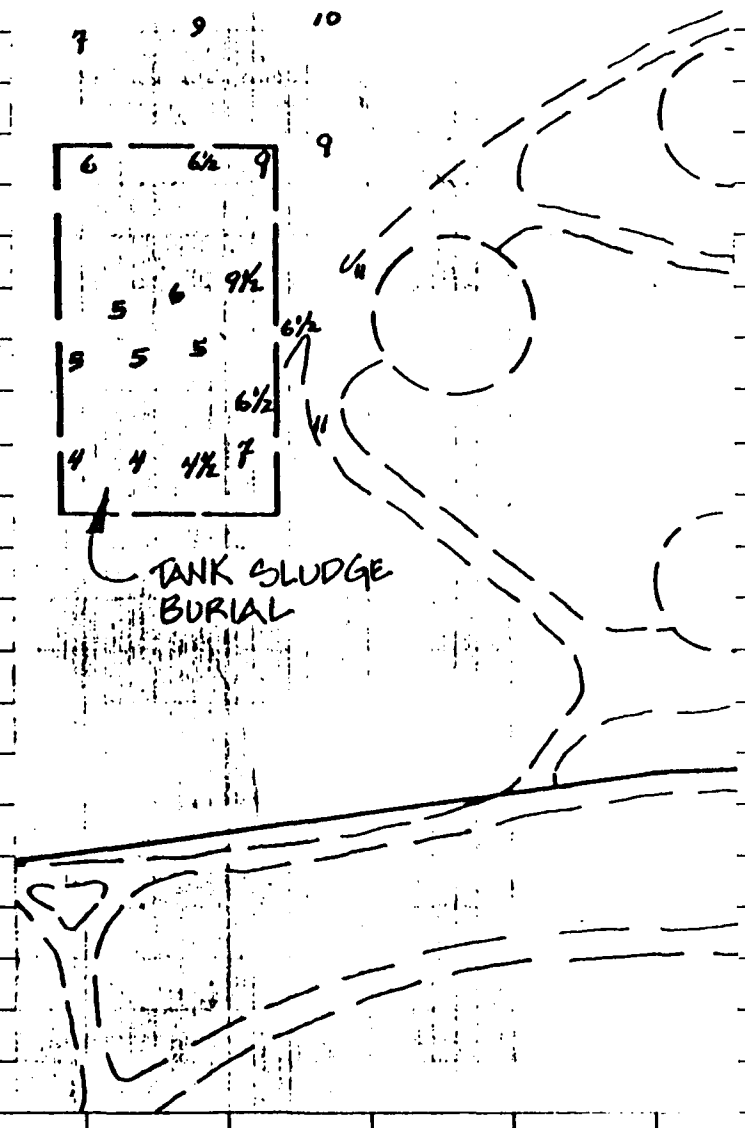
0900 ONSITE SF-5. COMPLETE ONSITE DOCUMENTATION AND FIELD CHECK OF ALL UTILITIES MARKING. DELINEATE BOUNDARIES OF 4 POL STORAGE TANKS TO ALLOW SOIL GAS PROBES TO BE INSTALLED ADJACENT TO TANKS AS REQUIRED UTILIZED THE FOLLOWING GEOPHYSICAL EQUIPMENT 1) GEONICS EM-31 TERRAIN

TANK SLUDGE BURIAL AREA
ELECTROMAGNETIC SURVEY
(RECONNAISSANCE LEVEL)

LOC	VALUE	LOC	VALUE
1(3)	6½	20	(11)(4)
A	11	19	9½
2(3)	7	10	6
6	4½	11	5
2	4	12	6½
5	5	13	6
B(3)	6½	15	9
9	5	14	8-10
3	5	16	9
4	5	17	7
		18	10

NOTES:
1. VALUES IN MMHO/M w/ GEONICS EM-31
2. LOC = SOIL GAS PROBE LOCATION
3. OPEN AREA OUT OF WOODS
4. OUTER LOOP PIPELINE NEGATED DATA AT PROBE LOCATION. VALUE OBTAINED IS TO MOST AWAY FROM METALLIC INFLUENCE

CONDUCTIVITY METER.
2) GEONICS EM-31 & 52 B GRADIENT MAGNETOMETER
3) METROTECH M-480 PIPE AND CABLE LOCATOR.
CLEARED ADDITIONAL ALTERNATE BURIAL LOCATIONS AS DIRECTED BY SITE SUPERVISOR. DEFINED TANK AND UNDERGROUND PIPING AT LOCATION OF OIL/WATER SEPARATOR.
CONDUCTED CONDUCTIVITY SURVEY OF REPORTED SLUDGE DISPOSAL AREA TO WEST OF POL AREA (SP-5 SITE). MEASUREMENTS TAKEN IN ACCESSIBLE AREAS AND NEAR AT SOIL GAS PROBE LOCATIONS WHERE-EVER POSSIBLE. MOST OF SITE AREA IS HEAVILY OVERGROWN AND INACCESSIBLE WITH GEOPHYSICAL EQUIPMENT



TANK SLUDGE BURIAL AREA ELECTROMAGNETIC SURVEY

1600 DEPART SP-5 FOR SITES D-3 AND D-15 TO RECON SITE AND LAY OUT PLAN OF ACTION.

1830 DEPART FOR OFFICE TO COMPLETE SITE DOCUMENTATION

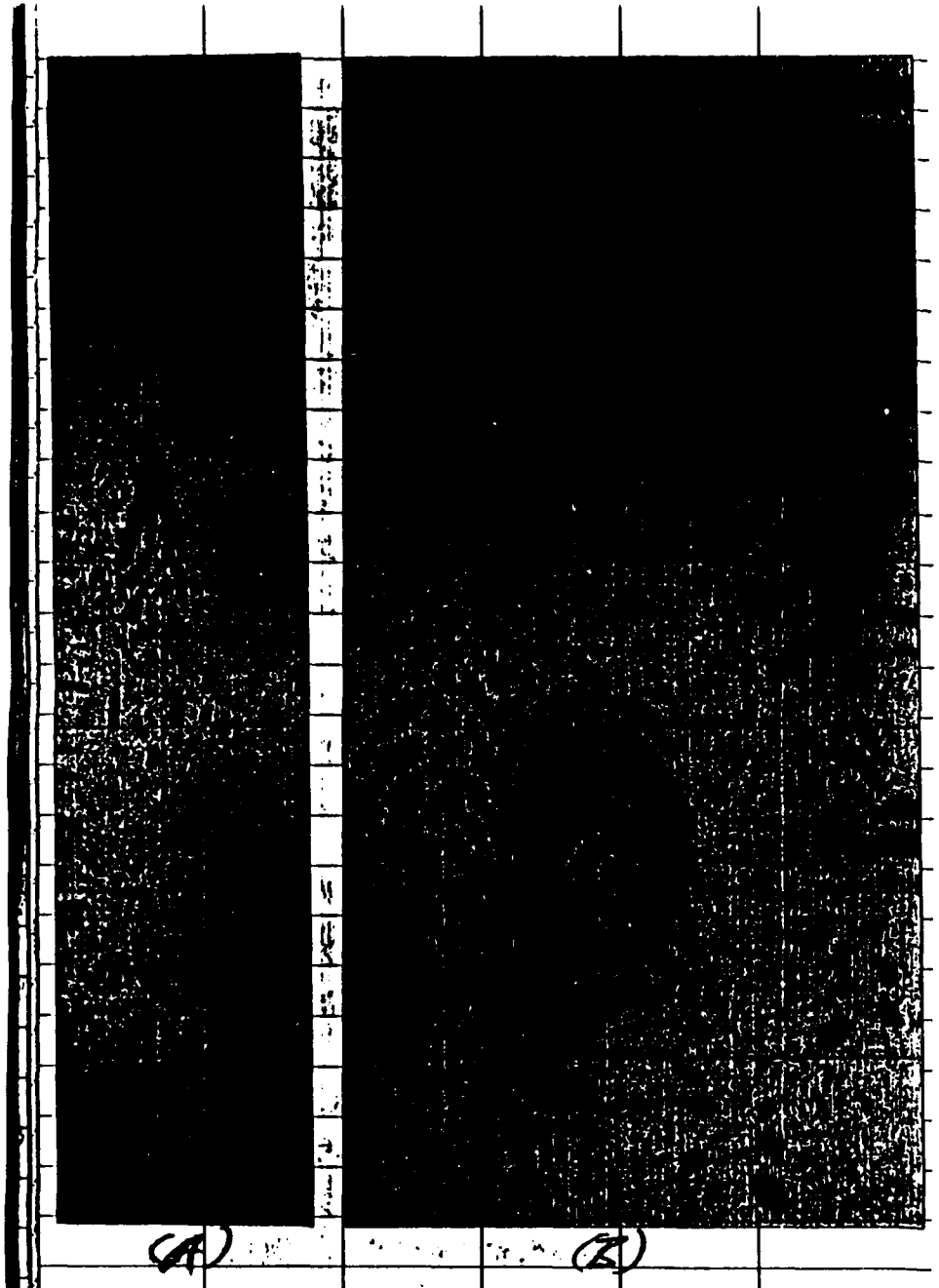
1900 COMPLETE TASK FOR TODAY.

NOTE: TANK SLUDGE BURIAL AREA ELECTROMAGNETIC SURVEY MEASUREMENTS OBTAINED USING A GEONICS EM-31 TERRAIN CONDUCTIVITY METER IN THE HORIZONTAL COPLANAR MODE. VALUES ARE APPARENT GROUND CONDUCTIVITY IN MILLIMHOS PER METER

01 JULY 1988 FRIDAY

0600 ARRIVE OFFICE
MORNING WEATHER
TEMP - 53°F RH - 82%
BARO - 29.57↓ DP - 49°
WINDS - CALM
COVER - 2500 SCT, 5000 BKN, 8000 OVC
GENERALLY OVERCAST
REVIEW PLANS, SCOPE OF WORK, AND APPROACH BASED ON AVAILABLE SITE RESEARCH INFO ON D-3 & D-13 W/ R. DUSAN.
REQUEST ACCESS TO PROJECT AND SECURITY PASSES FOR SITES IS-1 → 8. NO ADDITIONAL ACTION BY USAF. MOS RADAR SYSTEM.

1000 ONSITE D-3 SITE CHARACTERIZATION AND FIELD REVIEW OF INFO OBTAINED DURING SITE RESEARCH TO DATE



1300 ONSITE SF-J. FIELD WORK AND CHECKOUT OF RADAR SYSTEM (GPR) DOCUMENTS UNDERGROUND UTILITIES AND LOOP CONNECTOR) PIPELINES, POL TANK BOUNDARIES, ETC.

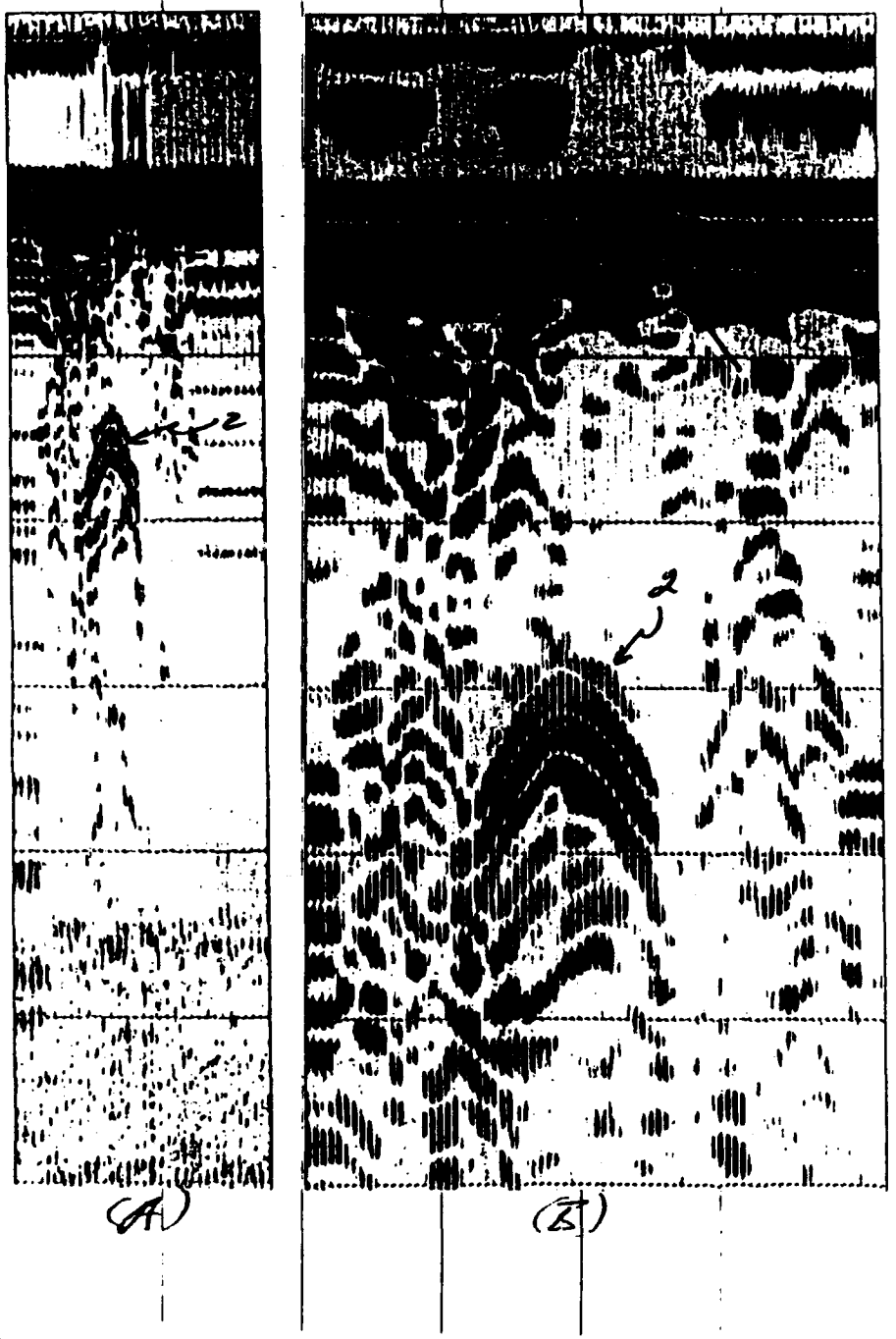
1830 DEPART FOR OFFICE TO COMPLETE SITE DOCUMENTATION

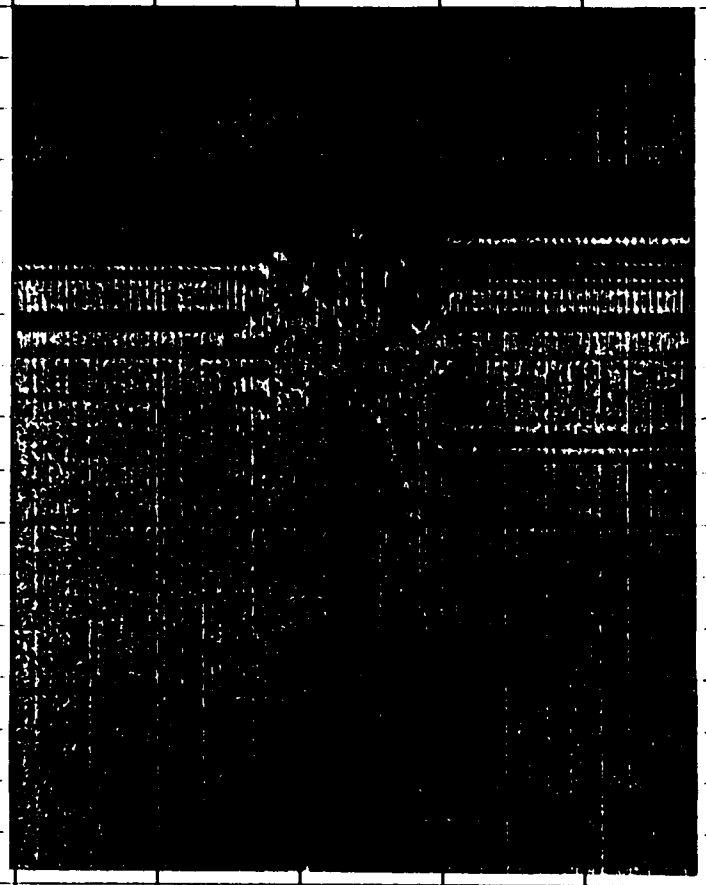
1900 COMPLETE TASK FOR TODAY

TYPICAL FACTORS TO CONSIDER

SCALE: A = 10 NS/DIVISION
B = 5 NS/DIVISION

FEATURES:
1) 3/4" ELECTRICAL CONDUIT BURIED APPX 3 1/2'
2) 6" Ø PIPELINE BURIED APPX 2.3'


(A)
(B)



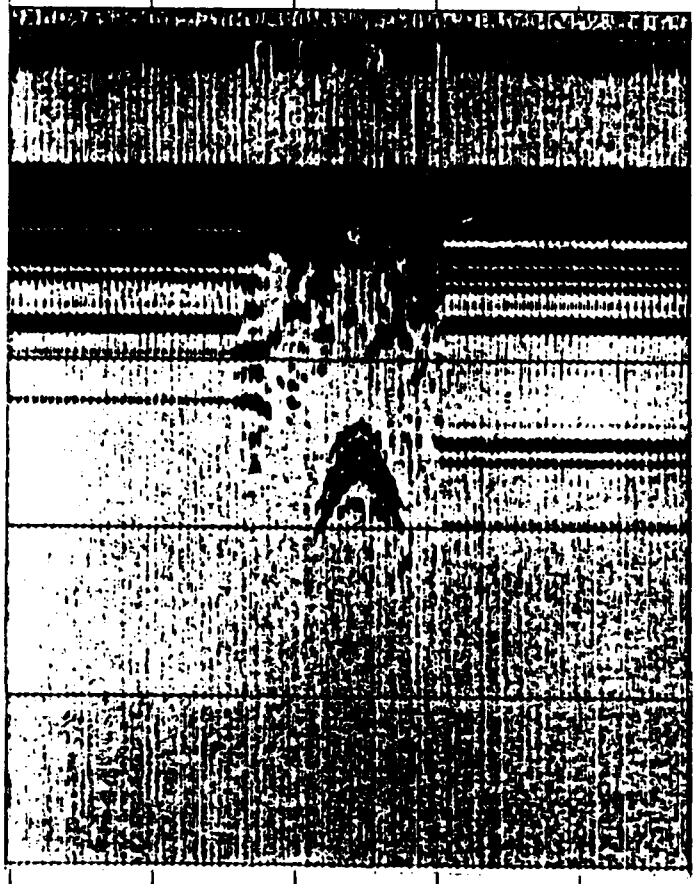
RERUN OF RECORD A ON PREVIOUS PAGE - PRIMARY CHANGES ARE ANTENNA SPEED OVER GROUND AND GAIN SETTINGS, ADJUSTED FOR MAX RESOLUTION IN THE UPPER 20 FEET OF SOIL

05 July 1988 Tuesday

0600 ARRIVE OFFICE
MORNING WEATHER
TEMP 55°F RH - 60%
BARO - 29.93 DP - 42°
WINDS 2 KTS FROM 230°
COVER 2500 BKN, 5000 OVCT
GENERALLY OVERCAST.
REVIEW PROGRESS TO DATE ON SIP-5

1000 PICK UP 80 mHz RADAR ANTENNA AT AIRPORT TERMINAL, CHECKOUT HOOK SYSTEM.

1100 ONSITE SIP-5, SURVEY THREE BORINGS WITH RADAR, MAG, & EM. THREE MOST DIFFICULT CHOSEN (#1, #5, & #8) WORKING ALONE. SITE ASSISTANT ASSIGNED TO HELP WITH RADAR



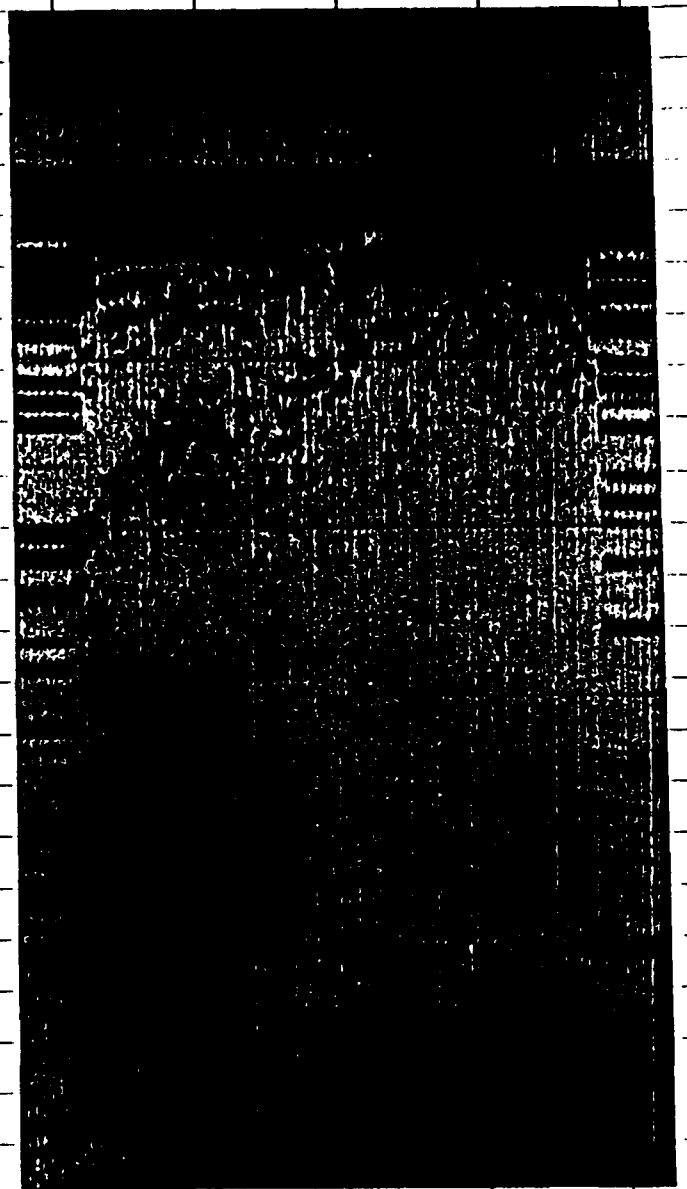
REAR OF ANTENNA IN VARIOUS STATE - NOTICE CRINKLES AT ANTENNA SIDES WHERE GROUND AND CAN STRANGE, ADJUSTED FOR MAIN REFLECTION AND THE CREASE AT 6 FEET OF SCALE

05 JULY 1988 TUESDAY

0600 ARRIVE OFFICE
MORNING WEATHER
TEMP 55°F RH 60%
BAR - 29.93 DP - 42°
WINDS 2KTS FROM 230°
PLACE DISCRETE, 5000 OVC
SCATTERED CIRRUS AST.
REVIEW PROCESS TO DATE
ON SF-5

1000 PICK UP 80 MTR BAZAR
ANTENNA AT AMERICOM
TERMINATE, CHECKOUT
MICRO SYSTEM.

1100 CONSTR SF-5. SURVEY
TRACE BEARINGS WITH
COMPASS, MAG. & GEOL.
RIDGE MUST INTERSECT
CHIMNEY (N, T'S, 3 TEE)
WORKING ALONE, SAT
ASSISTANT ASSIGNED
TO HELP WITH ANTENNA



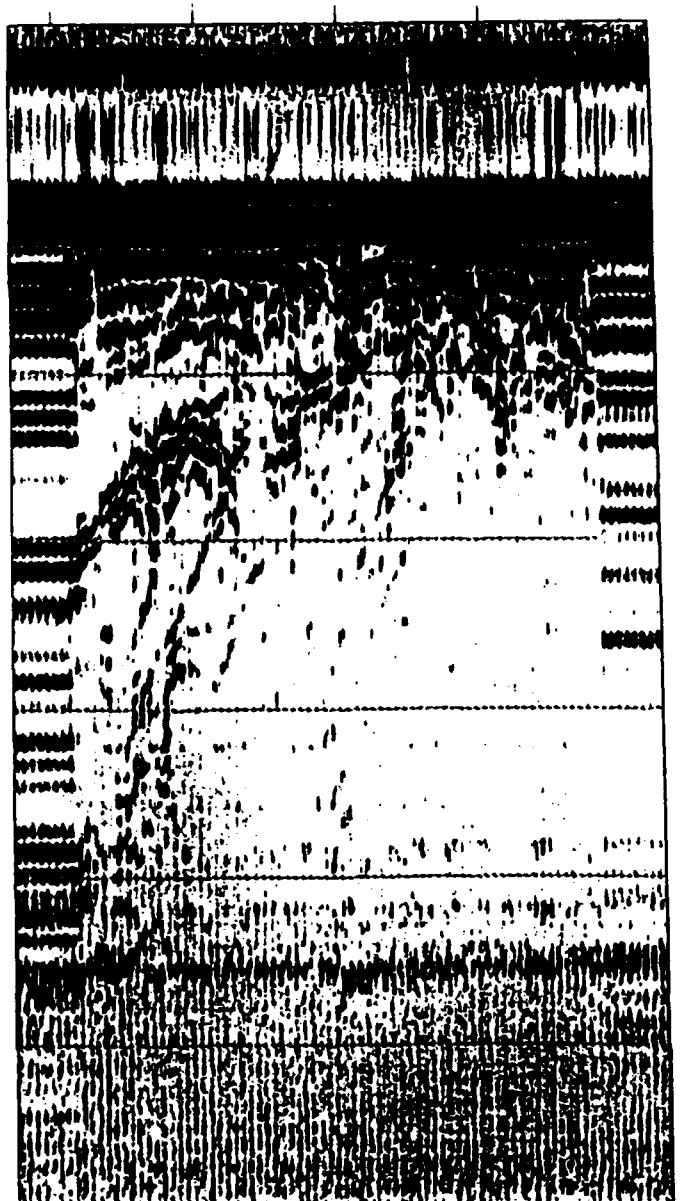
SURVEY UNABLE TO RETURN TO S.F.S IN THE AFTERNOON. INDIVIDUAL ASSIGNED TO SOIC GAS TEAM.

2030 DEPARTED FOR OFFICE TO COMPLETE SITE DOCUMENTATION

2100 COMPLETE TASK FOR TODAY.

TYPICAL RECORD TO LEFT, PASSING LEFT TO RIGHT FROM AREA BY TANK 604 - NE ACROSS ROAD, ONTO FLAT PARKING AREA.

SCALE: 10NS/DIVISION



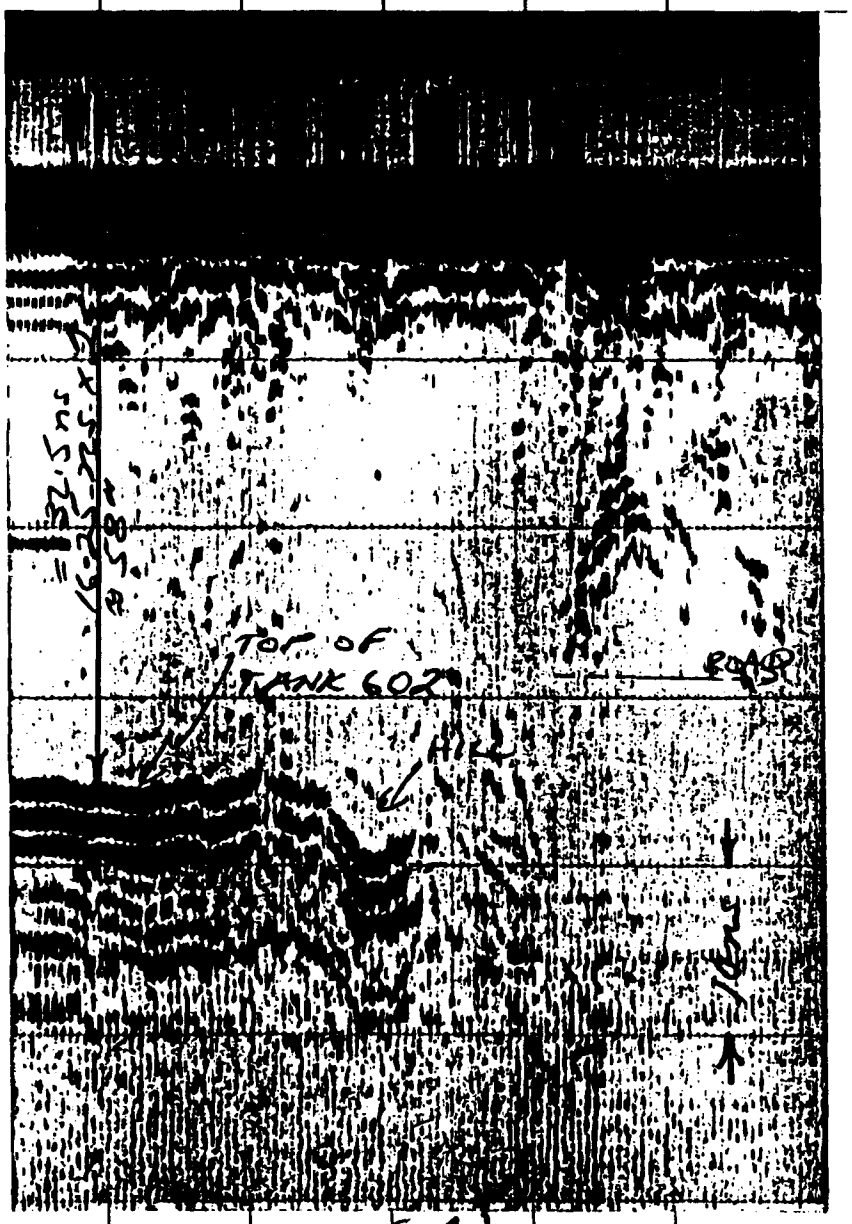
SURVEY UNABLE TO RETRIEVE SPS IN THE AFTERNOON, INSTRUM ASSIGNED TO SOIC GAS TEAM

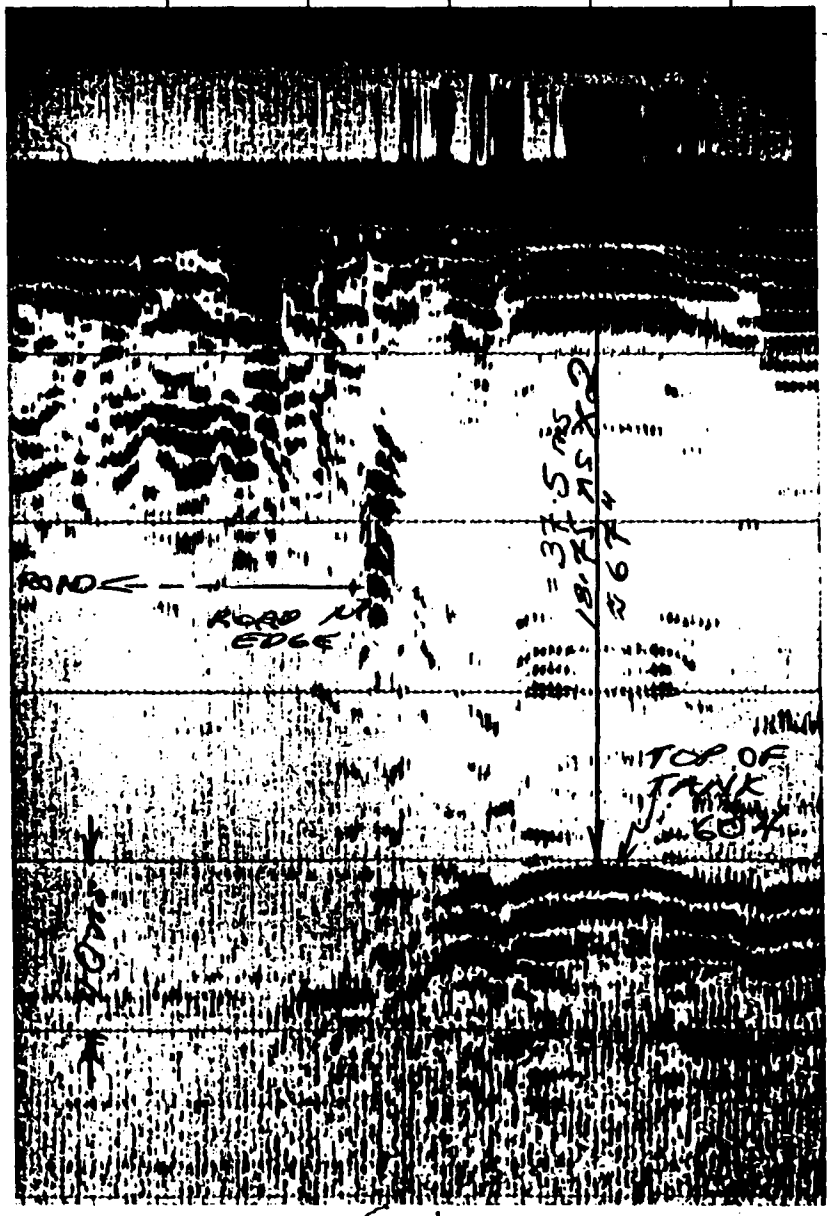
2030 DEPARTED FOR OFFICE TO COMPLETE SITE DOCUMENTATION

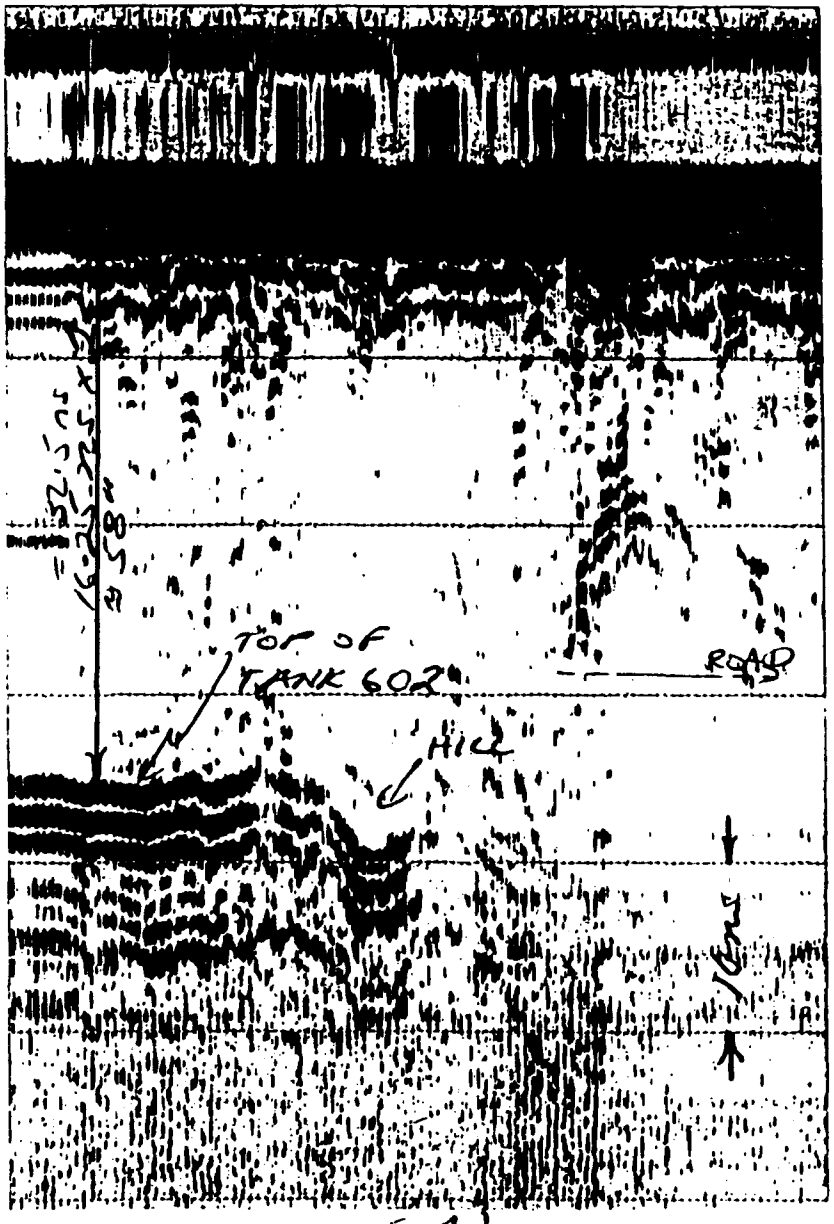
2100 COMPLETE TASK FOR TODAY.

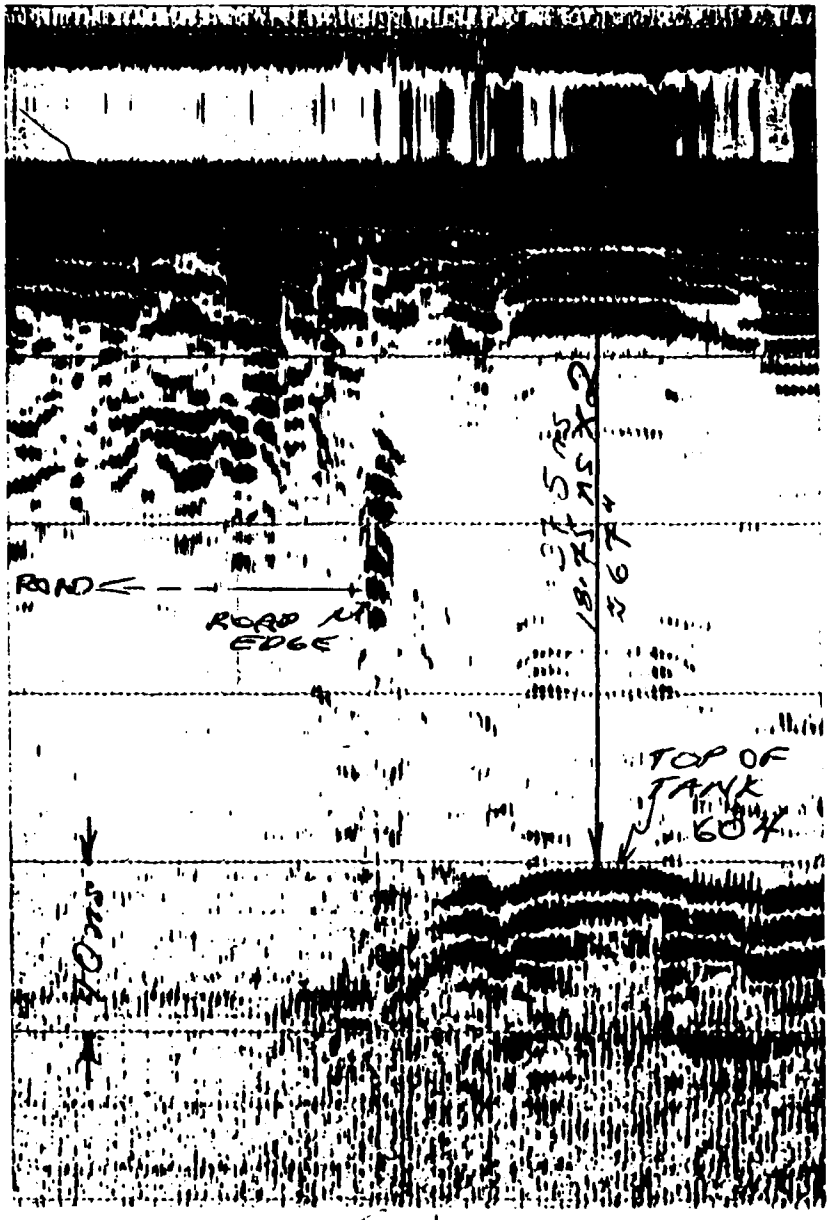
TYPICAL ROUTE TO LOT, PASSING EAST TO AREA FROM AREA BY TANK FARM - ACROSS ROAD ONTO LOT PARKING AREA.

SCALED FOR ILLUSTRATION


TOP OF
TANK 602
ROAD
(A)

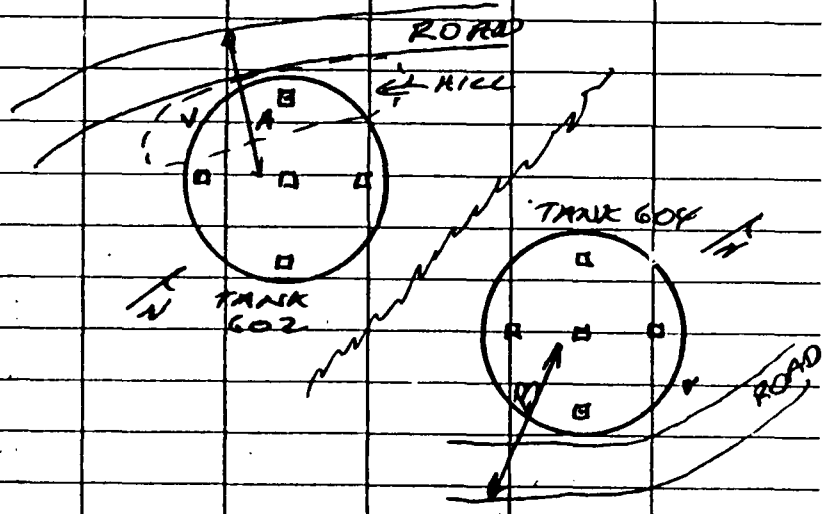

ROAD
ROAD
EDGE
TOP OF
TANK
(F)


TOP OF
TANK 602
ROAD
HILL
(A)


ROAD
ROAD AT
EDGE
TOP OF
TANK
60?
(B)

RADAR PROFILES A & B (PREVIOUS PAGES)

PROFILE LOCATIONS AS PER SKETCHES BELOW. VELOCITY BASED ON MEASURED DEPTH TO KNOWN OBJECTS IS APPX 6.67 NS/FOOT TWO-WAY TIME (10 NS ≈ 1½')



NOTE: ANNOTATION FOR ALL BORING RECORDS. EVERY MARK AT SOL, BORING LOCATION, AND EOL. UNLESS NOTED, ALL LINES CENTERED OVER BORING LOCATION, AND ARE 100' LONG.

RADAR SURVEY - BORING LOCATIONS

NOTE: UNLESS OTHERWISE NOTED, THE FOLLOWING SPECIFICATIONS APPLY TO ALL RECORDS TO FOLLOW

INSTRUMENTATION
GSSI SIR SYSTEM-3
ANTENNA - 500 MHz

PRINT POLARITY ±
RECORDER 100 LINES/INCH
RADAR 16 SCANS/SEC
FULL SCALE RANGE 50 NS

BORING Ø5

PROFILE 1 A → A'
HEADING 110° T
PROFILE 2 A' → A
HEADING 290° T
PROFILE 3 B → B'
HEADING 200° T, BEGINS

6' NORTH OF BORING LOC. ROAD BEGINS @ 15' SOUTH OF BORING LOCATION. BALANCE OF LINE @ 8' ON PACKED ROAD. POINT B IS UP AGAINST HEAVY TREES/BRUSH.

PROFILE 4 - REPEAT OF 3

BASED ON PROFILES 3 & 4 AND GRADIENT MAGNETOMETER DATA, BORING LOCATION WAS MOVED 3' SOUTHEAST. INTERFACE PATTERN CHANGED BY PRESENCE OF LOOSE SOD.

PROFILE 5 C → C'
HEADING 200° T LINE LENGTH 20' CENTERED OVER NEW BORING LOCATION.

PROFILE 6 REPEAT OF 5

BORING #3

BORING LOCATED @ NORTH OF FILL AREA @ SOUTH OF ACCESS ROAD IN CLOSE SOIL @ SOUTH OF HEAVY TREES/BRUSH. APPEARS TO BE FILL OVER NATURAL SOIL. FOR SAFENESS APPX 20' SOUTH, FACE IN SLOPE (DOWN) APPX 30° SOUTHWEST - WEST

PROFILE 1 A' → A
HEADING 270° T
PROFILE 2 A → A'
HEADING @ 90° T
PROFILE 3 A' → A
HEADING 270° T

SOUTH TO NORTH PROFILES BEGIN APPX 20' SOUTH OF BORING LOCATION, WITH A PEAK IN SLOPE

BORING #4

PROFILE 1 A' → A
HEADING 270° T
PROFILE 2 A → A'
HEADING 090° T
PROFILE 3 B' → B
HEADING 360° T
PROFILE 4 B → B'
HEADING 180° T

INNER LOOP PIPELINE AT 45' N OF BORING LOCATION.

BORING #3

PROFILE 1 A' → A
HEADING 225° T LINE BEGINS 45' SOUTH OF CENTER OF PROPANE TANK LAST 10' OF LINE - SMALL KNOLL TO NORTH. VEERED SOUTH OF LINE TO STAY AWAY FROM ENOCC. DIVOR TOP OF TANK 602
PROFILE 2 A → A'
HEADING 045° T.
PROFILE 3 B' → B
HEADING 135° T ELECTRIC CABLES SHOWN ARE AT 31'S (480 V 3Φ HV) AND 2'S (12 VDC IN CONDUIT) ROAD IS BETWEEN 25'N AND 48'N
PROFILE 4 B → B'
HEADING 315° T
OUTER LOOP PIPELINE CS APEX 8-10' NORTH OF ROAD EDGE - MT CROSSED

BORING # 9

PROFILE 1 A' → A
HEADING 270° T
PROFILE 2 A → A'
HEADING 090° T

PROFILE 3 B → B'
HEADING 180° T
PROFILE 4 B' → B
HEADING 360° T

BORING #2

PROFILE 1 A → A'
HEADING 090° T
PROFILE 2 A' → A
HEADING 270° T
PROFILE 3 B → B'
HEADING 180° T
PROFILE 4 B' → B
HEADING 360° T

BORING #6

PROFILE 1 A → A'
HEADING 090° T
PROFILE 2 A' → A
HEADING 270° T

PROFILE 3 B' → B
HEADING 360° T
PROFILE 4 B → B'
HEADING 180° T
ROAD FROM 24'S TO
END OF LINE E

BORING #7

EAST-WEST LINE JOGS
AT BORING LOCATION TO
MISS 60' OUTER LOOP
RECEIVING PIT. LINE
BEARINGS ARE 270°
AND 070° FROM LOCATION

PROFILE 1 A' → A
HEADING 250°/270° T
NOTE 60' ISSUE LINE
AT 30' EAST.
PROFILE 2 A → A'
REVERSE OF PROFILE 1

PROFILE 3 B-B'
HEADING 180°T - LINE BEGINS AT 70 N, FIRST MARK AT 50' NORTH, LAST MARK AS DOWN ± 10' DOWN RADIALS (N10 TO 45' SOUTH OF BORING)

PROFILE 4 B-B'
REPEAT OF #3

NOTE: ANNOTATION FOR ALL BORING RECORDS. EVERY MARK AT SOC, BORING LOCATION, AND EOL, UNLESS NOTED, ALL LINES CENTERED OVER BORING, AND ARE 100' LONG (±50' N&S, ±50' E+W)

TANK SLUDGE BURIAL AREA
RADAR PROFILES

PROFILE 1 - BEGINS SE EDGE OF ROAD AT 602 OUTER LOOP RECEIVING PIT AND CROSSES OUTER LOOP PIPING. MARK AT EDGE OF BUSHES ENTERING WOODS, AT SG PROBE 9 AND SG PROBE 3, TO EOL.

PROFILE 1A - RETURN REPEAT OF ABOVE

PROFILE 2 - BEGINS AT EDGE OF ROAD (MARK) W/ MARKS ALSO AT EDGE OF WOODS, AT SOIC BORING LOCATION, AND SG PROBE 2, TO EOL

PROFILE 2A - RETURN REPEAT OF ABOVE

PROFILE 3 - BEGINS NEXT TO 602 RECEIVING PIT, MARK AT ROAD EDGE, CROSS OUTER LOOP PIPE, MARK AT ROAD EDGE, MARK AT SG PROBE 19, EXTEND TO EOC - WITHIN 35' OF SG PROBE 13.

PROFILE 3A - RETURN REPEAT OF ABOVE

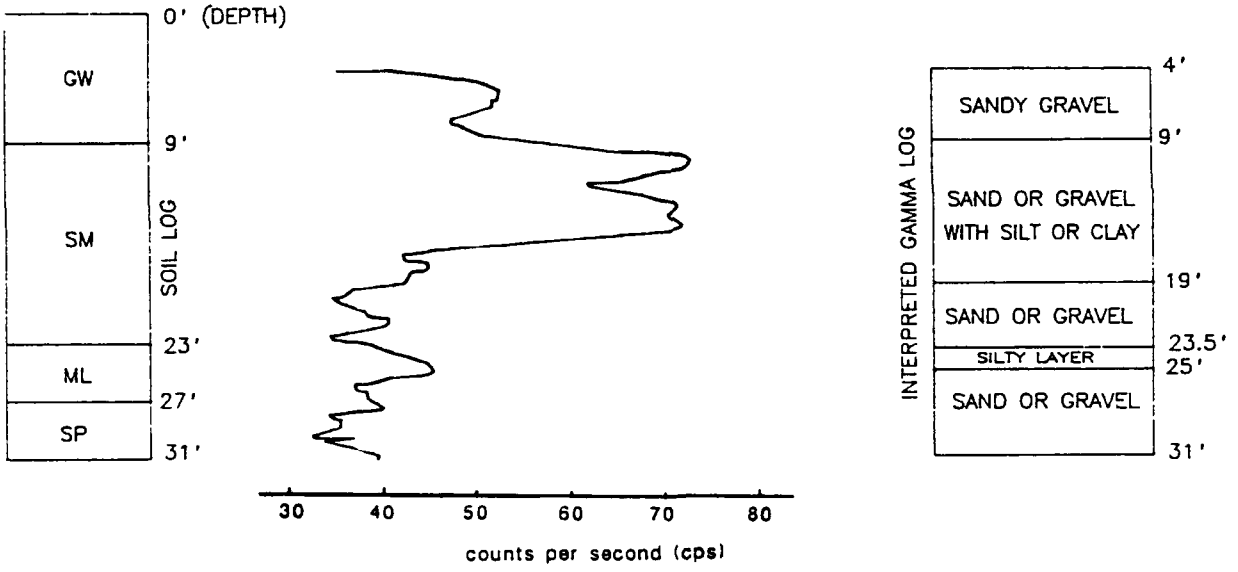
07 JULY 1998 THURSDAY

0500 ARRIVE OFFICE
MORNING WEATHER
TEMP - 55°F RH = 60%
BARO - 30.09 DP = 42°
WINDS CALM
COVER 5000 BKN, 8000 OVC
LIGHT RAIN FORECAST

0900 ONSITE SP-5 - COMPLETE ALL WORK ON TAGS SITE - FINAL RECORDS CHECK AND SOME ADDITIONAL MEASUREMENTS CHECK W/ DRILL CREWS AND SITE SUPERVISOR

Gamma-Ray Logs

Client:	Black & Veatch		
Site number:	D-3	Well number: 02	Sample number: 002
Well location:	Elmendorf Air Force Base. Alaska		
	Refer to PLATE 5-1, page 5-35 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	15 August 1988	Begin:	1612 hrs
Run:	four		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	9.8 metres	Reported depth:	31' (9.4 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Clear, ca. 70° F., slight breeze		

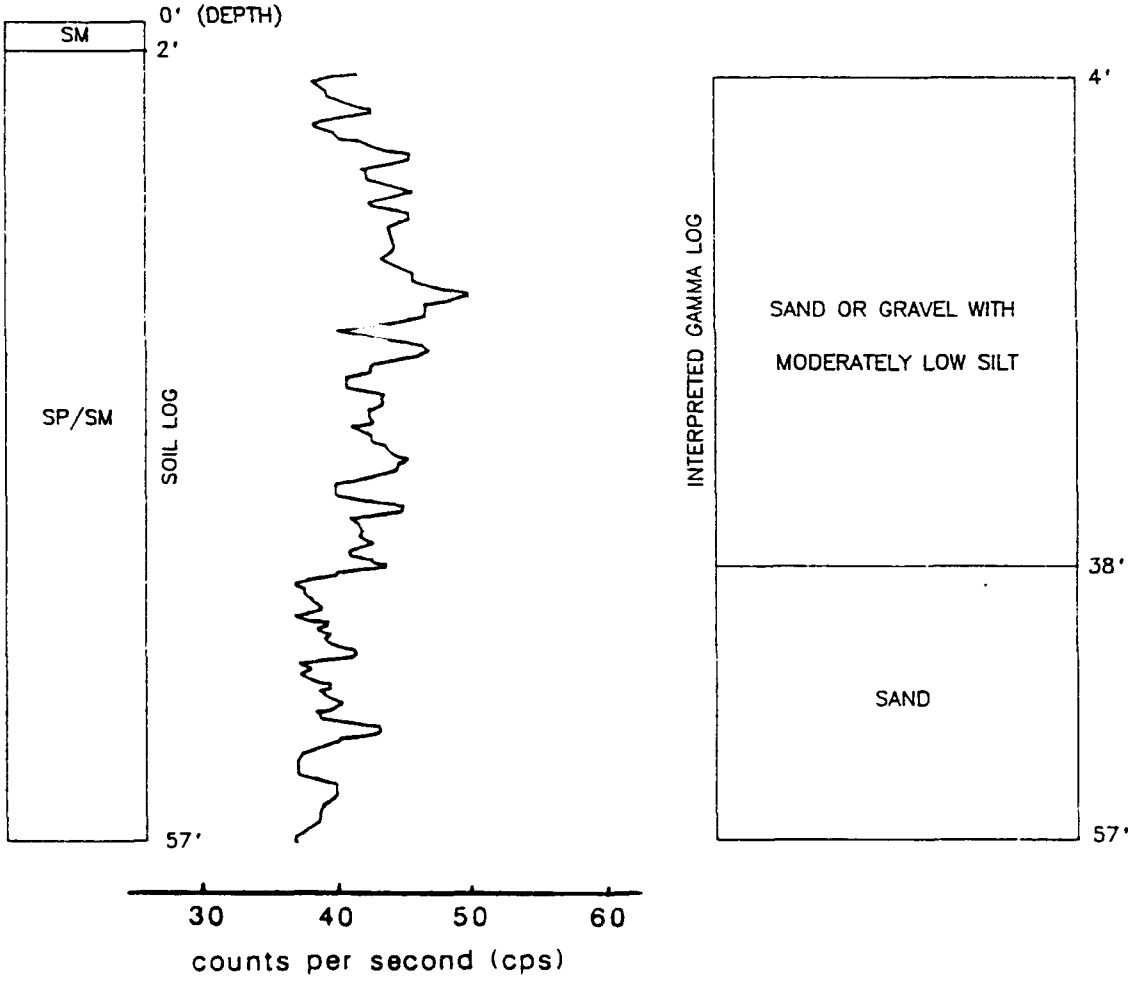


NATURAL GAMMA LOG
SITE D3-02

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch
Site number:	D-5 Well number: W-1 Sample number: 005
Well location:	Elmendorf Air Force Base, Alaska
	Refer to PLATE 5-2, page 5-38 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)
Date:	18 August 1988 Begin: 1355 hrs
Run:	one
Rate:	*ca.* 4 metres/ min Direction of log: uphole
Measured point:	Top of PVC, level
Total depth:	17.9 metres Reported depth: not available
Scale:	1cm=1 metre
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682
Settings:	5 CPS/div., 5 CPS offset
Operator:	Dan Young
Witness:	Jacqueline Holzman
Weather:	Overcast, ca. 60° F.

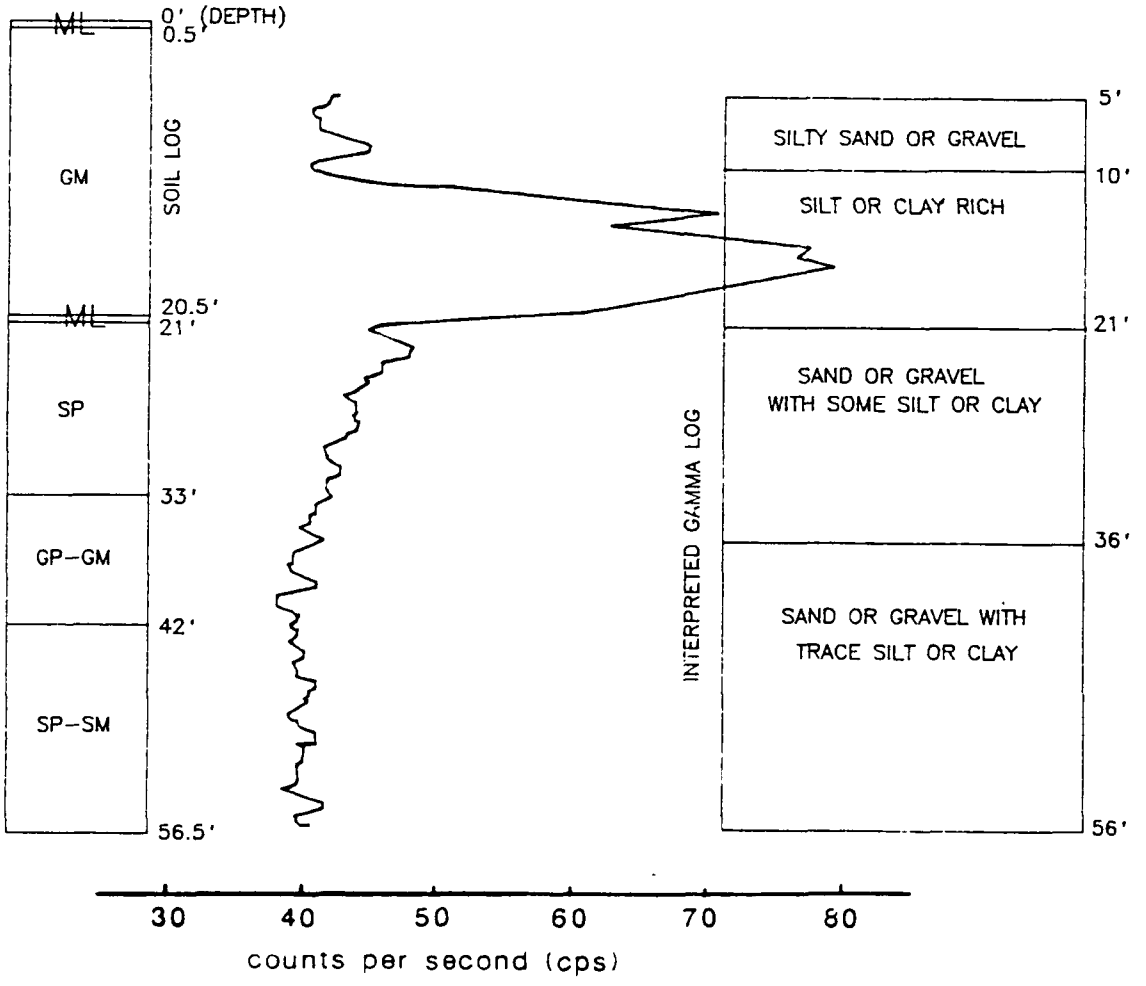


NATURAL GAMMA LOG
SITE D5-W1

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	D-7	Well number: W5	Sample number: 010
Well location:	Elmendorf Air Force Base, Alaska		
	Not Listed (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	18 August 1988	Begin:	1515 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	17.1 metres	Reported depth:	not available
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	10 CPS/div., 0 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

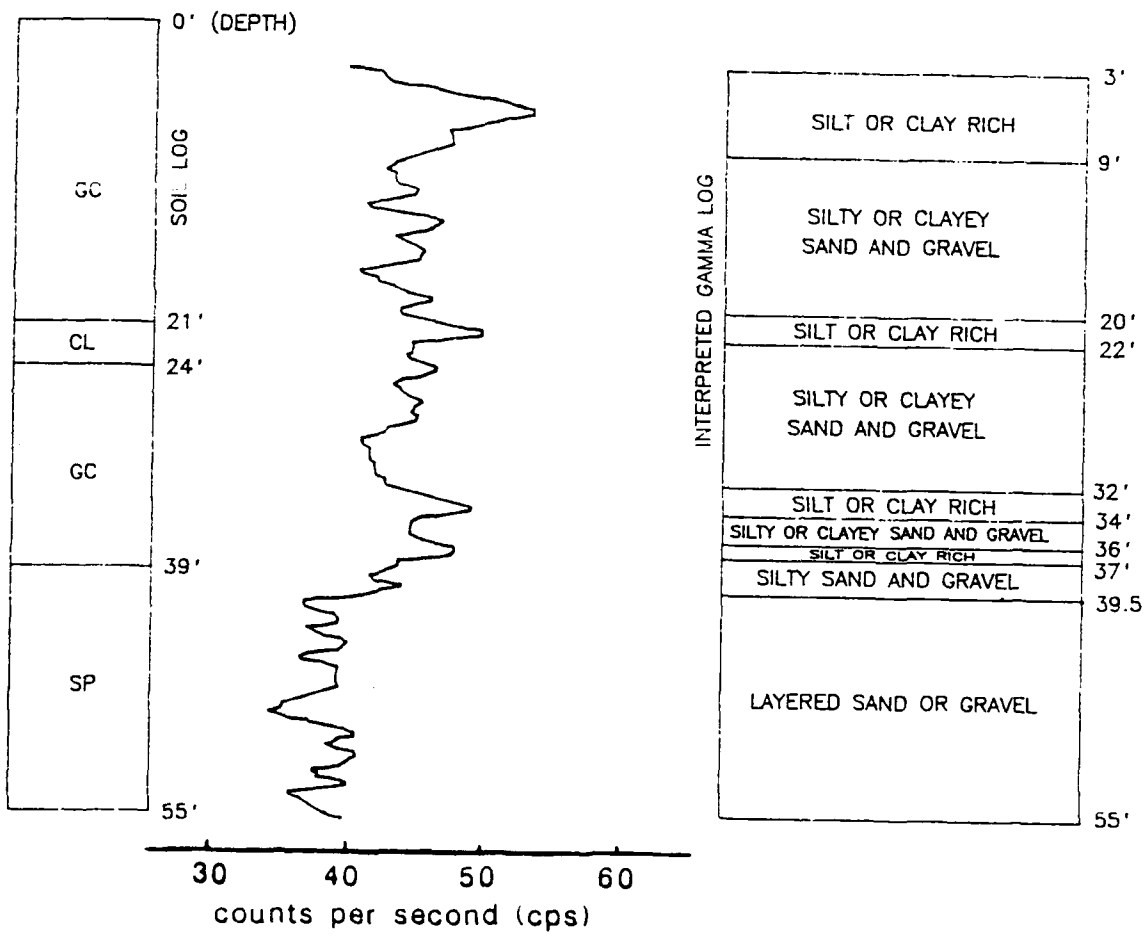


NATURAL GAMMA LOG
SITE D7-W5

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	D-13	Well number: 01	Sample number: 015
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-3, page 5-42 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	18 August 1988	Begin:	0915 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	17.3 metres	Reported depth:	55' (16.7 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly clear, ca. 60° F.		

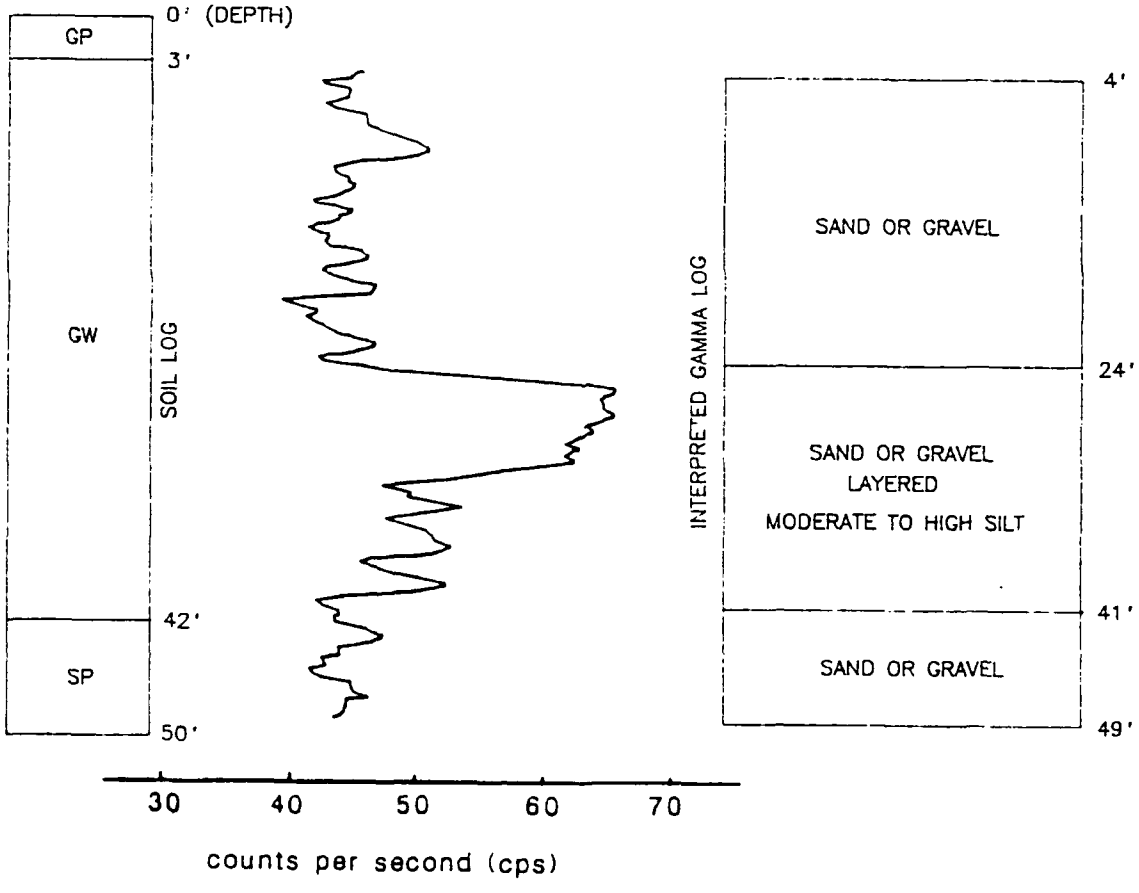


NATURAL GAMMA LOG
SITE D13-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	IS-3	Well number:	Sample number: 035
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-7, page 5-53 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1140 hrs
Run:	two		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, north northeast side		
Total depth:	13.6 metres	Reported depth:	50' (15.2 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Clear, ca. 65° F., slight breeze		

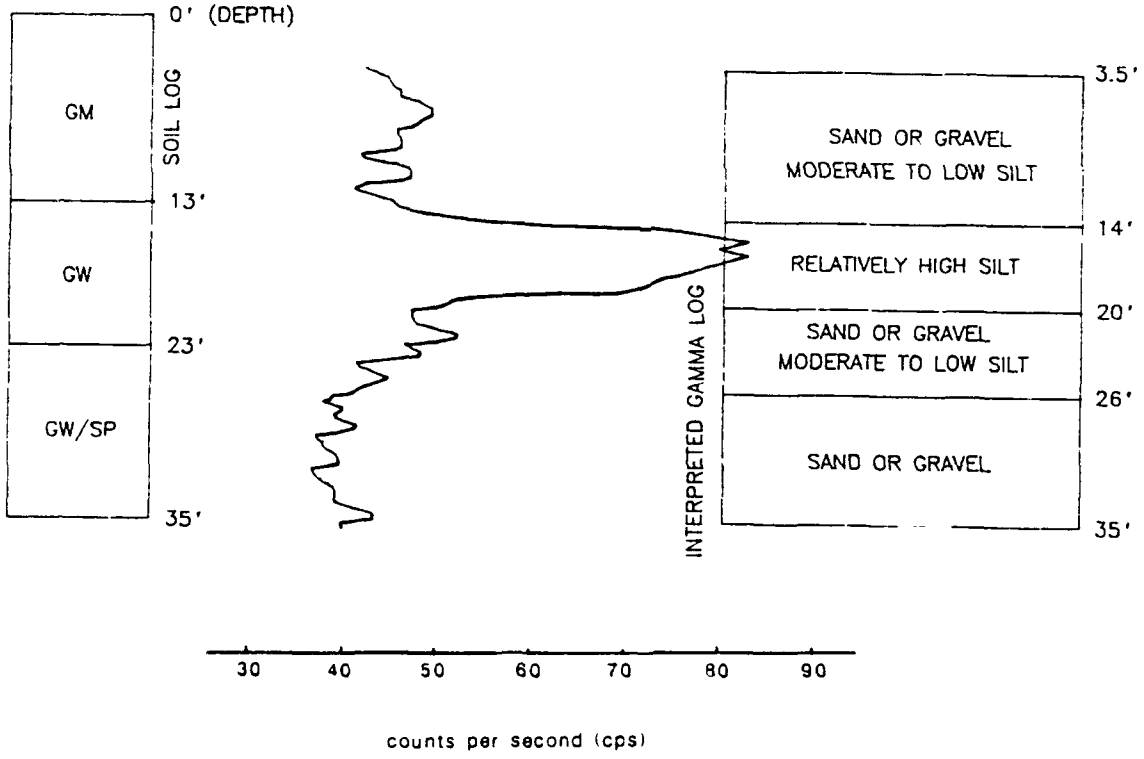


NATURAL GAMMA LOG
SITE IS-3

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	IS-8	Well number:	Sample number: 040
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-9, page 5-55 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1645 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, south side		
Total depth:	11.4 metres	Reported depth:	35' (10.6 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly Sunny, ca. 60° F.		

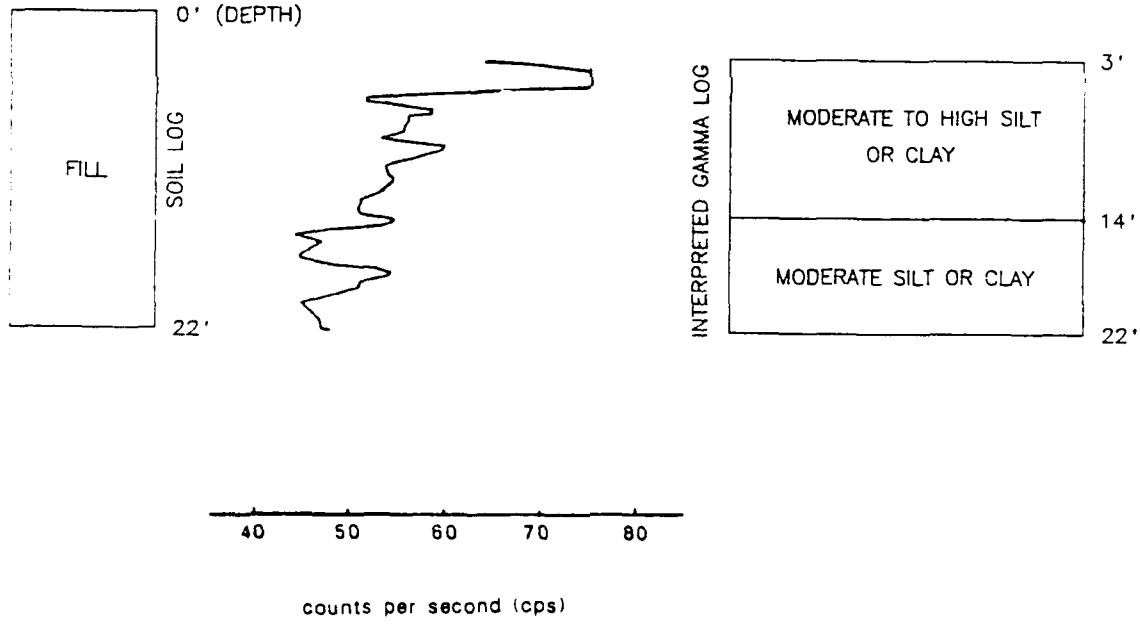


NATURAL GAMMA LOG
SITE IS-8

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-1	Well number: 01	Sample number: 049
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-10, page 5-60 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	18 August 1988	Begin:	1800 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, north side		
Total depth:	7.1 metres	Reported depth:	20' (6.1 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

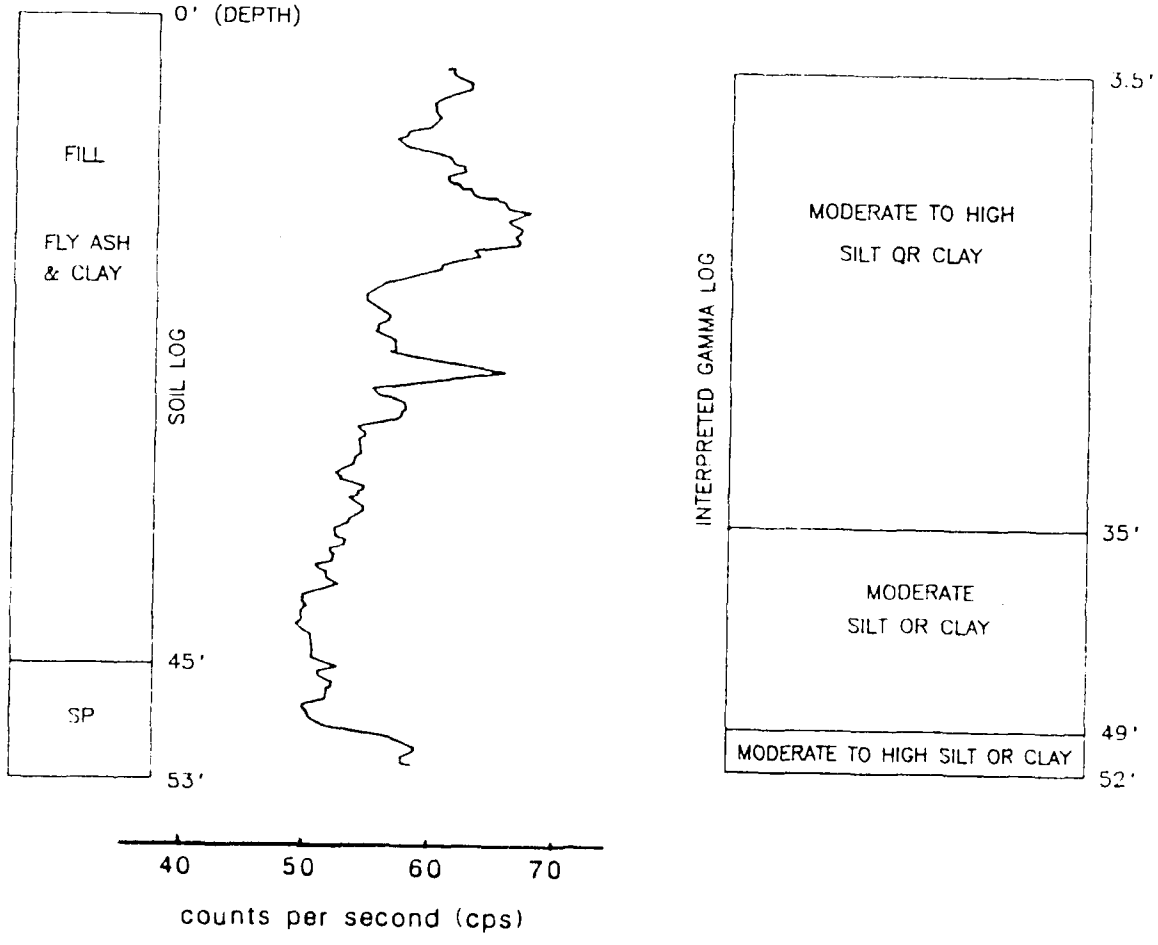


NATURAL GAMMA LOG
SITE SP1-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-2/SP-6	Well number: 04	Sample number: 054
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-11, page 5-62 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	17 August 1988	Begin:	1530 hrs
Run:	three		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	16.3 metres	Reported depth:	53.0' (16.1 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	10 CPS/div., no offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		



NATURAL GAMMA LOG
SITE SP2/6-04

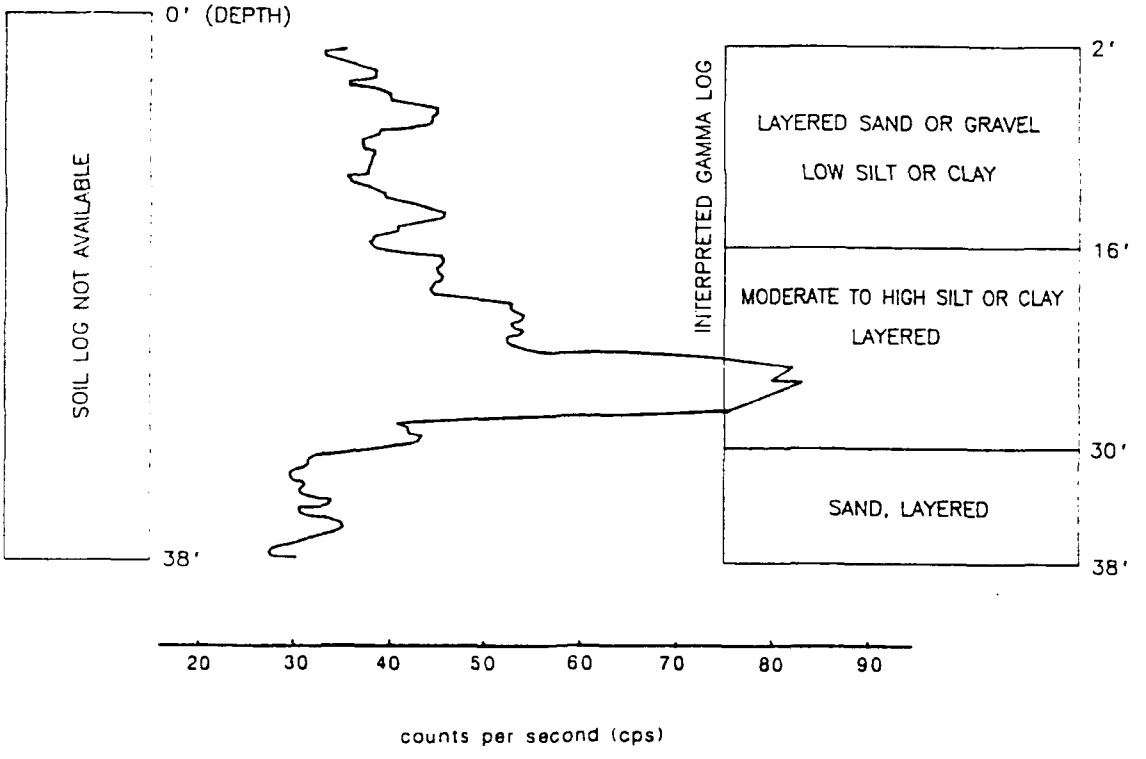
Woodward-Clyde Consultants

Figure

Client:	Black & Veatch
Site number:	SP-2/SP-6 Well number: GW-6 Sample number:
Well location:	Elmendorf Air Force Base, Alaska

Refer to PLATE 5-11, page 5-62 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)

Date:	18 August 1988	Begin:	1625 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, northeast side		
Total depth:	11.9 metres Reported depth:		not available
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		



NATURAL GAMMA LOG
SITE SP2/6-GW6

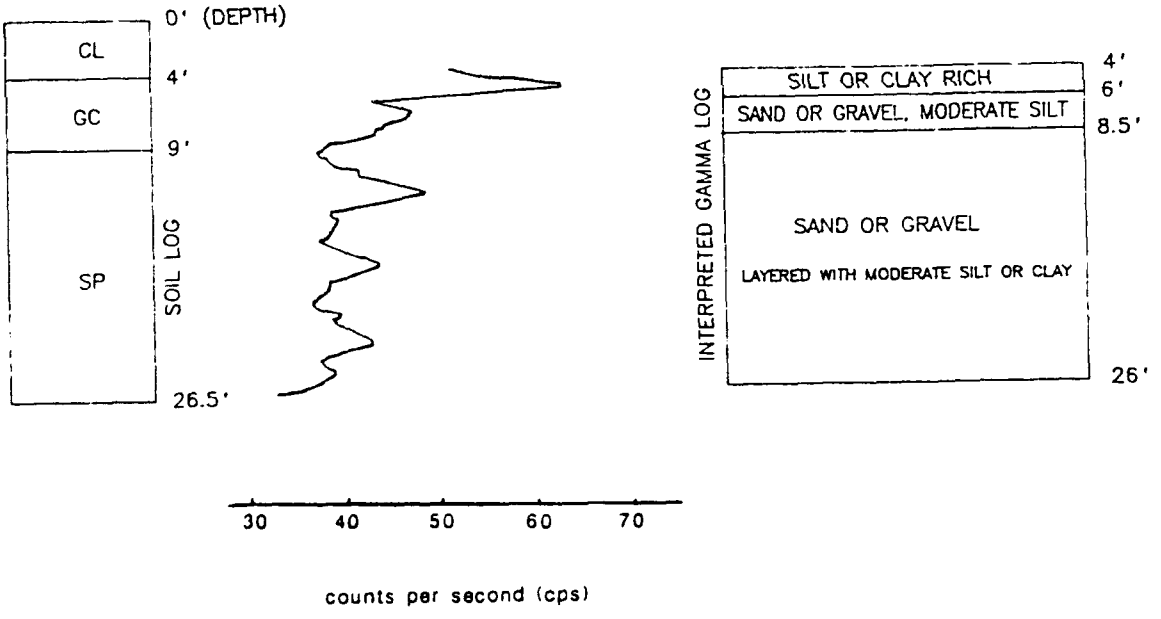
Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-4	Well number: 01	Sample number: 063
Well location:	Elmendorf Air Force Base, Alaska		

Refer to PLATE 5-12, page 5-86 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)

Date:	17 August 1988	Begin:	1125 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, south side		
Total depth:	8.4 metres	Reported depth:	26.5' (8.4 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

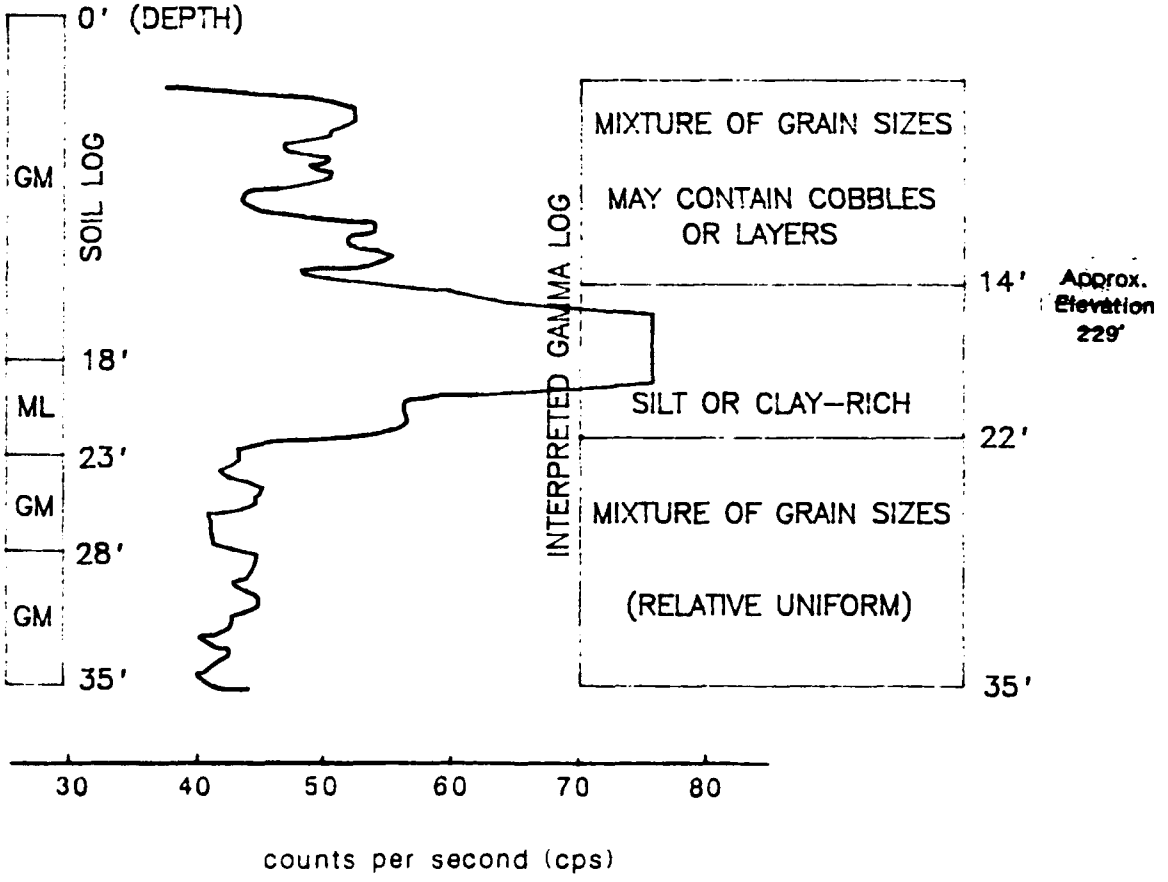


NATURAL GAMMA LOG
SITE SP4-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-5	Well number: 02	Sample number: 073
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-14, page 5-72 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1530 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	9.6 metres	Reported depth:	36.5' (11 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly cloudy, sunny, ca. 70° F., slight breeze		

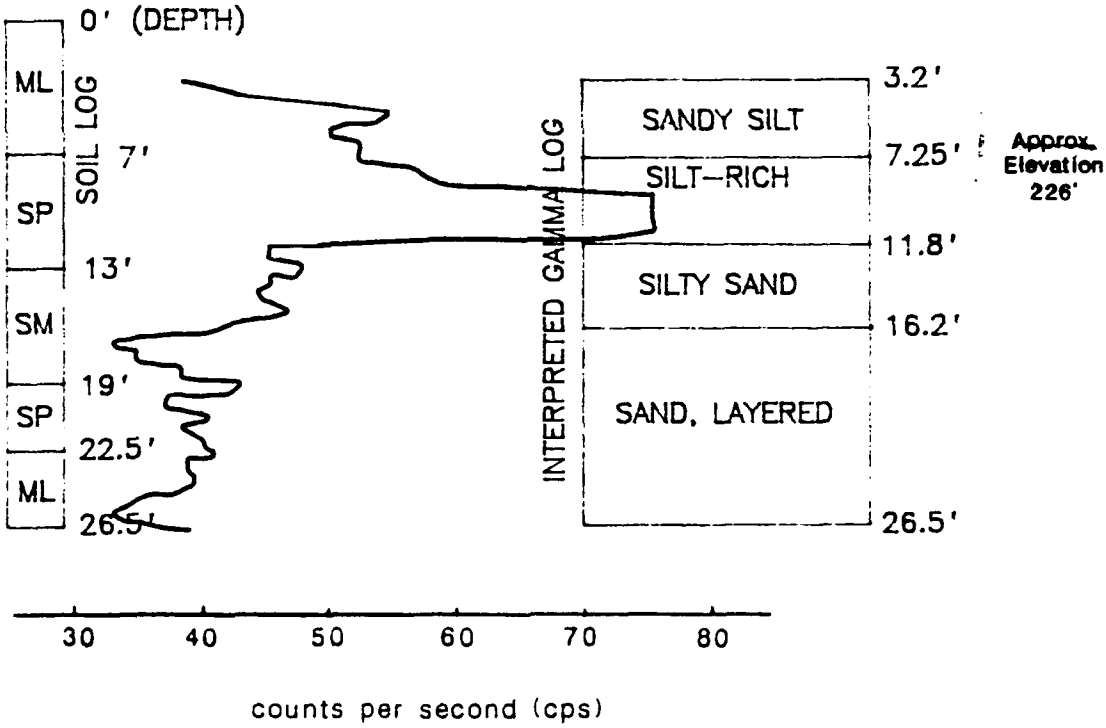


NATURAL GAMMA LOG
SITE SP5-02

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-5	Well number: 08	Sample number: 079
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-14, page 5-72 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1426 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	8.5 metres	Reported depth:	26.5' (8 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly cloudy, sunny, ca. 70° F., slight breeze		

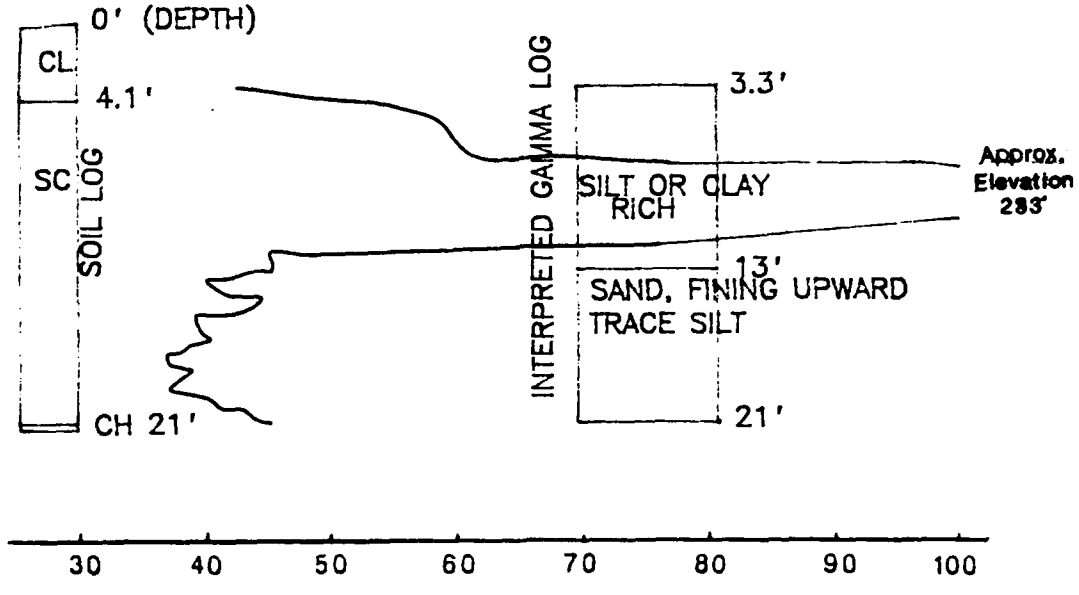


NATURAL GAMMA LOG
SITE SP5-08

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-5A	Well number: 15	Sample number: 067
Well location:	Elmendorf Air Force Base, Alaska		
	Not Listed (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	19 August 1988		Begin: 1505 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min		Direction of log: uphole
Measured point:	Top of PVC, north side		
Total depth:	6.8 metres	Reported depth:	21.5' (6.5m)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 65° F.		

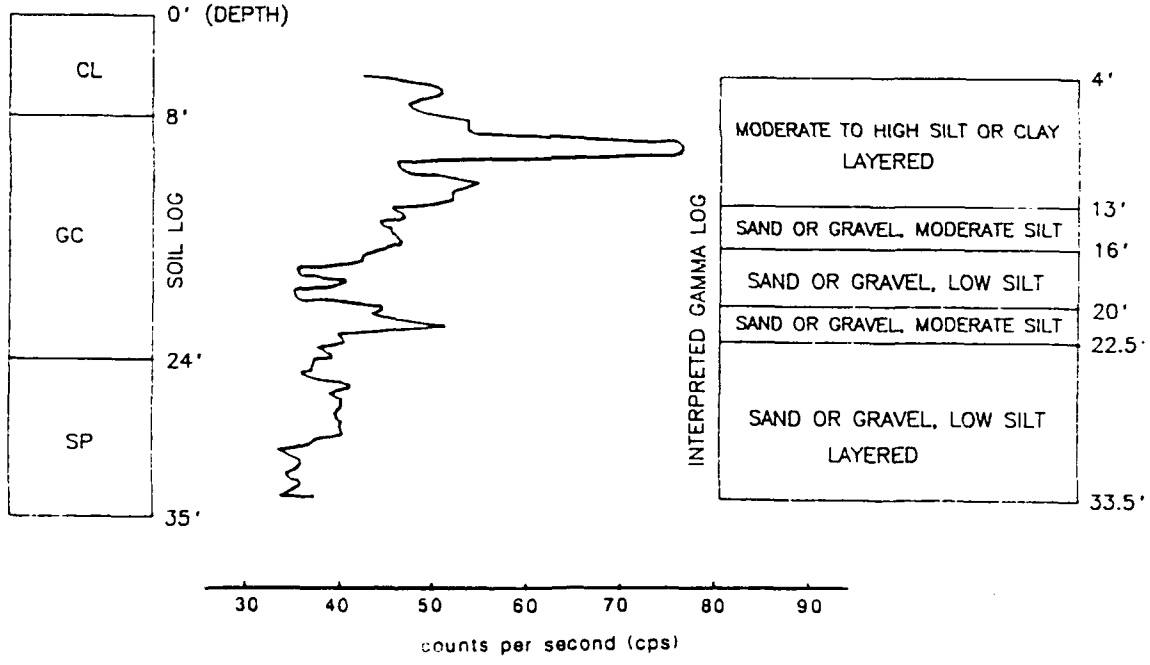


NATURAL GAMMA LOG
SITE SP5A-15

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch
Site number:	SP-7/SP-10 Well number: 01 Sample number: 084
Well location:	Elmendorf Air Force Base, Alaska
	Refer to PLATE 5-15, page 5-76 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)
Date:	16 August 1988 Begin: 0957 hrs
Run:	two
Rate:	*ca.* 4 metres/ min Direction of log: uphole
Measured point:	Top of PVC, northeast side
Total depth:	10.6 metres Reported depth: 35' (11.8 metres)
Scale:	1cm=1 metre
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682
Settings:	5 CPS/div., 5 CPS offset
Operator:	Dan Young
Witness:	Jacqueline Holzman
Weather:	Clear, calm, ca. 60° F.

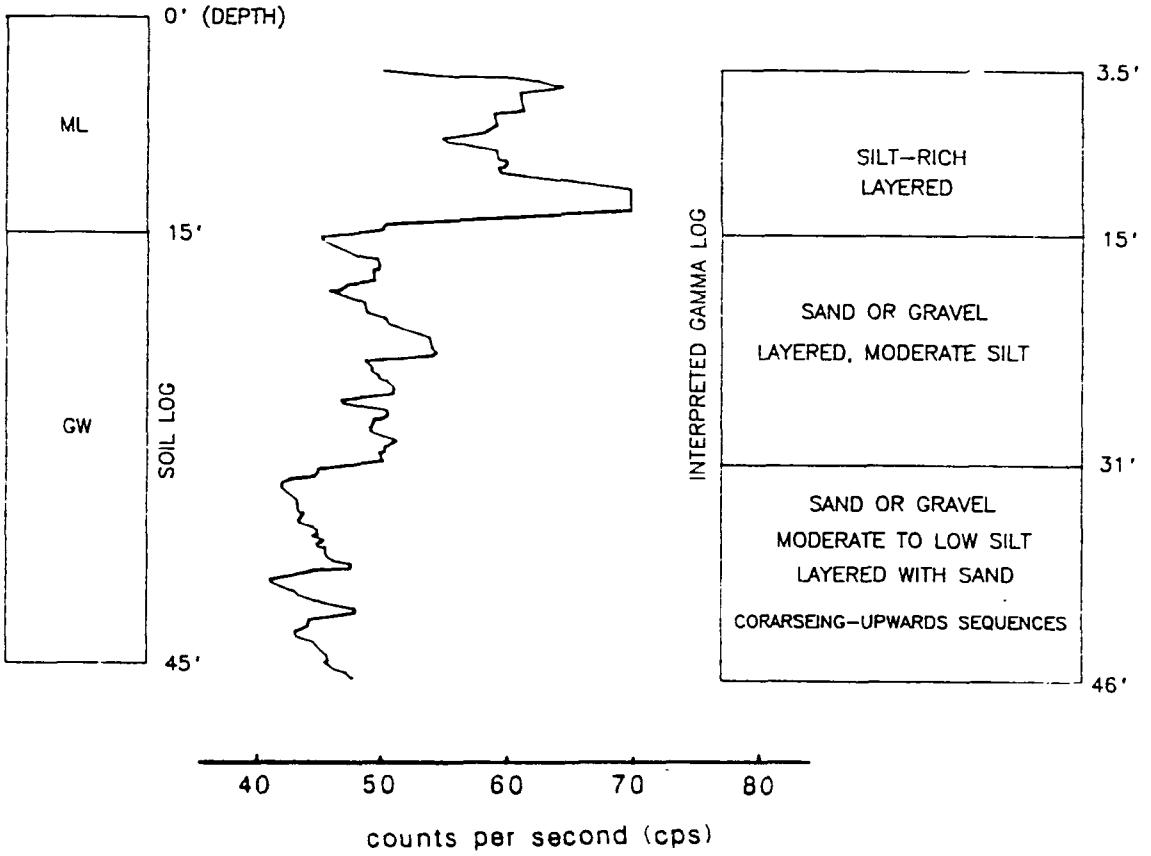


NATURAL GAMMA LOG
SITE SP7/10-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-14	Well number: 02	Sample number: 097
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-9, page 5-55 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	17 August 1988	Begin:	1640 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, west side		
Total depth:	14.3 metres	Reported depth:	45' (13.6 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		



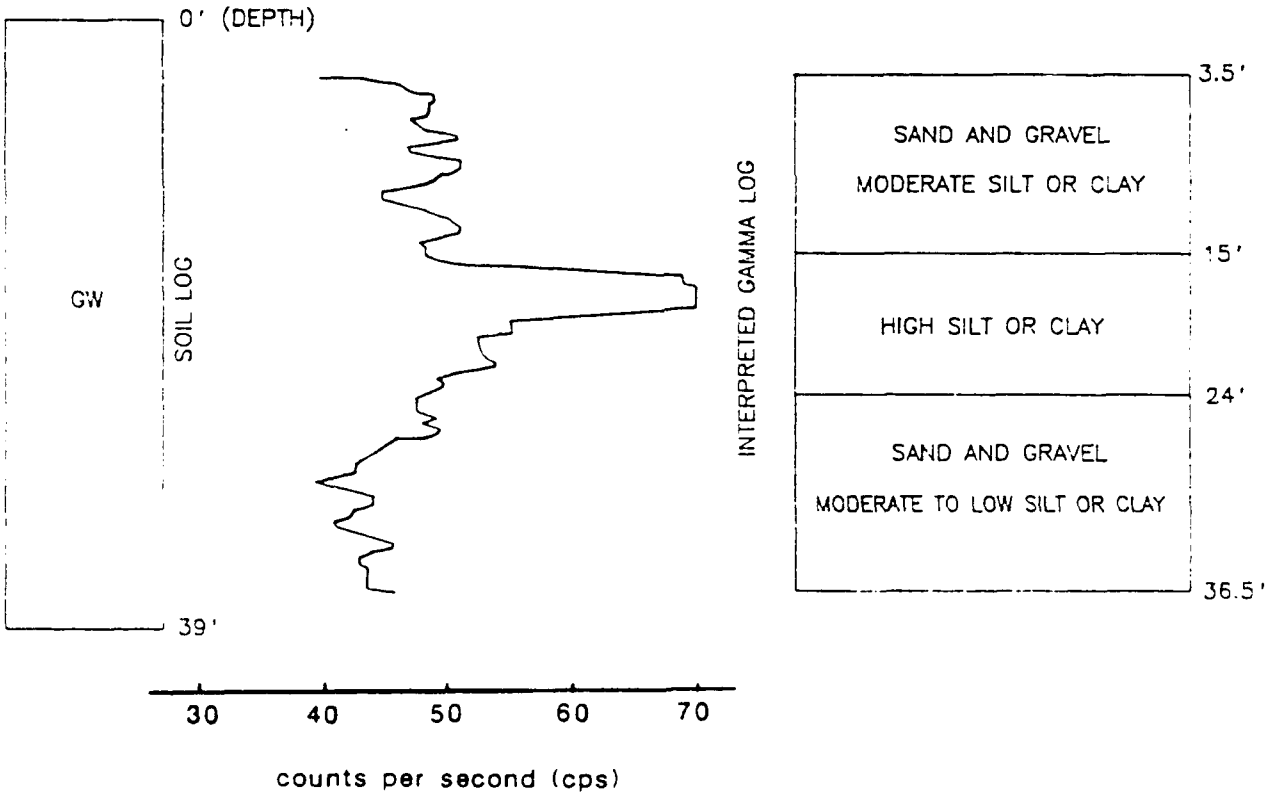
NATURAL GAMMA LOG
SITE SP14-02

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-15	Well number: 01	Sample number: 100
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-17, page 5-84 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	18 August 1988	Begin:	1055 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	11.4 metres	Reported depth:	39' (11.8 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly sunny, ca. 60° F.		

INTERPRETED GAMMA LOG OF SP-15-01

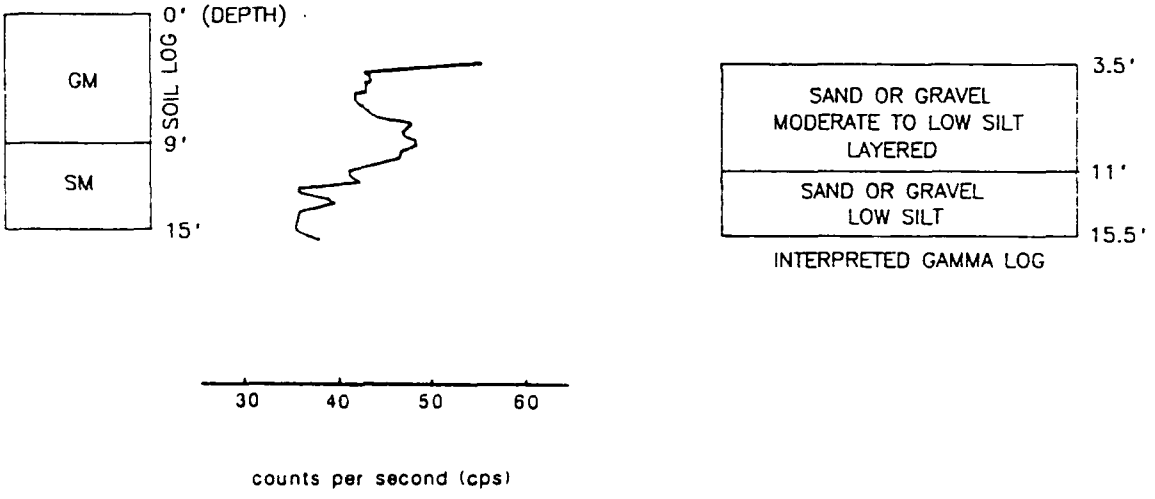


NATURAL GAMMA LOG
SITE SP15-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	NS-3	Well number: 03	Sample number: 110
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-20, page 5-96 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	17 August 1988	Begin:	1345 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, south side		
Total depth:	5.2 metres	Reported depth:	15' (4.8 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 285; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

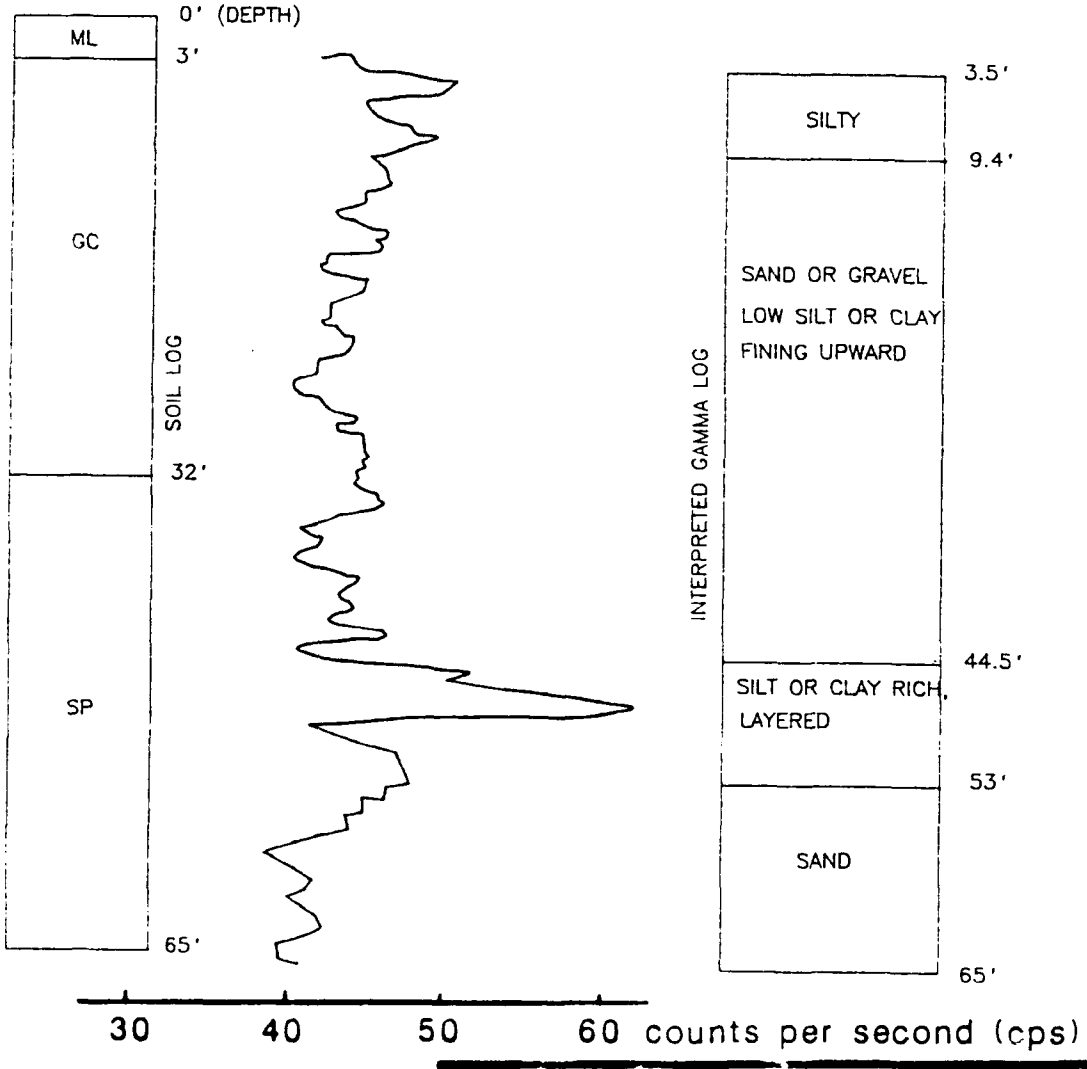


NATURAL GAMMA LOG
SITE NS3-03

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	BH	Well number: 1	Sample number: 119
Well location:	Elmendorf Air Force Base, Alaska		
	Not referenced (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	19 August 1988	Begin:	1605 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, north side		
Total depth:	20.4 metres	Reported depth:	65' (19.7 m)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 70° F.		

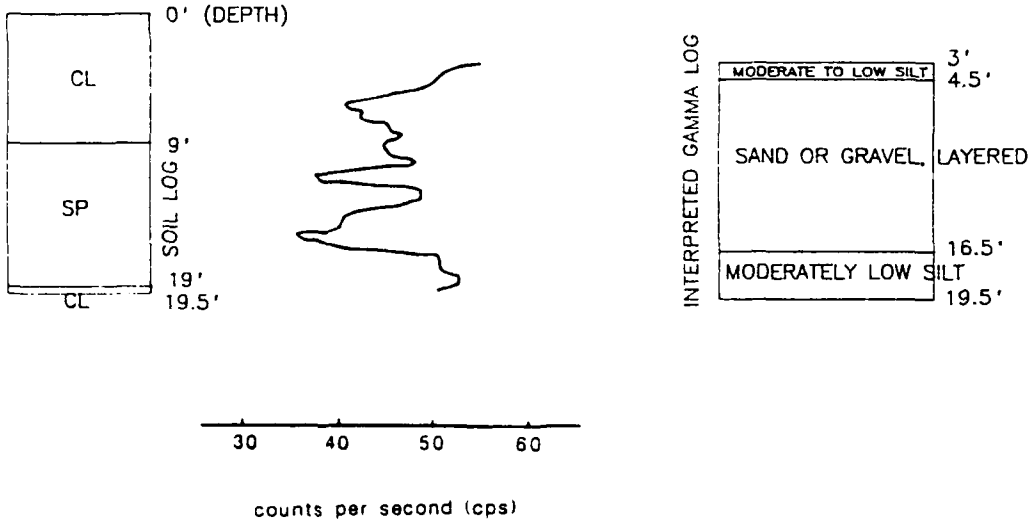


NATURAL GAMMA LOG
SITE BH-1

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	BH	Well number: 4	Sample number: 122
Well location:	Elmendorf Air Force Base, Alaska		
Not referenced	(Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	19 August 1988		Begin: 1415 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min		Direction of log: uphole
Measured point:	Top of PVC		
Total depth:	6.2 metres	Reported depth: 18' (5.5 m)	
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly sunny, ca. 70° F.		

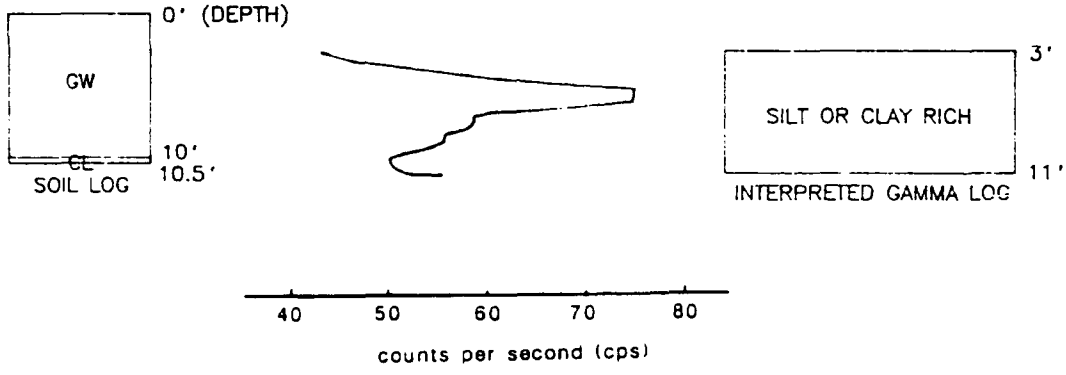


NATURAL GAMMA LOG
SITE BH-4

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	BH	Well number: 6	Sample number: 124
Well location:	Elmendorf Air Force Base, Alaska		
	Not referenced (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	19 August 1988		Begin: 1130 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min		Direction of log: uphole
Measured point:	Top of PVC, north side		
Total depth:	3.8 metres	Reported depth: 10.4' (3.2m)	
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Sunny, ca. 70° F.		

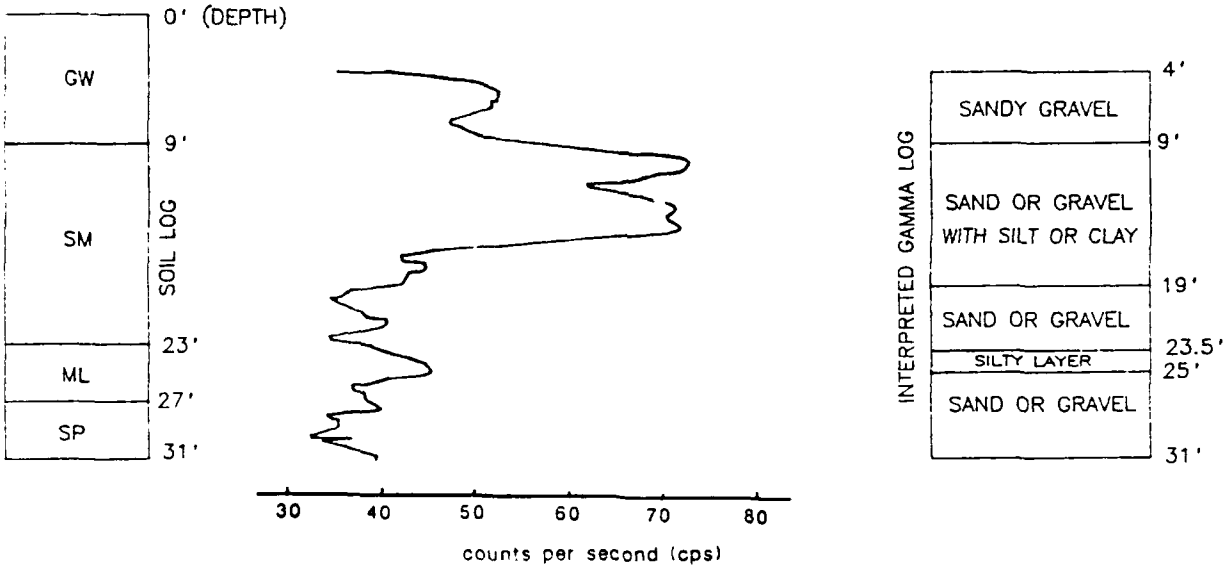


NATURAL GAMMA LOG
SITE BH-6

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	D-3	Well number: 02	Sample number: 002
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-1, page 5-35 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	15 August 1988	Begin:	1612 hrs
Run:	four		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphoie
Measured point:	Top of PVC, east side		
Total depth:	9.8 metres	Reported depth:	31' (9.4 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Clear, ca. 70° F., slight breeze		

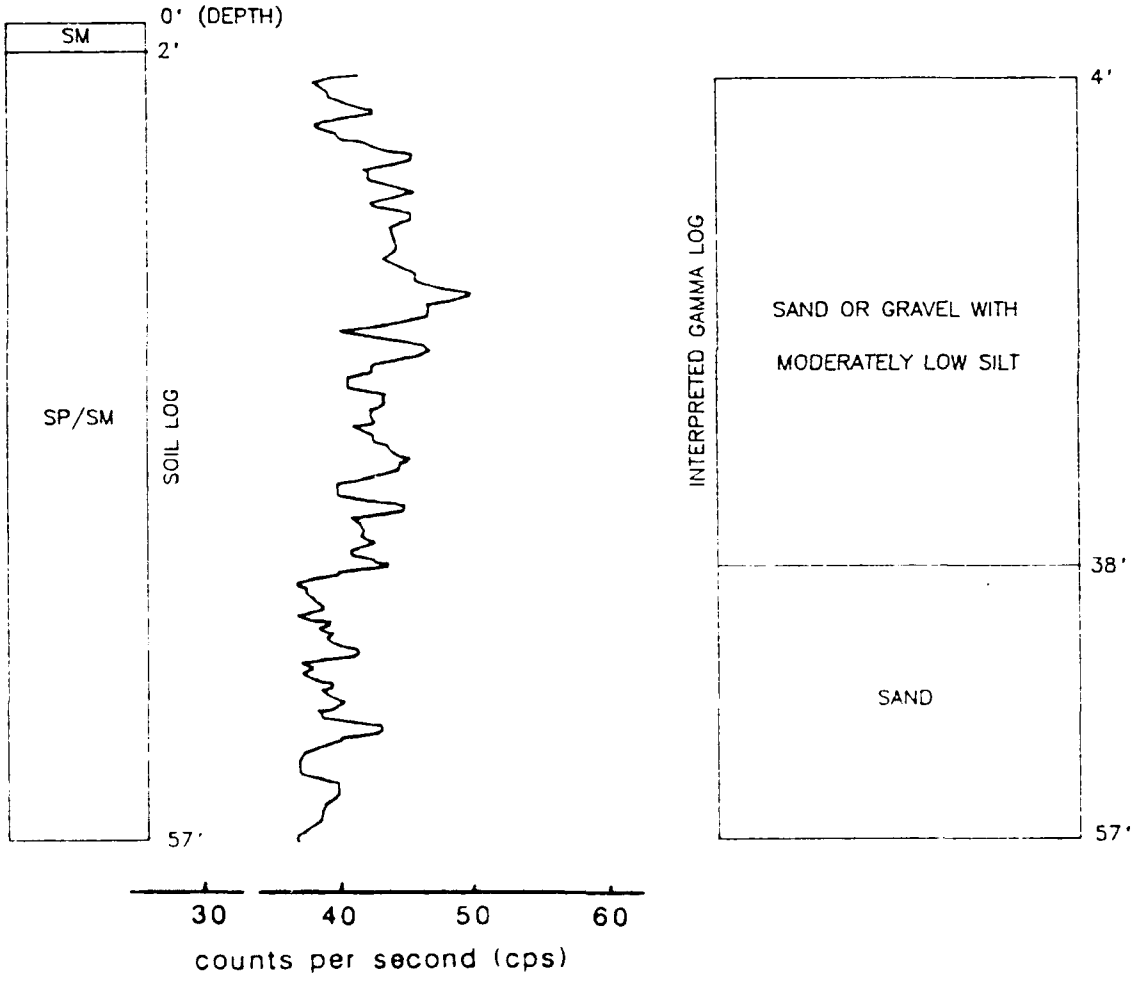


NATURAL GAMMA LOG
SITE D3-02

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch
Site number:	D-5 Well number: W-1 Sample number: 005
Well location:	Elmendorf Air Force Base, Alaska
	Refer to PLATE 5-2, page 5-38 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)
Date:	18 August 1988 Begin: 1355 hrs
Run:	one
Rate:	*ca.* 4 metres/ min Direction of log: uphole
Measured point:	Top of PVC, level
Total depth:	17.9 metres Reported depth: not available
Scale:	1cm=1 metre
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682
Settings:	5 CPS/div., 5 CPS offset
Operator:	Dan Young
Witness:	Jacqueline Holzman
Weather:	Overcast, ca. 60° F.

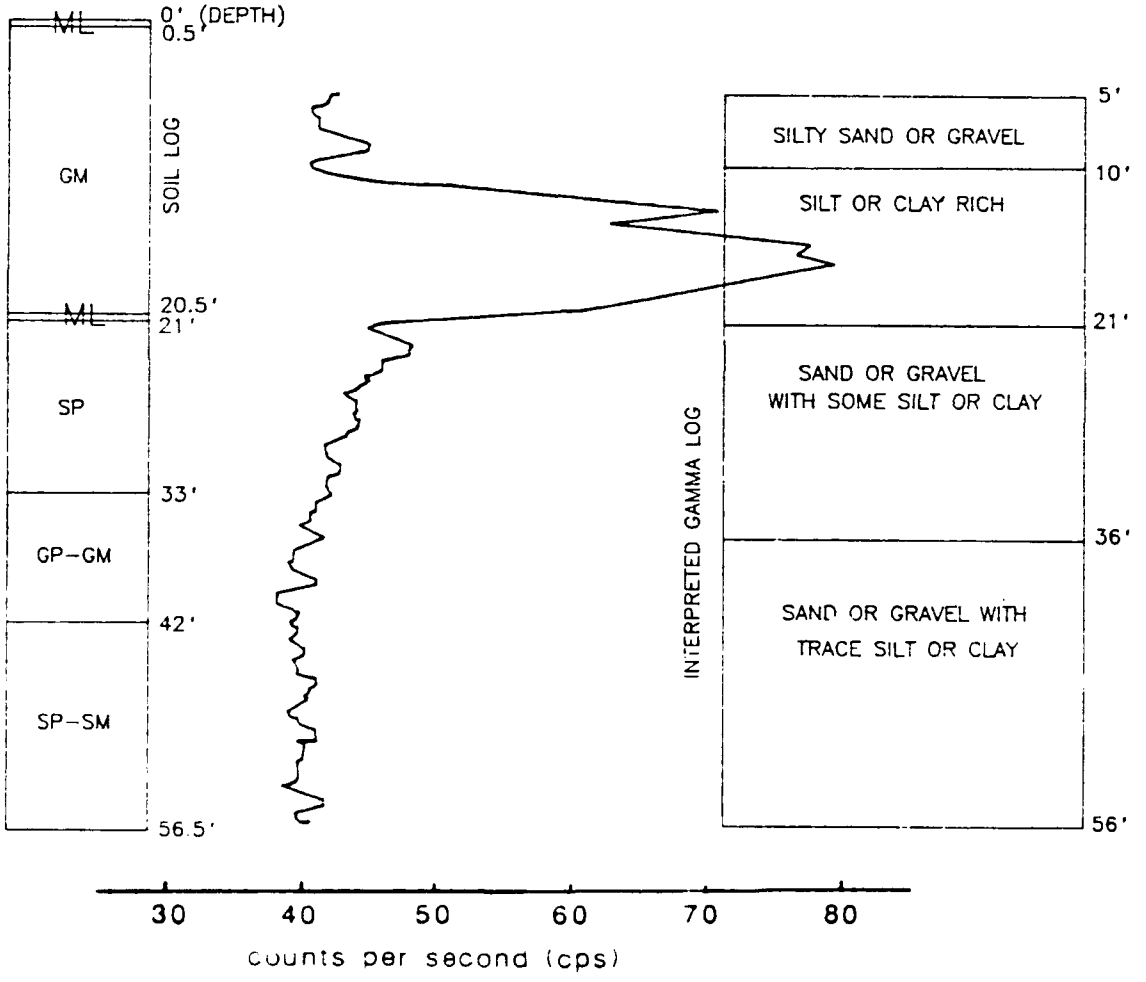


NATURAL GAMMA LOG
SITE D5-W1

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	D-7	Well number: W5	Sample number: 010
Well location:	Elmendorf Air Force Base, Alaska		
	Not Listed (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	18 August 1988	Begin:	1515 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	17.1 metres	Reported depth:	not available
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	10 CPS/div., 0 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

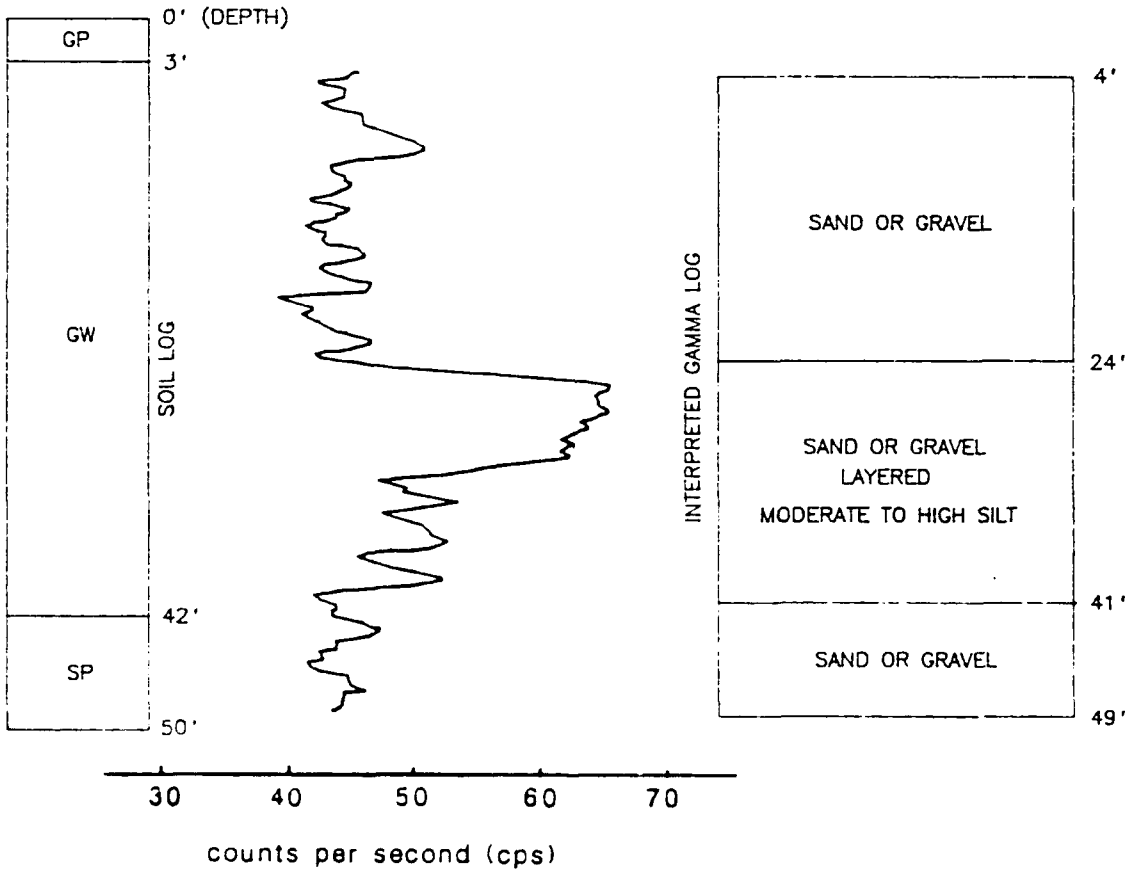


NATURAL GAMMA LOG
SITE D7-W5

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	IS-3	Well number:	Sample number: 035
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-7, page 5-53 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1140 hrs
Run:	two		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, north northeast side		
Total depth:	13.6 metres	Reported depth:	50' (15.2 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Clear, ca. 65° F., slight breeze		

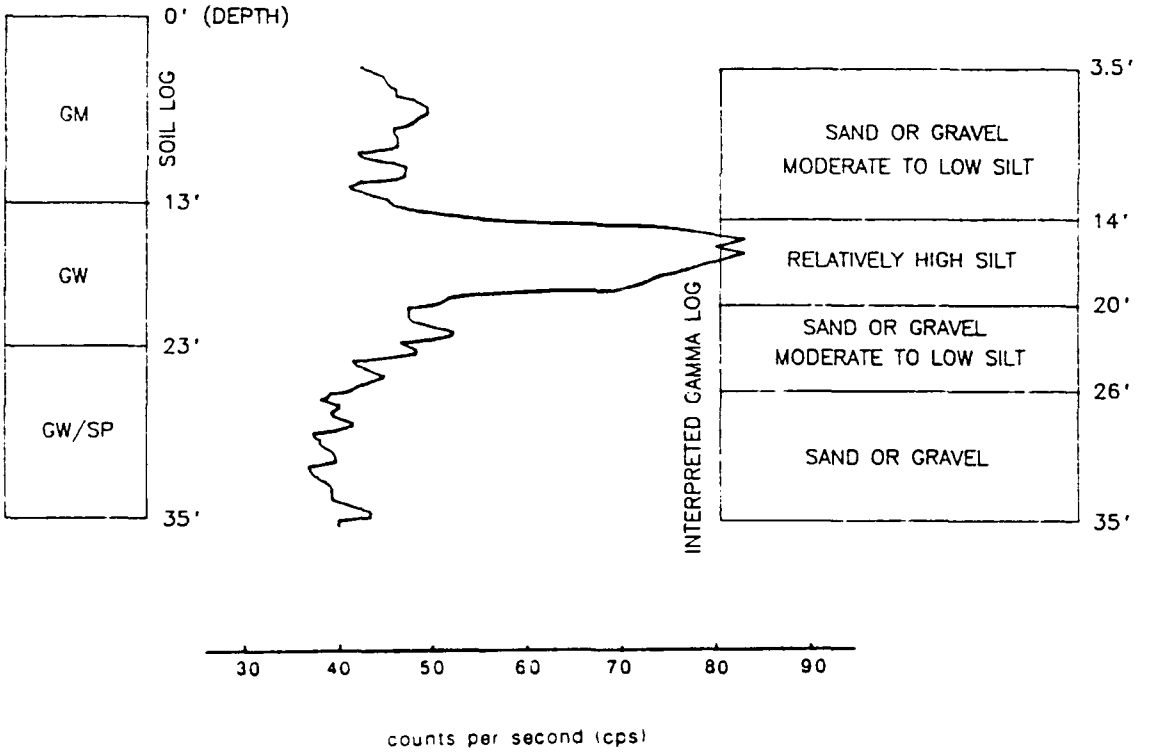


NATURAL GAMMA LOG
SITE IS-3

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	IS-8	Well number:	Sample number: 040
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-9, page 5-55 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1645 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, south side		
Total depth:	11.4 metres	Reported depth:	35' (10.6 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly Sunny, ca. 60° F.		

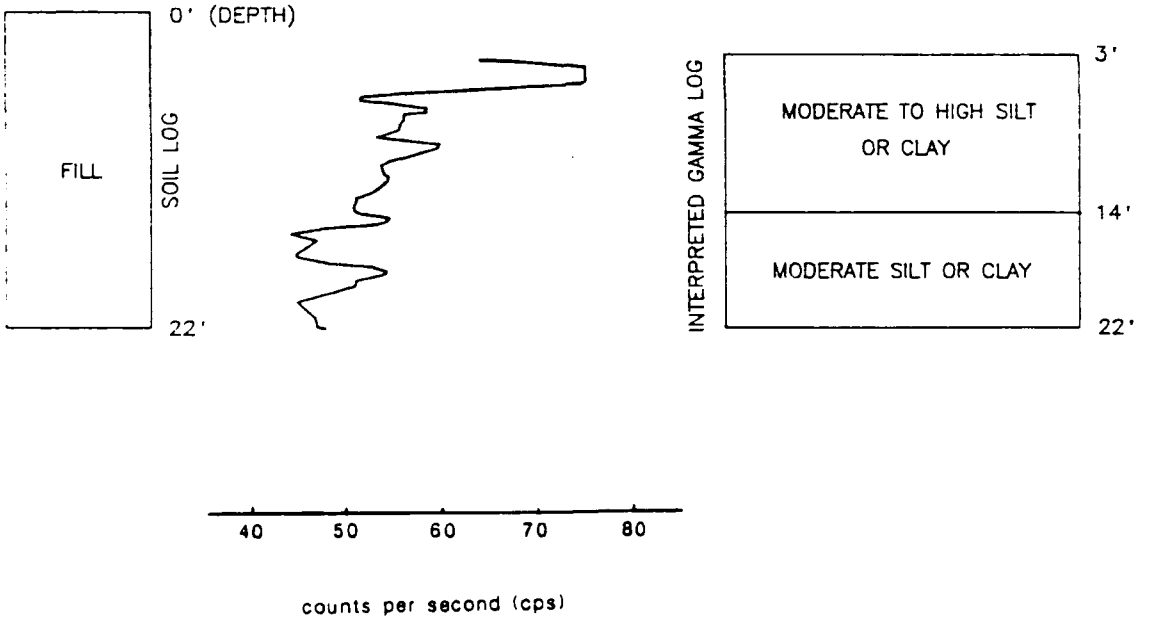


NATURAL GAMMA LOG
SITE IS-8

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-1	Well number: 01	Sample number: 049
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-10, page 5-60 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	18 August 1988	Begin:	1800 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, north side		
Total depth:	7.1 metres	Reported depth:	20' (6.1 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

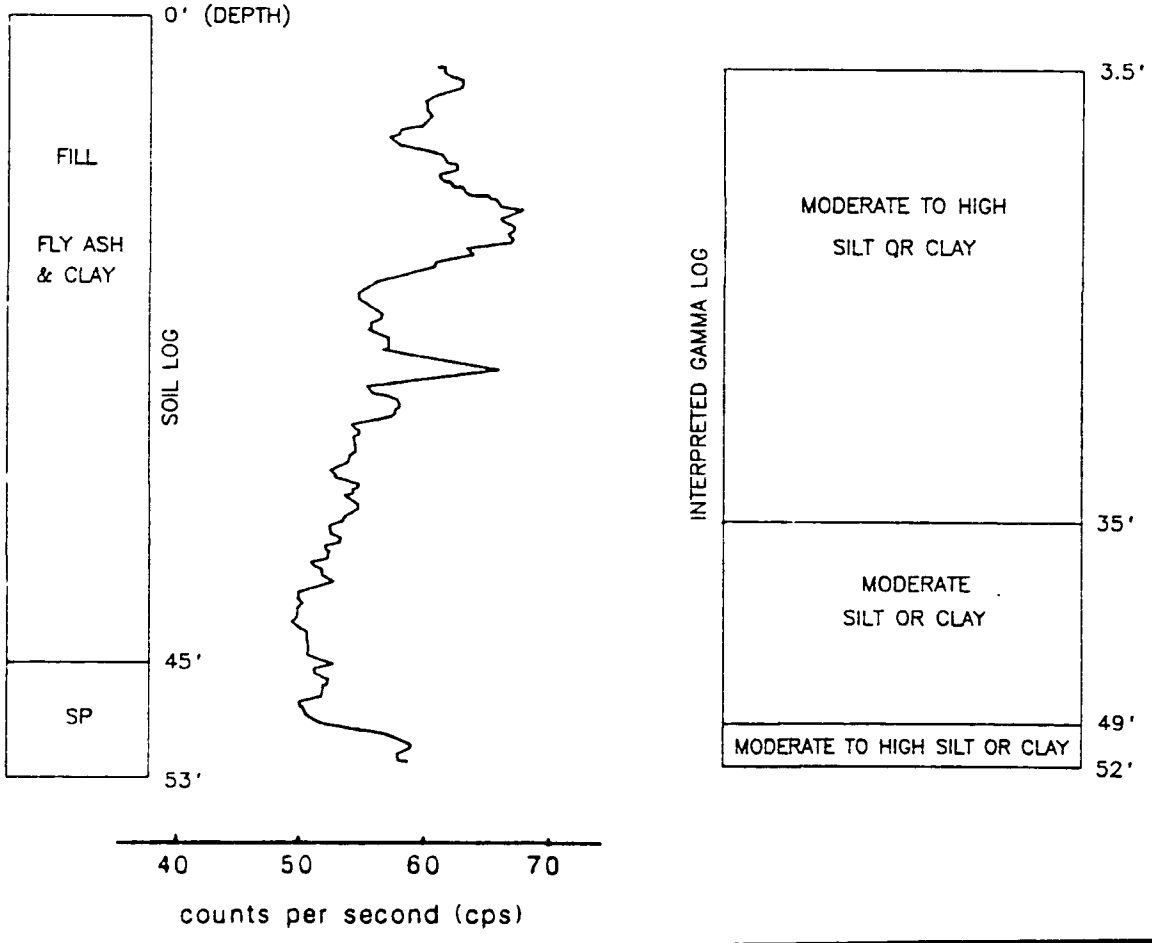


NATURAL GAMMA LOG
SITE SP1-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-2/SP-6	Well number: 04	Sample number: 054
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-11, page 5-62 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	17 August 1988	Begin:	1530 hrs
Run:	three		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	16.3 metres	Reported depth:	53.0' (16.1 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	10 CPS/div., no offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		



NATURAL GAMMA LOG
SITE SP2/6-04

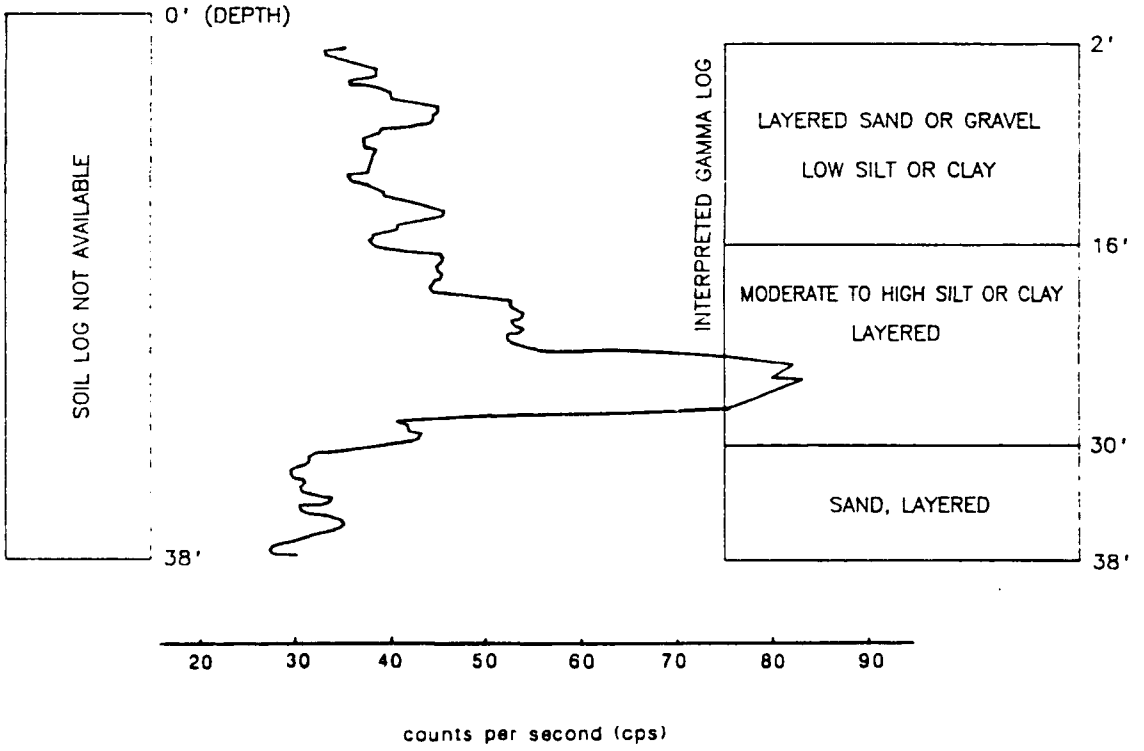
Woodward-Clyde Consultants

Figure

Client:	Black & Veatch
Site number:	SP-2/SP-6 Well number: GW-6 Sample number:
Well location:	Elmendorf Air Force Base, Alaska

Refer to PLATE 5-11, page 5-62 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)

Date:	18 August 1988	Begin:	1625 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, northeast side		
Total depth:	11.9 metres Reported depth:		not available
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

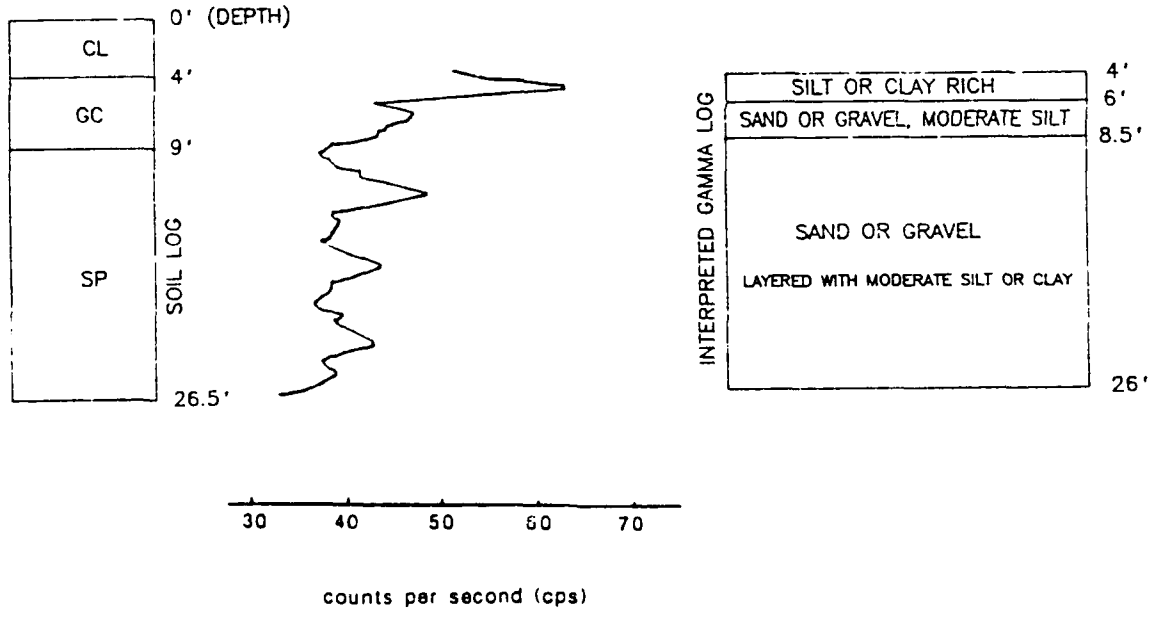


NATURAL GAMMA LOG
SITE SP2/6-GW6

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-4	Well number: 01	Sample number: 063
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-12, page 5-86 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	17 August 1988	Begin:	1125 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, south side		
Total depth:	8.4 metres	Reported depth:	26.5' (8.4 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		

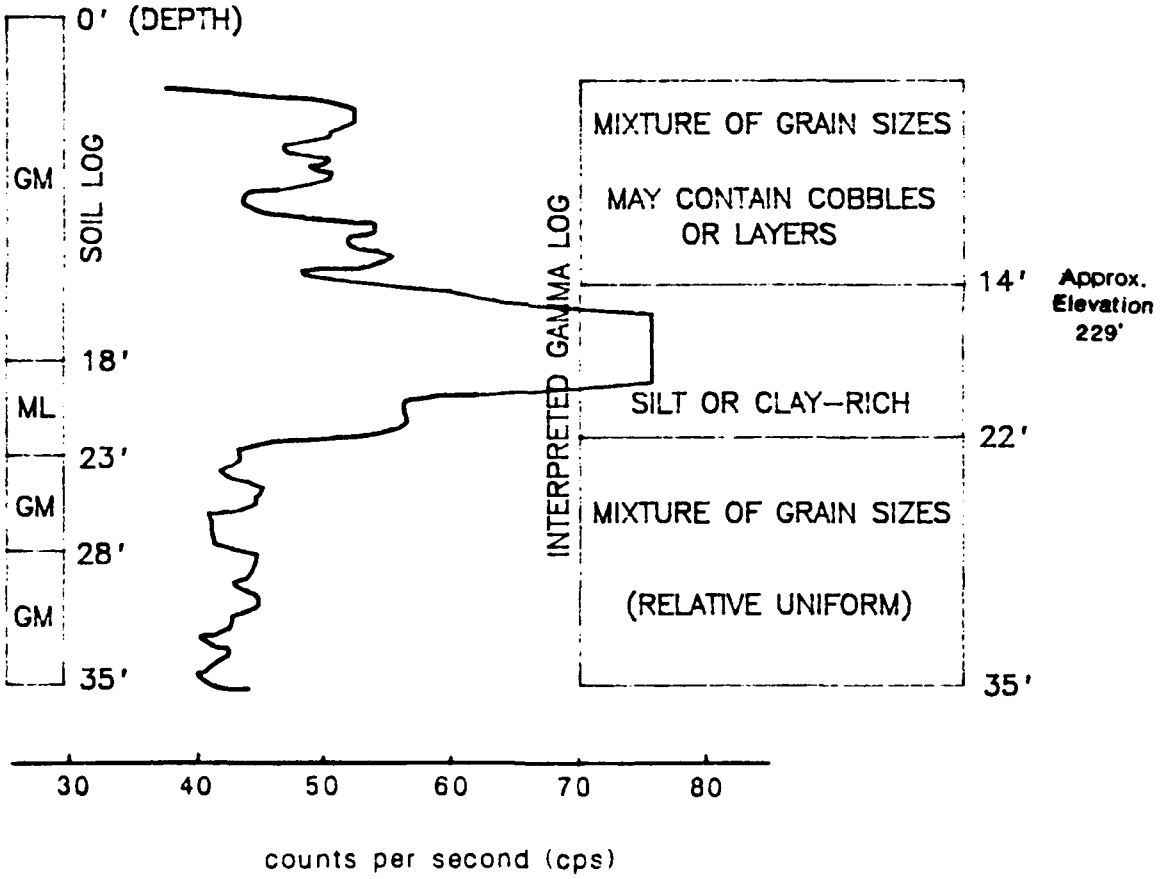


NATURAL GAMMA LOG
SITE SP4-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-5	Well number: 02	Sample number: 073
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-14, page 5-72 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1530 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	9.6 metres	Reported depth:	36.5' (11 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div. 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly cloudy, sunny, ca. 70° F., slight breeze		

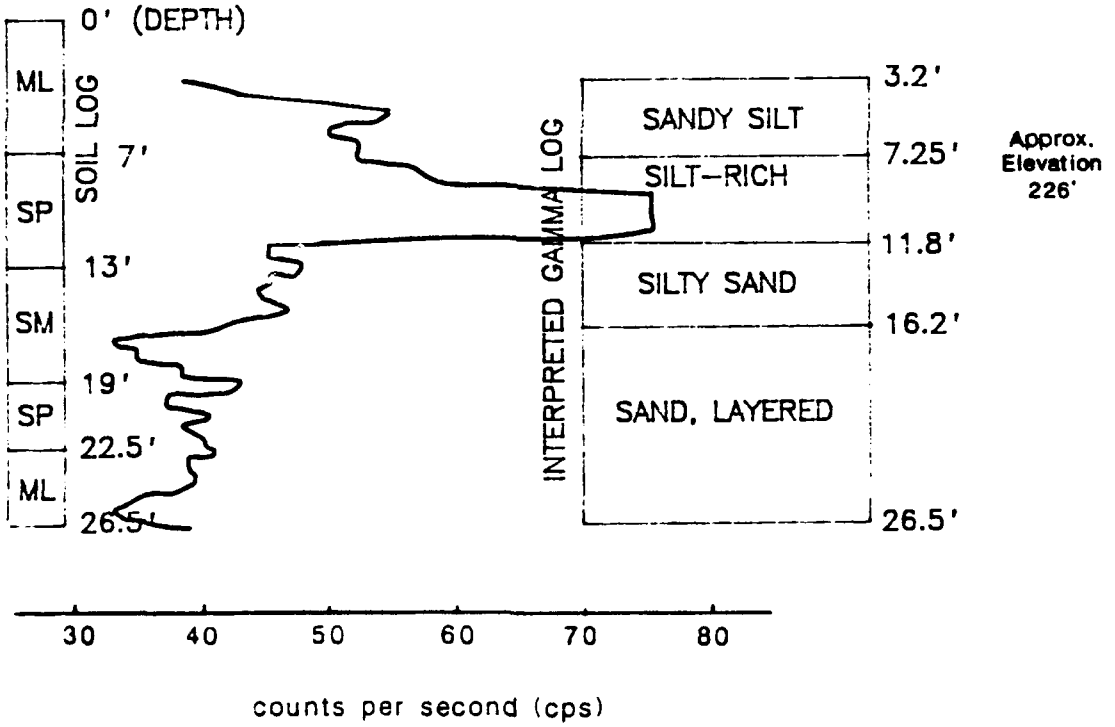


NATURAL GAMMA LOG
SITE SP5-02

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-5	Well number: 08	Sample number: 079
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-14, page 5-72 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	16 August 1988	Begin:	1426 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	8.5 metres	Reported depth:	26.5' (8 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly cloudy, sunny, ca. 70° F., slight breeze		

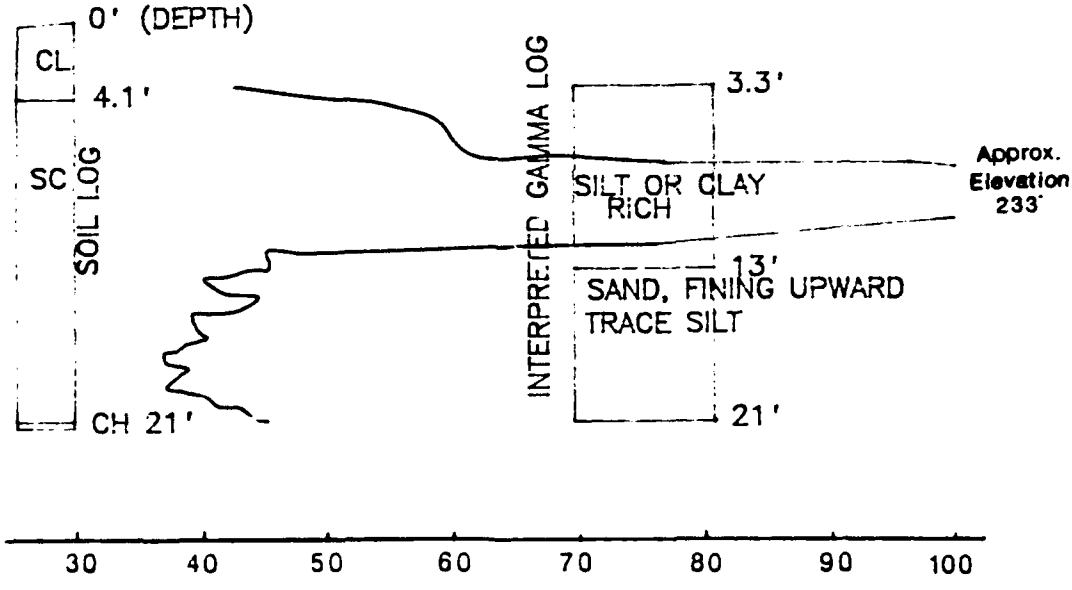


NATURAL GAMMA LOG
SITE SP5-08

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-5A	Well number: 15	Sample number: 067
Well location:	Elmendorf Air Force Base, Alaska		
	Not Listed (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	19 August 1988	Begin:	1505 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, north side		
Total depth:	6.8 metres	Reported depth:	21.5' (6.5m)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 65° F.		

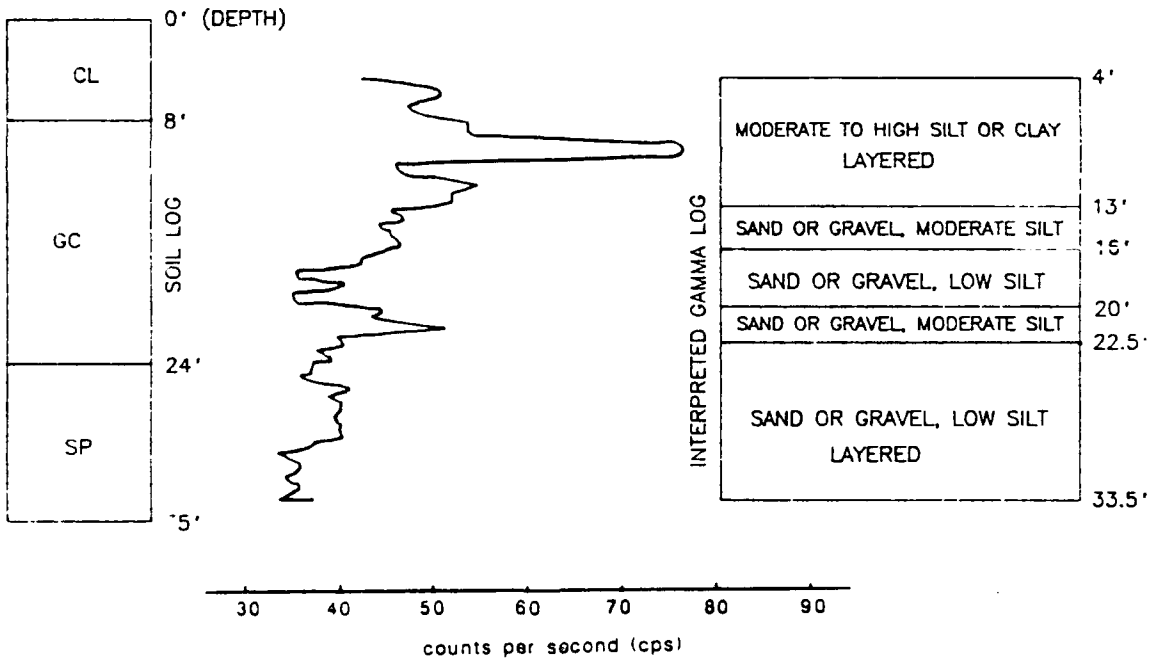


NATURAL GAMMA LOG
SITE SP5A-15

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch
Site number:	SP-7/SP-10 Well number: 01 Sample number: 084
Well location:	Elmendorf Air Force Base, Alaska
	Refer to PLATE 5-15, page 5-76 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)
Date:	16 August 1988 Begin: 0957 hrs
Run:	two
Rate:	*ca.* 4 metres/ min Direction of log: uphole
Measured point:	Top of PVC, northeast side
Total depth:	10.6 metres Reported depth: 35' (11.2 metres)
Scale:	1cm=1 metre
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682
Settings:	5 CPS/div., 5 CPS offset
Operator:	Dan Young
Witness:	Jacqueline Holzman
Weather:	Clear, calm, ca. 60° F.

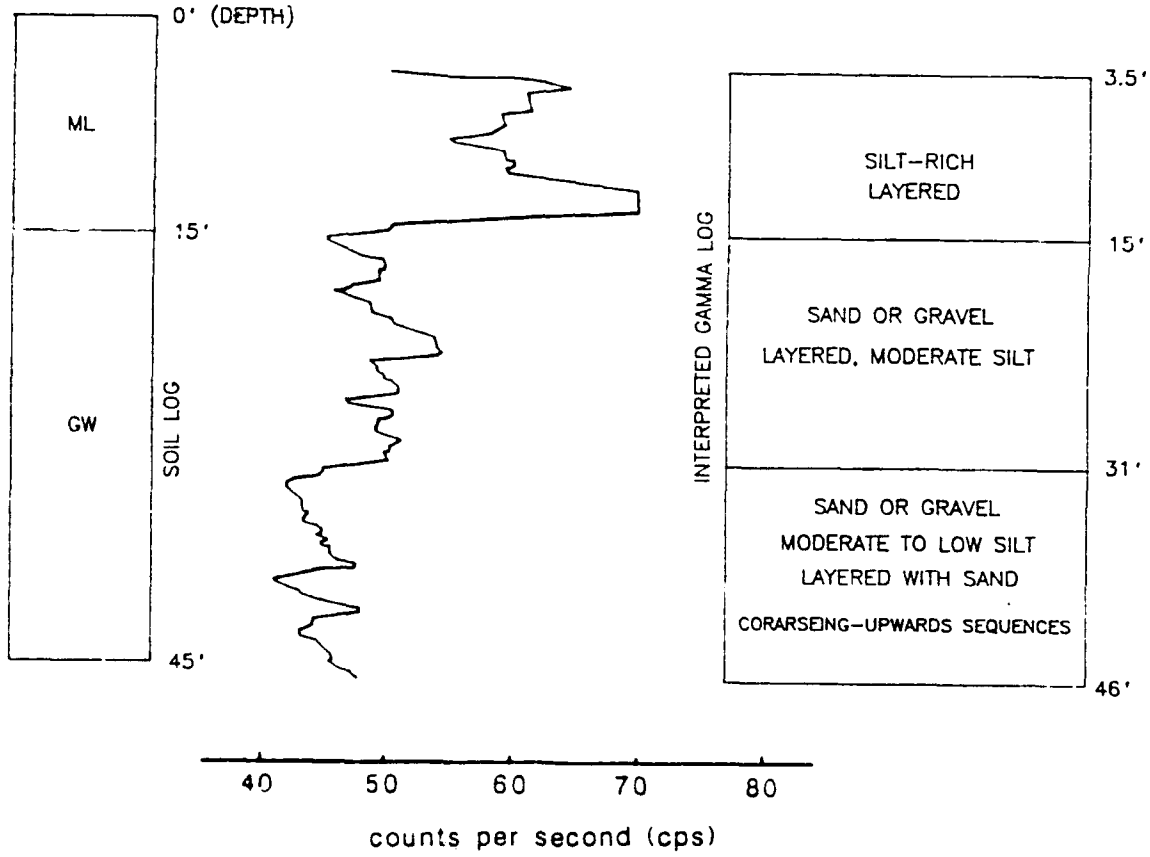


NATURAL GAMMA LOG
SITE SP7/10-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-14	Well number: 02	Sample number: 097
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-9, page 5-55 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	17 August 1988	Begin:	1640 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, west side		
Total depth:	14.3 metres	Reported depth:	45' (13.6 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 60° F.		



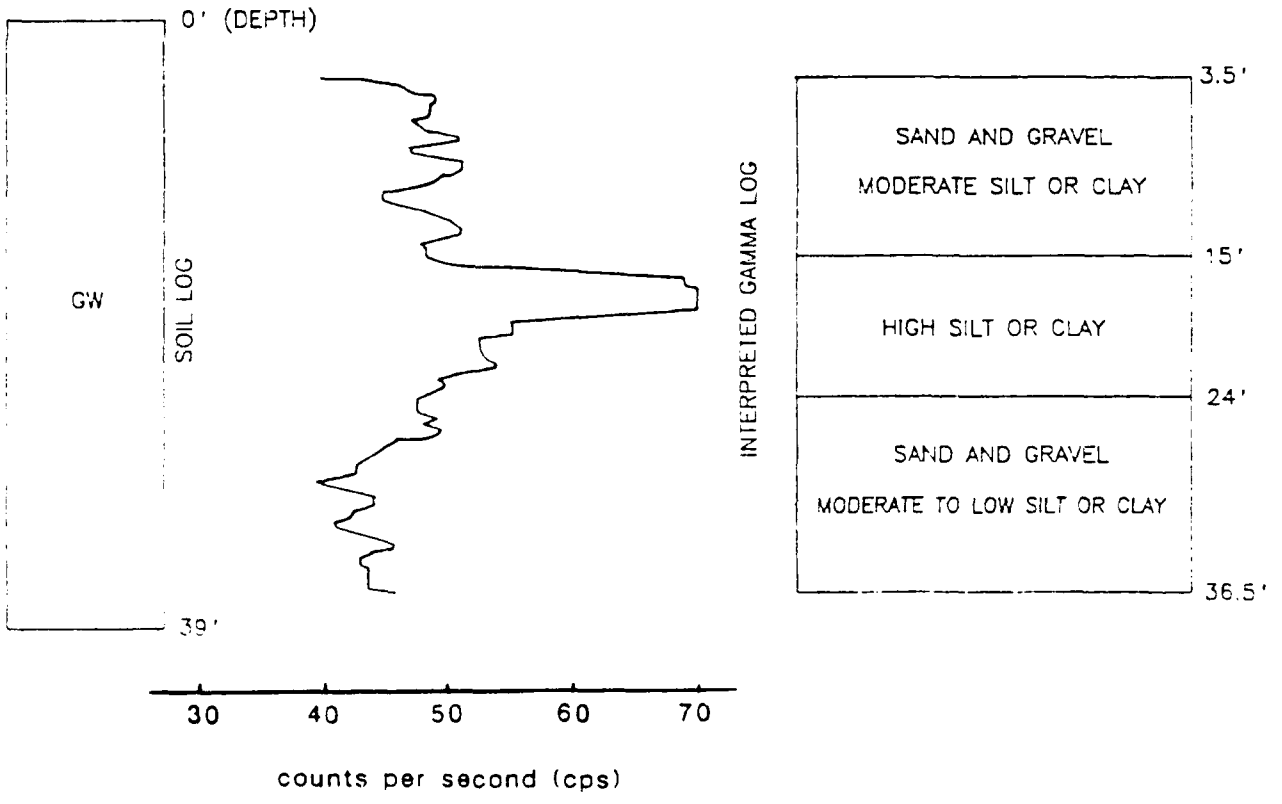
NATURAL GAMMA LOG
SITE SP14-02

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	SP-15	Well number: 01	Sample number: 100
Well location:	Elmendorf Air Force Base, Alaska		
	Refer to PLATE 5-17, page 5-84 (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	18 August 1988	Begin:	1055 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, east side		
Total depth:	11.4 metres	Reported depth:	39' (11.8 metres)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly sunny, ca. 60° F.		

INTERPRETED GAMMA LOG OF SP-15-01

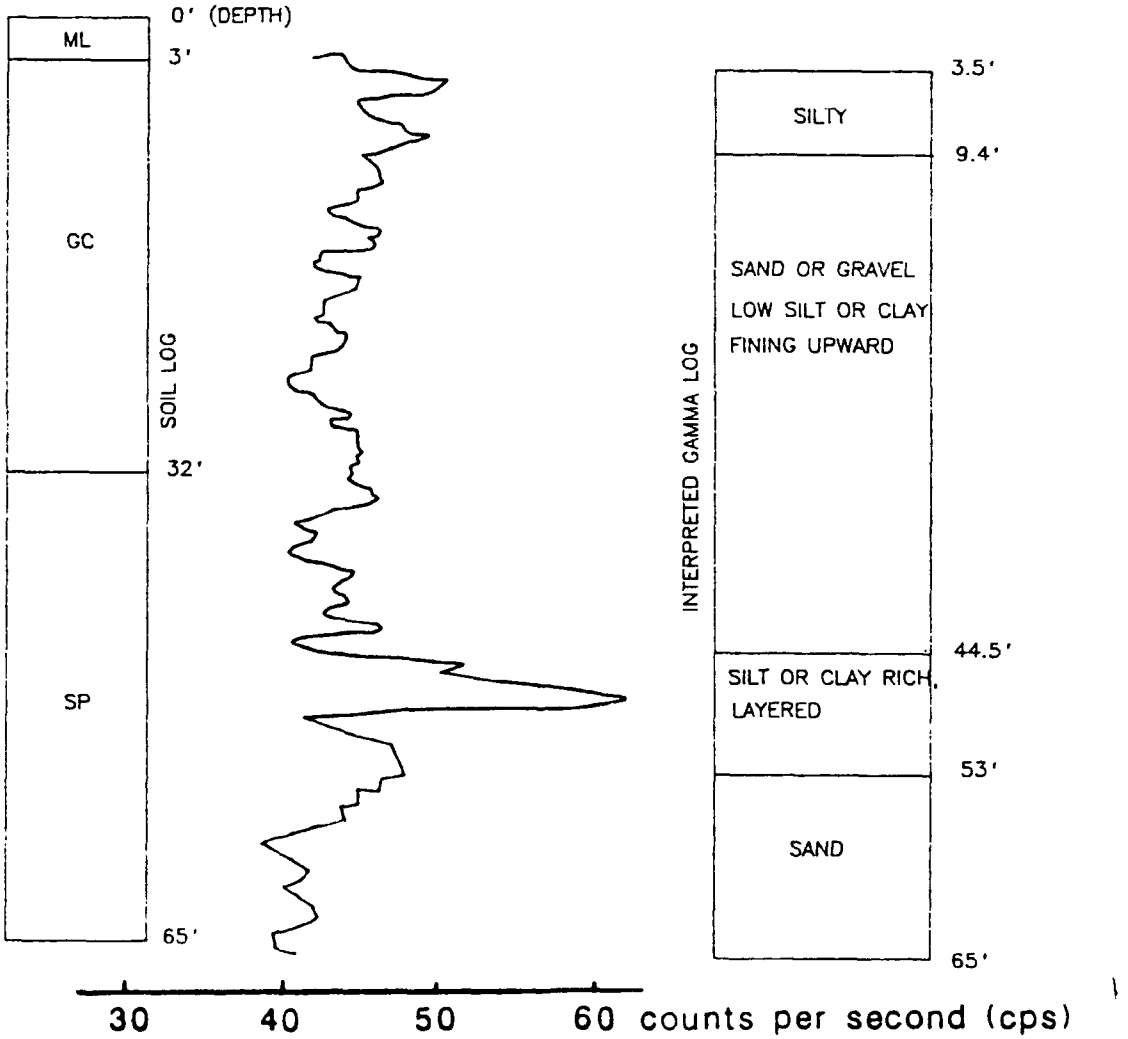


NATURAL GAMMA LOG
SITE SP15-01

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	BH	Well number: 1	Sample number: 119
Well location:	Elmendorf Air Force Base, Alaska		
	Not referenced (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	19 August 1988	Begin:	1605 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min	Direction of log:	uphole
Measured point:	Top of PVC, north side		
Total depth:	20.4 metres	Reported depth:	65' (19.7 m)
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Overcast, ca. 70° F.		

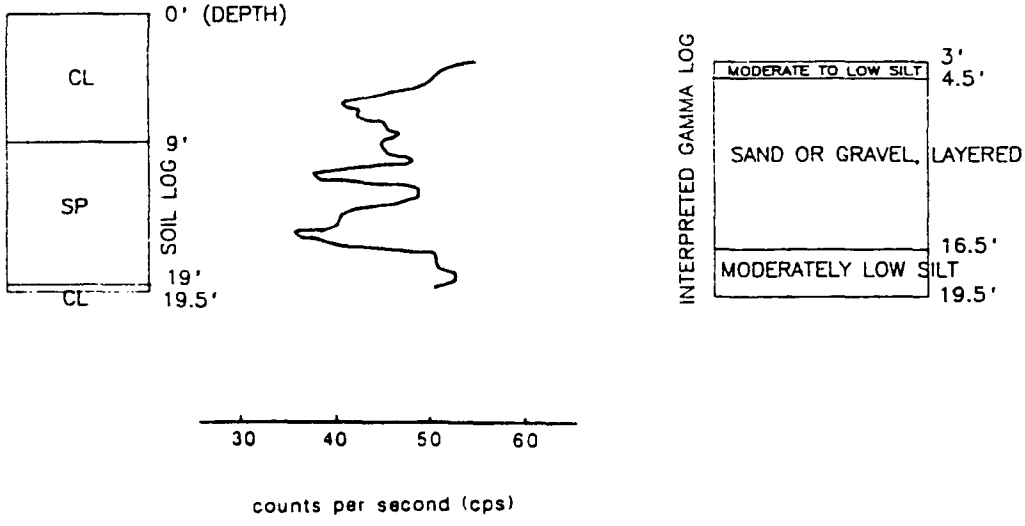


NATURAL GAMMA LOG
SITE BH-1

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch		
Site number:	BH	Well number: 4	Sample number: 122
Well location:	Elmendorf Air Force Base, Alaska		
	Not referenced (Black & Veatch, June 1988, *Quality Assurance Project Plan*)		
Date:	19 August 1988		Begin: 1415 hrs
Run:	one		
Rate:	*ca.* 4 metres/ min		Direction of log: uphole
Measured point:	Top of PVC		
Total depth:	6.2 metres	Reported depth: 18' (5.5 m)	
Scale:	1cm=1 metre		
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682		
Settings:	5 CPS/div., 5 CPS offset		
Operator:	Dan Young		
Witness:	Jacqueline Holzman		
Weather:	Partly sunny, ca. 70° F.		

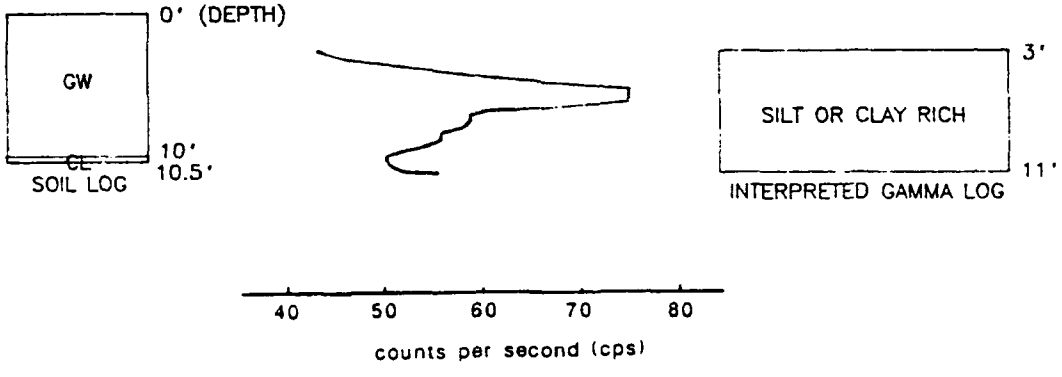


NATURAL GAMMA LOG
SITE BH-4

Woodward-Clyde Consultants

Figure

Client:	Black & Veatch
Site number:	BH Well number: 6 Sample number: 124
Well location:	Elmendorf Air Force Base, Alaska
	Not referenced (Black & Veatch, June 1988, *Quality Assurance Project Plan*)
Date:	19 August 1988 Begin: 1130 hrs
Run:	one
Rate:	*ca.* 4 metres/ min Direction of log: uphole
Measured point:	Top of PVC, north side
Total depth:	3.8 metres Reported depth: 10.4' (3.2m)
Scale:	1cm=1 metre
Equipment:	Mt. Sopris 1000-C, sn 283; gamma-strat. sonde, sn 1682
Settings:	5 CPS/div., 5 CPS offset
Operator:	Dan Young
Witness:	Jacqueline Holzman
Weather:	Sunny, ca. 70° F.

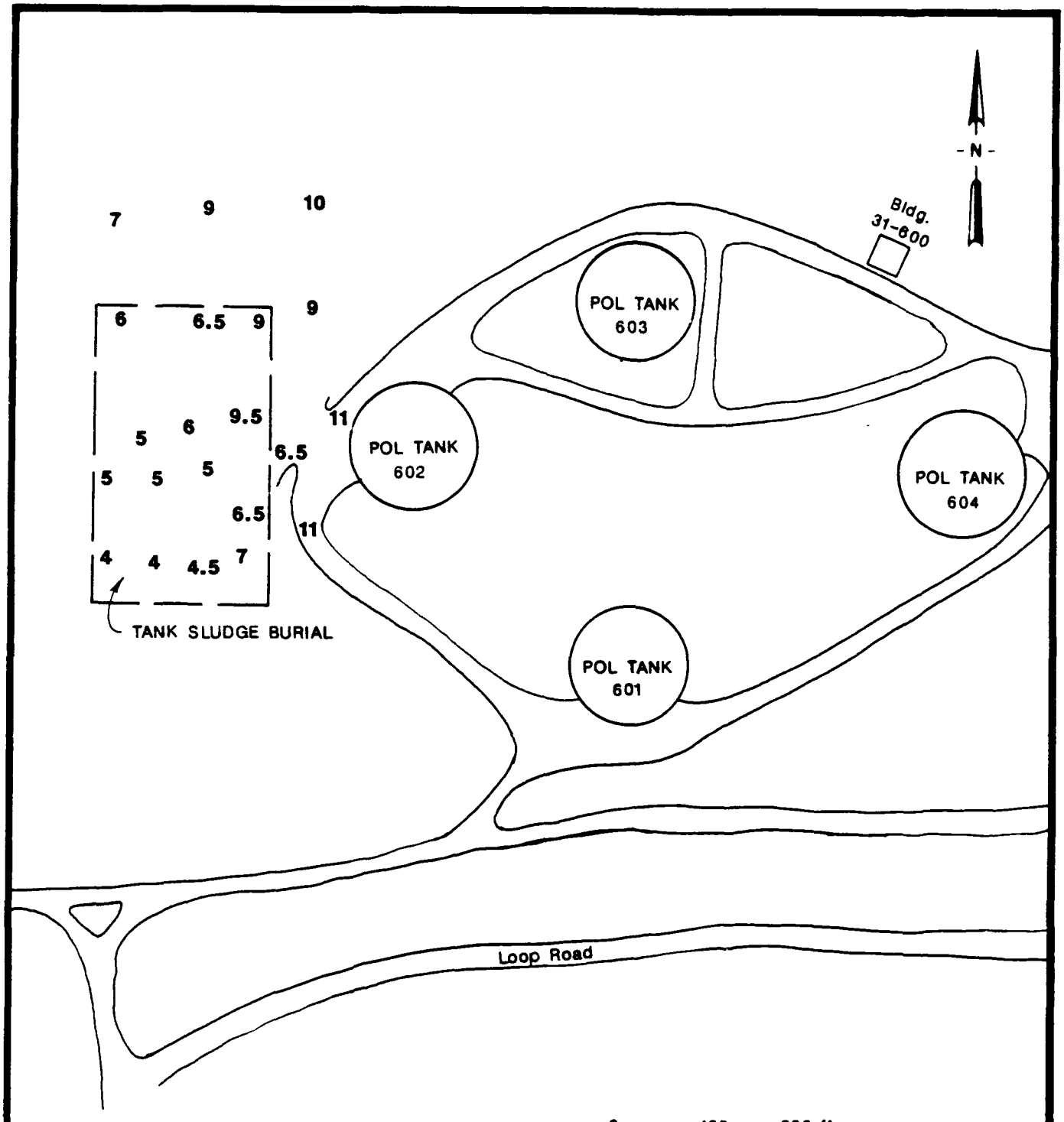


NATURAL GAMMA LOG
SITE BH-6

Woodward-Clyde Consultants

Figure

Terrain Conductivity Data



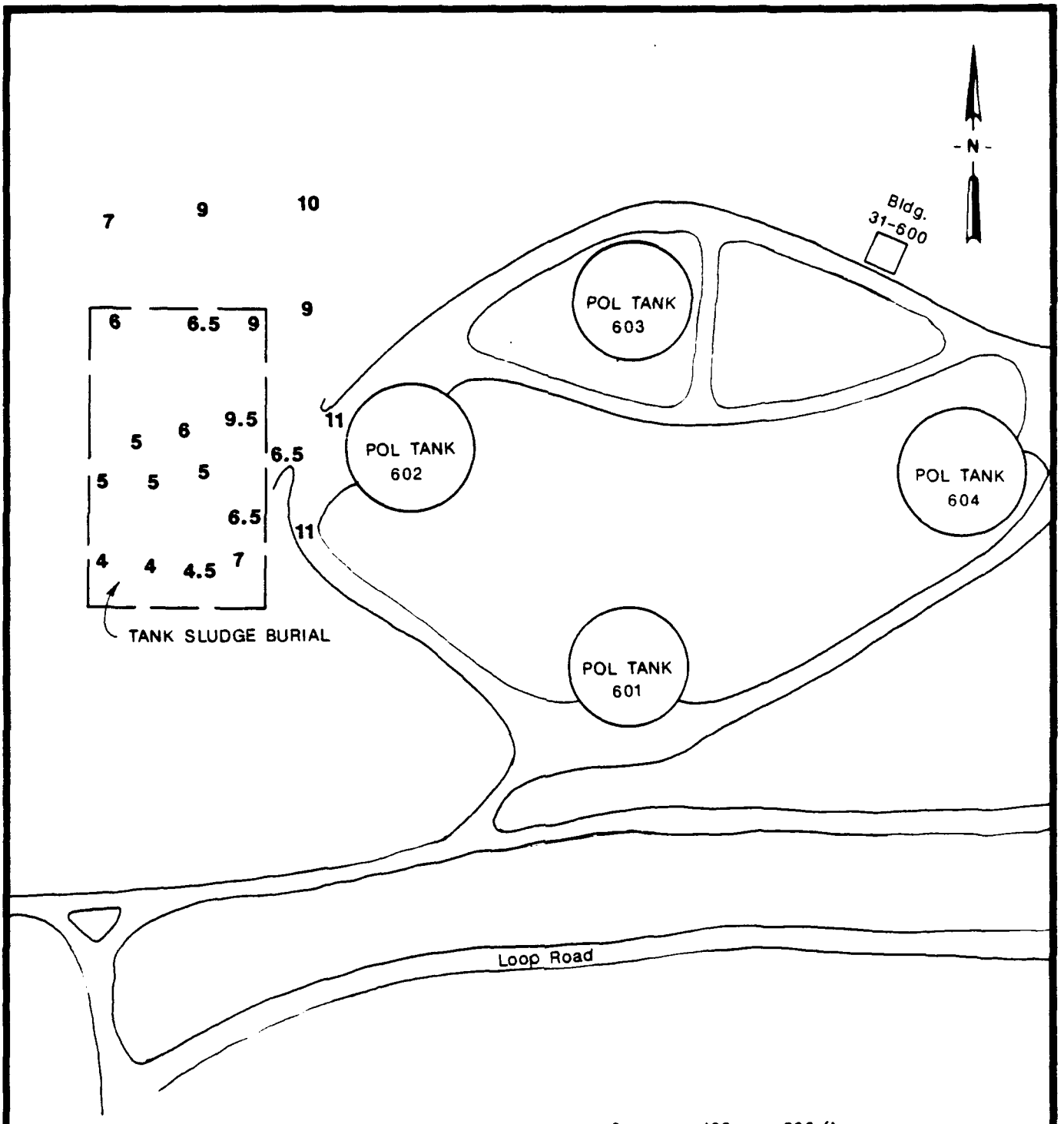
Note:

1. Instrument: Geonics EM-31
2. Values are apparent ground conductivity in millimhos/meter

TANK SLUDGE BURIAL AREA
TERRAIN CONDUCTIVITY
SITE SP-5

Woodward-Clyde Consultants

Figure



Note:

1. Instrument: Geonics EM-31
2. Values are apparent ground conductivity in millimhos/meter

TANK SLUDGE BURIAL AREA
TERRAIN CONDUCTIVITY
SITE SP-5

Woodward-Clyde Consultants

Figure

Pump Test Data

Subject Pump Test analysis Well GW-3A

Project No. 8830033A

Task No. 0130

File No.

By Jim Munter

Checked By

Date 11-8-88

Date

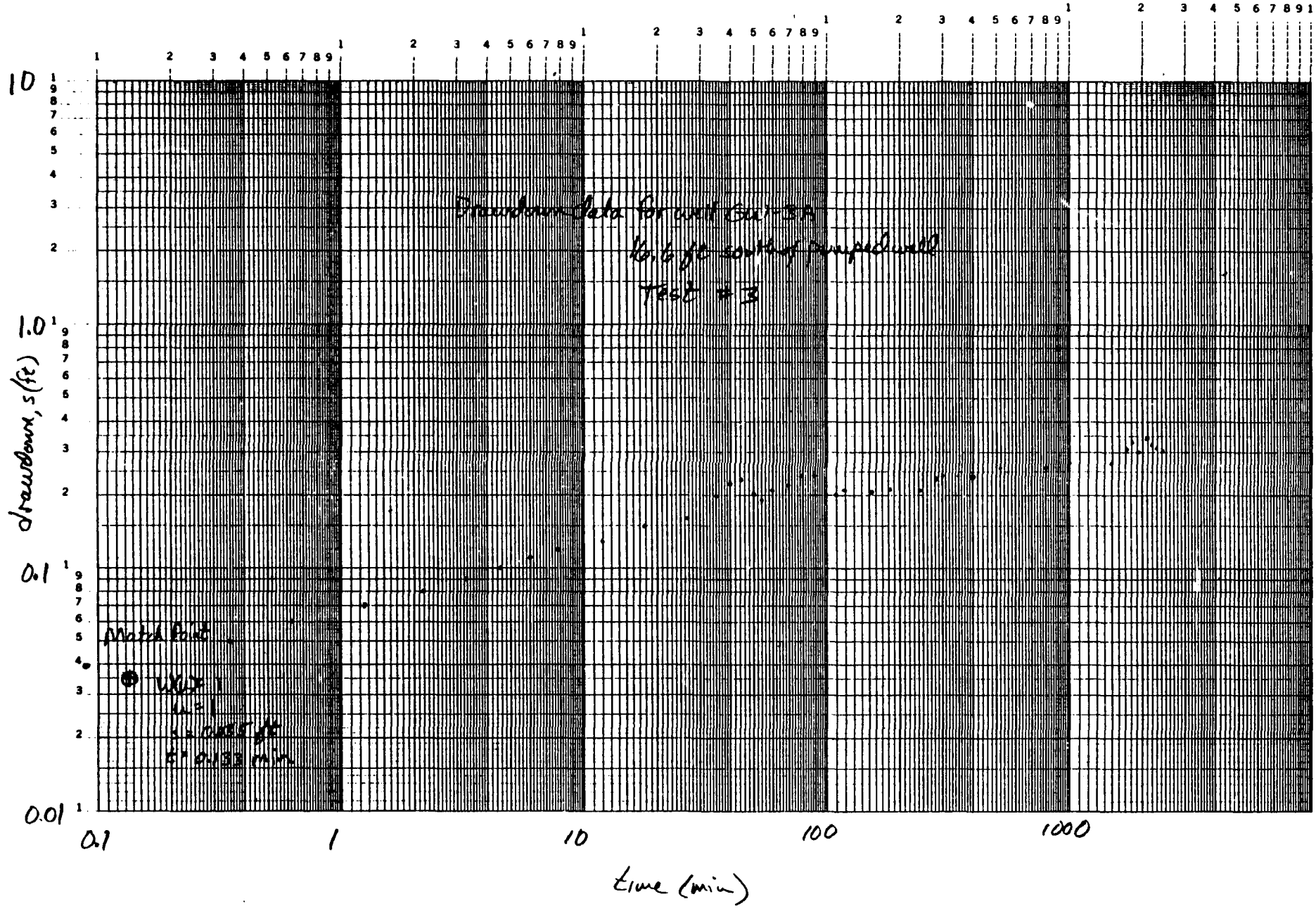
Sheet ____ of ____

Theis Method

$$T = \frac{Q\,W(u)}{4\pi\Delta} = \frac{41.2\ \text{gal/min} \times 1 \times 1440\ \text{min/day}}{4\pi(0.035\ \text{ft}) \times 7.48\ \text{gal/ft}^3} = 18{,}034\ \text{ft}^2/\text{day}$$

$$\Rightarrow K = 334\ \text{ft/day} \quad (b = 54\ \text{ft})$$

$$S = \frac{4Ttu}{r^2} = \frac{4 \times 18{,}034\ \text{ft}^2/\text{day} \times 0.133\ \text{min} \times \frac{1\ \text{day}}{1440\ \text{min}} \times 1}{(16.6\ \text{ft})^2} = 0.024$$


Drawdown data for unit Gw-3A
16.6 ft south of pumped well
Test #3
Match Point
W(u) = 1
u = 1
s = 0.605 ft
t = 0.133 min
drawdown, s (ft)
time (min)
10
1.0
0.1
0.01
0.1
1
10
100
1000

Subject Pump Test - Recovery Data analysis

By J. Munter Checked By

Date 11-8-88 Date

Project No. 88 20 33A

Task No. 0130

File No. GW-3A

Sheet _____ of _____

Recovery analysis
(using method in Johnson, 1966, p. 138-140)

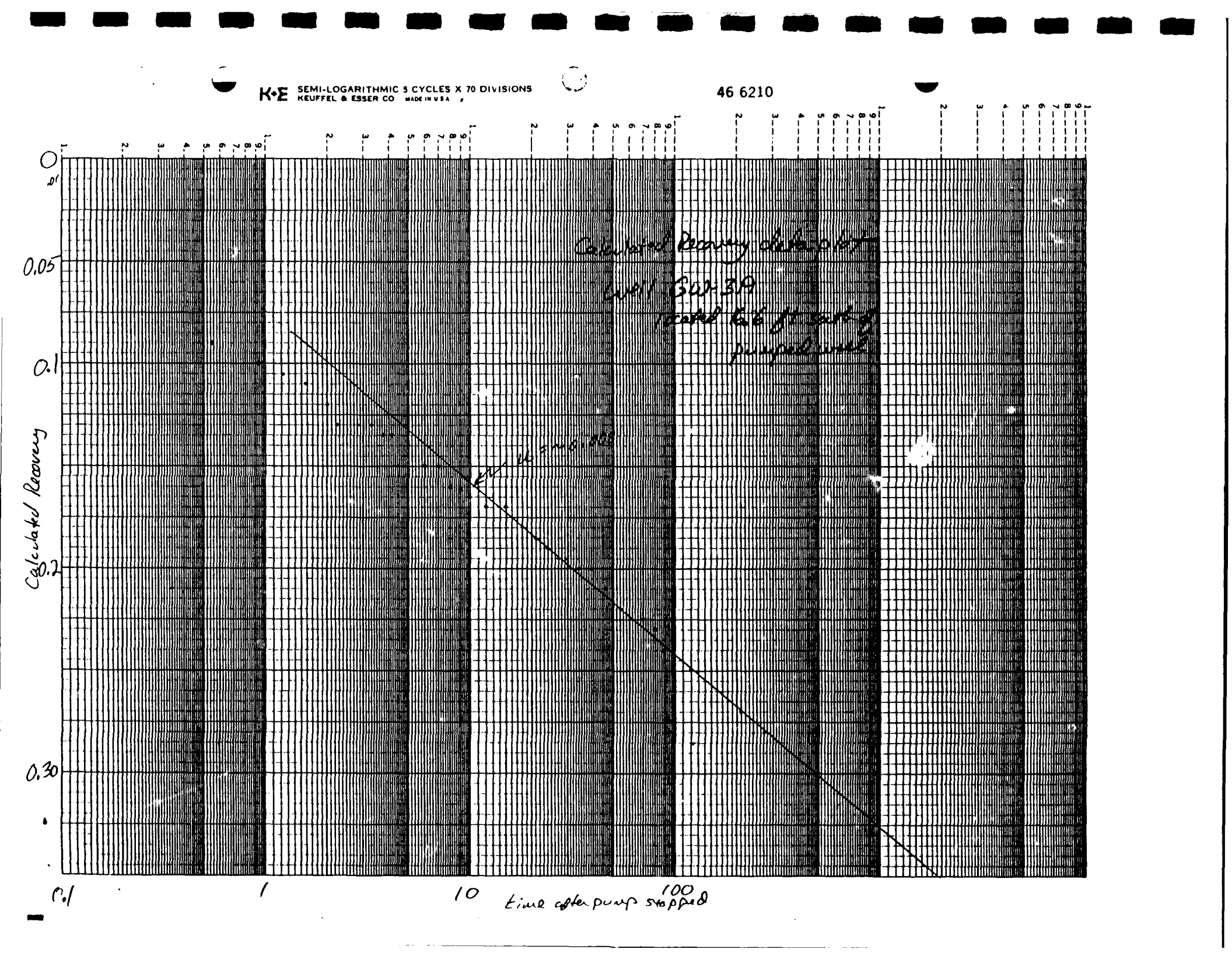
$$T = \frac{264\,Q}{\Delta s} = \frac{264 \times 41.2\ gpm}{0.083\ ft} = 131{,}040\ gpd/ft = 17{,}520\ ft^2/day$$

$(-0.10 + 0.183\ ft)$

$$S = \frac{0.3\,T t_o}{r^2} = \frac{0.3 \times 131{,}040\ gpd/ft \times 0.135\ min \times \frac{1\ day}{1440\ min}}{(16.6\ ft)^2} = 0.0134$$

$$u = \frac{(16.6)^2(0.0134)}{4(17{,}520)\left(\frac{10}{1440}\right)} = 0.0076 \Rightarrow O.K. \checkmark$$

This method is applicable because essentially stabilized drawdowns noted in obs. wells during latter part of test.


K•E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.
46 6210
Calculated Recovery data plot
well GW-30
recorded by Hydrotech
pumped well
Calculated Recovery
0
0.05
0.1
0.2
0.30
0.1
1
10
100
Time after pump stopped

Subject Ramp Test - Residual dd vs t/t' - Well GW-3A

Project No. 8830033A

By J. Munter

Checked By

Task No. 0100

File No.

Date 11/18

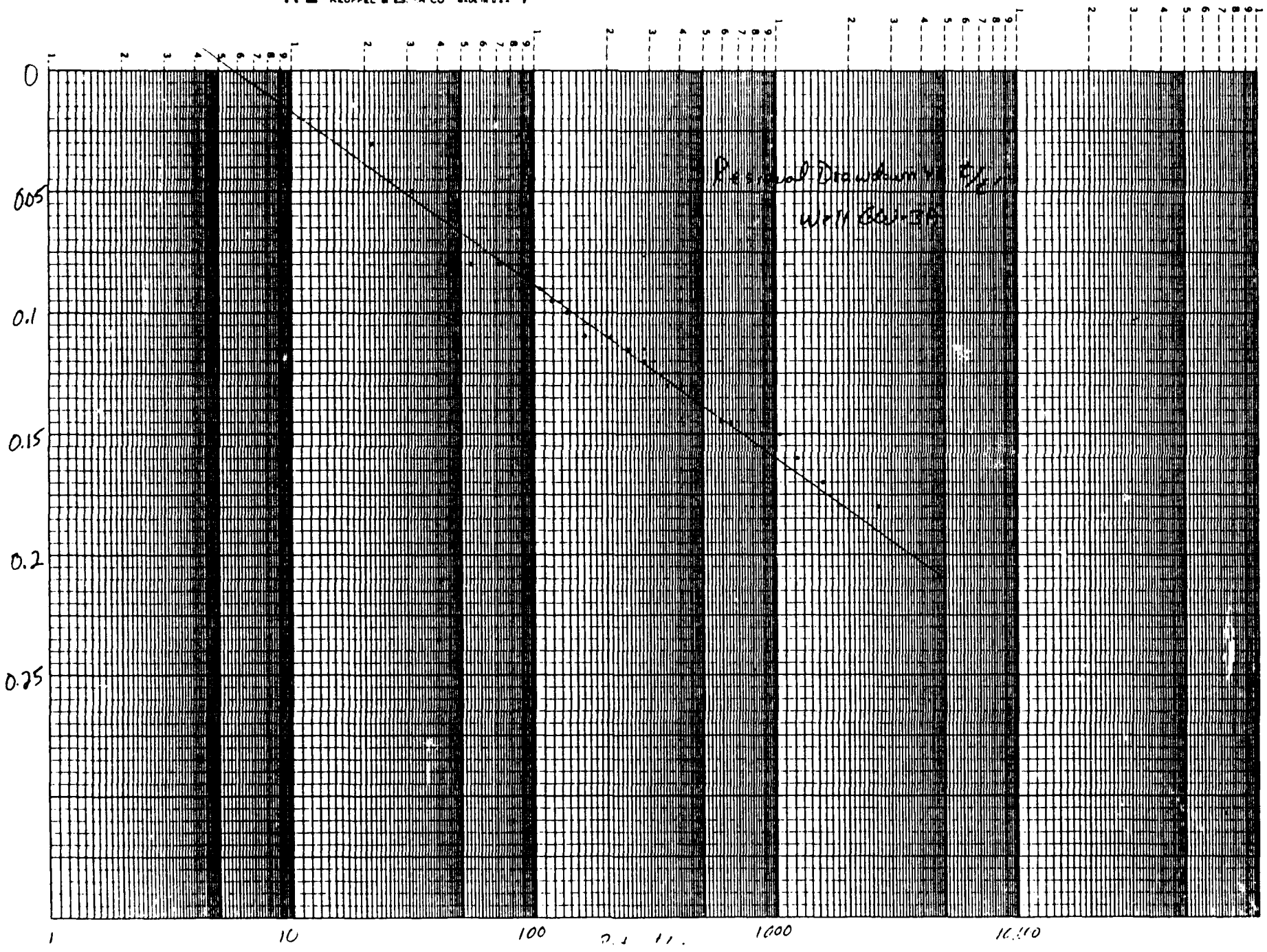
Date

Sheet ____ of ____

$$T = \frac{264\,Q}{\Delta s'} = \frac{264 \times 41.2\ \text{gpm}}{0.16 - 0.088} = 151{,}066\ \text{gpd/ft} = 20{,}196\ \text{ft}^2/\text{day}.$$

t/t' intercept w/ zero drawdown = 5.9 $> 2 \Rightarrow$

test affected by recharge (Johnson, 1966, p. 142)


K•E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.
46 6210
0
0.05
0.1
0.15
0.2
0.25
1
10
100
1000
Residual Drawdown vs t/t'
With Eq-39

Subject Pump test analysis Well #2 PT-03

Project No. 88300.33A

Task No. 0130

File No. Pump Test

By J. Munter

Checked By

Date 11-8-88

Date

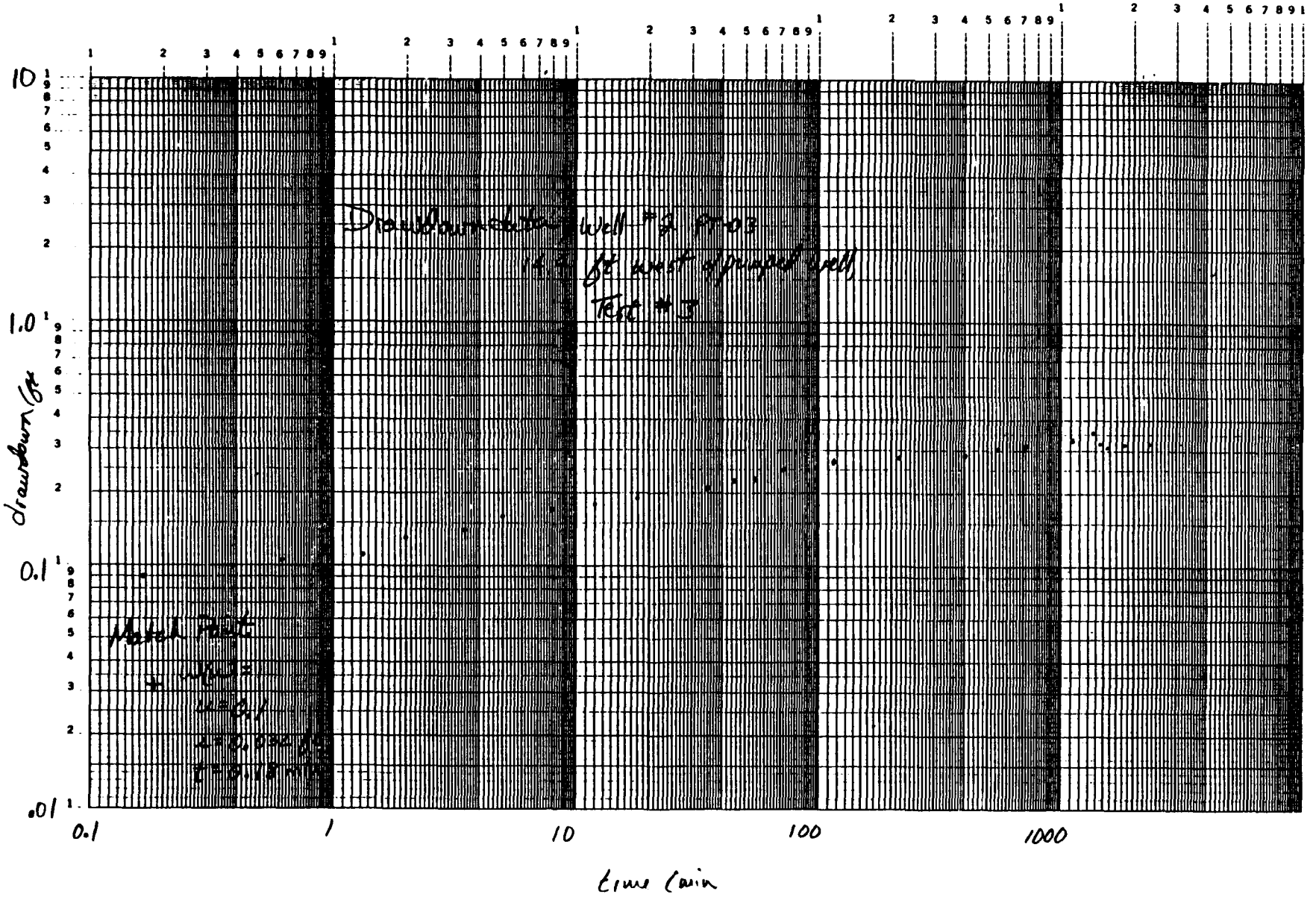
Sheet _____ of _____

THEIS METHOD

$$T = \frac{Q\,W(u)}{4\pi s} = \frac{41.2\ gal/min \times 1 \times 1440\ min/day}{4\pi (0.032\ ft)\left(7.48\ \frac{gal}{ft^3}\right)} = 19,724\ ft^2/day$$

$$\Rightarrow K = 365\ ft/day \quad b = 54'$$

$$S = \frac{4Tt_u}{r^2} = \frac{4 \times 19724\ ft^2/day \times 0.1\ min \times \frac{1\ day}{1440\ min \times 0.1}}{(14.9\ ft)^2} = 0.0044$$


Drawdown (ft)
Time (min)
0.1
1
10
100
1000
1.0
0.01
Drawdown data well #2 PW03
14.2 ft west of pumped well
Test #3
Match Point
M(C) =
u = 0.1
s = 0.05 ft
t = 0.15 min

Subject Pump Test - Recovery data Analysis

By J. Munter Checked By

Date 11-8-88 Date

Project No. 88 300 33A

Task No. 0130

File No. PT03

Sheet _____ of _____

Calculated Recovery data $r = 14.9$ ft

$$T = \frac{264Q}{\Delta s} = \frac{264 \times 41.2}{0.118 - 0.045} = 148{,}997 \text{ gpd/ft} = 19{,}919 \text{ ft}^2/\text{day}$$

$$S = \frac{0.3 \times 148{,}997 \times 0.000018 \text{ days}}{(14.9 \text{ ft})^2} = 0.0036$$

$$u = \frac{r^2 S}{4Tt} = \frac{(14.9)^2 \times 0.0036}{4 \times 19{,}919 \times \frac{2}{1440}} = 0.007 \Rightarrow \text{Method O.K.}$$

46 6210
K+E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
Calculated recovery (Rf)
0.1
1.0
0.3

Subject Pump Test analysis

Project No. 880033A

By Jim Munter

Checked By

Task No. 0130

File No. PT04

Date 11-8-88

Date

Sheet _____ of _____

Theis Method

Match Point 1

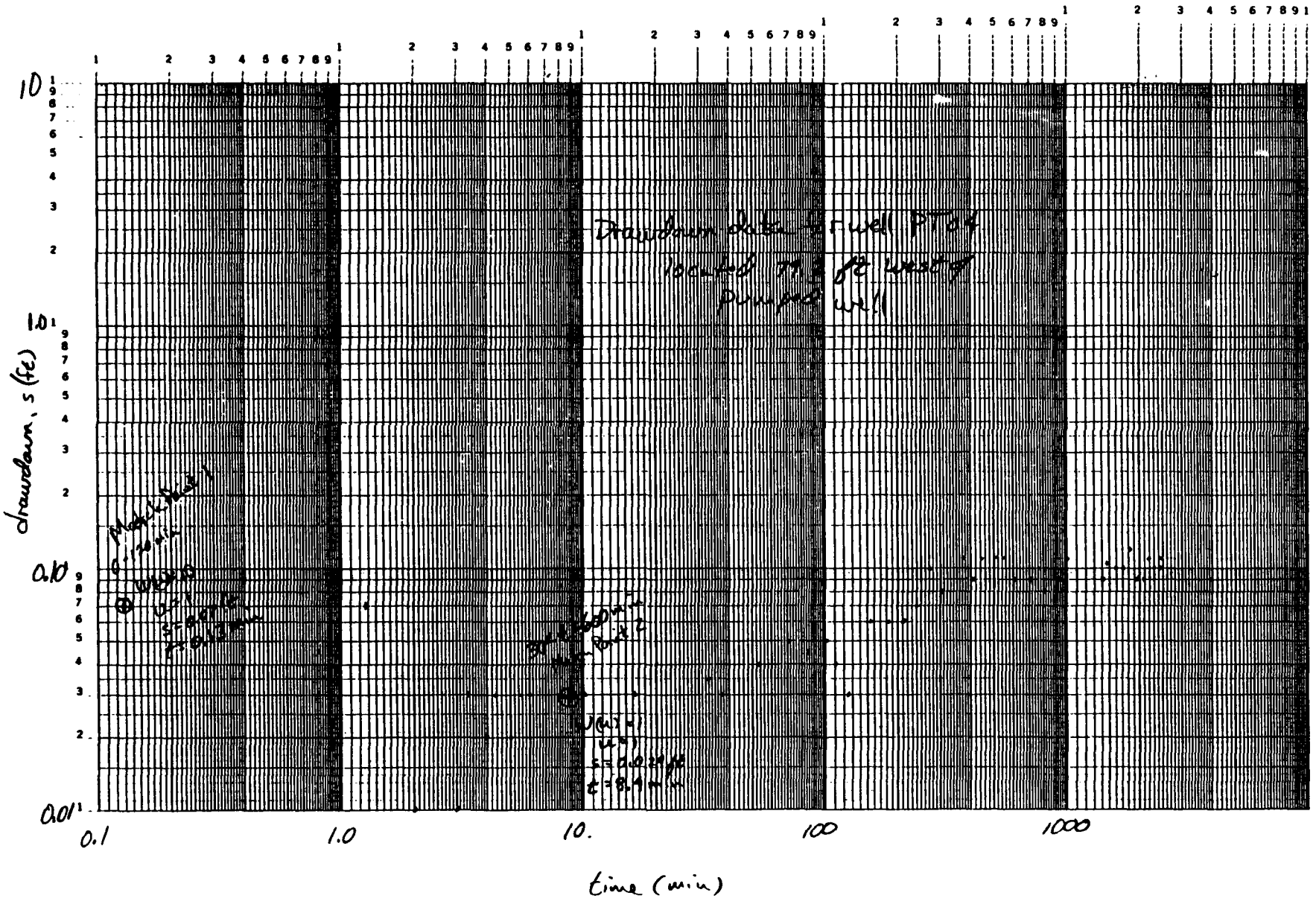
$$T = \frac{Q\,w(u)}{4\pi s} = \frac{7932\ ft^3/day \times 10}{4\pi\,(0.07\ ft)} = 90{,}167\ ft^2/day$$

$$S = \frac{4\,T\,t\,u}{r^2} = \frac{4\left(90{,}167\ ft^2/day \times 0.13\ min \times \frac{1\ day}{1440\ min}\right)}{(79.2\ ft)^2} = 0.0052$$

Match Point 2

$$T = \frac{7932 \times 1}{4\pi\ 0.029} = 21{,}766\ ft^2/day$$

$$S = \frac{4\,T\,t\,u}{r^2} = \frac{4 \times 21{,}766 \times 8.4\ min \times \frac{1\ day}{1440\ min}}{(79.2\ ft)^2} = 0.081$$


Drawdown data - 2 nd well PT 24
10 cu-ft 77.2 gal water
pumped well
drawdown, s (ft)
10
1.0
0.10
0.01
0.1
1.0
10.
100
1000
time (min)

Subject Pump Test analysis - Recovery data

By Jim Munter Checked By

Date 11-8-88 Date

Project No. 88300 33A

Task No. 0130

File No. PT04

Sheet _____ of _____

Calculated Recovery method

$$T = \frac{264\,Q}{\Delta s} = \frac{264 \times 41.2}{0.116\,ft - 0.025\,ft} = 119525\ gpd/ft = 15{,}979\ ft^2/day$$

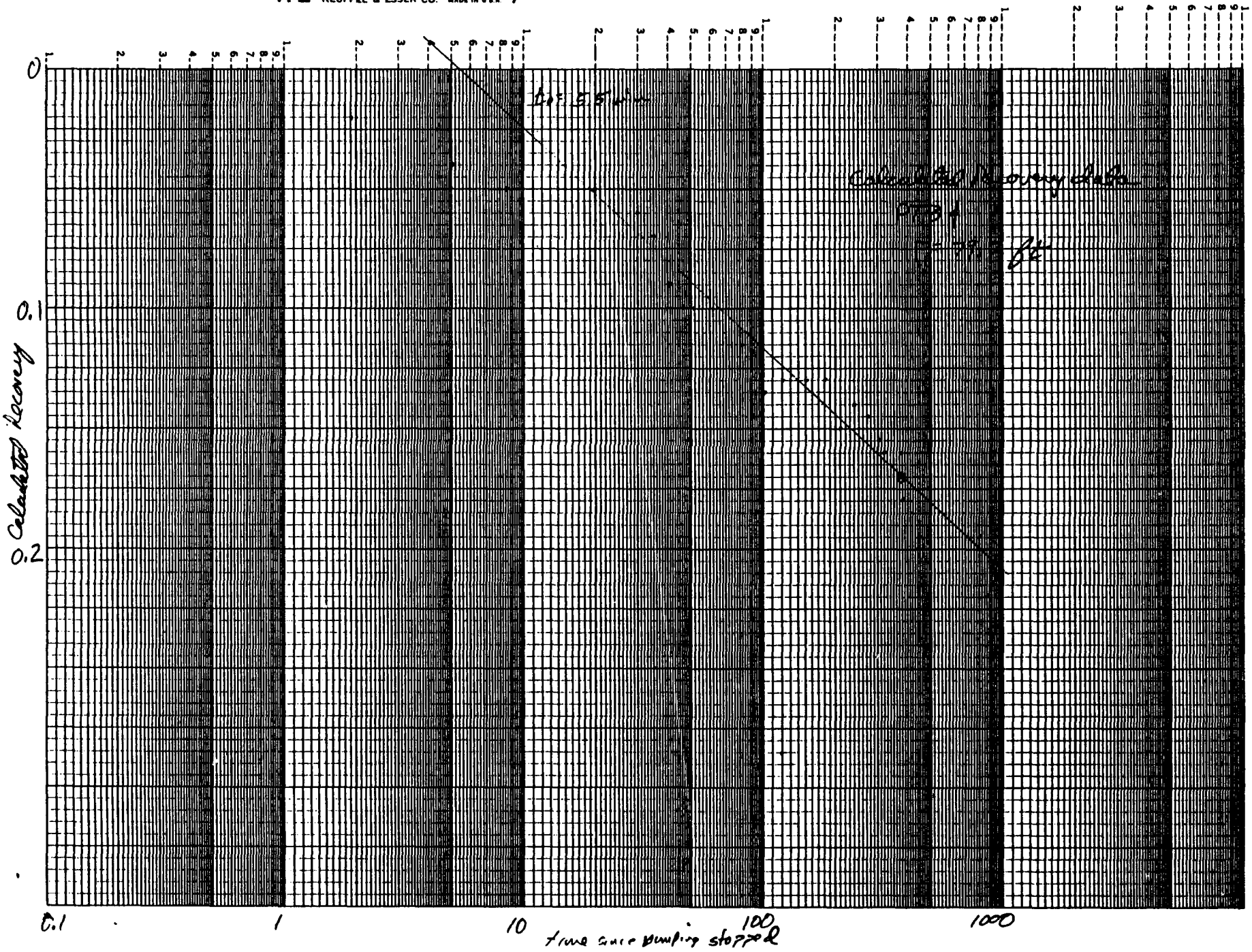
$$S = \frac{0.3\,T\,t_o}{r^2} = \frac{0.3 \times 119525\ gpd/ft \times 5.5\ min \times \frac{1\ day}{1440\ min}}{(79.2\ ft)^2} = 0.022$$

$$u = \frac{r^2 S}{4Tt} = \frac{(79.2)^2 \times 0.022}{4(15{,}979)\left(\frac{20}{1440}\right)} = 0.15$$

if $t = 50$ min $u = 0.06$

if $t = 70$ min $u = 0.04$

if $t = 100$ min $u = 0.03$ ⇒ analysis ok for late data.


K•E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 6210
0
0.1
0.2
Calculated Recovery
0.1
1
10
100
1000
Time since pumping stopped

Subject Pump Test Analysis – Distance-Drawdown

Project No. 8830033A

By I Munter

Checked By

Task No. 0130

File No.

Date 11/8

Date

Sheet ____ of ____

Distance drawdown method

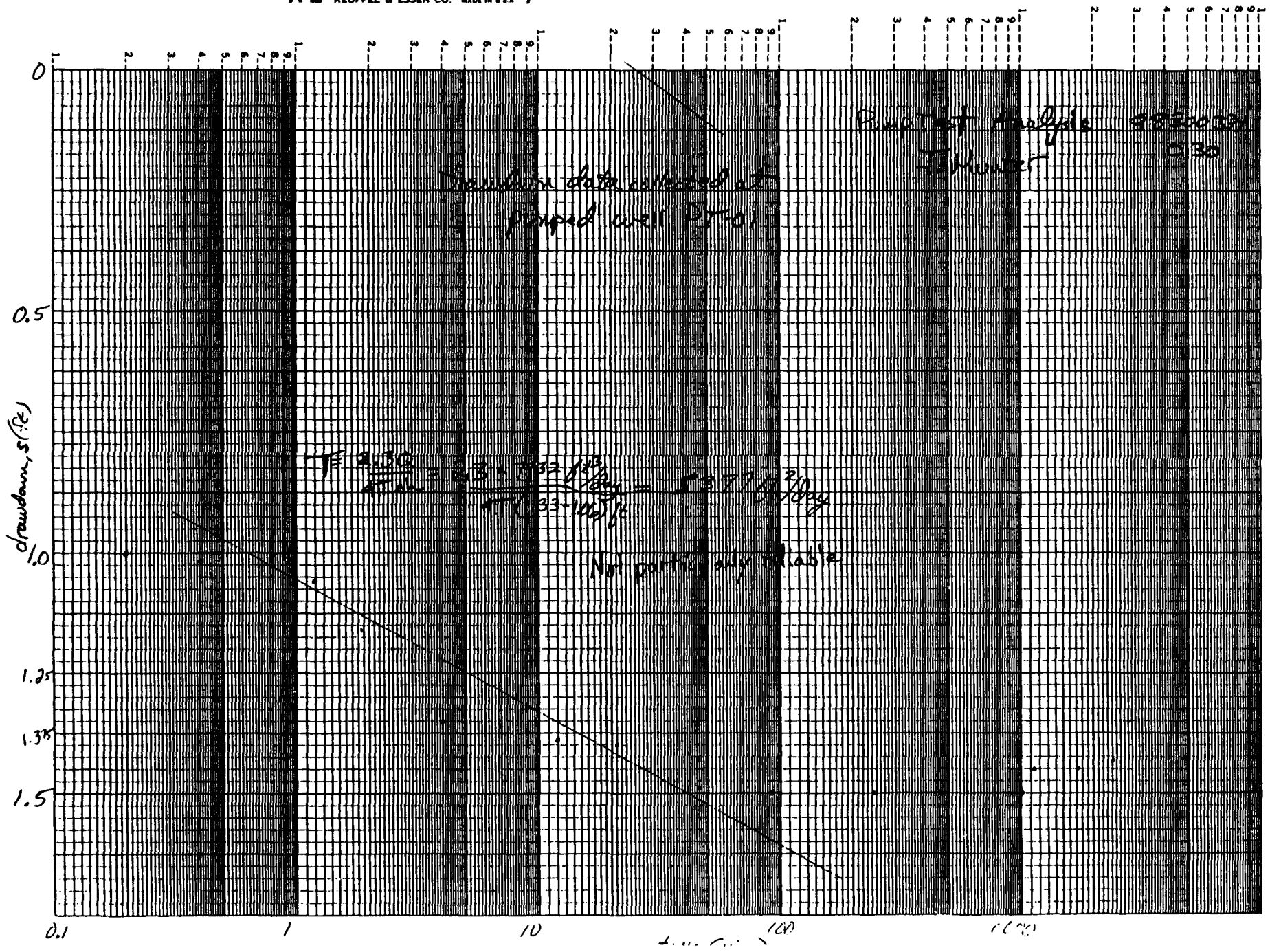
$$T = \frac{528\,Q}{\Delta s} = \frac{528 \times 41.2\ \text{gpm}}{(0.45-0)\ \text{ft}} = 48341\ \text{gpd/ft} = 6463\ \text{ft}^2/\text{day}$$

$$S = \frac{0.3\,Tt}{r_0^2} = 0.3 \times 48341\ \text{gpd/ft} \times \frac{0.347\ \text{days}}{100\ \text{ft}} = 0.503$$

$$u = \frac{r^2 S}{4Tt} = \frac{(79.2)^2 \times .5}{4 \times 6463 \times .347} = 0.35 \Rightarrow \text{Analysis no good.}$$

(& not even close)

Since data @ PT04 @ $t > 600$ min is affected by delayed yield or recharge from the reservoir, distance drawdown analysis is not possible.


K·E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 6210
Pump Test Analysis
T. Hunter
Drawdown data collected at pumped well PT-01
drawdown, s (ft)
0
0.5
1.0
1.25
1.33
1.5
0.1
1
10
100
Not particularly reliable

Subject Pump Test - Recovery analysis

By J. Munter Checked By

Date 11-8-88 Date

Project No. 88300 33A

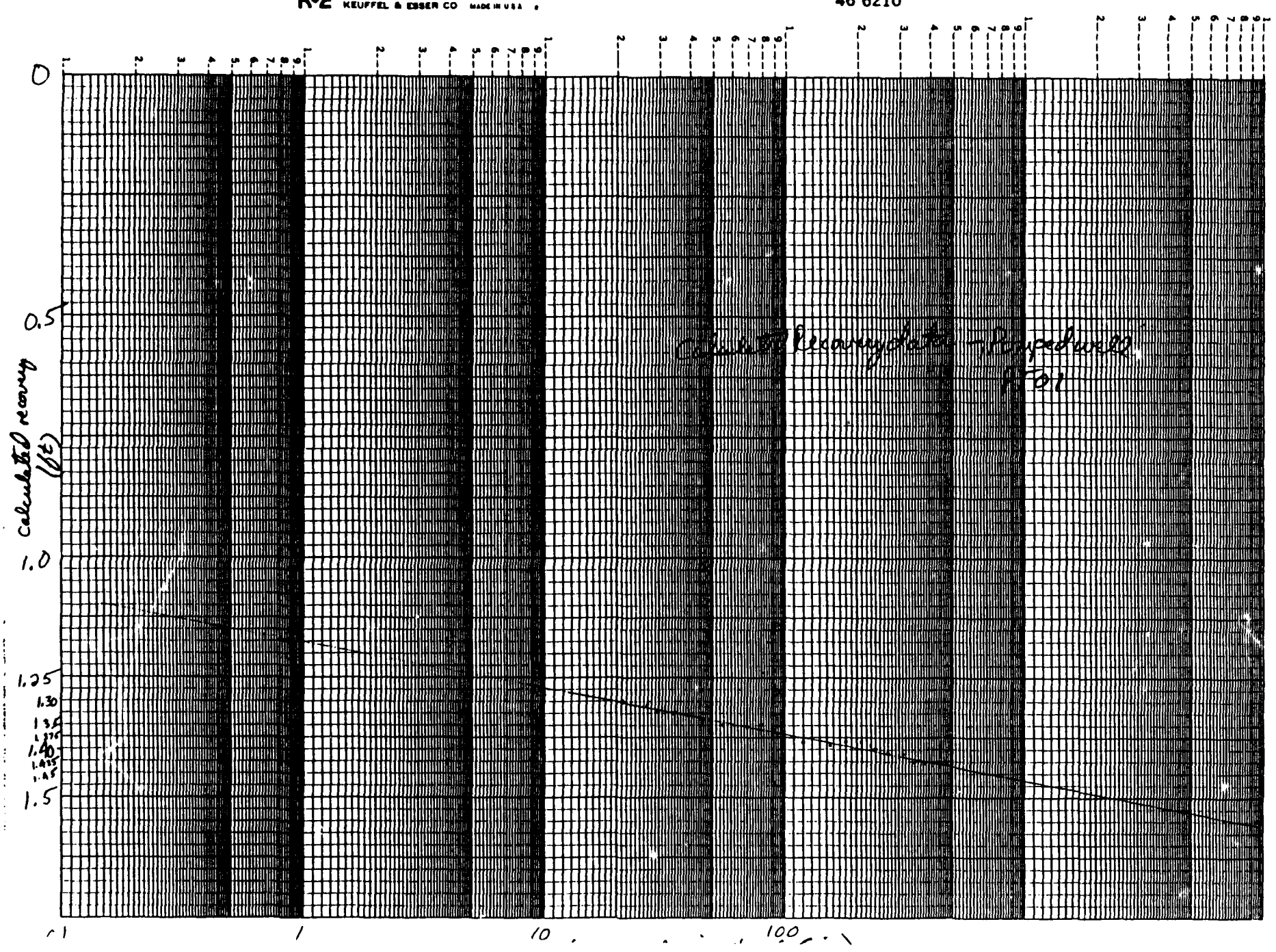
Task No. 0130

File No. PT01

Sheet _____ of _____

Calculated Recovery - Pumped well

$$T = \frac{264 \cdot Q}{\Delta S} = \frac{264 \cdot 41.2}{1.27 - 1.175} = 114{,}493 \text{ gpd/ft} = 15{,}306 \text{ ft}^2\text{/day}$$


K•E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.
46 6210
0
0.5
1.0
1.25
1.30
1.5
calculated recovery (%)
1
10
100
Calculated recovery data - Ringwood Pilot

Estimation of groundwater velocity using Darcy's Equation:

$$V = (K*dH/dL)/n$$

where: V- groundwater velocity

K- hydraulic conductivity

dH/dL- hydraulic gradient

n- porosity

ELMENDORF AFB
CALCULATION OF GROUNDWATER VELOCITY AND TRAVEL TIME
7/17/89 DJE

REPORT SECTION NO. (4.1.X)	SITE NUMBER	CONDUCT.* (ft/day)	GRADIENT* (ft/mile)	DIST TO RECEPTOR (feet)	VELOCITY (ft/day)	TRAVEL TIME (days)
1	D-3	0.24	130	2400	0.02	101538
2	D-5	300	20	5200	4.55	1144
3	D-7	300	20	5200	4.55	1144
4	D-13	300	20	5200	4.55	1144
5	D-15	NO ESTIMATE	50	800	NO ESTIMATE MADE	
6	D-16	WIDE RANGE		SURF H20		SURF H20
7	D-17	0.059	50	4500	0.00	2013559
8	IS 1-8					
	IS-1 thru IS-4	300	5	5000	1.14	4400
	IS-5, IS-6	300	10	SOIL AND SURF H20	2.27	INGEST OR SURF H20
	IS-7, IS-8	300	45	4000	10.23	391
9	S-6	NO ESTIMATE MADE		SOIL AND SURF H20		SOIL AND SURF H20
10	SP-1	30	1000	500	22.73	SOIL OR SURF H20
11	SP-2, SP-6	300	130	600	29.55	20
12	SP-4	300	60	500	13.64	37
13	SP-7, 10	300	20	4000	4.55	880
13	SP-7, 10	300	20	3000	4.55	660
14	SP-11	300	60	500	13.64	37
14	SP-11	300	60	3000	13.64	220
15	SP-12	340	25	5000	6.44	776
15	SP-12	340	25	2200	6.44	342
16	SP-13	300	15	SOIL AND SURF H20	3.41	SOIL OR SURF H20
17	SP-14	300	60	2000	13.64	147
17	SP-14	300	60	4000	13.64	293
18	SP-15	300	15	4000	3.41	1173
18	SP-15	300	15	2000	3.41	587
19	NS-1	STREAM	50	SURF H20		SURF H20
20	SP-5, 5A	0.053	NOT EST.		NO ESTIMATE MADE	
21	NS-2	300	20	5200	4.55	1144
22	NS-3	300	250	500	56.82	9
22	NS-3	300	250	500	56.82	9

* Calcs for Worst case travel time - max conductivity and gradient used when range given in text.

Eff. Porosity used was 0.25 (within the range for sand and gravel).

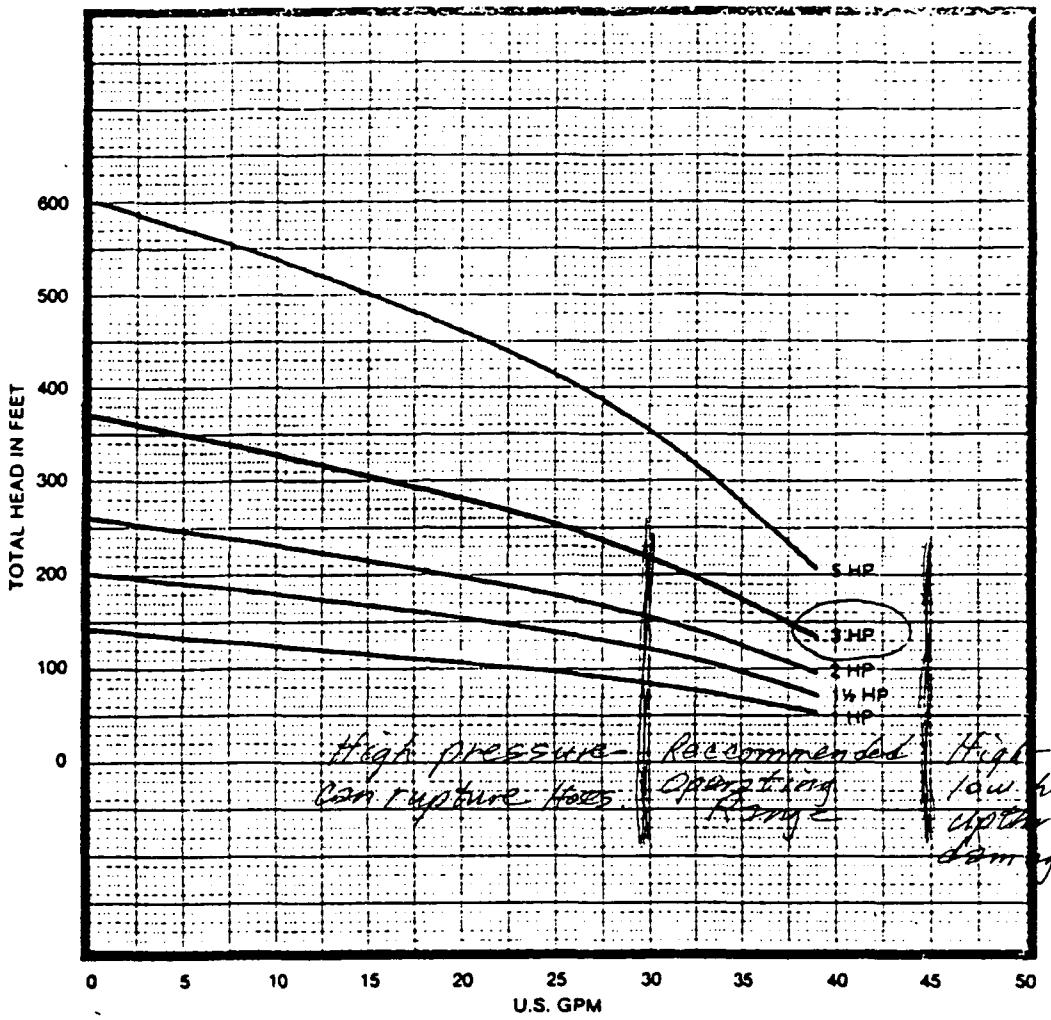
Fairbanks Morse

4XLS
3411

3450 RPM

30 GPM

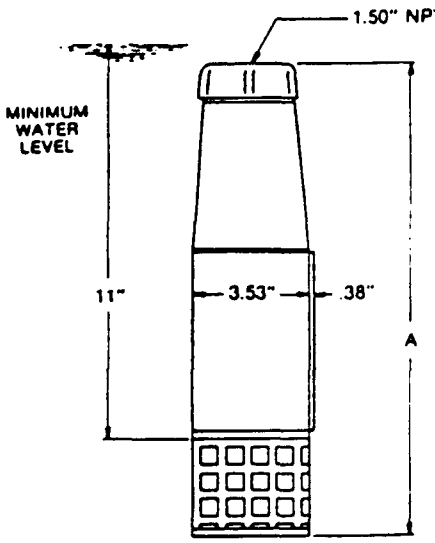
1½" PIPE



High pressure - Can rupture hose.

Recommended Operating Range

High flow, low head - Cavitation damages pump.



DIMENSIONAL DATA

MODEL	MOTOR RATING	STAGING	NOMINAL MOTOR DIAMETER	LENGTH A
4XLS	1 HP	5 STAGES	4"	18.19"
	1½ HP	7 STAGES	4"	21.69"
	2 HP	9 STAGES	4"	25.19"
	3 HP	13 STAGES	4"	32.13"
	5 HP	21 STAGES	4"	46.19"

Note: Orifice tube must be level. Read manometer level referenced from center of 2" Orifice tube.

BASKI WATER INSTRUMENTS, INC.

1586 S. Robb Way; Denver, CO 80226

2" x 1¼" Orifice Cap

$Q = KA\sqrt{2gh} = 8.02\ KA\sqrt{h}$

$Q = 8.02\ (.612)\ 1.227\sqrt{h}$

$\underline{Q = 6.022\sqrt{h}}$

Q = Discharge in gpm
A = Orifice area, $in^2 = \pi\ (.625)^2 = 1.227$
h = Head in inches
K = from Layne & Bowler curve

$R = \frac{\text{Orifice dia.}}{\text{Pipe dia. (Sch. 40)}} = \frac{1.25}{2.067} = .605$

K = .612

Head inches	GPM	Head inches	GPM	Head inches	GPM
5	13.5	27	31.3	49	42.1
6	14.8	28	31.9	50	42.6
7	15.9	29	32.4	51	43.0
8	17.0	30	33.0	52	43.4
9	18.1	31	33.5	53	43.8
10	19.0	32	34.1	54	44.3
11	20.0	33	34.6	55	44.7
12	20.9	34	35.1	56	45.1
13	21.7	35	35.6	57	45.5
14	22.5	36	36.1	58	45.9
15	23.3	37	36.6	59	46.3
16	24.1	38	37.1	60	46.6
17	24.8	39	37.6	61	47.0
18	25.5	40	38.1	62	47.4
19	26.2	41	38.6	63	47.8
20	26.9	42	39.0	64	48.2
21	27.6	43	39.5	65	48.6
22	28.2	44	39.9	66	48.9
23	28.9	45	40.4	67	49.3
24	29.5	46	40.8	68	49.7
25	30.1	47	41.3	69	50.0
26	30.7	48	41.7	70	50.4

January 1979

R. Dugan

NOTE: Leaks at joints & punctures in hose total about 1/3 gpm

PUMP/RECOVERY TEST DATA #3

INSTALLATION ID 0087 ELM

LOCATION ID DISCHARGE POINT

~~200~~ 240 ft North-West of AT-01

LOG DATE 24 Aug 88

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	~~DEPTH~~ TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
START TIME 1426				
1	3.00 (ft)	36.1 (chart)	not accurate	
5	3.00 ± .05	36.1 (chart)		
9	3.00 ± .05	36.1 (chart)		
barrel — 16	55.84 66 gal barrel in 77 sec	41.18 gpm (chart)	← Use This, instead of 36.1	
40	3.00 ± .05	36.1		
78	3.00 ± 0.02	41.2	adjusted flow upward from ~2.95	
(HRS) 97 (ET)	3.00 ± 0.02	41.2 + leakage	∞	
1753/216	3.00 ± 0.02		adjusted flow slightly (was ~2.98)	
1825	3.00 ± 0.02		adjusted flow slightly (was ~3.02	
1852	3.00 ± 0.02			
1922	3.00 ± 0.02			
2013	3.00 ± 0.02			
2103	3.00 ± 0.03		adjusted flow (was ~3.05)	
2152	3.00 ± 0.03			
2242	3.00 ± 0.02			
2332	3.00 ± 0.02			
0022	3.00 ± 0.02			
0202	3.00 ± 0.02			
0342	3.00 ± 0.02			
0522	3.00 ± 0.03			
0702	3.00 ± 0.02		adjusted flow	
0856	3.00 ± 0.02			
copied to next page ↓ 1042	~3.00 ± 0.05			
Shut pump down for	42 sec @ 0938 for oil ch			
1141	3.00 ± 0.02			

PUMP/RECOVERY TEST DATA

INSTALLATION ID [illegible]
LOCATION ID discharge point

LOG DATE 8-25-88 / 8-26-88

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0702	3.00 ± 0.02		adjusted flow	was at 3.05
0856	3.00 ± 0.02			
0902	~3.00 ± 0.05	measured 5 ft barrel height	1 min 19 sec to fill	55 gal barrell
shut pump for	42 sec @ 0938 for	oil check on generator.		(to same level as
0941	3.00 ± 0.02			described below)
1111	3.00 ± 0.02			
1322	3.00 ± 0.02			
1456	3.00 ± 0.01			
1647	3.00 ± 0.02	adjusted flow slightly downward		3.01 ± 0.02
1902	3.00 ± 0.02			
2103	3.00 ± 0.01	[illegible]	[illegible]	[illegible]
2303	3.00 ± 0.02			
0103	3.00 ± 0.02			
0303	3.02 ± 0.02			
[illegible]	3.00 ± 0.02	adjusted flow	downslope	3.05
[illegible]	3.01 ± 0.02	filled barrel to	within 0.05 ft of	top in 80 sec
		I.D. = 1.91'	depth of barrel	= 0.79 ft/min
		to rim, depth of water = 2.60 ft		
		= 55.8 gal		

copied from last page

test = 1

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID well #1 pump well
PT-01

LOG DATE 24 AUG 95

mid probe to north side of pump house

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0904	25.00'	0	SNCO #	1529
1016	25.02	0	w/R.P	IN
1056	25.14			
1116	25.05			
1132	25.05			
1147	25.05			
1203	25.05			
1217	25.06			
30 SEC				
1 MIN	26.41			
2 MIN				
5 MIN	26.32			
6 MIN	26.37			
7 MIN	26.38			
8 MIN				
9 MIN	25.02			
10 MIN	25.02			
11 MIN	25.00			
12 MIN	25.00			
13 MIN	25.00			
14 MIN	25.00'			
15 MIN				
23 MIN	24.91			

PUMP/RECOVERY TEST DATA test #2

INSTALLATION ID ELM - 0684

LOCATION ID PT-01

LOG DATE 8/24/82

Static level: 1329 24.95, 1330 24.92,

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
static level 1332	25.0		18.0	25.00
12 sec.	26.23		18.5	25.00
43 sec	25.95		19.0	25.00
1.5 min	25.80		19.5	25.00
2 min 10 sec	25.75		20.0	25.00
2.5 min	25.75		20.5	24.99
2 min 50 sec	25.75		21.0	24.99
3.5 min	25.75		21.5	25.00
4.0	25.80		23.0	25.00
4 min 40 sec	25.90		24.0	25.00
5 min 10 sec	25.84		25.0	25.00
5 min 40 sec	25.84		26.5	25.00
6 min 10 sec	25.83		28.0	25.00
7.0	25.85		30.0	25.00
8.0	25.83		32.5	25.00
9.0	25.85		35.0	25.00
10.0	25.85		40.0	25.00
12.0	26.18			
15.0	26.15			
~~18.0~~ 17.0	26.35			
~~pump off~~				

PUMP/RECOVERY TEST DATA Test # 3

Discharge point = 240 ft from this well towards Base OPs (NW)

INSTALLATION ID ELM-0687

LOCATION ID PT-01

LOG DATE 8/24/88

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
Static 00.0	25.00			
12 sec	26.00			
30 sec	26.02			
50 sec	26.06			
1 min 10	26.06			
1.5 min	26.06			
1 min 50 sec	26.16			
2 min 10 sec	26.12			
2.5 min	26.20			
3.0 min	26.34			
3.5	26.36			
4.0	26.35			
4.5	26.35			
5.0	26.34			
5.5	26.36			
6.0	26.34			
7.0	26.36			
8.0	26.37			
9.0	26.37			
10.0	26.36			
12.0	26.39			
15.0	26.40			
18.0	26.40			
21.0	26.40			
24.0	26.40			
27.0	26.40			
30.0	26.38			
35.0	26.38			
40:30 SEC	26.49			

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM-0687
LOCATION ID PT-01

LOG DATE 8/24/88 - 8/26/88

PUMP TEST			Pump ~~RECOVERY~~ TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
46.0 min	26.49		1282 1139 (~~1425~~)	26.43
51min 30SEC	26.485		1282 1139 (~~1425~~)	26.45
55min	26.49		1284 1140 (~~1426~~)	26.48
60min 30SEC	26.49		1285 1141 (~~1427~~)	26.47
71	26.5		1392 1328 (~~1534~~)	26.47
81 :35	26.48		1485 1501 (~~1627~~)	26.455
92:30	26.50		1590 1646 (~~1732~~)	26.45
101:00	26.5		1735 1901 (~~1827~~)	26.45
113	26.495		1844 2100 (~~1986~~)	26.41
120	26.5	time min ↓	1964 2300 (~~2106~~)	26.45
1652 (158min)	26.5	155 · 2084 ←	2026 0100 (~~2126~~)	26.395
1722 (188)	26.505	185 2204 ←	(~~2346~~) 0300	26.40
1752 (218)	26.51	215 2324 ←	(~~2466~~) 0500	26.43
1820 (246)	26.50	243 2440 ←	(~~2586~~) 0700	26.43
1850 (276)	26.505	273		
1920 (306)	26.51	303		
2010 (356)	26.51	353		
2100 (406)	26.51	403		
2150 (456)	26.50	453		
2240 (506)	26.495	503		
2330 (556)	26.515	553		
0020 (606)	26.50	603		
(704) ~~0120~~ 0200	26.495	703		
(803) 0310	26.50	803		
(906) 0520	26.50	903		
(1006) 0700	26.50	1003		
(1106) 0940 — water level indicator not working - went to get batteries		1163		
1126 (1222)	21	1271		
11 (1225)		1280		

~~PUMP~~/RECOVERY TEST DATA

INSTALLATION ID ELM 0657

LOCATION ID ~~PT 03~~ 01

LOG DATE 8/26/88

Recovery ~~PUMP~~ TEST			RECOVERY TEST	
ELAPSED TIME (MIN)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN)	DEPTH TO WATER (FT)
0	26.43		51	25.075
0:13	25.26		56:04	25.08
0:30	25.18		62:45	25.08
1:00	25.16		70:30	25.075
1:30	25.165		80:00	25.08
2:00	25.15		90:00	25.07
2:30	25.135		101	25.075
3:00	25.155		121	25.055
3:30	25.155		153	25.04
4:00	25.155		180	25.05
~~5:00~~ 4:30	25.155		180	25.045
5:00	25.155		210	25.05
5:30	25.145		225	25.04
6:00	25.155		pump removed	
6:30	25.155		230	25.035
7:00	25.14		231	25.03
[illegible]	25.145		231	25.035
9:00	25.15		240	25.03
10:00	25.15		270	25.025
12:00	25.145		300	25.025
15:00	25.15		323	25.02
18:00	25.135		387	24.99
21.00	25.13		383	25.00
24.00	25.125			
27:00	25.125			
30:00	25.115			
35:00	25.105			
40:00				
40:34	25.08			
46:00	25.09			

See Back

DH - reading is needle pegged to 1.0 [illegible] mark

measure mark - west side PVC
top of PVC = 0.25' below Top of steel casing
TOSC = 2.68' above concrete pad
concrete pad = 0.65' above ground surface

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID ~~pump test well~~ #4 LOG DATE 8-24-88

well located ~~67.2~~ 79.2 ft west of pumped well

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
~~0915~~	25-0.08			
0919	25-0.09			
0920	25-0.07			
0920	25-0.08			
0921	25-0.08			
0928	25-0.09			
1000	25-0.11			
1015	25-0.11			
1029	25-0.115			
1041	25-0.11			
1054	25-0.09			
1118	25-0.11			
1130	25-0.12			
1145	25-0.12			
1200	25-0.14			
1215	25-0.11			

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID PT04 LOG DATE 8-24-88

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
STATIC 1328	25-0.14			
1329	25-0.13			
1330	25-0.12			
1331	25-0.12			
1332	25-0.12	NO DATA COLLECTED @ TEST 1		
11 sec	25-0.12			
39 sec	25-0.13			
TEST #2 1 min	25-0.12			
1:28	25-0.12			
1:58	25-0.12			
2:43	25-0.12			
3:12	25-0.11			
3:47	25-0.12			
4:45	25-0.11			
5:14	25-0.12			
6:00	25-0.10			
6:30	25-0.11			
7:00	25-0.12			
9:05	25-0.11			
9:53	25-0.12			
17:11	25-0.12			
shut pump @ 17:20 19:38	25-0.10			
20:18	~~25-0.~~			
25:25	25-0.11			
33:38	25-0.14	@ 1415:21		
38:47	25 0.13	42 00 1393 21		
40:00	25-0.13			
2.45:21=42:00				

PUMP/RECOVERY TEST DATA

J. Munter

INSTALLATION ID ELM 0687
LOCATION ID PT09 LOG DATE 8/24/88 - 8/26/88

TEST # 3 Measuring point = Black mark on SW side of PVC casing PUMPING

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
start Time 14:16:48				
07 sec	25 - 0.12	41.2	185.31	25-0.07
35 sec	25 - 0.13	↓	550PM 213.17 1750	25-0.07
1:05	25 - 0.13		1820 / 244.06	25-0.06
1:38	25 - 0.13		1851 274	24.93
2:00	25 - 0.13		1921 304	24.95
2:36	25 - 0.12		2012 355	24.98
3:00	25 - 0.12		2101 409	24.96
3:35	25 - 0.10		2151 454	24.98
3:57	25 - 0.11		2242 505	24.98
4:36	25 - 0.10		2332 555	24.98
5:00	25 - 0.11		0021 609 8/25	24.96
5:30	25 - 0.10		0202 705	24.96
6:00	25 - 0.10		0342 805	24.95
7:10	25 - 0.10		0522 905	24.95
8:00	25 - 0.09		0702 1005	24.95
9:17	25 - 0.10		0914 1137	[illegible]
10.17	25 - 0.10		[illegible] 1255	[illegible]
12:00	25 - 0.11		1325 1388	[illegible] -0.04
16:42	25 - 0.10		1459 1482	[illegible] -0.025
20:50	25 - 0.09		1653 1596	[illegible] -0.03
33:17	25 - 0.095		1901 1724	24.97
38.33	25 - 0.1		2102 1845	24.99
46:35	25 - 0.1		2302 1965	24.96
56:40	25 - 0.09		0102 2085 8/26	24.96
72:35	25 - 0.08		0302 2205	24.98
84:48	25 - 0.085		0502 2325	24.97
103.00	25 - 0.08		[illegible] 2945	[illegible]
111	25 - 0.09		0723 2966	24.98
125:12	25 - 0.10			
155:34	25 - 0.07			

77 sec / 55 gal flow check

PUMP/RECOVERY TEST DATA

INSTALLATION ID 0687
LOCATION ID PT 04

LOG DATE 8/20/83

D.M.

RECOVERY DATA ~~PUMP TEST~~			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
static	24.98		[illegible]	24.98
12 sec	24.98		72:44	24.86.5
47 sec	24.95		84:57	24.86.5
1 min 15 sec	24.96		100:49	24.845
1 min 50 sec	24.96		121:59	24.85
2 min 30 sec.	24.96		152:12	24.85
3 min	24.95		181:16	24.85
3.5	24.95		210:44	24.83
4.0	24.94		213:19	24.845
4.5	24.94		243:00	24.842
5.0	24.94		243:18	24.84
5.5	24.94		273:19	24.835
6.0	24.94		307:18	24.825
6.5	24.94		324	24.82
7.0	24.93		384	24.81
8.0	24.93		385	24.82
9.0	24.93		386	24.80
10.0	24.93		387	24.81
12.0	24.92		pulled probe & left site @ 1415	
15.0	24.93			
18.0	24.93			
21.0	24.93			
24.0	24.93			
27.0	24.94			
30.0	24.92			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID well #2 LOG DATE 8-24-88

PT-03 14.9 ft. west of pumped well

meas. mark = south side PVC top of PVC = 0.30 ft below top of steel casing TOSC = 2.77 ft above concrete pad concrete pad = 0.39 ft above ground surface

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
clock time 0921	24.915'	~0		
0932	24.92	0		
1002	24.93			
1016	24.93			
1030	24.94			
1038	24.93			
1055	24.91	0		
1117	24.92			
1131	24.91			
1146	24.91			
1201	24.91			
1216	24.92			
1230	24.915	0		
30 sec	25.025			
1 min	25.03			
2 min	25.05			
3 min	25.055			
4.0 min	25.065			
5.0 min	25.070			
6.0 min	25.080			
7.0 min	25.080	pump off		
8.0 min	24.97			
9.0 min	24.965			
10.0 min	24.940			
11.0 min	24.945			
12.0 min	24.945			
13.0 min	24.940			
14.0	24.935			
15.0	24.935			
~~16.0~~ 23	24.927			

STATIC PRE-PUMPING

TEST #1

PUMP/RECOVERY TEST DATA #2

INSTALLATION ID ELM 0687
LOCATION ID PT-03 WELL #2 TEST #2
LOG DATE 8-24-88

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
static 1327	24.915'		17min 48sec	24.999
static 1332	24.9050		18 " 25"	24.986
~~0~~ 7 sec	24.980		18 " 45 "	24.980
30 sec	25.010		19.0	24.978
60 sec	25.015		20.0	24.965
1.5 min	25.010		20.5	24.965
2.0 min	25.010		21.0	24.965
2min 20sec	25.010		22.0	24.960
2 min 40sec	25.020		23.0	24.953
3.5 min	25.020		24.5	24.950
4 min	25.020		25.5	24.950
4.5	25.020		26.5	24.950
5.0	25.025		28.0	24.945
5.5	25.030		30.0	24.940
6.0	25.033		33.0	24.937
7.0	25 030		37.0	24.925
8.0	25.035		40.0	24 925
9.0	25.038		43.0	24 920
10.0	25.040			
12.0	25.060			
15.0	25.080			
~~18.0~~ 17.5	25.085			
pump off				

PUMP/RECOVERY TEST DATA #3

INSTALLATION ID 0687
LOCATION ID PT-03
Well #2 TEST #3
LOG DATE 8-24-88

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
14:16:48 static 00.0	24.920			
2:16:48 10 sec	25.010			
37 sec	25.025			
1.0 min	25.027			
1 min 20 sec	25.030			
1 min 40 sec	25.045			
2.0 min	25.050			
2 min 20 sec	25.050			
2 min 40 sec	25.052			
3.0 min	25.055			
3.5	25.060			
4.0	25.071			
4.5	25.073			
5.0	25.082			
5.5	25.081			
6.0	25.087			
7.0	25.089			
8.0	25.091			
9.0	25.093			
10.0	25.096			
12.0	25.099			
15.0	25.108			
18.0	25.110			
21.0	25.115			
24.0	25.123			
27.0	25.125			
30.0	25.123			
35.0	25.135			
~~40.0~~ 39:50	25.138			
45.0 min	25.145			

PUMP/RECOVERY TEST DATA

INSTALLATION ID 0687
LOCATION ID PT-03

LOG DATE 8/24/88 - 8/26/88

TEST #3

Pump

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
50 min 27 sec	25.143'		1651/1594	25.23
55 min	25.150		190=/1725	25.23
60 m 12 sec	25.155	drizzle	2 C 0/1845	25.24
71:40	25.17		25C 0/1963	25.235
82:30	25.18		2100/2085	25.235
91:00	25.18		2:30/2205	25.245
102:60	25.17		2502/2325	25.24
~~124:00~~ 110:30	25.18		2445	25.245
117	25.19		0725/2465	25.245
1653 156	25.2			
1722 185	25.245	pump off	→ 0728:57	
1753 216	26.20			
1820 293	25.22			
1851 279	25.195			
1921 305	25.205			
1012 355	25.21			
2100 403	25.205			
2151 454	25.205			
2242 505	25.23			
2332 555	25.225			
0022 605	25.23			
0202 705	25.23			
0342 805	25.22			
0552 905	25.225			
0720 1003	[illegible]			
0910 1135	25.25			
1111 1253	25.25			
1323 1386	25.24			
1459 1482	25.24			

HO
114=
4:10:48pm
JM watch
(start time
= 1417)

MCO
Heavy
Rain

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM CGST

LOCATION ID [illegible] LOG DATE 9/2/24

RECOVERY DATA

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
01	24.16		69:47	24.97
20	25.14	90 min (ET) = 8:58:46	79:46	~~24.82~~ 24.98
55	25.03		98:57	24.985
1:07	25.12		120:42	24.98
1:30	25.12		149:39	24.965
1:57	25.11		179:40	24.96
2:22	25.10		209:08	24.96
2:42	25.10		240:00	24.955
3:07	25.095		270:17	24.96
3:29	25.09		~~300:00~~	24.95
4:01	25.09		322	24.95
4:26	25.09		380	24.945
5:02	25.09		381	24.94
5:57	25.09		382	24.94
[illegible]	25.075			
[illegible]	25.07			
10:06	25.055			
12:00	25.05			
15:00	25.045			
18:01	25.04			
21:00	25.03			
24:02	25.02			
27:00	25.025			
30:00	25.02			
33:45	25.01			
[illegible]	25.015			
42:54	25.01			
50:31	25.005			
57:42	25.00			
61:30	25.00			

16.6 Ft south of pump well

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID well #3 GW-3A
LOG DATE 8-24-88

Measure mark - west side PVC top of PVC = 0.63 Ft below top of steel casing
TOC = 1.29 Ft above concrete pad
concrete pad = 0.37 Ft above ground surface

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0913	23.04	0		
0942	23.04			
1004	23.06			
1018	23.04			
1043	23.040	0		
1058	23.04			
1115	23.04			
1133	23.035			
1148	23.03			
1204	23.03			
1218	23.03			
Test #1 Pump on	~~23.06~~	44		
30	23.06			
60	23.065			
2:00	23.08			
3:00	23.085			
4:00	23.09			
5:00	23.09			
6:00	23.095			
7:00	23.11			
8:00	23.11			
— pump off	~~23.04~~			
9:00	23.04			
10:00	23.02			
11:00	23.02			
12:00	23.02			
13.00	23.015			
14:00	23.015			
15.00	23.015			
23:00	23.01			

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID GW-3B
LOG DATE 8-24-88

Test #2

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN)	DEPTH TO WATER (FT)
pre-pump ~~13:26~~	23.03		17:38	23.13
13.29	23.04		18:10	23.105
1331	23.04		19:34	23.10
			19:05	23.09
4	23.07		19:36	23.085
10	23.09		20:28	23.08
46	23.095		21:50	23.08
1:05	23.095		23.07	23.07
1:34	23.1		25.03	23.07
1:58	23.1		26.49	23.07
2:29	23.105		28:30	23.06
3:01	23.105		30:26	23.055
3:32	23.105		38:05	23.05
41:00	23.11		35:54	23.06
5:00	23.115		38:18	23.05
5:34	23.115		40:00	23.05
6:09	23.115			
6:48	23.12			
8:02	23.12			
9:00	23.13			
10:00	23.13			
12:10	23.15			
14:56	23.155			
17:18	23.22			

PUMP/RECOVERY TEST DATA

INSTALLATION ID Elm 0687
LOCATION ID GW-3A
LOG DATE 8-24-88

Test #3
Starting time = 1416

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1416	23.05			
5 sec 1416.08	23.09			
21	23.10			
38	23.11			
56	23.12			
1:16 min	23.12			
1:43	23.12			
2:10	23.13			
2:47	23.135			
3:13	13.14			
3:53	23.145			
4:35	23.15			
5:05	23.155			
5:33	23.155			
6:01	23.16			
6:59	23.17			
7:54	23.17			
8:57	23.17			
10:01	23.18			
12:00	23.18			
15:06	23.185			
17:56	23.20			
21:00	23.205			
24:00	23.205			
26:51	23.21			
30:00	23.21			
35:00	23.25			
39:50	23.275			
44:54	23.28			
50:32	23.25			

PUMP/RECOVERY TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID GW-3A

LOG DATE 8-24-88 - 8/26/88

Pump

PUMP TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
54:56	23.24		591 1648 1708	23.305
60:24	23.26		1723 1700	23.36
70:00	23.27		1783 2100	23.38
80:24	23.29		1963 2300	23.35
90:31	23.29	2083	0100 8/26	23.39
100:00	23.25		203 0300	23.37
104	23.25		2323 0500	23.36
110	23.25		2443 0700	23.35
120	23.26	Elapsed time (min)		
1651	23.265	154		
1722	23.26	185		
1750	23.275	213		
1820	23.26	243		
1850	23.285	273		
1920	23.29	303		
2010	23.29	353		
2100	23.29	403		
2150	23.25	453		
2240	23.31	503		
2330	23.31	553		
0020 8/25	23.315	603		
0200	23.31	703		
0340	23.31	803		
0520	23.28	903		
0700	23.32	1003		
0106	23.32	1129		
1104	23.325	1251		
1320	23.32	1383		
1455	23.32	1479		
1900				

~~PUMP~~/RECOVERY TEST DATA

INSTALLATION ID 2Cm 0687
LOCATION ID GW-3m
LOG DATE 8-26-88

Recovery

~~PUMP~~ TEST			RECOVERY TEST	
ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	PUMPING RATE (GAL/MIN)	ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0725 2586 min	23.33		50:19	23.115
pump shut-off			55:27	23.11
5	23.27		61:43	23.11
33	23.24		69:49	23.105
56	23.23		80:00	23.10
1:14	23.225		89:00	23.09
1:36	23.22		100	23.095
2:01	23.21		120 min	23.08
2:25	23.20		149	23.08
2:50	23.20		179	23.085
3:18	23.20		208	23.06
3:46	23.195		240	23.05
4:13	23.195		269	23.05
4:58	23.19		399	23.055
5:32	23.18		422	23.04
6:08	23.18		4380	23.03
7:00	23.18		Pulled probe & left site @ 1915	
8:01	23.17			
9:00	23.17			
10:04	23.175			
12:00	23.16			
15:04	23.16			
18:05	23.15			
20:53	23.145			
23:51	23.14			
27:00	23.135			
30:00	23.135			
34:38	23.13			
39:44	23.13			
45:51	23.12			

Slug Test Data

SLUG TEST DATA

INSTALL ID: ELM 0687
LOCATION ID: D3-02 (002)
LOGGER CODE: JM.
TEST METHOD: ✓ SLUG INJECTION OR ___ SLUG WITHDRAWAL
LOG DATE: 8-11-88
SLUG VOLUME (FT^3): 0.0426
COMMENTS: measure N side PVC
top of PVC = 0.32 ft below TOSC
TOSC = 1.2 ft above concrete pad - pad = 0.4 ft above ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1415	20+0.02
1416	20+0.02
1421	20+0.06
1421	20+0.06
1422	20+0.06
1427	20+0.29
1428	20+0.29
1429	20+0.29
injection	
sec	20-0.55
16	20-0.49
30	20-0.49
40	20-0.48
1:03	20-0.46
1:18	20-0.47
1:45	20-0.45
2:08	20-0.46
2:33	20-0.45
withdrawal	
8 sec	20-0.35 bad
23	20+1.19
42	20+1.12
58	20+0.86
1:13	20+0.79
1:48	20+0.72
2:10	20+0.67
2:26	20+0.64

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
3:19	20+0.60
4:08	20+0.56
4:26	20+0.42
4:44	20+0.42
5:19	20+0.47 ?

(005) **SLUG TEST DATA** TOSC = top of steel casing

INSTALLATION ID ELM 0687 ~~E807~~

LOCATION ID D5-W1 Dames & Moore

LOG DATE 8-9-88

LOGGER CODE ~~JA~~ J.M.

SLUG VOLUME (FT^3) 0.0426

TEST METHOD ___✓___ SLUG INJECTION OR ___✓___ SLUG WITHDRAWAL

COMMENTS ~~top of~~ PVC to TOSC = 0.02 ft ; TOSC = 1.14 ft above grand surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1549	40-1.38 =
1550	40-1.38 =
1556	40-1.38
1557	40-1.38
injection	
10 sec	40-1.46
14	40-1.37
38	40-1.37
withdrawal	
11 sec	40-1.375
42	40-1.37
1:05	40-1.365
1:25	40-1.35

could not get probe past slug at SWL and could not get more detailed info during 1st 11 sec.

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

(con)

SLUG TEST DATA

INSTALLATION ID SLM 0657 (0657)
LOCATION ID DS GW-1A - unconfirmed no ID on well casing DATE 5-10-88
LOGGER CODE JM SLUG VOLUME (FT³) .2426
TEST METHOD X SLUG INJECTION OR X SLUG WITHDRAWAL
COMMENTS 2" I.D. PVC top = 0.36 ft from TOSC
TOSC = 2.35' above concrete base = ground surface
measuring pt on S. side of PVC casing

FOUND STAKE IDENTIFYING well DW1-A

110 GCC sample number

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1500	40+1.75 = 41.75
1501	40+1.73 = 41.73
1501	40+1.74 = 41.74
1507	40+1.74 = 41.74
injection	
9 sec	40+1.72
22	40+1.74
41	40+1.75
60	40+1.75
withdrawal	
9sec	40+1.72
27	40+1.76
40	40+1.76
reinserted slug	
withdrawal	
6	40+1.72
17	40+1.76
29	40+1.76
47	40+1.76
reinserted slug	
1521	40+1.75
withdrawal	
6sec	40+1.72
20	40+1.77

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1524	40+1.77
inserting slug	
6 sec	40+1.78
16	40+1.77
29	40+1.78
60	40+1.78
1:40	40+1.77

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID D7 WES (010)
LOGGER CODE H J.M.
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 8-11-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS ~~reading~~ at S. side of PVC casing
PVC is 0.77 ± below TOSC. TOSC = 1.14 ft above concrete = land surface
old bags of gloves and Tyvek left around site

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	
1304	30+2.29	pull out probe and it does not show signs of being coated (hydrocarbon. etc).
1304	30+2.32	
1305	30+2.49	
1305	30+2.49	
1306	30+2.31	
1307	30+2.49	
1310	30+2.48	
1311	30+2.49	casing above static level appears to be wet
1317	30+2.48	
1318	30+2.48	
Injection		
6	30+2.34	
18	30+2.47	
37	30+2.48	
withdrawal		
8	30+2.50	
19	30+2.47	
33	30+2.48	
reinserted slug		
7	30+2.42	
19	30+2.48	
35	30+2.49	
52	30+2.50	
1:23	30+2.50	

about equilibrium reading each time

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

TOSC = top of steel casing

INSTALLATION ID ELM 657 ~~0357~~
LOCATION ID D7 GW-2C (014)
LOGGER CODE ~~JH~~ J.M.
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 5-10-88
SLUG VOLUME (FT^3) 0.0426

COMMENTS measuring pt is West side of PVC ~~PVC~~ PVC = 0.05' from TOSC
3.06 ft to TOSC above concrete = ground surface
2 inch ID on PVC casing slug hit bottom of hole

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1603	30 + 1.86 = 31.86
1603	30 + 1.865 = 31.865
1604	30 + 1.87
1610	30 + 1.85
1611	30 + 1.83
1612	20 + 1.86
1613	30 + 1.96
injection	
8 sec	30 + 1.88
25	30 + 1.89
51	30 + 1.88
1:17	30 + 1.88
1617	30 + 1.88
withdrawal	
15 sec	30 + 1.88
32	30 + 1.70 ??
56	30 + 1.89
1:14	30 + 1.89

} casing wet, hard to read

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

measure mark - red N side of PVC

SLUG TEST DATA

TOSC = Top of steel casing

INSTALLATION ID ELM 0687

LOCATION ID 013-01 (015)

LOG DATE 8-9-88

LOGGER CODE J.M.

SLUG VOLUME (FT^3) 0.0426

TEST METHOD ✓ SLUG INJECTION OR ___ SLUG WITHDRAWAL

COMMENTS top of PVC to TOSC = 0.21 ft TOSC above pad = 2.87 ft

0.3 ft pad above land surface.

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1406	40+1.02=41.02
1407	40+1.03=41.03
1407	40+1.04=41.04
1407	40+1.04=41.04
1414	40+1.02=41.02
1419	40+1.03=41.03
injection	
6 sec	40+1.015=
~~18~~	~~40+t~~
36	40+1.04=
57	40+1.04=
1419	40+1.04=
withdrawal	
~~40~~	~~40~~
held - always water	40+1.56
re inserted slug	
1421	40+1.04
withdrawal	
held - remained submerged	40+1.34
no response	40+1.19
probe submerged	

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

TOSC = top of steel casing

INSTALLATION ID SLM ~~0687~~ 0687

LOCATION ID ~~013-03(017)~~ 013-03(017)

LOG DATE 8-9-88

LOGGER CODE ~~JM~~ JM

SLUG VOLUME (FT^3) .0426

TEST METHOD ___ SLUG INJECTION OR ✓ SLUG WITHDRAWAL

COMMENTS measure spot - red - North side top of PVC to TOSC = 0.20ft; TOSC = 2.34ft above concrete pade concrete pad = 0.3 ft above ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1321	35+3.02 = 38.02
1322	35+3.02 = 38.02
1323	35+3.01 = 38.01
1332	35+3.00 38.00
injection	
5 sec	35+3.15 =
21	35+3.00 =
42	35+3.02 =
1336 hand held - never out of water	35+3.48
resubmerged slug	
2	35+3.31
42	35+3.03
resubmerged slug	
2.8 sec	35+3.12
1343 59	35+3.02

v. Rapid recovery

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID D17 W13 (032)
LOGGER CODE ~~D.A.~~ D.Y.
TEST METHOD ✓ SLUG INJECTION OR ___ SLUG WITHDRAWAL
LOG DATE 8-23-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS TOSC = 1.64 ft above ground surface – no concrete pad
Top of PVC = 0.08 ft below top of steel casing
measure mark = east side PVC

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1524	14.99
1525	14.99
injection	
15 sec	13.80
31	13.85
45	13.88
1:02	13.905
1:14	13.925
1:30	13.94
1:45	13.945
2:00	13.955
2:25	13.96
3:00	13.985
3:25	13.99
4:00	14.005
4:30	14.06
5:00	14.08
5:30	14.0
6:00	14.1
6:30	14.1
7:00	14.12
7:30	14.13
8:00	14.145
8:30	14.165
9:00	14.17
9:30	14.175
10:00	14.195
16:00	14.355

slug brought under level probe

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
WITHDRAWAL	
29 sec	15.0
45	14.955
1:05	14.935
1:32	14.96
2:00	14.995
2:30	15.045
3:00	15.92
3:30	15.915
4:00	15.905
4:30	15.76
5:00	15.715
5:30	15.705
6:00	15.67
6:30	15.645
7:00	15.635
8:00	15.61
9:00	15.575
10:00	15.535

No Sample Assoc. - 1 Test Pits

1 of 2

SLUG TEST DATA

TOSC = top of steel casing

INSTALLATION ID ELM 0687
LOCATION ID D17 W-10
LOGGER CODE QA >.M.
LOG DATE 8-11-88
SLUG VOLUME (FT^3) 0.0426
TEST METHOD ✓ SLUG INJECTION OR ____ SLUG WITHDRAWAL
COMMENTS top of PVC = 0.40 ft below TOSC
measuring pt S. side PVC TOSC = 1.2 Ft above land surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1541	10+1.75
1542	10+1.14
1547	10+1.52?
1548	10+1.74
1549	10+1.72
1549	10+1.74
injection	
8 sec	10+0.10
19	10+0.12
29	10+0.27
40	10+0.38
50	10+0.38
1:03	10+0.45
1:16	10+0.50
1:26	10+0.55
1:33	10+0.59
1:43	10+0.63
2:04	10+0.67
2:26	10+0.75
2:32	10+0.80
2:46	10+.81
3:02	10+0.88
3:18	10+0.89
3:33	10+0.94
3:47	10+0.97
4:19	10+1.04
5:00	10+1.10
6:00	10+1.19
7:18	10+1.26

wind? →

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
8:19	10+1.36
9:07	10+1.40
10:13	10+1.44
12:18	10+1.49
13:45	10+1.35 ??
14:28	10+1.36
16:27	10+1.40
18:00	10+1.52
19:00	10+1.63
20:00	10+1.65
22:14	10+1.66
1614 → 24:05	10+1.67
WITHDRAWAL	
1617	10+1.66
28 sec	15-1.65
59	15-1.83
1:22	10+3.0
1:45	10+2.93
2:10	10+2.83
2:33	10+2.57
2:47	10+2.61
3:05	10+2.55
3:22	10+2.46
3:48	10+2.54
4:05	10+2.48
4:38	10+2.32
4:56	10+2.33
5:25	10+2.25
5:52	10+2.08

2 of 2

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID D17 W-10
LOGGER CODE JM J.M.
TEST METHOD ____ SLUG INJECTION OR ____ SLUG WITHDRAWAL
COMMENTS well responding nicely

LOG DATE 8-11-88
SLUG VOLUME (FT^3) ____

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
6:36	10+2.01
7:26	10+1.95
8:00	10+1.94
10:21	10+2.02 ?
10:57	10+1.83
11:44	10+1.95
12:28	10+1.83
13:49	10+1.80
14:26	10+1.74
14:43	10+1.70
15:17	10+1.87
15:41	10+1.69
16:00	10+1.65

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

INSTALLATION ID ELM 0687

LOCATION ID IS3 (035) LOG DATE 8-11-88

LOGGER CODE JH, JM SLUG VOLUME (FT^3) 0.0426

TEST METHOD / SLUG INJECTION OR ~~/~~ SLUG WITHDRAWAL

COMMENTS top of PVC = 0.44 below TOSC = ground surface (flush finished well) Has measure top of PVC, south side.

water (0.20 ft), 0.20 ft below flush mount well head - oily film on top of water

rained heavily last night

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1103	40+1.38=41.38
1104	40+1.37=41.37
1105	40+1.37=41.37
1:13	40+1.37 41.37
injection	
7sec	40+1.28=41.28
18	40+1.33=
26	40+1.35=
35	40+1.35=
44	40+1.35=
60	40+1.36=
1:16	40+1.36=
re-injected slug	
4	40+1.24
12	40+1.30
19	40+1.32
27	40+1.33
35	40+1.35
44	40+1.36
53	40+1.36
1:05	40+1.36

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

when slug was at or near H_2O level - could not get probe past slug

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID IS-4 (036)
LOGGER CODE JH D.Y
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 8-23-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS flush mount water around well
measure mark - east side PVC
Top of PVC = 0.29 ft below ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1220	23.47
1220	23.46
1221	23.47
1226	23.45
injection	
5	23.40
16	23.45
31	23.45
42	23.45
53	23.45
WITHDRAWAL	
18	23.43
33	23.46
42	23.46
60	23.46
reinsert slug	
1231	23.45
5	23.43
15	23.44
23	23.44
34	23.44
38	23.45
48	23.45
60	"

WITHDRAWAL ✓

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

TOCS = top of steel casing

INSTALLATION ID GLM 0687
LOCATION ID TS-6 (038)
LOGGER CODE JH, J.M.
TEST METHOD ___ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 8-10-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS Top of PVC = 0.9 ft below TOSC
TOSC = Bill' above pad = ground surface
measuring pt = N side steel casing ~~<0.5 ft of fluid in well annulus~~
Fluid level in annulus = 0.5 ft below top of PVC.

ELAPSED TIME (MIN)	DEPTH TO WATER (FT)
117	50+1.01
1117	50+1.01
1118	50+1.02
1125	50+1.04
1125	50+1.04
injection	
7sec	50+1.00
22	50+1.02
37	50+1.02
60	50+1.02
withdrawal	
13 sec	50+0.98 - casing wet, prob. not good reading
29	50+1.02
55	50+1.04
1:10	50+1.04

looks like water

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID ~~ISP~~-8 (040)
LOGGER CODE ~~Off~~ J.M
TEST METHOD ____ SLUG INJECTION OR ____ SLUG WITHDRAWAL
LOG DATE 8-10-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS ~~top of PVC~~ to TOSC = 0.63 ft TOSC = 2.87 ft above concrete ~~pad~~
ref measuring point of N side PVC
concrete pad 0.30 ft above ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0906	25-0.37 =
0906	25-0.38 =
0907	25-0.38 =
~~0915~~ 0916	25-0.42 =
0917	25-0.40 =
0917	25-0.40 =
inserted slug	
5 sec	25-0.44 =
24	25-0.41 =
39	25-0.41 =
60	25-0.42 =
withdrawal	
14	25-~~0.57~~ 0.52 or 0.57 ← Poor reading either
37	25-0.48 =
51	25-0.46 =
1:16	25-0.45 =
1:22	25-0.42 =
1:42	25-0.43 =
reinserted slug	
0925	25-0.42
withdrawal	
9 sec	25-0.60
23	25-052
33	25-0.49
44	25-0.46
54	25-0.46
1:10	25-0.44
1:25	25-0.44
1:38	25-043

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1:50	25-0.42

0.60
2.59
0.20

1 of 2

SLUG TEST DATA

INSTALLATION ID ELM 0687

LOCATION ID SP2-SP6-04 (054)

LOG DATE 8-12-88

LOGGER CODE JH, JM

SLUG VOLUME (FT^3)

TEST METHOD ___ SLUG INJECTION OR ___ SLUG WITHDRAWAL

COMMENTS 2" ID PVC ~~TOP~~ M.P = East side of pvc = 0.60' below top of steel casing = 2.59 ft above top of concrete pad which is 0.20 ft above land surface

J.H. first test

W.L. by JH static

Notes by JM

ELAPSED TIME (~~MINT~~) sec	DEPTH TO WATER (FT)
12:45	35+3.06
17:46	40-1.60
17:48	40-1.93
17:49	40-1.84
12:49:30	40-1.88
12:50	40-1.76
12:51	40-~~3~~2.04
12:52	40-~~2~~.88
12:53	40-~~2~~.82
12:54	40-~~2~~.74
12:54:30	40-~~2~~.64
12:55	40-~~2~~.60
12:55:30	40-~~2~~.57
12:58:30	40-1.65
1:00:30	40-1.61
1:02	40-1.64
1:03	40-1.63
1:04	40-1.63
1:12:30	40-1.62
1:15	40-1.60
1:15:30	40-1.67
1:17:30	40-1.68
1:18	40-1.73
1:19	40-1.63
1:20	40-1.63
INSERT SLUG	
7 sec	40-1.69
21 sec	40-1.63
32 sec	40-1.64

(spacing between tabs 35+40=4.95')

Train engine went by @ 12:54:30 300 ft away

JM does water levels

ELAPSED TIME sec (~~MINT~~)	DEPTH TO WATER (FT)
48 sec	40-1.63
60 sec	40-1.63
W. Withdrawal	
8 sec	40-~~1~~.78
22 sec	40-1.82
37 sec	40-1.80
50 sec	40-1.84
1:11	40-1.62
1:28	40-1.62
1:40	40-1.65
END	
1:30 PM	40-1.74
1:30:30	40-1.73
1:31	40-1.64
1:31:30	40-1.63
1:32	40-1.65
INSERT SLUG	
6 sec	40-1.85
25 sec	40-1.65
41 sec	40-1.635
56 sec	40-1.63
1337	40-1.61
1338	40-1.63
withdrawal	
13 sec	40-1.66
29	40-1.66
44	40-1.68
1:04	40-1.64
1:23	40-1.62

2 of 2

SLUG TEST DATA

INSTALLATION ID ELM 0657

LOCATION ID SP2/6 04 (054)

LOG DATE 8-12-88

LOGGER CODE JH. L.M

SLUG VOLUME (FT^3) _____

TEST METHOD ___ SLUG INJECTION OR ✓ SLUG WITHDRAWAL

COMMENTS _____

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1343	40-1.61
1344	40-1.52
1345	40-1.62
1347	40-1.77
1348	40-1.63
injection	
5 sec	40-1.72
19	40-1.70
35	40-1.85 ?
1:03	40-1.65
1:40	40-1.65

Slim observed water level drop while taking reading

casing seems wet

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

0687

TOC = top of steel casing

INSTALLATION ID GLM ~~0967~~

LOCATION ID SP5-02 (073)

LOG DATE 8-9-88

LOGGER CODE SH. JM

SLUG VOLUME (FT^3) 0.0426

TEST METHOD ___ SLUG INJECTION ~~OR~~ and X SLUG WITHDRAWAL

COMMENTS measure pt N side of PVC casing - Marked w/ red pen

0.30 ft to TOC from PVC 1.93' pad to TOC steel 0.30' - ground to pad

measure to middle of yellow tab

water level indicator
Water Master
Johnson Div UOP

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0911	20+2.25 = 22.25
0913	20+2.34 = 22.34
0914	20+2.24 = 22.24
0923	20+2.23 22.23
0923	20+2.24 = 22.24
injection	
9 sec	20+1.41 = 21.41
29	20+1.66 = 21.66
40	20+1.71 = 21.71
57	20+1.79 = 21.79
1:10	20+1.85 = 21.85
1:21	20+1.87 = 21.87
1:35	20+1.90 = 21.90
1:45	20+1.95 = 21.95
2:02	20+1.98 = 21.98
2:14	20+1.99 = 21.99
2:29	20+2.01 = 22.01
2:50	20+2.05 = 22.05
3:15	20+2.04 = 22.04
3:40	20+2.04 = 22.04
4:23	20+2.09 = 22.09
4:45	20+2.09 = 22.09
5:35	20+2.11 = 22.11
6:12	20+2.14 = 22.14
7:00	20+2.13 = 22.13
recalibrate w/slug in	
0941	20+2.12 = 22.12
0944	20+2.15 = 22.15
0945	20+2.18 = 22.18

0924

0953

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0946	22.18
0949	20+2.06 22.06
0950	20+2.12 = 22.12
0950	20+2.18 = 22.18
0951	20+2.16 = 22.16
withdrawal	
16 sec ?	20+2.47 = 22.47
30 ?	20+2.44 =
44 ?	20+2.52 =
60	20+2.48 =
1:20	20+2.47 =
1:40	20+2.47 =
slug back in	
0955	22.00
0955	22.05
0956	20+2.17 = 22.17
2 sec	20+2.80 22.80 (held)
18	22.53
29	20+2.53 = 22.53
49	20+2.47 = 22.47
1:02	20+2.51 = 22.51
1:20	20+2.50 = 22.50
1:45	20+2.47 = 22.47
2:08	20+2.42 = 22.42
2:20	20+2.42 = 22.42

slug got caught up on
prior cycle removal,
ref slug back in

SP2/SP6

SLUG TEST DATA

INSTALLATION ID ~~PZ11~~ CC87

LOCATION ID ~~[illegible]~~ GW64 (062)

LOG DATE 5-12-88

LOGGER CODE ~~[illegible]~~ J.M.

SLUG VOLUME (FT^3) CC426

TEST METHOD ✓ SLUG INJECTION OR X SLUG WITHDRAWAL

COMMENTS 2.1" PVC measure pt E side of PVC casing

top of PVC = 0.11' below TOSC TOSC = 2.18' from concrete pad = ground surface

ELAPSED TIME (MIN)	DEPTH TO WATER (FT)
~~TEST~~ 1210	30+1.73
12.11	30+1.72
12.15	30+1.74
12.16	30+1.72
1217	30+1.72
injection	
5sec	30+1.68
18	30+1.72
33	30+1.72
1223	30+1.73
withdrawal	
5	30+1.77
21	30+1.72
32	30+1.72
47	30+1.72

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID SP4-01W (063)
LOGGER CODE ~~AA~~ J.M.
TEST METHOD ____ SLUG INJECTION OR ____ SLUG WITHDRAWAL
LOG DATE 8-12-88
SLUG VOLUME (FT^3) 0.0476
COMMENTS measure pt W side of PVC casing
top of PVC = 0.26 ft below TOSC TOSC = 2.74 ft above concrete pad
0.3 ft top of concrete pad to land surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1539	5+0.39
1540	5+0.39
1540	5+0.39
1543	5+0.41
1544	5+0.41
injection	
8 sec	5+0.35
19	5+0.38
31	5+0.36
44	5+0.39
1:03	5+0.37
WITHDRAWAL	
6 sec	5+0.38
15	5+0.38
29	5+0.38
injection	
7 sec	5+0.36
19	5+0.37
~~hold~~ 5 even	
39	5+0.37
	held 5.00 ft on for less than 1 sec

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID SP5-06 (077)
LOGGER CODE JM & JH
TEST METHOD _____ SLUG INJECTION OR X SLUG WITHDRAWAL
LOG DATE 8-5-88
SLUG VOLUME (FT^3) 0.01625
COMMENTS 2" I.D. · 0.39 ft below top of steel casing
2.60 ft to bottom of exposed casing

1535 - 34.90 ft: 1536 - 34.91: 1537 - 34.905:

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1535	34.90
1536	34.91
1537	34.905
1539	34.90
1540	34.91
1541	34.91
~~1559~~ 1559	34.89
~~slug injection~~	
1559	34.90
1600	34.90
1601	34.90
injection	
10.5 sec	34.74 difficult to
30	34.85 get accurate
41	34.86 readings
53	34.865
1:12	34.87
1:50	34.87
2:29	34.87
4:05	34.87

WITHDRAWAL

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
10 sec	35.45
27	35.22
38	35.15
47.	35.10
54	35.04
1.03 ?	35 03
1.16	(35.02 → 34.98
1.30	34.95
1:40	34.94
1:50	34.94
2:05	34.93
2:19	34.92
2:32	34.92
2:49	34.92
3:07	34.93
3:45	34.92
4:20	34.92

SLUG TEST DATA

TOSC = top of steel casing

0687

INSTALLATION ID ELM ~~0867~~

LOCATION ID SPS-07 (078)

LOG DATE 8-9-88

LOGGER CODE ~~AA~~ AM

SLUG VOLUME (FT^3) 0.0426

TEST METHOD ____ SLUG INJECTION OR ____ SLUG WITHDRAWAL

COMMENTS measuring mark-red- NSide PVC; 0.43 top of PVC to TOSC; 2.92' pad to TOSC - concrete pad 0.30' above ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1027	35-0.33 = 34.67
1028	35-0.33 = 34.67
1029	35-0.33 = 34.67
~~injection~~	~~35-0.27=~~
1040	35-0.27 = 34.73
1041	35-0.24 = 34.76
1041	35-0.25 = 34.76
1042	35-0.26 = 34.74
1041	35-0.26 = 34.76
injection	1.76
8 sec	35-1.76 = 33.24
23	35-1.58 = 33.42
46	35-1.37 = 33.63
1:03	35-1.32 = 33.68
1:24	35-1.21 = 33.79
1:48	35-1.19 = 33.81
2:03	35-1.06 = 33.94
2:31	35-0.97 = 34.03
2:52	35-0.91 = 34.09
3:14	35-0.87 = 34.13
3:33	35-0.81 = 34.19
3:50	35-0.77 = 34.27
4:15	35-0.71 = 34.29
4:32	35-0.68 = 34.32
5:08	35-0.63 = 34.37
5:45	35-0.58 = 34.42
8:00	35-0.46 = 34.54
10:00	35-0.40 = 34.60
12:00	35-0.33 = 34.67

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
13:20	35-0.33 = 34.67
withdrawal	
20 sec	35+1.11 = 36.11
38.	35+1.0 = 36.0
50	35+1.02 = 36.02
1:16	35+0.95 = 35.95
1:30	35+0.96 = 35.96
1:54	35+0.91 = 35.91
2:12	35+0.88 = 35.88
2:29	35+0.76 = 35.76
2:48	35+0.74 = 35.74
3:05	35+0.71 = 35.7
3:35	35+0.61
3:53	35+0.55
4:32	35+0.47
5:54	35+0.30
7:30	35+0.17
9:00	35+0.04
10:15	35+0.0
11:10 12:00	35-0.04

SLUG TEST DATA

INSTALLATION ID 9LM 0867
LOCATION ID SBS-~~0~~8 (079)
LOGGER CODE 1 # 9.M
TEST METHOD ___X___ SLUG INJECTION OR ___X___ SLUG WITHDRAWAL
LOG DATE 8-8-88
SLUG VOLUME (FT^3) 0.0426/2
COMMENTS 0.18 top of casing to measuring point on N side of casing
2.36 to top of casing from concrete pad = concrete pad 0.4 ft above ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1454	16.26
1455	16.255
1456	16.245
1457	16.245
1457	16.255
injection	
10 sec	16.08
26	16.085
40	16.09
60	16.105
1:15	16.11
1:33	16.112
1:52	16.117
2:25	16.115
2:47	16.12
3:37	16.125
4:32	16.13
5:45	16.135
6:33	16.14
7:50	16.14
8:44	16.145
9:30	16.15
11:00	16.16
13:22	16.16
14:40	16.165
16:00	16.165
17:56	16.17
18:40	16.17

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
20	16.17
23:00 ~~2.385~~	16.18
WITHDRAWAL	
8 sec	16.33 ?
27	16.305
38	16.295
56	16.295
1:19	16.30
1:49	16.29
4:45	16.27
5:08	16.27
second time for test	
injection	16.27
6 sec	16.095
18	16.105
26	16.11
36	16.125
47	16.135
1:16	16.13
1:38	16.14
2:00	16.14
WITHDRAWAL	
3	16.50
14	16.31
25	16.31
42	16.30
60	16.29
2:00	16.27

Tested Robins' Soil well level indicator

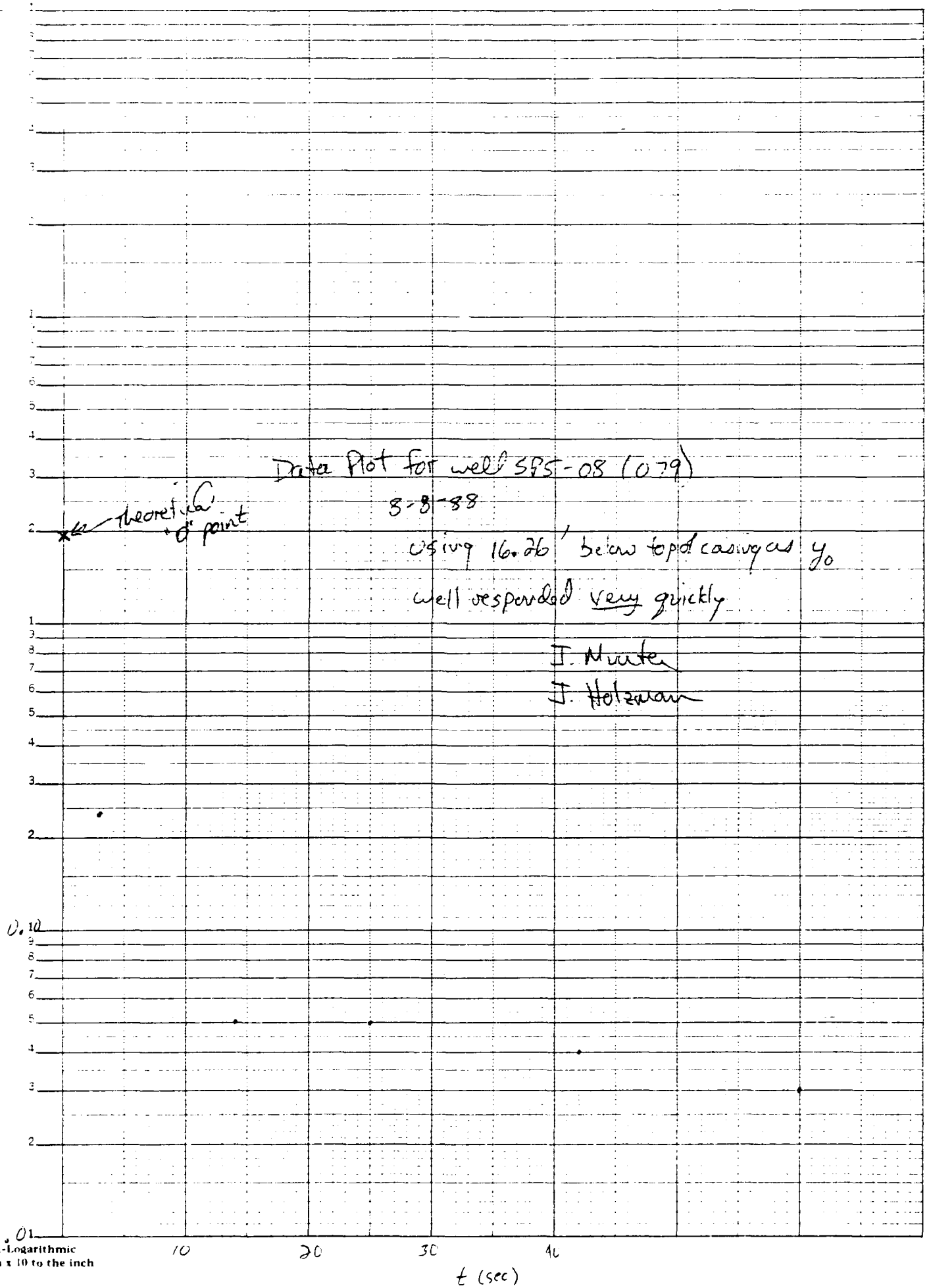
1501

injection readings top of casing mark for measuring levels at 0.18

tape covering old measuring pt.

time = 1532

2:17


Data Plot for well SPS-08 (079)
8-8-88
theoretical d point
using 16.26' below top of casing as y0
well responded very quickly
J. Hunter
J. Holzman
Semi-Logarithmic
1 Cycles x 10 to the inch
10
20
30
40
t (sec)

J. Munter
J. Holzman

SLUG TEST DATA

INSTALLATION ID Elm 0687
LOCATION ID ~~SB5-608 (0879)~~
LOGGER CODE SB5-10 (0819)
LOG DATE 8-8-88
SLUG VOLUME (FT^3) 0.0426
TEST METHOD X SLUG INJECTION OR ✓ SLUG WITHDRAWAL
COMMENTS 2.70 ft = top of casing from concrete pad - ground surface
0.40 top of well to top of casing
ID casing = 2 in measure - red mark N side of casing
(Measuring point)

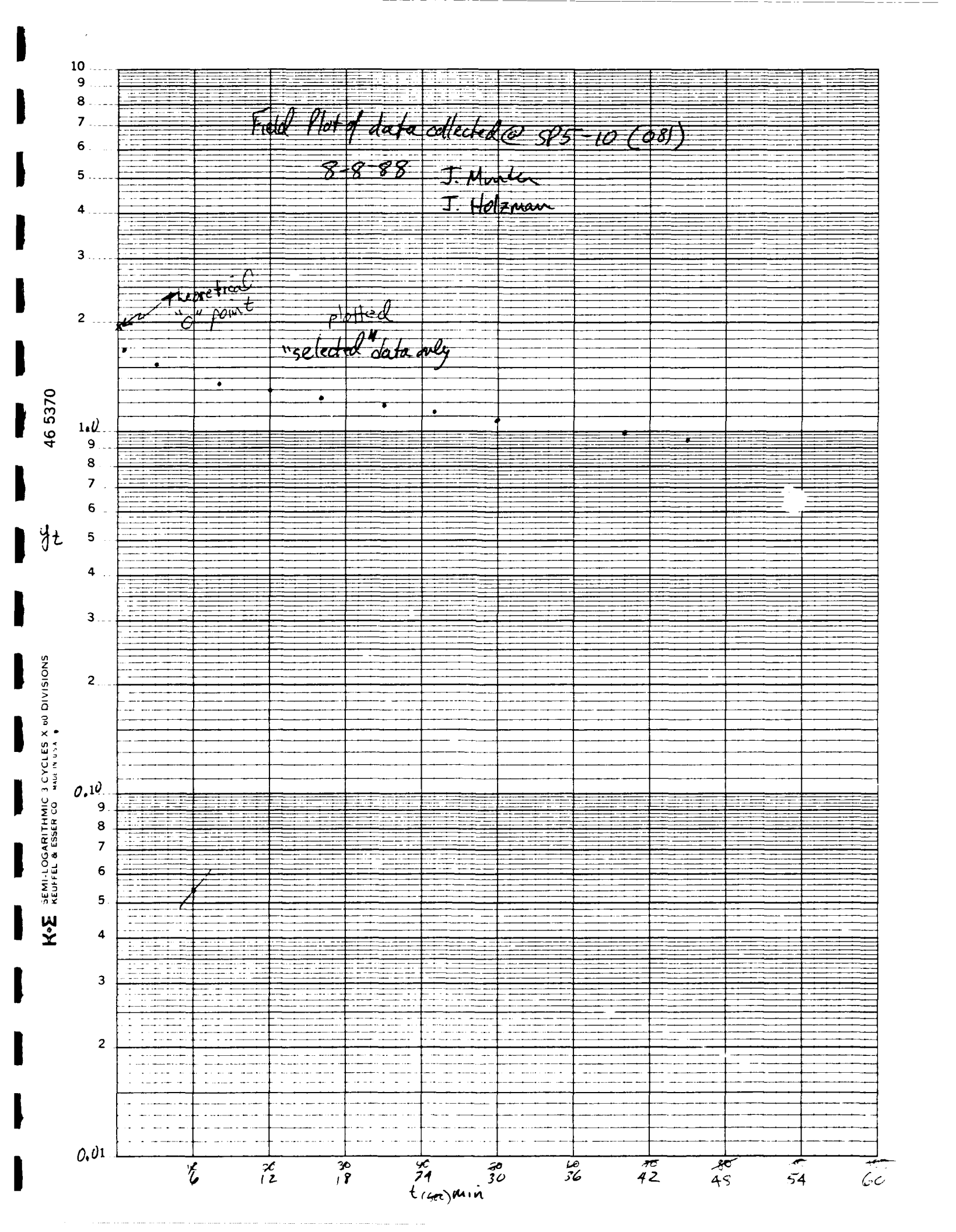
Soil Test DR70A water level indicator using Robins'

ELAPSED TIME (MIN.)	DEPTH TO (dtw) WATER (FT)	
1325	2.93	
1329	2.93	
1337	2.90	
1338	2.93	$y_o = 2.93$
1339	2.93	
		$y_t =$
injection		$y_o - dtw_t$
30 sec	1.25	1.68
1 min 30 sec 1:30 "	(2.64-) 1.36	1.57
2 min 30 sec 2:20 "	(2.61-) 1.39	1.54
3:00	1.40	1.53
4:00	1.43	1.50
5:00	1.47	1.46
6:30	1.52	1.41
8:00	1.57	1.36
10:00	2-0.36 = 1.64	
11:30	2-.37 = 1.63	
12:00 (12 min)	2-0.37 = 1.63	1.30
14:00	2-0.36 = 1.64	
19:50	2-0.335 1.665	
16:00	2-0.31 1.69	1.24
17:00	2-0.28 1.72	
18:25	2-0.26 1.74	
20:00	2-0.26 1.74	
21:00	2-0.26 1.74	1.19
22:30	2-0.255 1.745	
25:00	2-0.20 1.80	1.13
27:00	2-0.19 1.81	

JM reading PWL

JH reading PWL

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)	y_t
30	2-0.15 = 1.85	1.08
35	2-0.16 = 1.84	
40	2-0.06 = 1.94	0.99
45	2-0.02 = 1.98	0.95
50	2-0.01 1.99	
pulled probe & slug & left site ~1:30 PM		


Field Plot of data collected @ SPS-10 (081)
8-8-88 J. Mueller
J. Holzman
theoretical "0" point
plotted "selected" data only
10
9
8
7
6
5
4
3
2
1.0
9
8
7
6
5
4
3
2
0.10
9
8
7
6
5
4
3
2
0.01
6
12
18
24
30
36
42
48
54
60
t (sec) min
y/t
46 5370
K+E SEMI-LOGARITHMIC 3 CYCLES X 60 DIVISIONS
KEUFFEL & ESSER CO MADE IN U.S.A.

SLUG TEST DATA

WELL ID ELM 0687
SOIL SB7 SB10 01 184 LOG DATE 8-23-88
LOGGER CODE SA D.Y. SLUG VOLUME (FT^3) 0.0426
METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
COMMENTS CONCRETE PAD FLUSH W/GROUND SURFACE; OUTER CASING STICKUP IS 0.9' PVC IS 0.2' BELOW STEEL CASING. MEASURING MARK ON EAST SIDE

INJECTION

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1125	14.95
1127	14.95
1127	14.95
1134	14.93
04 SEC	14.91
17 SEC	14.93
27 SEC	14.94
39 SEC	14.93
54 SEC	14.96
1:07	14.94
1:23	14.93

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
WITHDRAWAL	
1139	
03	15.04
29	14.97
42	14.97
50	14.95
1:04	14.95

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID SP7/SP10 02 (085)
LOGGER CODE JH D.Y.
TEST METHOD 1/2 SLUG INJECTION OR ____ SLUG WITHDRAWAL
LOG DATE 8-23-88
SLUG VOLUME (FT^3) 0.00426
COMMENTS TOSC = 0.11 ft above concrete pad = ground surface
Top of PVC = 0.16 ft below TOSC
measure mark = east side PVC

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1053	16.35
1054	16.34
1054	16.36
1055	16.35
1058	16.36
injection	
7 sec	16.35
WITHDRAWAL	
16 sec	16.27
19	16.35
31	16.35
39	16.35
47	16.35
reinject slug	
6 sec	16.33
15	16.34
22	16.35
29	16.35
35	16.35
42	16.35
50	16.355

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

TOSC = top of steel casing

INSTALLATION ID ELM 0687
LOCATION ID SP7/SP10 03 1086
LOGGER CODE JA D.Y.
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 8-23-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS TOSC = 2.52 ft above concrete pad – pad = 0.14 ft above ground
top of PVC = 0.615 ft below TOSC
measure mark = east side PVC

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0859	25.19
0900	25.21
0900	25.21
0902	25.215
0909	25.215
injection	
7 sec	25.11
16	25.185
26	25.19
38	25.19
44	25.21
60	25.20
1:15	25.20
1:30	25.20
0917	25.20
WITHDRAWAL	
7 sec	25.235
20	25.228
34	25.22
45	25.22
1:00	25.21
1:17	25.21

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST

INSTALLATION ID ELM 0687
LOCATION ID SB7/SP10 04 (087)
LOGGER CODE JA D.Y.
TEST METHOD V SLUG INJECTION OR ___ SLUG WITHDRAWAL
LOG DATE 8-23-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS contaminated well, MEASURE MARK EAST SIDE OF PVC, TOP OF PVC 0.25' BELOW TOP OF STEEL CASE, STEEL CASE 1.66' ABOVE CONCRETE PAD, PAD = GROUND SURFACE

INJECTION

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1412	19.37'
1413	19.35
1413	19.36
1418	19.35
5 SEC	19.26
15	19.34
25	19.35
36	19.35
42	19.35
60	19.35

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
WITHDRAWAL	
1ST TEST - PROBE STUCK	
START AGAIN AFTER STABILIZATION	
1423	19.35
3 SEC	19.52
16	19.35
35	19.36
49	19.36
60	19.36

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID SAT/SPIO W-3 (~~0686~~) (0688) LOG DATE 8-23-88
LOGGER CODE ~~AA~~ D.Y. SLUG VOLUME (FT^3) 0.0426
TEST METHOD ✓ SLUG INJECTION OR ____ SLUG WITHDRAWAL
COMMENTS MEASURING PT ON EAST SIDE, TOP OF PVC IS 0.28' BELOW TOP OF SURFACE CASING. SURFACE CASING IS 1.3' ABOVE GROUND SURFACE

IN SECTION

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
0946	~~21.45~~ 21.5'
0948	21.48'
0948	21.48'
0949	21.47'
0955	21.48
03 SEC	21.22
14	21.48 ?
37	21.35
50	21.37
60	21.39
1:10	21.39
1:20	21.44
1:30	21.47
1:40	21.45
1:49	21.48
2:0	21.48
2:15	21.44
2:36	21.48

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
WITHDRAWAL	TEST
0:35	21.71
12	21.49
23	21.45
32	21.45
44	21.41
57	21.41
1:07	21.41

SLUG TEST DATA

TOSC = top of steel casing

INSTALLATION ID ELM 0687
LOCATION ID SP11 W-14 (090)
LOGGER CODE JM
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 8-12-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS measure pt NE side of casing (low spot)
0.05 ft, top of PVC to TOSC TOSC = 1.40 ft above concrete which is land surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1436	5-1.41
1437	5-1.39
1438	5-1.45
1438	5-1.45
1439	5-1.51
1439	5-1.40
1440	5-1.42
1445	5-1.39
injection	
<30 sec	5-1.44
30	5-1.39
37	5-1.40
54	5-1.40
withdrawal	
7 sec	5-1.50
19	5-1.40
32	5-1.40
46	5-1.40

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

TOSC = top of steel casing

INSTALLATION ID ELM 0687
LOCATION ID SP14-02 (09)
LOGGER CODE J.M.
TEST METHOD ___ SLUG INJECTION OR ___ SLUG WITHDRAWAL
LOG DATE 8-10-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS top of PVC = 0.50 ft to TOSC; TOSC = 2.4 ft above concrete pad measure mark, N side
land surface = 0.2 ft below concrete pad

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1023	35+1.22 = 36.22
1023	35+1.27 = 36.27
1023	35+1.25 = 36.25
1024	35+1.25 = 36.25
1031	35+1.22 = 36.22
1031	35+1.20 = 36.20
1031	35+1.21 = 36.21
1032	35+1.20 = 36.20
inserted slug	
6 sec	35+1.16 = 36.16
21	35+1.20 = 36.20
36	35+1.20 = 36.20
50	35+1.21 = 36.21
withdrawal	
12	~~35+1.20~~ 1.19
26	35+1.20
reinserted	slug
~~1038~~	
1039	35+1.21 = 36.21
6 sec	35+1.17 =
20	35+1.20 =
37	35+1.21 =

casing wet hard to get accurate reading water level should be lower

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

TOSC = top of steel casing

INSTALLATION ID 9LM 0687 ~~0867~~

LOCATION ID NS2-02 (10)

LOG DATE 8-9-88

LOGGER CODE ~~JAA~~ JM

SLUG VOLUME (FT^3) 0.0426 ~~ft3~~

TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL

COMMENTS 0.53' top of PVC to TOSC - 1.99 ft concrete pad to TOSC
0.30 ft from ground surface to top of concrete pad

water marker Johnson WOP

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1230	40+0.18 = 40.18
1230	40+0.18 = 40.18
1239	40+0.18 = 40.18
injection	
8	40+0.17 = 40.17
17	40+0.17 = 40.17
32	40+0.17 = 40.17
55	40+0.18 = 40.18
1:15	40+0.18 = 40.18
removes slug - electrical caughton top of slug re-inserted slug	
1246	40+0.19 = 40.19
1247	40+0.19 = 40.19
~~1247~~	
WITHDRAWAL	
10	40. ~~+2.15~~ 0.25
18	40 ~~+2.15~~ 0.25
40	40 +~~2.15~~ 0.25
57	40 +~~2.21~~ 0.31
injection - stabilization	
125~~8~~	40+0.21
Light flickered	once at 40.40 ft

large cobbles upto 4" ⌀ around well

✓ RAPID recovery

Hunter held 40.50 during withdrawal and probe never came out of the water

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

INSTALLATION ID Lim 0687
LOCATION ID NS3 03 (110)
LOGGER CODE JH J.M.
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 8-26-88
SLUG VOLUME (FT^3) 0.0426
COMMENTS meniscus mark - south side PVC
top of PVC = 0.17 ft below TOSC
TOSC = 2.55 ft above concrete pad = 0.3 ft above land surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1311	3.61
1312	3.605
1312	3.60
1312	3.605
9 sec	3.625
29 sec	3.615
46 sec	3.615
1:01	3.615
1:20	3.615
1328	3.615
8 sec	3.625
20 sec	3.625
34 sec	3.62
45 sec	3.62
1:00	3.61
1:12	3.615
1:29	3.61
1:43	3.61

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID NS3 06 (113) LOG DATE 8-25-88
LOGGER CODE JH J.M. SLUG VOLUME (FT^3) 0.0426
TEST METHOD ____ SLUG INJECTION OR ____ SLUG WITHDRAWAL
COMMENTS flush mount
top of PVC = 0.34 ft below ~~[illegible]~~, flush mount unit = 0.1 ft above land surface
measure mark = south west side PVC

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1527	28 +0.11
1528	20 +0.105
1530	20 +0.095
injection	
6 sec	28 +0.04
13	28 +0.085
23	28 +0.10
35	28 +0.10
57	28 +0.10
WITHDRAWAL	
6 sec	27 +0.95
20	28 +0.10
30	28 +0.11
40	28 +0.11
55	28 +0.11

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

Soil Test ▼ indicator

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID BH-1 (119)
LOGGER CODE D-1 RD
TEST METHOD ← SLUG INJECTION OR → SLUG WITHDRAWAL
LOG DATE 24 Aug 88
SLUG VOLUME (FT^3) _____
COMMENTS
Pad Height = 0.38 Ft
Surface casing above pad = 2.84 Ft
PVC below surface casing 0.24 Ft
measuring mark on North side

SLUG INJECTION

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
	59.065
4 sec	59.045
14 sec	59.035
27 sec	59.030
40 sec	59.030
56 sec	59.035
1:08 sec	59.035
1:22	59.045
1:37	59.055
1:48	59.060
2:00	59.060
2:15	59.060
2:30	59.060
3:00	59.060

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
Slug	WITHDRAWAL
	59.060
7	59.000
27	59.000
57	59.000
1:20	59.005
2:00	59.060
withdrawal test not	valid - improper
reading	point from 7 to 120 sec.
- appears	to readjust
faster	than we could
read	it
RETEST - Slug	withdrawal
	59.060
16	59.00
38	59.030
57	59.055
1:10	59.060
1:22	59.060
1:30	59.060
2:00	59.060

Soil Test ▽ Initial

SLUG TEST DATA

INSTALLATION ID Ecm 0687
LOCATION ID BH-3 (121)
LOGGER CODE RD DY
TEST METHOD ✓ SLUG INJECTION OR — SLUG WITHDRAWAL
LOG DATE 24 Aug 88
SLUG VOLUME (FT^3) _____
COMMENTS Pad height = .30 ft, measuring mark on East side
height of surface casing above pad = 2.6 ft
PVC below surface casing = 0.33 ft

Slug injection test

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
	16.05
	16.11
	16.110
	16.115
14	14.305
29	14.360
43	14.370
57	14.380
1:20	14.380
1:40	14.395
2:00	14.400
2:20	14.405
2:40	14.420
3:00	14.420
3:30	14.415
4:00	14.430
4:30	14.430
5:00	14.440
5:30	14.442
6:00	14.455
7:00	14.452
8:00	14.470
9:00	14.475
10:00	14.480
11:00	14.485
12:00	14.495
13:00	14.500

1648
1650
1650
1708

slug withdrawal test

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
31 sec	16.275
45 sec	16.286
1:00	16.310
1:20	16.315
1:45	16.315
2:00	16.305
2:20	16.285
2:40	16.30
3:00	16.315
3:30	16.295
4:00	16.297
5:00	16.266
6:00	16.290
7:00	16.295
8:00	16.280
9:00	16.290
10:00	16.287

1709

SLUG TEST DATA

INSTALLATION ID Elm 0687
LOCATION ID B4-4 (122)
LOGGER CODE JH / JM
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG AT 8-25-88
SLUG VOLUME (FT³) 0.0426
COMMENTS measure mark = East side PVC
top of PVC = 0.32 below TOSC TOSC = 2.37 ft above concrete pad
concrete pad = 0.20 ft above ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1358	5+0.81
1358	5+0.80
1359	5+0.80
injection	
8sec	4+0.82
20	5+0.31
31	5+0.47
44	5+0.58
57	5+0.65
1:09	5+0.68
1:31	5+0.725
1:45	5+0.735
2:17	5+0.76
3:07	5+0.77
4:17	5+0.78
5:45	5+0.78

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
8sec	6+0.79
23	6+0.26
36	6+0.07
47	5+0.99
57	5+0.92
1:07	5+0.89
1:18	5+0.865
1:38	5+0.84
1:55	5+0.83
2:26	5+0.815
3:36	5+0.81
5:07	5+0.80

← water level encountered Slug 5+0.97

SLUG TEST DATA

INSTALLATION ID ELM 0687
LOCATION ID BH-5 (123)
LOGGER CODE JM JM
TEST METHOD V SLUG INJECTION OR ____ SLUG WITHDRAWAL

LOG DATE 8-25-88
SLUG VOLUME (FT^3) .0426

COMMENTS measure mark = west side PVC
top PVC = 0.17 ft below TOSC TOSC = 2.64 ft above concrete pad
concrete pad = 0.4 ft above ground surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1227	7 + 0.27
1227	7 + 0.28
injection	
7 sec	6 + 0.33
20	6 + 0.57
37	6 + 0.72
49	6 + 0.79
1:05	6 + 0.85
1:19	6 + 0.90
1:37	6 + 0.93
1:51	6 + 0.96
2:12	6 + 0.99
2:36	7 + 0.03
2:53	7 + 0.05
3:26	7 + 0.08
3:48	7 + 0.09
4:12	7 + 0.11
4:39	7 + 0.125
5:25	7 + 0.145
6:33	7 + 0.165
8:21	7 + 0.19
9:51	7 + 0.205
10:54	7 + 0.21
13:27	7 + 0.215
14:35	7 + 0.21

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
WITHDRAWAL	
8 sec	8 + 0.27
16	7 + 0.95
38	7 + 0.76
51	7 + 0.68
1:03	7 + 0.64
1:18	7 + 0.60
1:36	7 + 0.56
2:04	7 + 0.50
237	7 + 0.47
3:20	7 + 0.42
4:01	7 + 0.39
5:04	7 + 0.365
6:11	7 + 0.34
7:52	7 + 0.315
9:05	7 + 0.31
10:15	7 + 0.30
11:23	7 + 0.30

SLUG TEST DATA

water level read 0.10 ft above bottom of probe

INSTALLATION ID SLM 0687
LOCATION ID BH-6 (124)
LOGGER CODE ~~JH~~ S.M.
TEST METHOD ✓ SLUG INJECTION OR ✓ SLUG WITHDRAWAL
LOG DATE 8-25-88
SLUG VOLUME (FT^3) ~~0.0435~~
COMMENTS measure mark = north side PVC
top of PVC = 0.34 ft below TOSC
TOSC = 1.89 ft above concrete pad 0.3 ft above land surface

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)
1032	11+0.16
1032	11+0.15
injection	
6 sec	11+0.08
18	11+0.11
28	11+0.13
37	11+0.13
47	11+0.135
1:01	11+0.135
1:19	11+0.135
1:41	11+0.14
2:59	11+0.12
3.18	11+0.12
9sec	11+0.17
19	11+0.15
30	11+.145
39	11+0.14
50	11+0.14
1:12	11+0.14
1:40	11+0.14

ELAPSED TIME (MIN.)	DEPTH TO WATER (FT)

Ground Water Level Data

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/4/88

LOGGER CODE DM

COMMENTS Sampled SP-5 (072, 077, 078, 079, 081)

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
072	10:05	37.11			
↓	10:09	37.14			
↓	10:40	41.17 (after purging)			
077	11:33	34.81			
↓	11:45	34.86			
↓	12:20	40.85 (after purge)			
078	1300	34.54			
↓	13:04	34.61			
↓	13:30	55.92 (bailed dry)			
079	1337	16.49			
↓	1341	16.30			
↓	14:20	26.02 (after purg)			
081	14:25	2.94			
↓	14:30	3.06			
↓	15:00	12.75 (bailed dry)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID ELM (0687) LOG DATE 8/5/88
LOGGER CODE SWB
COMMENTS
Weather - light Rain, calm 55°F

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)** (TOC)	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
SP5-07	0845	34.97 ft			
↓	0850	34.92 ft			
↓	0920	49.14 ft (After Purge)			
↓	1155	39.37 ft			
SP5-10	0930	3.60 ft			
↓	0934	3.55 ft			
SP5A-19	0951	16.18 ft			
↓	0955	16.16 ft			
↓	1025	16.50 ft (After Purge)			
SP5A-16	1020	16.99 ft			
↓	1025	16.85			
↓	1040	19.18 (After Purge)			
SP5A-15	1130	11.38			
↓	1135	11.42 ft			
US2-02	1235	40.25 ft			
	1310	40.00 (After Purge)			

* USE 24 HOUR CLOCK
**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID ELM (0689) LOG DATE 8/8/88

LOGGER CODE SWB

COMMENTS weather - partly sunny 70° no breeze

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
MS2-2	1151	40.00			
↓	1156	40.00			
↓	1205	40.16 (After purge)			
MS2-1	1230	38.80			
↓	1235	38.80			
↓	1250	39.00 (After purge)			
D13-2	1315	40.32ft			
↓	1320	40.45			
↓	1335	40.80 (After purge)			
D-13-3	1340	37.92			
↓	1395	38.25 (After purge)			
~~D13-1~~					

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID ELM (0687) LOG DATE 8/9/88

LOGGER CODE SAB

COMMENTS Weather - partly sunny 60° calm

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
P13-1	0815	41.32			
↓	0820	41.30			
↓	0835	41.11 (After purge)			
W-1	0907	38.54			
↓	0912	38.45			
↓	0930	38.63 (After purge)			
GW-2B	1020	33.00			
↓	1025	33.00			
↓	1040	33.84 (After purge)			
GW-1B	1050	35.63			
↓	1055	35.65			
↓	1110	35.74 (After purge)			
GW-1C	1130	40.96			
	1135	40.97			
	1150	40.95 (After purge)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/10/88

LOGGER CODE DM

COMMENTS Sampled A-7 (014, 011, 010)
SP2/16-ran (051, 052, 061, 062)

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
014	08:15	31.92			
↓	08:20	31.95			
↓	08:45	31.59 (after purge)			
011	09:15	33.24			
↓	09:19	33.03			
↓	09:35	32.84 (after purge)			
010	10:14	32.47			
↓	10:20	32.6			
↓	11:00	32.5 (after purge)			
051	12:35	40.75			
↓	12:40	40.75			
↓	—	—			
061	13:35	32.07			
↓	13:40	32.08			
↓	14:10	32.15 (after purge)			
062	14:35	31.62			
↓	14:39	31.58			
↓	15:15	31.59 (after purge)			
052	15:35	32.49			
↓	15:40	32.49			
↓	15:55	32.67 (after purge)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/11/88

LOGGER CODE DM

COMMENTS Sampled SP14-2(097), SP14-01(096), SP.14(099)-DM7A, SP14(098)-W-17,

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
097	08:20	36.17			
↓	08:25	36.16			
↓	08:50	36.18 (after purge)			
096	09:30	31.89			
↓	09:34	31.82			
↓	10:00	31.84 (after purge)			
099	10:25	31.55			
↓	10:29	31.56			
↓	10:50	31.49 (after purge)			
098	11:15	29.75			
↓	11:20	29.54			
↓	12:05	29.62 (after purge)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/12/88

LOGGER CODE DM

COMMENTS Sampled SP11 GW-14 (090), SP11-GW 4A (091), SP12 W-9 (092), SP12 GW-3A (093), SP-4-01 (063)

LOCATION ID	LOG TIME * (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME * (HH:MM)	DEPTH TO WATER (FT)**
090	08:20	3.71			
↓	08:25	3.66			
↓	08:55	3.63 (after purge)			
091	09:10	6.62			
↓	09:14	6.65			
↓	09:30	6.73 (after purge)			
092	10:30	23.18			
↓	10:35	23.09			
↓	11:20	23.07 (after purge)			
093	11:35	23.18			
↓	11:39	23.21			
↓	12:12	23.07 (after purge)			
063	13:45	5.40			
↓	13:49	5.71			
↓	14:15	5.52 (after purge)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/13/88

LOGGER CODE DM

COMMENTS Sampled SP 2/6-04(054); SP 2/6 03(053); NS2-01(106); D-13-01(015); NS2-02(107)

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
054	08:00	38.30			
↓	08:05	38.33			
↓	08:35	38.39 (after purge)			
053	09:00	37.55			
↓	09:05	37.58			
↓	09:30	37.24 (after purge)			
106	12:00	39.19			
↓	12:05	39.20			
↓	13:00	39.32 (after purge)			
015	13:45	40.94			
↓	13:49	40.95			
↓	14:15	40.92 (after purge)			
107	14:35	40.07			
↓	14:39	40.09			
↓	14:58	40.12 (after purge)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/15/88

LOGGER CODE DM

COMMENTS Sampled SP 7/10-02(085) W-4(089); SP 7/10-01(084) SP 7/10-03(086); SP 7/10-W3(088) - (087)

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
085	08:20	16.45			
↓	08:24	16.48			
↓	08:44	16.47 (after purge)			
084	09:00	15.0			
↓	09:04	15.0			
↓	09:26	15.12 (after purge)			
089	09:40	13.75			
↓	09:44	13.72			
↓	10:04	14.22 (after purge)			
086	~~25~~ 10:20	25.45			
↓	10:25	25.43			
↓	10:39	25.48 (after purge)			
088	10:55	22.0			
↓	10:59	22.0			
↓	11:24	21.18 (after purge)			
087	11:35	19.6			
↓	11:39	19.59			
↓	11:59	19.45 (after purge)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/16/88

LOGGER CODE DM

COMMENTS

LOCATION ID	LOG TIME * (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME * (HH:MM)	DEPTH TO WATER (FT)**
055	09:25	32.97			
↓	09:29	32.95			
↓	09:55	32.80 (after plug)			
064	10:20	5.67			
↓	10:24	5.66			
↓	10:45	5.76 (after plug)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/17/88
LOGGER CODE DM
COMMENTS

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
038	08:23	49.87			
↓	08:27	49.87			
↓	08:55	49.95 (after pump)			
037	09:55	49.68			
↓	09:59	49.71			
↓	10:25	49.62 (after pump)			
040	12:00	24.58			
↓	12:04	24.59			
↓	12:30	24.56 (after pump)			
039	13:45	13.54			
↓	13:49	13.56			
↓	14:10	13.5 (after pump)			
034	14:55	29.18			
↓	14:59	29.21			
↓	15:15	29.20 (after pump)			

* USE 24 HOUR CLOCK ** FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/18/88
LOGGER CODE DM
COMMENTS

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
033	08:45	28.28			
↓	08:49	28.30			
↓	09:06	28.25 (after purge)			
042	09:45	29.31			
↓	09:50	29.29			
↓	10:05	29.27 (after purge)			
041	11:05	29.20			
↓	11:10	29.18			
↓	11:35	29.0 (after purge)			
035	13:15	41.19			
↓	13:19	41.22			
↓	13:48	41.19 (after purge)			
036	14:45	23.52			
↓	14:49	23.48			
↓	15:03	23.59 (after purge)			

* USE 24 HOUR CLOCK **FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 6687 LOG DATE 8/19/88

LOGGER CODE DM

COMMENTS

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
002	08:30	20.08			
↓	08:34	20.20			
↓	08:50	20.29 (after plug)			
003	09:00	10.33			
↓	09:05	10.34			
↓	09:19	10.5 (after plug)			
001	09:28	25.92			
↓	09:32	25.95			
↓	10:03	26.0 (after plug)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/22/88

LOGGER CODE DM

COMMENTS

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
031	09:50	7.67			
↓	09:54	9.02			
↓	10:24	6.17 after purge			
032	10:40	15.0			
↓	10:44	15.02			
↓	11:02	15.81 after purge			
100	11:30	28.27			
↓	11:34	28.31			
↓	11:50	28.33 after purge			
101	12:05	26.78			
↓	12:09	26.81			
↓	12:28	26.91 after purge			
049	13:55	8.69			
↓	13:59	8.72			
↓	14:18	8.91 after purge			
060	13:35	36.29			
↓	13:39	36.3			
↓	15:00	36.82 after purge			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/23/88
LOGGER CODE DM
COMMENTS Sampled at NS3 sites 02, 03, 06

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
111	08:25	3.91			
↓	08:30	3.93			
↓	08:52	3.98 (post purge)			
110	10:25	3.6			
↓	10:29	3.6			
↓	10:44	3.58 (post purge)			
113	12:00	27.93			
↓	12:04	27.95			
↓	12:36	28.03 (post purge)			

* USE 24 HOUR CLOCK

** FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/29/88

LOGGER CODE DM

COMMENTS

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
126	0805	2.92			
↓	0809	2.94			
↓	0820	5.73 (post purge)			
065	0900	39.68			
↓	0904	39.66			
↓	0920	39.68 (post purge)			
007	1030	41.75			
↓	1034	41.76			
↓	1047	41.78 (post purge)			
009	1115	42.16			
↓	1119	42.15			
↓	1138	42.17 (post purge)			

* USE 24 HOUR CLOCK

**FROM MEASUREMENT REFERENCE POINT

GROUND WATER LEVEL DATA

INSTALLATION ID 0687 LOG DATE 8/30/88
LOGGER CODE DM
COMMENTS

LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**	LOCATION ID	LOG TIME* (HH:MM)	DEPTH TO WATER (FT)**
121	0840	17.16			
↓	0844	17.30			
↓	0845	dry after purge			
122	0903	5.57			
↓	0907	5.60			
↓	0918	6.08 (post purge)			
119	1030	59.02			
↓	1034	59.06			
↓	1055	59.06 (post purge)			
124	1205	11.05			
↓	1209	11.07			
↓	1219	11.05 post purge			
123	1330	6.38			
↓	1334	6.40			
↓	1344	9.37 (post purge)			

* USE 24 HOUR CLOCK **FROM MEASUREMENT REFERENCE POINT

Ground Water Quality Sampling Data

QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 8/8/88 LOG TIME 1403
LOCATION ID D3-01 (001) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID SC1-0003 SAMPLE DEPTH (FT.) 26 ft

INITIAL GROUNDWATER DEPTH (FT) 26.8 ft 8/19/88 - 25.92 ft
SAMPLING PERIOD: START ~~1400~~ 8/19/88 1215 COMPLETE 1215
SAMPLING METHOD B LOGGER CODE SC3
LAB CODE KWL DATE SENT 8/20/88
PRESERVATION METHOD HCl H_2SO_4 HNO_3 <5 ~~pH~~ added by QAO
COMMENTS Depth from TOC to base of well = 60.7
Stickup = 2 ft barrels volume 5.1 gallons

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.91	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	140	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	5.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	92	1

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1403	0.0	0.0	-	-	-	START PUMPING
1450	18	3.2				very turbid, bailed dry
1647	11.2	5.2	8.38	150	7.8	turbid
1703	16.8	6.2	8.56	140	5.9	turbid
1715	22.4	7.2	855	139	5.9	sl. turbid, .4 gpm
1724	25	7.7	8.56	139	5.9	v. sl. turbid - ~~clear~~ & clear
						adequately developed
						for sampling
						(very slow recharge)
~~1550~~ 1724						Final water level 47.1 ft

8/5/88

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 14 July 88, 6 Aug 88 LOG TIME 0830
LOCATION ID D3-002 (002) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 002-0003 SAMPLE DEPTH (FT.) 20.0 ft

INITIAL GROUNDWATER DEPTH (FT) ~~19 ft Hix~~ 20.08 ft 6 Aug 88 19.7 ft
SAMPLING PERIOD: START 8/9/88 1040 COMPLETE 1050
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/20/88
PRESERVATION METHOD HCl H_2SO_4 or HNO_3 added by lab
COMMENTS well depth 31.6 ft borehole volume 2 gal
Stickup 1.5 ft
developed with Teflon bailer

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.51	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	1600	1
REDOX POTENTIAL	Eh	mvolts	←	
TEMPERATURE	TEMP	°C	5.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	129.2	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
14 July 88	0.0	0.0	-	-	-	START PUMPING
0830	0.0	0	6.62	200	8	Clear HNU = 0.00
0835	3.6	1.8	6.69	250	5	Bailed dry (n 3 1/2 gal.
1450	2.0	1.1	7.41	330	9	Clear to slightly cloudy
1455	5.0	3.5	7.55	330	11	Very murky + turbid
						Bailed dry after 3 add. gal.
6 Aug 88	1055					
(19.7 ft)	1105	9.0	4.5			light gray, very turbid, bailed dry in 4 gal.
	1120					
	1134	13	6.5			bailed dry in 4 gallons
	1143			6.16	180	5 water level = 26.4 ft
	1159	15	7.5	6.09	175	4.3 moderately turbid (well produces 1 gal/hr
	1209	16	8	6.03	175	4.3 bailed dry, slightly turbid

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

10 gal/hr purge rate?

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Sec 4 LOG DATE 6 Aug 88 LOG TIME _____

LOCATION ID D302 (CC2) LOT CONTROL NO. _____

SAMPLE TYPE _____ SAMPLE ID (CC2) SAMPLE DEPTH (FT.) _____

INITIAL GROUNDWATER DEPTH (FT) _____

SAMPLING PERIOD: START _____ COMPLETE _____

SAMPLING METHOD _____ LOGGER CODE _____

LAB CODE _____ DATE SENT _____

PRESERVATION METHOD _____

COMMENTS bailed w/ teflon bailer

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	_____	_____
SPECIFIC CONDUCTANCE	SC	µmhos/cm	_____	_____
REDOX POTENTIAL	Eh	mvolts	_____	_____
TEMPERATURE	TEMP	°C	_____	_____
ALKALINITY ($CaCO_3$)	ALK	mg/l	_____	_____

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
6 Aug 88 1218	17	8.5	6.20	185	4.0	slight turbid, brownish tint
1226	17.8	8.9	6.14	185	4.0	" " " "
						well recharge about
						6 gal/hour - decided
						against 2nd Sample

SAMPLES TYPES: (WSACODE)

D -	DUPLICATE	FB -	FIELD BLANK
R -	REPLICATE	TB -	TRIP BLANK
S -	SPIKE	LB -	LAB BLANK
K -	KNOWN	N -	NORMAL

SAMPLE METHODS. (WSMCODE)

G -	GRAB	SP -	SUBMERSIBLE PUMP
B -	BAILER	AL -	AIR-LIFT SAMPLER
PP -	PERISTALIC PUMP	BP -	BLADDER PUMP
SL -	SUCTION LIFT PUMP		

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/14/88 LOG TIME _____

LOCATION ID D-3-003 LOT CONTROL NO. _____

SAMPLE TYPE _____ SAMPLE ID 003 SAMPLE DEPTH (FT.) _____

INITIAL GROUNDWATER DEPTH (FT) 9ft 7in (TOC)

SAMPLING PERIOD: START _____ COMPLETE _____

SAMPLING METHOD _____ LOGGER CODE _____

LAB CODE _____ DATE SENT _____

PRESERVATION METHOD _____

COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
0900	0.0		7.51	360	6	Slightly turbid
0910	2.0		7.64	320	4	Very turbid
0914	4.0	2.60	~~7.66~~	255	4	" Bailed dry in 5 gal
1418	4.0		2.64	370	6	very slightly turbid
1416	9.0		7.64	~~3460~~ 90	9	turbid - milky gray
						bailed dry @ 7 gallons
						in afternoon
1430	12		7.56	385	9½	milky

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0682 LOG DATE 8/8/88 LOG TIME 1500

LOCATION ID D3 03 (003) LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID (003)CCC3 SAMPLE DEPTH (FT.) 10 ft

INITIAL GROUNDWATER DEPTH (FT) 10 ft 8/8/88 8/19/88 10.33 ft

SAMPLING PERIOD: START 8/19/88 1125 COMPLETE 1135

SAMPLING METHOD B LOGGER CODE SVB

LAB CODE RMW2 DATE SENT 8/20/88

PRESERVATION METHOD HCl H_2SO_4 HNO_3 ice cool by 4°C

COMMENTS Bottom of well = 22.5 ft

Stickup = 2.6 ft above ground level, well volume = 2.1 gallons

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.54	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	339	1
REDOX POTENTIAL	Eh	mvolts	–	
TEMPERATURE	TEMP	°C	3.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	262	≤ 2

	TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
8/8/88	1500	0.0	0.0	–	–	–	START PUMPING
	1534 1530	6.3	3				very turbid, boiled mud, dry, ~0.5 gpm
	1550	8.4	4	7.57	342	6.5	very turbid, brownish-gray
	1558	10.5	5	7.62	350	4.3	very turbid, brn-gray, 0.4 gpm
	1607	12.6	6	7.66	350	4.4	turbid
8/9/88	1300	12.6	6	7.89	378	5.3	(boiled left in well overnight)
	1306	16.8	8	7.70	358	4.3	still slightly turbid after boiling dry
	1318	18.9	9	7.74	345	4.8	boiled dry
							well apparently developed
							continuing slow recharge
	1324						Final water level 20.7 ft

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 8/9/88 LOG TIME 0930
LOCATION ID W-1 ~~(D-7)~~ D-5 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 005-0001 SAMPLE DEPTH (FT.) 38 ft (TOC)

INITIAL GROUNDWATER DEPTH (FT) 38.5 ft (TOC)
SAMPLING PERIOD: START 0935 COMPLETE 0945
SAMPLING METHOD B LOGGER CODE EAB
LAB CODE RMAL DATE SENT 8/10/88
PRESERVATION METHOD HCL, H_2SO_4 or HNO_3 added dep. on test chill to 4°C
COMMENTS well installed in 1986 - purge into flow

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	~~6~~ 6.85	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	190	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	5.8C	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	98	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
0911	0.0	0.0	-	-	-	START PUMPING
0915	3.5	1	6.76	187	5.2	clear, NO odor or sheen
0919	?	2	6.76	189	6.0	" "
0920	10.5	3	6.85	190	5.8	Pulpy orange sediment small amount

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 8/29/88 LOG TIME 1030

LOCATION ID GW-1A D-5 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 007-0001 SAMPLE DEPTH (FT.) 42ft (toc)

INITIAL GROUNDWATER DEPTH (FT) 41.75ft (toc)

SAMPLING PERIOD: START 1050 COMPLETE 1105

SAMPLING METHOD B LOGGER CODE EM3

LAB CODE RMAC DATE SENT 8/30/88

PRESERVATION METHOD H_2SO_4 HNO_3 HCl added by lab

COMMENTS

DTM well installed 1987

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	4.68	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	88	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	5.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	46.4	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1037	0	0	4.68	092	6.0	Sl cloudy, no odor or sheen
1040	2	1 2/3	4.67	090	5.0	Turbid " "
1045	4	2 4/6	4.69	092	5.0	" " "
1047	6	3 6/6	4.65	88	5.0	" " "

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 8/9/88 LOG TIME 1137
LOCATION ID GW-1C (0-5) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 008-0001 SAMPLE DEPTH (FT.) 41 Ft TOC

INITIAL GROUNDWATER DEPTH (FT) 40.96 ft TOC
SAMPLING PERIOD: START 1400 COMPLETE 1415
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/10/88
PRESERVATION METHOD H2SO4, HCl or HNO3 added — Chill to 4°C
COMMENTS
Well installed in 1987 — Ridge info below

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.82	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	129	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	6.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	64	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1137	0	0	7.20	115	7.0	Slightly cloudy No odor or sheen
1141	2	1	6.98	120	6.0	Cloudy " "
1145	4	2	6.78	122	6.5	" " "
1150	6	3	6.82	129	6.5	" " "

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 8/29/88 LOG TIME 1115
LOCATION ID GW-2A D-5 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 009-0001 SAMPLE DEPTH (FT.) 42 ft

INITIAL GROUNDWATER DEPTH (FT) 42.16 ft (TOC)
SAMPLING PERIOD: START 1140 COMPLETE 1150
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/30/88
PRESERVATION METHOD HCl H2SO4 or HNO3 added by lab
COMMENTS Dum well installed 8/86

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	4.22	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	070	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	5° C	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	~~##~~ 47.2	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1124	0	0	4.26	008	7	Sl. cloudy no odor or sheen
	2	1	4.20	073	5.5	turbid " " " "
	4	2	4.27	073	5	" " " "
	6	3	4.22	070	5	" " " "

SAMPLES TYPES (WSACODE)

D - DUPLICATE	FB - FIELD BLANK	G - GRAB	SP - SUBMERSIBLE PUMP
R - REPLICATE	TB - TRIP BLANK	B - BAILER	AL - AIR-LIFT SAMPLER
S - SPIKE	LB - LAB BLANK	PP - PERISTALIC PUMP	BP - BLADDER PUMP
K - KNOWN	N - NORMAL	SL - SUCTION LIFT PUMP	

SAMPLE METHODS (WSMCODE)

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/10/88 LOG TIME 1900
LOCATION ID W-5 (D-7) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 010-0001 SAMPLE DEPTH (FT.) 32

INITIAL GROUNDWATER DEPTH (FT) 32.47
SAMPLING PERIOD: START 1050 COMPLETE 1100
SAMPLING METHOD B LOGGER CODE DM
LAB CODE RMAL DATE SENT 8/11/88
PRESERVATION METHOD Chill to 4°C. Add H_2SO_4 or HNO_3
COMMENTS Duplicate sample collected

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.83	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	128	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	6.4	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	70	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1019	0.0	0.0	-	-	-	START PUMPING
1023	4	1	6.74	137	6.2	clear no sheen or odor
1025	8	2	6.8	128	6.2	turbid
1029	12	3	6.83	128	6.4	"

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/10/88 LOG TIME 1900

LOCATION ID D-7 W-6 (011) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 011-0001 SAMPLE DEPTH (FT.) 32

INITIAL GROUNDWATER DEPTH (FT) 33.24

SAMPLING PERIOD: START 0935 COMPLETE 0945

SAMPLING METHOD B LOGGER CODE DM

LAB CODE RMAL DATE SENT 8/11/88

PRESERVATION METHOD Chill to 4°C acid H_2SO_4 or HNO_3

COMMENTS well installed in 1986
Purge info below

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	~~100~~ 6.87	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	100	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	5.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	68.0	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
0924	2.5	1	6.84	95	5.5	clear, some minor particulate
0927	5	2	6.89	95	5.5	turbid, particulate
0930	7.5	3	6.87	100	5.5	" "

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 6657 LOG DATE 8/9/88 LOG TIME 1117

LOCATION ID 640 1B (DAT) LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 12-0001 SAMPLE DEPTH (FT.) 35ft (TOC)

INITIAL GROUNDWATER DEPTH (FT) 35.63 ft TOC

SAMPLING PERIOD: START 1330 COMPLETE 1340

SAMPLING METHOD B LOGGER CODE SUM3

LAB CODE RMAL DATE SENT 8/10/88

PRESERVATION METHOD HCl, H_2SO_4 OR HNO_3 added chill to 4°C

COMMENTS Well installed in 1987, purge into bailer

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.80	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	345	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	5.6	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	228	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1102	0	0	6.94	340	8	slightly cloudy, no odor or sheen
1106	1.6	1	6.84	338	5.8	Opaque " " "
1110	3.2	2	6.86	341	6.2	" " " "
1114	4.8	3	6.80	345	5.6	" " " "

SAMPLES TYPES (WSACODE)

D - DUPLICATE
R - REPLICATE
S - SPIKE
K - KNOWN
FB - FIELD BLANK
TB - TRIP BLANK
LB - LAB BLANK
N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB
B - BAILER
PP - PERISTALIC PUMP
SL - SUCTION LIFT PUMP
SP - SUBMERSIBLE PUMP
AL - AIR-LIFT SAMPLER
BP - BLADDER PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 SWM LOG DATE 8/9/88 LOG TIME 1045

LOCATION ID GW-3A (10-7) LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 03-6001 SAMPLE DEPTH (FT.) ~~45~~ 33 ft (TOC)

INITIAL GROUNDWATER DEPTH (FT) 33ft ~~44.23~~ ft (TOC)

SAMPLING PERIOD: START 1300 COMPLETE 1310

SAMPLING METHOD GB LOGGER CODE SWM

LAB CODE RMAL DATE SENT 8/10/88

PRESERVATION METHOD H_2SO_4 HCl HNO_3 added - chill to 4°C.

COMMENTS Well installed in 1987

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.89	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	273	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	6.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	162	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1025	0	0	6.86	218	7.5	clear slight H_2S odor? No Sheen
1032	2	1	6.79	276	7.0	cloudy " " " " "
1036	4	2	6.88	275	5.8	" " " " "
1040	6	3	6.89	273	6.0	" " " " "

SAMPLES TYPES. (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/10/88 LOG TIME 1900
LOCATION ID GW-2C (014) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 014-0001 SAMPLE DEPTH (FT.) 32 ft

INITIAL GROUNDWATER DEPTH (FT) 31.92 (TOC)
SAMPLING PERIOD: START 0845 COMPLETE 0900
SAMPLING METHOD B LOGGER CODE DM
LAB CODE RMAL DATE SENT 8/11/88
PRESERVATION METHOD Chill to 4°C Add H_2SO_4 or HNO_3
COMMENTS well was not locked when approached for sampling

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.27	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	208	1
REDOX POTENTIAL	Eh	mvolts	–	–
TEMPERATURE	TEMP	°C	5.8	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	118	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
0835	0.0	0.0	-	-	-	START PUMPING
0835	0	<	6.11	222	7.0	No odor
0837	1.5	1	6.03	210	6.0	
0839	3.0	2	6.16	212	6.0	
0843	5.0	3	6.27	208	5.8	

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ~~D13-01~~ ELM 0687 LOG DATE 3 Aug 88 LOG TIME 1140

LOCATION ID D13-01 (015) LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 015-0003 SAMPLE DEPTH (FT.) 41 ft

INITIAL GROUNDWATER DEPTH (FT) 40.9 (TOC)

SAMPLING PERIOD: START 1220 (8/9/88) COMPLETE 1240

SAMPLING METHOD B LOGGER CODE Eur3

LAB CODE RMAL DATE SENT 8/10/88

PRESERVATION METHOD HCl H2SO4 or HNO3 added

COMMENTS casing stickup 2.7 ft well depth 57.8 ft

Bore volume = 2.8 gal

FINAL PARAMETER MEASUREMENTS: Final levels after developing water level before 40.9 57 ft

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.37	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	197	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	~~19~~ 6.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	70	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
3 Aug 88 1140	0.0	0.0	-	-	-	START PUMPING
1158	28	10	6.32	125	8.5	very turbid 2.5 gpm
1218	56	20	6.85	120	7.5	turbid 2.5 gpm
1234	84	30	6.94	118	7.0	slightly turbid 2.5 gpm
1245	98	35	6.98	119	7.1	very slight turbid
1254	112	40	6.97	119	7.1	clear
						Parameters stable · well developed
						Start sampling 3 Aug 88

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 22 July 88 LOG TIME 1618
LOCATION ID [redacted] D-13 - 02 (016) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 016-0003 SAMPLE DEPTH (FT.) 40ft TOC

INITIAL GROUNDWATER DEPTH (FT) 40.6 ft TOC
8/8/88 SAMPLING PERIOD: START 1355 COMPLETE 1610
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/9/88
PRESERVATION METHOD Chill to 4°C, HCl, H_2SO_4, HNO_3 added to some containers
COMMENTS Bottom of casing = 47.9 ft ∴ 7.3 ft water in well

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.61	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	178	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	6.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	98	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
7/27/88 1610	0.0	0.0	-	-	-	START PUMPING
1630	7	6				water table still 40.6 after 13 minutes
1640-1652	7	12				brown turbid water, level 40.6
7/27/88 0945				183	6.5	initial test before purging (40.6')
1030	31	26	6.94	183	7.3	purge rate 1 gal/min (slightly turbid)
1045	46	38	6.90	180	6.7	slightly turbid
1100	61	50	6.90	180	7.0	very slightly turbid
1115	71	59	6.99	180	6.5	1 gal/min purge rate - clear
1125	81	68	6.98	178	5.6	clear
7/28/88 1135	91	76	6.96	177	5.7	clear - Developed adequately

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0087 (ECM) LOG DATE 7/23/88 LOG TIME 1300

LOCATION ID D13-03 (017) LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 017-0003 SAMPLE DEPTH (FT.) 38 ft TOC

INITIAL GROUNDWATER DEPTH (FT) 37.9 ft TOC

8/9/88 SAMPLING PERIOD: START 1420 COMPLETE 1430

SAMPLING METHOD G B LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/9/88

PRESERVATION METHOD Chill to 4°C, HCl, HNO3 Hallow added for certain tests

COMMENTS Depth to BOC = 54.8 Ft Developed w/ B-K pump well volume = 2.8 gallons

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.92	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	132	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	6.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	17	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
7/27/88 1300	0.0	0.0	-	-	-	START PUMPING
1320	35	12.5	7.19	120	8	brown turbid
1335	70	25	7.01	120	8	brown turbid
1346	105	37.5	7.04	120	7	slightly turbid
1350-1400	140	50	7.00	120	7	v. slightly brown turbid
1405-1412	160	60	7.06	120	7	V. slightly brown turbid
						Purge rate 3 gal/min
1430						- Developed, water lvl 37.9 ft.

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 ELM LOG DATE 8/22/88 LOG TIME 1000
LOCATION ID W-11 (D-17) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 031-0001 SAMPLE DEPTH (FT.) 7 ft

INITIAL GROUNDWATER DEPTH (FT) 7.67 ft (TOC)
SAMPLING PERIOD: START 8/22 1026 COMPLETE 1039
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/23/88
PRESERVATION METHOD HCl Hasay or HNO3 added Chill to 4°C
COMMENTS Dam well installed 1986 — purge info. below

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.35	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	795	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	6.2	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	499.6	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING H2S
1005	0	0	7.34	1310	7.2	grey, black particles — odor
1015	6.5	1	7.39	1000	6.0	" " "
1020	13	2	7.34	800	6.6	" " "
1024	19.5	3	7.35	795	6.2	" " "

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

0687

INSTALLATION ID EML LOG DATE 8/22/88 LOG TIME 1100

LOCATION ID NW-3 (D-17) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 032-0001 SAMPLE DEPTH (FT.) 15ft

INITIAL GROUNDWATER DEPTH (FT) 15.00ft (toc)

SAMPLING PERIOD: START 8/22 1320 COMPLETE Return 1508

SAMPLING METHOD B LOGGER CODE SM3

LAB CODE RMAL DATE SENT 8/23/88

PRESERVATION METHOD HCl H2SO4 or HNO3 added Chill 4 to 4°C

COMMENTS D&M well installed 8/86

Well bailed dry during Purge (4 gal) and during sampling was allowed to recharge each time

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.39	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	510	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	366	0.2
	ALK	dup	323.6	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1102	0	0	7.34	525	9	clear no odor no sheen
1107	3	1	7.39	510	8	Turbid " " " "

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 5 Aug 88 LOG TIME 0930

LOCATION ID IS-1 (033) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 033-0003 SAMPLE DEPTH (FT.) 28ft

INITIAL GROUNDWATER DEPTH (FT) 28.30 ft (TOC)

SAMPLING PERIOD: START 8/18/88 0907 COMPLETE 0918

SAMPLING METHOD B LOGGER CODE SW3

LAB CODE RMAL DATE SENT 8/18/88

PRESERVATION METHOD HCl, H_2SO_4, HNO_3 or NaOH added by lab Chill to 4°C

COMMENTS TOC is 0.5 ft below ground surf; bottom of well is 34.8 ft from TOC
Borehole volume: 1.2 gallons, purge rate 3 gpm with B-K pump

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.08	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	630	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	396	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
0930	0.0	0.0	-	-	-	START PUMPING
0941	24	20	6.72	610	7.5	Dark brown, turbid; 3 gpm
0955	48	40	7.11	630	6.7	very slightly turbid 3 gpm
1003	60	50	7.17	630	6.7	very slightly turbid, 3 gpm
1009	72	60	7.18	630	6.6	v. sl turbid to clear, 3 gpm
1016	84	70	7.18	630	6.6	v. sl. turbid to clear, 3 gpm
						adequately developed for
						sampling
						Final water-level 28.3 ft

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm0082 LOG DATE 8/18/88 LOG TIME 1100

LOCATION ID W-18 (ES-1) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 041-0006 SAMPLE DEPTH (FT.) 30 ft

INITIAL GROUNDWATER DEPTH (FT) 29.30 ft (TOC)

SAMPLING PERIOD: START 1140 COMPLETE 1155

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMWL DATE SENT 8/19/88

PRESERVATION METHOD HCl, H2SO4, HNO3 or NaOH added by lab Chill to 4°C

COMMENTS D+M well installed 1986

Pure product 1/2" in bailer, dk Brown very oily

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.22	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	590	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	8.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	404	4

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1115	0	0	7.09	595	10.5	Pure product 1/2" in bailer
1123	3	1	7.10	550	9.5	less product
1128	6	2	7.17	580	8.8	" "
1135	9	3	7.22	590	8.5	small amt of product

SAMPLES TYPES. (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 8/18/88 LOG TIME 0940

LOCATION ID W-19 (IS-1) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 042-0001 SAMPLE DEPTH (FT.) 29.3 ft

INITIAL GROUNDWATER DEPTH (FT) 29.31 ft (TOC)

SAMPLING PERIOD: START 1010 COMPLETE 1042

SAMPLING METHOD B LOGGER CODE SM

LAB CODE Rmal DATE SENT 8/19/88

PRESERVATION METHOD HCl H_2SO_4 HNO_3 or NaOH added Chill to 4°C

COMMENTS Davis & Moore well installed 1986
Purge into below.

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.26	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	450	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	6.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	404	~~5~~ 4

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
0945	0	0	~~7.21~~	460	7.0	Sli cloudy NO odor
0955	2.5	1	7.21	440	7.2	" " " " "
1000	5	2	~~6.23~~	456	6.5	" " " "
1005	7.5	3	~~6.0~~ 7.26	456	6.0	" " " "

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

39.9
29.2
10.7
4.7
1.8

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 4 Aug 1988 LOG TIME 1537
LOCATION ID IS-2 (034) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 034-0003 SAMPLE DEPTH (FT.) 29 ft

INITIAL GROUNDWATER DEPTH (FT) 29.21ft (TOC)
SAMPLING PERIOD: START 8/17/88 1520 COMPLETE 1600
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMA DATE SENT 8/18/88
PRESERVATION METHOD HCl, H_2SO_4 or HNO_3 or NaOH pre-acidified Chill to 4°C
COMMENTS Top of casing 0.5 ft below ground surface
29.2' depth to water — bottom of hole = 39.9 ft

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.47	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	330	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	6.8	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	~~230~~ 236	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
4/Aug 88 1552	0.0	0.0	-	-	-	START PUMPING
1602	18	10	7.53	330	7.0	very turbid, brown 3 gpm
1614	36	20	7.70	320	6.0	med turbid
1623	54	30	7.76	320	5.8	slightly turbid med brn
1634	72	40	7.75	320	5.8	v slightly turbid
1642	90	50	7.74	320	5.5	almost clear 3 gpm
1652	108	60	7.68	320	5.6	" "
1656	117	65	7.68	320	5.5	" "
						parameters stabilized,
						developed for sampling
						Final water level 29.3 ft

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

8 3
1.4 gal

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 4 Aug 88 LOG TIME 1420
LOCATION ID IS-3 (035) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 035-0003 SAMPLE DEPTH (FT.) 41 ft

INITIAL GROUNDWATER DEPTH (FT) 41.22 ft (TOC)
SAMPLING PERIOD: START 8/18/88 1350 COMPLETE 1400
SAMPLING METHOD B LOGGER CODE SW3
LAB CODE RMRL DATE SENT 8/19/88
PRESERVATION METHOD HCl HasOu HNO3 or NaOH added Chill to 4°C
COMMENTS Depth to bottom of hole 49.5 ft
Top of casing is 0.5 ft below ground surface
Borehole volume 1.4 gallon

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.05	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	515	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	5.9	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	324	2

developed with B-K pump

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
4 Aug 88						
1405	0.0	0.0	-	-	-	START PUMPING
14:34	28	20	6.74	550	6.5	very turbid rate = 6 gal/min
14:44	56	40	6.96	500	6.3	Slightly turbid
14:54	84	60	7.03	510	7.0	V. " "
14:57	98	70	7.02	520	6.1	V " "
15:02	112	80	7.05	520	6.1	" " "
1508	126	90	7.06	520	6.1	very slightly turbid, 6 gal/min
						parameters stable Developed
						See sampling
						Final water level 41.3 ft

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

Flush mount

INSTALLATION ID Elm 6687 LOG DATE 8/9/88 LOG TIME 1105
LOCATION ID IS-4 (036) LOT CONTROL NO.
SAMPLE TYPE N SAMPLE ID (036+0003 SAMPLE DEPTH (FT.) 24'

INITIAL GROUNDWATER DEPTH (FT) 23.6'
SAMPLING PERIOD: START 1115 COMPLETE
SAMPLING METHOD B LOGGER CODE DM
LAB CODE RMA1 DATE SENT 8/10/88
PRESERVATION METHOD
COMMENTS TD = 30' TOC is 0.4 ft below ground surface
6.4 A well volume = 9 1.1 gallons

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.23	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	505	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	234	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1105	0.0	0.0	-	-	-	START PUMPING
1125						dark brown turbid 3gpm
1131	11	10	7.44	510	7.5	moderately turbid
1137	22	20	7.32	490	6.3	slightly turbid 4gpm
1142	33	30	7.30	500	6.5	slightly turbid
1145	44	40	7.32	500	6.3	slightly turbid
1148	55	50	7.32	500	6.3	very "
1153	66	60	7.32	500	6.3	very slightly turbid
						adequately developed for sampling
						Final depth to GW = 23.6'

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 068) LOG DATE Aug 10 1988 LOG TIME 0801
LOCATION ID 15-5 (037) LOT CONTROL NO. -
SAMPLE TYPE N SAMPLE ID 037-0003 SAMPLE DEPTH (FT.) -

INITIAL GROUNDWATER DEPTH (FT) ~~49.5'~~ 49.68ft TOC
SAMPLING PERIOD: START ~~0835~~ 8/17/88 1025 COMPLETE ~~0955~~ 1055
SAMPLING METHOD ~~PP~~ ~~SP~~ ~~#1 pump~~ BLOGGER CODE SWB
LAB CODE RMAL DATE SENT 8/18/88
~~PRESERVATION METHOD~~ Total Well Depth 60.6', 11.2' of water in well
COMMENTS which is 1.8 gal H2O in pipe
HCl H2SO4 HNO3 or NaOH are added by lab Chill to 4°C

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.28	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	190	1
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	5.8	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	104 ~~104~~	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
0835	0.0	0.0	-	-	-	START PUMPING
0853	36	20	6.51	130	6.7	very turbid, brown
0859	54	30	7.00	143	5.2	turbid, brn
0908	72	40	7.35	138	5.1	moder. turbid l.m, 10 gpm
0914	90	50	7.39	140	5.1	moder. turbid brn 5 gpm
0921	108	60	7.54	140	5.2	slight turbid brn 5 gpm
0930	126	70	7.60	128	5.2	very slightly turbid brn
0939	144	80	7.59	137	5.4	clear - very slightly turbid
						-
						Adequately developed
						for sampling

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY

INSTALLATION ID Elm 068 LOG DATE 9 Aug 88 LOG TIME 1426
LOCATION ID IS-6 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID (038)-0003 SAMPLE DEPTH (FT.) 50 ft

INITIAL GROUNDWATER DEPTH (FT) 49.87 ft (TOC)
SAMPLING PERIOD: START ~~8/17/88~~ 8/17/88 0855 COMPLETE 0945
SAMPLING METHOD B LOGGER CODE Sam3
LAB CODE Numar DATE SENT 8/18/88
PRESERVATION METHOD HCl, H_2SO_4 or HNO_3 or NaOH pre-added by lab chill to 4°C
COMMENTS Depth of well from top of PVC casing (TOC) = 60.7 ft
TOC is .7 ft below ground surface
borehole volume = 10.8 ft = 1.8 gal/ft

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.12	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	250	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	5.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	~~150~~ 156	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
9 Aug 88 1426	0.0	0.0	-	-	-	START PUMPING
1430	18	10	7.55	228	8.0	very turbid dark brown
1435	36	20	7.59	212	5.7	turbid 5 gpm pumping
1440	54	30	7.53	212	5.9	moderately turbid brown
1445	~~72~~	40	7.52	215	5.6	moderately turbid brown
1450	90	50	7.46	215	5.6	slightly turbid
1455	108	60	7.53	210	5.6	slightly turbid
1500	136	70	7.50	210	5.6	clear to very slightly turbid
						Ground water final level 49.9'
						well adequately developed
						for sampling

SAMPLES TYPES. (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 ELM LOG DATE 29/July 88 LOG TIME 1615

LOCATION ID IS-7 (039) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 039-0003 SAMPLE DEPTH (FT.) 13.5ft

INITIAL GROUNDWATER DEPTH (FT) 13.56ft (TOC)

SAMPLING PERIOD: START 8/17/88 1410 COMPLETE 1426

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/18/88

PRESERVATION METHOD HCl, H_2SO_4, HNO_3 & Not pre-added by lab - Chill to 4°C

COMMENTS TD = 26.7 ft from TOC Purge rate 3½ GPM

TOC 2 ft below ground surface 2.1 gal / well vol.

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.14	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	312	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	~~148~~ 149	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1620	5.	2.3	6.61	310	9	Very turbid - NO odor or sheen
1630	25	11.5	6.95	309	9	" " " " "
1635	50	23	7.00	308	9	clearing but still turbid
1645	75	34.5	7.10	309	8.5	" " " "
1650	85	39	7.02	309	6.5	" " " "
1655	100	46	7.1	309	8.5	slightly turbid
1656	105	46	7.06	306	8	clear
						Developed for sampling

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK

R - REPLICATE TB - TRIP BLANK

S - SPIKE LB - LAB BLANK

K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP

B - BAILER AL - AIR-LIFT SAMPLER

PP - PERISTALIC PUMP BP - BLADDER PUMP

SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/23/88 LOG TIME 1135
LOCATION ID IS-08-01 (040) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 040-0003 SAMPLE DEPTH (FT.) 25ft

INITIAL GROUNDWATER DEPTH (FT) 24.58' (TOC) 37'5" (TD)
SAMPLING PERIOD: START 8/17/88 1230 COMPLETE 1330
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE ENVR DATE SENT 8/18/88
PRESERVATION METHOD HCl, H_2SO_4 or HNO_3 preadded by lab - chill to 4°C
COMMENTS Slight POL odor - Duplicate taken here

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.10	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	395	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	8.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	~~272~~ ~~272~~	0.2
	ALK	Dup	264 ~~[illegible]~~	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1155	0	0	6.92	380	8	Slightly turbid odor + sheen
1205	5	2.5	7.08	360	7.5	Very turbid odor + sheen
~~1230~~	10	5	7.11	360	8	" " "
1240	20	10	7.24	390	8	dk brown turbid, odor & sheen
~~1305~~	30	15	7.26	389	8	" " "
1320	40	20	7.24	390	8	dk brown, odor & sheen
1335	50	25	7.17	390	8	" " "
1358	60	30	7.21	390	8	" " "
9/25 1304	65	32.5	7.00	400	10	turbid - slight odor - no sheen
1320	75	37.5	7.02	400	8.2	brown turbid, sli sheen
1340	85	42.5	6.97	410	8.5	" "
1357	94	~~45~~ 47	7.15	400	8.5	" "

SAMPLES TYPES: (WSACODE)

D -	DUPLICATE	FB -	FIELD BLANK		
R -	REPLICATE	TB -	TRIP BLANK		
S -	SPIKE	LB -	LAB BLANK		
K -	KNOWN	N -	NORMAL		

SAMPLE METHODS: (WSMCODE)

G -	GRAB	SP -	SUBMERSIBLE PUMP
B -	BAILER	AL -	AIR-LIFT SAMPLER
PP -	PERISTALIC PUMP	BP -	BLADDER PUMP
SL -	SUCTION LIFT PUMP		

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/23-25/88 LOG TIME 1643 (7/25)

LOCATION ID IS-08-01 (040) LOT CONTROL NO. _____

SAMPLE TYPE H2O SAMPLE ID 040 SAMPLE DEPTH (FT.) _____

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (° C)	COMMENTS
1650	100	52	7.02	410	9	cloudy, slight odor & foam
1700	105	52.5	7.19	409	8	" " "
1610	110	57	7.29	400	8.5	" " "
1623	115	59.5	7.23	408	8.5	"

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm 0687 LOG DATE 8/22/88 LOG TIME 0843

LOCATION ID SPL-01 (049) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 049-0003 SAMPLE DEPTH (FT.) 9Ct

INITIAL GROUNDWATER DEPTH (FT) 8.5 ft 8/22 - 8.69 ft (TOC)

SAMPLING PERIOD: START 8/22/88 1420 COMPLETE 1430

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/23/88

PRESERVATION METHOD HCl & H_2SO_4 pre-added by lab · Chill to 4°C

COMMENTS TD = 23' 14.5' H_2O in pipe which = 2.5 gal in pipe. Pumped 11 Eq gal out of well to develope

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.92	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	400	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	9.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	274.0	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
0857	0.0	0.0	-	-	-	START PUMPING
1110	99	36	6.89	415	9°C	slightly turbid discolor
1115	100	40	6.67	410	8.5	very slightly turbid
1117	112	45	6.73	407	8.5	very slightly turbid
						Developed adequately for sampling

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm OU7 LOG DATE 8/11/88 LOG TIME 1201
LOCATION ID SP-7/02 (OSC) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 050-0003 SAMPLE DEPTH (FT.) 36 ft

INITIAL GROUNDWATER DEPTH (FT) 35.5' 8/22/88 36.29 ft (toc)
SAMPLING PERIOD: START 8/22 - 1500 COMPLETE 1515
SAMPLING METHOD B LOGGER CODE SMR
LAB CODE RMAL DATE SENT 8/23/88
PRESERVATION METHOD HCl or H2SO4 ~~HNO3~~ added by lab Chill to 4°C
COMMENTS TD = 50.3', Water pipe = 14.8', wkwk = 2.4 gal.

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.19	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	340	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	8	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	137.2	0.2
		ALK Dup	133.2	

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1215	0.0	0.0	-	-	-	START PUMPING
1350	90	36	7.13		9.0	moderately turbid
1353	92	37	7.25	347	8.0	slightly turbid, 3 gpm
1358	110	44	7.27	354	7.5	slightly turbid
						Adequately developed for sampling.
				Final		Depth to H2O = 36.6'

SAMPLES TYPES. (WSACODE)

D - DUPLICATE	FB - FIELD BLANK	G - GRAB	SP - SUBMERSIBLE PUMP
R - REPLICATE	TB - TRIP BLANK	B - BAILER	AL - AIR-LIFT SAMPLER
S - SPIKE	LB - LAB BLANK	PP - PERISTALIC PUMP	BP - BLADDER PUMP
K - KNOWN	N - NORMAL	SL - SUCTION LIFT PUMP	

SAMPLE METHODS. (WSMCODE)

GROUND WATER QUALITY SAMPLING RECORD

ECM

INSTALLATION ID 0687 LOG DATE 7/28/88 LOG TIME 1045

LOCATION ID SP2/SP6 -01 (051) LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 051-0002 SAMPLE DEPTH (FT.) 41 ft TOC

INITIAL GROUNDWATER DEPTH (FT) 40.8 ft

SAMPLING PERIOD: START 8/10/88 1300 COMPLETE 1315

SAMPLING METHOD _____ LOGGER CODE Dugan & Sam3

LAB CODE RMAL DATE SENT 8/11/88

PRESERVATION METHOD 1+1 Conc HCl & HNO3 add by lab

COMMENTS Casing stickup 2.5 ft, purge rate 2.5 gal/min

Total depth of casing = 53.2 ft

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.09	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	360	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.2	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	240	

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS (Purge rate 2½ gal/min)
	0.0	0.0	-	-	-	START PUMPING
1045	5	2	6.78	330	9	brown, very turbid w/ debris
1105	25	10	7.27	352	8.5	" " " "
1115	50	20	7.26	351	8.5	turbid but clearing
1130	75	30	7.28	350	8.5	" " "
1145	100	40	7.24	350	9	turbid slight
1150	105	42	7.22	353	9	very slight discoloration - adequately developed for sampling

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID EI LOG DATE 7-28-88 LOG TIME 1710
LOCATION ID SP216-02 (052) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 052-0002 SAMPLE DEPTH (FT.) 29'-6"

INITIAL GROUNDWATER DEPTH (FT) 32.49
SAMPLING PERIOD: START 8/10/88 1555 COMPLETE 1610
SAMPLING METHOD B LOGGER CODE SW3
LAB CODE RMAL DATE SENT 8/11/88
PRESERVATION METHOD HCl H2SO4 & HNO3 added by lab
COMMENTS Slight odor & sheen water when purging

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.96	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	345	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	90.	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	236	

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1630	0.0	0.0	-	-	-	START PUMPING
1642	20.0		6.73	45	18	[redacted]
1650	50.0		7.15	35	18	
1657	75.0		8.17	45	18	
1702	90.0		8.15	45	18	
1705	100.0		8.16	45	18	

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm 0687 LOG DATE 8/10/88 LOG TIME 1350
LOCATION ID SP2/6-03 (053) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID [redacted] SAMPLE DEPTH (FT.) 38ft

INITIAL GROUNDWATER DEPTH (FT) ~~37.5~~ 37.55ft (loc)
SAMPLING PERIOD: START 8/13/88 0930 COMPLETE 0930
SAMPLING METHOD B LOGGER CODE Sw13
LAB CODE RMRL DATE SENT 8/13/88
PRESERVATION METHOD chill to 4°C, Add HCl, H_2SO_4 or HNO_3
COMMENTS TD = 51.3, 13.8 = well volume, 2 gal

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.07	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	700	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.2	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	227.3	0.1
	ALK	Dup	222.7	0.1

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1415	0.0	0.0	-	-	-	START PUMPING
1425	76	20	7.48	408	8.5	very turbid, brown-grey
1437	69	30	7.25	399	7.0	turbid brn grey, 3-4 gpm
1443	92	40	7.18	392	7.0	slightly turbid brn grey
1458	115	50	7.18	370	7.0	very slightly turbid, 3-4 gpm
1510	138	60	7.18	370	7.0	clear to very slightly turb. g
						Adequately developed for sampling
		1525	Final Water Depth = 37.60 ft.			

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm (068) LOG DATE 8/10/88 LOG TIME 1120
LOCATION ID SP-2/6-04 (054) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 054-0002 SAMPLE DEPTH (FT.) 38ft

INITIAL GROUNDWATER DEPTH (FT) ~~35.10'~~ 38.30ft (TOC)
SAMPLING PERIOD: START ~~8/8/88~~ 8/13/88 0840 COMPLETE 0848
SAMPLING METHOD B LOGGER CODE Sw13
LAB CODE RCWHL DATE SENT 8/13/88
PRESERVATION METHOD HCl, H_2SO_4 or HNO_3 added by lab
COMMENTS TD = 53.0', 18' of water in pipe, = 3 gal of well vol.

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	~~6.24~~ 6.98	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	332	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	63.4	0.1

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1133	0.0	0.0	-	-	-	START PUMPING
1156	45	15	7.16	352	8.0	turbid, gray very slight H_2S odor
1202	60	20	7.18	320	6.8	turbid gray no odor
1208	75	25	7.21	338	6.8	mod turbid gray " 4 4 gpm
1221	90	30	7.2	340	7.0	slightly turbid gray " " 3-4 gpm
1226	105	35	7.21	339	7.0	slightly turbid gray " "
1232	120	40	7.18	340	7.0	slightly turbid gray " " 3-4 gpm
1240	135	45	7.21	338	7.0	slightly turbid, 3-4 gpm
1252	150	50	7.20	340	7.0	very slightly turbid 1 gpm - HG
						Adequately developed
						for sampling

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING REC

INSTALLATION ID Elm 069 LOG DATE 8/11/88 LOG TIME 1500

LOCATION ID SP2/6 -05 LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 055Z0003 SAMPLE DEPTH (FT.) 33 ft

INITIAL GROUNDWATER DEPTH (FT) ~~32.8'~~ 32.97ft (TOC)

SAMPLING PERIOD: START 8/16/88 0955 COMPLETE ~~0955~~ 1000

SAMPLING METHOD B LOGGER CODE SM3

LAB CODE RMAL DATE SENT 8/17/88

PRESERVATION METHOD HCl or H_2SO_4 added by lab Chill to 4°C

COMMENTS TD = 48.0', Water in pipe = 15.2', 1 vol = 2.5 gal
Strong POL odor

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.02	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	345	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	9.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	224	

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1520	0.0	0.0	-	-	-	START PUMPING
1636	55	22	7.76	330	8°C	Gray turbid POL smell slight solid flow turn
1645	65	26	7.47	345	7°	Gray mod turbid " "
1649	75	30	7.37	340	7.5°C	lt gl turbid
						Adequately developed for sampling
						Final H2O depth = 32.81

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/10/88 LOG TIME 1325
LOCATION ID W-16 SP2/6 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 061-0001 SAMPLE DEPTH (FT.) 32

INITIAL GROUNDWATER DEPTH (FT) 32.07
SAMPLING PERIOD: START 1410 COMPLETE 1435
SAMPLING METHOD B LOGGER CODE Dm
LAB CODE RMAL DATE SENT 8/11/88
PRESERVATION METHOD Chill to 4°C, add HCl, HNO_3 by lab
COMMENTS

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.0	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	360	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	9.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	248	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1352	4	1	6.96	355	9.0	cloudy, slight POL odor + H_2S odor
1400	8	2	7.01	362	9.0	No odor; cloudy
1405	12	3	7.00	360	9.5	No odor; "

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/10/88 LOG TIME 1900
LOCATION ID ~~062-0001~~ SP2/6 GW6A LOT CONTROL NO. —
SAMPLE TYPE Watt-N SAMPLE ID 062-0001 SAMPLE DEPTH (FT.) 31

INITIAL GROUNDWATER DEPTH (FT) 31.62
SAMPLING PERIOD: START 1515 COMPLETE 1530
SAMPLING METHOD B LOGGER CODE DM
LAB CODE RMAL DATE SENT 8/11/88
PRESERVATION METHOD Chill to 4°C Add H_2SO_4 or HNO_3
COMMENTS

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.03	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	340	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	246	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1505	1	1	7.06	349	9.0	turbid petroleum odor
1507	2	2	7.1	340	8.0	+ sheen
1510	3	3	7.03	340	8.0	"

SAMPLES TYPES: (WSACODE)

D - DUPLICATE	FB - FIELD BLANK	G - GRAB	SP - SUBMERSIBLE PUMP
R - REPLICATE	TB - TRIP BLANK	B - BAILER	AL - AIR-LIFT SAMPLER
S - SPIKE	LB - LAB BLANK	PP - PERISTALIC PUMP	BP - BLADDER PUMP
K - KNOWN	N - NORMAL	SL - SUCTION LIFT PUMP	

SAMPLE METHODS: (WSMCODE)

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm 0697 LOG DATE 8/9/88 LOG TIME 1540
LOCATION ID SP4 -07W LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 063-0003 SAMPLE DEPTH (FT.) 5ft

INITIAL GROUNDWATER DEPTH (FT) 5.36 ft (TOC)
SAMPLING PERIOD: START ~~1555~~ 8/12/88 1415 COMPLETE 1425
SAMPLING METHOD B LOGGER CODE SMR
LAB CODE RIVAL DATE SENT 8/13/88
PRESERVATION METHOD Chill to 4°C Acid H_2SO_4 or HCl ~~HNO3~~
COMMENTS 27.4 ft to bottom of well, 2.5' pvc stick-up, 22.1' at GW. in pipe and 3.7 gal.

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.10	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	292	1
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	9.5	~~0.01~~ 0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	147.6	0.4

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1555	0.0	0.0	-	-	-	START PUMPING
1604	15	4	7.84	275	8.9	very turbid, dark brown, 3gpm
1608	22	7	7.50	262	7.7	very turbid, 3gpm
1610	30	9	7.43	261	7.4	turbid
1614	45	12	7.44	261	7.4	~~moderately~~ turbid, 3-4 gpm
1622	57	15	7.36	258	7.6	moderately turbid, 3-4 gpm
1625	67	18	7.38	256	7.6	moderately turbid, 3-4 gpm
1628	75	20	7.35	257	7.5	slightly turbid, 3-4 gpm
1632	83	22	7.35	257	7.5	very slightly turbid
1635	90	24	7.31	257	7.4	very slightly turbid
						Adequately developed for
						sampling.

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID EIM 0687 LOG DATE 8/12/88 LOG TIME 1350 HRS

LOCATION ID SD4-02 LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 064-0003 SAMPLE DEPTH (FT.) 6ft

INITIAL GROUNDWATER DEPTH (FT) ~~5.67 FT~~ 5.67 ft

SAMPLING PERIOD: START ~~1350 HRS~~ 8/16/88 1045 COMPLETE ~~1430 HRS~~ 1055

SAMPLING METHOD B LOGGER CODE SDB

LAB CODE RMAL DATE SENT 8/17/88

PRESERVATION METHOD HCl or H_2SO_4 added By lab Chill to 4°C

COMMENTS TD = 27.4FT STANDING H_2O = 21.8FT

21.8 ÷ 6 = 3.65 GAL = BORE Volume

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	~~7.6~~ 7.29	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	~~240~~ 255	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	~~7.6~~ 7.8	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	220	

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1355	0.0	0.0	-	-	-	START PUMPING
1410	60	16.5	7.55	252	10.0	TURBID - 7GPM
1416	80	22.0	*	250	8.0	MODERATELY TURBID 7GPM
1423	100	27.5		240	7.0	"
1430	120	33.0		240	7.0	
	ADEQUATELY DEVELOPED FOR SAMPLING					
	FINAL DEPTH TO H_2O =				5.7'	

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

* PH METER INOPERABLE

GROUND WATER QUALITY SAMPLING RECORD

ELM

INSTALLATION ID ~~SP4-03~~ LOG DATE 8-23-89 LOG TIME 8 1345

LOCATION ID SP4-03 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 065-0003 SAMPLE DEPTH (FT.) 40 ft

INITIAL GROUNDWATER DEPTH (FT) 36'-7" 8/24 - 39.68 ft

SAMPLING PERIOD: START 8/29/88 - 0925 COMPLETE 0935

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/30/88

PRESERVATION METHOD HCl & H_2SO_4 added by lab

COMMENTS

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	5.30	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	340	1
REDOX POTENTIAL	Eh	mvolts	~~fast~~	
TEMPERATURE	TEMP	°C	6.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	= 268.0	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1345	0.0	0.0	-	-	-	START PUMPING
1350	5.0	2.5	ND	ND	ND	ND
1400	10.0	5				
1405	20.0	10				
1410	30.0	15				
1415	40.0	20				
1420	50.0	25				
1425	60.0	30				
1430	70.0	35				
1435	80.0	40	↓	↓	↓	↓

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID SLM LOG DATE 7/19/88 LOG TIME 1300
LOCATION ID SPS-2 (072) LOT CONTROL NO. _____
SAMPLE TYPE ~~NORMAL~~ N SAMPLE ID 072-0003 SAMPLE DEPTH (FT.) 32ft toc

INITIAL GROUNDWATER DEPTH (FT) 31ft (toc)
8/4/88 SAMPLING PERIOD: START 1115 COMPLETE 1122
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/5/88
PRESERVATION METHOD Chill to 4°C HCl H_2SO_4 or HNO_3 added
COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.32	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	605	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	489.6	0.4

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1305	0	0	7.29	600	7.5	Clear
1310	2	1	7.41	600	6	Slightly turbid
1315	5	2.5	7.47	590	6	Turbid
1330	7	3.5	6.99	600	6	Turbid
1340	12.5	7	7.5	600	7	Turbid
7/20 0850	12.5	7	7.26	600	7½	clear, sli odor
0905	17.5	9.5	7.41	600	7½	gray brown turbid, sli odor
0925	19.5	13	7.35	600	7½	gray brown turbid, faint odor
0945	25	16	7.43	600	7	"
						Developed sufficiently for sampling

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

ECM

INSTALLATION ID 0687 LOG DATE 7/19/88 LOG TIME 1355

LOCATION ID SPS-02 (073) LOT CONTROL NO. _____

SAMPLE TYPE ~~ENTER~~ N SAMPLE ID 073-0003 SAMPLE DEPTH (FT.) 22 ft TOC

INITIAL GROUNDWATER DEPTH (FT) 22 ft

SAMPLING PERIOD: START 1355 7/19/88 COMPLETE 1405

SAMPLING METHOD B LOGGER CODE ~~SAB~~

LAB CODE RMAL DATE SENT 7/20/88

PRESERVATION METHOD _____

COMMENTS Casing stickup 2 ft above ground surface

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.13	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	720	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	9.9	~~0.0~~ 0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	468.8	0.1

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
7/11/88	0.0	0.0	-	-	-	START PUMPING
1420	20.0	8.7	6.84	720	11.5	Turbid
1440	30.0	13.0	7.18	620	9	turbid
1745	40.0	17.4 ~~6.99~~	6.99	~~700~~	9	turbid
7/19/88 1800	43.0	18.7	6.93	700	11	turbid
7/19/88 1130	47.0	.20	6.89	740	9.8	slightly turbid
1300	53.0	23	7.09	720	9.8	faintly turbid
1345	56	24.3	7.13	720	9.9	clear
1355	57	24.8	7.13	720	9.9	clear -
						developed for sampling

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 7/20/88 LOG TIME 1010

LOCATION ID SPS-06 (077) LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 077-0004 SAMPLE DEPTH (FT.) 35 ft (TOC

INITIAL GROUNDWATER DEPTH (FT) 34.81 ft (TOC)

8/4/88 SAMPLING PERIOD: START 1510 COMPLETE 1520

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMOL DATE SENT 8/5/88

PRESERVATION METHOD Chill to 4°C Add HCl H_2SO_4 or HNO_3

COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.17	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	580	1
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	7.00	0.01
ALKALINITY ($CaCO_3$)	ALK	mg/l	400	5

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS	
7/20/88 1010	0.0	0.0	-	-	-	START PUMPING	35'
1024	3.0	1.2	6.53	600	5.0	very turbid - BK pump	
1045	13.0	5.2	7.38	580	5.5	very turbid	
1100	15.0	6				switch to Teflon bailer	40'
Bail 1158	23.0	9.2	7.41	500	5.0	- bailed nearly dry	
1235	28.0	11.2	7.53	500	5.2		
1310	33.0	13.2	7.44	500	3.5	temp resp? turbid	
1330	36.0	14.4	7.28	550	3.5		
1350	39.0	15.6	7.19	550	3.5	Temp stable - sl turbid	
1410	42.0	16.8	7.32	550	3.5	sl turbid	48'
						Adequate for development	

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/20/88 LOG TIME 1530
LOCATION ID SPS-7 LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 088-0003 SAMPLE DEPTH (FT.) 34.67 toc

INITIAL GROUNDWATER DEPTH (FT) 34 ft 6" (TOC) 50' 5" TD
8/1/88 SAMPLING PERIOD: START 8/5/88 1300 COMPLETE 1315
SAMPLING METHOD B LOGGER CODE SB
LAB CODE PWR DATE SENT 8/6/88
PRESERVATION METHOD Chill to 4°C Add HCL, H_2SO_4 or HNO_3
COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.63	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	700	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	5.9	0.01
ALKALINITY ($CaCO_3$)	ALK	mg/l	560	2.0

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
7/x 1540	0	0	9.33	310	10°	sli gray turbid, v. faint odor
1610	4	2	7.88	385	8½	very turbid - gray
1705	4 ½	2	7.72	440	8	very turbid - gray
7/21 1240	4.5	2	7.00	600	6.5	
1252	9.5	4				5 gallons purged = dry
1320	10.5	4.5	7.43	590	6.5	
1357			7.32	650	7.0	
1405	12.0	6	7.34	630	7.5	
[illegible]	13.0	6.5	7.29	640	7.0	clear
						Discharged

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/8 - 7/9 1988 LOG TIME @ 1200 (7/8/88
LOCATION ID SD-5-08 LOT CONTROL NO. _____
SAMPLE TYPE WATER SAMPLE ID 0687-NG-079 / GW-88-0003 SAMPLE DEPTH (FT.) 15ft TOC

INITIAL GROUNDWATER DEPTH (FT) 15ft 10" (TOC) 27ft 6" TD
SAMPLING PERIOD: START 8/4/88 1540 COMPLETE 1548
SAMPLING METHOD Teflon Bailer LOGGER CODE SWB
LAB CODE Rmw DATE SENT 8/5/88
PRESERVATION METHOD Chill to 4°C Add HCl H2SO4 or HNO3
COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.42	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	255	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	6.5	0.01
ALKALINITY ($CaCO_3$)	ALK	mg/l	202.8	0.1

	TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
		0.0	0.0	-	-	-	START PUMPING
7/8	1200	7	2.5	7.15	313	14°C	Date: 7/8/88
7/9	0830	10	3.5	7.4	328	13°C	Slightly Cloudy 7/9/88
	0915	13	4.8	7.7	309	11°C	gray, cloudy "
	1033	15	6.0	7.6	308	10°C	" "
	1050	17	7.0	7.59	293	9°C	" "
7/15	1440	17	7.0	6.91	230	12°	Slightly cloudy
	1450	21	9.0	7.00	250	7°	turbid
	1510	25	11.0	7.27	272	7°	Very turbid
7/20	1010	25	11.0	7.54	220	6°	very slightly turbid - no odor
	1015	30	13.0	7.01	230	6°	Very turbid - no odor
	1020	32	14.0	7.49	240	6	turbid - "
	1045	35	15.5	7.51	250	7	Slightly turbid - "
	1055	35	15.5	7.58	260	7	-- Allowed to recharge & Slightly turbid

bailed dry

Developed sufficiently to sample

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/20/88 LOG TIME @ 1100
LOCATION ID SP-5-10 LOT CONTROL NO. _____
SAMPLE TYPE ~~WATER~~ N SAMPLE ID 081-0003 SAMPLE DEPTH (FT.) 3ft TOC

INITIAL GROUNDWATER DEPTH (FT) 2ft 11" (TOC) YD = 10ft 10"
SAMPLING PERIOD: START 8/5/88 1530 COMPLETE 1540
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/6/88
PRESERVATION METHOD Chill to 4°C Add HCl H_2SO_4 HNO_3 Dep. on test
COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.47	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	620	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	7.5	2.5
ALKALINITY ($CaCO_3$)	ALK	mg/l	520	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
7/20 1110	0.0	0.0	7.22	600	12.0	slight turbid, gleen, slt org odor, sed.
1120	2.0	~~0~~ 1.2	7.33	370	10	Very turbid & thick, brined clay
7/21 1220	4.0	2.4	6.90	650	9.8°	exhibits pet. odor & gleen 3'
1305	4.5	2.7	7.29	650	8.0	well not fully recovered
~~1320~~	~~3.0~~		~~7.45~~	~~590~~	~~8.5~~	Delete (entry for SPS-07)
1340	5.0	3.0	7.35	640	8.5	clear enough
						developed sufficient for
						sampling - temp effected by
						weather & time lag

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

ELM

INSTALLATION ID ~~SPS-20~~ LOG DATE 8-24-88 LOG TIME 1345

LOCATION ID SPS-20 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 126-0003 SAMPLE DEPTH (FT.) 3 ft (TOC)

INITIAL GROUNDWATER DEPTH (FT) 1'-0" 8/24/88 - 2.92 ft (TOC)

SAMPLING PERIOD: START 8/24/88 0830 COMPLETE 0835

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/30/88

PRESERVATION METHOD HCl or H_2SO_4 added by lab

COMMENTS

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.06	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	360	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	2.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	197.6	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
~~1345~~ ~~1405~~	0.0	0.0	-	-	-	START PUMPING
1353 ~~1415~~	5.0		8.10	6	11	Duction Instrument reading
1415	10.0		8.21	6	11	
1435	14.0		8.20	6	11	
1455	17.0		8.21	6	11	

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

well volume 1.6 gal

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 7/21/88 LOG TIME 1430

LOCATION ID SPSA-15 (067) LOT CONTROL NO. (067)

SAMPLE TYPE N SAMPLE ID 067-0004 SAMPLE DEPTH (FT.) 11 ft TOC

INITIAL GROUNDWATER DEPTH (FT) 11.3 ft

8/5/88 SAMPLING PERIOD: START 1445 COMPLETE 1455

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/6/88

PRESERVATION METHOD Chill to 4°C, HCl H2SO4 HNO3 added for contaminants

COMMENTS Depth from TOC to bottom of well = 21.8 ft

Well bailed dry after 2 gal. during purging prior to sampling

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	8.57	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	820	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	8.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	634	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
7/21/88 1430	0	0	7.26	800	7.5	initial sample before dewatering
1439	2	1.3				
1440	3	1.9	7.62	830	7.5	well not fully recovered since last sample
1705	3.5	2.2	7.70	780	7.7	
7/23 W 0850	~~5.5~~	~~3.5~~	6.99	720	9.0	initial test before purging 11.2'
0900	5.5	3.5	7.70	750	7.4	bailed dry in 3 minutes
0918	5.8	3.7	7.93	790	7.2	
						well extremely slow to
						recharge - adequately
						developed for sampling

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM (0087) LOG DATE 7/19/88 LOG TIME 1640

LOCATION ID SPSA-16 (068) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 068-0004 SAMPLE DEPTH (FT.) 175 ft TOC

INITIAL GROUNDWATER DEPTH (FT) 165 ft TOC

8/5/88 SAMPLING PERIOD: START 1420 COMPLETE 1430

SAMPLING METHOD B LOGGER CODE SB13

LAB CODE RMRL DATE SENT 8/6/88

PRESERVATION METHOD Chill to 4°C HCl H_2SO_4 HNO_3 add for certain tests

COMMENTS —

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.86	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	1020	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.0	0.0
ALKALINITY ($CaCO_3$)	ALK	mg/l	1094	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
7/19/88 1640	0.0	0.0	-	-	-	START PUMPING 165'
1740	5	5				
7/20/88 1730	+1					
1450	11	11	6.88	~~-~~	INOP	turbid : purged dry @ 6 gallons
1515	13	13	6.99	~~-~~	INOP	slightly turbid ; will allow to recharge
1530	15	15	6.97	1380	8	Meter OK after pushing in probe jack
1550	17	17	7.00	1360	9	temp variable due to heat of probe & beaker + water
1630	19	19	6.91	1340	8.8	Considered overlapped

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID (0684) ELM LOG DATE 7/11/88 LOG TIME Varies see below

LOCATION ID SP SA 18 (070) LOT CONTROL NO. -

SAMPLE TYPE ~~WATER~~ N SAMPLE ID 0682-UG-070 65-88-0004 SAMPLE DEPTH (FT.) 14ft 4in TOC

INITIAL GROUNDWATER DEPTH (FT) 14ft 4in (TOC) TD=20ft 7in

7/11/88 SAMPLING PERIOD: START 1405 COMPLETE 1415

SAMPLING METHOD Teflon Bailer LOGGER CODE SWB

LAB CODE ENSR DATE SENT 7/20/88

PRESERVATION METHOD Various according to test

COMMENTS 418.1 - H2SO4 160.1 - NEAT 420.2 - HCL

Chill all to 4°C

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.17	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	380	0.01
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	8.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	170	1

	TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
7/11	~~1225~~	0.0	0.0	-	-	-	START PUMPING
	1725	2.0	2.0	6.49	448	8	turbid - brown
7/13	1030	2.00	2.0	5.93	408	8	slight turbidity
	1040	5.00	5.0	6.04	410	8	Very turbid - bailing
	1100	~~6.00~~ 7.5	7.5	6.25	410	8	turbid
	1110	8.0	8.0	6.33	410	8	turbid
	1115	8.0	8.0	6.29	400	7	slightly turbid
							Developed for sampling

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK

R - REPLICATE TB - TRIP BLANK

S - SPIKE LB - LAB BLANK

K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP

B - BAILER AL - AIR-LIFT SAMPLER

PP - PERISTALIC PUMP BP - BLADDER PUMP

SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/11/88 LOG TIME 1230
LOCATION ID SP-51-19 LOT CONTROL NO. _____
SAMPLE TYPE ~~WATER~~ N SAMPLE ID 071-0004 SAMPLE DEPTH (FT.) 16.5 TOC

INITIAL GROUNDWATER DEPTH (FT) 15.8 ft (TOC)
8/5/88 SAMPLING PERIOD: START 1348 COMPLETE 1405
SAMPLING METHOD Teflon Bailer LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/6/88
PRESERVATION METHOD Chill to 4°C HCL HaSO4 HNO3 added depending on test
COMMENTS casing stickup above ground surface = ~~3~~ 2.5 ft

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.09	0.1
SPECIFIC CONDUCTANCE	SC	µmhos/cm	350	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	6.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	~~400~~ 259	~~5~~ 2
		ALK Duplicate	294	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1230	0.0	0.0	-	-	-	START PUMPING
1235	0.0		6.78	400	7	Very Turbid
1245	5.0	5	6.83	~~390~~ 375	6.5	Very Turbid
1255	10.0	10	6.87	380	6.5	"
1300	15.0	15	6.97	362	7.0	"
1305	20.0	20	6.77	365	7.0	"
1310	25.0	25	6.92	365	6.5	"
7/14 1705	25.0	25	6.86	397	6	Clear - slight turbid
1715	30.0	30	6.87	380	7½	very Turbid
1720	35.0	35	6.98	375	7.5	very turbid
7/19 1500-1545	42.0	42	6.78	395	8.0	clear ▼ 15.9 ft TOC
1615	45.0	45	6.87	395	8.2	clear ▼ 16.1 ft TOC
						developed for sampling

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID SP7/10-01 LOG DATE 7-27-88 LOG TIME 1400
LOCATION ID SP7/10 LOT CONTROL NO. ~~0884~~
SAMPLE TYPE N SAMPLE ID 084-0003 SAMPLE DEPTH (FT.) 15 ft

INITIAL GROUNDWATER DEPTH (FT) ~~15 ft~~. 15.00 ft (TOC)
SAMPLING PERIOD: START 8/15/88 0925 COMPLETE 0935
SAMPLING METHOD B LOGGER CODE SW3
LAB CODE RMAL DATE SENT 8/16/88
PRESERVATION METHOD HCl, H_2SO_4 add prev. Chill to 4°C.
COMMENTS No odors or Sheen

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.11	0.1
SPECIFIC CONDUCTANCE	SC	µmhos/cm	405	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	124	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1255	15.0		6.88	50	9°	1242
1300	45.0		7.20	45	8.5	
1305	55.0		7.17	42	7.5	
1307	55.0		7.27	42	7.5	
1310	80.0		7.24	42	7.5	
1313	90.0		7.27	42	7.5	
1316	100.0		7.26	42	7.5	
1320	110.0		7.26	42	7.5	1323

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELAM 0687 LOG DATE 7/27/88 LOG TIME 1315

LOCATION ID SP7/10 - 02 (085) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 085-0003 SAMPLE DEPTH (FT.) 16½ ft

INITIAL GROUNDWATER DEPTH (FT) 16.35 ft (TOC)

SAMPLING PERIOD: START 8/15/88 0845 COMPLETE 0855

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE PMAL DATE SENT ~~8/15/88~~ 8/16/88

PRESERVATION METHOD Chill to 4°C, HCl or H2SO4 prev. added by lab

COMMENTS Top of casing flush with ground surface

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.98	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	481	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	6.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	162	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1315	5	3.5	6.97	650	10	Brown turbid NO sheen or odor
1330	25	17.5	7.24	580	8	" " "
1345	50	35	7.36	520	7.5	Clearing but still turbid
1350	75	42.5	7.29	500	8	Slightly turbid
1400	100	60	7.29	500	7.5	"
1405	110	67	7.24	500	7.5	Very slightly turbid
						Developed - sufficient
						to allow sampling

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0687 LOG DATE 5 Aug 88 LOG TIME 1107
LOCATION ID SP7/SP10 -03 (086) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 086-0003 SAMPLE DEPTH (FT.) 25ft

INITIAL GROUNDWATER DEPTH (FT) 25.3 ft TOC 8/15/88 25.45 ft
SAMPLING PERIOD: START 8/15/88 1040 COMPLETE 1050
SAMPLING METHOD B LOGGER CODE SJH3
LAB CODE RMAL DATE SENT 8/16/88
PRESERVATION METHOD HCl or H_2SO_4 added by lab chill to 4°C.
COMMENTS Casing sticking above ground = 2.5 ft BK pump
Well depth (TOC) = 32.6 ft
1 borehole volume = 1.2 gallons

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	5.37	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	230	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	74	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1107	0.0	0.0	-	-	-	START PUMPING
1115	24	20	6.34	210	7.5	brown turbid, 5gpm
1126	48	40	6.31	213	6.4	very slightly turbid, 5gpm
1132	60	50	6.31	213	6.3	v. sl. turbid to clear, 5gpm
1138	72	60	6.32	213	6.3	clear, 5gpm
						developed adequately
						See sampling
						Final water level = 25.3 ft

SAMPLES TYPES. (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm(6687) LOG DATE 8/9/88 LOG TIME 0920
LOCATION ID SPMW-4 LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 087-0003 SAMPLE DEPTH (FT.) 22 ft

INITIAL GROUNDWATER DEPTH (FT) 19.4' 8/15/88 - ~~19.64~~ ft (TOC)
SAMPLING PERIOD: START ~~0930~~ 8/15/88 1200 COMPLETE 1210
SAMPLING METHOD B LOGGER CODE SJ13
LAB CODE RMAL DATE SENT 8/16/88
PRESERVATION METHOD HCl or H_2SO_4 added by lab Chill to 4°C
COMMENTS TD = 31.6 feet
12.2 ft of GW in pipe, and 2 gal H_2O

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.72	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	415	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	156	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
0930	0.0	0.0	-	-	-	START PUMPING
0935	17	8.5	6.64	375	7.1	very turbid, ~~slt~~ odor, 3gpm
0942	35	18	6.94	405	6.5	very turbid, ~~slt~~ odor, 3gpm
0946	45	23	6.97	410	6.5	turbid, ~~slt~~ odor, 3gpm
0948	50	25	7.00	410	6.5	moderately turbid, 3gpm
0950	53	27	7.00	410	6.5	slightly turbid, 3gpm
0953	55	28	7.00	410	6.5	slightly turbid, very slight odor
						Developed adequately for sampling
						Final GW level = 19.41

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

ELM

INSTALLATION ID 0657 LOG DATE 8/15/88 LOG TIME 1125

LOCATION ID SP7/10 W-3 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 088-0001 SAMPLE DEPTH (FT.) 22ft

INITIAL GROUNDWATER DEPTH (FT) 22.00ft (toc)

SAMPLING PERIOD: START 1125 COMPLETE 1135

SAMPLING METHOD B LOGGER CODE SP13

LAB CODE Nuvel DATE SENT 8/16/88

PRESERVATION METHOD HCl at H2SO4 added by lab Chill to 4°C

COMMENTS Primo x Wilcox well installed 1986
Contaminated - pure product encountered during purge

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.94	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	495	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.8°C	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	192	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1106	0	0	6.96	500	9	1/2" pure prod. in bailer
1110	≈ 2.5	1	6.86	490	9	1/4" " " " "
1113	5	2	6.84	495	8.5	1/4" " " " "
1118	7.5	3	6.94	495	8.5	less pure product, strong odor & sheen

SAMPLES TYPES. (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM (0687) LOG DATE 8/15/88 LOG TIME 1005

LOCATION ID SP7/10 W-4 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 089-0001 SAMPLE DEPTH (FT.) 14 ft

INITIAL GROUNDWATER DEPTH (FT) 13.75 ft (TOC)

SAMPLING PERIOD: START 1005 COMPLETE 1015

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE PMAL DATE SENT 8/16/88

PRESERVATION METHOD Chill to 4°C HCl or H2SO4 added by lab

COMMENTS Well installed in 1986 - purge info below

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.99	0.1
SPECIFIC CONDUCTANCE	SC	µmhos/cm	458	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	9.1	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	178	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
0950	0	0	6.99	492	10°	clear Strong POL odor
0952	2.5	1	7.04	472	9°C	turbid Strong POL odor
0958	5	2	6.99	465	9.1	" " " "
1001	7.5	3	6.99	458	9.1	" " " "

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/12/88 LOG TIME 0820
LOCATION ID ~~000~~ - SP-11 GW-14 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 090-0003 SAMPLE DEPTH (FT.) 3.7

INITIAL GROUNDWATER DEPTH (FT) 3.71
SAMPLING PERIOD: START 0855 COMPLETE 0910
SAMPLING METHOD B LOGGER CODE DM
LAB CODE BOA DATE SENT 8/13/88
PRESERVATION METHOD Chill to 4°C; add HNO3 or HCl by lab
COMMENTS

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.20	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	215	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	5.7	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	132.8	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
0843	3.5	1	7.05	215	6.0	water slightly cloudy
0848	7	2	6.97	220	5.8	" "
0853	10.5	3	7.19	215	5.8	" "
0904	12	3½	7.2	215	5.7	(clear)

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/12/88 LOG TIME 0900

LOCATION ID SP-11 GW 4A LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 091-0001 SAMPLE DEPTH (FT.) 6.6

INITIAL GROUNDWATER DEPTH (FT) 6.62

SAMPLING PERIOD: START 0930 COMPLETE 0935

SAMPLING METHOD B LOGGER CODE ΔDm

LAB CODE RMAL DATE SENT 8/13/88

PRESERVATION METHOD Chill to 4°C. Add HCl or HNO_3 by lab

COMMENTS Ambient condition blank collected here.

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.96	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	265	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	164.8	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
0923	1.5	1	7.01	~~280~~ 255	8.0	clear with orang particulates,
0925	3	2	6.99	275	8.5	turbid brown with sheen + odor
0927	4.5	3	6.96	265	8.0	" "

SAMPLES TYPES (WSACODE)

D - DUPLICATE
R - REPLICATE
S - SPIKE
K - KNOWN
FB - FIELD BLANK
TB - TRIP BLANK
LB - LAB BLANK
N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB
B - BAILER
PP - PERISTALIC PUMP
SL - SUCTION LIFT PUMP
SP - SUBMERSIBLE PUMP
AL - AIR-LIFT SAMPLER
BP - BLADDER PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/2/88 LOG TIME 1030
LOCATION ID ~~0687~~ SP-12 W-9 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 092-0001 SAMPLE DEPTH (FT.) 23

INITIAL GROUNDWATER DEPTH (FT) 23.18
SAMPLING PERIOD: START 1120 COMPLETE 1130
SAMPLING METHOD B LOGGER CODE DM
LAB CODE RMAL DATE SENT 8/3/88
PRESERVATION METHOD Chill to 4°C; Add HCl or HNO_3 by lab
COMMENTS Ambient Conditions Blank Collected

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.21	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	500	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	293	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1053	3	1	7.09	483	7.09	brown turbid, no odor/color.
1055	6	2	7.21	510	7.21	" "
1058	9	3	7.21	500	7.21	becoming clearer

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUNDWATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 ELM LOG DATE 8/12/88 LOG TIME 1150

LOCATION ID GW-3A (SP-12) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 093-0201 SAMPLE DEPTH (FT.) 23 ft

INITIAL GROUNDWATER DEPTH (FT) 23.18 ft (TOC

SAMPLING PERIOD: START 1212 COMPLETE 1218

SAMPLING METHOD B LOGGER CODE SWB

LAB CODE RMAL DATE SENT 8/13/88

PRESERVATION METHOD HCl~~HNO3~~ H_2SO_4 added by lab Chill to 4°C

COMMENTS Well installed in 1987 Purge info below

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.26	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	445	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	227.6	0.4

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1153	0	0	7.32	462	9.5	Clear, No odor or sheen
1156	2	1	7.24	440	7.5	turbid No odor or sheen
1200	4	2	7.28	440	7.0	" " "
1207	6	3	7.26	445	7.5	" " "

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ECM 0697 LOG DATE 5 Aug 88 LOG TIME 1510
LOCATION ID SP14-01 (096) LOT CONTROL NO.
SAMPLE TYPE N SAMPLE ID 096-0003 SAMPLE DEPTH (FT.) 32.5 ft

INITIAL GROUNDWATER DEPTH (FT) 31.86 ft (TOC)
SAMPLING PERIOD: START 8/11/88 1000 COMPLETE 1020
SAMPLING METHOD B LOGGER CODE SAB
LAB CODE RMAL DATE SENT 8/12/88
PRESERVATION METHOD HCl H2SO4 or HNO3 added by lab
COMMENTS TOTAL Depth = 42.3 ; Stickup = 2 ft
well volume = 10.5 ft = 1.75 gallons

FINAL PARAMETER MEASUREMENTS: BK pump

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.86	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	322	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	8.5°C	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	180	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1510	0.0	0.0	-	-	-	START PUMPING
1537	35	20	7.11	310	7.2	Moderately turbid, 5 gpm
1543	52.5	30	7.14	305	6.7	slightly turbid, 5 gpm
1552	70	40	7.16	304	6.5	slightly turbid 5gpm
1558	87.5	50	7.19	303	6.5	very slightly turbid, 5gpm
1604	105	60	7.17	303	6.5	v. sl. turbid to clear, 5gpm
						Adequate development
						for sampling
						Final water - level 31.8 ft

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 (ECM) LOG DATE 6 Aug 88 LOG TIME 0850

LOCATION ID SP14-02 (097) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 097-0003 SAMPLE DEPTH (FT.) 36 ft

INITIAL GROUNDWATER DEPTH (FT) 36.1 ft (TOC)

SAMPLING PERIOD: START 8/11/88 0850 COMPLETE 0905

SAMPLING METHOD B LOGGER CODE SAB

LAB CODE RIVAL DATE SENT 8/12/88

PRESERVATION METHOD H_2SO_4 HCl or HNO_3 added by lab

COMMENTS Depth of well 47.0 ft

bore volume below water level: 1.8 gallons

2.4 to stirking

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.79	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	275	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	142	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
6 Aug 88 0850	0.0	0.0	-	-	-	START PUMPING
0910	36	20	6.46	260	5.9	brown, v. turbid 4 gpm
0918	54	30	6.92	260	5.2	moderately turbid, 4.5 gpm
0925	72	40	6.92	260	5.2	slightly turbid 4.5 gpm
0933	90	50	6.93	260	5.3	very slightly turbid 4.5 gpm
0941	108	60	6.93	260	5.3	very slight turbid, 4.5 gpm
0947	118	70	6.93	260	5.3	extremely slight turbidity, to clean
						ordered by developer
						for sampling

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK

R - REPLICATE TB - TRIP BLANK

S - SPIKE LB - LAB BLANK

K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP

B - BAILER AL - AIR-LIFT SAMPLER

PP - PERISTALIC PUMP BP - BLADDER PUMP

SL - SUCTION LIFT PUMP

GROUND WATER QU[illegible]T [illegible]ING RECORD

INSTALLATION ID 0687 LOG DATE 8/11/88 LOG TIME 1025
LOCATION ID GW-74 (SP-14) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 099-0001 SAMPLE DEPTH (FT.) 31

INITIAL GROUNDWATER DEPTH (FT) 31.55
SAMPLING PERIOD: START 1050 COMPLETE 1100
SAMPLING METHOD B LOGGER CODE DM
LAB CODE RMHL DATE SENT 8/12/88
PRESERVATION METHOD Chill to 4°C; HCl or HNO_3, acidify to pH < 2
COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.03	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	345	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	9.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	156	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1037	1.5	1	6.94	335	8.5	turbid, brown, no odors or sheen
1042	3.0	2	6.99	350	9.0	" "
1045	4.5	3	7.03	345	9.0	" "

SAMPLES TYPES. (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 LOG DATE 8/11/88 LOG TIME 1115
LOCATION ID W-17 SP-14 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 098-0001 SAMPLE DEPTH (FT.) 30

INITIAL GROUNDWATER DEPTH (FT) 29.75
SAMPLING PERIOD: START 1205 COMPLETE 1225
SAMPLING METHOD B LOGGER CODE DM
LAB CODE RMAL DATE SENT 8/12/88
PRESERVATION METHOD Chill to 4°C ; HCl or HNO_3 added by lab
COMMENTS Duplicate sample site ; ambient conditions ; blank collected (6 VOA's)

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.6	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	310	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	8.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	158	2
	ALK	dupe	166	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1155	3.5	1	7.51	309	9.0	slightly cloudy, no odors
1200	7.0	2	7.51	310	8.5	" "
1206	10.5	3	7.6	310	8.5	" "

SAMPLES TYPES. (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/22/88 LOG TIME 0920
LOCATION ID SP-15-01 (100) LOT CONTROL NO. —
SAMPLE TYPE ~~WATER~~ N SAMPLE ID ~~100-0003~~ SAMPLE DEPTH (FT.) 28ft

INITIAL GROUNDWATER DEPTH (FT) 28'6" (TOC) TD = 38 ft (TOC) 28.27 8/22 ft
SAMPLING PERIOD: START 8/22 1153 COMPLETE 1200
SAMPLING METHOD B LOGGER CODE 2013
LAB CODE RIVAL DATE SENT 8/23/88
PRESERVATION METHOD HCl, A-Soyer HNO_3 added by lab Chill to 4°C
COMMENTS —

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.21	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	650	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	244.0	0.0

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
0925	0.0	0.0	6.91	680	70	clear slight odor
0935	1.5	1	7.06	650	6.5	choc. brown odor H_2S = 4ppm
0945	3.0	2	7.06	700	6.3	" " "
0948	6.0	4	7.04	700	6.7	" " " Sheen-minor
1015	8.0	5.5	7.03	700	7	" " " "
1040	20.0	9.5	7.09	690	7	cleaning slightly - odor
1100	30.0	15.0	7.00	700	7	turbid sheen & odor
1452	30.00	15.0	7.19	610	8	slightly turbid sheen & odor
1500	35	17.5	7.07	690	7½	turbid, but clearing
1530	45	22.0	7.15	670	8	clearing, slight sheen & odor
1535	50	24.5	7.12	670	7	" " " "
1545	55	27.0	7.15	670	7½	"

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/22/88 LOG TIME 0920

LOCATION ID SP 15-01 (100) LOT CONTROL NO. _____

SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (° C)	COMMENTS
1600	865	32.5	7.16	670	17.5	Cloudy slight sheen
1640	80	43	7.17	650	17.7	clear

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM 0282 LOG DATE 8/8/88 LOG TIME 0904
LOCATION ID SP 15 - 02 (101) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID (101)-0003 SAMPLE DEPTH (FT.) 26 ft

INITIAL GROUNDWATER DEPTH (FT) 27.0 ft (TOC) 8/22 - 26.78 ft
SAMPLING PERIOD: START 8/22 1230 COMPLETE 1250
SAMPLING METHOD B LOGGER CODE SWB
LAB CODE RMAL DATE SENT 8/23/88
PRESERVATION METHOD HCl, H_2SO_4 + HNO_3 added Chill to 4°C
COMMENTS Depth of well = 39.5 ft (TOC)
TOC is 0.5 ft below ground surface
borehole volume is 2.1 gallons, developed with B-H pump

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.02	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	800	1
REDOX POTENTIAL	Eh	mvolts	–	
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	~~220~~ 168	0.0
		ALK DUP	220.0	

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
0904	0.0	0.0	–	–	–	START PUMPING
0915	21	10	6.89	620	6.5	brown, very turbid 3 gpm
0925	21/42	20	7.22	600	5.8	brown, moderately turbid 4 gpm
0935	21/63	30	7.35	610	6.3	brownish clear, slightly turbid,
0945	1/84	35	7.52	610	6.[illegible]	[illegible], very slightly turbid
1005	85	40	7.54	600	5.8	clear 4 gpm
1013	96	45	7.35	600	5.8	clear 4 gpm
1020	107	50	7.31	600	5.7	clear. 4 gpm
						Developed - adequately for sampling
1030						Final water level 26.9 ft

8/8/88

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

Aug 88

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ECM 0687 LOG DATE 2 Aug 88 LOG TIME 1550
LOCATION ID NS2·01 (106) LOT CONTROL NO. ____
SAMPLE TYPE N SAMPLE ID 106-0003 SAMPLE DEPTH (FT.) 38 ft

INITIAL GROUNDWATER DEPTH (FT) 38.8 TOC
SAMPLING PERIOD: START 8/3/88 1320 COMPLETE 1330
SAMPLING METHOD B LOGGER CODE SM
LAB CODE RMAL DATE SENT 8/8/88
PRESERVATION METHOD Chill to 4°C Add HCl H2SO4 OR HNO3
COMMENTS Bottom of Hole 53.2 (TOC) stickup 2.5 ft

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.72	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	210	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	7.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	120	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1550	0.0	0.0	-	-	-	START PUMPING
1608	25	10	6.29	200	8.3	very turbid, purge rate = 3gal/min
1625	50	20	6.82	205	8.0	turbid ; purge rate 3 gpm
1637	75	30	6.86	205	7.2	slightly turbid 3 gpm
1652	100	40	6.81	204	7.0	slightly turbid 3 gpm
1700	112	45	6.85	204	6.8	very slightly turbid 3 gpm
1709	125	50	6.87	203	6.6	" " " "
1716	133	54	6.87	202	6.3	" " " "
1722	141	58	6.85	203	6.3	slight clear
						developed See sampling

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

~ 2.5 gal / bore volume

GROUND WATER QUALITY SAMPLING RECORD

PAGE 2 OF 2

INSTALLATION ID Elm (0687) LOG DATE 16 July 88 LOG TIME _____

LOCATION ID NSJ-02 (107 LCT CONTROL NO. _____

SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

INITIAL GROUNDWATER DEPTH (FT) 40.2 TOC

SAMPLING PERIOD: START 11:30 COMPLETE 1215

SAMPLING METHOD bailing LOGGER CODE _____

LAB CODE _____ DATE SENT _____

PRESERVATION METHOD _____

COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	_____	_____
SPECIFIC CONDUCTANCE	SC	µmhos/cm	_____	_____
REDOX POTENTIAL	Eh	mvolts	_____	_____
TEMPERATURE	TEMP	°C	_____	_____
ALKALINITY ($CaCO_3$)	ALK	mg/l	_____	_____

Bore volume = 2.3 gallons B-K Pump

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
15 July 88 17:05	8gal	3.5				water brown - heavy sediment
16 July 88 11:30	11gal	4.8	6.27	185	9°	water lightening up - lighter sediment load
12:35	17gal	7.4	6.58	180	9°	water brown turbid
11:40	18gal	7.8	6.68	178	8°	clearing, slightly colored
11:55	21gal	9.1	6.75	180	8°	slt turbid
12:15	23gal	10	6.75	180	8°	clear
						Developed for Sampling
		11.3				baled additional 3gal
						in Pulling Pipe
						water level at 40.2 after
						bailing

STABLE

SAMPLES TYPES: (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 7/15/88 LOG TIME 1713
LOCATION ID NS-2-2 (107) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 167-0003 SAMPLE DEPTH (FT.) 40ft TOC

INITIAL GROUNDWATER DEPTH (FT) 40ft 2" (TOC)
8/8/88 SAMPLING PERIOD: START 1445 COMPLETE 1455
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/9/88
PRESERVATION METHOD Chill to 4°C -Acids added to certain tests
COMMENTS No floating contaminants

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.76	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	227	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	6.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	110	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING
1713	0	0	6.35	195	10°	Slightly turbid HNU=0.0
1720	2		6.51	195	7°	turbid - choc. brown
1730	4		6.67	200	7.5°	" HNU=0.0
1734	6		6.58	195	7.0	"
1745	8		6.60	195	7.0	"
1750	10		6.55	200	7.0	"

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

LOCATION ID Elm 0687 LOG DATE 8/12/88 LOG TIME 1040

STATION ID LK3-02 W (III) LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID III-0003 SAMPLE DEPTH (FT.) 4Ft

STATIC GROUNDWATER DEPTH (FT) ~~4.46~~ 4.2' 8/23/88 - 3.91 ft (TOC)

PURGING PERIOD: START ~~1050~~ 8/23/88 0854 COMPLETE ~~88~~ 0904

SAMPLING METHOD ~~Suction lift pump (SL)~~ 2B LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/23/88

PRESERVATION METHOD HCl or H_2SO_4 added by lab - Chill to 4°C

COMMENTS 27.0' = TD. 22.8' of water in pipe which = 3.2 gal of H_2O in pipe (1 Bore Volume)

FIELD PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.44	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	249	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	9.0	—
ALKALINITY ($CaCO_3$)	ALK	mg/l	158.8	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1055	0.0	0.0	-	-	-	START PUMPING
1112	160	16.2	6.83	240	10.5	turbid, brownish
1118	80	~~21.5~~	7.09	232	8.7	moderately turbid, 6.0 gpm
1123	160	~~26.8~~	7.22	232	9.0	slightly turbid 6.0 gpm
1130	120	~~32.4~~	7.36	232	9.0	slightly TURBID
				~~240~~		
				Final Water depth = 4.3'		
						Adequately developed for sampling

SAMPLES TYPES. (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm 26 LOG DATE 8/12/99 LOG TIME 1245

LOCATION ID RS-3/03 (MW) LOT CONTROL NO. _____

SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

INITIAL GROUNDWATER DEPTH (FT) 3.6'

SAMPLING PERIOD: START 1248 COMPLETE 1330

SAMPLING METHOD _____ LOGGER CODE _____

LAB CODE _____ DATE SENT _____

PRESERVATION METHOD _____

COMMENTS 17.2 = TD, Bore Volume = 13.6" with = 2.3 gal

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.14	
SPECIFIC CONDUCTANCE	SC	µmhos/cm	398	
REDOX POTENTIAL	Eh	mvolts	-0.14	
TEMPERATURE	TEMP	°C	10.5	
ALKALINITY ($CaCO_3$)	ALK	mg/l		

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1250	0.0	0.0	-	-	-	START PUMPING
1305	60	26.1	7.18	400	11	TURBID
1312	80	34.8	7.12	395	10	moderately turbid
1316	100	43.5	7.14	395	11	"
1322	120	52.2	7.14	398	10.5	VERY SLIGHTLY TURBID
		POST DEVELOPMENT		Depth TO		
		WATER =		3.58 ft.		(@) 1330 HRS
		ADEQUATELY		DEVELOPED		FOR SAMPLING

SAMPLES TYPES. (WSACODE)

D - DUPLICATE	FB - FIELD BLANK	G - GRAB	SP - SUBMERSIBLE PUMP
R - REPLICATE	TB - TRIP BLANK	B - BAILER	AL - AIR-LIFT SAMPLER
S - SPIKE	LB - LAB BLANK	PP - PERISTALIC PUMP	BP - BLADDER PUMP
K - KNOWN	N - NORMAL	SL - SUCTION LIFT PUMP	

SAMPLE METHODS. (WSMCODE)

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm 069 LOG DATE 8/12/88 LOG TIME 1245
LOCATION ID MS-3/03 (110) LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 110-0003 SAMPLE DEPTH (FT.) 4ft

INITIAL GROUNDWATER DEPTH (FT) 3.6' 8/23/88 - 3.60ft (TOC)
SAMPLING PERIOD: START ~~12:45~~ 8/23/88 1030 COMPLETE ~~1330~~ 1055
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE RMTL DATE SENT 8/24/88
PRESERVATION METHOD HCl H2SO4 added by lab Chill to 4°C
COMMENTS 17.2 = TD, Bore Volume = 13.6" which = 2.3 gal

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	~~7.11~~ 4.88	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	~~396~~ 422	1
REDOX POTENTIAL	Eh	mvolts	~~-82~~ —	—
TEMPERATURE	TEMP	°C	~~10.5~~ 11°	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	263.8	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1250	0.0	0.0	-	-	-	START PUMPING
1305	60	26.1	7.18	400	11	TURBID
1313	80	34.8	7.12	395	10	moderately turbid
1316	100	43.5	7.14	395	11	K
1322	120	52.2	7.14	398	10.5	Very Slightly TURBID
		POST DEVELOPMENT		Depth TO		
		WATER =		3.58 ft.		@ 1330 HRS
		ADEQUATELY	DEVELOPED	FOR	SAMPLING	

SAMPLES TYPES (WSACODE)

D - DUPLICATE	FB - FIELD BLANK	G - GRAB	SP - SUBMERSIBLE PUMP
R - REPLICATE	TB - TRIP BLANK	B - BAILER	AL - AIR-LIFT SAMPLER
S - SPIKE	LB - LAB BLANK	PP - PERISTALIC PUMP	BP - BLADDER PUMP
K - KNOWN	N - NORMAL	SL - SUCTION LIFT PUMP	

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm 0687 LOG DATE 8/12/88 LOG TIME 0815
LOCATION ID MS-3 / 04 (113) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 113-0003 SAMPLE DEPTH (FT.) 28 ft

INITIAL GROUNDWATER DEPTH (FT) 28.0' 8/23 - 27.93 ft (TOC
SAMPLING PERIOD: START ~~0820~~ 8/23 - 1236 COMPLETE ~~1305~~ 1244
SAMPLING METHOD ~~[illegible]~~ (SL) LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/24/88
PRESERVATION METHOD HCl H_2SO_4 or HNO_3 added
COMMENTS TD = 48.5', Water in pipe = 20.5' which = 3.4 gal in pipe.

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.11	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	350	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	9.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	163.2	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
0900	0.0	0.0	-	-	-	START PUMPING
0915	60	17.6	6.93	335	8.5	very turbid, 5 gpm, black/grey
0930	80	23.4	7.38	340	8.5	turbid.
0940	100	~~28~~ 29.2	7.38	349	8.9	TURBID, grey. 5 gpm
0946	120	~~35~~ 35	7.35	345	8.5	Slightly TURBID
0956	140	40.9	7.39	345	8.5	clear to slightly turbid
						Adequately developed for sampling.
				Final	Water	depth = 28.0'

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

1/2

INSTALLATION ID EUM-0687 LOG DATE 8/12/88 LOG TIME 1600 Hrs

LOCATION ID BH-1 (119) LOT CONTROL NO. —

SAMPLE TYPE N + D SAMPLE ID 119-00034 0030 SAMPLE DEPTH (FT.) _____

INITIAL GROUNDWATER DEPTH (FT) 57.1 FT

SAMPLING PERIOD: START ~~8/39~~ Hrs 1100 COMPLETE 1115 ~~HRS~~

SAMPLING METHOD B LOGGER CODE ~~EM~~

LAB CODE PMAL DATE SENT 8/31/88

PRESERVATION METHOD HCl H_2SO_4 & HNO_3 added by lab

COMMENTS TD = 68.6 FT STANDING H_2O = 9.5 FT

9.5 ÷ 6 = 1.58 ≈ 1.6 GAL

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.00	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	095	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	5.2	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	45	2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1600	0.0	0.0	-	-	-	START PUMPING
1625	90	56	*	110	11	VERY TURBID
1630	100	62.2	|	105	6	
1635	110	68.4	|	105	5	
1643	120	74.6	|	100	6	
1647	130	80.8	|	100	5.5	
1652	140	86.0	|	100	6	
1656	150	93.3	|	103	6	TURBID
			|			
			|			
			|			
			|			
			|			

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

pH meter inoperable

GROUND WATER QUALITY SAMPLING RECORD

2/2

INSTALLATION ID ELM-0687 LOG DATE _____ LOG TIME 0845

LOCATION ID BH-1 (119) LOT CONTROL NO. _____

SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

INITIAL GROUNDWATER DEPTH (FT) _____

SAMPLING PERIOD: START _____ COMPLETE _____

SAMPLING METHOD _____ LOGGER CODE _____

LAB CODE _____ DATE SENT _____

PRESERVATION METHOD _____

COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.43	
SPECIFIC CONDUCTANCE	SC	µmhos/cm	100	
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C	6	
ALKALINITY ($CaCO_3$)	ALK	mg/l		

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
0850	0.0	0.0	-	-	-	START PUMPING
0915	80 (20d)	143.75	6.98	100	6	SLIGHTLY TURBID
0920	90 (40)	150	7.33	100	6	
0926	100 (50)	~~150~~ 135	7.43	100	6	VERY SLIGHTLY TURBID
		ADEQUATELY	DEVELOPED	FOR SAMPLING		

SAMPLES TYPES. (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

ELM

INSTALLATION ID ~~BH03~~ LOG DATE 8-23-88 LOG TIME 1500

LOCATION ID B14-3 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 121-0002 SAMPLE DEPTH (FT.) 17 ft TOC

INITIAL GROUNDWATER DEPTH (FT) 9'-2" 8/30/88 17.16 ft TOC

SAMPLING PERIOD: START 8/30/88 1000 COMPLETE 8/31/88 - 0830

SAMPLING METHOD B LOGGER CODE ERM

LAB CODE RMA DATE SENT 8/31/88

PRESERVATION METHOD HCl H2SO4 or HNO3 added by lab

COMMENTS Very slow recharge — returned numerous times to complete sample

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.49	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	205	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	5.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	105	5

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1500	0.0	0.0	-	-	-	START PUMPING
1505	1.0					Dry

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 8-24-88 LOG TIME 1020

LOCATION ID BH-04 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID 122-0003 SAMPLE DEPTH (FT.) 5.5 ft (TOC)

INITIAL GROUNDWATER DEPTH (FT) 7'-4" 8/30 - 5.57 ft (TOC)

SAMPLING PERIOD: START 8/30 - 0920 COMPLETE 0935

SAMPLING METHOD B LOGGER CODE SW3

LAB CODE RMAL DATE SENT 8/31/88

PRESERVATION METHOD HCl, H_2SO_4 or HNO_3 added by lab

COMMENTS —

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.32	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	98	1
REDOX POTENTIAL	Eh	mvolts	—	
TEMPERATURE	TEMP	°C	6.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	45	5

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
1025	0.0	0.0	-	-	-	START PUMPING
1030	5.0		6.98	12	8	Question Instrument reliability
1041	20.0		7.17	12	8	
1051	40.0		7.42	11	8	
1057	50.0		7.43	12	8	
1103	60.0		7.43	12	8	

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ~~BH-05~~ ELM LOG DATE 8-24-92 LOG TIME 1225

LOCATION ID BH-05 LOT CONTROL NO. _____

SAMPLE TYPE N SAMPLE ID 123-0003 SAMPLE DEPTH (FT.) 6ft CTOC

INITIAL GROUNDWATER DEPTH (FT) 4'-4" 8/30 - 6.38 ft (TOC)

SAMPLING PERIOD: START 8/30 - 1343 COMPLETE 1356

SAMPLING METHOD B LOGGER CODE SMB

LAB CODE RMA DATE SENT 8/31/92

PRESERVATION METHOD NCl H_2SO_4 or HNO_3 added by lab

COMMENTS _____

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	~~B~~ 6.42	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	338	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	7.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	170	5

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
1225	0.0	0.0	-	-	-	START PUMPING
1229	10.0		8.86	6	9	Question Instrument reliability
1242	25.0		8.39	6	8	
1259	40.0		8.03	6	8	
1310	50.0		8.13	6	8	
1321	60.0		8.07	6	8	

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elva 0687 LOG DATE 8/8/88 LOG TIME 1115
LOCATION ID BH-6 (~~0687~~) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 124-0003 SAMPLE DEPTH (FT.) 11 ft (TOC)

INITIAL GROUNDWATER DEPTH (FT) 10.7 ~~FET~~ ft 8/30 11.05 ft (TOC)
SAMPLING PERIOD: START ~~1116~~ 8/30 1220 COMPLETE 1235
SAMPLING METHOD B LOGGER CODE SMB
LAB CODE Rmax DATE SENT 8/31/88
PRESERVATION METHOD Acid H_2SO_4 or HNO_3 added
COMMENTS Casing Stickup = 2 ft
Depth of well = 12.3 ft Developed using Teflon bailer, borehole volume

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.39	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	355	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	11.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	170	5

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
8/8/88 1115	0.0	0.0	-	-	-	START PUMPING
1130	7	~~38~~	7.12	374	11.0	Brown, very turbid
1200	11	44	7.08	375	11.0	brown, turbid, 0.3 gpm
1220	16	64	7.08	375	11.0	brown, slightly turbid, 0.3 gpm
1240	21	84	7.07	370	11.0	V. slightly turbid to clear, 0.3 gpm
1250	23.5	94	7.06	372	11.0	V. sl. turbid to clear, 0.3 gpm
						Developed adequately for sampling.
8/8/88 1251						Final water level = 11.0 ft

SAMPLES TYPES: (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELM LOG DATE 8/23/88 LOG TIME 1425
LOCATION ID BW-1 LOT CONTROL NO. —
SAMPLE TYPE N SAMPLE ID 117-0001 SAMPLE DEPTH (FT.) ~~Unknown~~ 16ft

INITIAL GROUNDWATER DEPTH (FT) about 16ft
SAMPLING PERIOD: START 8/23 - 1420 COMPLETE 1430
SAMPLING METHOD SL (?) LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/24/88
PRESERVATION METHOD HCl H2SO4 or HNO3 added
COMMENTS Rose drinking water well - not use for several weeks - not purged by us

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.02	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	140	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	0.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	(17.3	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING

SAMPLES TYPES (WSACODE)
D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)
G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID ELMG LOG DATE 8/22/88 LOG TIME 1340

LOCATION ID BW-2 LOT CONTROL NO. —

SAMPLE TYPE N&D SAMPLE ID 11K-0001KD SAMPLE DEPTH (FT.) UNKNOWN

INITIAL GROUNDWATER DEPTH (FT) UNKNOWN

SAMPLING PERIOD: START 1340 COMPLETE 1345

SAMPLING METHOD ~~PP~~ SL LOGGER CODE EMB

LAB CODE RMAL ~~OTHER~~ DATE SENT 8/24/88

PRESERVATION METHOD HCl HNO3 or HAUC. cooled Ch. II to 4°C

COMMENTS Base drinking water well — not for ROUTINE PUMP

Well has been pumped dry — 1" used — [illegible]

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.75	0.1
SPECIFIC CONDUCTANCE	SC	µmhos/cm	142	1
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	11.0	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	70.4	0.2
		Dup	77.2	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING

N/A

SAMPLES TYPES (WSACODE)

D - DUPLICATE FB - FIELD BLANK

R - REPLICATE TB - TRIP BLANK

S - SPIKE LB - LAB BLANK

K - KNOWN N - NORMAL

SAMPLE METHODS (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP

B - BAILER AL - AIR-LIFT SAMPLER

PP - PERISTALIC PUMP BP - BLADDER PUMP

SL - SUCTION LIFT PUMP

GROUND WATER QUALITY SAMPLING RECORD

INSTALLATION ID Elm LOG DATE 8/23/88 LOG TIME 1400

LOCATION ID BW-52 LOT CONTROL NO. —

SAMPLE TYPE N SAMPLE ID # 125-0001 SAMPLE DEPTH (FT.) ?

INITIAL GROUNDWATER DEPTH (FT) unknown

SAMPLING PERIOD: START 1400 COMPLETE 1410

SAMPLING METHOD From TAP LOGGER CODE SMB

LAB CODE RMAL DATE SENT 8/24/88

PRESERVATION METHOD HCl H_2SO_4 + HNO_3 added by lab Chill to 4°C

COMMENTS Base DWking under well sampled ~~after~~ prior to Chlorination

FINAL PARAMETER MEASUREMENTS:

				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	8.69	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	170	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	9.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	107.6	0.2

TIME	TOTAL VOLUME WITHDRAWN (GALS)	TOTAL VOLUME WITHDRAWN (Bore Volumes)	pH	SC (µmhos/cm)	TEMP. (°C)	COMMENTS
	0.0	0.0	-	-	-	START PUMPING

SAMPLES TYPES. (WSACODE)

D - DUPLICATE FB - FIELD BLANK
R - REPLICATE TB - TRIP BLANK
S - SPIKE LB - LAB BLANK
K - KNOWN N - NORMAL

SAMPLE METHODS. (WSMCODE)

G - GRAB SP - SUBMERSIBLE PUMP
B - BAILER AL - AIR-LIFT SAMPLER
PP - PERISTALIC PUMP BP - BLADDER PUMP
SL - SUCTION LIFT PUMP

Field Record Sheets

FIELD RECORD SHEET

Site Name: D3-1 Site Number: 001

Exact location of well or source of sample or well number:
S of Hospital Across oil well road
well # D-3-1

Date: 9/9/88 Time: 0930 Weather: Sunny 60°
Sample Number: 001-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 25.92 ft Rate of Discharge: —
Duration of Pumping Prior to Sampling: 16.5 gal
Depth of Well: 59.97 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): see log of boring

Water Temperature: 5.5°C pH: 7.91
Conductivity: 140 umhos/cm

Appearance and any Other Relevent Data: No sheen or odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SD-3-2 Site Number: 002

Exact location of well or source of sample or well number:
South of hospital - Across oil well road

Date: 8/19/88 Time: 0830 Weather: Mostly sunny 60°
Sample Number: 002-0003 Type of Sample: Grab
Preservative Type and Amount: HCl, HNO_3 or H_2SO_4 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 20.08 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 5 gal purged (to dry)
Depth of Well: 32.07 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "
Water Bearing Formation(s): See log of boring

Water Temperature: 5.0°C pH: 7.51
Conductivity: 162 umhos/cm

Appearance and any Other Relevent Data: No odor no sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: D-3-3 Site Number: 003

Exact location of well or source of sample or well number:
S of Hospital Across oil well road
well # 03-3

Date: 8/4/88 Time: 0900 Weather: Sunny calm 60°
Sample Number: 003-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 + ~~NaS~~ HNO_3 added
Point and Method of Collection: Teflon bailer at water level

Water Level: 10.33 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 6 gal purged
Depth of Well: 22.70 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 3.5°C pH: 7.54
Conductivity: 339 umhos/cm

Appearance and any Other Relevant Data: No odors No Sheen

Samplers Initials: JWB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: ~~GW-1~~ W-1 (D-5) Site Number: 005

Exact location of well or source of sample or well number:
well no: W-1
Installed in 1986

Date: 8/9/88 Time: 0930 Weather: Sunny calm 65°
Sample Number: ~~EQ05~~ 005-0001 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: water surface with Teflon bailer

Water Level: 38.5 ft (toc) Rate of Discharge: -
Duration of Pumping Prior to Sampling: ~~not~~ 10.5 gal (3 well vol)
Depth of Well: 59.32 Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: ~~see~~ unknown
Types of Screens, Slots, Perforations, or Louvers: unknown

Water Bearing Formation(s): see log of boring

Water Temperature: 5.8°C pH: 6.85
Conductivity: 190 umho

Appearance and any Other Relevant Data: No visible contaminants or odor
Some ~~org~~ orange colored sediment

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: D-5 GW-1A Site Number: 007

Exact location of well or source of sample or well number:
Damest Moore Well GW-1A

Date: 8/29/88 Time: 1105 Weather: HEAVY RAIN
Sample Number: 007-0001 Type of Sample: Water
Preservative Type and Amount: H_2SO_4, HNO_3, HCl added by lab
Point and Method of Collection: Water surface with teflon bailer.

Water Level: 41.75' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 6 gals (3 well volumes
Depth of Well: 52.39' Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: 5.0°C pH: 4.65
Conductivity: 88

Appearance and any Other Relevant Data: turbid water, no odor or sheen

Samplers Initials: DM

FIELD RECORD SHEET

Site Name: GW-1C (D-5) Site Number: ~~05~~008

Exact location of well or source of sample or well number:
well No. GW-1C installed 1987

Date: 8/9/88 Time: 1400 Weather: Sunny, calm 70° F
Sample Number: 08-0001 Type of Sample: Grab
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Method- Teflon Bailer ~ at water surface

Water Level: 40.96 ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: Purged 6 gal
Depth of Well: 52.05 ft Diameter of Well: 2 IN ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of (Screens), Slots, Perforations, or Louvers: ~~0.01~~ unknown

Water Bearing Formation(s): see log of boring

Water Temperature: 6.5°C pH: 6.82
Conductivity: 129 umhos

Appearance and any Other Relevant Data: No obvious contamination
No odor or sheen

Samplers Initials: CMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: D5 GW-2A Site Number: 009

Exact location of well or source of sample or well number:
Dames & Moore Well GW-2A

Date: 8/29/88 Time: 1140 Weather: Heavy Rain
Sample Number: 009 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 42.16' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 6 gals (3 well volumes)
Depth of Well: 52.12' Diameter of Well: 2 in I.D.
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: 5.0°C pH: 4.22
Conductivity: 70

Appearance and any Other Relevent Data: turbid; no odors or sheen

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: W-5 D-7 Site Number: 010

Exact location of well or source of sample or well number:
W-5 010

Date: 8/10/88 Time: 1014 Weather: Rain
Sample Number: 010 - 0001 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4, HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 32.47 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 12 gals (3 well volumes)
Depth of Well: 55.74 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: 6.4°C pH: 6.83
Conductivity: 128 umhos/cm

Appearance and any Other Relevant Data: clear to turbid water; no ~~oil~~ odor or sheen. Duplicate sample.

Samplers Initials: DPL

Figure 2.6-6

FIELD RECORD SHEET

Site Name: D-7 GW-6 Site Number: 011

Exact location of well or source of sample or well number:
D-7 # GW-6 011-0001

Date: 8/10/88 Time: 0940 Weather: Rain
Sample Number: 011-0001 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailers

Water Level: 33.24 (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7.5 gal (3 well vols.)
Depth of Well: 57.06' Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): ~~See Well Completion Log~~ See boring log

Water Temperature: 5.5°C pH: 6.87
Conductivity: 180 umhos/cm

Appearance and any Other Relevent Data: turbid w/ particulates

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: GW1B (D-7) (012) Site Number: 012

Exact location of well or source of sample or well number:
well no. GW-1B installed 1987

Date: 8/9/88 Time: 1120 Weather: sunny calm 65°
Sample Number: 012-0001 Type of Sample: Grab
Preservative Type and Amount: Has been HNO_3 or HCl added by lab
Point and Method of Collection: at water level with Teflon bailer

Water Level: 35.63 ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: Purge 5 gal.
Depth of Well: 46.12 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of ~~Screens~~, Slots, Perforations, or Louvers: ~~0.02~~ unknown

Water Bearing Formation(s): see log of boring

Water Temperature: 5.6° F pH: 6.8
Conductivity: 345 umho

Appearance and any Other Relevant Data: No visible contamination or odor

Samplers Initials: SmB

FIELD RECORD SHEET

Site Name: GW-2B (013) D-7 Site Number: 013

Exact location of well or source of sample or well number:

Well NO GW-2B installed 1987

Date: 8/9/88 Time: 1020 Weather: Sunny calm 60°F

Sample Number: 013-0001 Type of Sample: Grab

Preservative Type and Amount: HCl HgCoy HNO3 added by lab

Point and Method of Collection: Point: water level
Method: Teflon bailer

Water Level: 33.00ft Rate of Discharge: ~

Duration of Pumping Prior to Sampling: Argued 6 gal.

Depth of Well: 44.73 ft Diameter of Well: 2in ID

Screened, Slotted, Perforated, or Louvered Intervals: See well completion form

Types of Screens, Slots, Perforations, or Louvers: unknown

Water Bearing Formation(s): See log of boring

Water Temperature: 6.0°C pH: 6.89

Conductivity: 273

Appearance and any Other Relevent Data: No obvious contamination or color

Samplers Initials: SmB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: D-7 GW-2C Site Number: 014

Exact location of well or source of sample or well number:
Well # GW-2C

Date: 8/10/88 Time: 0815 Weather: RAIN
Sample Number: 014-0001 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 31.92 (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: 5 gal (3 well vol)
Depth of Well: 39.61 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): ~~See Well Completion Log~~

Water Temperature: 5.8°C pH: 6.27
Conductivity: 208 umhos/cm

Appearance and any Other Relevant Data: No detectable odors

Samplers Initials: DM

FIELD RECORD SHEET

Site Name: D-13-01 Site Number: 015

Exact location of well or source of sample or well number: well # D-13-01

Date: 8/9/88 Time: 1220 Weather: Partly sunny 60° calm
Sample Number: 015-0003 Type of Sample: Water Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: at water table with Teflon Bailer

Water Level: 41.32 ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: 9 gal purged (3 well vol)
Depth of Well: 59.93 ft Diameter of Well: 2 in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion log
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 6.0 °C pH: 6.37
Conductivity: 197 mhos/cm

Appearance and any Other Relevent Data: No sheen or odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: D-13-02 (016) Site Number: 016

Exact location of well or source of sample or well number:
located N of Sanitary landfill E of EAFB

Date: 8/8/88 Time: 1355 Weather: partly sunny, calm 70°F
Sample Number: 016-0003 Type of Sample: Grab
Preservative Type and Amount: HCl HaSo4 or HNO3 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 46.32ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: 4.5 gal purged (3 well vol)
Depth of Well: 49.00ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See completion form
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 6.0°C pH: 6.61
Conductivity: 178 umhos/cm

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: GMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SS D-13-03 Site Number: 017

Exact location of well or source of sample or well number:
located N of sanitary landfill E of EAFB

Date: 8/8/88 Time: 1420 Weather: sunny calm 70°
Sample Number: 017-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 37.92 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gal purged (3 well vol)
Depth of Well: 55.71 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 6.0°C pH: 6.92
Conductivity: 132 umhos/cm

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: ~~SS5~~ - W-11 (D-17) Site Number: 031

Exact location of well or source of sample or well number:
Dam well # W-11
Installed 1986

Date: 8/22/88 Time: 1000 Weather: RAIN 55°
Sample Number: 031-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H2SO4 + HNO3 added
Point and Method of Collection: Teflon bailer at water level

Water Level: 7.67 (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 19.5 gal
Depth of Well: 30.48 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: unknown
Types of Screens, Slots, Perforations, or Louvers: unknown
Water Bearing Formation(s): unknown

Water Temperature: 6.2°C pH: 7.35
Conductivity: 795

Appearance and any Other Relevent Data: H2S organic odor
NO Sheen
well is situated in area of dead vegetation

Samplers Initials: GMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: W-13 (D-17) Site Number: 032

Exact location of well or source of sample or well number: _____

D+M well installed 1986

Date: 8/22/88 Time: 1100 Weather: Rain 50°

Sample Number: 032-0001 4001D Type of Sample: Grab

Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added

Point and Method of Collection: Teflon bailer at water level

Water Level: 15.00ft (TOC) Rate of Discharge: -

Duration of Pumping Prior to Sampling: 4 gal - (bailed dry)

Depth of Well: 32.61 ft Diameter of Well: 2in ID

Screened, Slotted, Perforated, or Louvered Intervals: Unknown

Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: 8.0°C pH: 7.39

Conductivity: 510 umhos/c

Appearance and any Other Relevant Data: No sheen or odor detected
Well bailed dry during purge - return after 2 hrs
Also bailed dry during sampling - return in 2 hrs to
fill remaining 6, 1 L bottles.

Samplers Initials: SAB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-1 Site Number: 033

Exact location of well or source of sample or well number: Behind hangar 14

Date: 8/18/88 Time: 0850 Weather: partly cloudy calm 60°

Sample Number: 033-0003 Type of Sample: Grab

Preservative Type and Amount: HCl H_2SO_4 HNO_3 or NaOH added by lab

Point and Method of Collection: Teflon Bailer at water level

Water Level: 28.28 ft (TOC) Rate of Discharge: —

Duration of Pumping Prior to Sampling: 3 gal purged (3 well vol)

Depth of Well: 35.20 ft Diameter of Well: 2in ID

Screened, Slotted, Perforated, or Louvered Intervals: see well completion log

Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 7.0 °C pH: 7.08

Conductivity: 620 umhos/cm

Appearance and any Other Relevent Data: no odor or sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: W-18 (FS-1) Site Number: 041

Exact location of well or source of sample or well number:
Near hangar 14

D+M well installed in 1986 # W-18

Date: 8/18/88 Time: 1100 Weather: mostly cloudy 60°
Sample Number: 041-0001 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 HNO_3 & NaOH added
Point and Method of Collection: Teflon bailer at water level

Water Level: 29.20 ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: 9 gal
Depth of Well: ≈ 47.97 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): see log of boring

Water Temperature: 8.5°C pH: 7.22
Conductivity: 590 umhos/cm

Appearance and any Other Relevant Data: Pure product dark Brown oily, black stringy particles

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: W-19 (IS-1) Site Number: 042

Exact location of well or source of sample or well number:
Dames & moore well # W-19

Date: 8/18/88 Time: 0940 Weather: Mostly cloudy 60°
Sample Number: 042-0061 (MS+MSD) Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 HNO_3 or NaOH added by lab
Point and Method of Collection: Teflon bailer @ water level

Water Level: 29.31 ft (TOC) Rate of Discharge:
Duration of Pumping Prior to Sampling: 7.5 gal purged
Depth of Well: 44.48 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): see log of boring

Water Temperature: 6.0°C pH: 7.26
Conductivity: 450 umhos/cm

Appearance and any Other Relevent Data: No odor No sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-2 (034) Site Number: 034

Exact location of well or source of sample or well number: behind hangar 11

well # IS-2

Date: 8/17 Time: 1500 Weather: mostly cloudy calm 60°

Sample Number: 034-0003 Type of Sample: Grab

Preservative Type and Amount: HCl HNO_3 H_2SO_4, ~~HNO~~ NaOH

Point and Method of Collection: at water level with teflon bailer

Water Level: 29.21 ft TOC Rate of Discharge: —

Duration of Pumping Prior to Sampling: 6 gal purged

Depth of Well: 40.03 ft Diameter of Well: 2in ID

Screened, Slotted, Perforated, or Louvered Intervals: See well completion log

Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See boring log

Water Temperature: 6.8°C pH: 7.41

Conductivity: 330 umhos/cm

Appearance and any Other Relevent Data: no odor or sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-3 Site Number: 035

Exact location of well or source of sample or well number:
Behind ~~Access~~ Hangar 10

Date: 8/18/88 Time: 1320 Weather: Mostly cloudy 60°
Sample Number: 635-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 HNO_3 NaOH added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: ~~49.80 ft~~ 41.19 ft Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gal purged
Depth of Well: 49.80 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 5.9°C pH: 7.05
Conductivity: 515 umhos/cm

Appearance and any Other Relevent Data: No odor
No sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-4 Site Number: 036

Exact location of well or source of sample or well number: AT AWACS Hangar

Date: 8/18/88 Time: 1445 Weather: partly cloudy - calm 60°
Sample Number: 036-0003 Type of Sample: Water
Preservative Type and Amount: Cool to 4°C; add HCl or HNO_3 by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 23.59 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gal (3 well volumes)
Depth of Well: 30.15' Diameter of Well: 2 in ID
Screened, Slotted, Perforated, or Louvered Intervals:
Types of Screens, Slots, Perforations, or Louvers:
Water Bearing Formation(s): See Well Completion forms

Water Temperature: 7.0°C pH: 7.23
Conductivity: 505

Appearance and any Other Relevent Data: brown, turbid; no odors or sheen

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-5 Site Number: 037

Exact location of well or source of sample or well number: S of 17th TAS hangar west refueling stand

Date: 8/17/88 Time: 1000 Weather: mostly cloudy 60°
Sample Number: 037-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 HNO_3 or NaOH added by lab
Point and Method of Collection: at water level w/ teflon bailer

Water Level: ~~24.58ft~~ 49.68ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: ~~bought~~ 4.5 gal purged
Depth of Well: 59.90ft Diameter of Well: 6.3 ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion log
Types of Screens, Slots, Perforations, or Louvers: "

Water Bearing Formation(s): see log of boring

Water Temperature: 5.8°C pH: 7.28
Conductivity: 190

Appearance and any Other Relevent Data: No odor, No sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-6 Site Number: 038

Exact location of well or source of sample or well number:
Adjacent to 17th TAS Hanger near E end of EW runway

IS-6

Date: 8/17/88 Time: 0830 Weather: Mostly cloudy 60°
Sample Number: 038-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: at water level w/ teflon bailer

Water Level: ~~@~~ 49.87 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gal purged
Depth of Well: 59.92 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): see log of boring

Water Temperature: 5.5°C pH: 7.12
Conductivity: 250 umhos/cm

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: SWB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-7 Site Number: 039

Exact location of well or source of sample or well number:
behind vehicle maintenance bldg.
well # IS-7

Date: 8/17/88 Time: 1410 Weather: mostly cloudy 60° calm
Sample Number: 039-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 HNO_3 or NaOH acidified by lab
Point and Method of Collection: at water level w/teflon bailer

Water Level: 13.56 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 6.6 gal purged
Depth of Well: 26.72 ft Diameter of Well: 2" ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of Screens, Slots, Perforations, or Louvers: "

Water Bearing Formation(s): See log of boring

Water Temperature: ~~###~~ 8.5°C pH: 7.14
Conductivity: 312

Appearance and any Other Relevent Data: no odor or sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: IS-08 Site Number: 040

Exact location of well or source of sample or well number:
West of CCT Hangar - (well # IS-8

Date: 8/17/88 Time: 1200 Weather: Mostly cloudy, calm 60°
Sample Number: 040-0003 & 0003D Type of Sample: Grab
Preservative Type and Amount: HCl, H_2SO_4 HNO_3 or NaOH added by lab
Point and Method of Collection: at water level with Teflon bailer (decon'd)

Water Level: 24.58ft (toc) Rate of Discharge: -
Duration of Pumping Prior to Sampling: 6 cyl purged (3 well vol)
Depth of Well: 36.02ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " "
Water Bearing Formation(s): See boring log

Water Temperature: 8.5°C pH: 7.10
Conductivity: 395 umhos/cm

Appearance and any Other Relevent Data: Slight odor & sheen
water very clear - no turbidity

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP-1-01 Site Number: 049

Exact location of well or source of sample or well number: #SP-1 -01
S of Corps of Engineers Building

Date: 8/22/88 Time: 1420 Weather: light rain 55°
Sample Number: 049-0003 Type of Sample: Grab
Preservative Type and Amount: HCl to pH<2 added by lab
Point and Method of Collection: at water surface with Teflon bailer

Water Level: 8.69 ft (toc) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 8 gal purged
Depth of Well: 23.21 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 9.0°C pH: 6.92
Conductivity: 400 umhos/cm

Appearance and any Other Relevent Data: Sheen & strong POL odor observed

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP1-02 Site Number: 050

Exact location of well or source of sample or well number:
S of corps of Engineers bldg.
E of SP1-01

Date: 8/22/88 Time: 1500 Weather: RAIN 55°
Sample Number: 050-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H2SO4 added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: 36.29 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7.5 gal purged
Depth of Well: 51.32 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See boring log

Water Temperature: 8°C pH: 7.19
Conductivity: 340

Appearance and any Other Relevent Data: Sheen strong POL odor observed

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SPa/6 -01 Site Number: 051

Exact location of well or source of sample or well number:
well no 051 at site spa/6

Date: 8/10/88 Time: 1235 Weather: light rain 55°
Sample Number: 051-0002 Type of Sample: Grab
Preservative Type and Amount: HCL H_2SO_4 & HNO_3 added by lab
Point and Method of Collection: Teflon Bailer at water level

Water Level: 40.75 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: purged 7.5 gal (3 well vol.)
Depth of Well: 54.00 ft Diameter of Well: 2 IN ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion log
Types of Screens, Slots, Perforations, or Louvers: See well completion log

Water Bearing Formation(s): ~~Sett~~ see log of boring

Water Temperature: T 8.2°C pH: 7.09
Conductivity: 360 mhos

Appearance and any Other Relevant Data: no odor or sheen

Samplers Initials: GMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP2/6-02 Site Number: (052)

Exact location of well or source of sample or well number:
Well # 2/6-02

Date: 8/10/88 Time: 1535 Weather: Rain
Sample Number: 052-0002 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer.

Water Level: 32.49 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7.5 gal (3 well vol)
Depth of Well: 47.79 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): See Well Completion log.

Water Temperature: 9.0°C pH: 6.96
Conductivity: 345 umhos/cm

Appearance and any Other Relevent Data: turbid, petroleum sheen + odor, both decreasing with continued bailing.

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP216-03 Site Number: 053

Exact location of well or source of sample or well number:
~~Aton~~ South of and adjacent to Bluff Road
well # SP216-03

Date: 8/13/88 Time: 0930 Weather: partly cloudy 55°
Sample Number: 053-0002 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: at water level w/ teflon bailer

Water Level: 37.55 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gal purged (3 well vol)
Depth of Well: 53.82 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: See well completion form

Water Bearing Formation(s): Seclay of boring

Water Temperature: 7.2°C pH: 7.07
Conductivity: ~~Zoumhos/cm~~

Appearance and any Other Relevent Data: No visible contamination
slight H_2S odor

Samplers Initials: GMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP2/6 – 04 Site Number: 054

Exact location of well or source of sample or well number:
Along Bluff ROAD, South of CE Shops
well # SP2/6-04

Date: 8/13/88 Time: 0840 Weather: PARTly cloudy 55° slight breeze
Sample Number: 054-0002 Type of Sample: Grab
Preservative Type and Amount: HCl H2SO4 & HNO3 added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: 38.30ft Rate of Discharge: –
Duration of Pumping Prior to Sampling: 9 gal purged (3 well vol)
Depth of Well: 53.65ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion
Types of Screens, Slots, Perforations, or Louvers: see well completion

Water Bearing Formation(s): see log of boring

Water Temperature: 7.0°C pH: 6.98
Conductivity: 332 mhos/cm

Appearance and any Other Relevent Data: No sheen or visible contaminants, Slight H_2S odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP ~~002~~ 216 -05 Site Number: 055

Exact location of well or source of sample or well number:
Along Bluff ROAD South of small arms Shooting range

Date: 8/16/88 Time: 0955 ~~1005~~ Weather: Sunny calm 65°
Sample Number: 055-0003 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 added prev. by lab
Point and Method of Collection: at water level w/ Teflon bailer (d-contrew)

Water Level: 32.97 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gal (3 well vols)
Depth of Well: 48.91 ft Diameter of Well: 2.0 ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 9.0°C pH: 7.02
Conductivity: 345 umhos/cm

Appearance and any Other Relevent Data: Strong POL odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: W-16 SP2/6 (061) Site Number: 061

Exact location of well or source of sample or well number:
SP 2/6 DrM Well W-16
WCC: 061

Date: 8/10/88 Time: 1335 Weather: Rain
Sample Number: 061-0003 Type of Sample: Water
Preservative Type and Amount: Chill to 4°C. Add HCl & HNO_3 by lab.
Point and Method of Collection: Water surface with teflon bailer.

Water Level: 32.07 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 12 gal (3 well vol)
Depth of Well: 56.32 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s):

Water Temperature: 9.5 pH: 7.00
Conductivity: 360

Appearance and any Other Relevent Data: Water was clear at beginning of purging. After ~~5~~ 4 gals. bailed was cloudy with H_2S odor, after 12 gals no odor, cloudy.

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SW6A SP2/6 Site Number: 062

Exact location of well or source of sample or well number:
Well # 062-0001

Date: 8/10/88 Time: 1435 Weather: Rain
Sample Number: 062-0001 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3, added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 31.62 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 3 gal (3 well volumes)
Depth of Well: 39.48 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown
Water Bearing Formation(s): ~~See Well Completion Log~~

Water Temperature: 8.0 °C pH: 7.03
Conductivity: 340 umhos/cm

Appearance and any Other Relevant Data: Cloudy, petroleum odor + sheen.

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP4-01 Site Number: 063

Exact location of well or source of sample or well number:
Along gravel road N of golf course and W of TP 4 tanks. Adjacent to beaver Pond

Date: 8/12/88 Time: 1415 Weather: Sunny 60° light wind
Sample Number: 063-0003 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: 5.40 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 10.5 gal purged (3 well vols)
Depth of Well: 27.22 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See completion form
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 9.5°C pH: 7.10
Conductivity: 292 umhos/cm

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: SMJ

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP4-02 Site Number: 064

Exact location of well or source of sample or well number: Golf Course seep N of Course, W of YP4 tanks

Date: 8/16/88 Time: 1045 Weather: Sunny calm 68°
Sample Number: 064-0003 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 pre-added by lab
Point and Method of Collection: At water level with d-conned teflon bailer

Water Level: 5.67 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 10.5 gal purged
Depth of Well: 26.65 ft Diameter of Well: 2 in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 7.8°C pH: 7.29
Conductivity: 255 umhos/cm

Appearance and any Other Relevant Data: NO visible contamination or odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP4-03 Site Number: 065

Exact location of well or source of sample or well number:
WCC Well SP4-03

Date: 8/29/88 Time: 0925 Weather: Heavy Rain
Sample Number: 065-0003 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 added by lab
Point and Method of Collection: Water surface with Teflon bailer.

Water Level: 39.68' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gals (3 well volumes)
Depth of Well: 57.69' Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See Well Completion Log
Types of Screens, Slots, Perforations, or Louvers: See Well Completion Log
Water Bearing Formation(s): See Boring Log

Water Temperature: 6.5 °C pH: 5.3
Conductivity: 340

Appearance and any Other Relevant Data: Turbid, POL odor + sheen

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SPS-2 Site Number: 072

Exact location of well or source of sample or well number: On bluff N of EW runway, in area of buried YP-4 Tanks

Date: 8/4/88 Time: 1115 Weather: sunny 65° light breeze
Sample Number: 072-0003 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 added by lab
Point and Method of Collection: Teflon bailer at ~~well~~ surface water

Water Level: 37.11 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gal purged (3 well vol)
Depth of Well: 48.46 ft (TOC) Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See completion form
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 7.5°C pH: 7.32
Conductivity: 605

Appearance and any Other Relevent Data: No sheen or odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP5-02 (073) Site Number: 073

Exact location of well or source of sample or well number:

well No SP5-02 Installed in 1988

Site situated on hill North of EW Runway in area of YP-4 tanks (underground)

Date: 7/19/88 Time: 1400 Weather: Sunny, high 50's°
Sample Number: 673-0003 Type of Sample: water (ground)
Preservative Type and Amount: HCL, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Bailer at water level

Water Level: 22.00 ft (TOC) Rate of Discharge: ~
Duration of Pumping Prior to Sampling: 57 gal-to develop
Depth of Well: 40 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: 0.02

Water Bearing Formation(s): See log of boring

Water Temperature: 9.9°C pH: 7.13
Conductivity: 720

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SPS-~~07~~ 06 Site Number: ~~078~~ 077

Exact location of well or source of sample or well number: well # SPS-07 located on bluff above E/W runway in vicinity of buried JP-4 tanks

Date: 8/4/88 Time: ~~1540~~ 1510 Weather: Sunny, 65°F light breeze
Sample Number: 078-0003 Type of Sample: Grab
Preservative Type and Amount: HCl, H_2SO_4 and HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: ~~39.70 ft~~ 34.81 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: purged 12 gal. (3 well vols)
Depth of Well: 50.65 ft (TOC) Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 7.00°C pH: 7.17
Conductivity: 580 umhos/cm

Appearance and any Other Relevent Data: no visible contamination or odor

Samplers Initials: SAB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SPS-07 Site Number: 078

Exact location of well or source of sample or well number: on bluff N of EW Runway in vicinity of underground JP-4 tanks

Date: 8/5/88 Time: 1300 Weather: rain
Sample Number: 078-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 34.54ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: well bailed dry 4 times (total of 16 gal)
Depth of Well: 55.92ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See completion form
Types of Screens, Slots, Perforations, or Louvers: " " "
Water Bearing Formation(s): See log of boring

Water Temperature: ~~5.9°C~~ 5.9°C pH: 7.63
Conductivity: 700 micromhos/cm

Appearance and any Other Relevant Data: No sheen, slight petroleum odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: ELM (0687) Site Number: SPS-08 (079)

Exact location of well or source of sample or well number: SPS-08 (078) N of SPS site, 20 ft S of high voltage line.

Date: 8 Jul 88 Time: _____ Weather: 60°, clear, wind W@5

Sample Number: 0687 - [redacted] - NG - 079 / GN - 88 - 0003 Type of Sample: water

Preservative Type and Amount: VOA - HCL, 418.1 - H_2SO_4, 160.1 - NEAT

Point and Method of Collection: Bailer

Water Level: 15.7 ft (TOC) Rate of Discharge: _____

Duration of Pumping Prior to Sampling: _____

Depth of Well: 25 ft from ground surface Diameter of Well: 2 in ID

Screened, Slotted, Perforated, or Louvered Intervals: screened 10-25 ft clay

Types of Screens, Slots, Perforations, or Louvers: 0.02 in screen

Water Bearing Formation(s): fine sand

Water Temperature: _____ pH: _____

Conductivity: _____

Appearance and any Other Relevant Data: _____

Casing stickup above ground surface = 2.5 ft.

Samplers Initials: RGD

15 7

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP5-08 Site Number: 079

Exact location of well or source of sample or well number: on bluff N of EW Runway in vicinity of underground JP-4 tanks

Date: 8/4/88 Time: 1540 Weather: Sunny, 65°F <5mpH wind
Sample Number: 079-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: 16.49ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 8 gal purged (4 well vols)
Depth of Well: 27.48ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See completion form
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See log of boring

Water Temperature: ~~64°F~~ 6.5°C pH: 7.42
Conductivity: 255 mhos/cm

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: SW3

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP-5-10 Site Number: 081

Exact location of well or source of sample or well number:

well NO. SP-5-10
on bluff above runway on road below buried JP-4 tanks

Date: 8/5/88 Time: 1530 Weather: Light rain
Sample Number: 081-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: 3.60 (TOC) ft Rate of Discharge: -
Duration of Pumping Prior to Sampling: well purged dry 2 times - 5 gal total
Depth of Well: 12.75 ft Diameter of Well: 2 in ID
Screened, Slotted, Perforated, or Louvered Intervals: see completion form
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): see log of boring

Water Temperature: ~~7.5~~ 7.5°C pH: 7.47
Conductivity: 620 umhos/cm

Appearance and any Other Relevent Data: petroleum odor (strong) and sheen observed on liquid

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP5-20 Site Number: 126[redacted]

Exact location of well or source of sample or well number: WCC Well - 126-0003

Date: 8/29/88 Time: 0830 Weather: Heavy Rain
Sample Number: 126-0003 Type of Sample: Water
Preservative Type and Amount: HCl ; H_2SO_4 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 2.92' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gal (3 well volumes)
Depth of Well: 11.56' Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See Well Completion Log
Types of Screens, Slots, Perforations, or Louvers: See Well Completion Log

Water Bearing Formation(s): See Boring Log

Water Temperature: 7.0°C pH: 7.06
Conductivity: 360

Appearance and any Other Relevant Data: turbid; no odor or sheen; slight H_2S odor

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP5A - 15 Site Number: 067

Exact location of well or source of sample or well number: on WSC N of EW Runway - in vicinity of JP-4 tanks

Date: 8/5/88 Time: 1445 Weather: RAIN
Sample Number: 067-0004 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added
Point and Method of Collection: Teflon bailer at water surface

Water Level: 11.38 ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: bailed dry 1 time (TOTAL 2 gal)
Depth of Well: 21.79 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 8.5°C pH: 8.57
Conductivity: 820

Appearance and any Other Relevent Data: No sheen but slight petroleum odor was detected

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SPSA - 16 Site Number: 068

Exact location of well or source of sample or well number:
located N of EW Runway in vicinity of underground JP-4 tanks

Date: 8/5/88 Time: 1420 Weather: RAIN
Sample Number: 068 - 0004 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water surface

Water Level: 16.79 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 3 gal purged (3 well vol)
Depth of Well: 32.22 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion log
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): see log of boring

Water Temperature: ~~70~~ 7°C pH: 7.86
Conductivity: 1020 umhos/cm

Appearance and any Other Relevent Data: Pure product evident on surface of water in first bailer removed (about 1/4" thick) ~~oil~~ oil droplets can be seen in sample jars strong odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP SA18 Site Number: 070

Exact location of well or source of sample or well number:
On bluff above EW runway in vicinity of buried YP-4 tanks

Date: ~~7~~ 7/19/88 Time: 1405 Weather: Sunny high 50's
Sample Number: 070-0004 Type of Sample: Grab
Preservative Type and Amount: HCl or H2SO4 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 14ft 4in (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: well bailed dry, allowed to recharge
Depth of Well: 20ft 7in Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See completion boran
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 8.5°C pH: 6.17
Conductivity: 380 umhos/cm

Appearance and any Other Relevent Data: No sheen or odors

Samplers Initials: SW3

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP SA-19 Site Number: 071

Exact location of well or source of sample or well number: located on bluff above EW runway near JP-4 tanks

Date: 8/5/88 Time: 1348 Weather: RAIN
Sample Number: 071-0004 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: ~~15.80 ft~~ 16.18ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 3 gal purged (3 well vol)
Depth of Well: 22.19 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 6.5°C pH: 7.09
Conductivity: 350 umhos/cm

Appearance and any Other Relevant Data: Slight petroleum odor
No sheen

Samplers Initials: SWB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP7/10-01 Site Number: 084

Exact location of well or source of sample or well number:
Immed N of EW Runway west of AUACS and S of Taxiway #8

Date: 8/15/88 Time: ~~1005~~ 0935 Weather: Sunny calm 65°
Sample Number: 084-0003 Type of Sample: Grab
Preservative Type and Amount: HCL or H2SO4 added by lab
Point and Method of Collection: at water level w/ teflon bailer

Water Level: 15.00ft (toc) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 10.5 gal purged (3 well vol)
Depth of Well: ~34.92ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "
Water Bearing Formation(s): See log of boring

Water Temperature: 7.0°C pH: 7.11
Conductivity: 405 umhos/cm

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: ~~SP 8/6~~ SP7/10-02 Site Number: 085

Exact location of well or source of sample or well number: Immed. North of EW Runway, west of AWACS and South of Taxiway 8

Date: 8/15/88 Time: 0845 Weather: Sunny calm 60°
Sample Number: 085-0003 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 added by lab
Point and Method of Collection: At water level with Teflon bailer

Water Level: 16.45 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gal purged (3 well vol)
Depth of Well: 25.35 ft Diameter of Well: 2 in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 6.5°C pH: 6.98
Conductivity: 481 umhos/cm

Appearance and any Other Relevant Data: No odors, no sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP7/10-03 Site Number: 086

Exact location of well or source of sample or well number:

well # SP7/10-03 N of EW Runway
west of AWACS

Date: 8/15/88 Time: 1040 Weather: Sunny calm 70°
Sample Number: 086-0003 Type of Sample: Grab
Preservative Type and Amount: HCl or H2SO4 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 25.45 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gal (3 well vol)
Depth of Well: 32.85 ft Diameter of Well: 2in FD
Screened, Slotted, Perforated, or Louvered Intervals: see well completion sheet
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 8.5°C pH: 5.37
Conductivity: 230 umhos/cm

Appearance and any Other Relevent Data: Slight POL odor at start
Faded as purging continued.
NO sheen

Samplers Initials: SWB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP7/10-04 Site Number: 087

Exact location of well or source of sample or well number: well # SP7/10-04

N of EW Runway, west of AUACS

Date: 8/15/88 Time: 1200 Weather: Sunny calm 70°
Sample Number: 087-0003 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 added by lab
Point and Method of Collection: At water level w/ teflon bailer

Water Level: ~~38.82 ft~~ 19.60 (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: ~~40~~ 8.5 gal purged
Depth of Well: 31.95 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion log
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 8.0°C pH: 6.72
Conductivity: 415 umhos/cm²

Appearance and any Other Relevent Data: POL odor & sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP 7/10 W-3 Site Number: 088

Exact location of well or source of sample or well number:
Dames & Moore Well N of EW Runway
West of ALIACS

Date: 8/15/88 Time: 1125 Weather: Sunny calm 70°
Sample Number: 088-0001 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4 added by Lab
Point and Method of Collection: at water level w/ Teflon Bailer

Water Level: 22.00 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7.5 gal purged
Depth of Well: 31.96 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: @ 8.8°C pH: 6.94
Conductivity: 495 umhos/cm

Appearance and any Other Relevant Data: 1/2 in of Pure product in bailer during purge, very strong POL odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP 7/10 W-4 Site Number: 089

Exact location of well or source of sample or well number:
Dames & Moore well W-4
corner of taxiway 6 & 8 - West end
of EW runway

Date: 8/15/88 Time: 1005 Weather: Sunny, hot calm 70°
Sample Number: 089-0001 Type of Sample: Grab
Preservative Type and Amount: HCl or H_2SO_4, added by Lab
Point and Method of Collection: at water level w/ Ss teflon bailer

Water Level: 13.75 ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: 7.5 gal (3 well vols)
Depth of Well: 28.18 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: ~~Se~~ unknown
Types of Screens, Slots, Perforations, or Louvers: unknown

Water Bearing Formation(s): unknown

Water Temperature: 9.1°C pH: 6.99
Conductivity: 458 umhos/c

Appearance and any Other Relevant Data: Strong POL odor
Slight sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: 0687 - SP-11 GW-14 Site Number: 090-0003

Exact location of well or source of sample or well number:
SP-11 GW-14
WCC: 090-0003

Date: 8/12/88 Time: 0820 Weather: Sunny 60°
Sample Number: 090-0003 Type of Sample: Water
Preservative Type and Amount: Chill to 4°C; Add HCl or H_2SO_4 by lab.
Point and Method of Collection: Water surface with teflon bailer

Water Level: 3.71 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 12 gals (3 well volumes)
Depth of Well: 23.4 Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): —

Water Temperature: 5.7° pH: 7.2
Conductivity: 215

Appearance and any Other Relevent Data: Water was clear at first purging, slightly cloudy with continued bailing.

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP-11 GW4A Site Number: 091-0001

Exact location of well or source of sample or well number:
SP-11 GW4A
091

Date: 8/12/88 Time: 0900 Weather: Sunny 60°
Sample Number: 091-0001 Type of Sample: Water
Preservative Type and Amount: Chill to 4°C; Add HCl or HNO_3 by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 6.62 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gals (3 well volumes)
Depth of Well: 14.49 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: 8.0 pH: 6.96
Conductivity: 265

Appearance and any Other Relevent Data: Water first appeared clear with orange particulates & POL odor, becoming turbid with sheen & odor

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP12 W-9 Site Number: 092-0001

Exact location of well or source of sample or well number:
Dames & Moore Well W-9 SP12
WCC # 092

Date: 8/12/88 Time: 1030 Weather: Sunny, 60°
Sample Number: 092-0001 Type of Sample: Water
Preservative Type and Amount: Chill to 4°C; Add HCl or HNO_3 by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 23.18 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gals (3 well volumes)
Depth of Well: 39.54 ft Diameter of Well: 2 in ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: 7.5° pH: 7.21
Conductivity: 500

Appearance and any Other Relevent Data: Brown & turbid, no odor or sheen, becoming clearer at end of purge

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: GW 3A (SP-12) Site Number: 093

Exact location of well or source of sample or well number:
located S of EW Runway near fire station
well installed in 1987

Date: 8/12/88 Time: 1212 Weather: mostly sunny 60°F light winds
Sample Number: 693-0001 Type of Sample: Grab
Preservative Type and Amount: Teflon bailer at water level
Point and Method of Collection: HCl or H_2SO_4 added by lab

Water Level: 23.18 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 6 gal purged (3 well vols)
Depth of Well: 34.19 ft Diameter of Well: 2 IN ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: unknown

Water Bearing Formation(s): unknown

Water Temperature: 7.5°C pH: 7.26
Conductivity: 445 umhos/cm

Appearance and any Other Relevent Data: no odor or sheen

Samplers Initials: GMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP14-1 (096) Site Number: 096

Exact location of well or source of sample or well number: well NO SP14-1
located in grassy area NE of commissary and SE of Family Services Bldg.

Date: 8/11/88 Time: 0930 Weather: mostly cloudy 55°
Sample Number: 096-0003) Type of Sample: Grab
Preservative Type and Amount: HCl H2SO4 or HNO3 added by lab
Point and Method of Collection: Teflon Bailer at water level

Water Level: 31.89 ft (TOC) Rate of Discharge: -
Duration of Pumping Prior to Sampling: Purged 5 gal (3 well vol.)
Depth of Well: 43.00 ft (TOC) Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 8.5°C pH: 6.86
Conductivity: 322 mho

Appearance and any Other Relevant Data: No visible contaminants or odor

Samplers Initials: _____

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP-14-2 Site Number: 097

Exact location of well or source of sample or well number:
well No 097
located near intersection of 2nd and "N" streets
SE of Kenai dining hall

Date: 8/11/88 Time: 0830 Weather: partly cloudy, light wind
Sample Number: 097-0003 Type of Sample: Grab
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water table

Water Level: 36.17 ft Rate of Discharge: -
Duration of Pumping Prior to Sampling: Purged 6 gallons
Depth of Well: 47.83 ft Diameter of Well: 2 in
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of Screens, Slots, Perforations, or Louvers: see log of boing + well completion form
Water Bearing Formation(s): See log of boring

Water Temperature: 7.0 °C pH: 6.79
Conductivity: 275 mhos

Appearance and any Other Relevent Data: NO visible contaminants OR sheen or odor

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: W-17 (098) Site Number: ~~HE~~ 098-0001

Exact location of well or source of sample or well number:
SP 14 D+M Well W-17
WCC: 098

Date: 8/11/88 Time: 1115 Weather: Wind to 20 kts; overcast
Sample Number: 098-0001 Type of Sample: Water
Preservative Type and Amount: Cool to 4°C ; HCl or HNO_3 added by lab
Point and Method of Collection:

Water Level: 39.75 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 10.5 gals (3 well volumes)
Depth of Well: 48.76 Diameter of Well: 2 in ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s):

Water Temperature: 8.5 pH: 7.6
Conductivity: 310

Appearance and any Other Relevent Data: Water was slightly cloudy - no odors or sheen. Duplicate sampling site. Ambient conditions blank collected (6 VOA's)

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: GW-7A SP 14 Site Number: 099

Exact location o well or source of sample or well number:
DrM Well 7A SP 14 WCC: 099

Date: 8/11/88 Time: 1025 Weather: Wind to 20 Kts; overcast
Sample Number: 099-0001 Type of Sample: Water
Preservative Type and Amount: Cool to 4°C; Add HCl/HNO_3 by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 31.55 Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gals (3 well volumes)
Depth of Well: 39.21 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s):

Water Temperature: 9.0 pH: 7.03
Conductivity: 345

Appearance and any Other Relevent Data: First water bailed was clear with no odor or sheen; after 1.5 gals turbid PWT no odor or sheen - same for remainder of purging

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP-15-1 Site Number: 100

Exact location of well or source of sample or well number:

S of EW Runway
NW of Bldg 6-900

Date: 8/22/88 Time: 1130 Weather: RAIN 55°
Sample Number: 100-0003 Type of Sample: Grab
Preservative Type and Amount: HCl HNO_3 or H_2SO_4 added by lab
Point and Method of Collection:
Teflon bailer at water surface

Water Level: 28.27ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7 gal
Depth of Well: 37.56 ft Diameter of Well: 2IN ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): see log of boring

Water Temperature: 7.0°C. pH: 7.21
Conductivity: 650

Appearance and any Other Relevant Data: Slight sheen and Slight odor noted
DOL

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: SP 15-02 Site Number: 101

Exact location of well or source of sample or well number:

S of EW Runway
N of SP 15-1

Date: 8/22/88 Time: 1205 Weather: RAIN
Sample Number: 101-0003 Type of Sample: Grab
Preservative Type and Amount: HCl' H_2SO_4, HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 27.78 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 6 gal
Depth of Well: 39.43 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 7.0°C pH: 7.02
Conductivity: 900 umhos/cm2

Appearance and any Other Relevent Data: No odor, No sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: NS-2-01 (106) Site Number: (106)

Exact location of well or source of sample or well number:

well # NS-2-01

Date: 8/8/88 Time: 1320 Weather: Partly sunny 70°F calm
Sample Number: 106-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailers at water level

Water Level: 38.80 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gal purged (3 well vol)
Depth of Well: 54.50 ft Diameter of Well: 2 IN ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 7.0°C pH: 6.72
Conductivity: 210 umhos/cm

Appearance and any Other Relevent Data: No odor or sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: NS2-2 Site Number: 107

Exact location of well or source of sample or well number: well no NS2-2 located N of gravel pit which is E of EAFB

Date: 8/8/88 Time: 1445 Weather: partly sunny, 70° no wind
Sample Number: 107-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added
Point and Method of Collection: Teflon bailer at water surface

Water Level: 40.00 ft Rate of Discharge: —
Duration of Pumping Prior to Sampling: 9 gal purged (3 well vol)
Depth of Well: 57.25 ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "
Water Bearing Formation(s): See log of boring

Water Temperature: 6.5°C pH: 6.76
Conductivity: 227 umhos/cm

Appearance and any Other Relevent Data: cloudy, no odor or sheen

Samplers Initials: GMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: NS3-2 Site Number: 111

Exact location of well or source of sample or well number:

NS3-2 Golf course seep

Date: 8/23/88 Time: 0830 Weather: Mostly sunny 55°
Sample Number: 111-0003 Type of Sample:
Preservative Type and Amount: HCl or H_2SO_4 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 3.91 ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 12 gals purged
Depth of Well: 27.07 ft Diameter of Well: 2in id
Screened, Slotted, Perforated, or Louvered Intervals: see well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See boring log

Water Temperature: 9.0°C pH: 7.44
Conductivity: 249 umhos/cm²

Appearance and any Other Relevent Data: No odor or sheen observed

Samplers Initials: SNB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: NS3-3 Site Number: 110

Exact location of well or source of sample or well number:
NS3-3 Golf Course Seep

Date: 8/23/88 Time: 1030 Weather: Mostly sunny 65°
Sample Number: 110-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 & HNO_3 added by lab
Point and Method of Collection:
Teflon bailer at water level

Water Level: 3.60ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7 gals purged
Depth of Well: 16.87ft Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 11°C pH: 4.88
Conductivity: 422

Appearance and any Other Relevent Data: No odor or sheen observed

Samplers Initials: GMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: NS3-06 Site Number: 113

Exact location of well or source of sample or well number:

well # NS3-06 - Golf Course Seep

Date: 8/23/88 Time: 1200 Weather: mostly sunny 65°
Sample Number: 113-0003 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Teflon bailer at water level

Water Level: 27.93ft (TOC) Rate of Discharge: —
Duration of Pumping Prior to Sampling: 11 gals purged
Depth of Well: 48.11 ft (TOC) Diameter of Well: 2in ID
Screened, Slotted, Perforated, or Louvered Intervals: See well completion form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See log of boring

Water Temperature: 9.0°C pH: 7.11
Conductivity: 350 umhos/cm²

Appearance and any Other Relevent Data: No odors or sheen observed

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BH-1 Site Number: 119

Exact location of well or source of sample or well number:
Base Hydrogeology Well

Date: 8/30/88 Time: 1030 Weather: Overcast 55°
Sample Number: 119-0003 Type of Sample: Water
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 59.1' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 4.5 gal (3 well volumes)
Depth of Well: 69.51' Diameter of Well: 2in. ID
Screened, Slotted, Perforated, or Louvered Intervals: See Well Completion Log
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See Boring Log

Water Temperature: 5.2 pH: 7.00
Conductivity: 95

Appearance and any Other Relevent Data: turbid, no odors or sheen
Duplicate sampling ~~data~~ site.

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BH-3 Site Number: 121

Exact location of well or source of sample or well number:
Base Hydrogeology Well 3

Date: 8/30/88 Time: 1000 Weather: Overcast, 55°
Sample Number: 121-0002 Type of Sample: Water
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 17.16' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 1 gal
Depth of Well: 19.72' Diameter of Well: 2 in FD
Screened, Slotted, Perforated, or Louvered Intervals: See Well Completion Form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See Boring Log

Water Temperature: 5.5 pH: 7.49
Conductivity: 705

Appearance and any Other Relevent Data: Water on surface of very thick muck layer

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BH-4 Site Number: 122

Exact location of well or source of sample or well number:
Base Hydrogeology Well 4

Date: 8/30/88 Time: ~~1020~~ 0930 Weather: Overcast, 55°
Sample Number: 122-0003 Type of Sample: Water
Preservative Type and Amount: ~~HCl~~ H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 5.57' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7.5 gals (3 well volumes)
Depth of Well: 20.24' Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: See Well Completion Log
Types of Screens, Slots, Perforations, or Louvers: " " "

Water Bearing Formation(s): See Boring Log

Water Temperature: 6.5° C pH: 6.32
Conductivity: 98

Appearance and any Other Relevent Data: turbid brown, no odors or sheen
MS/MSD ate
Ambient Conditions blank ate

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BH-5 Site Number: 123

Exact location of well or source of sample or well number:
Base Hydrogeology Well 5

Date: 8/30/88 Time: 1225 Weather: Overcast 55°
Sample Number: 123-0003 Type of Sample: Water
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer

Water Level: 6.38' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 7gal (3 well volumes)
Depth of Well: 20.19 Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: See Well ~~Installation~~ Completion Log
Types of Screens, Slots, Perforations, or Louvers: " "

Water Bearing Formation(s): See Boring Log

Water Temperature: 7.5°C pH: 6.42
Conductivity: 338

Appearance and any Other Relevent Data: slightly cloudy, no odor or sheen

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BH-6 Site Number: 124

Exact location of well or source of sample or well number:
Base Hydrogeology Well 6

Date: 8/30/88 Time: 1220 ~~#5~~ Weather: Overcast 55°
Sample Number: 124-0003 Type of Sample: Water
Preservative Type and Amount: HCl, H_2SO_4 or HNO_3 added by lab
Point and Method of Collection: Water surface with teflon bailer.

Water Level: 11.05' Rate of Discharge: —
Duration of Pumping Prior to Sampling: 1 gal (3 well volumes)
Depth of Well: 12.3' Diameter of Well: 2 in. ID
Screened, Slotted, Perforated, or Louvered Intervals: See Well Completion Form
Types of Screens, Slots, Perforations, or Louvers: " " " "

Water Bearing Formation(s): See Boring Log

Water Temperature: 11.5°C pH: 6.39
Conductivity: 372

Appearance and any Other Relevant Data: slightly cloudy, no odor or sheen.

Samplers Initials: DM

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BW-1 Site Number: 117

Exact location of well or source of sample or well number:
Base water well No.1
Located in Bldg # 23-990

Date: 8/23/88 Time: 1425 Weather: Sunny 65°
Sample Number: 117-0001 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection:
Point - unknown

Water Level: unknown Rate of Discharge: —
Duration of Pumping Prior to Sampling: 2 wks of use
Depth of Well: 16ft Diameter of Well: —
Screened, Slotted, Perforated, or Louvered Intervals: unknown
Types of Screens, Slots, Perforations, or Louvers: unknown

Water Bearing Formation(s): unknown

Water Temperature: 10.5°C pH: 7.02
Conductivity: 140 umhos/cm

Appearance and any Other Relevent Data: Very clear water
No odor, No Sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BW-2 Site Number: 118

Exact location of well or source of sample or well number:

Base drinking water well
situated at pumphouse #2 Bldg # 22-006

Date: 8/23/88 Time: 1340 Weather: Mostly sunny 65°
Sample Number: 118-0001 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added
Point and Method of Collection:
Point - unknown method - hose attached to pump

Water Level: unknown Rate of Discharge: —
Duration of Pumping Prior to Sampling: in use for 2wks
Depth of Well: unknown Diameter of Well: unknown
Screened, Slotted, Perforated, or Louvered Intervals: "
Types of Screens, Slots, Perforations, or Louvers: "

Water Bearing Formation(s): unknown

Water Temperature: 11.0 °C pH: 7.75
Conductivity: 142

Appearance and any Other Relevent Data: Very clear water, no odor, no sheen

Samplers Initials: SMB

Figure 2.6-6

FIELD RECORD SHEET

Site Name: BW-52 Site Number: 125

Exact location of well or source of sample or well number:
At golf course pro shop
Bldg # 23-100

Date: 8/23/88 Time: 1400 Weather: Sunny 65°
Sample Number: 125-0001 Type of Sample: Grab
Preservative Type and Amount: HCl H_2SO_4 or HNO_3 added by lab
Point and Method of Collection:
Point - Unknown - Method Tap

Water Level: Unknown Rate of Discharge: —
Duration of Pumping Prior to Sampling: Purged tap for 10 min.
Depth of Well: Unknown Diameter of Well: Unknown
Screened, Slotted, Perforated, or Louvered Intervals: Unknown
Types of Screens, Slots, Perforations, or Louvers: Unknown

Water Bearing Formation(s): Unknown

Water Temperature: 9.5°C pH: 8.69
Conductivity: 170 umhos/cm

Appearance and any Other Relevant Data:
Very clear water, no odor no sheen

Samplers Initials: SMB

Figure 2.6-6

Surface Water Quality Sampling Records

SURFACE WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0187 LOG DATE 8/6/88 LOG TIME 0925
LOCATION ID NS1-1 (102) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 102 SAMPLE DEPTH (FT.) Surface

SAMPLING PERIOD: START 0900 COMPLETE 0910
SAMPLING METHOD GRAB LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	6.02	
SPECIFIC CONDUCTANCE	SC	µmhos/cm	510	
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	11°C	
ALKALINITY ($CaCO_3$)	ALK	mg/l	358	

INSTALLATION ID _____ LOG DATE _____ LOG TIME _____
LOCATION ID _____ LOT CONTROL NO. _____
SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START _____ COMPLETE _____
SAMPLING METHOD _____ LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

SAMPLE TYPES: (WSACODE)

D - DUPLICATE	FB - FIELD BLANK		
R - REPLICATE	TB - TRIP BLANK		
S - SPIKE	LB - LAB BLANK		
K - KNOWN	N - NORMAL		

SAMPLE METHODS: (WSMCODE)

G - GRAB	SP - SUBMERSIBLE PUMP		
B - BAILER	AL - AIR-LIFT SAMPLER		
PP - PERISTALIC PUMP	BP - BLADDER PUMP		
SL - SUCTION LIFT PUMP			

SURFACE WATER QUALITY SAMPLING RECORD

0687

INSTALLATION ID ELM LOG DATE 8/6/88 LOG TIME 1020
LOCATION ID NS-1-2 (103) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID (103) SAMPLE DEPTH (FT.) Surface

SAMPLING PERIOD: START 1000 COMPLETE 1010
SAMPLING METHOD Grab LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.44	
SPECIFIC CONDUCTANCE	SC	µmhos/cm	400	
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	10°C	
ALKALINITY ($CaCO_3$)	ALK	mg/l	214	

INSTALLATION ID _____ LOG DATE _____ LOG TIME _____
LOCATION ID _____ LOT CONTROL NO. _____
SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START _____ COMPLETE _____
SAMPLING METHOD _____ LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

SAMPLE TYPES: (WSACODE)				SAMPLE METHODS: (WSMCODE)			
D -	DUPLICATE	FB -	FIELD BLANK	G -	GRAB	SP -	SUBMERSIBLE PUMP
R -	REPLICATE	TB -	TRIP BLANK	B -	BAILER	AL -	AIR-LIFT SAMPLER
S -	SPIKE	LB -	LAB BLANK	PP -	PERISTALIC PUMP	BP -	BLADDER PUMP
K -	KNOWN	N -	NORMAL	SL -	SUCTION LIFT PUMP		

SURFACE WATER QUALITY SAMPLING RECORD

INSTALLATION ID 6687 ELM LOG DATE 8/6/88 LOG TIME # 1130
LOCATION ID IS-2-03 (104) LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 104 SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START 1105 COMPLETE 1115
SAMPLING METHOD GS LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.56	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	215	
REDOX POTENTIAL	Eh	mvolts	-	
TEMPERATURE	TEMP	°C	11.5°C	
ALKALINITY ($CaCO_3$)	ALK	mg/l	102	

INSTALLATION ID _____ LOG DATE _____ LOG TIME _____
LOCATION ID _____ LOT CONTROL NO. _____
SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START _____ COMPLETE _____
SAMPLING METHOD _____ LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

SAMPLE TYPES: (WSACODE)
D - DUPLICATE
R - REPLICATE
S - SPIKE
K - KNOWN
FB - FIELD BLANK
TB - TRIP BLANK
LB - LAB BLANK
N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB
B - BAILER
PP - PERISTALIC PUMP
SL - SUCTION LIFT PUMP
SP - SUBMERSIBLE PUMP
AL - AIR-LIFT SAMPLER
BP - BLADDER PUMP

SURFACE WATER QUALITY SAMPLING RECORD

ELM

INSTALLATION ID 0687 LOG DATE 8/16/88 LOG TIME 1250
LOCATION ID DS1-4 LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 105 SAMPLE DEPTH (FT.) surface

SAMPLING PERIOD: START 1225 COMPLETE 1235
SAMPLING METHOD G LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.17	
SPECIFIC CONDUCTANCE	SC	µmhos/cm	260	
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C	12°C	
ALKALINITY ($CaCO_3$)	ALK	mg/l	116	

INSTALLATION ID _____ LOG DATE _____ LOG TIME _____
LOCATION ID _____ LOT CONTROL NO. _____
SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START _____ COMPLETE _____
SAMPLING METHOD _____ LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

SAMPLE TYPES: (WSACODE)

D -	DUPLICATE	FB -	FIELD BLANK		
R -	REPLICATE	TB -	TRIP BLANK		
S -	SPIKE	LB -	LAB BLANK		
K -	KNOWN	N -	NORMAL		

SAMPLE METHODS: (WSMCODE)

G -	GRAB	SP -	SUBMERSIBLE PUMP
B -	BAILER	AL -	AIR-LIFT SAMPLER
PP -	PERISTALIC PUMP	BP -	BLADDER PUMP
SL -	SUCTION LIFT PUMP		

SURFACE WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 ELM LOG DATE 8/20/88 LOG TIME 1105
LOCATION ID SC-4 LOT CONTROL NO. _____
SAMPLE TYPE N SAMPLE ID 114-0001R SAMPLE DEPTH (FT.) Surface

SAMPLING PERIOD: START 1106 COMPLETE 1110
SAMPLING METHOD G LOGGER CODE SMB
LAB CODE RMAL DATE SENT 8/24/88
PRESERVATION METHOD H003
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.43	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	162	1
REDOX POTENTIAL	Eh	mvolts	—	—
TEMPERATURE	TEMP	°C	11.6	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	50	2

INSTALLATION ID _____ LOG DATE _____ LOG TIME _____
LOCATION ID _____ LOT CONTROL NO. _____
SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START _____ COMPLETE _____
SAMPLING METHOD _____ LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

SAMPLE TYPES: (WSACODE)
D - DUPLICATE
R - REPLICATE
S - SPIKE
K - KNOWN
FB - FIELD BLANK
TB - TRIP BLANK
LB - LAB BLANK
N - NORMAL

SAMPLE METHODS. (WSMCODE)
G - GRAB
B - BAILER
PP - PERISTALIC PUMP
SL - SUCTION LIFT PUMP
SP - SUBMERSIBLE PUMP
AL - AIR-LIFT SAMPLER
BP - BLADDER PUMP

SURFACE WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 ELM LOG DATE 8/20/88 LOG TIME 1120
LOCATION ID SC-5 LOT CONTROL NO. -
SAMPLE TYPE N SAMPLE ID 115-0001R SAMPLE DEPTH (FT.) Surface

SAMPLING PERIOD: START 1130 COMPLETE 1135
SAMPLING METHOD G LOGGER CODE SMO
LAB CODE RMRL DATE SENT 8/20/88
PRESERVATION METHOD HNO3
COMMENTS

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.50	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	97	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	11.5	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	40	1

INSTALLATION ID _____ LOG DATE _____ LOG TIME _____
LOCATION ID _____ LOT CONTROL NO. _____
SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START _____ COMPLETE _____
SAMPLING METHOD _____ LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

SAMPLE TYPES: (WSACODE)				SAMPLE METHODS. (WSMCODE)			
D -	DUPLICATE	FB -	FIELD BLANK	G -	GRAB	SP -	SUBMERSIBLE PUMP
R -	REPLICATE	TB -	TRIP BLANK	B -	BAILER	AL -	AIR-LIFT SAMPLER
S -	SPIKE	LB -	LAB BLANK	PP -	PERISTALIC PUMP	BP -	BLADDER PUMP
K -	KNOWN	N -	NORMAL	SL -	SUCTION LIFT PUMP		

SURFACE WATER QUALITY SAMPLING RECORD

INSTALLATION ID 0687 ELM LOG DATE 8/20/88 LOG TIME 1010
LOCATION ID SC-6 LOT CONTROL NO. -
SAMPLE TYPE N SAMPLE ID 116-0001R SAMPLE DEPTH (FT.) Surface

SAMPLING PERIOD: START 1020 COMPLETE 1025
SAMPLING METHOD G LOGGER CODE S.B
LAB CODE RMAL DATE SENT 8/ad88
PRESERVATION METHOD HNO_3 ~~HCl or H_2SO_4~~ added by lab
COMMENTS

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.	7.43	0.01
SPECIFIC CONDUCTANCE	SC	µmhos/cm	99	1
REDOX POTENTIAL	Eh	mvolts	-	-
TEMPERATURE	TEMP	°C	10.1	0.1
ALKALINITY ($CaCO_3$)	ALK	mg/l	98	2

INSTALLATION ID _____ LOG DATE _____ LOG TIME _____
LOCATION ID _____ LOT CONTROL NO. _____
SAMPLE TYPE _____ SAMPLE ID _____ SAMPLE DEPTH (FT.) _____

SAMPLING PERIOD: START _____ COMPLETE _____
SAMPLING METHOD _____ LOGGER CODE _____
LAB CODE _____ DATE SENT _____
PRESERVATION METHOD _____
COMMENTS _____

PARAMETER MEASUREMENTS:				DETECTION LIMIT
POTENTIAL OF HYDROGEN	pH	S.U.		
SPECIFIC CONDUCTANCE	SC	µmhos/cm		
REDOX POTENTIAL	Eh	mvolts		
TEMPERATURE	TEMP	°C		
ALKALINITY ($CaCO_3$)	ALK	mg/l		

SAMPLE TYPES: (WSACODE)
D - DUPLICATE
R - REPLICATE
S - SPIKE
K - KNOWN
FB - FIELD BLANK
TB - TRIP BLANK
LB - LAB BLANK
N - NORMAL

SAMPLE METHODS: (WSMCODE)
G - GRAB
B - BAILER
PP - PERISTALIC PUMP
SL - SUCTION LIFT PUMP
SP - SUBMERSIBLE PUMP
AL - AIR-LIFT SAMPLER
BP - BLADDER PUMP

IRP STAGE 3 RI/FS

ELMENDORF AFB, AK

APPENDIX E

SURVEYING DATA

COORDINATE FILES
AND
COMPUTATIONS

ELMENDORF GEOTECHNICAL SURVEY

September / November 1988

for

BLACK & VEATCH

ENGINEERS - ARCHITECTS

LCMF LIMITED
ENGINEERS
PLANNERS
PROJECT MANAGERS
SURVEYORS

**** COORDINATE FILE SYSTEM ****

LE REFERENCE LIST:

NAME	TYPE	LENGTH	DESCRIPTION	TIME
046	COORD	1000	ELMENDORF GEOTECHNICAL SURVEY	0 00 00 JOB# 88046

COORDINATE FILE:88046 LENGTH = 1000 POINTS: TIME ON FILE: 0 00 00.0
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
ENTER & ASSIGN							
				1	107,953.9100	106,049.2900	
				2	113,565.9700	98,688.3800	
				3	113,678.1700	99,530.4800	
				4	114,844.1500	101,681.2500	
				5	110,385.8200	107,194.3400	
				6	111,161.3800	107,332.5500	
				7	106,514.6100	104,168.7200	
				8	107,079.1300	105,466.8500	
				9	107,649.9500	106,315.2600	
				10	107,916.5600	106,976.2800	
				11	108,506.4800	107,909.6200	
				12	109,490.5400	108,492.4300	
				13	110,177.5800	111,006.7400	
				14	110,214.1500	110,892.1100	
				15	115,798.9100	106,422.9600	
				16	116,244.5300	107,027.7500	
				17	115,981.4900	107,997.7600	
				18	117,296.2400	109,530.5900	
				19	117,986.1200	109,718.8200	
				20	118,296.3900	111,050.4700	
				21	118,354.5300	111,647.5100	
				22	116,314.1700	109,422.5300	
				23	116,335.1900	109,787.3500	
				24	117,747.3200	104,021.0300	
				25	116,458.3400	103,622.4200	
				26	109,949.7900	98,988.0600	
				27	106,856.1100	119,510.5200	
				28	105,990.3800	118,448.2300	
				30	110,386.2200	111,835.2000	
				31	111,339.3300	111,837.9000	
				32	113,017.7800	109,765. 800	
				33	113,548.1400	109,261.9500	
				34	113,409.1100	111,752.1800	
				35	113,491.7700	111,133.5400	
				36	113,450.1800	112,125.1000	
				37	110,504.1900	100,912.3600	
				38	110,210.4800	100,390.3700	
				39	109,429.5900	99,584.4800	
				40	110,796.7500	105,6[illegible]3.4800	
				41	115,753.4400	115,687.9000	
				42	116,675.6800	115,881.3500	
				43	120,928.4800	114,469.4100	
				44	121,907.8400	114,703.9500	
				45	122,210.7100	115,188.5000	
				46	123,279.6300	116,008.1800	N-
				47	124,041.5900	116,451.6400	N-

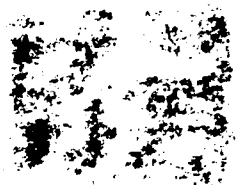
49	107,340.9800	117,402.4000
50	110,913.1700	115,664.4600
51	108,408.3500	106,455.3000
52	112,177.4400	106,006.1600
53	111,297.2800	104,837.1900
54	120,602.8400	114,520.7800
55	114,093.9400	101,472.0900
56	109,580.5500	111,509.2200

E FOR THIS RUN: 1 22 48.1; TOTAL TIME ON FILE: 1 22 48.1
RDINATES STORED

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 1 22 48.1
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
ST				1	107,953.9100	106,049.2900	
				2	113,565.9700	98,688.3800	
				3	113,678.1700	99,530.4800	
				4	114,844.1500	101,681.2500	
				5	110,385.8200	107,194.3400	
				6	111,161.3800	107,332.5500	
				7	106,514.6100	104,168.7200	
				8	107,079.1300	105,466.8500	
				9	107,649.9500	106,315.2600	
				10	107,916.5600	106,976.2800	
				11	108,506.4800	107,909.6200	
				12	109,490.5400	108,492.4300	
				13	110,177.5800	111,006.7400	
				14	110,214.1500	110,892.1100	
				15	115,798.9100	106,422.9600	
				16	116,244.5300	107,027.7500	
				17	115,981.4900	107,997.7600	
				18	117,296.2400	109,530.5900	
				19	117,986.1200	109,718.8200	
				20	118,296.3900	111,050.4700	
				21	118,354.5300	111,647.5100	
				22	116,314.1700	109,422.5300	
				23	116,335.1900	109,787.3500	
				24	117,747.3800	104,021.0300	
				25	116,458.3400	103,622.4200	
				26	109,949.7900	98,988.0600	
				27	106,856.1100	119,510.5200	
				28	105,990.3800	118,448.2300	
				30	110,386.2200	111,835.2000	
				31	111,339.3300	111,837.9000	
				32	113,017.7800	109,765.4800	
				33	113,548.1400	109,261.9500	
				34	113,409.1100	111,752.1800	
				35	113,491.7700	111,133.5400	
				36	113,450.1800	112,125.1000	
				37	110,504.1900	100,912.3600	
				38	110,210.4800	100,390.3700	
				39	109,429.5900	99,584.4800	
				40	110,796.7500	105,683.4800	
				41	115,753.4400	115,687.9000	
				42	116,675.6800	115,881.3500	
				43	120,928.4800	114,469.4100	
				44	121,907.8400	114,703.9500	
				45	122,210.7100	115,188.5000	
				46	123,279.6300	116,008.1800	N-
				47	124,041.5900	116,451.6400	N-
				48	107,345.1300	119,285.2800	
				49	107,340.9800	117,402.4000	
				50	110,913.1700	115,664.4500	
				51	108,408.3500	106,455.8000	
				52	112,177.4400	106,006.1600	
				53	111,297.2800	104,837.1900	
				54	120,602.8400	114,520.7800	
				55	114,093.9400	101,472.0900	



56 109.580.5500 111.509.2200

1	[illegible]	[illegible]	[illegible]	MW-4
2	[illegible]	[illegible]	[illegible]	C-1
3	113,678.1700	99,536.4800	207.3900	C-12
4	114,844.1600	101,681.0500	308.0300	C-13
5	110,385.6200	107,194.3400	197.6600	EMF-10
6	111,151.3800	107,472.0500	168.2700	EMF-11
7	106,514.6100	104,168.7200	136.2300	F-1
8	107,079.1500	105,466.8500	137.2600	F-2
9	107,649.9500	105,515.2600	140.4200	F-3
10	107,316.5600	106,376.2800	139.9600	F-4
11	108,506.4800	107,309.6200	144.8500	F-5
12	109,490.5400	108,492.4300	148.1400	F-6
13	110,177.5800	111,006.7400	175.9900	G-1
14	110,214.1500	110,892.1100	173.0700	G-10
15	115,798.9100	106,472.9600	175.5100	HS-2
16	116,244.5500	107,027.7600	179.2500	HS-4
17	115,981.4900	107,997.7600	181.3600	HS-7
18	117,296.2400	108,538.5900	192.6100	HS-14
19	117,986.1200	109,718.8200	194.8300	HS-15
20	116,296.3800	111,056.4700	204.8200	HS-19
21	119,354.5300	111,647.5100	207.5200	HS-21
22	116,314.1700	109,422.5300	188.2300	HS-23
23	116,335.1300	109,797.3500	189.0700	HS-30
24	117,747.3800	104,021.0300	255.0100	J-22
25	116,458.3400	103,622.4200	260.9900	J-23
26	109,949.7300	98,388.0600	160.1700	MB-27
27	106,856.1100	119,510.5200	213.6200	MB-116
28	105,990.3800	119,448.2300	205.5800	MB-124
30	110,386.2200	111,835.2000	178.6500	MB-130
31	111,339.3300	111,837.9000	179.7600	MB-131
32	113,017.7800	109,765.4800	177.6000	MB-136
33	113,548.1400	109,261.9500	176.5600	MB-137
34	113,469.1100	111,752.1800	184.6600	MB-141
35	113,491.7700	111,133.5400	183.8500	MB-142
36	113,450.1800	112,125.1300	185.1300	MB-145
37	110,504.1900	100,912.3600	137.2800	MC-9
38	110,210.4800	100,390.3700	136.6800	MC-10
39	109,429.5900	99,584.4900	136.3500	MC-11
40	110,796.7500	105,583.4300	152.1200	MW-23
41	115,753.4400	115,687.9000	217.9700	N-1B
42	116,675.6800	115,381.3500	220.6400	N-2A
43	[illegible]	114,469.4100	272.0900	N-6
44	[illegible]	114,703.9500	279.2900	N-8
45	[illegible]	115,188.5000	275.3800	N-9
46	123,279.6300	116,008.1800	N-11A	
47	[illegible]	116,451.6400	N-12A	
48	[illegible]	119,285.2800	209.8500	O-1
49	107,340.9800	117,402.4000	202.7000	O-2
50	110,913.1700	115,664.4500	196.0200	O-4
51	108,408.3500	106,455.8000	151.3500	RW-20
52	112,177.4400	106,006.1600	154.0600	RW-23
53	111,297.2800	104,837.1900	152.8200	ST-146
54	120,602.8400	114,520.7300	251.2500	WC-2
55	114,093.9400	101,472.0900	210.0200	WC-6A
56	109,580.5500	111,509.2200	135.6400	WS-167

ART						10	107,916.5600	106,976.2800	
10	INV	SW	68	02	03.3	712.761	9	107,649.9500	106,315.2600	
9	INV	NE	68	02	03.3	712.761	10	107,916.5600	106,976.2800	
10	S.S.	NE	27	27	21.3	675.556	100	108,516.0251	107,287.7557	TP
10	S.S.	SW	53	49	38.3	288.232	201	107,746.4394	106,743.6072	SP
10	INV	NE	27	27	21.3	675.556	100	108,516.0251	107,287.7557	TP
00	TRAV	SE	89	11	13.7	621.329	0	108,507.2107	107,909.0219	TP
0	INV	SE	39	18	10.8	0.944	11	108,506.4800	107,909.6200	
11	INV	NE	0	00	00.0	0.000	0	108,506.4800	107,909.6200	
0	INV	SW	57	42	17.9	1104.142	10	107,916.5600	106,976.2800	
10	INV	NE	57	39	22.8	1104.026	0	108,507.2100	107,909.0210	
0	INV	SE	39	22	13.9	0.944	11	108,506.4800	107,909.6200	
11	INV	SW	57	42	17.9	1104.142	10	107,916.5600	106,976.2800	
10	INV	SW	68	02	03.3	712.761	9	107,649.9500	106,315.2600	
9	INV	NE	68	02	03.3	712.761	10	107,916.5600	106,976.2800	
10	TRAV	NE	27	27	21.3	675.555	0	108,516.0244	107,287.7553	
0	INV	NE	27	27	20.1	0.001	100	108,516.0251	107,287.7557	TP
00	INV	SW	27	27	21.3	675.556	10	107,916.5600	106,976.2800	
10	INV	NE	27	27	21.3	675.556	100	108,516.0251	107,287.7557	TP
100	S.S.	SW	13	54	03.3	375.891	202	108,151.1434	107,197.4505	SP
00	S.S.	SE	21	56	17.7	229.785	203	108,302.8798	107,373.6049	SP
100	S.S.	SW	41	33	21.3	560.434	204	108,096.6475	106,915.9915	SP
100	S.S.	SW	67	09	04.3	301.938	205	108,398.7822	107,009.5096	SP
ART							1	107,953.9100	106,049.2900	
1	INV	NE	41	48	48.9	609.726	51	108,408.3500	106,455.8000	
51	S.S.	SE	83	41	50.1	267.950	206	108,378.9340	106,722.1303	SP
51	S.S.	SE	61	58	48.1	354.465	207	108,241.8298	106,768.7158	SP
51	S.S.	SE	43	48	11.1	389.917	208	108,126.9382	106,725.6934	SP
51	S.S.	SE	50	50	51.1	327.796	209	108,201.3845	106,709.9952	SP
51	INV	SW	41	48	48.9	609.726	1	107,953.9100	106,049.2900	
1	S.S.	SE	78	30	11.1	548.479	210	107,845.8411	106,587.0165	SP

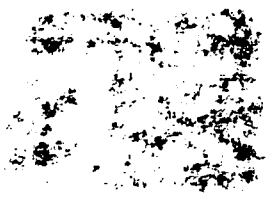
RADIAL STAKE OUT - OCC.PT:						10	107,916.5600	106,976.2
BACKSIGHT						9	107,649.9500	106,315.2
	0 00 00.0	SW	68 02 03.3		712.761	9	107,649.9500	106,315.2
[illegible]	139 25 18.0	NE	27 27 21.3		675.556	100	108,516.0251	107,287.7
AR	345 47 35.0	SW	53 49 38.3		288.232	201	107,746.4394	106,743.6
DIAL STAKE OUT - OCC.PT:						100	108,516.0251	107,287.7
CKSIGHT						10	107,916.5600	106,976.2
AR	0 00 00.0	SW	27 27 21.3		675.556	10	107,916.5600	106,976.2
AR	346 26 42.0	SW	13 54 03.3		375.891	202	108,151.1434	107,197.4
	310 36 21.0	SE	21 56 17.7		229.785	203	108,302.8798	107,373.6
AR	14 06 00.0	SW	41 33 21.3		560.434	204	108,096.6475	106,915.9
AR	39 41 43.0	SW	67 09 04.3		301.938	205	108,398.7822	107,009.5
DIAL STAKE OUT - OCC.PT:						51	108,408.3500	106,455.8
CKSIGHT						1	107,953.9100	106,049.2
AR	0 00 00.0	SW	41 48 48.9		609.726	1	107,953.9100	106,049.2
[illegible]	234 29 21.0	SE	83 41 50.1		267.950	206	108,378.9340	106,722.1
	256 12 23.0	SE	61 58 48.1		354.465	207	108,241.8298	106,768.7
AR	274 23 00.0	SE	43 48 11.1		389.917	208	108,126.9382	106,725.6
AR	267 20 20.0	SE	50 50 51.1		327.796	209	108,201.3845	106,709.9
DIAL STAKE OUT - OCC.PT:						1	107,953.9100	106,049.2
BACKSIGHT						51	108,408.3500	106,455.8
AR	0 00 00.0	NE	41 48 48.9		609.726	51	108,408.3500	106,455.8
	59 33 00.0	SE	78 38 11.1		548.479	210	107,845.8411	106,587.0

201	107,746.4394	106,743.6072	SP2/65
202	108,151.1434	107,197.4505	SP2/64
203	108,302.8798	107,373.6049	SP2/63
204	108,096.6475	106,915.9915	SP2 10
205	108,398.7822	107,009.5096	SP2/62
206	108,378.9340	106,722.1303	SP2/61
207	108,241.8298	106,768.7158	SP2/69
208	108,126.9382	106,725.6934	SP2/68
209	108,201.3845	106,709.9952	SP2/67
210	107,845.8411	106,587.0165	SP2/66

[illegible] ASSIGN
[illegible] ASSIGN

206	108,378.3340	106,722.1303	155.4200	SP2/61
207	108,241.8298	106,768.7158	155.7300	SP2/69
209	[illegible]	106,709.9952	151.7100	SP2/67
208	[illegible]	106,725.6934	151.0400	SP2/68
210	[illegible]	106,587.0165	150.4700	SP2/66
201	107,746.4394	106,743.6072	138.5400	SP2/65
204	[illegible]	106,915.9915	140.8300	SP2 10
205	108,398.7822	107,009.5096	146.9100	SP2/62
203	108,302.8798	107,373.6049	144.3900	SP2/63
202	108,151.1434	107,197.4505	143.2100	SP2/64
10	107,916.5600	106,976.2800	139.0600	F-4

201	107,746.4534	110,711.6372	159.1490	SP2,65
202	108,151.1454	107,157.4505	149.2100	SP2,64
203	108,302.8798	107,373.9044	144.7990	SP2,63
204	108,096.6475	106,915.6915	140.8300	SP2,62
205	108,398.7822	107,157.5896	146.7420	SP2,62
206	108,378.0340	106,722.1303	155.1200	SP2,61
207	108,241.8299	106,748.7158	155.7700	SP2,61
208	108,126.9382	106,725.6454	151.6490	SP2,60
209	108,201.3845	106,709.3952	151.7160	SP2,57
210	107,345.3411	106,587.8165	150.4980	SP2,66



```
START                                                  12     109,490.5400     108,492.4300
  12   INV SW    30 38 10.2       1143.696             11     108,506.4800     107,909.6200
  ART                                                  10     107,916.5600     106,976.2800
  10   INV NE    27 27 21.3        675.556            100     108,516.0251     107,287.7557 TP
 100 TRAV SE     89 11 06.7        621.329              0     108,507.1896     107,909.0216 TP
   0   INV SW    61 43 31.6       1809.678              9     107,649.9500     106,315.2600
   9   INV NE    61 45 15.1       1809.869             11     108,506.4800     107,909.6200



START                                                  12     109,490.5400     108,492.4300
  12   INV SW    30 38 10.2       1143.696             11     108,506.4800     107,909.6200
  11 S.S. SE     88 46 34.8        680.009            211     108,491.9582     108,589.4741 NS
  11 S.S. SW     27 22 40.2        740.360            212     107,849.0454     107,569.1610 SC
  ---------------------------------------------------------------------------
  ORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:    1 22 48.1
ELMENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
  ---------------------------------------------------------------------------
  ********** COGO ************
  ---------------------------------------------------------------------------
FROM TYPE          BEARING      DISTANCE   TO          NORTHING          EASTING
  ---------------------------------------------------------------------------
 .ST
START                                                  12     109,490.5400     108,492.4300
  12   INV SW    30 38 10.2       1143.696             11     108,506.4800     107,909.6200
  11 S.S. SE     88 46 34.8        680.009            211     108,491.9582     108,589.4741 NS
  11 S.S. SW     27 22 40.2        740.360            212     107,849.0454     107,569.1610 SC
TIME FOR THIS RUN:     0 02 00.9; TOTAL TIME ON FILE:    1 24 49.0
  ORDINATES STORED
  ---------------------------------------------------------------------------
COORDINATE FILE 88046  LENGTH = 1000 POINTS; TIME ON FILE:    1 24 49.0
  MENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
  ---------------------------------------------------------------------------
TWO INSTRUMENT RADIAL SURVEY
  ---------------------------------------------------------------------------
          ANGLE            SD            ZA              BRG PRISM   PT          NOR
  ---------------------------------------------------------------------------
                                                      INST PT:   11      108,506
                                  REF BRG: NE   30 38 10.2***** EDM SLOPE REDUCTI
 ------------------------------
      741.780 SLOPE DIST
      144.850 ELEV INST PT
        4.760 H.I. PRISM
        4.750 H.I. REFLECTOR
     93 32 46 ZENITH
        4.760 H.I. THEODOLITE
        4.750 H.I. TARGET
       98.991 ELEV TARGET PT     Pt # 212
      740.361 H DIST INST PT
      740.356 H DIST SEA LEVEL
------------------------------



  ---------------------------------------------------------------------------
COORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:    1 24 49.0
ELMENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
  ---------------------------------------------------------------------------
  ********** COGO ************
---------------------------------------------------------------------------
FROM TYPE          BEARING      DISTANCE   TO          NORTHING          EASTING
```

ART						11	108,506.4800	107,909.6200	
11	INV	NE	30	38	10.2	1143.696	12	109,430.5400	108,492.4300	
12	S.S.	SW	43	26	15.2	382.320	213	109,212.9284	108,229.5609	NS
12	S.S.	SE	12	42	49.8	302.318	214	109,195.6347	108,558.9647	NS
12	S.S.	NE	89	58	35.2	655.840	215	109,490.8097	109,148.2696	NS
12	TRAV	SE	18	00	44.8	761.934	101	108,765.9486	108,728.0381	TP
101	TRAV	NE	68	23	30.2	886.718	102	109,092.4904	109,552.4402	TP
02	TRAV	SE	65	47	33.8	457.279	103	108,904.9882	109,969.5100	TP
03	TRAV	NE	42	33	10.2	669.527	104	109,398.1978	110,422.2905	TP
104	TRAV	NE	87	06	30.2	416.562	105	109,419.2121	110,838.3225	TP
05	TRAV	NE	43	23	22.2	251.947	106	109,602.3022	111,011.3987	TP
06	TRAV	SE	87	28	12.8	498.563	107	109,580.2964	111,509.4761	
107	S.S.	NW	45	17	11.1	0.360	56	109,580.5500	111,509.2200	
07	INV	SW	88	17	45.5	3018.381	12	109,490.5400	108,492.4300	
12	INV	NE	88	17	45.5	3018.381	107	109,580.2964	111,509.4761	
07	INV	NW	45	17	11.1	0.360	56	109,580.5500	111,509.2200	
56	INV	SW	88	17	27.6	3018.132	12	109,490.5400	108,492.4300	

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 1 24 49.0
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** ROTATION **********

TATE LINE 12 TO 107 ABOUT 12 FROM NE 88 17 45.5 3018.381
TO NE 88 17 27.6
A ROTATION OF- 0 00 17.9

ALE 0.9999175
ANSLATE TO: 12 109,490.5400 108,492.4300

OM	BEARING	DISTANCE	TO	NORTHING	EASTING
			101	108,766.0288	108,728.0815
01 NE	68 23 12.3	886.645	102	109,092.6151	109,552.3872
02 SE	65 47 51.3	457.241	103	108,905.1645	109,969.4389
103 NE	42 32 52.3	669.471	104	109,398.3727	110,422.1393
104 NE	87 06 12.3	416.528	105	109,419.4213	110,838.1352
05 NE	43 23 04.3	251.926	106	109,602.5113	111,011.1812
06 SE	87 28 30.7	498.522	107	109,580.5505	111,509.2194

TIME FOR THIS RUN: 0 02 23.0
TAL TIME ON FILE: 1 27 11.9
ORDINATES STORED

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 1 27 11.9
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
START				107	109,580.5505	111,509.2194

```
 107   INV SE    47 38 44.9          0.001    56      109,580.5500      111,509.2200
START                                          12      109,490.5400      108,492.4300
  12   INV SE    18 01 02.7        761.871   101      108,766.0288      108,728.0815 TP
START                                          12      109,490.5400      108,492.4300
  12   INV SE    18 01 02.7        761.871   101      108,766.0288      108,728.0815 TP
  01 S.S. SW     20 43 27.3        723.531   216      108,089.3144      108,472.0451 SC
START                                         101      108,766.0288      108,728.0815 TP
 101   INV NE    68 23 12.3        886.645   102      109,092.6151      109,552.3672 TP
  02   INV SE    65 47 51.7        457.241   103      108,905.1645      109,369.4389 TP
  03 S.S. NW     65 45 11.7         95.086   217      108,944.2132      109,382.7410 NS
 103 S.S. NE     53 27 53.3        632.201   218      109,281.5244      110,477.4071 SC
 103   INV NE    42 32 52.3        669.471   104      109,398.3727      110,422.1393 TP
  04 S.S. NE     32 49 52.3         76.468   219      109,462.6262      110,463.5974 NS
 104 S.S. NE     78 21 46.3        303.681   220      109,459.6290      110,719.5777 SP
 104   INV NE    87 06 12.3        416.528   105      109,419.4213      110,838.1352 TP
  05   INV NE    43 23 04.3        251.926   106      109,602.5113      111,011.1812 TP
 106   INV SE    87 28 30.5        498.523    56      109,580.5500      111,509.2200
  56 S.S. NW     47 38 44.9          0.001   107      109,580.5505      111,509.2194
  56 S.S. NE     17 45 22.5        130.250   221      109,704.5952      111,548.9421 SP
 ME FOR THIS RUN:      0 11 09.4; TOTAL TIME ON FILE:     1 38 21.3
COORDINATES STORED
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 INPUT FILE:886046  LENGTH = 1000 POINTS; TIME ON FILE:    1 38 21.3
 ..OUTPUT (ELECTRONICAL SURVEY:  ***** JOB #886046
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 ********** JOB **********

FROM TYPE       BEARING    DISTANCE  ID       NORTHING        EASTING
```

201	107,746.4334	106,743.6072	138.5400	SP2/65
202	108,151.1434	107,187.4505	143.2100	SP2/64
203	108,302.8798	107,373.6049	144.3900	SP2/63
204	108,096.6475	106,315.3915	140.8300	SP2 10
205	108,398.7822	107,909.5096	146.9100	SP2/62
206	108,379.9340	106,722.1303	155.4200	SP2/61
207	108,241.8298	106,768.7158	155.7300	SP2/69
208	109,125.9582	106,725.6934	151.0400	SP2/68
209	108,201.3845	106,709.9952	151.7100	SP2/67
210	107,845.8411	106,587.0165	150.4700	SP2/66
211	108,491.9582	108,589.4741	NS3-3	
212	107,849.0454	107,569.1610	SC-6	
213	109,212.9284	108,229.5609	NS4-4	
214	109,195.6347	108,558.9647	NS3-5	
215	109,490.8097	109,148.2696	NS3-6	
216	108,089.3144	108,472.0451	SC-5	
217	108,944.2132	109,382.7410	NS3-2	
218	109,281.5244	110,477.4071	SC-4	
219	109,462.6262	110,463.5974	NS3-1	
220	109,459.6290	110,719.5777	SP4-2	

```
 ME FOR THIS RUN:     0 00 45.6; TOTAL TIME ON FILE:     1 39 08.9
COORDINATES STORED
```

COORDINATE FILE:880[illegible] LENGTH = 1000 POINTS: TIME ON FILE: 1 38 06.9
FMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM TO	BEARING	DISTANCE	TO	NORTHING	EASTING
ENTER & ASSIGN					
			221	109,704.5952	111,548.9421
			220	109,459.6290	110,719.5777
			219	109,462.6262	110,463.5974
			218	109,281.5244	110,477.4071
			217	108,944.2132	109,882.7410
			211	108,491.9582	108,589.4741
			216	108,089.3144	108,472.0451
			215	109,490.8097	109,148.2696
			214	109,195.6347	108,558.9647
			213	109,212.9284	108,229.5609

201	107,746.4394	106,744.6072	148.5400	SP2/65
202	108,151.1434	107,137.4505	143.2100	SP2/64
203	108,502.8798	107,573.6049	144.3900	SP2/63
204	108,856.6475	108,015.9915	140.6300	SP2 10
205	108,398.7822	107,809.5096	146.9100	SP2/62
206	108,378.9340	106,722.1303	155.4200	SP2/61
207	108,241.8298	106,768.7158	155.7300	SP2/69
208	108,126.3382	106,725.6334	151.6400	SP2/68
209	108,201.3845	106,709.9952	151.7100	SP2/67
210	107,935.8411	106,537.0165	150.4700	SP2/66
211	108,491.9582	108,589.4741	111.9200	MS3-3
212	107,849.0454	107,569.1610	SC-6	
213	109,212.9284	108,229.5609	149.2500	MS3-4
214	109,195.6347	108,558.9647	136.8400	MS3-5
215	109,490.8097	109,148.2696	149.0300	MS3-6
216	108,089.3144	108,472.0451	104.0400	SC-5
217	108,944.2132	109,882.7410	121.1300	MS3-2
218	109,281.5244	110,477.4071	121.1100	SC-4
219	109,462.6262	110,463.5974	126.1800	MS3-1
220	109,459.6290	110,719.5777	151.2700	SP4-2
221	109,704.5952	111,548.9421	137.3600	SP4-1

ENTER & ASSIGN

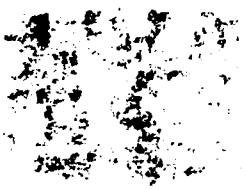
212	107.849.0454	107,569.1610	98.9900	SC-6

START					13	110,177.6800	111,006.7400
13 INV NW	72	18	21.4	120.322	14	110,214.1500	110,892.1100
14 TRAV SW	67	21	47.6	374.477	222	110,070.0183	110,546.4813 SP
ENTER & ASSIGN							
					222	110,070.0183	110,546.4813
ART					31	111,339.3300	111,837.9000
31 INV SW	0	09	44.3	953.114	30	110,386.2200	111,835.2000
30 S.S. NW	6	54	02.7	935.609	223	111,315.0516	111,722.7867 SP
30 S.S. NW	26	58	56.7	222.353	224	110,584.3686	111,734.3148 SP
ENTER & ASSIGN							
					224	110,584.3686	111,734.3148
					223	111,315.0516	111,722.7867
ART					34	113,409.1100	111,752.1800
34 INV NE	83	42	55.1	375.175	36	113,450.1800	112,125.1000
36 S.S. NW	77	37	59.9	89.188	225	113,469.2812	112,037.9810 SP
36 S.S. NE	10	27	55.1	6.100	226	113,456.1785	112,126.2080 SP
TER & ASSIGN							
					226	113,456.1785	112,126.2080
					225	113,469.2812	112,037.9810 SP
					225	113,469.2812	112,037.9810
START					34	113,409.1100	111,752.1800
34 INV NW	82	23	22.1	624.138	35	113,491.7700	111,133.5400
35 S.S. NW	64	02	43.1	487.800	227	113,705.2608	110,694.9393 SP
35 TRAV NW	82	23	22.1	20.370	108	113,494.4678	111,113.3494 PT
08 TRAV NW	24	30	42.1	590.610	228	114,031.8497	110,868.3180 SP
ENTER & ASSIGN							
					227	113,705.2608	110,694.9393
					228	114,031.8497	110,868.3180

[illegible]	[illegible]	106,743.6072	138.6400 SP2/65
[illegible]	[illegible]	107,197.4505	143.2100 SP2/64
[illegible]	[illegible]	107,373.6049	144.3900 SP2/63
204	[illegible]	106,915.9915	140.8300 SP2 10
205	108,398.7822	107,009.5096	146.9100 SP2/62
206	108,378.9340	106,722.1303	155.4200 SP2/61
207	108,241.8298	106,768.7158	155.7300 SP2/69
208	108,126.9382	106,725.6934	151.0400 SP2/68
209	108,291.3845	106,709.9952	151.7100 SP2/67
210	107,845.8411	106,587.0165	150.4700 SP2/66
211	108,491.9582	108,589.4741	111.9200 NS3-3
212	107,849.0454	107,569.1610	98.9900 SC-6
213	109,212.9284	108,229.5609	149.2500 NS3-4
214	109,135.6347	108,558.9647	136.8400 NS3-5
215	109,490.8097	109,148.2696	149.0300 NS3-6
216	108,089.3144	109,472.0451	154.0400 SC-5
217	108,944.2132	109,692.7410	121.1300 NS3-2
218	109,291.5244	110,477.4071	121.1100 SC-4
[illegible]	[illegible]	[illegible]	[illegible]

220	109,459.6290	110,714.5777	131.2700	SP4-2
221	109,704.5952	111,548.9421	137.3600	SP4-1
222	110,070.0183	110,546.4813	173.6700	SP4-3
223	111,315.0516	111,722.7867	191.9400	SP14-1
224	110,584.3686	111,734.3148	191.2600	SP14-2
225	113,469.2812	112,037.9810	185.3100	SP13-1
226	113,456.1785	112,126.2080	185.4900	SP13-2
227	113,705.2608	110,694.9393	185.0300	SP15-1
228	114,031.3497	110,869.3180	184.5900	SP15-2

201	107,746.4694	106,743.6072	138.5400	SP2/65
202	109,151.1434	107,130.4525	143.2100	SP2/64
203	108,582.8738	107,173.6049	144.2900	SP2/63
204	108,096.8475	106,915.9915	140.8400	SP2/62
205	109,338.7822	107,009.5096	146.5100	SP2/62
206	108,879.9548	106,922.1306	155.4200	SP2/61
207	109,241.8258	106,768.7158	155.7300	SP2/69
208	109,116.3382	106,725.6354	151.0400	SP2/68
209	108,201.3845	106,709.8952	151.7100	SP2/67
210	107,845.9411	106,587.0165	150.4700	SP2/66
211	108,491.3582	108,589.4741	111.9200	MS3-3
212	107,849.0454	107,569.1610	98.9900	SC-6
213	109,212.9284	108,229.5609	149.2500	MS3-4
214	109,195.6347	108,558.2647	136.8400	MS3-5
215	109,490.6097	109,146.2656	149.0300	MS3-6
216	108,089.3144	108,472.3451	104.2400	SC-5
217	108,344.2132	109,682.7410	121.1300	MS3-2
218	109,281.5244	110,477.4071	121.1100	SC-4
219	109,462.6262	110,463.5374	126.1800	MS3-1
220	109,459.6290	110,714.5777	131.2700	SP4-2
221	109,704.5952	111,548.9421	137.3600	SP4-1
222	110,070.0183	110,546.4813	173.6700	SP4-3
223	111,315.0516	111,722.7867	191.9400	SP14-1
224	110,584.3686	111,734.3148	191.2600	SP14-2
225	113,469.2812	112,037.9810	185.3100	SP13-1
226	113,456.1785	112,126.2080	185.4900	SP13-2
227	113,705.2608	110,694.9393	185.0300	SP15-1
228	114,031.3497	110,869.3180	184.5900	SP15-2



START					55	114,093.9400	101,472.0900	
55	TRAV	NW	90 00 00.0	705.520	109	114,093.9400	100,766.5703	PT
09	TRAV	NE	8 38 29.0	288.263	110	114,378.9305	100,809.8817	PT
110	TRAV	NE	49 05 04.0	741.152	111	114,864.3449	101,369.9521	PT
111	TRAV	NE	35 34 12.0	112.297	112	114,873.0188	101,481.9134	CL
12	INV	SW	0 43 20.6	779.141	55	114,093.9400	101,472.0900	
55	INV	NE	15 34 42.9	778.822	4	114,844.1500	101,681.2500	

ME FOR THIS RUN: 0 52 55.0; TOTAL TIME ON FILE: 2 32 01.9
OORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 2 32 01.9
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

******** ROTATION **********

ROTATE LINE 55 TO 112 ABOUT 55 FROM NE 0 43 20.6 779.141
TO NE 15 34 42.9
A ROTATION OF 14 51 22.3

SCALE 0.9995906
TRANSLATE TO: 55 114,093.9400 101,472.0900

OM	BEARING	DISTANCE	TO	NORTHING	EASTING
			109	114,274.7567	100,790.4333
09	NE 23 29 51.3	288.145	110	114,539.0076	100,905.3196
110	NE 63 56 26.3	740.848	111	114,864.4641	101,570.8528
111	SE 79 34 25.7	112.251	112	114,844.1502	101,681.2502

ME FOR THIS RUN: 0 01 43.3
TAL TIME ON FILE: 2 33 45.2
COORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 2 33 45.2
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
ART				4	114,844.1500	101,681.2500	
4	INV NE	45 [illegible]	0.000	112	114,844.1502	101,681.2502	CL
ART				55	114,093.9400	101,472.0900	
55	INV NW	75 [illegible]	705.231	109	114,274.7567	100,790.4333	PT
109	S.S. SE	3 25 42.7	58.265	229	114,216.5957	100,793.9178	SP
109	S.S. SW	64 14 30.3	159.611	230	114,205.3938	100,646.6820	SP
09	S.S. SE	85 16 27.7	433.532	231	114,239.0405	101,222.4914	SP
109	S.S. SW	10 03 20.3	62.602	232	114,213.1166	100,779.5028	TR
109	S.S. SW	73 20 01.3	362.692	233	114,170.7374	100,442.9771	SP
09	S.S. SE	89 39 21.7	298.821	234	114,272.9628	101,089.2490	SP
09	S.S. SE	76 32 29.7	155.423	235	114,238.5836	100,941.5885	SP
109	S.S. SE	9 17 09.7	110.484	236	114,165.7207	100,808.2614	TR
09	INV NE	23 29 51.3	288.145	110	114,539.0076	100,905.3196	PT
10	S.S. NE	57 22 23.3	359.967	237	114,733.0894	101,208.4833	SP
110	S.S. SW	21 14 43.3	266.613	238	114,290.5141	100,808.7089	SP
110	S.S. SE	76 49 15.7	155.262	239	114,503.6089	101,056.4923	SP
10	S.S. SW	84 31 29.3	4.550	240	114,538.5735	100,900.7903	SP
110	S.S. SW	87 59 42.3	310.166	241	114,528.1563	100,595.3437	SP
110	S.S. SW	88 41 44.3	129.269	242	114,536.0650	100,776.0842	SP

562.203 H DIST SEA LEVEL

559.580 SLOPE DIST
277.430 ELEV INST PT
4.860 H.I. DM
25.210 H.I. REFLECTOR
92 14 05 ZENITH
4.860 H.I. THEODOLITE
25.210 H.I. TARGET
235.267 ELEV TARGET PT
559.155 H DIST INST PT
559.147 H DIST SEA LEVEL

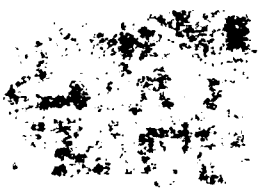
COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 7 24 33.6
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
TER & ASSIGN					
			236	114,165.7207	100,808.2614
			245	114,467.9319	100,450.7002
			246	114,516.5847	100,343.5566
			247	114,766.1173	100,394.3647
1	107,953.9100	106,949.2900	148.3600	MB-5	
2	113,565.8700	98,688.3900	171.8200	C-11	
3	113,678.1700	99,530.4800	207.3000	C-12	
4	114,844.1500	101,681.2500	305.0000	C-15	
5	110,385.8200	107,194.3400	157.6300	ERF-10	
6	111,161.3800	107,332.5500	163.2700	ERF-11	
7	106,514.6100	104,168.7200	136.2300	F-1	
8	107,079.1300	105,466.8500	137.2800	F-2	
9	107,649.9500	106,315.2600	148.4200	F-3	
10	107,916.5600	106,976.2800	139.0600	F-4	
11	108,506.4800	107,909.6200	144.8500	F-5	
12	109,490.5400	108,492.4300	148.1400	F-6	
13	110,177.5800	111,006.7400	175.9800	G-1	
14	110,214.1500	110,892.1100	173.0700	G-1A	
15	115,798.9100	106,422.9600	175.5100	HS-2	
16	116,244.5300	107,027.7500	179.2600	HS-4	
17	115,981.4900	107,997.7600	181.3600	HS-7	
18	117,296.2400	109,530.5900	192.6100	HS-14	
19	117,986.1200	109,710.8200	194.8300	HS-15	
20	118,296.3900	111,050.4700	204.8200	HS-19	
21	118,354.5300	111,647.5100	207.5200	HS-21	
22	116,214.1700	109,422.5300	188.2800	HS-29	
23	116,335.1900	109,787.3500	189.0700	HS-30	
24	117,747.3800	104,021.0300	255.0100	J-22	
25	116,458.3400	103,622.4200	260.3900	J-23	
26	109,949.7900	98,988.0600	160.1700	MB-27	
27	106,856.1100	119,510.5200	213.6200	MB-116	
28	105,990.3800	118,448.2300	205.5800	MB-124	
30	110,386.2200	111,835.2000	178.6500	MB-130	
31	111,339.3300	111,837.9000	179.7600	MB-131	
32	113,017.7800	109,765.4800	177.6000	MB-136	
33	113,948.1400	109,261.9500	176.5600	MB-137	
34	113,309.1100	111,752.1800	184.6600	MB-141	
35	113,491.7700	111,133.5400	183.8500	MB-142	
36	113,450.2800	112,125.1000	185.1300	MB-145	
37	110,504.1900	100,912.3600	137.2000	MC-9	
38	110,210.4800	100,390.3700	136.6800	MC-10	
39	109,429.5900	99,584.4800	136.3500	MC-11	

4	113,793.4409	115,387.0900	1[illegible].3700	M-8
45	114,375.6400	115,201.3500	1[illegible].4400	M-10
44	113,452.4800	114,454.4100	175.3700	M-9
43	112,987.6400	114,797.9500	175.2200	M-5
42	113,216.7100	115,199.5300	175.8400	M-4
46	113,279.6300	114,208.1600	M-11A	
47	114,041.5900	116,451.6400	M-10A	
48	107,345.1300	119,285.2000	189.9500	S-1
49	107,340.9600	117,462.4000	202.7000	S-2
50	110,913.1700	115,664.4500	176.0700	S-4
51	108,408.3500	106,455.8000	151.3500	MW-29
52	112,177.4400	106,206.1600	154.3600	MW-28
53	111,297.3800	104,837.1300	152.8200	SP-14S
54	108,602.3400	114,520.7800	251.1500	UC-2
55	114,093.9400	101,472.0900	210.3200	UC-5R
56	109,580.5500	111,509.2200	135.6400	MS-167
100	108,516.0251	107,287.7557	TP#1	
101	108,756.8288	108,728.0815	TP#2	
102	109,092.6151	109,552.3872	TP#3	
103	108,905.1645	109,969.4393	TP#4	
104	109,398.3727	110,422.1393	TP#5	
105	109,419.4213	110,838.1352	TP#6	
106	109,602.5113	111,011.1812	TP#7	
107	109,560.5505	111,509.2194		
108	113,494.4678	111,113.3494	PT A	
109	114,274.7567	100,790.4333	266.1200	PT B
110	114,539.0076	100,905.3196	277.4300	PT B-1
111	114,864.4641	101,570.8528	PT B-2	
112	114,844.1502	101,681.2502	CLOSE	
113	114,970.8099	100,901.7377	B-1A	
201	107,746.4394	106,743.6072	138.5400	SP2/65
202	108,151.1434	107,197.4505	145.2100	SP2/64
203	108,302.8798	107,573.6049	144.3900	SP2/63
204	108,096.6475	106,915.9915	140.8300	SP2 10
205	108,398.7822	107,009.5096	146.9100	SP2/62
206	108,278.9340	106,722.1303	155.4200	SP2/61
207	108.241.8298	106,768.7158	155.7300	SP2/69
208	108,126.9382	106,725.6934	151.3400	SP2/68
209	108,281.3845	106,709.9952	151.7100	SP2/67
210	107,845.8411	106,587.0165	150.4700	SP2/66
211	108,491.9582	108,589.4741	111.3200	MS3-3
212	107.849.0454	107,569.1610	98.9900	SC-6
213	109,212.9284	108,229.5609	149.2500	MS3-4
214	109,195.6347	108,558.9647	136.8400	MS3-5
215	109,490.8892	109,140.2696	149.0300	MS3-6
216	108,089.3149	108,472.0451	104.0400	SC-5
217	108,944.2132	109,882.7410	121.1300	MS3-2
218	109,201.5249	110,477.4071	121.1100	SC-4
219	108,462.6262	118,463.5974	126.1900	MS3-1
220	109,958.6289	110,719.5777	131.2700	SP4-2
221	109,709.5952	111,548.9421	137.3600	SP4-1
222	110,070.0183	110,546.4813	173.6700	SP4-3
223	111,315.0516	111,722.7867	181.9400	SP14-1
224	110,584.3686	111,734.3140	181.2600	SP14-2
225	113,469.2812	112,037.9810	185.3100	SP13-1
226	113,456.1785	112,126.2080	185.4900	SP13-2
227	113,705.2608	110,694.9393	185.0300	SP15-1
228	114,031.9497	110,868.3180	184.5900	SP15-2
229	114,216.5957	100,733.9178	253.7700	SPSA16
230	114,205.3338	100,646.6820	252.9800	SPSA15
231	114,239.0405	101,222.4914	236.6800	SPSA19
232	114,213.1166	100,779.5028	251.9000	TRENCH
233	114,170.7374	100,442.9771	242.5600	SPSA14
234	114,272.9428	101,089.2490	243.0000	SPSA18
235	114,238.5836	100,941.5885	241.2100	SPSA17

237	114,733.0634	101,228.4663	366.0300	SPS-5
238	114,296.8141	100,906.7085	166.4100	SPS-7
239	114,583.6083	101,356.1913	49.6600	SPS-8
240	114,638.3735	100,470.7903	178.3700	SPS-1
241	114,638.1965	100,395.8497	155.0100	SPS-2
242	114,636.3650	100,776.0991	71.8100	SPS-4
243	114,683.2782	100,635.8044	161.5700	SPS-6
244	114,640.2542	100,847.2879	106.9100	SPS-9
245	114,467.9319	100,459.7002	162.1400	SPS-11
246	114,516.5847	100,343.5566	105.5000	SPS-12
247	114,766.1173	100,394.2647	355.0700	SPS-13
248	114,959.2434	100,668.8990	235.1100	SPS-19
249	114,959.3632	100,360.7964	219.0400	SPS-20
250	114,965.1412	100,797.5799	249.7300	SPS-8



START					2	113,565.9700	98,688.3800	
2	INV NE	82 24 38.5	849.542		3	113,678.1700	99,530.4800	
3	TRAV NW	90 00 00.0	552.962		114	113,678.1700	98,977.5184	TP
114	TRAV SW	77 23 35.0	297.479		115	113,613.2419	98,687.2120	TP
115	TRAV NW	5 14 57.0	69.481		116	113,682.4312	98,680.8554	CL
116	INV SE	89 42 45.5	849.635		3	113,678.1700	99,530.4800	
3	INV SW	82 24 38.5	849.542		2	113,565.9700	98,688.3800	

TIME FOR THIS RUN: 0 20 35.9; TOTAL TIME ON FILE: 7 45 09.5
COORDINATES STORED

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 7 45 09.5
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

******** ROTATION **********

ROTATE LINE 3 TO 116 ABOUT 3 FROM NW 89 42 45.5 849.635
TO SW 82 24 38.5
A ROTATION OF- 7 52 36.0

SCALE 0.9998905
TRANSLATE TO: 3 113,678.1700 99,530.4800

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			114	113,602.3998	98,982.7953
114	SW 69 30 59.0	297.446	115	113,498.3118	98,704.1562
115	NW 13 07 33.0	69.473	116	113,565.9698	98,688.3795

TIME FOR THIS RUN: 0 02 06.0
TOTAL TIME ON FILE: 7 47 15.5
COORDINATES STORED

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 7 47 15.5
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
START				116	113,565.9698	98,688.3795	CL
116	INV NE	65 13 18.4	0.001	2	113,565.9700	98,688.3800	
2	INV NE	82 24 38.5	849.542	3	113,678.1700	99,530.4800	
3	INV SW	82 07 24.0	552.901	114	113,602.3998	98,982.7953	TP
114	TRAV NW	40 52 57.0	165.251	251	113,727.3387	98,874.6367	D1
251	TRAV NW	3 03 22.0	139.709	252	113,866.8490	98,867.1883	D1
ENTER & ASSIGN							
				251	113,727.3387	98,874.6367	
				252	113,866.8490	98,867.1883	

251	113,727.3387	98,874.6367	188.9900	D15-01
252	113,866.8490	98,867.1883	187.4100	D15-02

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START                                                  26      109,949.7900       98,938.9600
  26  INV SE    48 54 17.7       791.407    39      109,429.5900       99,584.4800
  39 TRAV SW    58 55 31.3       572.368   117      109,134.1596       99,094.2492 TP
 117 TRAV SE    21 54 28.7       116.201   253      109,026.3500       99,137.6058 NS
TIME FOR THIS RUN:     0 17 34.7; TOTAL TIME ON FILE:     8 04 50.2
 ORDINATES STORED
 ---- EDM SLOPE REDUCTION ******
--------------------------------
     790.830 SLOPE DIST
     136.350 ELEV INST PT
       3.970 H.I. DM
       5.400 H.I. REFLECTOR
    88 10 24 ZENITH
       3.970 H.I. THEODOLITE
       5.400 H.I. TARGET
     160.141 ELEV TARGET PT
     790.427 H DIST INST PT
     790.422 H DIST SEA LEVEL
  ------------------------------
     572.390 SLOPE DIST
     136.350 ELEV INST PT
       3.970 H.I. DM
       4.550 H.I. REFLECTOR
    90 30 08 ZENITH
       3.970 H.I. THEODOLITE
       4.550 H.I. TARGET
     130.760 ELEV TARGET PT
     572.368 H DIST INST PT
     572.364 H DIST SEA LEVEL
  ------------------------------
     117.610 SLOPE DIST
     130.760 ELEV INST PT
       4.870 H.I. DM
      10.720 H.I. REFLECTOR
    98 52 38 ZENITH
       4.870 H.I. THEODOLITE
      10.720 H.I. TARGET
     106.761 ELEV TARGET PT
     116.201 H DIST INST PT
     116.201 H DIST SEA LEVEL
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--------------------------------------------------------------------------------
 ORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:     8 04 50.2
LMENDORF GEOTECHNICAL SURVEY  ***** JOB #88046
--------------------------------------------------------------------------------
 ********** COGO **********
 ------------------------------------------------------------------------------
FROM TYPE          BEARING     DISTANCE   TO          NORTHING           EASTING
- -----------------------------------------------------------------------------
 TER & ASSIGN
                                          117      109,134.1596       99,094.2492
                                          253      109,026.3500       99,137.6058

                253    109,026.3500     99,137.6058    106.7600 MS1-4
```

```
START                                          38      110,210.4800      100,390.3700
 38  INV NE    60 38 04.9       598.948        37      110,504.1900      100,912.3600
 37 TRAV NE    77 23 34.9       265.330       118      110,562.1014      101,171.2926 *N
118 TRAV SE    12 42 40.1       123.684       254      110,441.4488      101,198.5075 NS
TIME FOR THIS RUN:     0 08 22.2; TOTAL TIME ON FILE:     8 13 12.4
 ORDINATES STORED
 **** EDM SLOPE REDUCTION ******
--------------------------------
     265.330 SLOPE DIST
     137.280 ELEV INST PT
       4.990 H.I. DM
       4.710 H.I. REFLECTOR
    89 54 23 ZENITH
       4.990 H.I. THEODOLITE
       4.710 H.I. TARGET
     137.995 ELEV TARGET PT
     265.330 H DIST INST PT
     265.328 H DIST SEA LEVEL
--------------------------------
     124.080 SLOPE DIST
     138.000 ELEV INST PT
       5.000 H.I. DM
       4.550 H.I. REFLECTOR
    94 34 47 ZENITH
       5.000 H.I. THEODOLITE
       4.550 H.I. TARGET
     128.543 ELEV TARGET PT
     123.684 H DIST INST PT
     123.683 H DIST SEA LEVEL
--------------------------------
--------------------------------------------------------------------------------
COORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:     8 13 12.4
 MENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
--------------------------------------------------------------------------------
************ COGO ************
--------------------------------------------------------------------------------
 OM TYPE          BEARING      DISTANCE   TO          NORTHING          EASTING
--------------------------------------------------------------------------------
ER & ASSIGN
                                          118      110,562.1014      101,171.2926
                                          254      110,441.4488      101,198.5075
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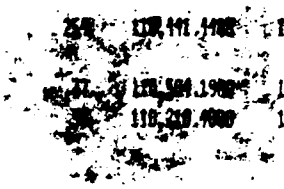

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START                                              38      110,210.4800      100,390.3700
  38  INV NE    60 38 04.9       598.948   37      110,504.1900      100,912.3600
  37 TRAV NE    24 26 39.9       803.973  119      111,236.0978      101,245.0524 #B
 119 TRAV NE    46 05 32.9       489.876  255      111,575.8249      101,597.9883 BH
 255 TRAV NE    37 00 40.9       775.168  256      112,194.8095      102,064.6190 NS
  ME FOR THIS RUN:      0 17 03.6; TOTAL TIME ON FILE:     8 30 16.0
 ORDINATES STORED
***** EDM SLOPE REDUCTION ******
 ------------------------------
      775.180 SLOPE DIST
      145.740 ELEV INST PT
        2.530 H.I. DM
       10.720 H.I. REFLECTOR
     89 41 15 ZENITH
        2.530 H.I. THEODOLITE
       10.720 H.I. TARGET
      141.790 ELEV TARGET PT
      775.168 H DIST INST PT
      775.163 H DIST SEA LEVEL
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--------------------------------------------------------------------------------
ORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:     8 30 16.0
  MENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
--------------------------------------------------------------------------------
************ COGO ************
 ------------------------------------------------------------------------------
OM TYPE          BEARING      DISTANCE   TO          NORTHING          EASTING
--------------------------------------------------------------------------------
TER & ASSIGN
                                         255      111,575.8249      101,597.9883
                                         256      112,194.8095      102,064.6190 NS
                                         256      112,194.8095      102,064.6190

                255    111,575.8249    101,597.9883    145.3800 BH-6
                256    112,194.8095    102,064.6190    141.7900 NS1-2
```

	7	106,514.6100	104,168.7200	1415.3300 SP1				
	8	107,079.1300	105,466.8500	1415.3300 SP2				
START					8	107,079.1300	105,466.8500	
8 INV SW	66	29	49.7	1415.565	7	106,514.6100	104,168.7200	
7 S.S. NE	73	57	53.7	394.425	257	106,623.5603	104,547.7986	SP
7 TRAV SW	65	04	19.7	522.473	120	106,294.3999	103,694.9212	#S
120 TRAV SE	18	47	26.3	123.291	258	106,177.6805	103,734.6345	SP
ENTER & ASSIGN								
					258	106,177.6805	103,734.6345	
					257	106,623.5603	104,547.7986	

257	106,623.5603	104,547.7986	188.3400 SP1-2	
258	106,177.6805	103,734.6345	100.6900 SP1-1	

43	118,796.7500	105,683.4800	150.0000	N-43		
44	115,753.4400	106,697.4600	307.4700	N-44		
45	116,075.6200	109,061.3500	238.5400	N-45		
46	120,928.4800	114,462.9100	272.0300	N-46		
47	121,307.3400	114,705.1500	109.2900	N-47		
48	122,210.7100	115,282.5000	175.3500	N-48		
49	123,279.6200	116,008.2800	N-119			
50	124,041.5900	116,451.6400	N-126			
51	107,345.1300	119,365.2800	109.8500	D-1		
52	107,340.9600	117,402.4900	332.7000	D-2		
53	110,913.1700	115,564.4500	196.6200	D-4		
54	108,488.8500	106,455.8800	151.3500	RP-20		
55	112,177.4400	106,006.1600	154.0600	RP-23		
56	111,297.2800	104,837.1900	152.8000	RP-146		

ART						52	112,177.4400	106,006.1600	
52	INV	SW	13 09 16.0	1417.895		40	110,796.7500	105,683.4800	
40	S.S.	NW	41 40 43.0	1119.509	START				5
52	INV	SW	13 09 16.0	1417.895		40	110,796.7500	105,683.4800	
40	TRAV	NW	41 40 43.0	1119.509		259	111,632.8960	104,939.0609	D1
259	TRAV	SW	16 53 33.0	350.715		121	111,297.3136	104,837.1511	CL
21	INV	SE	59 23 51.7	983.278		40	110,796.7500	105,683.4800	
40	INV	NW	59 23 53.6	983.228		53	111,297.2800	104,837.1900	

TIME FOR THIS RUN: 0 26 04.3; TOTAL TIME ON FILE: 8 56 20.4
COORDINATES STORED

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 8 56 20.4
EHMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********* ROTATION **********

ROTATE LINE 40 TO 121 ABOUT 40 FROM NW 59 23 51.7 983.278
TO NW 59 23 53.6
A ROTATION OF- 0 00 01.9

SCALE 0.9999492
TRANSLATE TO: 40 110,796.7500 105,683.4800

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			259	111,632.8466	104,939.0910
			121	111,297.2803	104,837.1895

TIME FOR THIS RUN: 0 01 39.0
TOTAL TIME ON FILE: 8 57 59.4
COORDINATES STORED

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 8 57 59.4
EHMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
ART				40	110,796.7500	105,683.4800	
40	INV NW	41 40 44.9	1119.452	259	111,632.8466	104,939.0910	D1
259	INV SW	16 53 31.1	350.697	121	111,297.2803	104,837.1895	CL
21	INV SE	63 12 46.3	0.001	53	111,297.2800	104,837.1900	

```
 ART                                                 52     112,177.4400     106,006.1600
 52  INV SW   13 09 16.0     1417.895   40     110,796.7500     105,683.4800
 40 TRAV SE   11 36 31.0      624.908  260     110,184.6243     105,809.2272 IS
 60  INV NW   11 36 31.0      624.908   40     110,796.7500     105,683.4800
 40  INV NE   13 09 16.0     1417.895   52     112,177.4400     106,006.1600
 52 S.S. SW   55 25 29.0      381.095  261     111,961.1733     105,692.3739 D1
 52 S.S. NW   65 43 18.0      540.553  262     112,399.6988     105,513.4145 D1
 ART                                                 40     110,796.7500     105,683.4800
 40  INV NW   41 40 44.9     1119.452  259     111,632.8466     104,939.0910 D1
259 S.S. SE   68 28 57.9      509.519  263     111,445.9647     105,413.0998 D1
 59 S.S. SW   71 57 29.1      605.465  264     111,445.3265     104,363.3970 D1
 59 S.S. NW   68 01 41.9     1151.110  265     112,063.5326     103,871.5875 D1
259 TRAV SW   74 10 44.1     1582.369  122     111,201.4384     103,416.6654 *N
 22 TRAV NE   14 34 14.1      113.948  266     111,311.7218     103,445.3317 NS
 ART                                                259     111,632.8466     104,939.0910 D1
259  INV SW   16 53 30.8      350.697   53     111,297.2800     104,837.1900
 53 S.S. SW   21 52 08.8      615.221  267     110,726.3324     104,608.0282 S6
 53 S.S. SW   25 28 01.8      651.186  268     110,709.3688     104,557.1843 S6
 53 S.S. SW   17 04 54.8      583.978  269     110,739.0641     104,665.6536 S6
 53 S.S. SW   27 39 55.8      615.939  270     110,751.7589     104,551.2040 S6
 53 S.S. SW   23 59 39.8      579.504  271     110,767.8535     104,601.5364 S6
 53 S.S. SW   20 00 55.8      640.802  272     110,695.1820     104,617.8599 S6
TIME FOR THIS RUN:     0 27 54.9; TOTAL TIME ON FILE:     9 25 54.3
ORDINATES STORED
  *** EDM SLOPE REDUCTION ******
 -------------------------------
    1417.920 SLOPE DIST
     152.120 ELEV INST PT
       4.770 H.I. DM
       4.960 H.I. REFLECTOR
    89 55 16 ZENITH
       4.770 H.I. THEODOLITE
       4.960 H.I. TARGET
     153.924 ELEV TARGET PT
    1417.918 H DIST INST PT
    1417.908 H DIST SEA LEVEL
 -------------------------------
    1119.510 SLOPE DIST
     152.120 ELEV INST PT
       4.770 H.I. DM
       4.370 H.I. REFLECTOR
    90 04 52 ZENITH
       4.770 H.I. THEODOLITE
       4.370 H.I. TARGET
     150.961 ELEV TARGET PT
    1119.509 H DIST INST PT
    1119.501 H DIST SEA LEVEL
 -------------------------------
     624.910 SLOPE DIST
     152.120 ELEV INST PT
       4.770 H.I. DM
       0.210 H.I. REFLECTOR
    90 08 22 ZENITH
       4.770 H.I. THEODOLITE
       0.210 H.I. TARGET
     155.167 ELEV TARGET PT
     624.908 H DIST INST PT
     624.904 H DIST SEA LEVEL
 -------------------------------
     381.110 SLOPE DIST
     154.060 ELEV INST PT
       5.110 H.I. DM
       0.210 H.I. REFLECTOR
    90 31 13 ZENITH
```

```
      0.210 H.I. TARGET
    155.502 ELEV TARGET PT
    381.094 H DIST INST PT
    381.091 H DIST SEA LEVEL
-----------------------------
    540.560 SLOPE DIST
    154.060 ELEV INST PT
      5.110 H.I. DM
      0.200 H.I. REFLECTOR
  90 18 03 ZENITH
      5.110 H.I. THEODOLITE
      0.200 H.I. TARGET
    156.138 ELEV TARGET PT
    540.552 H DIST INST PT
    540.549 H DIST SEA LEVEL
-----------------------------
    350.720 SLOPE DIST
    150.960 ELEV INST PT
      4.680 H.I. DM
      4.740 H.I. REFLECTOR
  89 42 04 ZENITH
      4.680 H.I. THEODOLITE
      4.740 H.I. TARGET
    152.732 ELEV TARGET PT
    350.715 H DIST INST PT
    350.713 H DIST SEA LEVEL
-----------------------------
    350.720 SLOPE DIST
    152.820 ELEV INST PT
      4.740 H.I. DM
      4.680 H.I. REFLECTOR
  90 17 56 ZENITH
      4.740 H.I. THEODOLITE
      4.680 H.I. TARGET
    151.053 ELEV TARGET PT
    350.715 H DIST INST PT
    350.713 H DIST SEA LEVEL
-----------------------------
   1119.530 SLOPE DIST
    151.050 ELEV INST PT
      4.680 H.I. DM
      4.630 H.I. REFLECTOR
  89 57 01 ZENITH
      4.680 H.I. THEODOLITE
      4.630 H.I. TARGET
    152.097 ELEV TARGET PT
   1119.529 H DIST INST PT
   1119.521 H DIST SEA LEVEL
-----------------------------
```

```
    509.520 SLOPE DIST
    151.050 ELEV INST PT
      4.680 H.I. DM
      2.770 H.I. REFLECTOR
  89 52 04 ZENITH
      4.680 H.I. THEODOLITE
      2.770 H.I. TARGET
```

```
      ---.--- SLOPE TARGET PT
      309.519 H DIST INST PT
      309.515 H DIST SEA LEVEL
-------------------------------
      350.720 SLOPE DIST
      151.050 ELEV INST PT
        4.680 H.I. DM
        4.740 H.I. REFLECTOR
     89 42 04 ZENITH
        4.680 H.I. THEODOLITE
        4.740 H.I. TARGET
      152.822 ELEV TARGET PT
      350.715 H DIST INST PT
      350.713 H DIST SEA LEVEL
-------------------------------
      605.470 SLOPE DIST
      151.050 ELEV INST PT
        4.680 H.I. DM
        4.500 H.I. REFLECTOR
     90 14 38 ZENITH
        4.680 H.I. THEODOLITE
        4.500 H.I. TARGET
      148.660 ELEV TARGET PT
      605.464 H DIST INST PT
      605.460 H DIST SEA LEVEL
-------------------------------
     1151.110 SLOPE DIST
      151.050 ELEV INST PT
        4.680 H.I. DM
        3.900 H.I. REFLECTOR
     90 01 22 ZENITH
        4.680 H.I. THEODOLITE
        3.900 H.I. TARGET
      151.400 ELEV TARGET PT
     1151.110 H DIST INST PT
     1151.101 H DIST SEA LEVEL
-------------------------------
     1582.380 SLOPE DIST
      151.050 ELEV INST PT
        4.680 H.I. DM
        4.530 H.I. REFLECTOR
     90 12 40 ZENITH
        4.680 H.I. THEODOLITE
        4.530 H.I. TARGET
      145.421 ELEV TARGET PT
     1582.369 H DIST INST PT
     1582.358 H DIST SEA LEVEL
-------------------------------
     1582.370 SLOPE DIST
      145.420 ELEV INST PT
        4.840 H.I. DM
        4.530 H.I. REFLECTOR
     89 49 03 ZENITH
        4.840 H.I. THEODOLITE
        4.530 H.I. TARGET
      150.822 ELEV TARGET PT
     1582.361 H DIST INST PT
     1582.350 H DIST SEA LEVEL
-------------------------------
      113.980 SLOPE DIST
      145.420 ELEV INST PT
        4.840 H.I. DM
        8.200 H.I. REFLECTOR
     91 21 13 ZENITH
        4.840 H.I. THEODOLITE
        8.200 H.I. TARGET
```

```
      113.948 H DIST INST PT
      113.947 H DIST SEA LEVEL
-------------------------------
      615.280 SLOPE DIST
      152.820 ELEV INST PT
        4.960 H.I. DM
        4.430 H.I. REFLECTOR
     90 47 48 ZENITH
        4.960 H.I. THEODOLITE
        4.430 H.I. TARGET
      144.803 ELEV TARGET PT
      615.221 H DIST INST PT
      615.216 H DIST SEA LEVEL
-------------------------------
      651.260 SLOPE DIST
      152.820 ELEV INST PT
        4.960 H.I. DM
        3.200 H.I. REFLECTOR
     90 51 57 ZENITH
        4.960 H.I. THEODOLITE
        3.200 H.I. TARGET
      144.748 ELEV TARGET PT
      651.186 H DIST INST PT
      651.181 H DIST SEA LEVEL
-------------------------------
      584.040 SLOPE DIST
      152.820 ELEV INST PT
        4.960 H.I. DM
        4.640 H.I. REFLECTOR
     90 50 17 ZENITH
        4.960 H.I. THEODOLITE
        4.640 H.I. TARGET
      144.605 ELEV TARGET PT
      583.978 H DIST INST PT
      583.973 H DIST SEA LEVEL
-------------------------------
      615.980 SLOPE DIST
      152.820 ELEV INST PT
        4.960 H.I. DM
        5.100 H.I. REFLECTOR
     90 39 30 ZENITH
        4.960 H.I. THEODOLITE
        5.100 H.I. TARGET
      145.610 ELEV TARGET PT
      615.939 H DIST INST PT
      615.935 H DIST SEA LEVEL
-------------------------------
      579.610 SLOPE DIST
      152.820 ELEV INST PT
        4.960 H.I. DM
        0.200 H.I. REFLECTOR
     91 05 43 ZENITH
        4.960 H.I. THEODOLITE
        0.200 H.I. TARGET
      146.508 ELEV TARGET PT
      579.504 H DIST INST PT
      579.500 H DIST SEA LEVEL
-------------------------------
      640.870 SLOPE DIST
      152.820 ELEV INST PT
        4.960 H.I. DM
        4.300 H.I. REFLECTOR
     90 49 56 ZENITH
        4.960 H.I. THEODOLITE
        4.300 H.I. TARGET
```

640.803 H DIST INST PT
640.798 H DIST SEA LEVEL

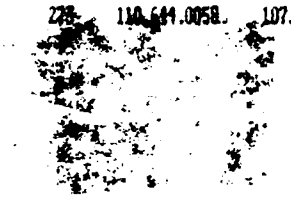
COORDINATE FILE:83046 LENGTH = 1000 POINTS; TIME ON FILE: 0 DAYS 0 HRS 0 MIN
MENDOCINO GEOTECHNICAL SURVEY ***** JOB #83046

********** DOGO **********

FROM TO	BEARING	DISTANCE	TO	NORTHING	EASTING
ENTER & ASSIGN					
			259	111,632.8466	104,939.0910
			260	110,184.6243	105,809.2272
			261	111,961.1733	105,692.3739
			262	112,399.6988	105,513.4145
			263	111,445.9647	105,413.0998
			264	111,445.3265	104,363.3970
			265	112,063.5326	103,871.5875
			122	111,201.4384	103,416.6654
..TER & ASSIGN					
			266	111,311.7218	103,445.3317
			267	110,726.3324	104,608.0282
			268	110,709.3688	104,557.1843
			269	110,739.0641	104,665.6536
			270	110,751.7589	104,551.2040
			271	110,767.8535	104,601.5364
			272	110,695.1820	104,617.8599
			260	110,184.6243	105,809.2272
\RT			53	111,297.2800	104,837.1900
.53 INV SW	21 52 08.8	615.221	267	110,726.3324	104,608.0282

259	111,632.8466	104,939.0910	151.0500	D17-4
260	110,184.6243	105,809.2272	154.5300	IS-8
261	111,961.1733	105,692.3739	155.5000	D17-2
262	112,399.6988	105,513.4145	156.1400	D17-3
263	111,445.9647	105,413.0998	154.1400	D17-1
264	111,445.3265	104,363.3970	148.5600	D17-5
265	112,063.5326	103,871.5875	151.9000	D17-6
266	111,311.7218	103,445.3317	139.3700	WS1-1
267	110,726.3324	104,608.0282	144.8000	S6-1
268	110,709.3688	104,557.1843	144.7500	S6-2
269	110,739.0641	104,665.6536	144.6100	S6-3
270	110,751.7589	104,551.2040	145.6100	S6-4
271	110,767.8535	104,601.5364	146.5100	S6-5
272	110,695.1820	104,617.8599	144.1800	S6-6

```
                    5      110,385.8200      107,194.3400      157.6300 EAF-10
   5  INV NE    10 06 15.9       787.779     6      111,161.3800      107,332.5500
   6 TRAV SW    27 03 36.9       580.974   273      110,644.0058      107,068.2490 AE
TIME FOR THIS RUN:      0 15 06.3; TOTAL TIME ON FILE:     9 41 00.5
ORDINATES STORED
***** EDM SLOPE REDUCTION ******
--------------------------------
      787.780 SLOPE DIST
      163.270 ELEV INST PT
        4.980 H.I. DM
        0.210 H.I. REFLECTOR
     90 45 33 ZENITH
        4.980 H.I. THEODOLITE
        0.210 H.I. TARGET
      157.615 ELEV TARGET PT
      787.711 H DIST INST PT
      787.705 H DIST SEA LEVEL
  -------------------------------
      581.010 SLOPE DIST
      163.270 ELEV INST PT
        4.980 H.I. DM
        4.100 H.I. REFLECTOR
     90 37 49 ZENITH
        4.980 H.I. THEODOLITE
        4.100 H.I. TARGET
      157.766 ELEV TARGET PT
      580.975 H DIST INST PT
      580.970 H DIST SEA LEVEL
  -------------------------------
--------------------------------------------------------------------------------
ORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:     9 41 00.5
MENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
--------------------------------------------------------------------------------
************ COGO ************
  ------------------------------------------------------------------------------
OM TYPE          BEARING      DISTANCE   TO          NORTHING          EASTING
--------------------------------------------------------------------------------
  TER & ASSIGN
                                          273      110,644.0058      107,068.2490
```

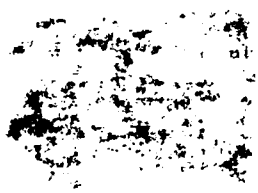


ART						41	115,753.4400	115,687.9000	
41	INV	NE	11	50	48.0	942.311	42	116,675.6800	115.881.3500	
42	TRAV	NW	25	28	24.0	684.425	123	117,293.5693	115,586.9848	#I
23	S.S.	SE	86	02	54.0	80.368	274	117,288.0307	115,667.1622	IS
23	S.S.	NW	14	16	58.0	439.899	275	117,719.8713	115,478.4582	IS

ENTER & ASSIGN

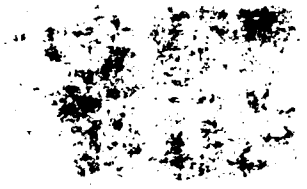
274	117,288.0307	115,667.1622
275	117,719.8713	115,478.4582

					43	120,928.4800	114,469.4100
		43	120,928.4800	114,469.4100	[illegible]		
		54	120,602.8400	114,520.7800	[illegible]		
START					43	120,928.4800	114,469.4100
43	INV SE	8 57 52.5		329.667	54	120,602.8400	114,520.7800
54	S.S. NW	57 16 28.5		39.680	276	120,624.2915	114,487.3984 BH
ENTER & ASSIGN							
					276	120,624.2915	114,487.3984
		276	120,624.2915	114,487.3984	248.2000 BH-2		



					46	123,279.6300	116,008.1800	N-
					47	124,041.5900	116,451.6400	N-
START					47	124,041.5900	116,451.6400	N-
47	INV SW	30	11	57.7	881.612	46	123,279.6300	116,008.1800	N-
46	S.S. SW	61	49	30.7	45.277	277	123,258.2518	115,968.2678	D1
46	TRAV SW	48	45	47.7	236.960	278	123,123.4326	115,829.9879	D1
START						46	123,279.6300	116,008.1800	N-
46	INV SW	48	45	47.7	236.960	278	123,123.4326	115,829.9879	D1
278	S.S. NW	80	31	39.3	72.860	279	123,135.4234	115,758.1214	D1
278	S.S. SW	85	20	02.7	250.547	280	123,103.0517	115,580.2713	D1
TER & ASSIGN									

277	123,258.2518	115,968.2678	D16-3
278	123,123.4326	115,829.9879	D16-1
279	123,135.4234	115,758.1214	D16-2
280	123,103.0517	115,580.2713	D16-4



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ME FOR THIS RUN:      1 57 41.0; TOTAL TIME ON FILE:    11 38 41.5
ORDINATES STORED
***** EDM SLOPE REDUCTION ******
-------------------------------
     397.320 SLOPE DIST
     275.380 ELEV INST PT
       4.220 H.I. DM
       5.020 H.I. REFLECTOR
    91 01 45 ZENITH
       4.220 H.I. THEODOLITE
       5.020 H.I. TARGET
     267.447 ELEV TARGET PT
     397.256 H DIST INST PT
     397.251 H DIST SEA LEVEL
-------------------------------
     466.580 SLOPE DIST
     267.447 ELEV INST PT
       5.160 H.I. DM
       4.670 H.I. REFLECTOR
    89 31 07 ZENITH
       5.160 H.I. THEODOLITE
       4.670 H.I. TARGET
     271.862 ELEV TARGET PT
     466.563 H DIST INST PT
     466.557 H DIST SEA LEVEL
-------------------------------
     698.100 SLOPE DIST
     271.862 ELEV INST PT
       4.960 H.I. DM
       4.850 H.I. REFLECTOR
    88 21 40 ZENITH
       4.960 H.I. THEODOLITE
       4.850 H.I. TARGET
     291.948 ELEV TARGET PT
     697.814 H DIST INST PT
     697.805 H DIST SEA LEVEL
-------------------------------
    2264.760 SLOPE DIST
     291.948 ELEV INST PT
       5.150 H.I. DM
       4.800 H.I. REFLECTOR
    89 03 54 ZENITH
       5.150 H.I. THEODOLITE
       4.800 H.I. TARGET
     329.360 ELEV TARGET PT
    2264.454 H DIST INST PT
    2264.423 H DIST SEA LEVEL
-------------------------------
     609.710 SLOPE DIST
     329.360 ELEV INST PT
       5.100 H.I. DM
       4.750 H.I. REFLECTOR
    91 18 13 ZENITH
       5.100 H.I. THEODOLITE
       4.750 H.I. TARGET
     315.847 ELEV TARGET PT
     609.552 H DIST INST PT
     609.543 H DIST SEA LEVEL
-------------------------------
      11.760 SLOPE DIST
     315.847 ELEV INST PT
```

```
      5.070 H.I. DM
      0.210 H.I. REFLECTOR
101  21  58 ZENITH
      5.070 H.I. THEODOLITE
      0.210 H.I. TARGET
    318.389 ELEV TARGET PT
     11.529 H DIST INST PT
     11.529 H DIST SEA LEVEL
--------------------------------
```

```
     11.760 SLOPE DIST
    318.630 ELEV INST PT
      0.210 H.I. DM
      5.070 H.I. REFLECTOR
  78 38 02 ZENITH
      0.210 H.I. THEODOLITE
      5.070 H.I. TARGET
    316.088 ELEV TARGET PT
     11.529 H DIST INST PT
     11.529 H DIST SEA LEVEL
-------------------------------
    609.710 SLOPE DIST
    316.088 ELEV INST PT
      5.070 H.I. DM
      4.940 H.I. REFLECTOR
  88 44 51 ZENITH
      5.070 H.I. THEODOLITE
      4.940 H.I. TARGET
    329.553 ELEV TARGET PT
    609.564 H DIST INST PT
    609.555 H DIST SEA LEVEL
-------------------------------
   2264.770 SLOPE DIST
    329.553 ELEV INST PT
      5.100 H.I. DM
      5.000 H.I. REFLECTOR
  90 57 35 ZENITH
      5.100 H.I. THEODOLITE
      5.000 H.I. TARGET
    291.825 ELEV TARGET PT
   2264.456 H DIST INST PT
   2264.420 H DIST SEA LEVEL
-------------------------------
    698.120 SLOPE DIST
    291.825 ELEV INST PT
      5.150 H.I. DM
      4.830 H.I. REFLECTOR
  91 40 59 ZENITH
      5.150 H.I. THEODOLITE
      4.830 H.I. TARGET
    271.651 ELEV TARGET PT
    697.819 H DIST INST PT
    697.810 H DIST SEA LEVEL
-------------------------------
    466.600 SLOPE DIST
    271.651 ELEV INST PT
      4.960 H.I. DM
      5.010 H.I. REFLECTOR
  90 32 41 ZENITH
      4.960 H.I. THEODOLITE
      5.010 H.I. TARGET
    267.169 ELEV TARGET PT
    466.579 H DIST INST PT
    466.573 H DIST SEA LEVEL
-------------------------------
    397.330 SLOPE DIST
    267.169 ELEV INST PT
      5.160 H.I. DM
      4.060 H.I. REFLECTOR
  89 01 09 ZENITH
      5.160 H.I. THEODOLITE
```

```
      4.060 H.I. TARGET
    275.074 ELEV TARGET PT
    397.272 H DIST INST PT
    397.266 H DIST SEA LEVEL
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```

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--------------------------------------------------------------------------
 ORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:   11 38 41.5
ELMENDORF GEOTECHNICAL SURVEY   ***** JOB #88046
--------------------------------------------------------------------------
  ********** COGO ************
  ------------------------------------------------------------------------
FROM TYPE          BEARING      DISTANCE   TO          NORTHING          EASTING
  ------------------------------------------------------------------------
  ART                                       44     121,907.8400     114,703.9500
  44  INV NE   57 59 32.6       571.418    45     122,210.7100     115,188.5000
NTER & ASSIGN
  ME FOR THIS RUN:      0 03 02.4; TOTAL TIME ON FILE:   11 41 43.9
OORDINATES STORED
--------------------------------------------------------------------------
 ORDINATE FILE 88046  LENGTH = 1000 POINTS; TIME ON FILE:   11 41 43.9
LMENDORF GEOTECHNICAL SURVEY   ***** JOB #88046
--------------------------------------------------------------------------
EW FIELD DATA FILE: BH-3      CREATED; LENGTH =10 LEGS
  SCR:HORZ TIE TO TEST WELL BH-3
--------------------------------
******* FIELD TRAVERSE *********
  ------------------------------------------------------------------------
LEG FROM              ANGLE        S.DIST       ZENITH  H.I.  H.T.
                      BEARING      H.DIST       V.DIST                TO
  ------------------------------------------------------------------------
            SW   57 59 32.6 REF BRG
                                                                    45      122.
  1   45    AR  357 20 02.0      397.320   91 01 45.0
            SW   55 19 34.6      397.256                          124      121.
  2  124    AR  236 48 27.0      466.580   89 31 07.0
            NW   67 51 58.4      466.564                          125      122.
  3  125    AR  147 15 31.0      698.100   88 21 40.0
            SW   79 23 32.6      697.814                          126      122.
  4  126    AR  182 22 03.0     2264.760   89 03 54.0
            SW   81 45 35.6     2264.458                          127      121.
  5  127    AR  173 54 29.0      609.710   91 18 13.0
            SW   75 40 04.6      609.552                          128      121.
  6  128    AR   87 10 35.0       11.760  101 21 58.0
            SE   17 09 20.4       11.529                          281      121.
                                                          CLOSING PT:      122.
            NE    0 00 00.0 REF BRG
                162 00 35.6 ANG ERROR
                  0 00 00.0 ANG BALANCE

 RIZONTAL CLOSURE
  NE   81 09 09.4
       4,324.4914 CLOSING LINE
       4,447.1739 DIST TRAV
           1.0284 PRECISION
--------------------------------
TEMPORARY DATA SAVED
  ME FOR THIS RUN:      0 09 52.3; TOTAL TIME ON FILE:   11 51 36.2
--------------------------------
COORDINATES STORED
--------------------------------------------------------------------------
  ORDINATE FILE 88046  LENGTH = 1000 POINTS; TIME ON FILE:   11 51 36.2
ELMENDORF GEOTECHNICAL SURVEY   ***** JOB #88046
--------------------------------------------------------------------------
```

OLD FIELD DATA FILE:BM-3

GLE TRAVERSE RESTARTED

162 50 39.6 ANG ERROR

EG	FROM		ANGLE BEARING	S.DIST H.DIST	ZENITH V.DIST	H.I.	H.T.	TO	
		SW	57 59 32.6 REF BRG						
								45	122.
1	45	AR	357 20 02.0						
		SW	55 19 34.6	397.256				124	121.
2	124	AR	236 48 27.0						
		NW	67 51 58.4	466.564				125	122.
3	125	AR	147 15 31.0						
		SW	79 23 32.6	697.814				126	122.
4	126	AR	182 22 03.0						
		SW	81 45 35.6	2264.458				127	121.
5	127	AR	173 54 29.0						
		SW	75 40 04.6	609.552				128	121.
6	128	AR	87 10 35.0						
		SE	17 09 20.4	11.529				281	121.
								CLOSING PT:	122.
		NE	0 00 00.0 REF BRG						
			162 50 39.6 ANG ERROR						
			0 00 00.0 ANG BALANCE						

HORIZONTAL CLOSURE
NE 81 09 09.4
4,324.4914 CLOSING LINE
4,447.1739 DIST TRAV
1.0284 PRECISION

NO ADJUSTMENT

EG	FROM		ANGLE BEARING	S.DIST H.DIST	ZENITH V.DIST	H.I.	H.T.	TO	
								45	122.
1	45	SW	55 19 34.6	397.256				124	121.
2	124	NW	67 51 58.4	466.564				125	122.
3	125	SW	79 23 32.6	697.814				126	122.
4	126	SW	81 45 35.6	2264.458				127	121.
5	127	SW	75 40 04.6	609.552				128	121.
6	128	SE	17 09 20.4	11.529				281	121.

AREA 22940729.85 SF 5118.0149 ACRES

ME FOR THIS RUN= 0 02 03.7; TOTAL TIME ON FILE: 11 53 40.0

COORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 11 53 40.0
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
TER & ASSIGN						
				281	121,545.5906	110,915.4634

TER & ASSIGN

281 121,545.5906 110,915.4634 818.2700 BM-3

```
  ST WELL BH-4
START                                          24      117,747.3800      104,321.0300
 24   INV SW   17 10 59.5      1349.264       25      116,458.3400      103,622.4200
  ME FOR THIS RUN:      0 14 04.2; TOTAL TIME ON FILE:    12 07 44.2
COORDINATES STORED
------------------------------------------------------------------------------
  ORDINATE FILE 88046  LENGTH = 1000 POINTS; TIME ON FILE:    12 07 44.2
ELMENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
------------------------------------------------------------------------------
  W FIELD DATA FILE: BH-4       CREATED; LENGTH =10 LEGS
  SCR:TIE TO TEST WELL BH-4
-------------------------------
******* FIELD TRAVERSE *********
 ----------------------------------------------------------------------------
 LEG FROM              ANGLE        S.DIST       ZENITH  H.I.  H.T.
                      BEARING       H.DIST       V.DIST                TO
 ----------------------------------------------------------------------------
            NA   25 00 00.0 REF BRG
                                                                    25      116.
 ----------------------------------------------------------------------------
  ORDINATE FILE 88046  LENGTH = 1000 POINTS; TIME ON FILE:    12 07 44.2
ELMENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
------------------------------------------------------------------------------
  D FIELD DATA FILE:BH-4
 -------------------------------
******* FIELD TRAVERSE *********
 ----------------------------------------------------------------------------
 EG FROM              ANGLE        S.DIST       ZENITH  H.I.  H.T.
                      BEARING      H.DIST       V.DIST                TO
 ----------------------------------------------------------------------------
            NE   17 10 59.2 REF BRG
                                                                    25      116.
  1   25     AR   25 36 06.0----------------------------------------------------
  ORDINATE FILE 88046  LENGTH = 1000 POINTS; TIME ON FILE:    12 07 44.2
LMENDORF GEOTECHNICAL SURVEY    ***** JOB #88046
------------------------------------------------------------------------------
  D FIELD DATA FILE:BH-4
 -------------------------------
******* FIELD TRAVERSE *********
 ----------------------------------------------------------------------------
  EG FROM              ANGLE        S.DIST       ZENITH  H.I.  H.T.
                      BEARING       H.DIST       V.DIST                TO
 ----------------------------------------------------------------------------
            NE   17 10 59.2 REF BRG
                                                                    25      116.
  1   25     AR   25 36 06.0       302.620    91 20 50.0
             NE   42 47 05.2       302.536                         129      116.
  2  129     AR  234 01 49.0       665.220    86 45 23.0
             SE   83 11 05.8       664.154                         130      116.
  3  130     AR  171 05 44.0       420.140    89 48 16.0
             NE   87 54 38.2       420.138                         131      116.
  4  131     AR  138 04 28.0       486.230    88 26 10.0
             NE   45 59 06.2       486.049                         132      116.
  5  132     AR  139 24 41.0       529.260    90 52 04.0
             NE    5 23 47.2       529.199                         282      117.
TEMPORARY DATA SAVED
TIME FOR THIS RUN:      0 07 32.5; TOTAL TIME ON FILE:    12 15 16.6
 -------------------------------
COORDINATES STORED
***** EDM SLOPE REDUCTION ******
```

```
-------------------------------
     302.820 SLOPE DIST
     260.990 ELEV INST PT
       4.290 H.I. DM
       5.000 H.I. REFLECTOR
    91 20 50 ZENITH
       4.290 H.I. THEODOLITE
       5.000 H.I. TARGET
     253.167 ELEV TARGET PT
     302.536 H DIST INST PT
     302.533 H DIST SEA LEVEL
-------------------------------
     665.220 SLOPE DIST
     253.167 ELEV INST PT
       5.130 H.I. DM
       4.720 H.I. REFLECTOR
    86 45 23 ZENITH
       5.130 H.I. THEODOLITE
       4.720 H.I. TARGET
     291.225 ELEV TARGET PT
     664.153 H DIST INST PT
     664.145 H DIST SEA LEVEL
-------------------------------
     420.140 SLOPE DIST
     291.225 ELEV INST PT
       5.030 H.I. DM
       4.750 H.I. REFLECTOR
    89 48 16 ZENITH
       5.030 H.I. THEODOLITE
       4.750 H.I. TARGET
     292.943 ELEV TARGET PT
     420.137 H DIST INST PT
     420.132 H DIST SEA LEVEL
-------------------------------
     486.230 SLOPE DIST
     292.943 ELEV INST PT
       5.060 H.I. DM
       4.850 H.I. REFLECTOR
    88 26 10 ZENITH
       5.060 H.I. THEODOLITE
       4.850 H.I. TARGET
     306.428 ELEV TARGET PT
     486.048 H DIST INST PT
     486.042 H DIST SEA LEVEL
-------------------------------
     529.260 SLOPE DIST
     306.428 ELEV INST PT
       5.150 H.I. DM
       0.210 H.I. REFLECTOR
    90 52 04 ZENITH
       5.150 H.I. THEODOLITE
       0.210 H.I. TARGET
     303.358 ELEV TARGET PT
     529.199 H DIST INST PT
     529.192 H DIST SEA LEVEL
-------------------------------
```

```
     529.260 SLOPE DIST
     303.358 ELEV INST PT
       0.210 H.I. DM
       5.150 H.I. REFLECTOR
    89 07 56 ZENITH
       0.210 H.I. THEODOLITE
```

```
      5.150 H.I. TARGET
    306.439 ELEV TARGET PT
    529.199 H DIST INST PT
    529.191 H DIST SEA LEVEL
-------------------------------
    486.240 SLOPE DIST
    306.439 ELEV INST PT
      5.150 H.I. DM
      4.910 H.I. REFLECTOR
  91 37 36 ZENITH
      5.150 H.I. THEODOLITE
      4.910 H.I. TARGET
    292.881 ELEV TARGET PT
    486.044 H DIST INST PT
    486.037 H DIST SEA LEVEL
-------------------------------
    420.160 SLOPE DIST
    292.881 ELEV INST PT
      5.060 H.I. DM
      4.880 H.I. REFLECTOR
  90 15 59 ZENITH
      5.060 H.I. THEODOLITE
      4.880 H.I. TARGET
    291.111 ELEV TARGET PT
    420.155 H DIST INST PT
    420.150 H DIST SEA LEVEL
-------------------------------
    665.240 SLOPE DIST
    291.111 ELEV INST PT
      5.030 H.I. DM
      4.980 H.I. REFLECTOR
  93 17 31 ZENITH
      5.030 H.I. THEODOLITE
      4.980 H.I. TARGET
    252.970 ELEV TARGET PT
    664.143 H DIST INST PT
    664.134 H DIST SEA LEVEL
-------------------------------
    302.590 SLOPE DIST
    252.970 ELEV INST PT
      5.130 H.I. DM
      4.140 H.I. REFLECTOR
  88 43 17 ZENITH
      5.130 H.I. THEODOLITE
      4.140 H.I. TARGET
    260.714 ELEV TARGET PT
    302.514 H DIST INST PT
    302.511 H DIST SEA LEVEL
-------------------------------
```

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 12 15 16.6
FEHMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
ENTER & ASSIGN					
			282	117,481.4633	105,306.5522

282 117,481.4633 105,306.5522 603.1000 RH--

```
  ART
  ART                                                    TEST WELL BH-5
   24   INV SW   17 10 59.5      1349.264     24      117,747.3800      104,021.0300
   25  TRAV SE    9 12 14.5       188.105     25      116,458.3400      103,522.4200
   33  TRAV NW   71 11 59.5       567.308    133      116,272.6565      103,652.5076 #B
  134  TRAV NW   47 33 51.5       106.119    134      116,455.4817      103,115.4662 #B
ENTER & ASSIGN                                283      116,527.0865      103,037.1469 BH
                                                                                      5
                                              283      116.527.0865      103,037.1469
                                  283  16,527.0865  103,037.1469  145.0800 BH-5
```

START

PUMP TESTS

						32	113,017.7800	109,765.4800	
ART						33	113,548.1400	109,261.9500	
32	INV	NW	43 30 48.5	731.317		284	113,431.5031	108,625.2722	PT
33	S.S.	SW	79 37 07.5	647.273					
ART						32	113,017.7800	109,765.4800	
32	INV	NW	43 30 48.5	731.317		33	113,548.1400	109,261.9500	
33	S.S.	SW	78 55 36.5	659.974		285	113,421.3835	108,614.2633	PT
33	S.S.	SW	76 19 45.5	716.535		286	113,378.7933	108,565.7148	PT
TER & ASSIGN									
						286	113,378.7933	108,565.7148	
						285	113,421.3835	108,614.2633	
						284	113,431.5031	108,625.2722	

? AND NS2 SITES

START					50	110,913.1700	115,664.4500	
50	TRAV	NE	0 00 00.0	1267.037	135	112,180.2067	115,664.4500	#D
135	TRAV	NW	5 47 08.0	3577.977	136	115,739.9583	115,303.7703	CL
136	INV	SE	4 16 24.5	4840.245	50	110,913.1700	115,664.4500	
50	INV	NE	0 16 39.3	4840.327	41	115,753.4400	115,687.9000	

IME FOR THIS RUN: 1 52 56.7; TOTAL TIME ON FILE: 14 08 13.3
COORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 14 08 13.3
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

******** ROTATION **********

ROTATE LINE 50 TO 136 ABOUT 50 FROM NW 4 16 24.5 4840.245
TO NE 0 16 39.3
A ROTATION OF- 355 26 56.2

SCALE 1.0000169
ANSLATE TO: 50 110,913.1700 115,664.4500

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			135	112,176.2332	115,764.9875
135	NW 1 14 04.2	3578.038	136	115,753.4405	115,687.9001

TIME FOR THIS RUN: 0 01 38.5
TAL TIME ON FILE: 14 09 51.8
ORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 14 09 51.8
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
ART				50	110,913.1700	115,664.4500	
50	INV	NE 4 33 03.8	1267.058	135	112,176.2332	115,764.9875	#D
135	INV	NW 1 14 04.2	3578.038	136	115,753.4405	115,687.9001	CL
36	INV	SW 5 15 39.7	0.001	41	115,753.4400	115,687.9000	
41	INV	SW 0 16 39.3	4840.327	50	110,913.1700	115,664.4500	
50	INV	NE 4 33 03.8	1267.058	135	112,176.2332	115,764.9875	#D
135	S.S.	SE 59 28 00.2	434.379	287	111,955.5518	116,139.1333	D1
35	S.S.	NE 49 44 24.8	731.343	288	112,648.8668	116,323.0915	D1
135	S.S.	SE 81 13 48.2	1032.077	289	112,018.8753	116,784.9980	D1
135	TRAV	NE 12 45 55.8	683.580	137	112,842.9166	115,916.0320	#D
37	TRAV	SE 86 01 06.2	463.771	138	112,810.7142	116,378.6839	#D
38	S.S.	NE 7 54 56.8	78.378	290	112,888.3449	116,389.4778	NS
138	TRAV	NE 73 03 15.8	782.277	139	113,038.7198	117,126.9959	#D
39	S.S.	NW 22 46 20.2	166.779	291	113,192.4986	117,062.4407	NS
39	S.S.	SE 73 34 14.2	283.855	292	112,958.4362	117,399.2606	D1

IME FOR THIS RUN: 0 12 28.7; TOTAL TIME ON FILE: 14 22 20.5
COORDINATES STORED

***** EDM SLOPE REDUCTION *****

1032.300 SLOPE DIST
203.910 ELEV INST PT
5.110 H.I. DM
25.210 H.I. REFLECTOR
88 48 32 ZENITH
5.110 H.I. THEODOLITE
25.210 H.I. TARGET
205.291 ELEV TARGET PT
1032.076 H DIST INST PT
1032.066 H DIST SEA LEVEL

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 14 22 20.5
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

DM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
ENTER & ASSIGN					
			289	112,018.8753	116,784.9980
			287	111,955.5518	116,139.1333
			288	112,648.8668	116,323.0915
			290	112,888.3449	116,389.4778
			291	113,192.4986	117,062.4407
			292	112,958.4362	117,399.2606

287	111,955.5518	116,139.1333	207.6300	D13-3
288	112,648.8668	116,323.0915	210.9600	D13-2
289	112,018.8753	116,784.9980	205.2900	D13-4
290	112,888.3449	116,389.4778	210.7600	MS2-2
291	113,192.4986	117,062.4407	211.3400	MS2-1
292	112,958.4362	117,399.2606	214.8500	D13-1

SITE

[illegible]

ORDINATE FILE 88046 LENGTH = 1000 POINTS; TIME ON FILE: 15 04 04.6
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

N FIELD DATA FILE: D3 CREATED; LENGTH =10 LEGS
SCR:TRAV MB-116 TO MB-124

***** FIELD TRAVERSE *********

LEG	FROM		ANGLE BEARING	S.DIST H.DIST	ZENITH V.DIST	H.I.	H.T.	TO	
		NW	90 00 00.0 REF BRG						
								27	106,
1	27	AR	0 00 00.0	116.750	90 25 27.0				
		NW	90 00 00.0	116.747				140	106,
2	140	AR	165 20 14.0	354.640	90 56 56.0				
		SW	75 20 14.0	354.591				141	106,
3	141	AR	176 40 07.0	308.480	90 04 11.0				
		SW	72 00 21.0	308.480				142	106,
4	142	AR	179 59 54.0	199.730	90 29 53.0				
		SW	72 00 15.0	199.722				143	106,
5	143	AR	175 23 32.0	230.650	90 43 18.0				
		SW	67 23 47.0	230.632				144	106,
6	144	AR	204 05 13.0	237.770	90 14 11.0				
		NW	88 31 00.0	237.768				145	106,
7	145	AR	62 08 28.0	227.130	90 11 32.0				
		SE	26 22 32.0	227.129				146	106,
8	146	AR	133 30 28.0	36.500	92 25 58.0				
		SE	72 52 04.0	36.467				147	106.

TEMPORARY DATA SAVED
ME FOR THIS RUN: 0 08 18.7; TOTAL TIME ON FILE: 15 12 23.3

COORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 15 12 23.3
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
ART				147	106,312.6365	118,252.5341	CL
147	INV NE	66 38 05.1	1370.362	27	106,856.1100	119,510.5200	
27	INV SW	50 49 16.1	1370.383	28	105,990.3800	118,448.2300	

ME FOR THIS RUN: 0 01 13.9; TOTAL TIME ON FILE: 15 13 37.2
COORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 15 13 37.2
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

```
********** ROTATION ************
--------------------------------
TATE LINE   27 TO 147 ABOUT   27 FROM SW   66 38 05.1      1370.362
                                    TO SW   50 49 16.1
                           A ROTATION OF-   15 48 49.0
ALE  1.0000000
-------------------------------------------------------------------------
COORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:   15 13 37.2
MENDORF GEOTECHNICAL SURVEY   ***** JOB #88046
-------------------------------------------------------------------------
********** ROTATION ************
--------------------------------
TATE LINE   27 TO 147 ABOUT   27 FROM SW   66 38 05.1      1370.362
                                    TO SW   50 49 16.1
                           A ROTATION OF-   15 48 49.0
ALE  1.0000153
ANSLATE TO:                        27     106,856.1100      119,510.5200
-------------------------------------------------------------------------
OM          BEARING      DISTANCE   TO          NORTHING          EASTING
-------------------------------------------------------------------------
                                    140     106,824.2950      119,398.1900
140 SW    59 31 25.0       354.597  141     106,644.4494      119,092.5849
141 SW    56 11 32.0       308.484  142     106,472.8061      118,836.2623
142 SW    56 11 26.0       199.726  143     106,361.6723      118,670.3119
143 SW    51 34 58.0       230.635  144     106,218.3594      118,489.6076
144 SW    75 40 11.0       237.772  145     106,159.5083      118,259.2342
145 SE    42 11 21.0       227.132  146     105,991.2189      118,411.7718
146 SE    88 40 53.0        36.468  147     105,990.3797      118,448.2298
IME FOR THIS RUN:      0 01 52.4
TAL TIME ON FILE:    15 15 29.6
OORDINATES STORED
-------------------------------------------------------------------------
ORDINATE FILE:88046  LENGTH = 1000 POINTS; TIME ON FILE:   15 15 29.6
MENDORF GEOTECHNICAL SURVEY   ***** JOB #88046
-------------------------------------------------------------------------
********** COGO *************
-------------------------------------------------------------------------
ROM TYPE          BEARING      DISTANCE   TO          NORTHING          EASTING
-------------------------------------------------------------------------
ART                                        147     105,990.3797      118,448.2298 CL
147  INV NE    32 50 53.3         0.000    28     105,990.3800      118,448.2300
START                                      140     106,824.2950      119,398.1900 #D
140  INV NE    74 11 11.0       116.749    27     106,856.1100      119,510.5200
 27 S.S. SE    26 10 59.0       225.075   293     106,654.1306      119,609.8320 D3
 27  INV SW    74 11 11.0       116.749   140     106,824.2950      119,398.1900 #D
140  INV SW    59 31 25.0       354.597   141     106,644.4494      119,092.5849 #D
 41  INV SW    56 11 32.0       308.484   142     106,472.8061      118,836.2623 #D
142 S.S. NW    76 07 45.0        64.417   294     106,488.2490      118,773.7239 D3
142  INV SW    56 11 26.0       199.726   143     106,361.6723      118,670.3119 #D
 43  INV SW    51 34 58.0       230.635   144     106,218.3594      118,489.6076 #D
144  INV SW    75 40 11.0       237.772   145     106,159.5083      118,259.2342 #D
145  INV SE    42 11 21.0       227.132   146     105,991.2189      118,411.7718 #D
146 S.S. SE    27 04 00.0        47.615   295     105,948.8183      118,433.4381 D3
 46  INV SE    88 40 54.9        36.468    28     105,990.3800      118,448.2300
ENTER & ASSIGN
                                           294     106,488.2490      118,773.7239
                                           293     106,654.1306      119,609.8320
                                           295     105,948.8183      118,433.4381
```

293 106,654.1306 119,609.8320 224.8800 03-1
294 106,488.2490 118,773.7239 208.3500 03-2
295 105,948.8183 118,433.4381 295.6000 03-3

7/10 SITE

					15	115,798.9100	106,422.9600	
					16	116.244.5300	107,027.7500	
ART								
15	INV	NE	53	36 59.6	751.231	16	116,244.5300	107,027.7500	
16	S.S.	SE	19	58 24.4	583.110	297	115,696.4930	107,226.9316	7/
16	S.S.	SE	50	29 40.4	858.828	298	115,698.1853	107,690.3909	7/
16	TRAV	SE	24	59 28.4	1354.824	148	115,016.5545	107,600.1354	TP
148	S.S.	SW	15	34 51.6	153.106	299	114,869.0750	107,559.0112	7/
48	S.S.	SE	71	17 49.4	277.296	300	114,927.6363	107,862.7883	7/
TER & ASSIGN									
						297	115,696.4930	107,226.9316	
						298	115,698.1853	107,690.3909	
						300	114,927.6363	107,862.7883	
						299	114,869.0750	107,559.0112	

297	115,696.4930	107,226.9316	177.0400	7/10-4
298	115,698.1853	107,690.3909	181.4606	7/10-3
299	114,869.0750	107,559.0112	169.2800	7/10-1
300	114,927.6363	107,862.7883	170.9500	7/10-2

-1 AND IS-2

					18	117,296.2400	109,530.5900	
ART					19	117,986.1200	109,718.8200	
18	INV NE	15	15	40.9	715.098	149	117,899.2727	109,467.5002	#I
19	TRAV SW	70	56	11.9	265.902	301	116,886.8413	109,461.0998	IS
149	S.S. SW	0	21	43.9	1012.452	302	117,725.8927	109,172.4534	IS
ENTER & ASSIGN									
						301	116,886.8413	109,461.0998	
						302	117,725.8927	109,172.4534	
LIST									
						301	116,886.8413	109,461.0998	
						302	117,725.8927	109,172.4534	

301	116,886.8413	109,461.0998	188.2300	IS-1
302	117,725.8927	109,172.4534	189.8300	IS-2

-3

20	118,296.3900	111,050.4700	204.6200	HS-19
21	118,354.5300	111,647.5100	207.5200	HS-21

ART					21	118,354.5300	111,647.5100	
21	INV SW	84	26	17.0	599.864	20	118,296.3900	111,050.4700	
20	TRAV SW	7	43	59.0	457.092	150	117,843.4546	110,988.9647	#I
50	S.S. NE	59	14	55.0	367.003	303	118,031.1082	111,304.3645	IS
ENTER & ASSIGN									
						303	118,031.1082	111,304.3645	

303	118,031.1082	111,304.3645	202.7300	IS-3

SRG LIST

IS-4

22	[illegible]	109,422.5300	188.2800	HS-29
23	[illegible]	109,787.3500	189.0700	HS-30

ART					23	116,335.1900	109,787.3500	
23	INV SW	86	[illegible]		365.425	22	116,314.1700	109,422.5300	
22	S.S. SW	75	54	21.7	857.638	304	116,105.3239	108,590.7089	IS
ENTER & ASSIGN									
						304	116,105.3239	108,590.7089	

304	116,105.3239	108,590.7089	181.7000	IS-4

```
                    -8   107,345.1630    119,285.2800    105.8503 D-1
                    49   107,340.9800    117,402.4300    263.7300 D-2
START                                                49      107,340.9800      117,402.4 00
  49  INV NE    89 52 25.4      1882.885    48      107,345.1300      119,285.2800
  48 TRAV SE    83 59 09.6       558.954   151      107,286.5676      119,841.1576 #D
 151 TRAV SW    11 04 26.4      1766.350   152      105,553.1074      119,501.8832 #D
  52 TRAV NW    78 15 30.6       526.408   296      105,660.2295      118,986.4901 D3
  ME FOR THIS RUN:      1 22 07.2; TOTAL TIME ON FILE:    16 37 36.8
COORDINATES STORED
  *** EDM SLOPE REDUCTION ******
  ------------------------------
      558.960 SLOPE DIST
      209.850 ELEV INST PT
        5.000 H.I. DM
        4.720 H.I. REFLECTOR
     89 43 52 ZENITH
        5.000 H.I. THEODOLITE
        4.720 H.I. TARGET
      212.760 ELEV TARGET PT
      558.954 H DIST INST PT
      558.948 H DIST SEA LEVEL
--------------------------------
     1766.350 SLOPE DIST
      212.760 ELEV INST PT
        5.030 H.I. DM
        4.690 H.I. REFLECTOR
     90 01 50 ZENITH
        5.030 H.I. THEODOLITE
        4.690 H.I. TARGET
      212.222 ELEV TARGET PT
     1766.349 H DIST INST PT
     1766.331 H DIST SEA LEVEL
--------------------------------
      526.420 SLOPE DIST
      212.220 ELEV INST PT
        5.000 H.I. DM
       12.660 H.I. REFLECTOR
     89 36 34 ZENITH
        5.000 H.I. THEODOLITE
       12.660 H.I. TARGET
      208.154 ELEV TARGET PT
      526.408 H DIST INST PT
      526.402 H DIST SEA LEVEL
  ------------------------------
      526.420 SLOPE DIST
      208.154 ELEV INST PT
       12.660 H.I. DM
        5.000 H.I. REFLECTOR
     90 23 26 ZENITH
       12.660 H.I. THEODOLITE
        5.000 H.I. TARGET
      212.231 ELEV TARGET PT
      526.408 H DIST INST PT
      526.402 H DIST SEA LEVEL
  ------------------------------
     1766.360 SLOPE DIST
      212.231 ELEV INST PT
        5.000 H.I. DM
        4.730 H.I. REFLECTOR
     89 59 29 ZENITH
```

5.000 H.I. THEODOLITE
4.730 H.I. TARGET
212.831 ELEV TARGET PT
1766.360 H DIST INST PT
1766.342 H DIST SEA LEVEL

558.990 SLOPE DIST
212.831 ELEV INST PT
5.030 H.I. DM
4.690 H.I. REFLECTOR
90 20 11 ZENITH
5.030 H.I. THEODOLITE
4.690 H.I. TARGET
209.896 ELEV TARGET PT
558.980 H DIST INST PT
558.975 H DIST SEA LEVEL

COORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 16 37 36.8
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
ITER & ASSIGN					
			296	105,660.2295	118,986.4901

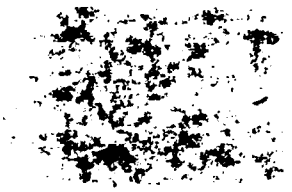
296 105,660.2295 118,986.4901 208.1500 03-4

BH-1

					41	115,753.4400	115,687.9000	217.6700 N-13
					42	116,675.6800	115,881.3500	228.3400 N-29
START					42	116,675.6800	115,881.3500	
42	INV	SW	11 50 48.0	942.311	41	115,753.4400	115,687.9000	
41	TRAV	SE	75 05 07.0	282.247	153	115,680.7949	115,960.6384	#B
153	TRAV	NE	80 52 19.0	1810.610	305	115,968.0330	117,748.3195	BH
TER & ASSIGN								
					305	115,968.0330	117,748.3195	
					305	115,968.0330	117,748.3195	230.3400 BH-1

201	107,746.4394	106,749.[illegible]	[illegible].1900	SP2/65
202	108,151.1434	107,[illegible].4835	[illegible].0300	SP2/64
203	108,302.9798	107,[illegible].6947	[illegible].0200	SP2/63
204	106,396.6475	106,[illegible].[illegible]	[illegible].6300	SP2/62
205	108,338.7522	107,[illegible].5846	[illegible].0100	SP2/62
206	108,378.6316	106,[illegible].1303	[illegible].6200	SP2/61
207	108,241.8298	106,[illegible].[illegible]	[illegible].0300	SP2/60
208	108,126.9382	106,[illegible].6934	151.8400	SP2/59
209	[illegible],291.3845	106,[illegible].3952	[illegible].7100	SP2/67
210	107,945.8411	106,587.0165	158.4700	SP2/66
211	108,491.3582	108,589.4741	111.0200	NS3-3
212	107,849.0454	107,569.1610	94.3900	SC-6
213	109,212.9284	108,229.6609	149.2500	NS3-4
214	109,195.6347	108,558.9647	156.9400	NS3-5
215	109,490.8897	109,148.3526	149.0200	NS3-6
216	108,089.7144	108,472.0451	104.0400	SC-5
217	108,944.2132	109,362.7410	121.1300	NS3-2
218	109,281.5244	110,477.4071	121.1100	SC-4
219	109,462.6262	110,463.5974	126.1800	NS3-1
220	109,459.6290	110,719.5777	121.2700	SP4-2
221	109,784.5952	111,548.9421	137.3600	SP4-1
222	110,978.0183	110,546.4913	173.6700	SP4-3
223	111,315.0516	111,722.7867	181.9400	SP14-1
224	110,584.3686	111,734.3148	181.2600	SP14-2
225	113,469.2812	112,037.3810	195.2100	SP13-1
226	113,456.1735	112,126.2080	185.4900	SP13-2
227	113,705.2608	110,894.0393	185.0300	SP15-1
228	114,031.3497	110,868.3180	184.5800	SP15-2
229	114,216.5957	100,793.9178	253.7700	SPSR16
230	114,205.3938	100,646.6820	252.9800	SPSR15
231	114,259.0405	101,222.4914	236.6800	SPSR19
232	114,213.1166	100,779.5028	251.3000	TRENCH
233	114,170.7374	100,442.9771	242.5600	SPSR14
234	114,272.9620	101,089.2490	245.0000	SPSR18
235	114,238.5836	100,941.5885	241.2100	SPSR17
236	114,165.7207	100,808.2614	229.3000	TRENCH
237	114,733.0894	101,208.4833	266.2800	SP5-5
238	114,290.5141	100,808.7089	268.4300	SP5-7
239	114,503.6089	101,056.4923	268.8600	SP5-6
240	114,538.5735	100,900.7903	279.9700	SP5-1
241	114,528.1563	100,595.3437	265.5200	SP5-2
[illegible]	[illegible]	100,776.0842	271.3900	SP5-9
[illegible]	[illegible]	100,605.8049	261.5700	SP5-3
[illegible]	[illegible]	100,847.1879	256.3100	SP5-4
[illegible]	[illegible]	100,450.7002	262.1400	SP5-11
[illegible]	[illegible]	100,343.5566	255.5000	SP5-12
247	114,766.1173	100,394.3647	235.2700	SP5-13
248	114,959.2434	100,668.8990	235.1400	SP5-10
249	114,969.3632	100,360.7994	219.0900	SP5-20
250	114,965.1412	100,797.5739	249.7900	SP5-8
251	113,727.3387	98,874.6367	188.9900	D15-01
252	113,366.8490	98,367.1883	187.4100	D15-02
253	109,026.3500	99,137.6058	106.7600	NS1-4
254	110,441.1498	101,198.5075	128.5400	NS1-3
255	111,575.8249	101,597.9883	145.2800	BH-6
256	112,194.8095	102,064.6130	141.7900	NS1-2
257	106,623.5603	104,047.2286	138.3400	SP1-2
258	106,177.6805	103,734.6345	100.6900	SP1-1
259	111,632.8466	104,339.0910	151.0500	D17-4
260	110,184.6247	105,809.2272	134.5300	IS-9
261	111,961.1733	105,632.3739	155.5800	D17-2

266	111,445.9547	105,413.2092	154.1400	[illegible]
267	111,446.6215	104,836.1970	148.0600	[illegible]
268	111,867.0726	93,871.0875	37.7000	[illegible]
269	111,311.7219	105,445.8917	159.2700	MS1-1
270	110,726.2424	104,928.2261	149.8200	[illegible]
271	110,709.5582	104.697.1949	[illegible]	[illegible]
272	110,739.0641	104,985.0535	149.6100	[illegible]
273	110,731.7589	104,951.2040	[illegible]	[illegible]
274	110,767.3535	104,601.9364	146.6100	[illegible]
275	110,695.1820	104,817.8599	154.1000	[illegible]
276	110,644.9050	107,068.2490	197.2700	BRBRT
277	117,289.0307	115,467.1822	215.0900	IS-5
278	117,[illegible].8713	115,475.4581	215.7600	IS-6
279	120,624.2915	114,487.3484	249.3000	BH-2
280	123,258.2518	115,963.2678	016-3	
281	122,123.4326	116,829.2379	016-1	
282	123,135.4224	116,758.1214	016-2	
283	123,183.0517	115,580.2713	016-4	
284	121,645.5906	110,915.1639	318.2700	BH-3
285	117,491.4633	105,306.5522	303.1900	BH-4
286	116,527.3865	105,037.1469	245.0800	BH-5
287	113,431.5021	108,625.2722	176.6000	PT-1
288	113,421.3835	108,614.2633	176.5000	PT-3
289	113,378.7933	108,565.7118	176.1700	PT-4
290	111,955.5518	116,139.1833	207.6300	013-3
291	112,648.8668	116,323.0915	210.3600	013-2
292	112,018.8753	116,794.9980	205.2900	013-4
293	112,068.3449	116,389.4778	210.7600	MS2-2
294	113,192.4986	117,062.4407	211.3400	MS2-1
295	112,958.4362	117,399.2606	214.8500	013-1
296	106,654.1306	113,609.8320	224.0800	03-1
297	106,488.2490	110,773.7239	208.3500	03-2
298	105,948.8185	116,433.4381	205.6000	03-3
299	105,660.2295	110,986.4901	208.1500	03-4
300	115,696.4930	107,225.9316	177.0400	7/10-4
301	115,638.1853	107,630.3909	181.4600	7/10-3
302	114,869.8750	107.559.0112	169.2800	7/10-1
303	114,927.6363	107,962.7883	170.9500	7/10-2
304	116,806.8413	109.461.0998	188.2300	IS-1
305	117,725.9927	109,172.4634	189.8300	IS-2
306	118,031.1082	111,304.3645	202.7300	IS-3
307	116,185.3239	108,590.7989	181.7000	IS-4
308	115,368.0330	117,748.3195	230.3400	BH-1



[redacted] **** JOB 888046

******** TOP **********

FROM PNT	ANGLE	DISTANCE	TO	NORTHING	EASTING	
			1	107,957.3100	105,349.7900	148.2600 MB-1
			2	113,565.3700	98,888.3800	171.3200 C-11
			3	113,579.1700	79,553.1200	197.3600 C-12
			4	114,844.1500	101,081.2500	305.0000 C-15
			5	110,285.8200	107,134.7400	157.6200 EAF-10
			6	111,161.6800	107,322.5500	163.2700 EAF-11
			7	106,514.6100	104,168.2200	136.2500 F-1
			8	107,079.1300	105,466.8500	137.2300 F-2
			9	107,649.9500	106,819.3600	140.4200 F-3
			10	107,916.5600	106,376.2300	139.3600 F-4
			11	108,306.4900	107,809.6200	144.8500 F-5
			12	109,490.5400	108,492.4300	149.1400 F-6
			13	110,177.5800	111,306.7400	175.3800 G-1
			14	110,214.1500	110,892.1100	173.0700 G-19
			15	115,798.9100	106,422.3600	175.5100 HS-2
			16	116,244.5500	107,827.7500	179.3660 HS-4
			17	115,991.4900	107,397.7600	181.3600 HS-7
			18	117,296.2400	109,530.5900	192.6100 HS-14
			19	117,396.1200	109,718.8200	194.8300 HS-15
			20	119,236.2900	111,050.4700	204.6200 HS-19
			21	118,354.5300	111,647.5100	207.5200 HS-21
			22	116,514.1700	109,122.5300	188.2800 HS-29
			23	116,335.1900	109,787.3500	189.0700 HS-30
			24	117,747.3800	104,021.0300	255.0100 I-22
			25	116,458.3400	103,522.4200	260.9900 I-23
			26	109,949.7900	98,988.0600	160.1700 MB-27
			27	106,856.1100	113,510.5200	213.6200 MB-116
			28	105,990.3800	118,448.2300	205.5800 MB-129
			30	110,386.2200	111,935.2000	178.5500 MB-130
			31	111,339.3300	111,837.9000	179.7600 MB-131
			32	113,017.7800	109,765.4800	177.6000 MB-136
			33	113,519.1400	109,261.9500	176.5600 MB-137
			[redacted]	[redacted]	111,752.1800	184.6600 MB-141
			[redacted]	[redacted]	111,133.5400	183.8500 MB-142
			[redacted]	[redacted]	112,125.1900	185.1300 MB-145
			[redacted]	[redacted]	100,912.3600	137.2800 MC-9
			[redacted]	[redacted]	100,390.3700	136.6800 MC-10
			39	109,429.5900	99,584.4900	136.3500 MC-11
			40	110,796.7500	105,683.4800	152.1200 MH-23
			41	115,753.4400	115,687.9000	217.9700 N-18
			42	116,675.6800	115,381.3500	220.6400 N-20
			43	120,928.4600	114,469.4100	272.0900 N-6
			44	121,907.8400	114,703.9500	279.2300 N-8
			45	122,210.7100	115,138.5000	275.3800 N-9
			46	123,279.6300	116,308.1800	N-11A
			47	124,041.5900	116,451.6400	N-12A
			48	107,345.1300	119,285.2307	209.8500 O-1
			49	107,340.9900	117,482.4000	202.7000 O-2
			50	110,313.1700	115,669.4500	196.0200 O-4
			51	108,498.3500	106,455.6000	161.3500 RY-20
			52	112,177.3400	104,306.1600	154.0670 RY-23
			56	111,297.2600	104,937.1900	152.8200 ST-146

```
TIME FOR THIS RUN:      0 25 18.5; TOTAL TIME ON FILE:    17 21 05.6
  ORDINATES STORED
   *** EDM SLOPE REDUCTION ******
--------------------------------
       [illegible] SLOPE DIST
       [illegible] ELEV INST PT
         [illegible] H.I. DM
         [illegible] H.I. REFLECTOR
      [illegible] ZENITH
         [illegible] H.I. THEODOLITE
         [illegible] H.I. TARGET
       [illegible] ELEV TARGET PT
       [illegible] H DIST INST PT
       [illegible] H DIST SEA LEVEL
--------- ----------------------
      236.960 SLOPE DIST
      275.420 ELEV INST PT
        4.650 H.I. DM
        5.180 H.I. REFLECTOR
     90 00 23 ZENITH
        4.650 H.I. THEODOLITE
        5.180 H.I. TARGET
      274.865 ELEV TARGET PT
      236.960 H DIST INST PT
      236.957 H DIST SEA LEVEL
  --------------------------------
      237.000 SLOPE DIST
      274.870 ELEV INST PT
        5.300 H.I. DM
        4.340 H.I. REFLECTOR
     90 06 34 ZENITH
        5.300 H.I. THEODOLITE
        4.340 H.I. TARGET
      275.378 ELEV TARGET PT
      237.000 H DIST INST PT
      236.996 H DIST SEA LEVEL
  --------------------------------

      237.000 SLOPE DIST
      274.870 ELEV INST PT
        5.330 H.I. DM
        4.340 H.I. REFLECTOR
     90 06 34 ZENITH
        5.330 H.I. THEODOLITE
        4.340 H.I. TARGET
      275.408 ELEV TARGET PT
      237.000 H DIST INST PT
      236.996 H DIST SEA LEVEL
  --------------------------------
       72.860 SLOPE DIST
      274.870 ELEV INST PT
        5.330 H.I. DM
        4.900 H.I. REFLECTOR
     90 00 00 ZENITH
        5.330 H.I. THEODOLITE
        4.900 H.I. TARGET
      275.300 ELEV TARGET PT
       72.860 H DIST INST PT
       72.859 H DIST SEA LEVEL
  --------------------------------
      250.680 SLOPE DIST
      274.870 ELEV INST PT
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        5.330 H.I. DM
       10.720 H.I. REFLECTOR
    88 07 57 ZENITH
        5.330 H.I. THEODOLITE
       10.720 H.I. TARGET
      277.651 ELEV TARGET PT
      250.547 H DIST INST PT
      250.543 H DIST SEA LEVEL
```

COORDINATE FILE:88046S LENGTH = 1000 POINTS; TIME ON FILE: 17 22 05.6
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
ENTER & ASSIGN			277	2,658,175.2941	539,592.9543
			278	2,658,040.0845	539,455.0828
			279	2,658,051.8640	539,383.1886
			280	2,658,018.9757	539,205.4515
			46	2,658,196.7867	539,632.8000
TER & ASSIGN			230	2,649,078.5774	524,299.4112
			245	2,649,340.5156	524,102.6821
			246	2,649,388.8502	523,995.4073
			247	2,649,638.5057	524,045.4807

TIME FOR THIS RUN: 0 07 21.6; TOTAL TIME ON FILE: 17 29 27.2
ORDINATES STORED

COORDINATE FILE:88046S LENGTH = 1000 POINTS; TIME ON FILE: 17 29 27.2
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

OM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
			277	2,658,175.2941	539,592.9543
			278	2,658,040.0845	539,455.0828
			279	2,658,051.8640	539,383.1886
			280	2,658,018.9757	539,205.4515
			230	2,649,078.5774	524,299.4112
			[illegible]	[illegible]	524,102.6821
			[illegible]	[illegible]	523,995.4073
			[illegible]	[illegible]	524,045.4807

FOR THIS RUN: 0 31 23.4; TOTAL TIME ON FILE: 17 38 58.6
DINATES STORED

277	2,658,175.2941	539,592.9543	273.2900 016-3
278	2,658,040.0845	539,455.0828	274.8700 016-1
279	2,658,051.8640	539,383.1886	275.3000 016-2
280	2,658,018.9757	539,205.4515	277.6500 016-4
230	2,649,078.5774	524,299.4112	252.5100 SP5R15
[illegible]	[illegible]	524,102.6821	262.2000 SP5-11
[illegible]	[illegible]	523,995.4073	260.3000 SP5-12
[illegible]	[illegible]	524,045.4807	234.4000 SP5-13

[illegible] FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 15 07 [illegible]
[illegible]ENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING	
POSITION						
			46	123,279.6300	116,008.1800	275.4200 N-11W
			47	123,258.2518	115,968.4678	273.2900 B16-1
			279	123,123.4426	115,829.9879	274.8700 B16-1
			279	123,135.4234	115,758.1214	275.6000 B16-2
			280	123,103.0517	115,580.2715	277.6500 B16-4
			238	114,205.3938	100,646.6620	252.5100 SPSA15
			245	114,467.9319	100,450.7802	262.2000 SPS-11
			246	114,516.5842	100,343.5566	260.3000 SPS-12
			247	114,766.1173	100,394.3547	134.1000 SPS-13

FOR THIS RUN: 0 02 51.3; TOTAL TIME ON FILE: 16 40 28.1
COORDINATES STORED

ORDINATE FILE:88046 LENGTH = 1000 POINTS; TIME ON FILE: 16 40 28.1
ELMENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** COGO **********

FROM	TYPE	BEARING	DISTANCE	TO	NORTHING	EASTING
ST						
				201	107,746.4394	106,743.6072
				202	108,151.1434	107,197.4505
				203	108,302.8798	107,373.6049
				204	108,096.6475	106,915.9915
				205	108,398.7822	107,009.5096
				206	108,378.9340	106,722.1303
				207	108,241.8298	106,768.7158
				208	108,126.9382	106,725.6934
				209	108,201.3845	106,709.9952
				210	107,845.8411	106,587.0165
				211	108,491.9582	108,589.4741
				212	107,849.0454	107,569.1610
				213	109,212.9284	108,229.5609
				214	109,195.6347	108,558.9647
				215	109,490.8097	109,148.2696
				216	108,089.3144	108,472.0451
				217	108,944.2132	109,882.7410
				218	109,281.5244	110,477.4071
				219	109,462.6262	110,463.5974
				220	109,459.6290	110,719.5777
				221	109,704.5952	111,548.9421
				222	110,070.0183	110,546.4813
				223	111,315.0516	111,722.7867
				224	110,584.3686	111,734.3148
				225	113,469.2812	112,037.9810
				226	113,456.1785	112,126.2080
				227	113,705.2608	110,694.9393
				228	114,031.8497	110,868.3180
				229	114,216.5957	100,793.9178
				230	114,205.3938	100,646.6820
				231	114,239.0405	101,222.4914
				232	114,213.1166	100,779.5028

ORDINATE FILE:88046S LENGTH = 1000 POINTS; TIME ON FILE: 16 46 15.1
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

******** ROTATION **********

ROTATE LINE 418 TO 411 ABOUT 418 FROM NE 70 37 06.9 15803.466
COORDINATE FILE:88046S LENGTH = 1000 POINTS; TIME ON FILE: 16 46 15.1
MENDORF GEOTECHNICAL SURVEY ***** JOB #88046

********** ROTATION **********

TATE LINE 418 TO 411 ABOUT 418 FROM NE 70 37 06.9 15803.466
TO NE 70 27 03.9
A ROTATION OF- 0 10 03.1

ALE 0.9999013
RANSLATE TO: 418 2,644,900.9600 533,664.0600

OM	BEARING	DISTANCE	TO	NORTHING	EASTING
			1	2,642,843.5313	529,719.7383
			2	2,648,433.4947	522,343.1801
			3	2,648,548.1449	523,184.8654
			4	2,649,720.2923	525,332.0053
			5	2,645,278.5383	530,857.5610
			6	2,646,054.4224	530,993.4895
			7	2,641,398.8819	527,843.5696
			8	2,641,967.1387	529,139.9156
			9	2,642,540.3801	529,986.5695
			10	2,642,808.8951	530,646.7420
			11	2,643,401.4828	531,578.2614
			12	2,644,387.1453	532,158.1346
			13	2,645,081.4648	534,670.1772
			14	2,645,117.6959	534,555.4521
			15	2,650,688.8158	530,070.4359
			16	2,651,136.1580	530,673.8610
			17	2,650,875.9808	531,644.5400
			18	2,652,195.0764	533,173.3687
			19	2,652,885.4356	533,359.5625
			20	2,653,199.5666	534,690.1684
			21	2,653,259.4460	535,286.9769
			22	2,651,212.7916	533,068.1908
			23	2,651,234.8760	533,432.9118
			24	2,652,630.0634	527,663.0572
			25	2,651,339.9909	527,268.2566
			26	2,644,818.5631	522,653.4007
			27	2,641,785.1966	543,182.7914
			28	2,640,916.4502	542,123.1417
			30	2,645,292.5052	535,497.9420
			31	2,646,245.5250	535,497.8554
			32	2,647,917.7437	533,420.7420
			33	2,648,446.5770	532,915.7135
			34	2,648,314.8412	535,406.0935
			35	2,648,395.6842	534,787.2755
			36	2,648,356.9972	535,778.8550
			37	2,645,378.5315	524,575.8818
			38	2,645,083.3258	524,054.8042
			39	2,644,300.1603	523,251.2800
			40	2,645,685.0091	529,345.6553
			41	2,650,670.4354	539,334.5548
			42	2,651,593.1460	539,525.2889
			43	2,655,841.3804	538,101.0617

44	2,656,821.3252	538,552.7145
45	2,657,125.5806	538,816.3292
46	2,658,196.7867	539,632.8000
47	2,658,959.9647	540,073.9868
48	2,642,273.5077	542,956.1450
49	2,642,263.8538	541,073.4711
50	2,645,830.5953	539,325.2572
51	2,643,299.1129	530,124.8780
52	2,647,066.5003	529,664.2658
53	2,646,183.0136	528,497.9892
54	2,655,515.9241	538,153.3784
55	2,648,969.5481	525,125.0600
56	2,644,485.9652	535,174.3508
100	2,643,409.2090	530,956.4332
101	2,643,663.3976	532,395.8798
102	2,643,992.3600	533,219.1459
103	2,643,806.1479	533,636.7026
104	2,644,300.6287	534,087.9146
105	2,644,322.8912	534,503.8061
106	2,644,506.4683	534,676.2991
107	2,644,485.9657	535,174.3502
108	2,648,398.3227	534,767.0791
109	2,649,148.3535	524,442.9449
110	2,649,412.9131	524,557.0469
111	2,649,740.2816	525,221.5601
112	2,649,720.2925	525,332.0055
113	2,649,844.3681	524,452.2133
114	2,648,470.7814	522,637.4586
115	2,648,365.8895	522,359.1525
116	2,648,433.4945	522,343.1797
117	2,644,003.3272	522,761.9634
118	2,645,437.1939	524,834.6185
119	2,646,111.3365	524,906.4004
120	2,641,177.3093	527,370.4634
121	2,646,183.0138	528,497.9887
122	2,646,083.0291	527,077.8911
123	2,652,210.1111	539,229.1477
124	2,656,898.6489	538,490.3183
125	2,657,073.1547	538,057.6680
126	2,656,942.7078	537,372.2247
127	2,656,611.6434	535,132.3238
128	2,656,459.0432	534,542.2444
129	2,651,562.6033	527,473.0830
130	2,651,485.7275	528,132.7071
131	2,651,502.2710	528,552.4774
132	2,651,840.9872	528,901.0003
133	2,651,154.4145	527,298.8839
134	2,651,335.6508	526,761.3634
135	2,647,093.8223	539,422.0919
136	2,650,670.4360	539,334.5549
137	2,647,760.8787	539,571.1719
138	2,647,730.0320	540,033.8702
139	2,647,960.2017	540,781.4387
140	2,641,753.0564	543,070.5660
141	2,641,572.3360	542,765.5181
142	2,641,399.9610	542,509.7238
143	2,641,288.3535	542,344.1152
144	2,641,144.5271	542,163.8486
145	2,641,085.0086	541,933.6709
146	2,640,917.1824	542,086.6848
147	2,640,916.4499	542,123.1415
148	2,649,909.9822	531,249.7773
149	2,652,797.8626	533,108.5225
150	2,652,746.4981	534,629.9935
151	2,642,216.5765	543,512.1366
152	2,640,482.3029	543,177.9647

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204	2,642,988.7878	530,585.9333
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215	2,644,389.3322	532,813.9059
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221	2,644,610.1138	535,213.7062
222	2,644,972.5687	534,210.2804
223	2,646,220.9125	535,382.8250
224	2,645,490.3385	535,396.4879
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227	2,648,607.8708	534,348.0959
228	2,648,934.9329	534,520.5020
229	2,649,090.2087	524,446.5991
230	2,649,078.5774	524,299.4112
231	2,649,113.9040	524,875.0630
232	2,649,086.6878	524,432.1957
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255	2,646,452.0604	525,258.3067
256	2,647,072.3454	525,723.0799
257	2,641,508.9291	528,222.2907
258	2,641,060.7180	527,410.5137
259	2,646,518.8435	528,598.8987
260	2,645,073.3141	529,473.1790
261	2,646,849.3385	529,351.1442
262	2,647,287.2958	529,170.9213
263	2,646,333.3665	529,073.4050
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268	2,645,594.3444	528,219.7310
269	2,645,624.3537	528,328.1024
270	2,645,636.7126	528,213.6274
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275	2,652,636.0520	539,119.3860
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278	2,658,040.0845	539,455.0828
279	2,658,051.8640	539,383.1886
280	2,658,018.9757	539,205.4515
281	2,656,448.0379	534,545.6770
282	2,652,367.9322	528,949.2243
283	2,651,407.0194	526,682.8428
284	2,648,328.0909	532,279.4422
285	2,648,317.9402	532,268.4640
286	2,648,275.2124	532,220.0450
287	2,646,874.2574	539,796.8443
288	2,647,568.0389	539,978.7568
289	2,646,939.4625	540,442.4574
290	2,647,807.6863	540,044.4361
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292	2,647,880.7224	541,053.9100
293	2,641,583.5283	543,282.6837
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296	2,640,587.9073	542,662.3115
297	2,650,588.7597	530,874.6241
298	2,650,591.8066	531,338.0308
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413	2,650,264.4009	534,945.6765
414	2,650,231.1409	527,157.2093
415	2,646,878.7593	522,448.4462
416	2,633,910.8124	565,848.0654
417	2,652,563.4930	582,466.6764
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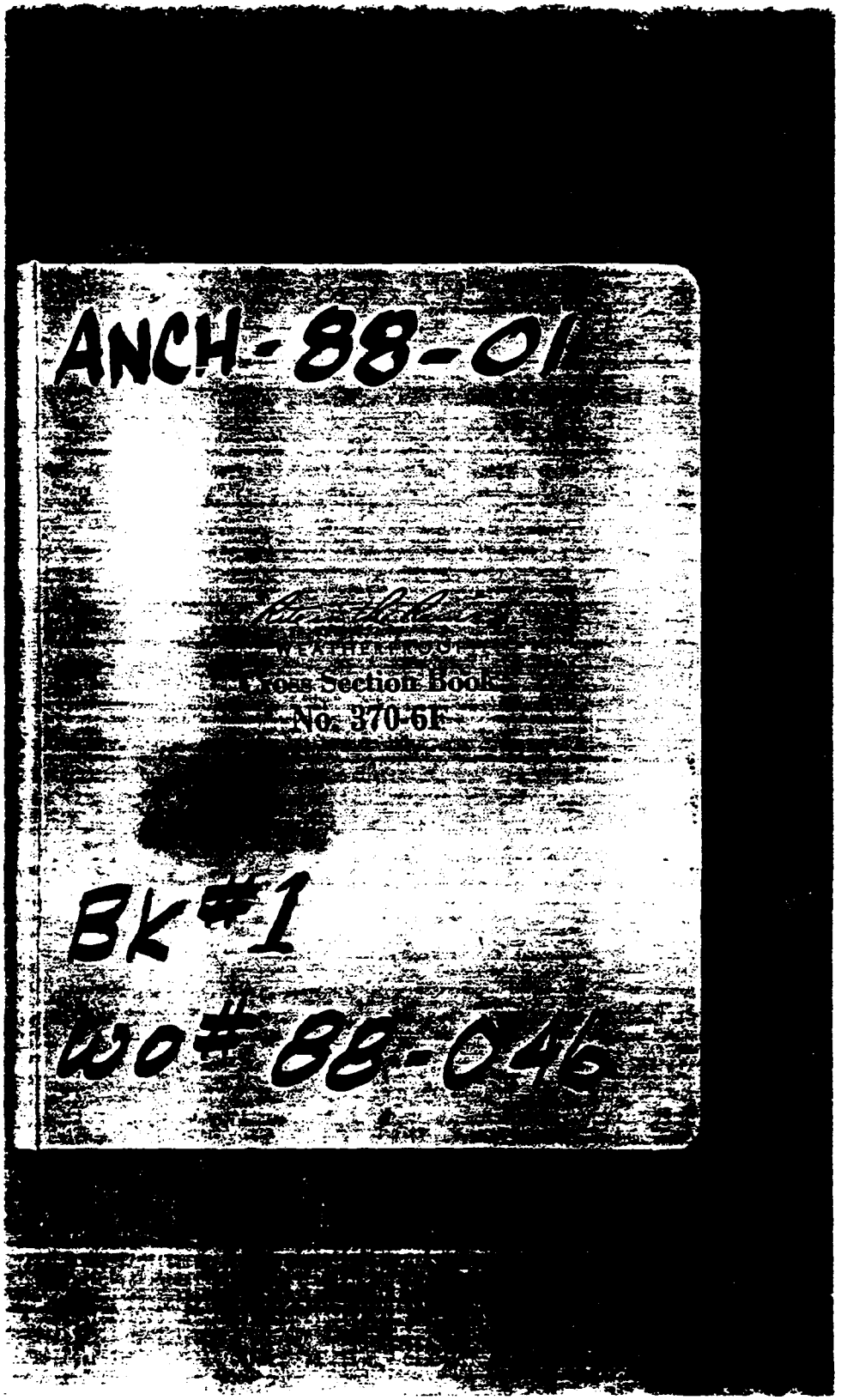
ANCH-88-01
Cross Section Book
No. 370-61
BK #1
WO #88-046

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18	VERT. TIE ; NS3-6 ; NS3-5 ; NS3-4
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22	" " " " SP13-1 ; SP13-2
23-24	" " " " SP15-1 ; SP15-2
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42	" " " NS1-3
43-44	" " " BH-6 ; NS1-2
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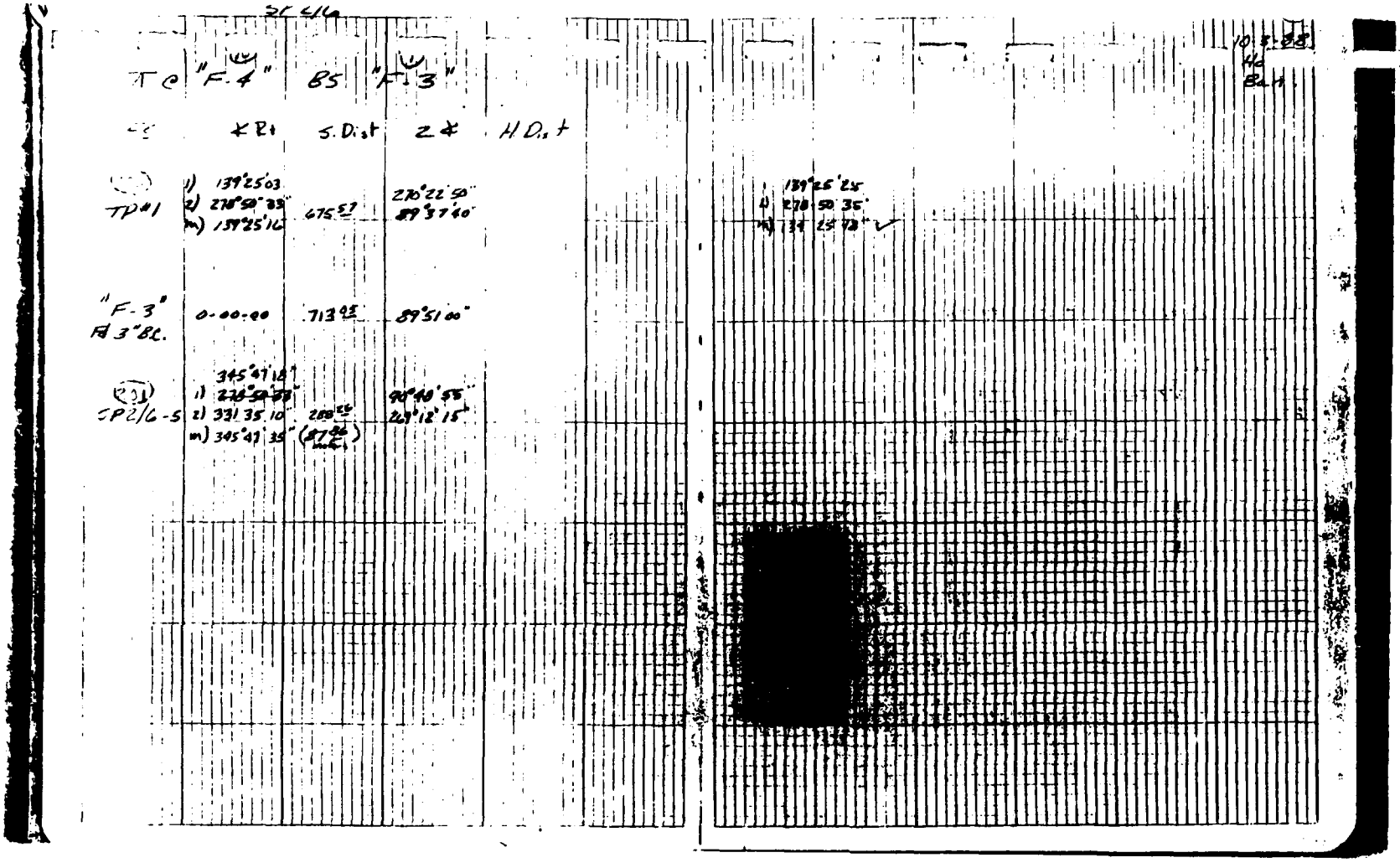
55	Horz ; Vert ties to BH-2
56	Horz ; Vert ties to D16-1 ; D16-2 ; D16-3 ; D16-4
57-59	Horz tie to BH-3


T @ "F-4" BS "F-3"
∠R1
S. Dist
∠R
H Dist
TP#1
1) 139°25'03
2) 270°50'35
m) 139°25'16
675.57
270°22'50
89°37'40
"F-3"
0-00-00
713.92
89°51'00
345°47'18"
1) 270°50'35"
2) 331°35'10"
m) 345°47'35"
(87.86 meas.)
280.00
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269°12'15"
139°25'24
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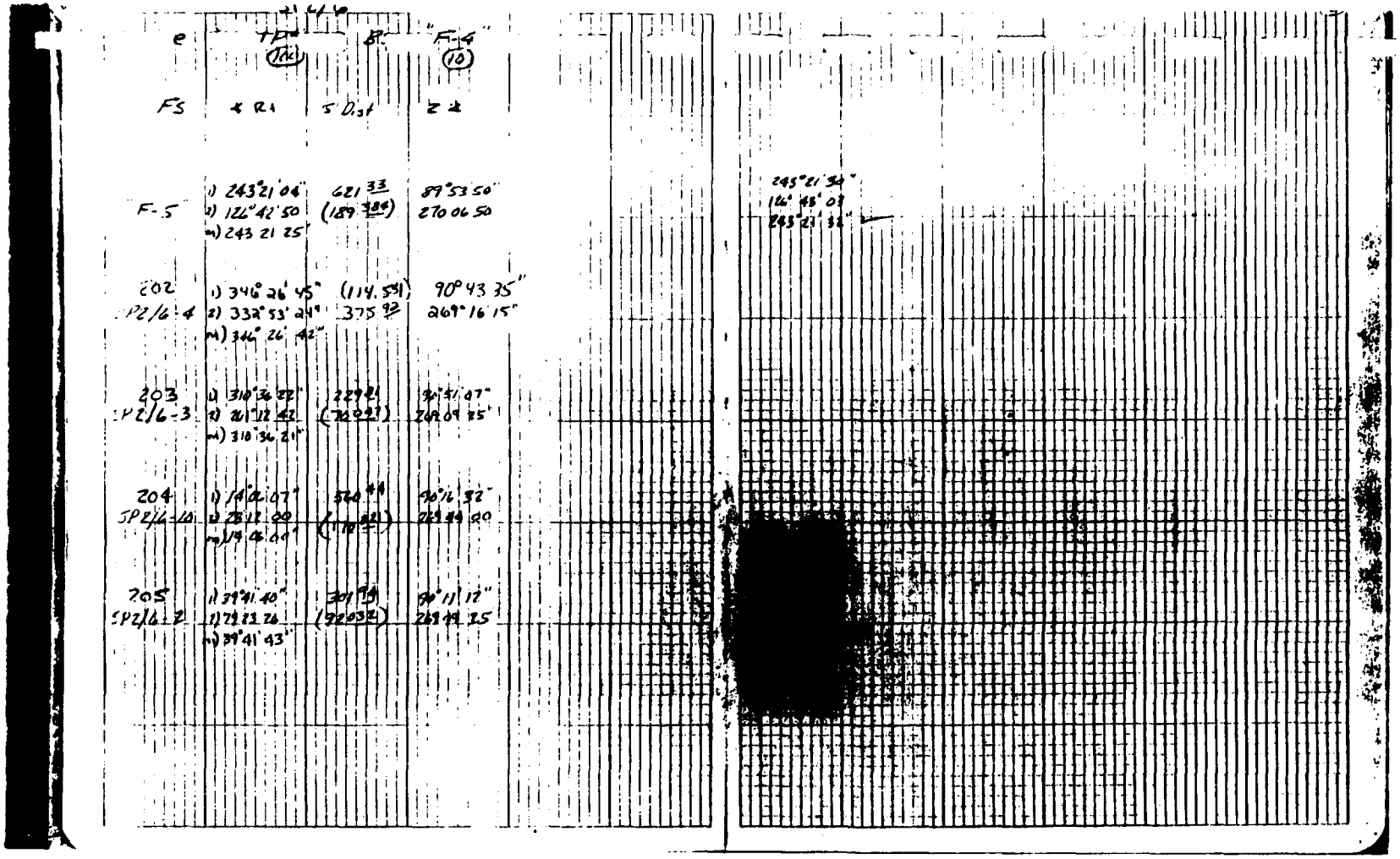
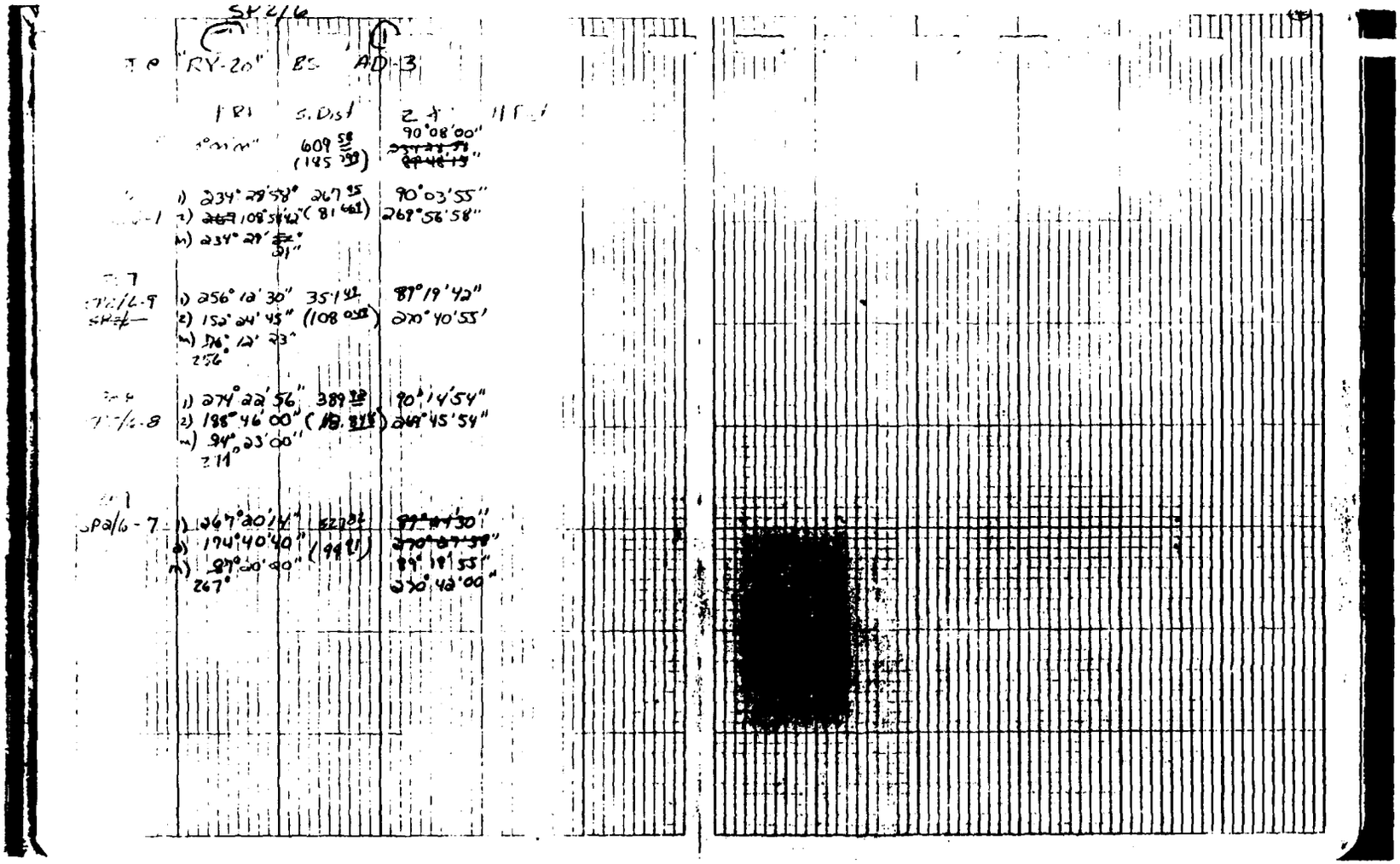
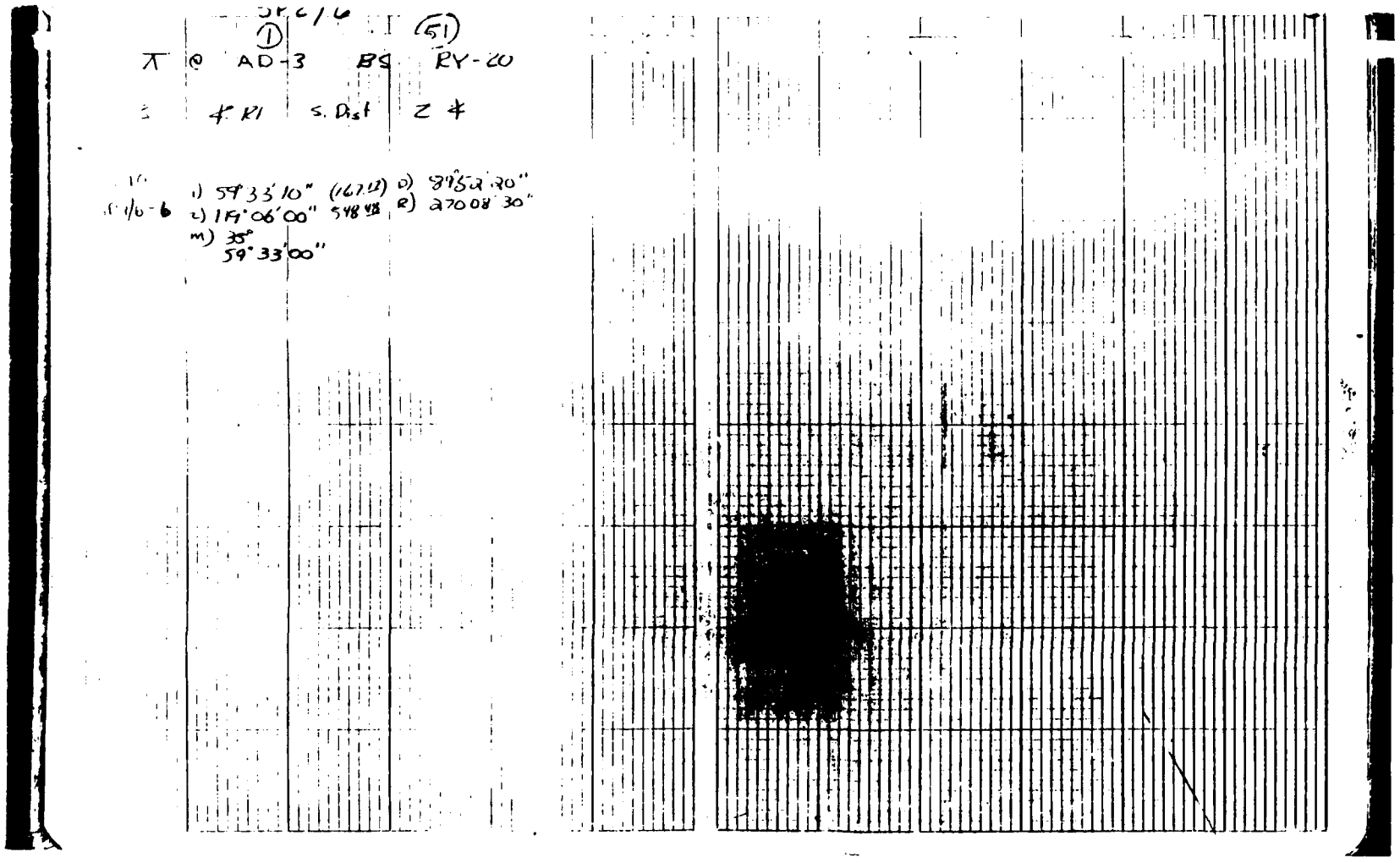
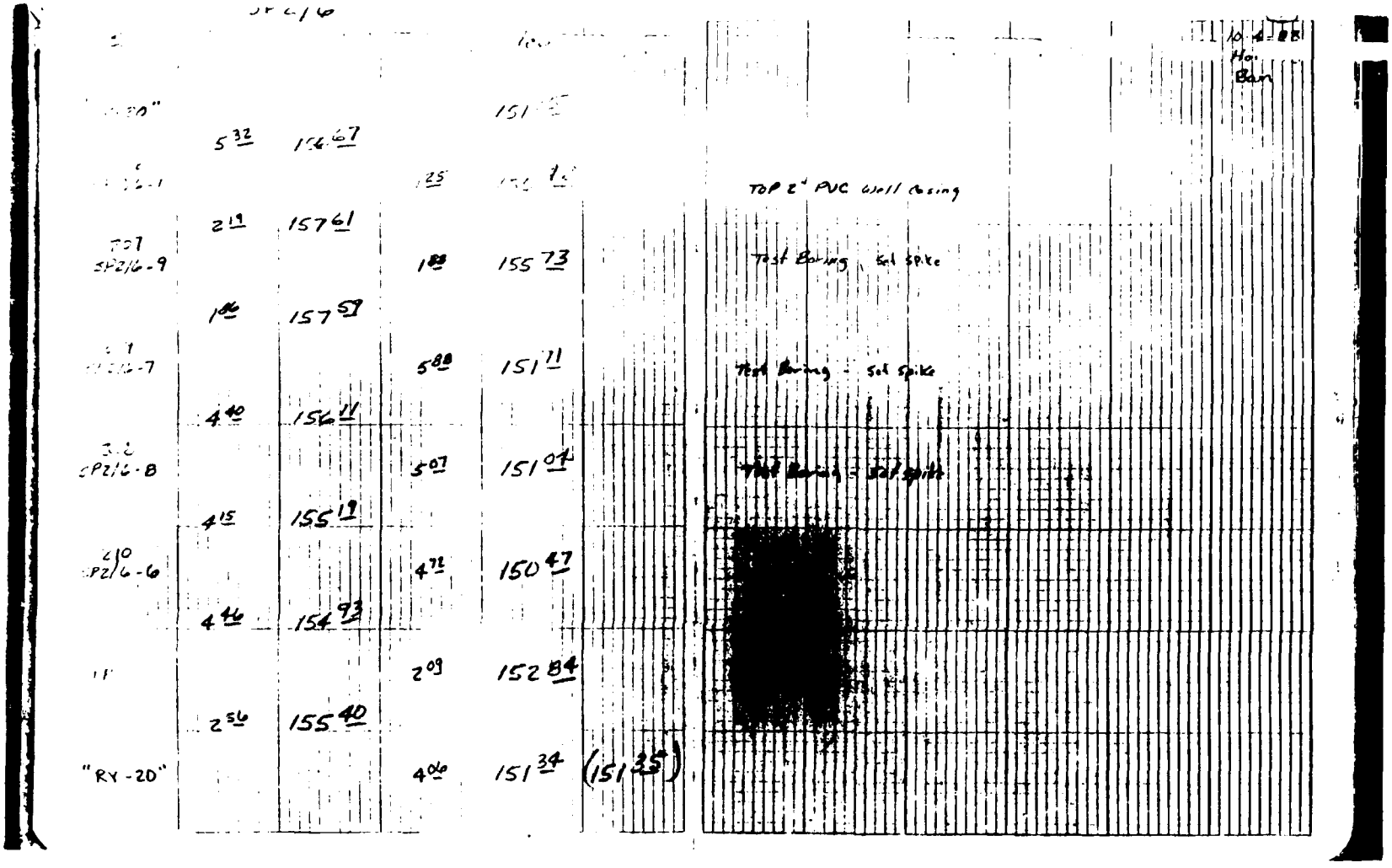
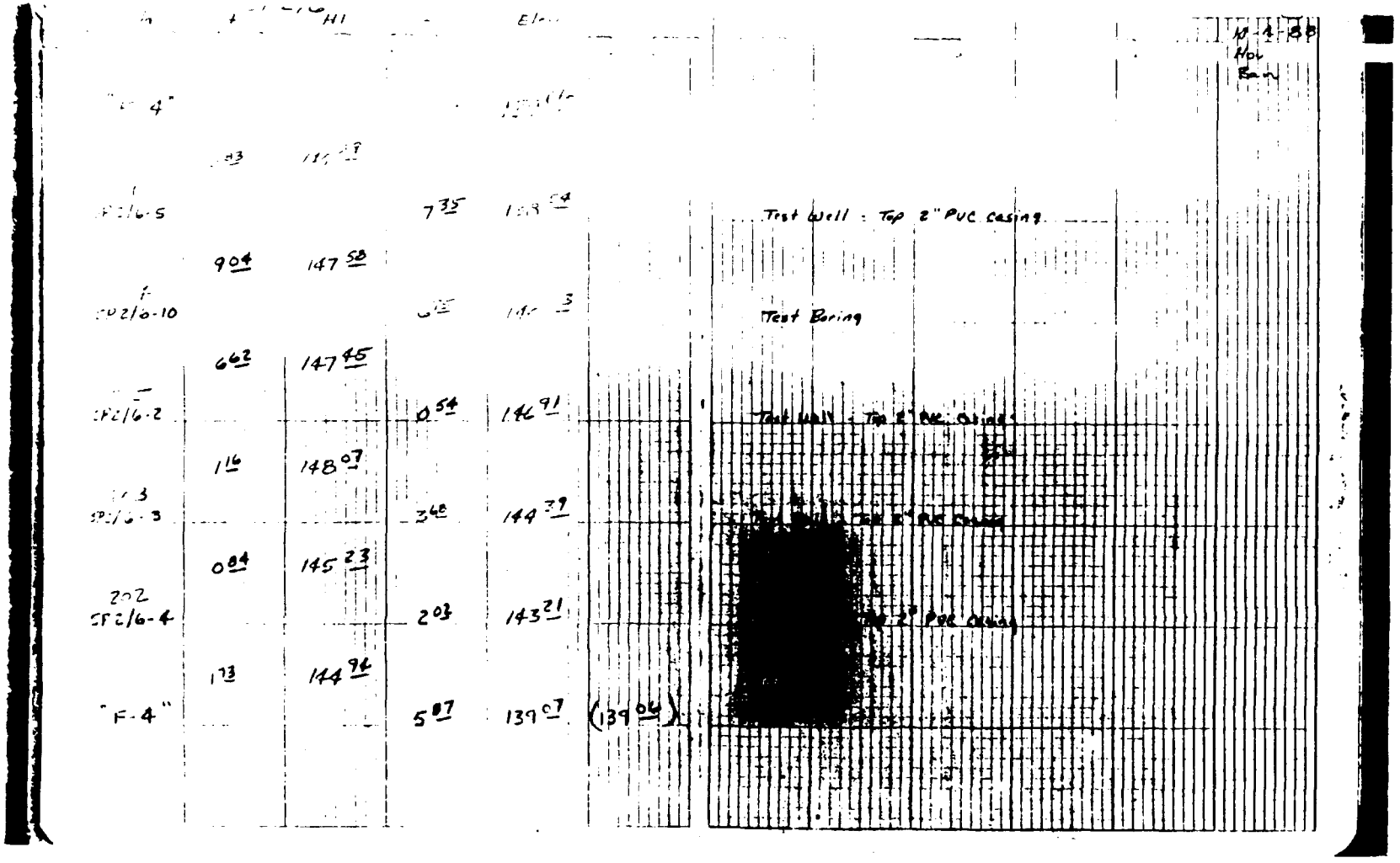
m) 139°25'18"

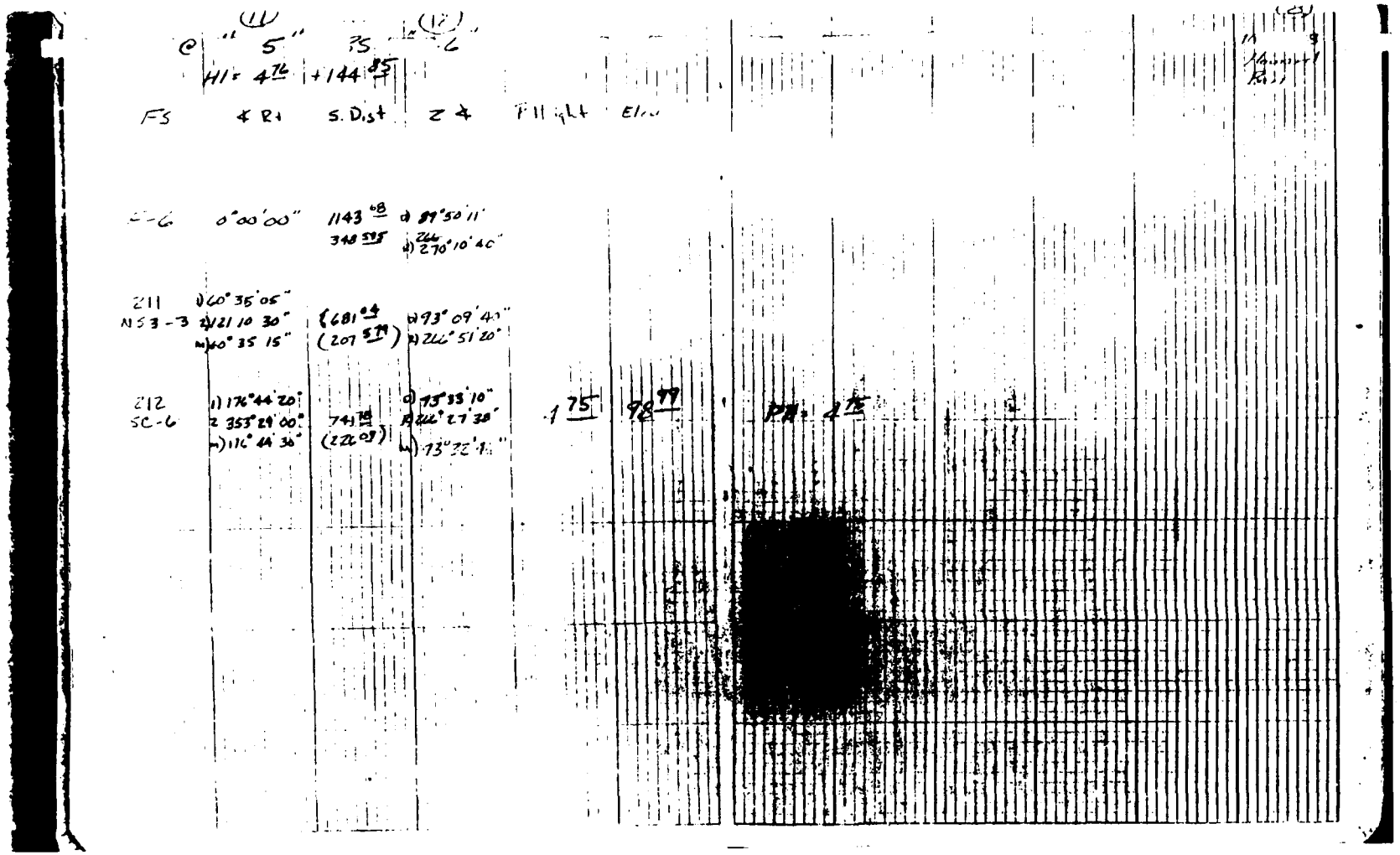



SK 2/6
T P "RY-20" BS AD-13
I Bl S. Dist Z ∠
90°08'00"
609 58
(185 59)
1) 234° 29' 58" 267 55
2) 108° 58' 42" (81 46) 268° 56' 58"
M) 234° 29' 31"
1) 256° 12' 30" 35 42 87° 19' 42"
2) 152° 24' 45" (108 05) 270° 40' 55"
M) 256° 12' 23"
1) 274° 22' 56" 389 28 90° 14' 54"
2) 188° 46' 00" (118 31) 269° 45' 54"
M) 94° 23' 00"
311
1) 267° 20' 14" 522 03
2) 174° 40' 40" (99 91)
M) 87° 20' 40"
267°
89° 19' 55"
270° 42' 00"


SPC/6
(1)
(51)
AD-3
BS
RY-CO
RI
S. Dist
Z #
i) 59°33'10" (167.11) o) 89°52'20"
c) 179°06'00" 548.98 R) 270°08'30"
m) 35°
59°33'00"
1/6-6

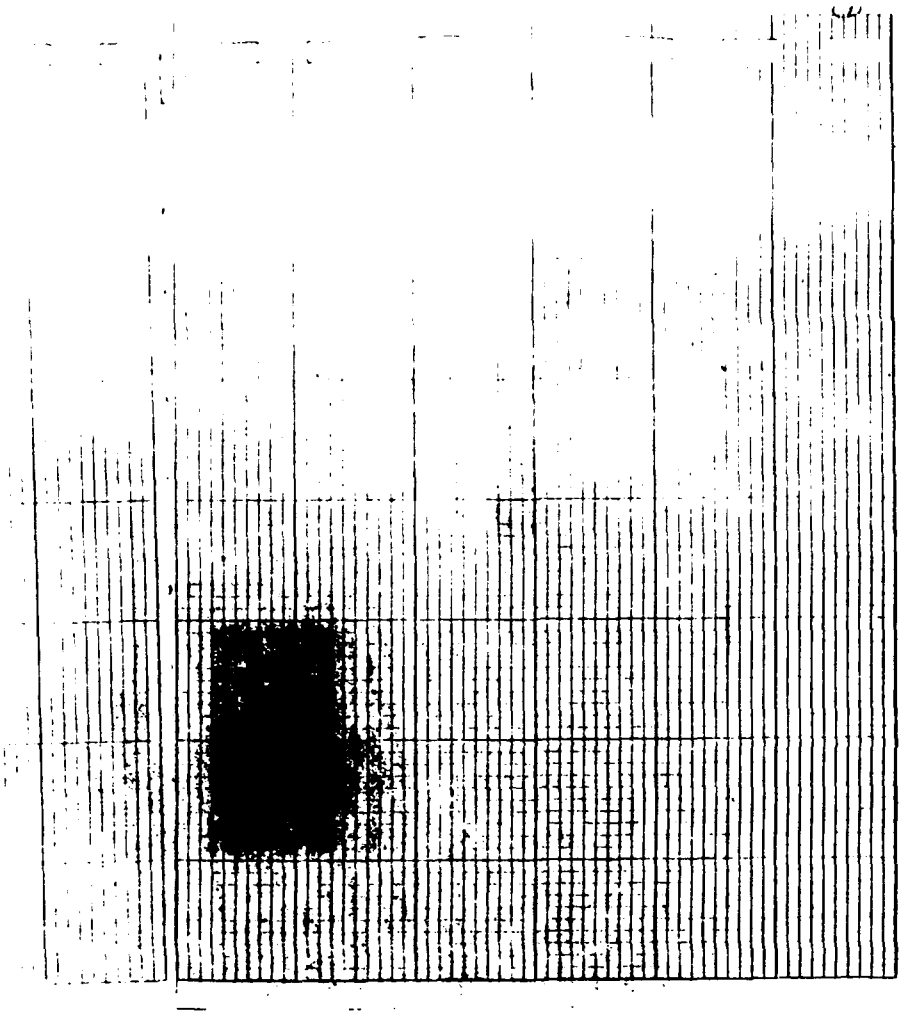

TOP 2" PVC well casing
Test Boring - Soil Spike
Test Boring - Soil Spike
Test Boring - Soil Spike
SP2/6-9
SP2/6-7
SP2/6-8
SP2/6-6
"RX-20"
5 32
156 67
2 19
157 61
1 86
157 59
4 40
156 11
4 15
155 19
4 46
154 93
2 56
155 40
1 25
1 88
5 88
5 07
4 72
2 09
4 06
155 73
151 11
151 07
150 47
152 84
151 34
(151 25)


Test Well : Top 2" PVC casing
Test Boring



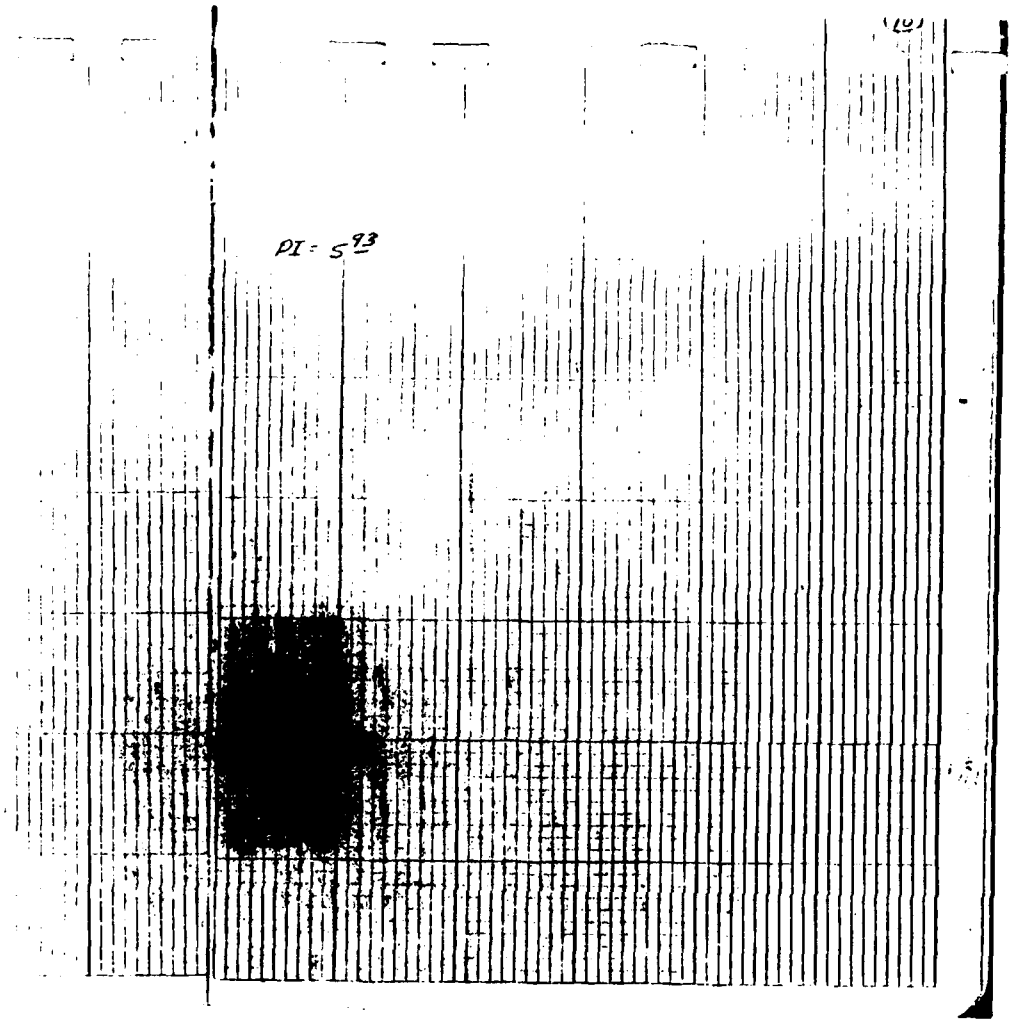
(12) (11)

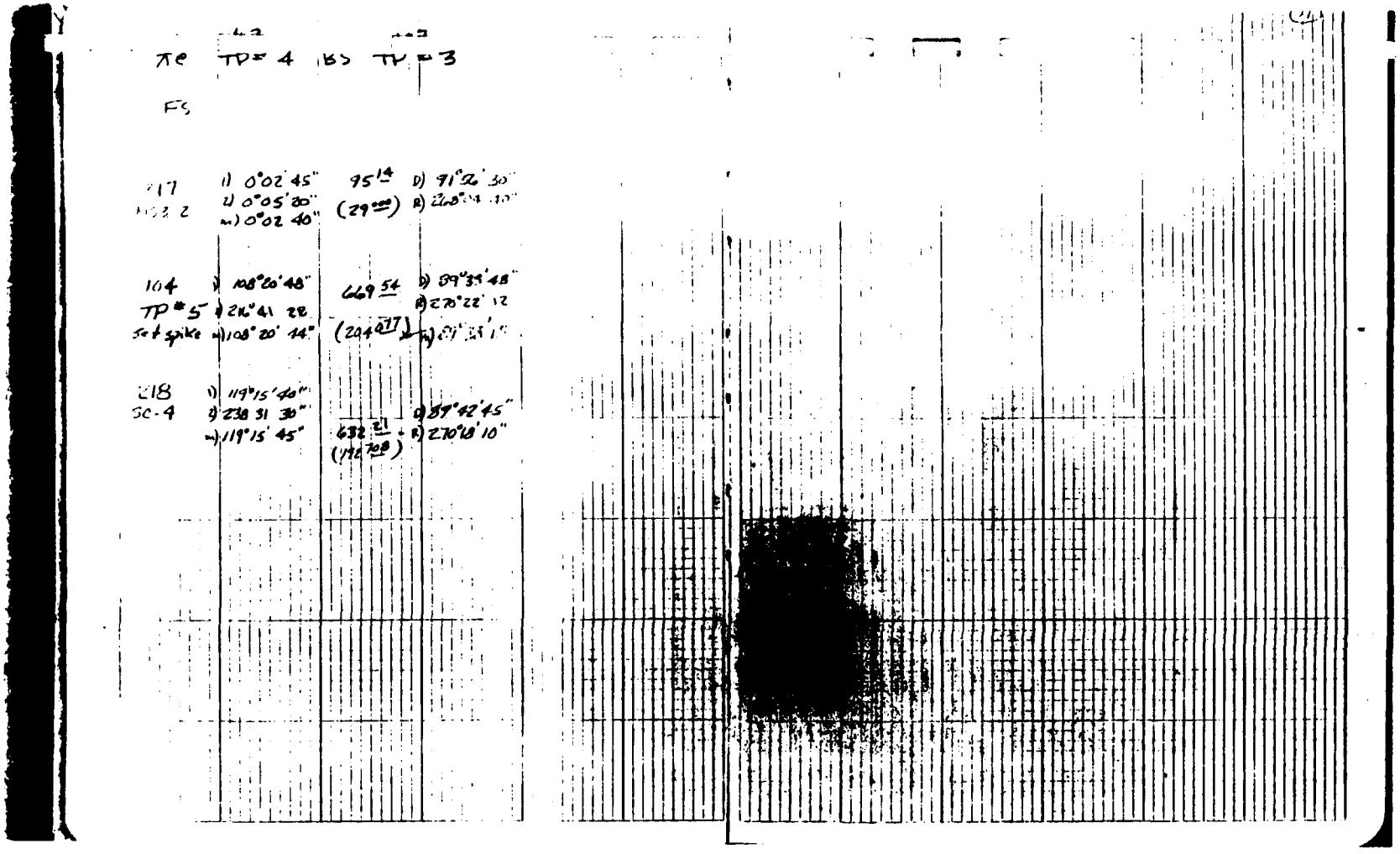
	12°47'52"		
NS3-4	25°36'10"	382 32	89°56'53"
	12°48'05"	(116 524)	270°-.-02
	316°38'40"		92°10'00"
NS3-5	223 18 00	302 56	267°42'50"
	316°39'00"	(92 218)	
	239°20'13"		
N.3-6	118°40'50"	655 84	89°57'03"
	239°20'25"	(199 898)	270°04'03"
	311°20'53"	762 26	91°46'54"
	242°42'10"	(232 335)	268°19'57"
	311°21'05"		

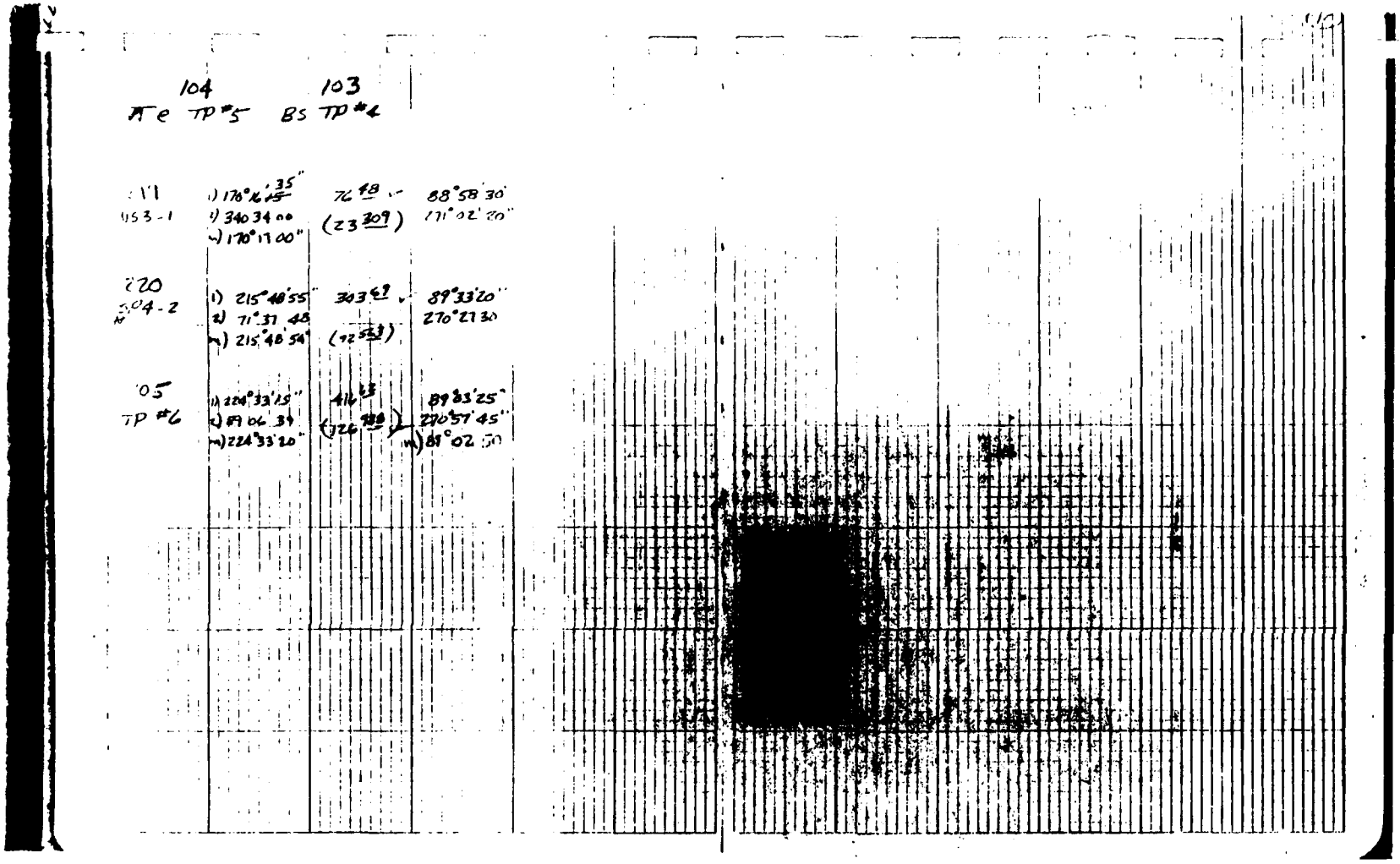


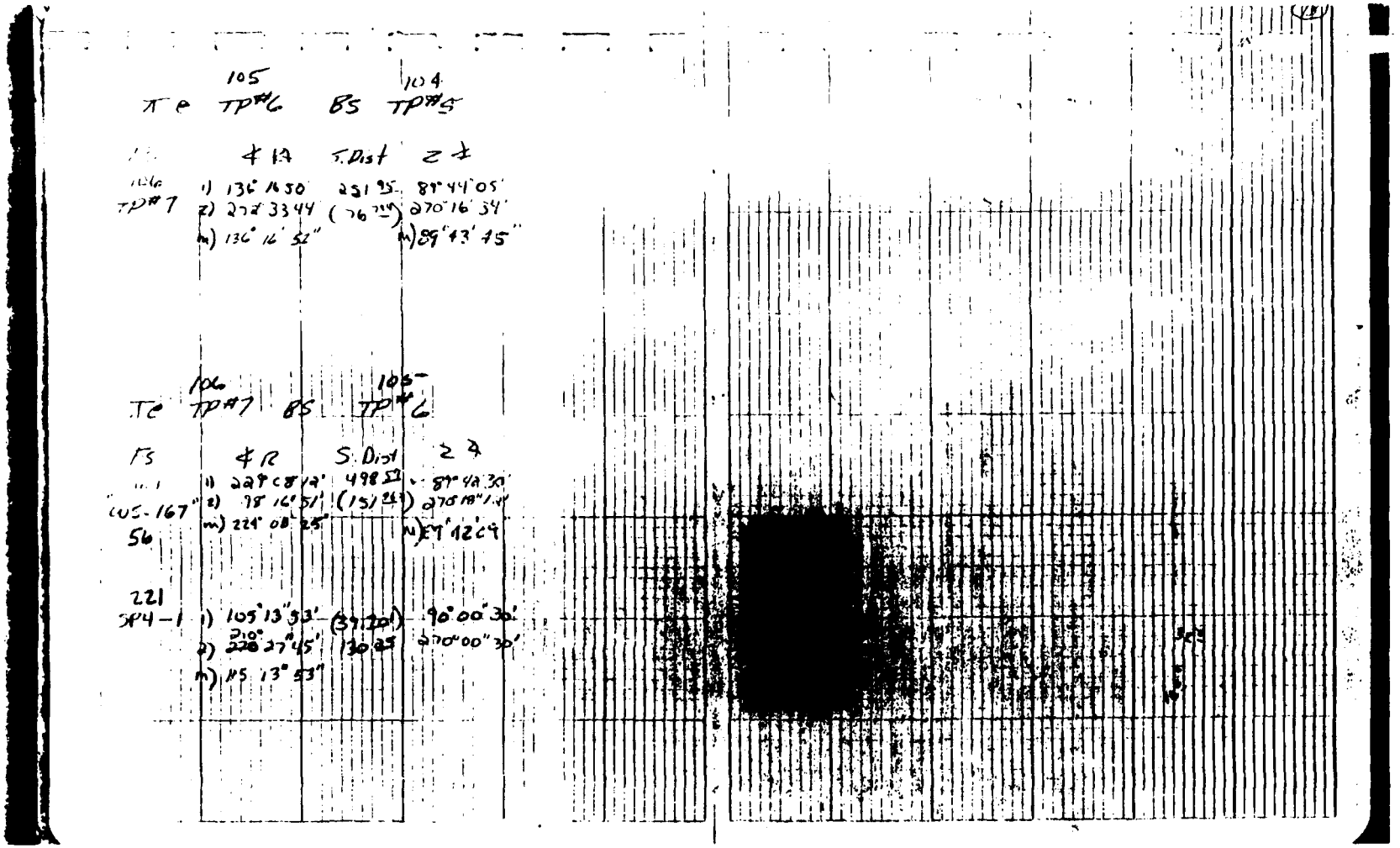
	101			12
At	TP#2		BS	F-6
	HI = 5.12			
FS	∠ R+		S Dist	Z ∠
216	1) 218°44'40"			
SC-5	2) 27°23'20"	723.87		1) 91°45'37"
	4) 218°44'30"	(220.690)		2) 268°15'10"
102	1) 82°24'10"	886.26		90°34'03"
TP#3	2) 172°48'30"	(270.235)		269°26'15"
Set Spike	4) 82°24'15"			

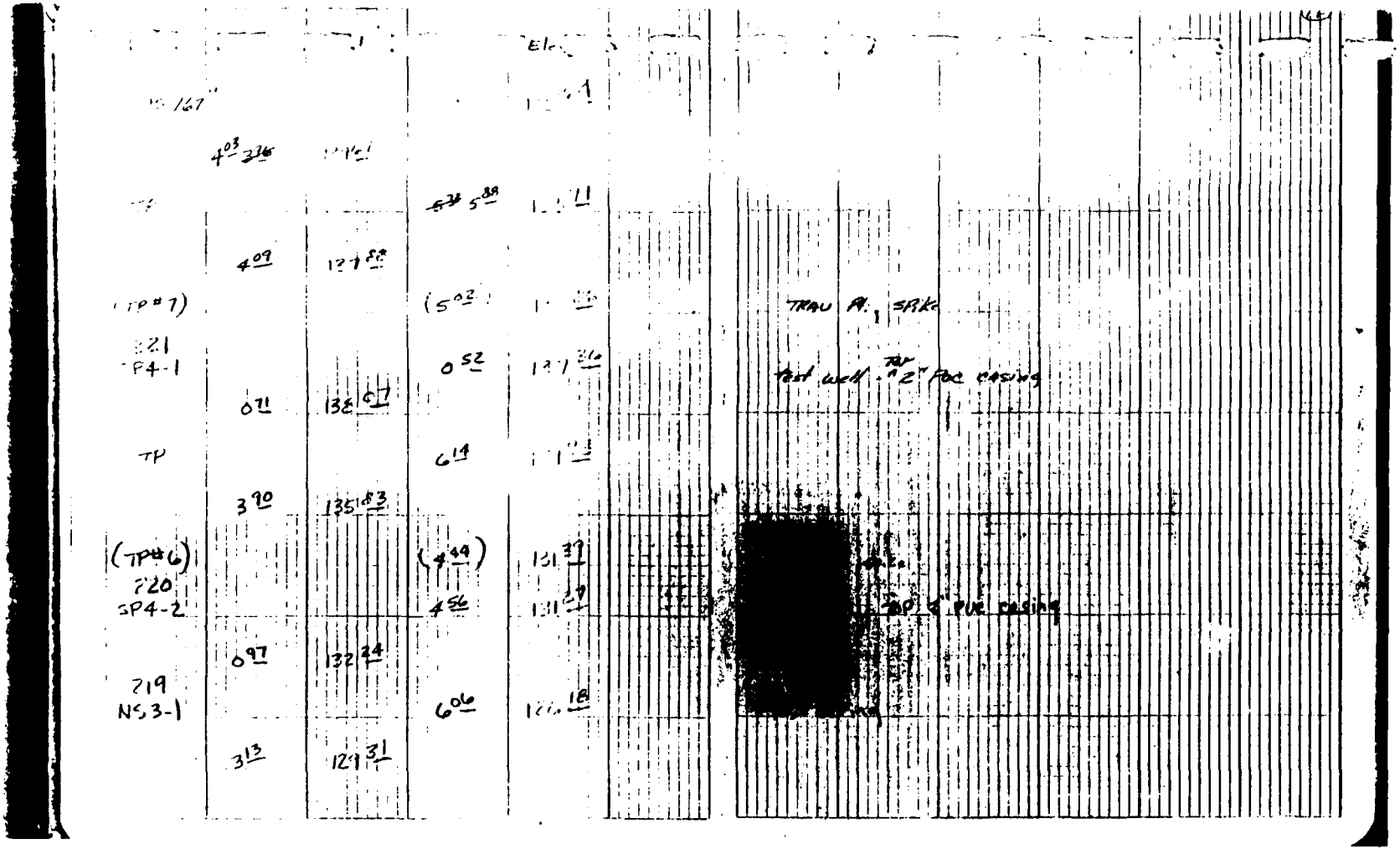
	102		101	
At	TP#3	BS	TP#2	
FS				
103	1) 225°48'50"	457.20		89°34'15"
TP#4	2) 71°37'52"	(139.37)		270°01'00"
	4) 225°48'52"			89°53'37"

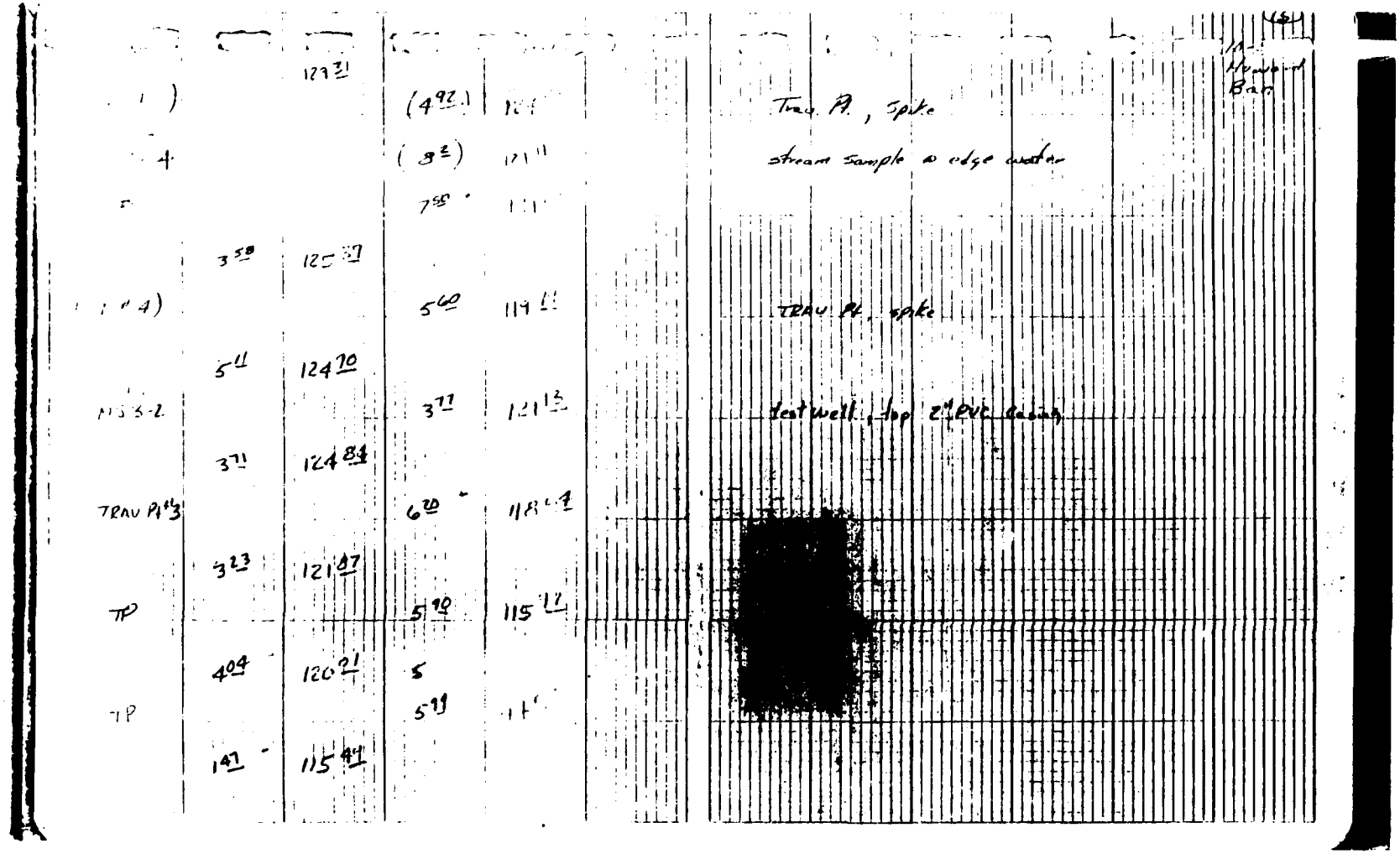


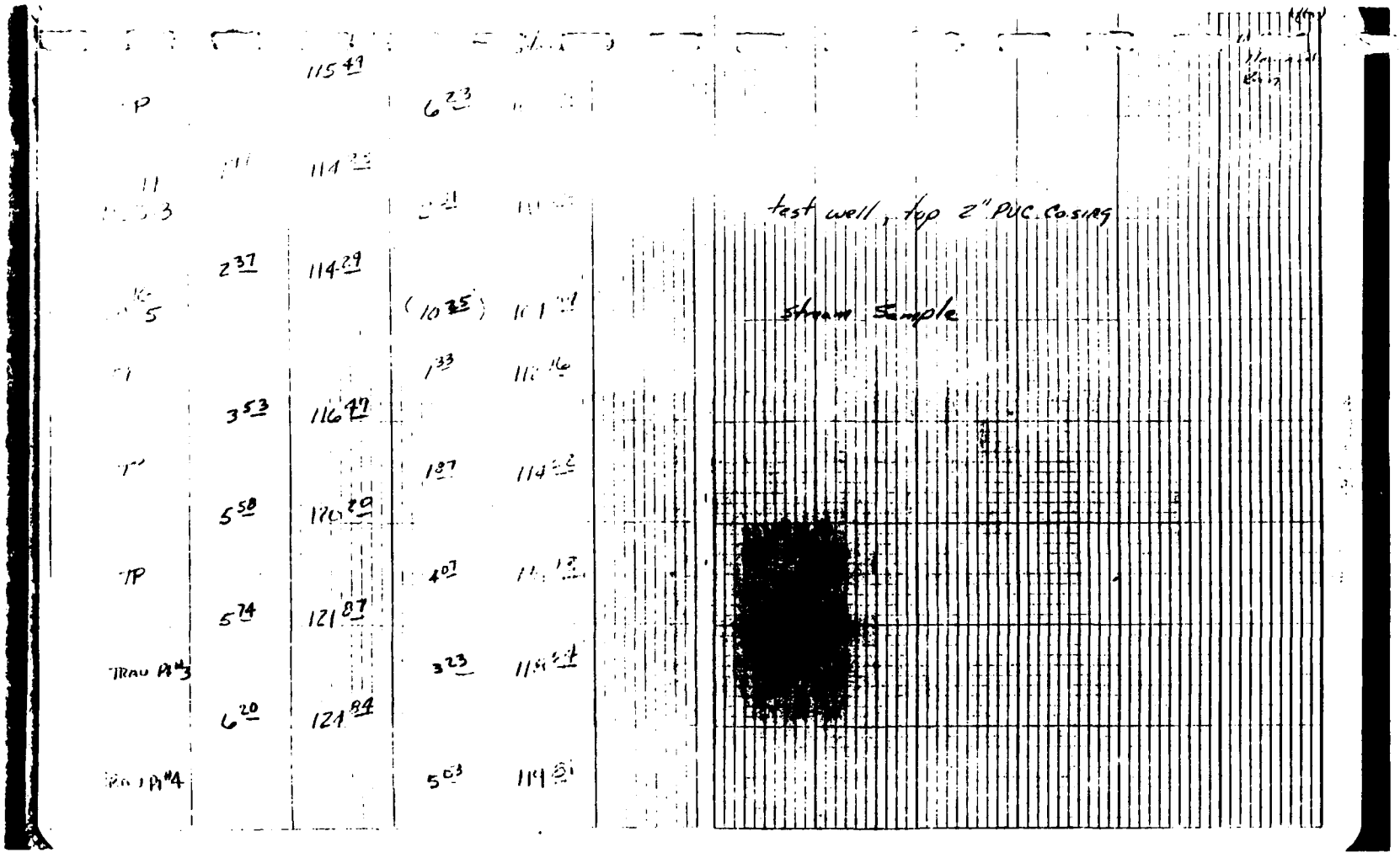

TP = 4
BS
TP = 3
FS
117
103 2
i) 0°02'45"
ii) 0°05'20"
iii) 0°02'40"
95 14
(29 00)
D) 91°52'30"
B) 268°04'30"
104
TP # 5
set spike
i) 108°20'48"
ii) 216°41'28"
iii) 108°20'14"
669 54
(204 27)
D) 89°39'48"
B) 270°22'12"
iii) 89°25'18"
118
SC-4
i) 119°15'40"
ii) 238°31'30"
iii) 119°15'45"
632 21
(192 708)
D) 89°42'45"
B) 270°18'10"

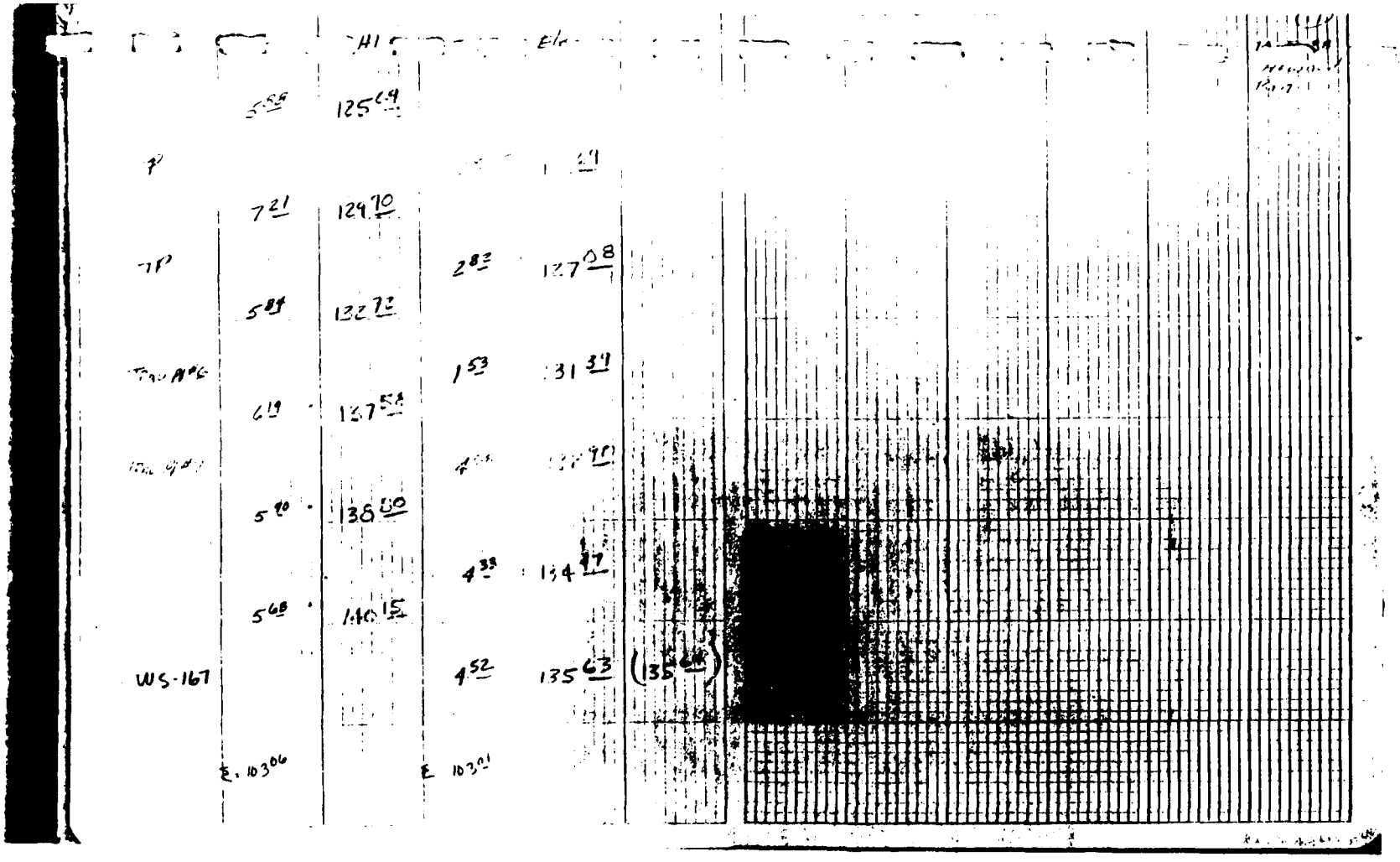

104
At e TP #5
103
BS TP #4
1) 170°46'35"
2) 340 34 00
3) 170°17'00"
76 48
(23 309)
88°58'30"
171°02'30"
220
1) 215°48'55"
2) 71°37'45
3) 215°48'54"
303 62
(72 53)
89°33'20"
270°27'30
05
TP #6
1) 224°33'25"
2) 89 06 34
3) 224°33'20"
416 63
(126 189)
89°33'25"
270°57'45"
89°02'50

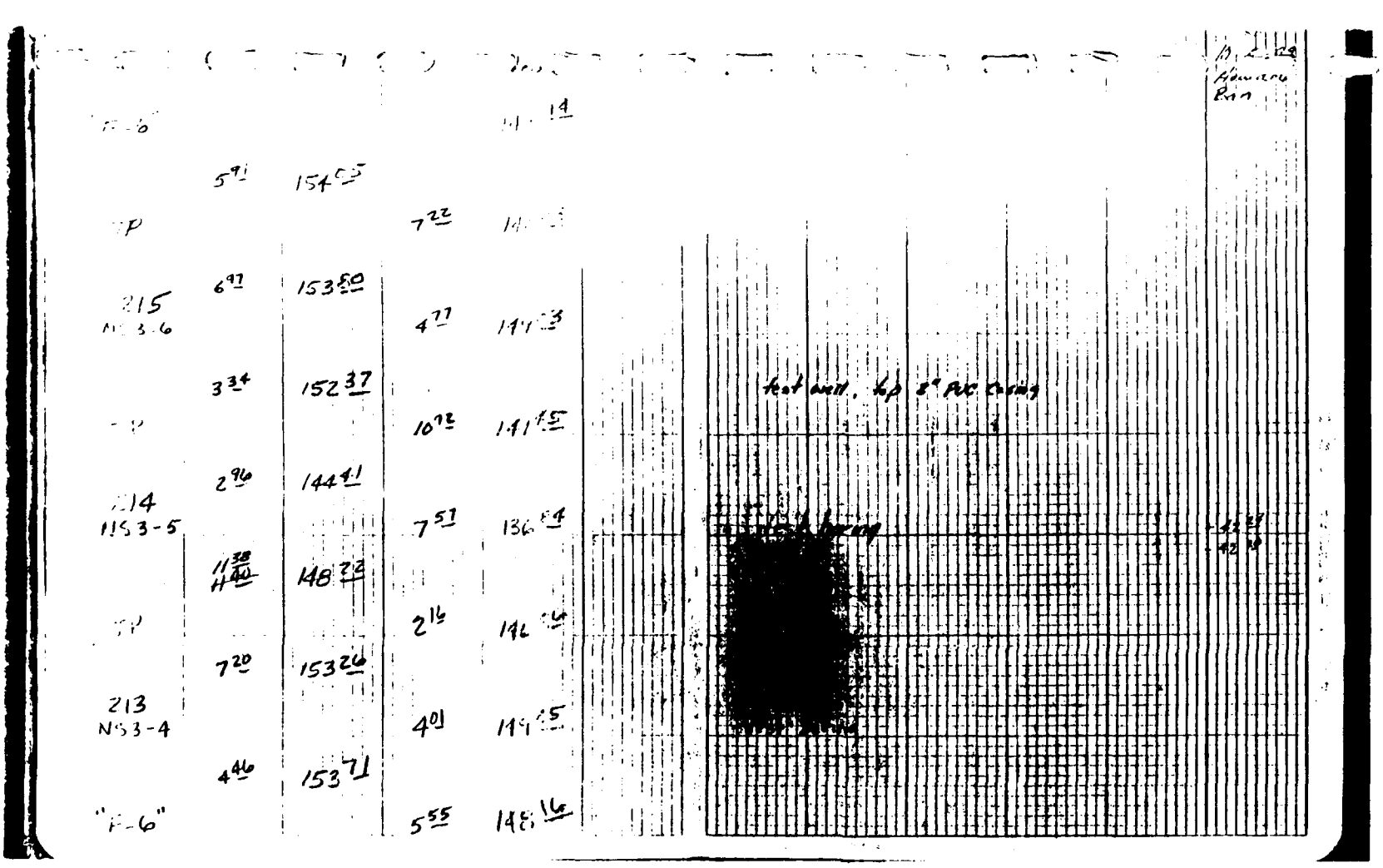



TRAU Pl. 1 SP1
test well - 7" 2" face casing
SP 4" PVC casing


Trav. Pt., Spike
stream sample @ edge water
TRAV Pt., spike
test well, top 2" PVC casing


test well, top 2" PVC casing
stream sample




F-6
5 91
154 05
7 22
P
215
NS3-6
6 97
153 50
4 77
3 34
152 37
10 72
P
2 96
144 41
214
NS3-5
7 51
11 38
H 40
148 32
2 16
P
7 20
153 26
213
NS3-4
4 01
4 46
153 71
"F-6"
5 55
heat exch. bldg 8" PVC casing

(14) (13)

To "G-1A" BS "G-1"

	∠ Rt	S Dist	Zx
"G-1"	0°00'00"	120.11	D) 90°14'40"
222	1) 139°40'15"	374.82	D) 90°38'54"
SP4-3	2) 229°20'17"	114.48	R) 269°21'46"
	M) 139°40'09"		

test well, top 8" PVC casing

		HI		Elev
"G-1A"				
	3.57	176.64		173.07
222 SP4-3			2.97	173.67
	3.66	177.33		
"G-1A"			4.26	173.07

(30)

"MB-130" BS "MB-131"

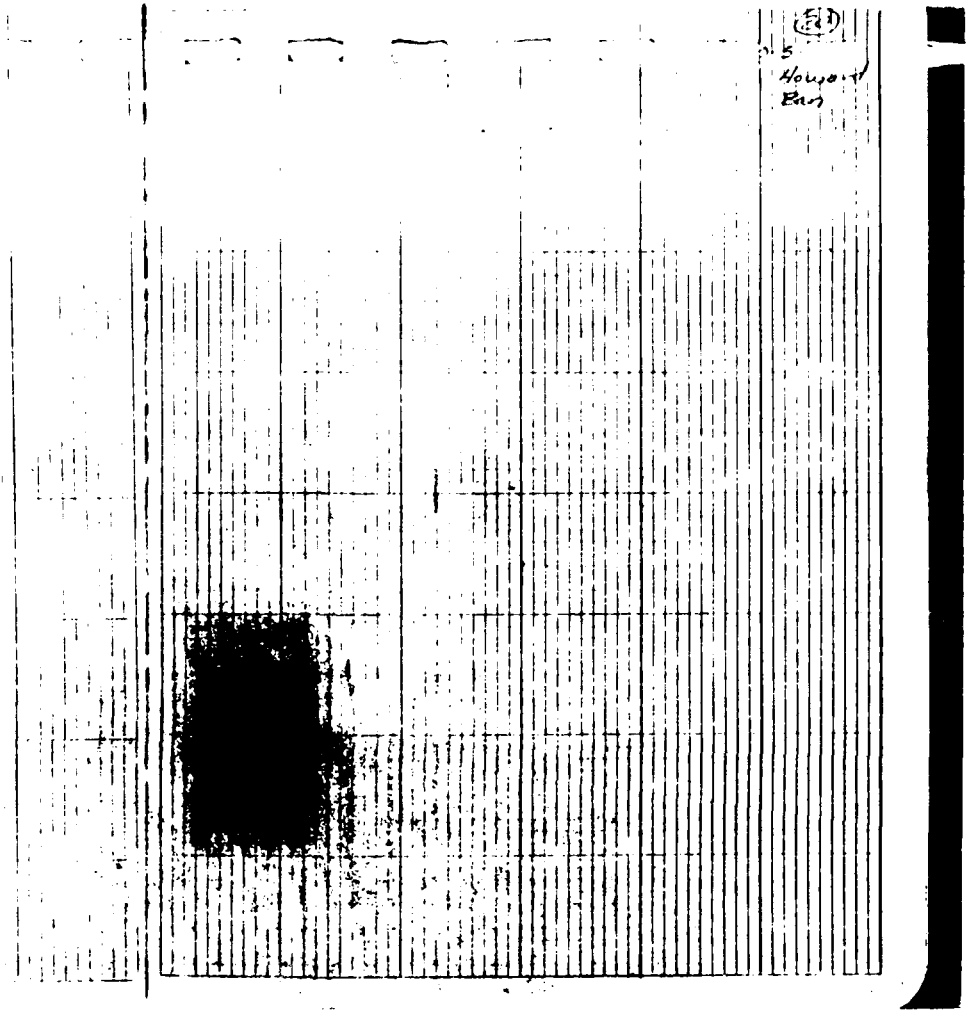
S ∠R1 Dist Z ∠

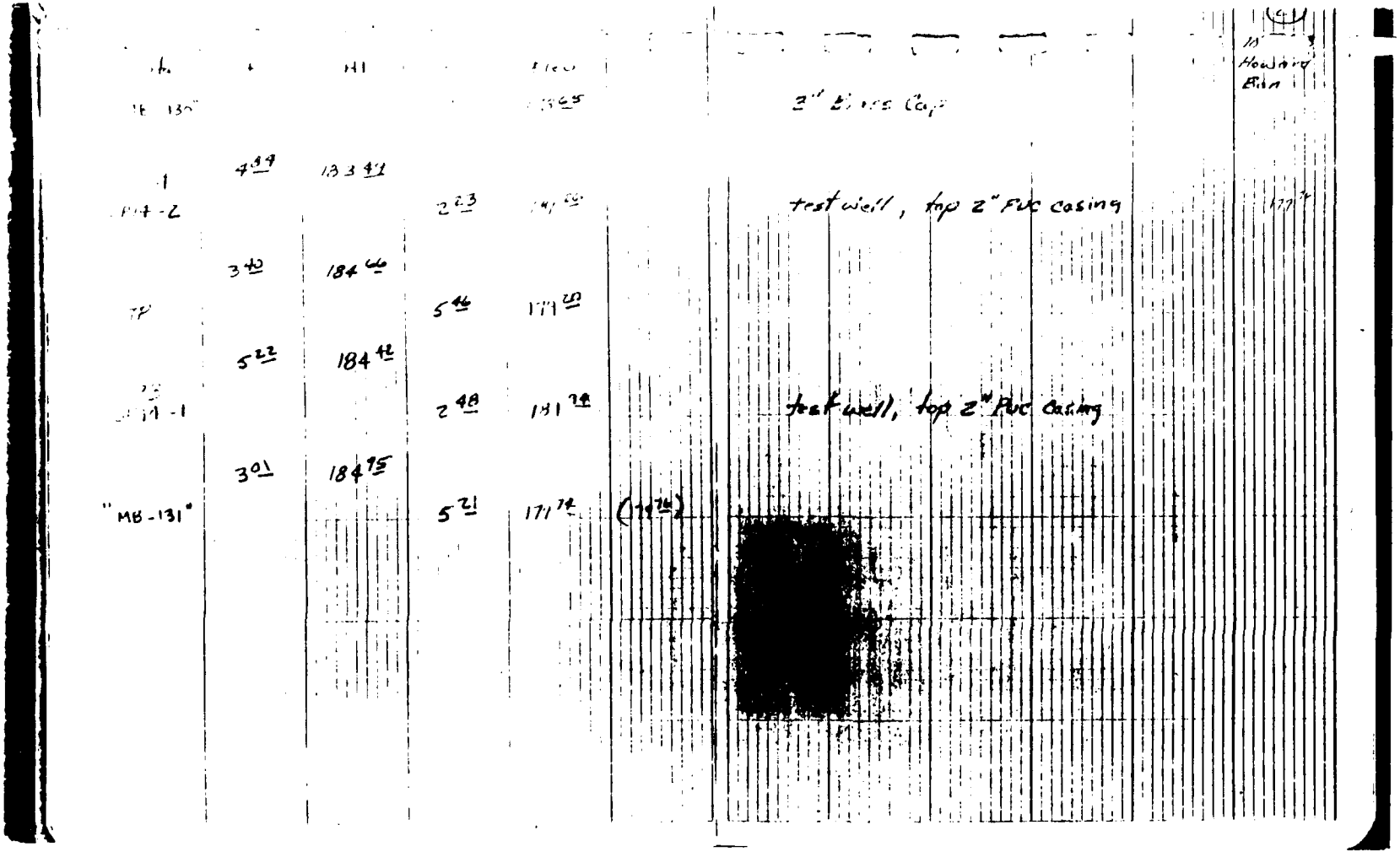
"MB 131" 0°00'00" (280 [illegible]) 89°56'37

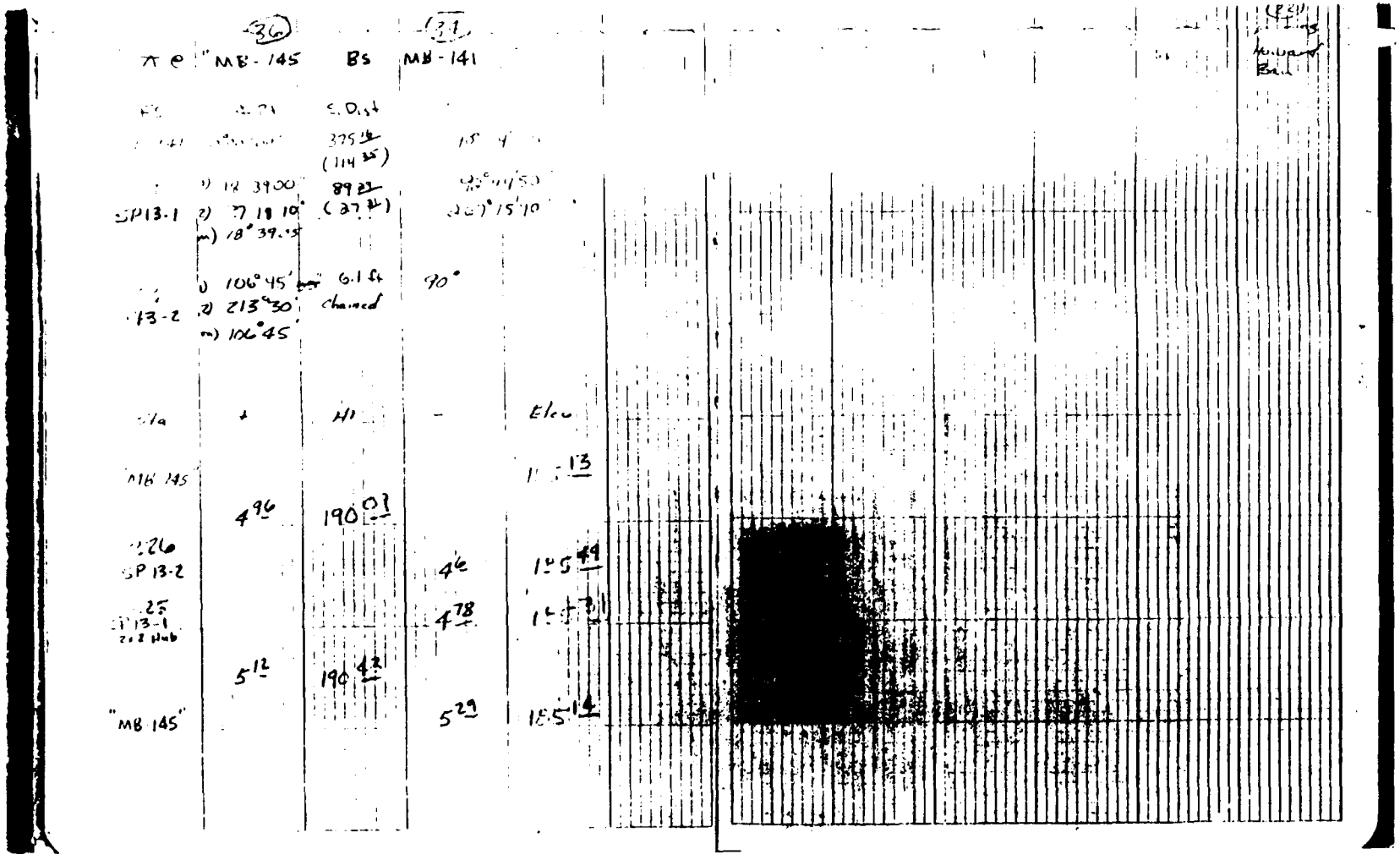
95[illegible]

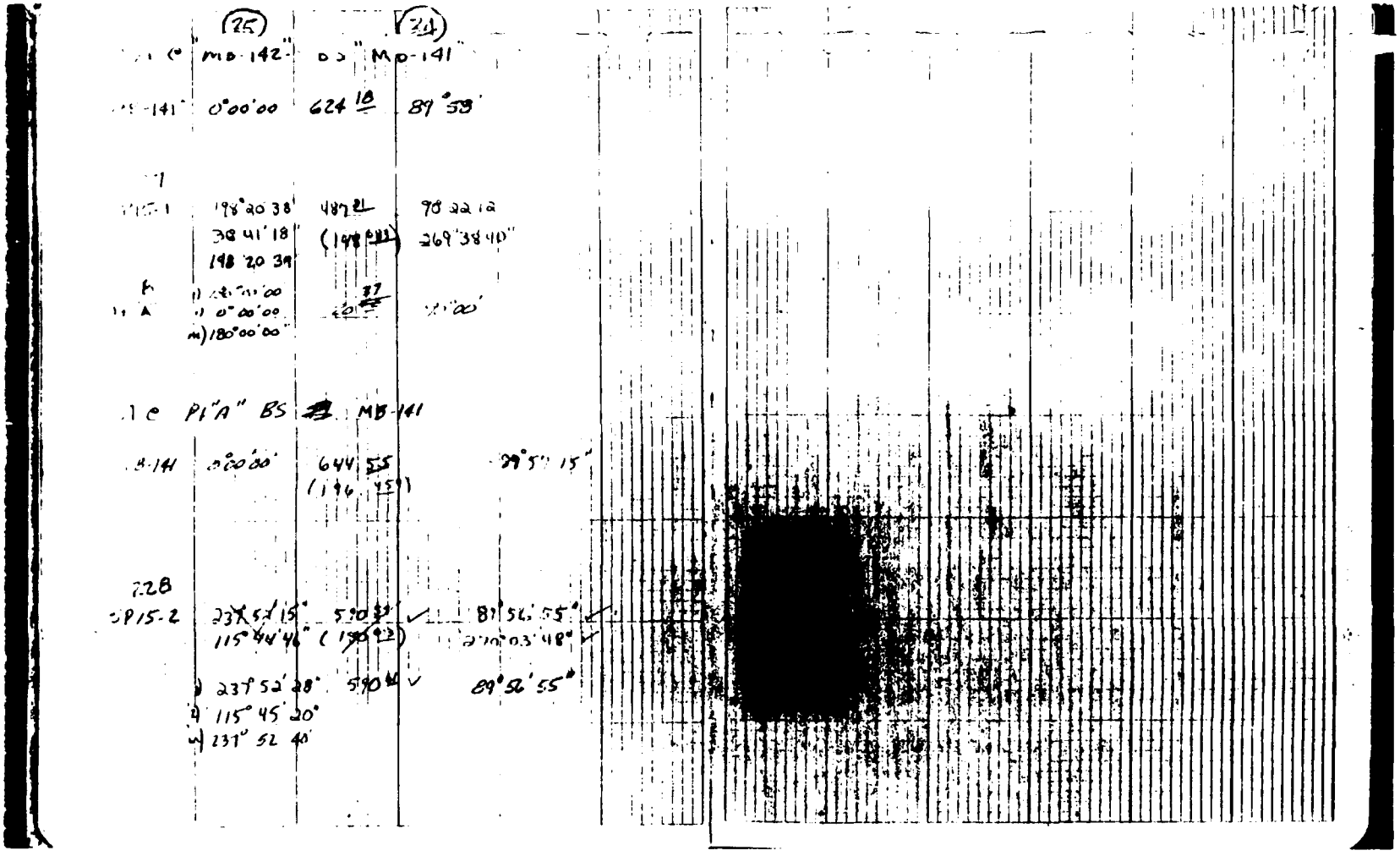
1) 352°56'17" (285 [illegible]) 90°04'48"
2) 345°52'25" 935 [illegible] 269°56'04"
m) 352°56'13"

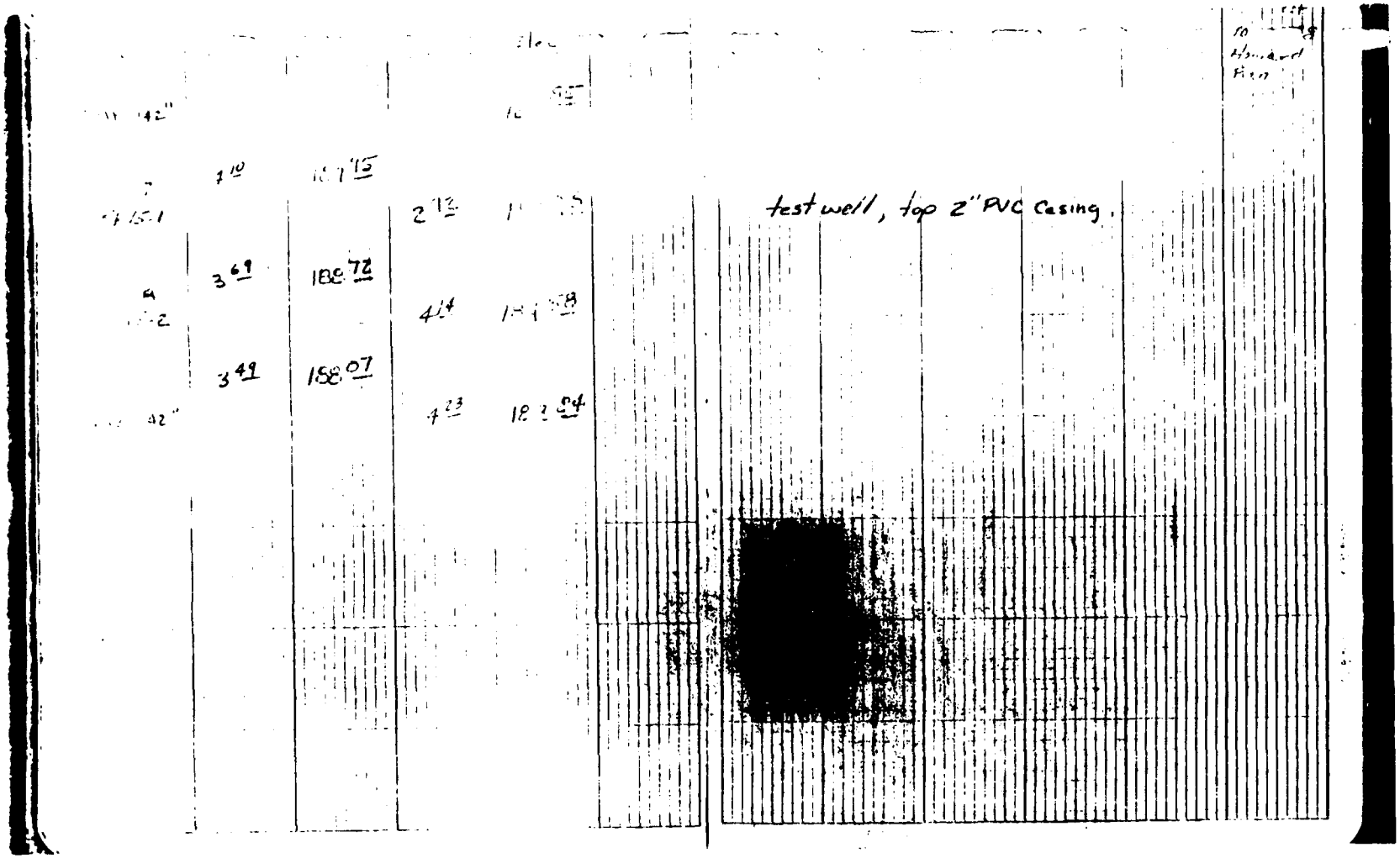
1) 332°51'33" 322 [illegible] 90°28'02"
2) 305°38'37" (67 [illegible]) 269°32'32"
m) 332°51'19"

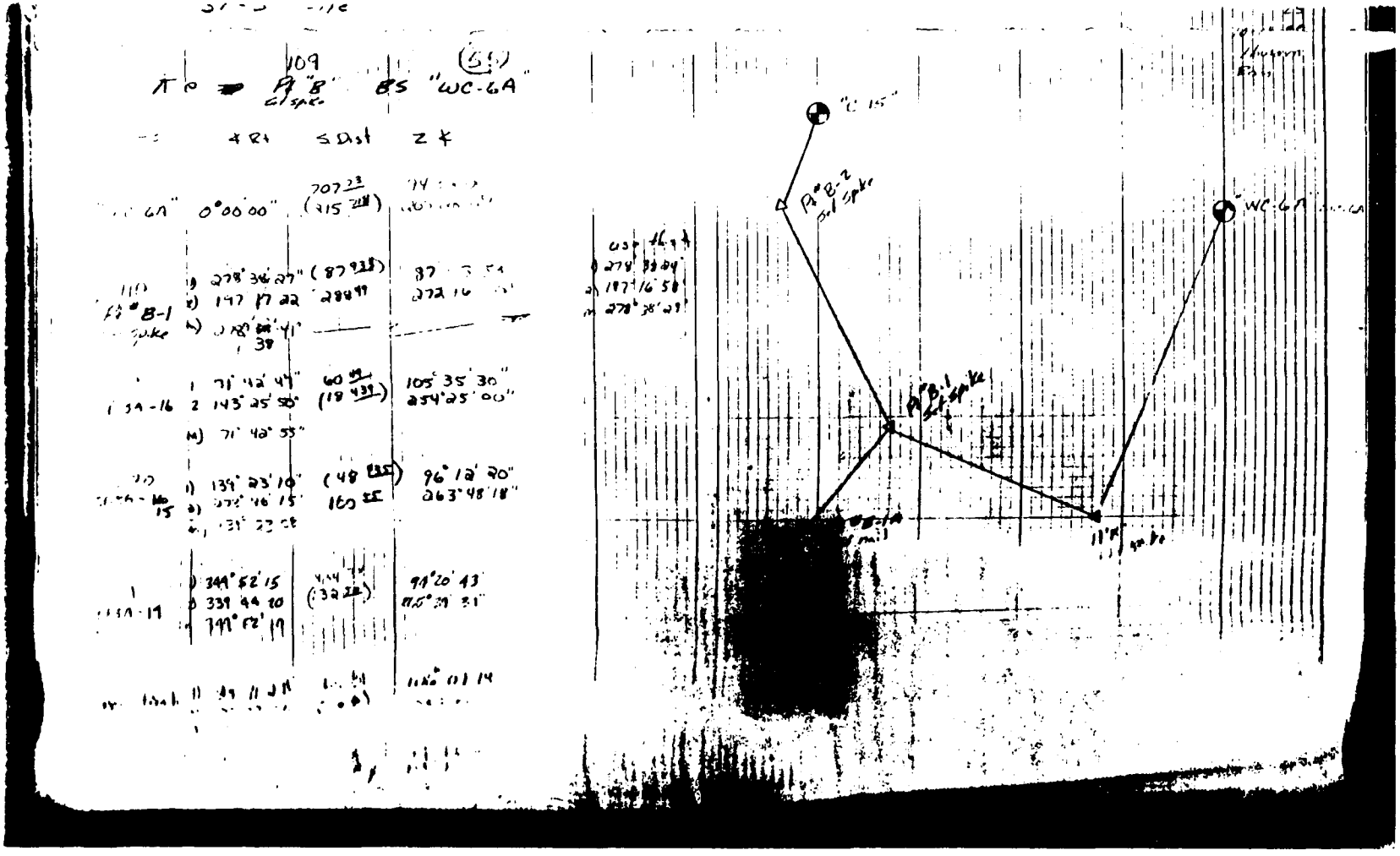



Housing Elev
3" PVC Cap
test well, top 2" PVC casing
test well, top 2" PVC casing
"MB-131"






test well, top 2" PVC casing.

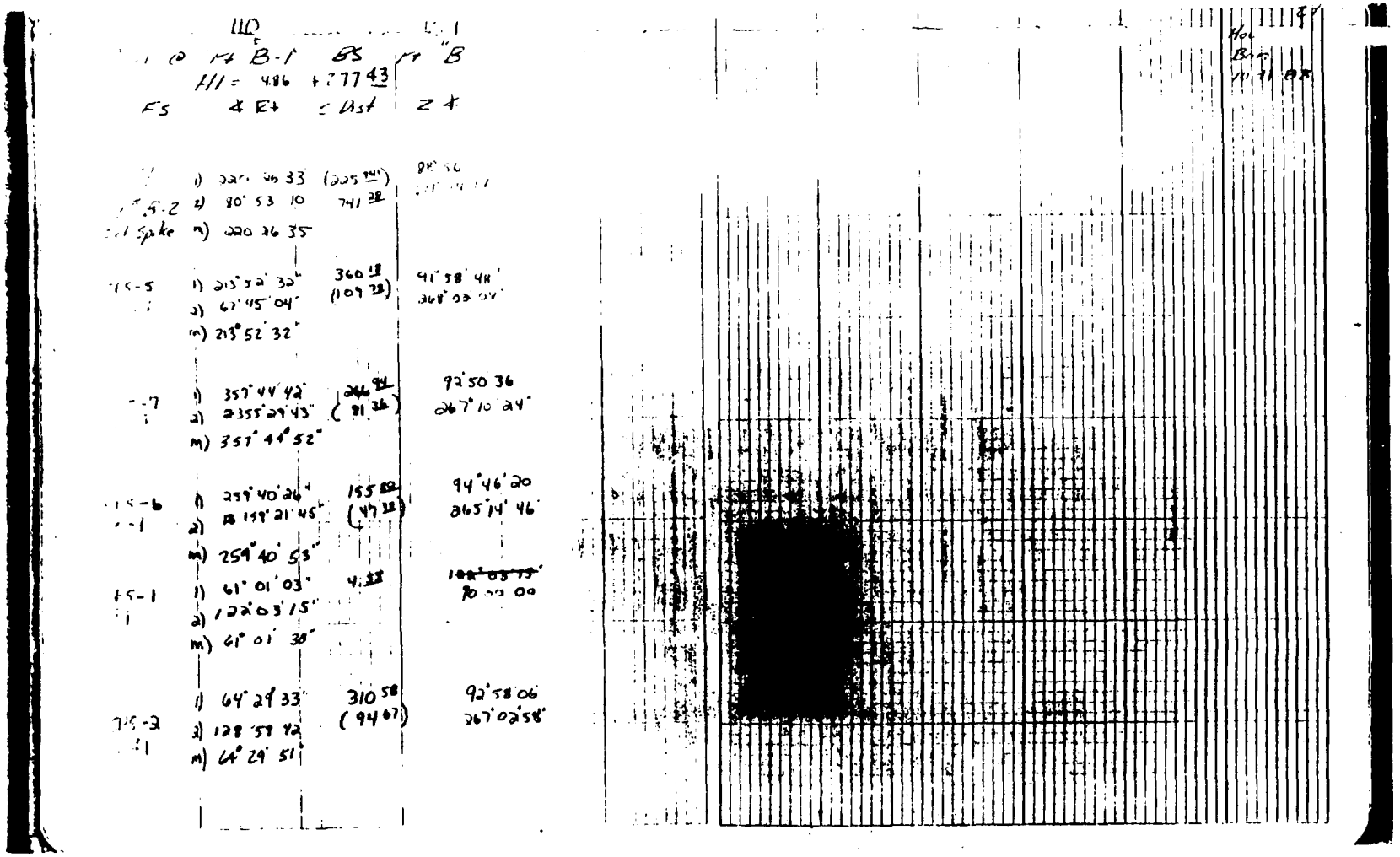

"C-15"
"WC-6A"

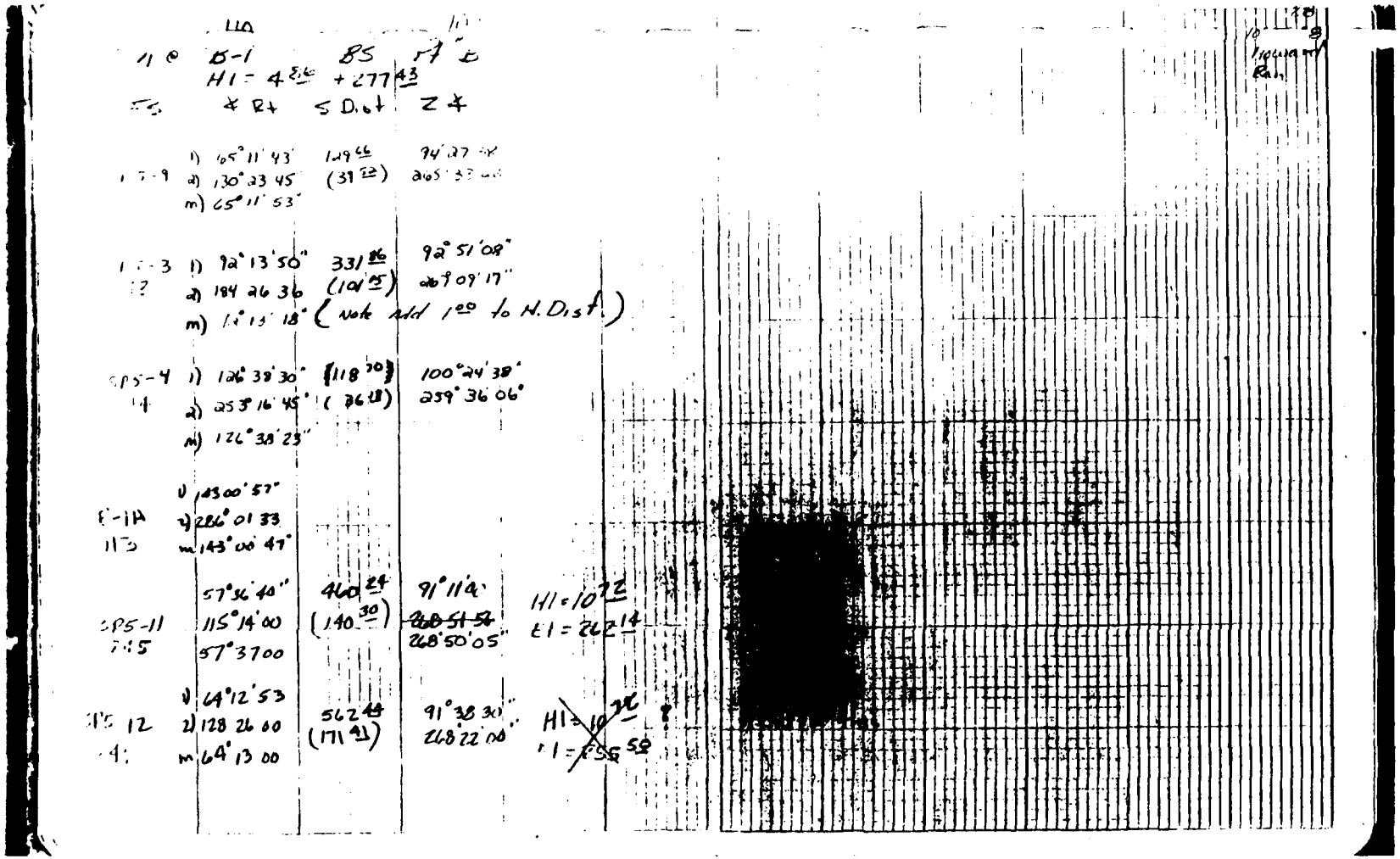
$HI = 4\frac{35}{109} + 666\frac{1}{55}$

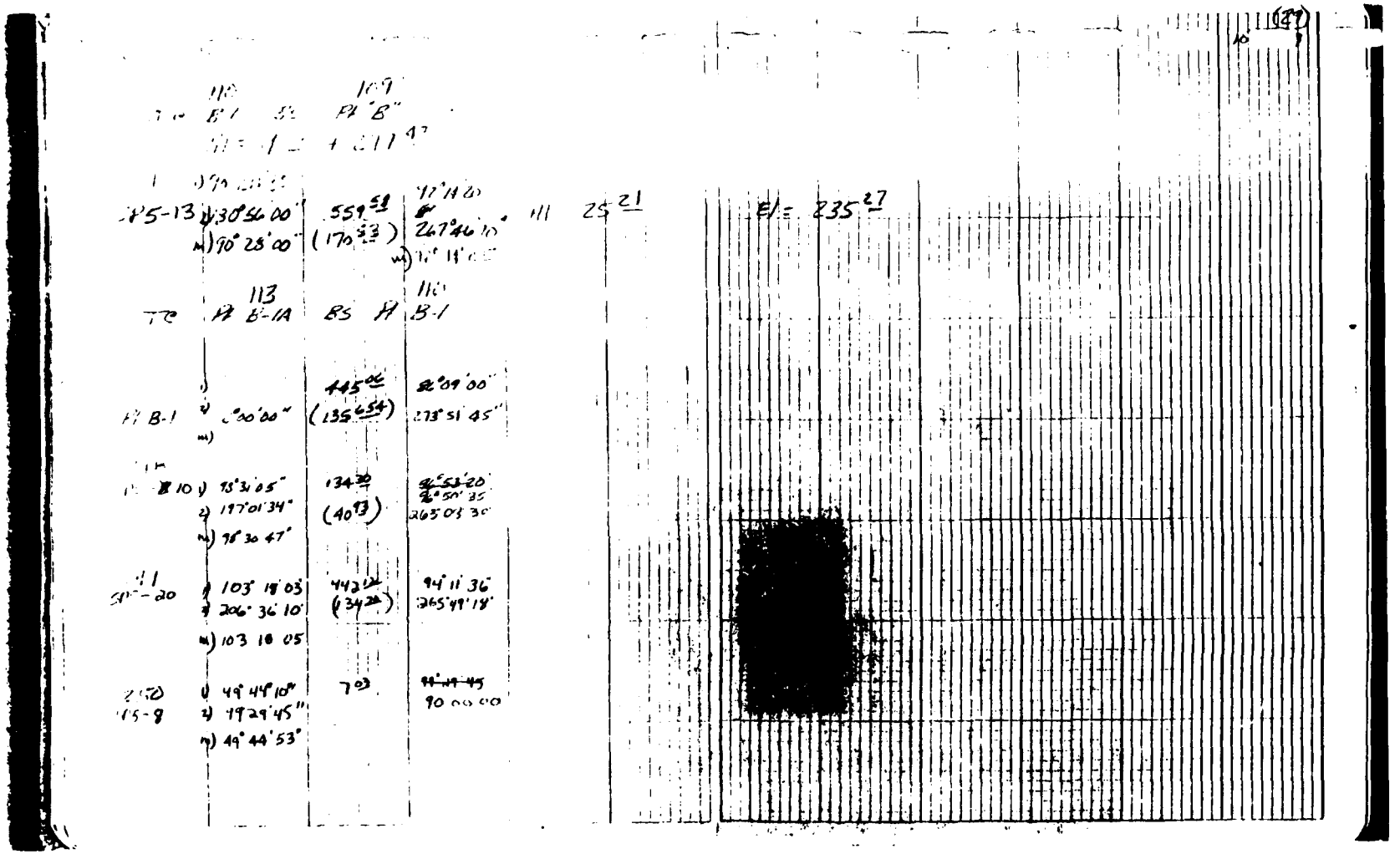
TC Pt "B" BS WC-6A

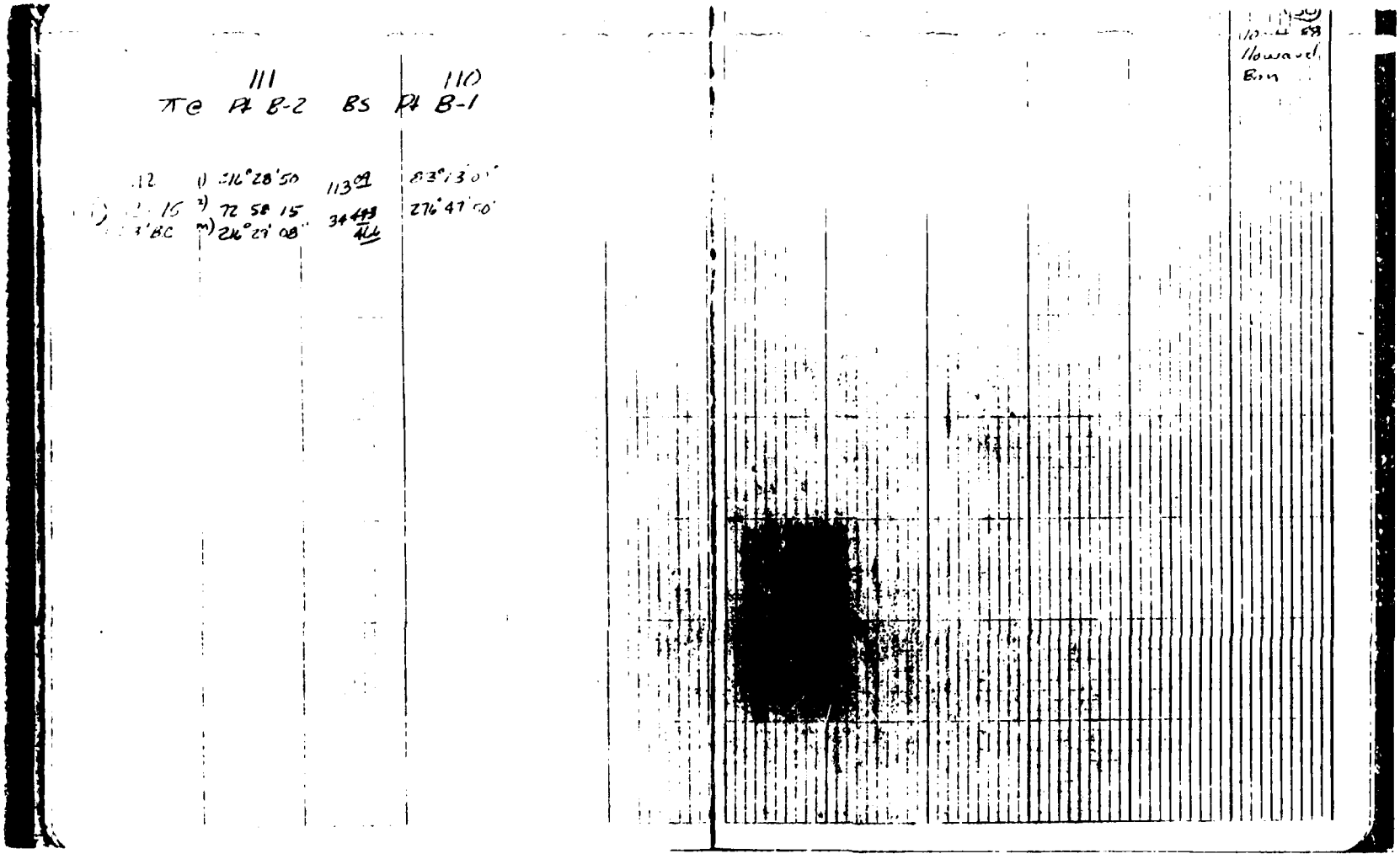
1				
12	1) 345° 29' 14"	(91.43)		95° 09' 13"
	2) 350° 53' 33"	3m 23		
	3) 345° 29' 16"			
-17	1) 358° 38' 41"	$157\frac{36}{(47.8)}$		79° 00' 17"
	2) 359° 12' 15"			
	3) 358° 36' 08"			
	1) 65° 52' 00"	$114\frac{62}{(34.7)}$	105° 22' 45"	$HI = 10\frac{72}{}$
	2) 181° 42' 55"		254° 34' 06"	
	3) 65° 51' 28"	(34.7)		$EI = 229\frac{30}{}$

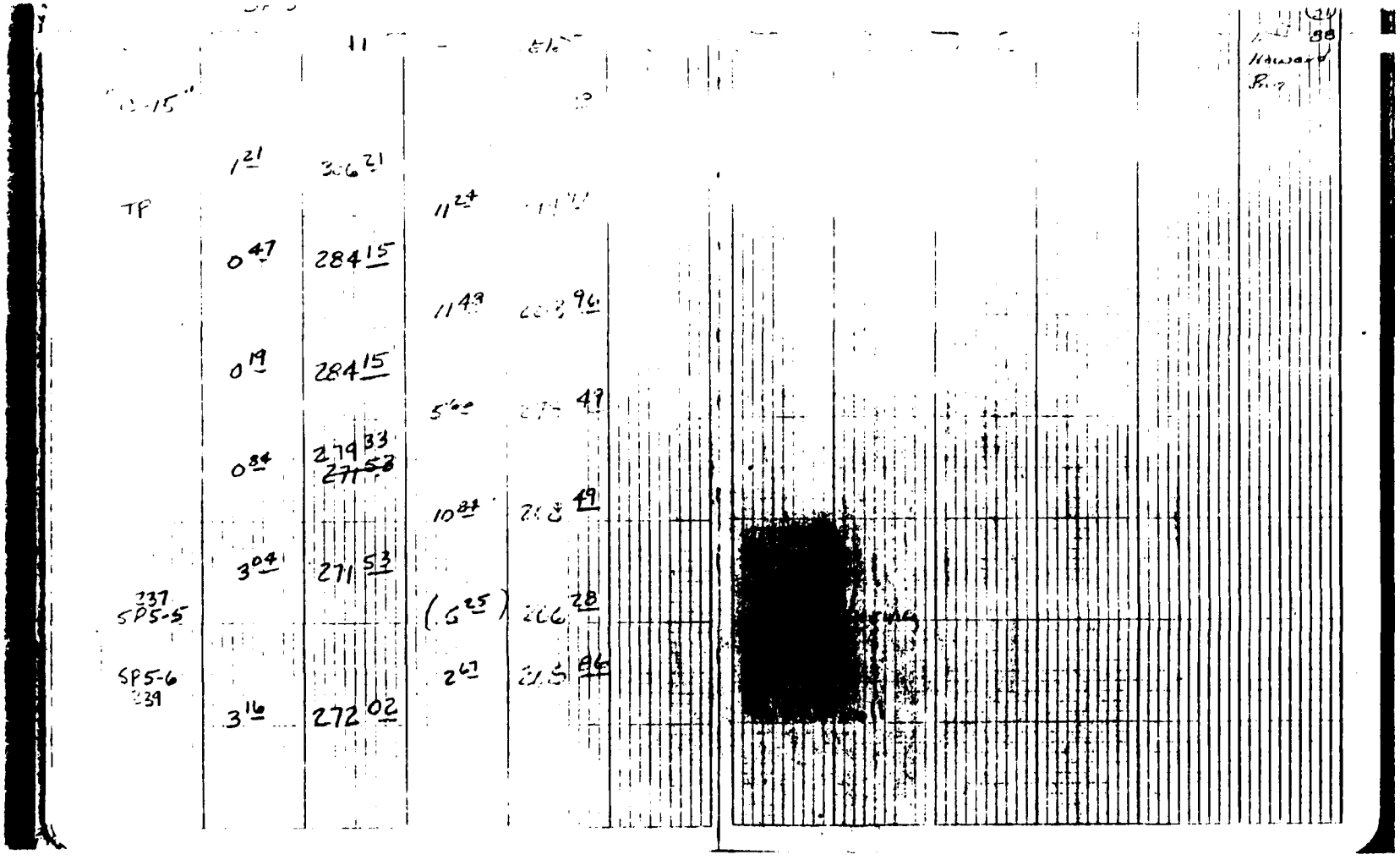
19 Howard Run



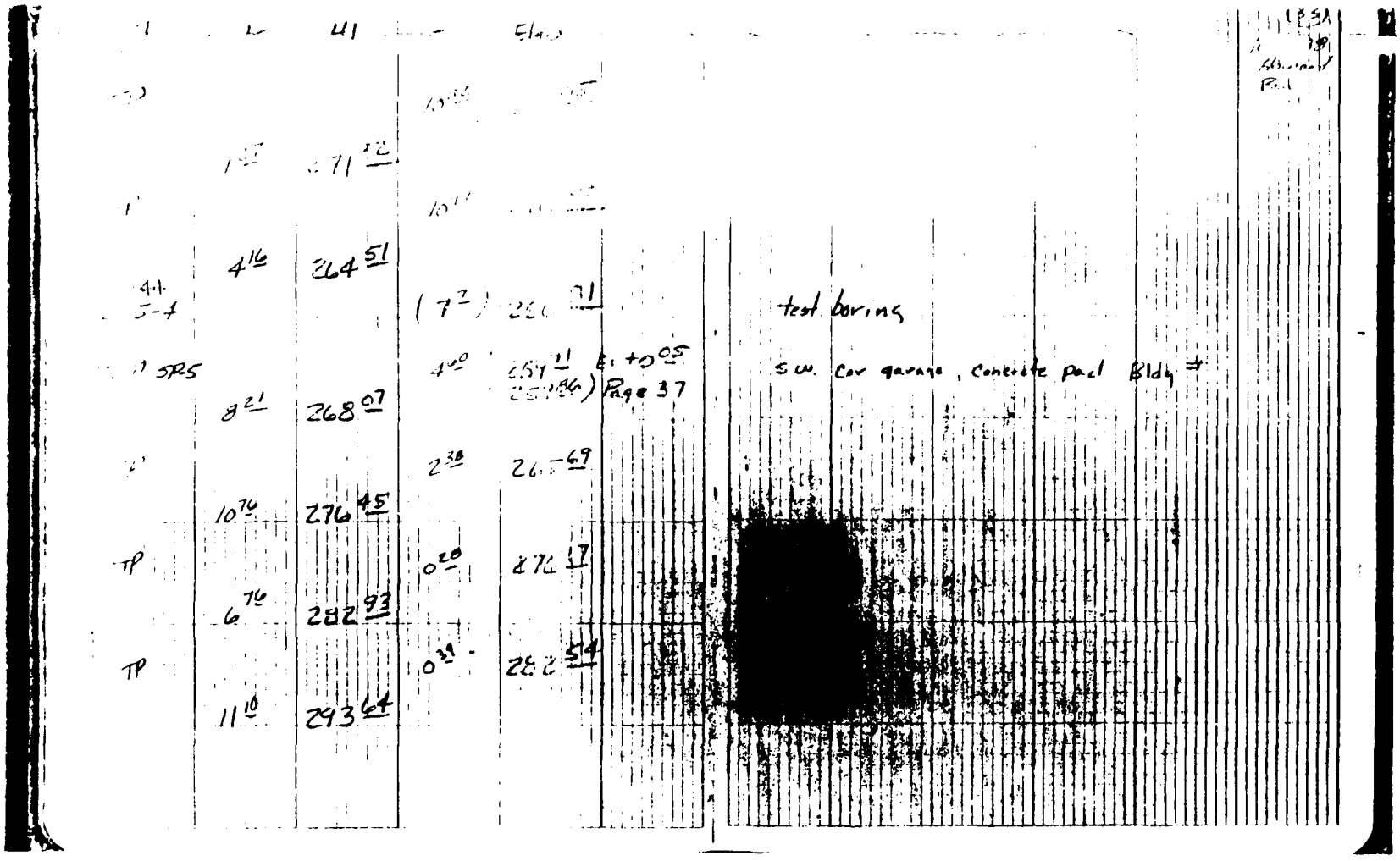


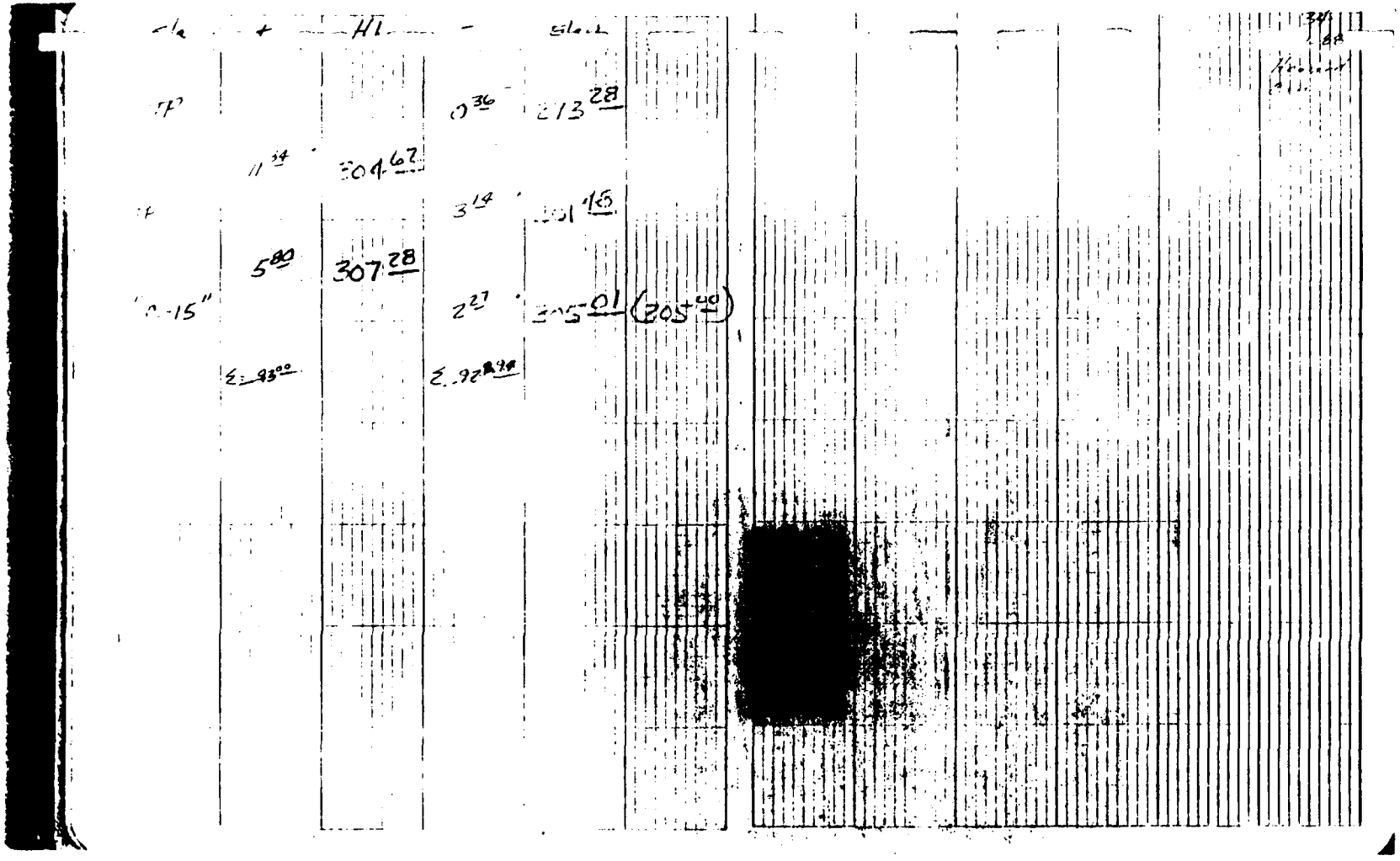


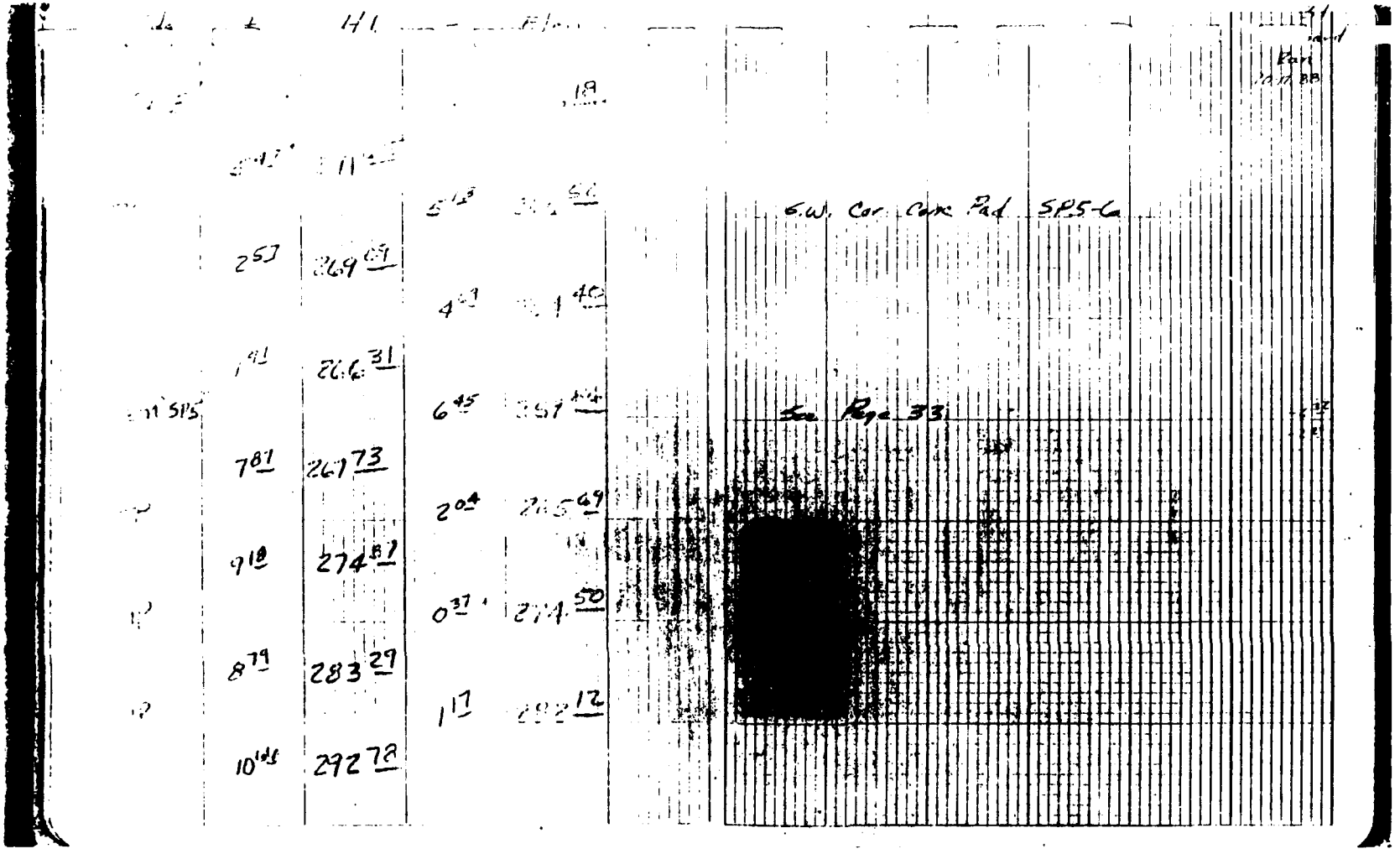

111
Te Pt B-2 BS
110
Pt B-1
Howard
Bm

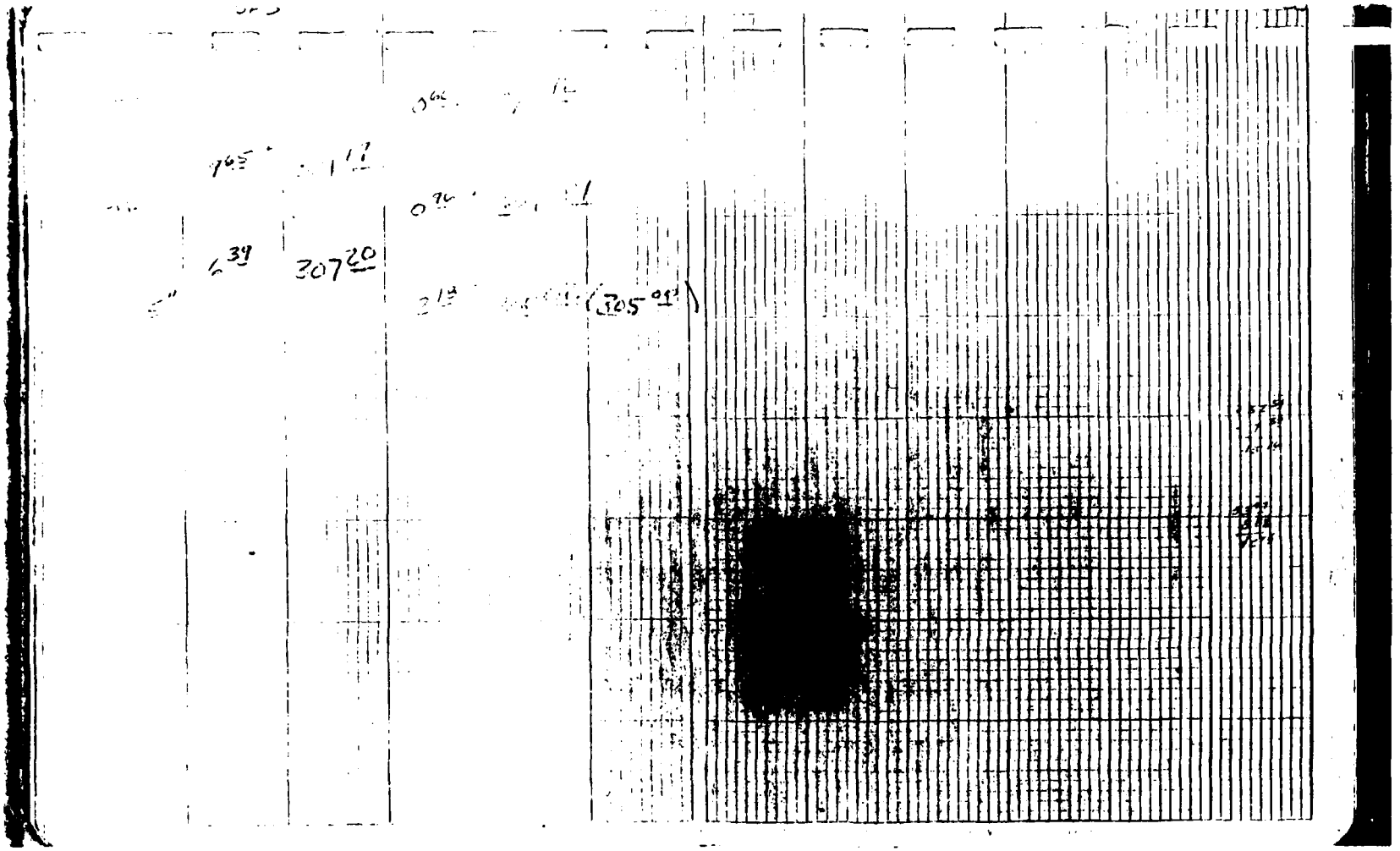


15-7			3 59		Test well, top 2" PVC casing
	2 42	270 [illegible]			
M "B"			4 07		
	3 89	270 07			
15-2			4 55		Test well, top 2" PVC casing
	3 15	268 97			
15-3			(7 4)		test boring
			0 21		
	9 53	278 29			
SP 5-9			(6 3)	271 99	
TP "B-1			0 80	277 43	spike
	4 50	281 93			
SP 5-1			1 96	279 97	
	0 90	280 87			


test boring
S.W. cor garage, Concrete pad Bldg #
(Page 37




S.W. Cor. Conc. Pad SPS-C
Lic. Rge. 33



114

TP TP#D-1 BS "C-12"

(2)

TP#D-2

i) 161° 23' 05"
ii) 334 47 10
m) 161° 23' BS"

	i) [illegible]		165 26	89°22'45"
	ii) [illegible]		(50 372)	270 35 20"
	m) 180 59' 39"			
"C-12"	0°00'00"		553 31 (168 649)	

TP D-15-01 BS TP#D-1

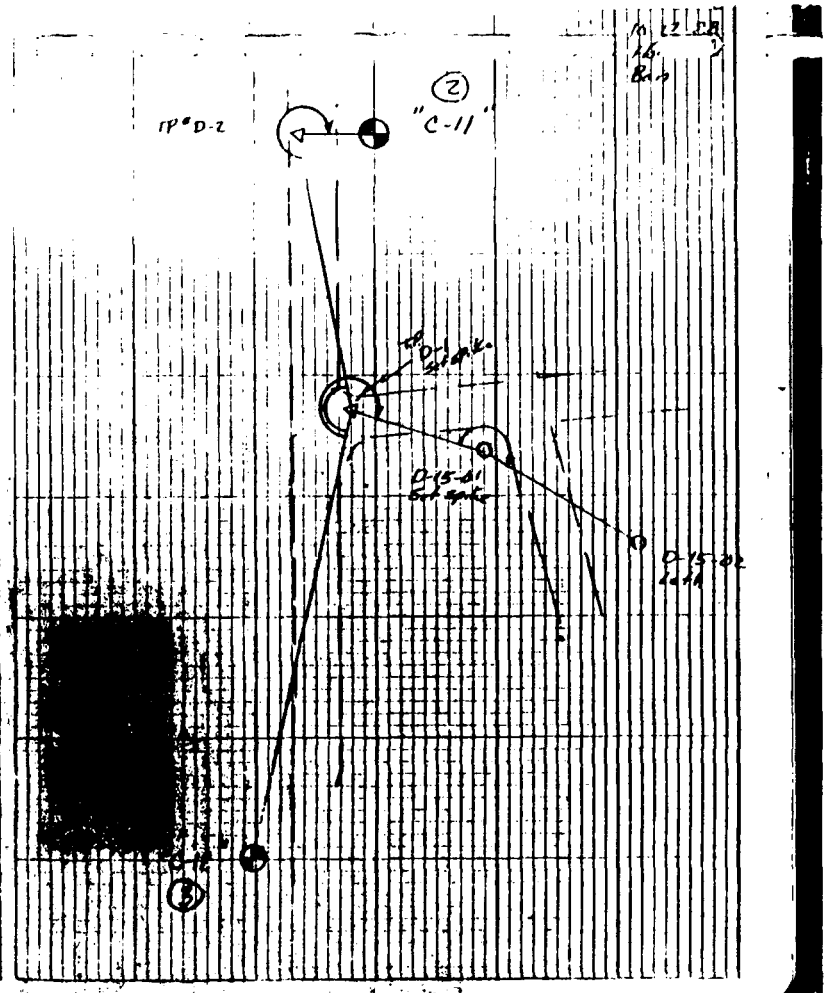
FS

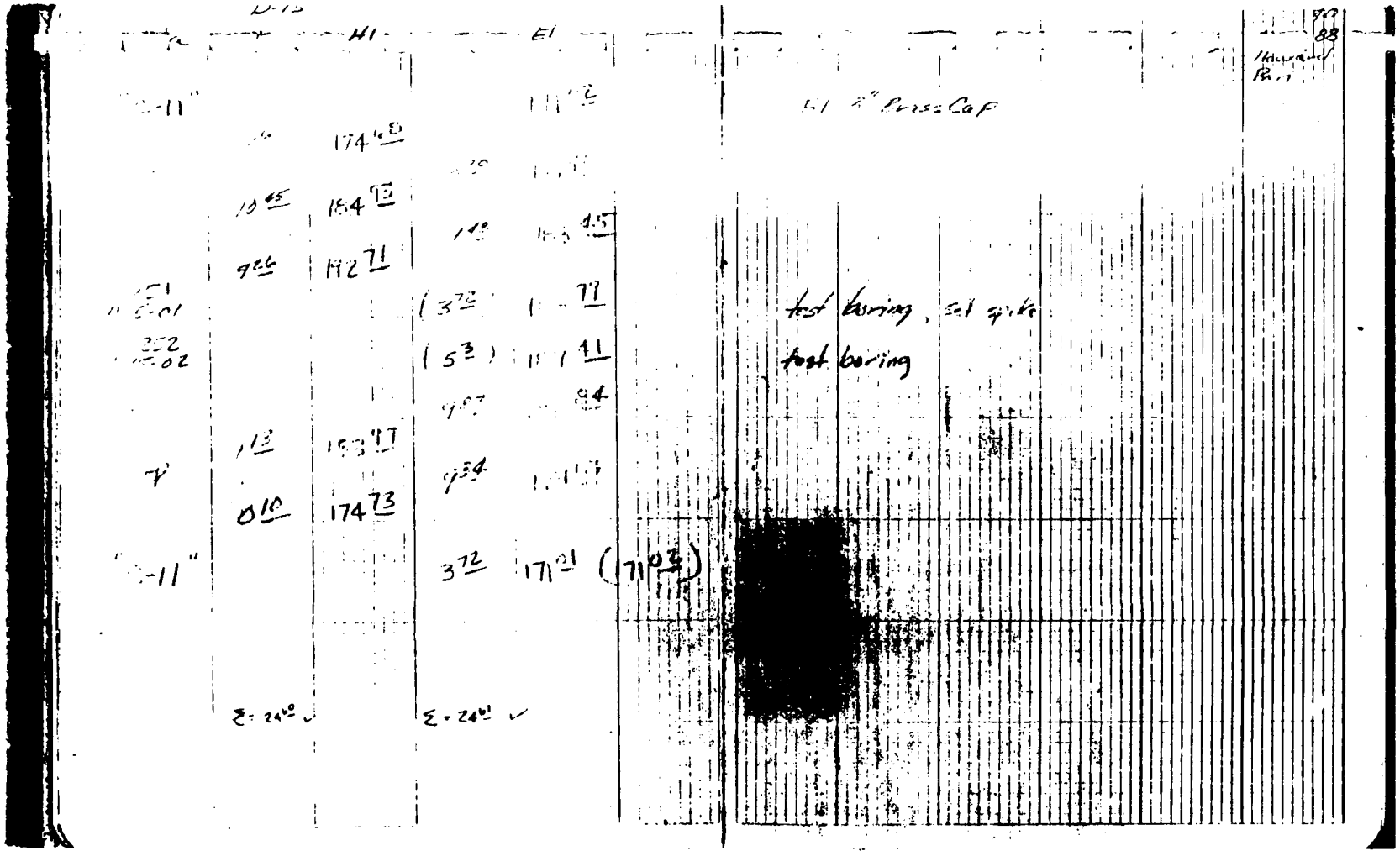
	i) 317°49'10"	139 72	90°43'8"
D-15-02	ii) 75°39'10"	(42 58)	269 17 50
	m) 317°49'35"		

115

TP TP#D-2 BS TP#D-1

	i) 277°21'17"	69 54	87°30'33"
"C-11"	ii) 194°42'55"	(21 29)	272°22'10"
FS 3"B.C.	m) 277°21'28"		





NS 1-4 Site

TC MC-11 BS MB-27

HI = 3.77 + 136.45

FS	∠ Rt	− Dist	Z't
MB-27	0°00'00"	790.83 (241.045)	88°10'54"
TP #NS 1)	287°19'46"	512.31	10°10'31"
NS 1-4 2)	215°37'39"	(174.435)	271°50'06"
1st mid m)	287°49'49"		269°30'15"

HI = 5.40

HI = 4.35

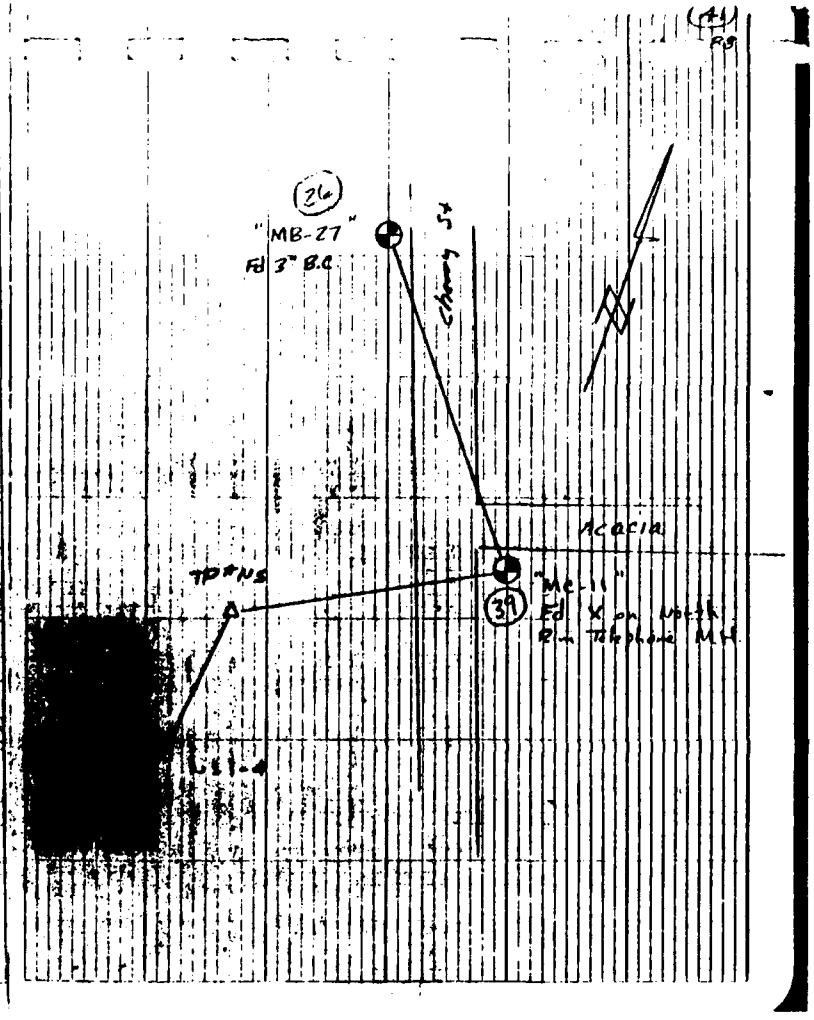
TC TP #NS 117 BS "MC-11" 39

HI = 4.87 + 130.76

FS	∠ Rt	− Dist	Z't
TP #NS 1)	74°10'15"	117.61	78°53'15"
NS 1-4 2)		35.284 (35.835)	26°00'00"
from sample m)	198°20'00"		m) 78°52'32"
m)	99°10'00"		

HI = 10.72

El = 106.76



NS1-S Site

At "MC-9" BS "MC-10"

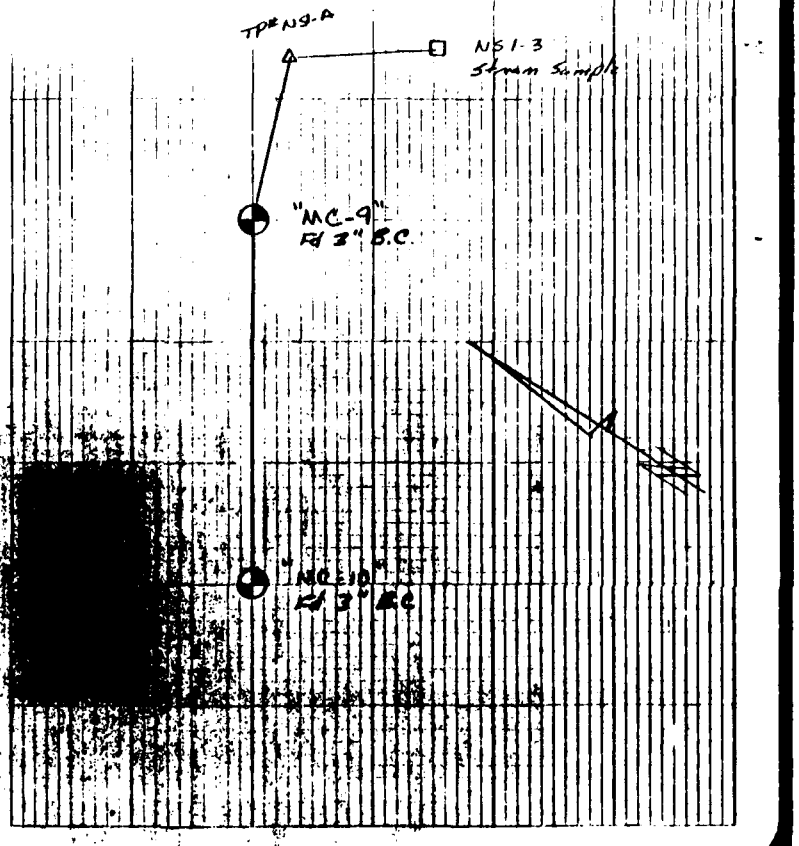
HI = 4.99 + 138 EC

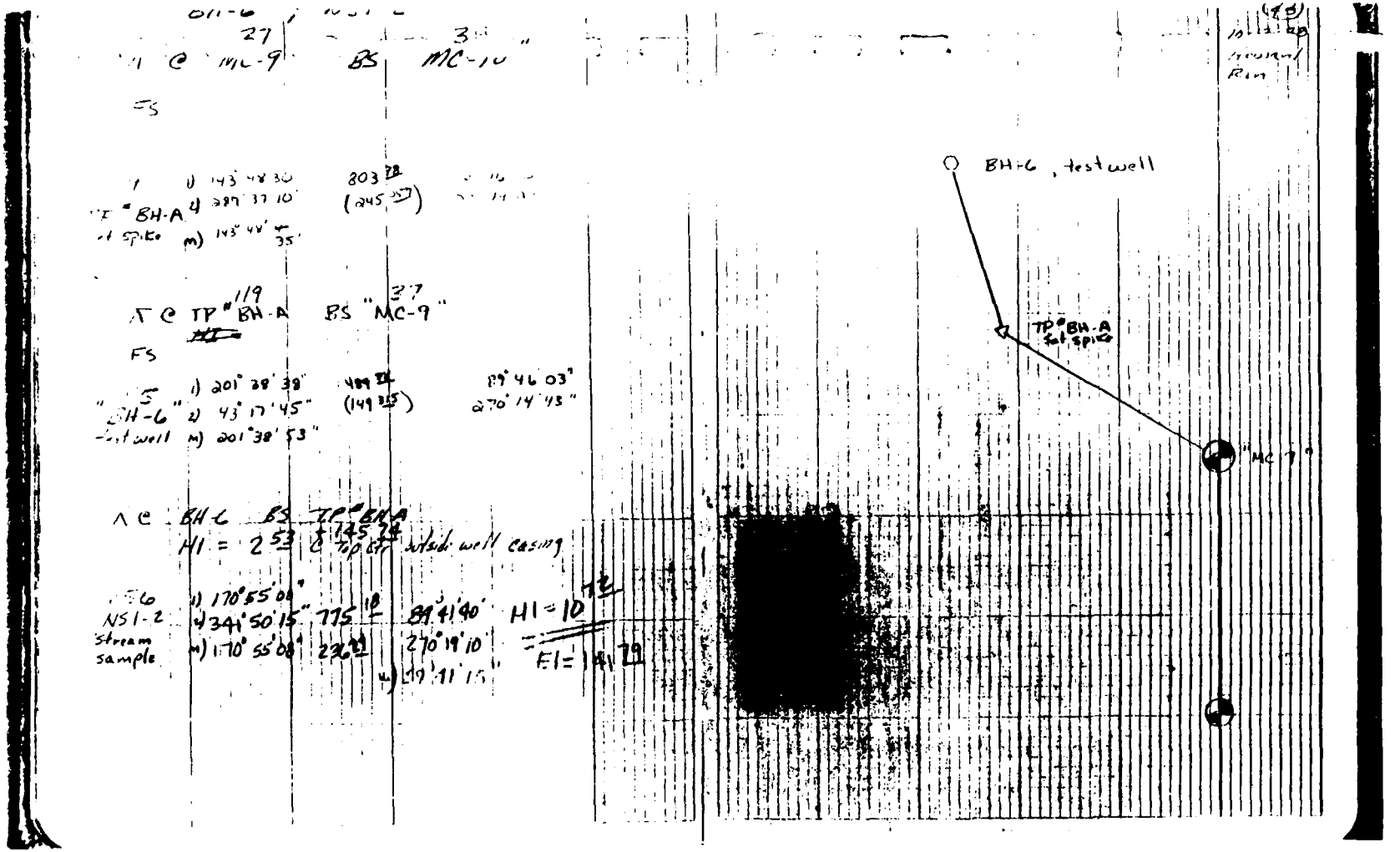
FS	∠ Rt	S. Dist	Z ∠
"MC-10"	0°00'00"	598.96 (182.562)	90°05'35" 269°55'10"

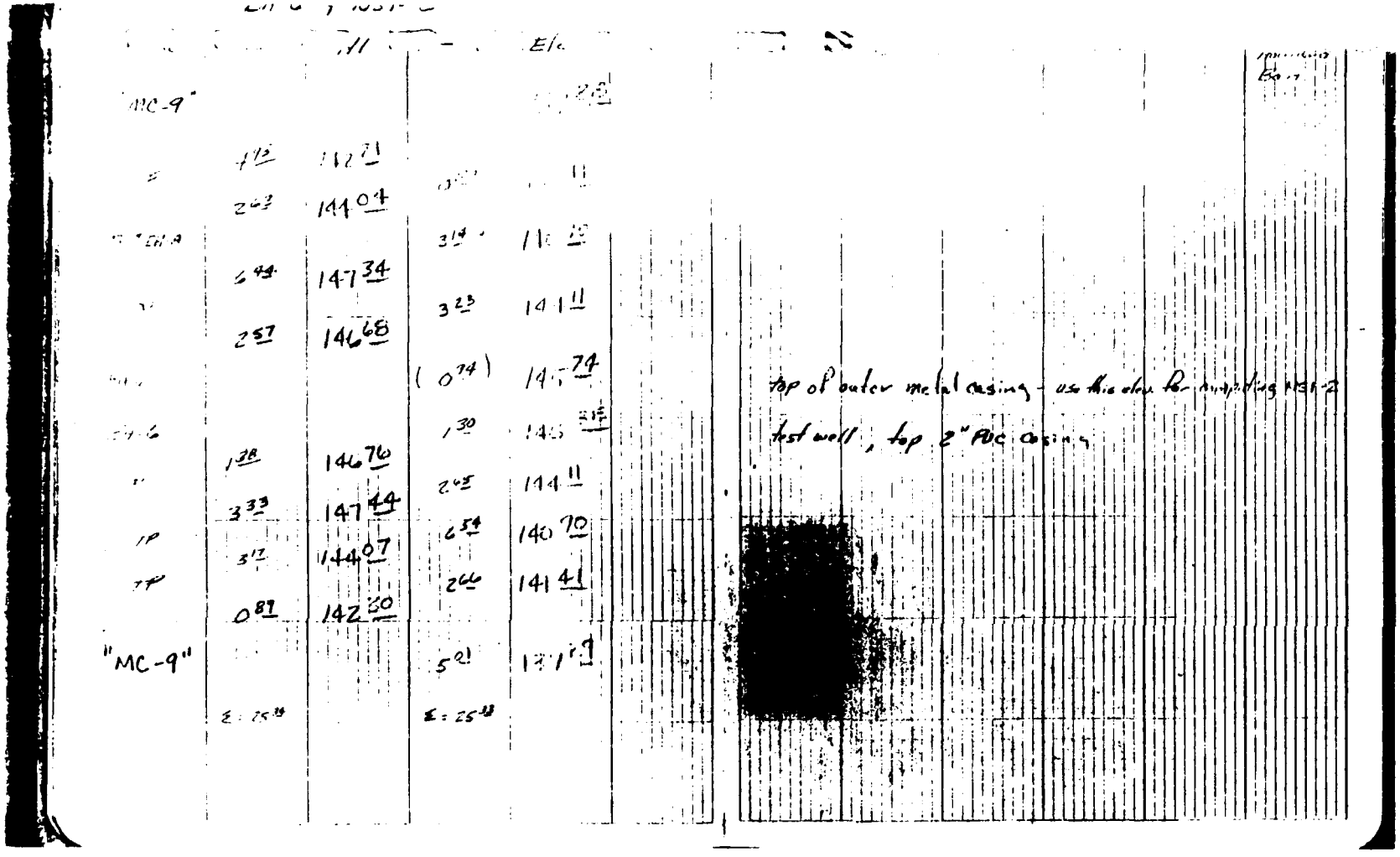
At TP*NS-A BS "MC-9"

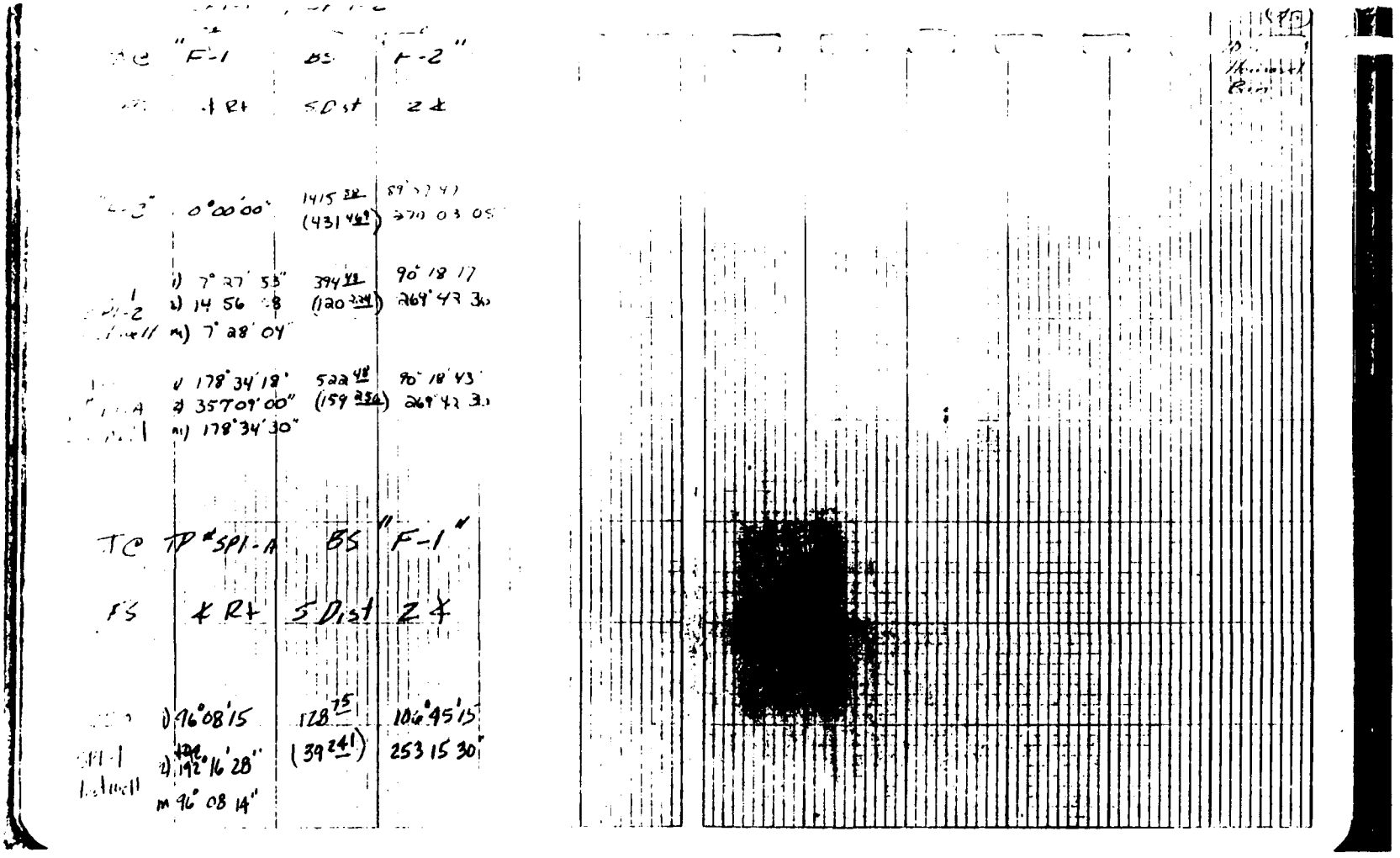
HI = 5.00 + 138 EC

FS	∠ Rt	S. Dist Z ∠	Z ∠
254 NS1-3 stream sample	269°54'00"	124.00 (37.78)	94°35'10" 265°25'35"



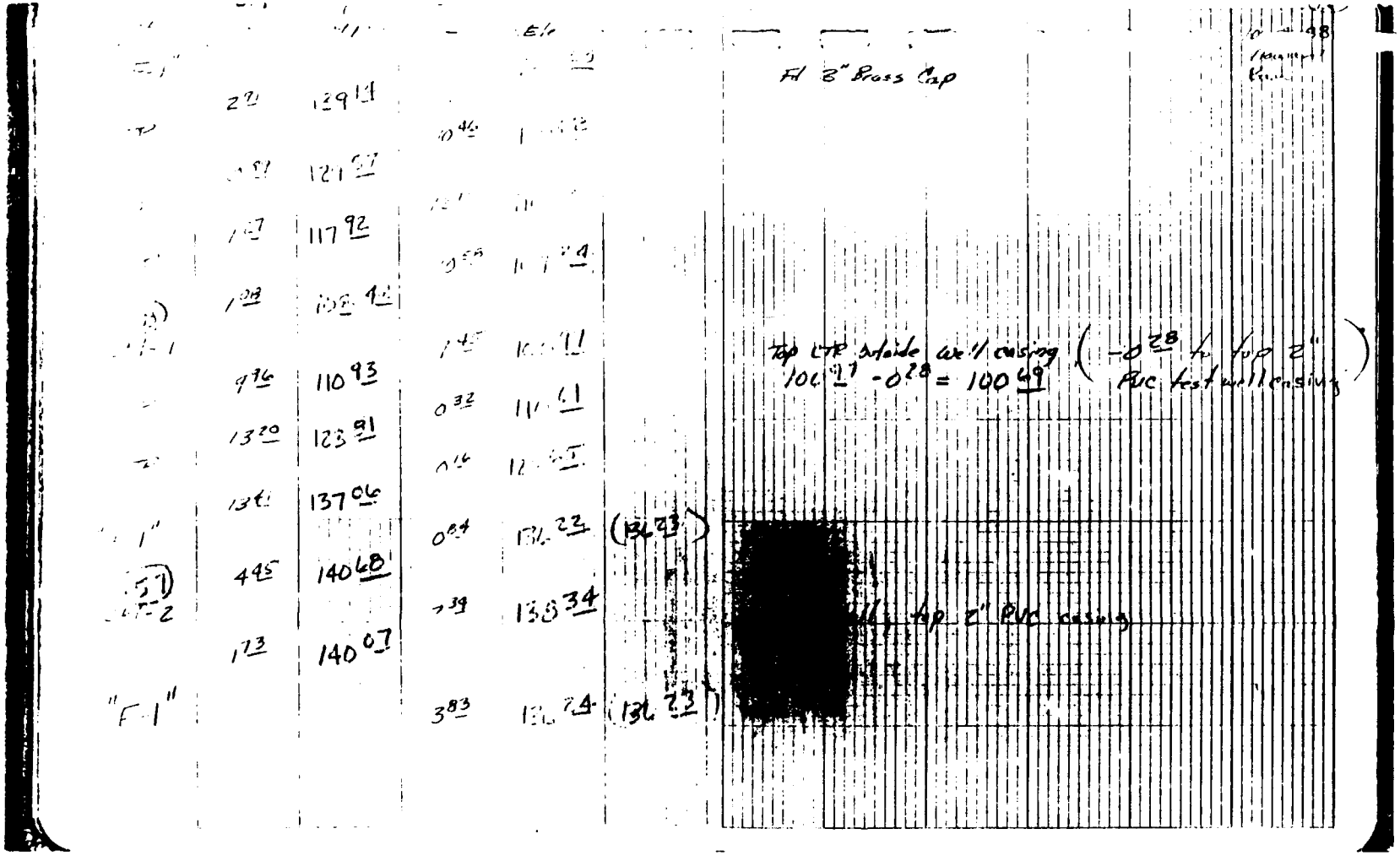

BH-6, test well
TP "BH-A" tst spike
"MC-9"

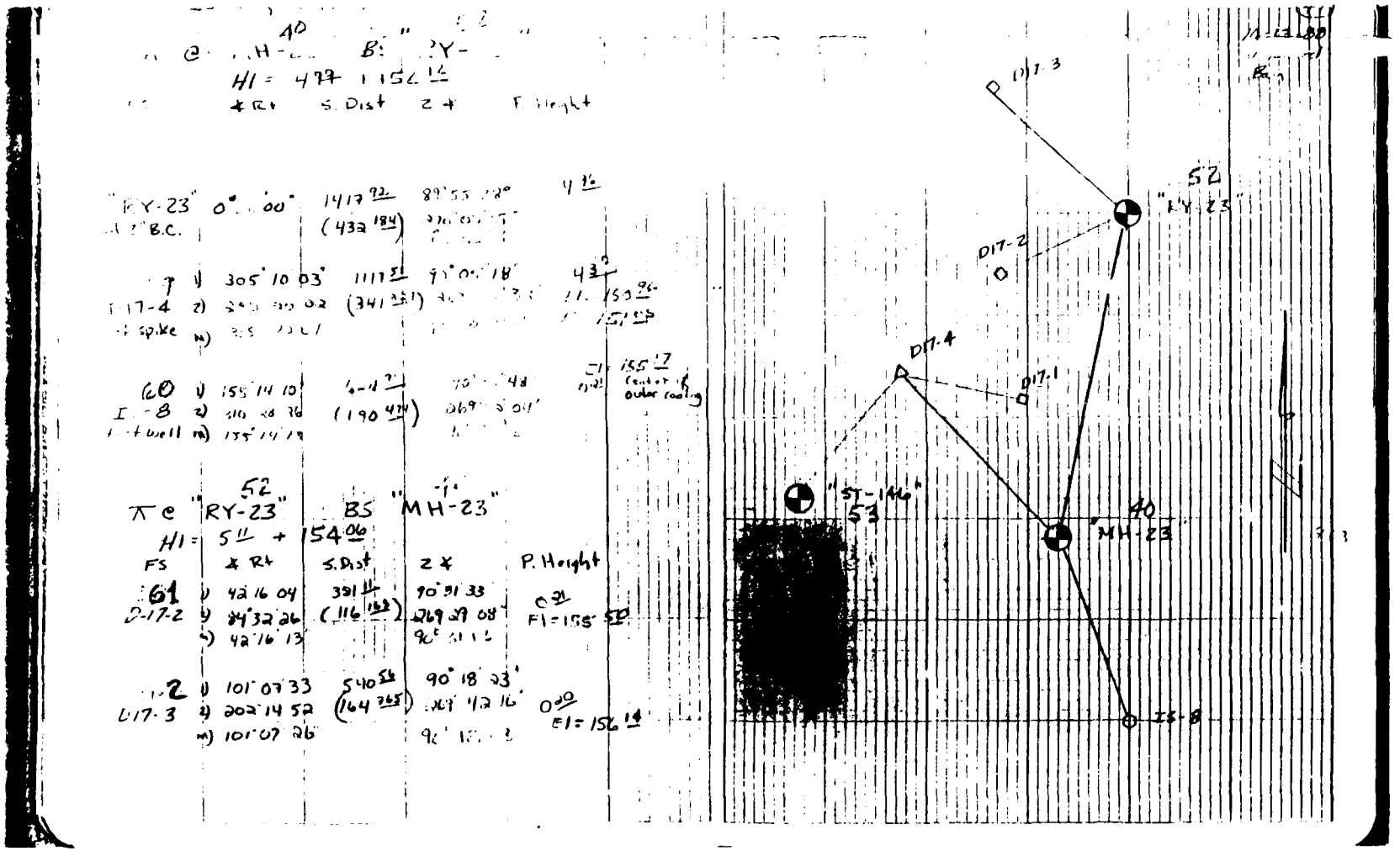

"MC-9"
top of outer metal casing - use this elev. for sampling MW-2
last well, top 2" PVC casing
"MC-9"



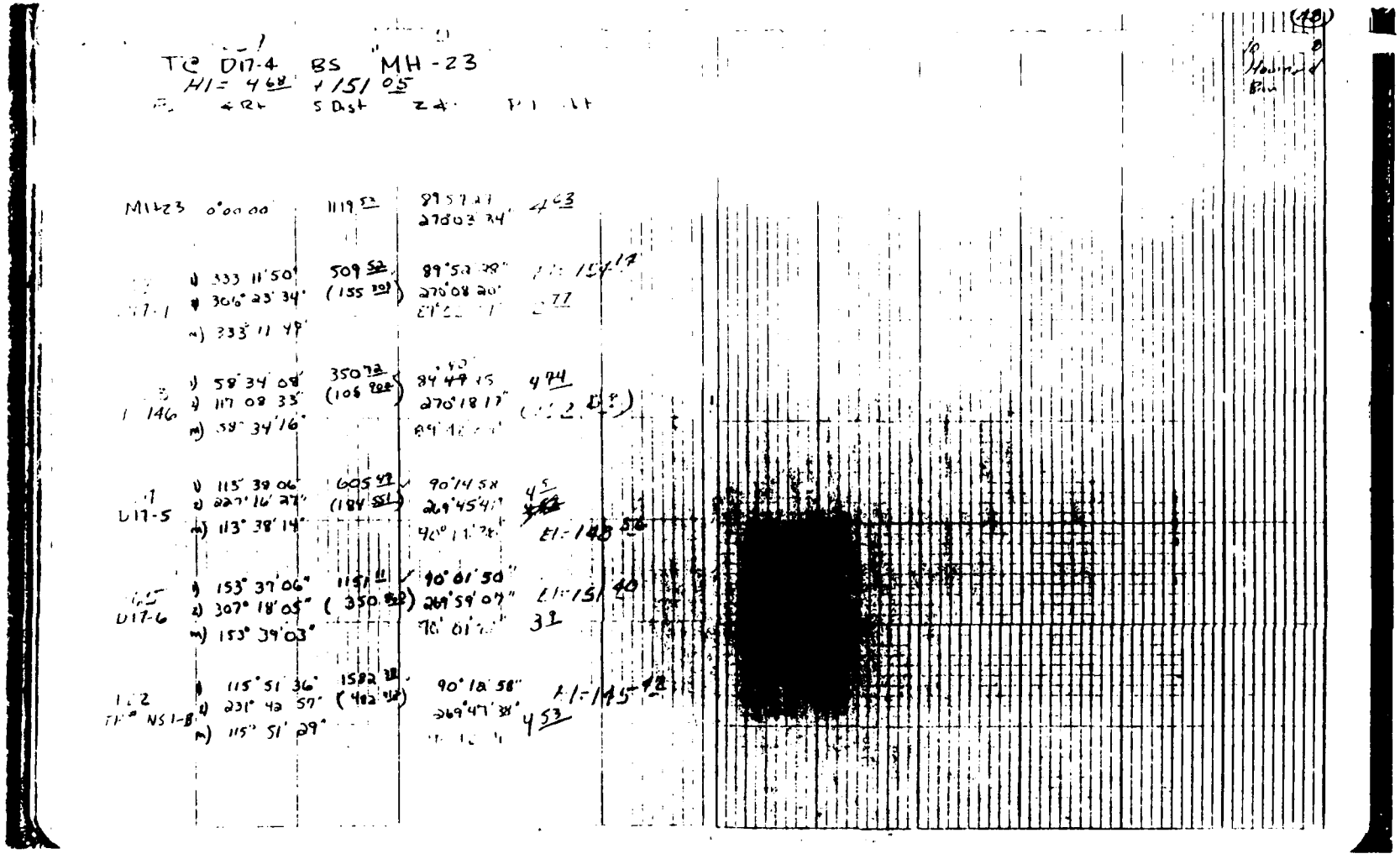
	"F-1	BS	F-2"
	+ Rt	S Dist	Z +
F-3	0°00'00"	1415.32	89°53'41"
		(431.469)	270 03 05
	i) 7°27'53"	394.92	90°18'17"
F-2	ii) 14 56 18	(120.334)	269°42'30"
	iii) 7°28'04"		
	iv) 178°34'18"	522.48	90°18'43"
A	v) 357°09'00"	(159.234)	269°42'30"
	vi) 178°34'30"		

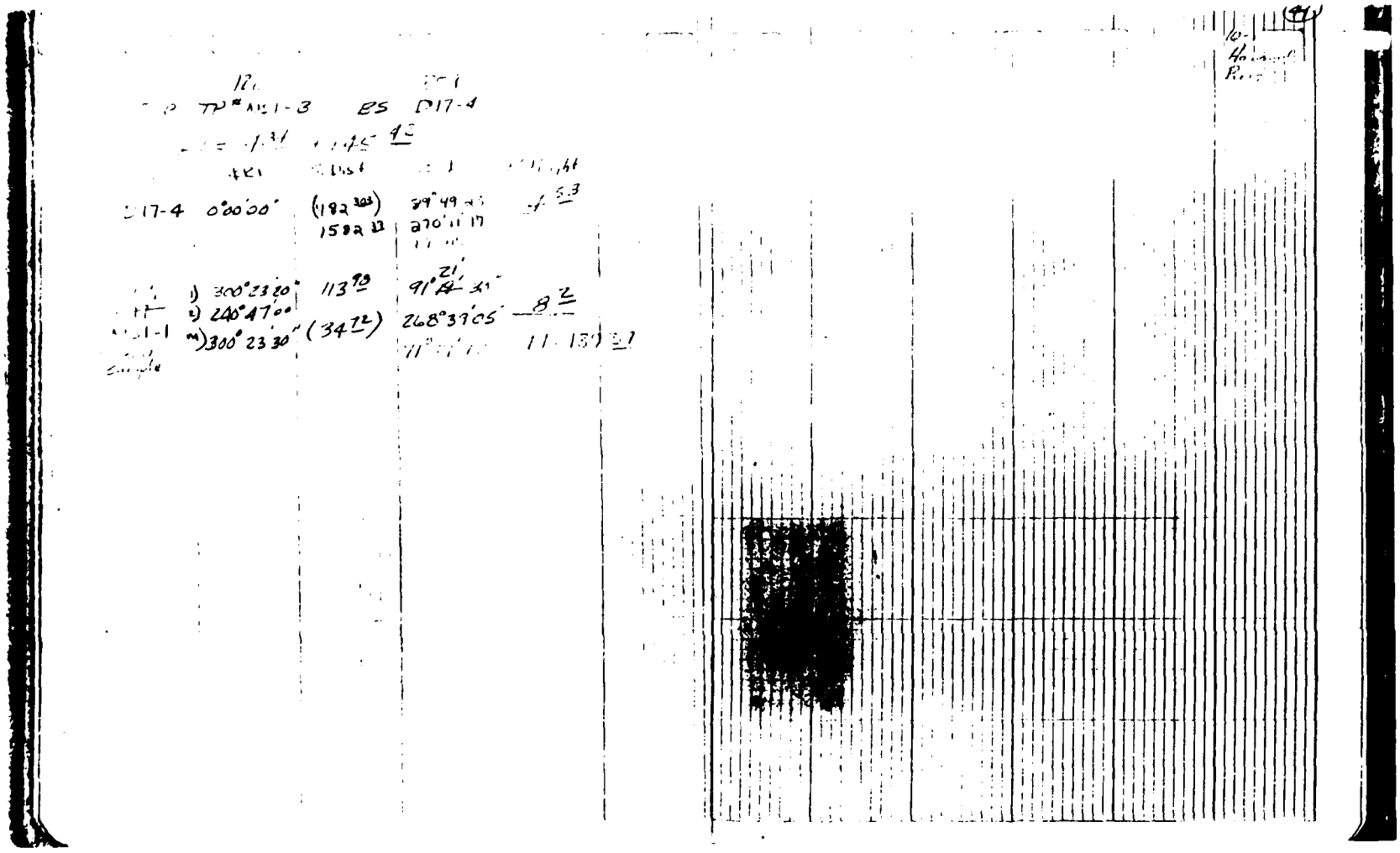
TC	TP "SPI-A	BS	"F-1"
FS	+ Rt	S Dist	Z +
	i) 96°08'15	128.75	106°45'15"
SPI-1	ii) 192°16'28"	(39.241)	253 15 30
	iii) 96°08'14"		


Fd 2" Brass Cap
Top PVC outside well casing (-0.28 ft from Top 2"
100.77 - 0.28 = 100.49 Elev. top of well casing
Top 2" PVC casing


D17-3
52
"RY-23"
D17-2
D17-4
D17-1
"ST-146"
53
40
"MH-23"
IS-8

TP D17-4 BS "MH-23
HI= 468 +151 05

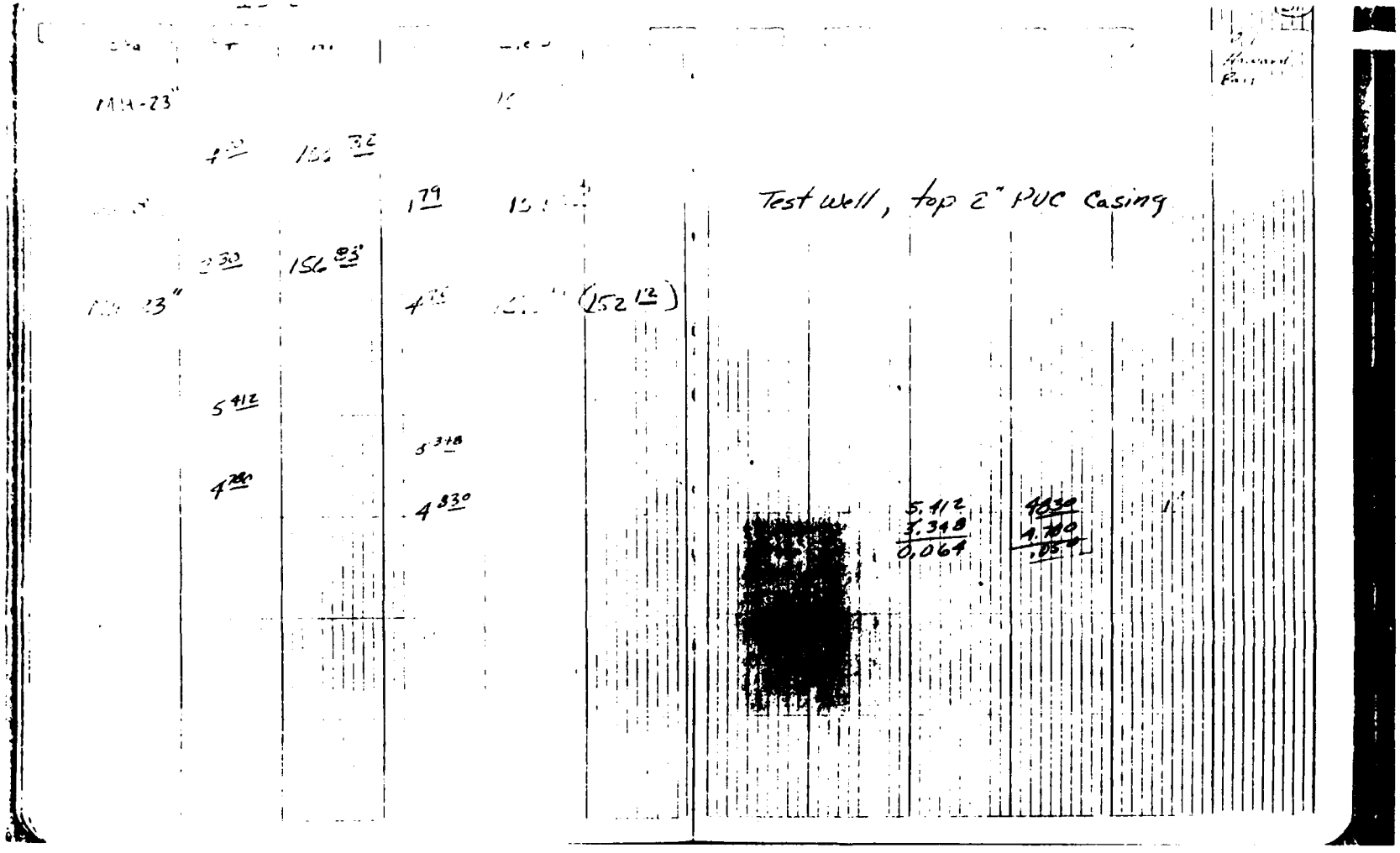




HI = 4.96 + 152.82

FS ∠ Ht ∠ Dist Z ∠ Height

56-1	1)	184°58'50"	615.98			
	2)	89°57'16"	(189.55)			4.43
	3)	144°58'38"				
56-2	1)	188°34'36"	651.02	90°53'33"	EL = 144.75	
	2)	17°09'02"	(178.34)			3.2
	3)	188°34'31"				
56-3	1)	180°11'30"	584.82	90°50'47"	EL = 144.61	
	2)	0°00'48"	(178.21)			4.64
	3)	180°11'24"				
56-4	1)	190°46'34"	615.98	90°40'00"	EL = 145.61	
	2)	21°32'50"	(187.23)			5.1
	3)	190°46'25"				
56-5	1)	187°06'12"	579.61	91°06'12"	EL = 146.51	
	2)	14°12'18"	(176.69)	268°54'45"		
	3)	187°6'7"				0.2
56-6	1)	183°07'18"	640.23	90°50'22"	EL = 144.18	
	2)	6°14'50"	(195.33)			
	3)	183°07'05"				4.3


Test well, top 2" PVC casing

Aborted Temp [illegible]

FS "EAF-11" BS "EAF-10"

HI = 4.98 | 16.32

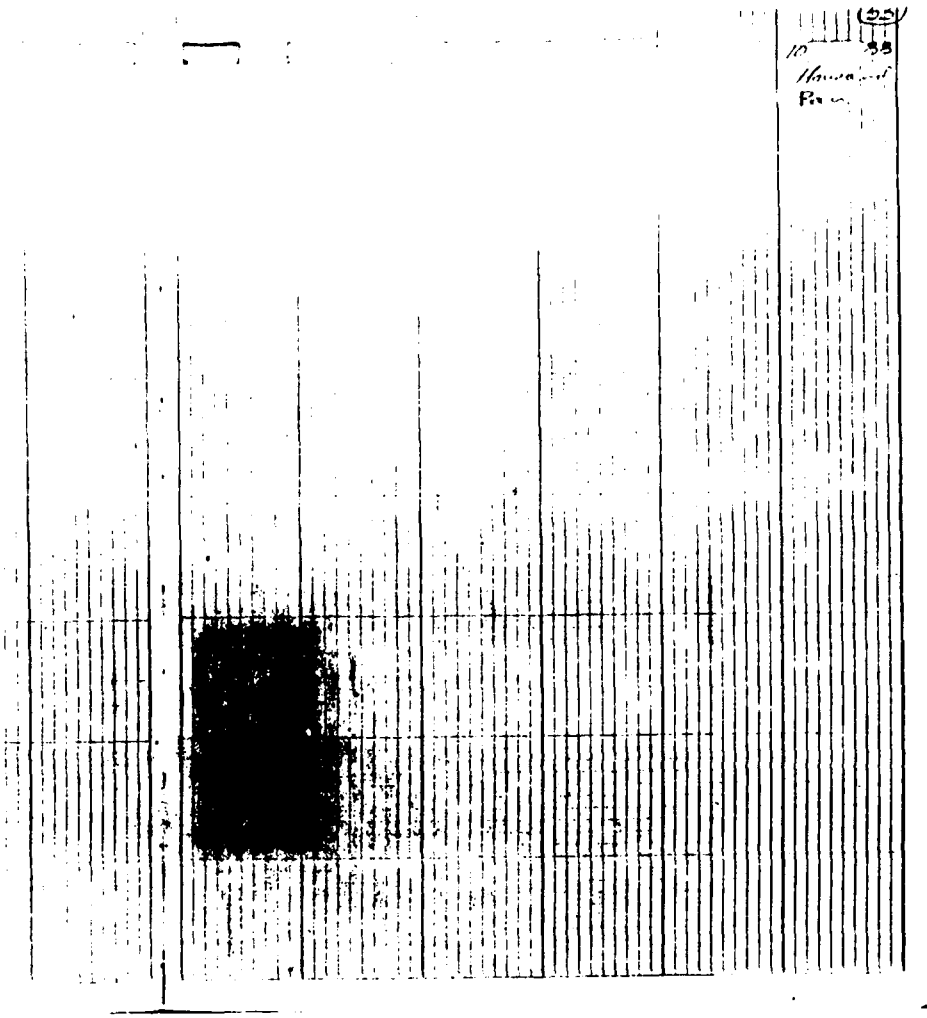
	Hz	S Dist	Z	V Height	Elev
EAF-10	0°00'00"	787.28 (240.11)	90°45'55"	0.21	(157.93)
13	1) 16° 57'43"	531.02	90°38'08"		
Aborted	2) 33°55'42"	(177.093)	89°22'30"	4.1	157.77
Temp test	3) 33°55'21" 16°				

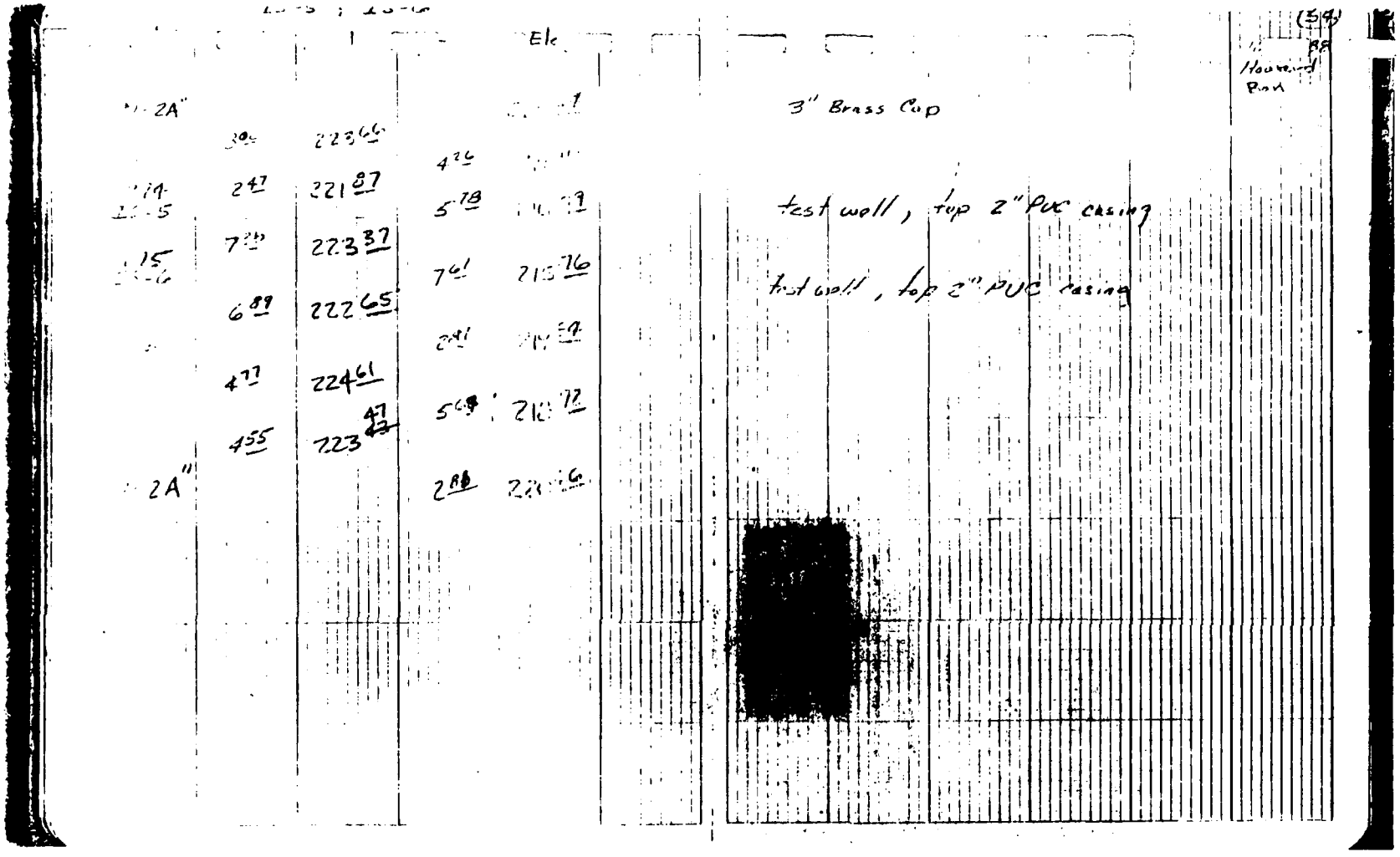
@ "N-2A" BS "N-1B"

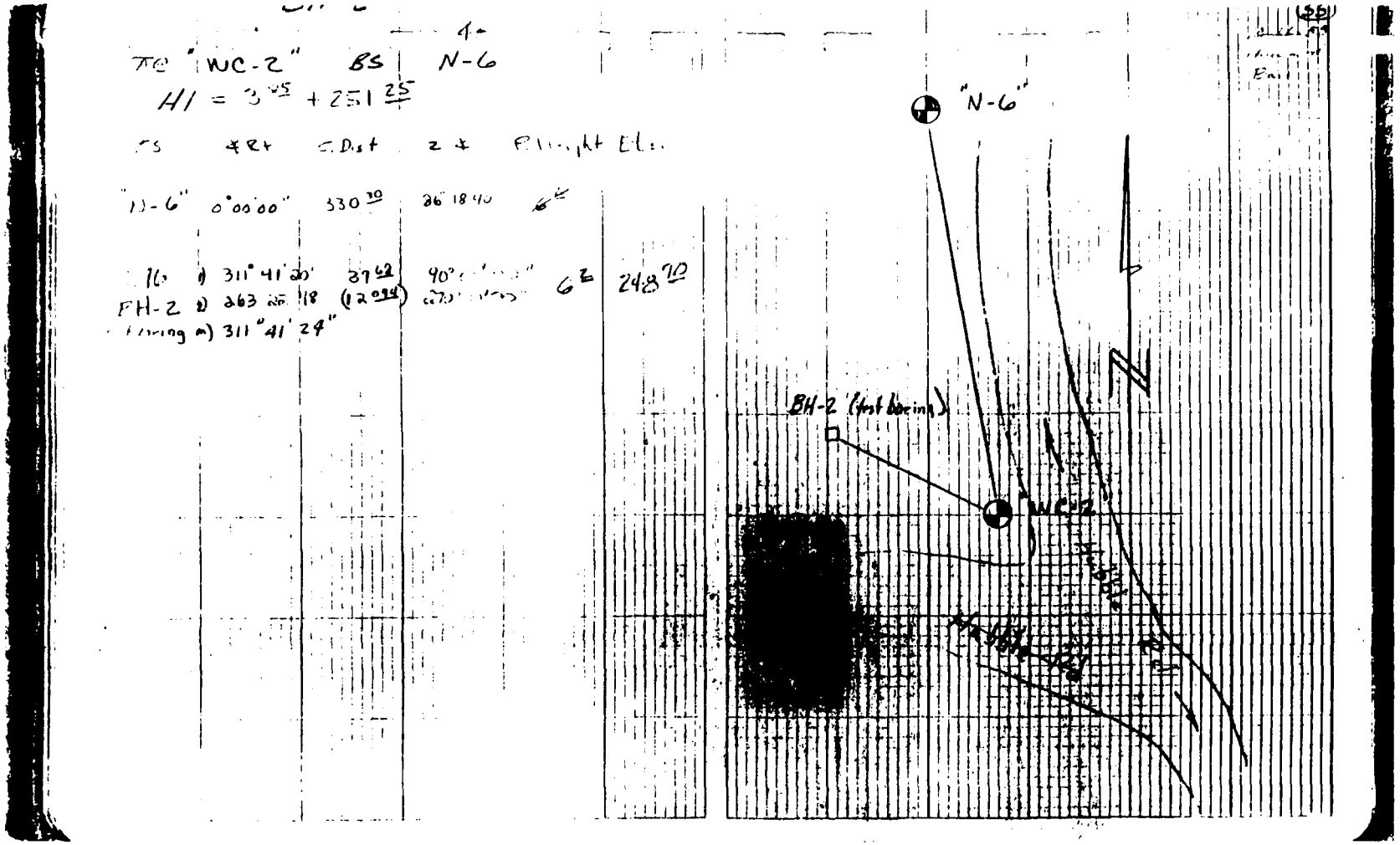
FS	∠ Rt	S. Dist	Z ∠
"N-1B"	0°00'00"	142 33	90°10 22
		(287 223)	269°50 0
	l) 142°40'38"	684 436	90°22 53"
	z) 285°21'35"	(208 42)	269°37'48"
TP" IS-A s/ nail	m) 142°40'48"		

@ TP" IS-A BS "N-2A"

FS	∠ Rt	S. Dist	Z ∠
1	l) 299°25'34"	80 46	92° 44' 53"
IS-5	z) 238°31'00"	(24 534)	267° 15 33"
	m) 299°25'30"		
25	l) 191° 11'40"	439 38	89° 54' 38"
IS-6	z) 22° 23' 54"	(134 935)	270 06 04
	m) 191° 11' 36"		




Elc
3" Brass Cap
test well, top 2" PVC casing
test well, top 2" PVC casing


"N-6"
BH-2 (first boring)
WC-2

At N-11A BS N-12A

HI = 4.65 + 275.42

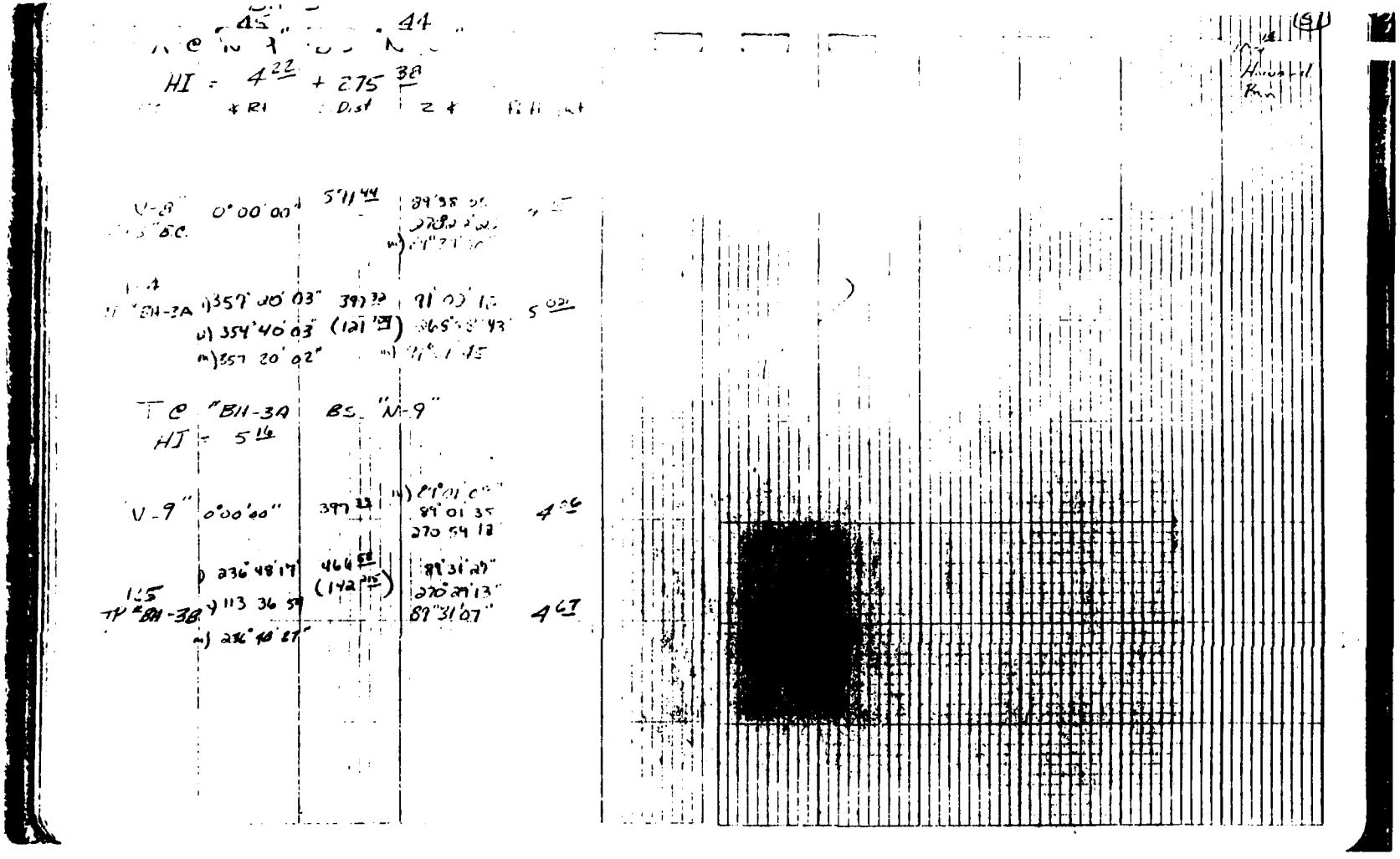
FS	∠Rt	S. Dist	z ∠	P. Height
"N-12A"	0°00'00"	881.39		
277 D16-3	a) 218°37'28"	45.34 (13.92)	93°01'10"	4.4
	b) 63°15'05"		86°[illegible]	
	m) 211°37'33"			
"D16-1" (1 spike for 2 borings)	a) 178°33'34"	236.94 (72.24)	90°04'42"	5.18
	b) 31°01'40"		126°59'56"	
	m) 178°33'50"			

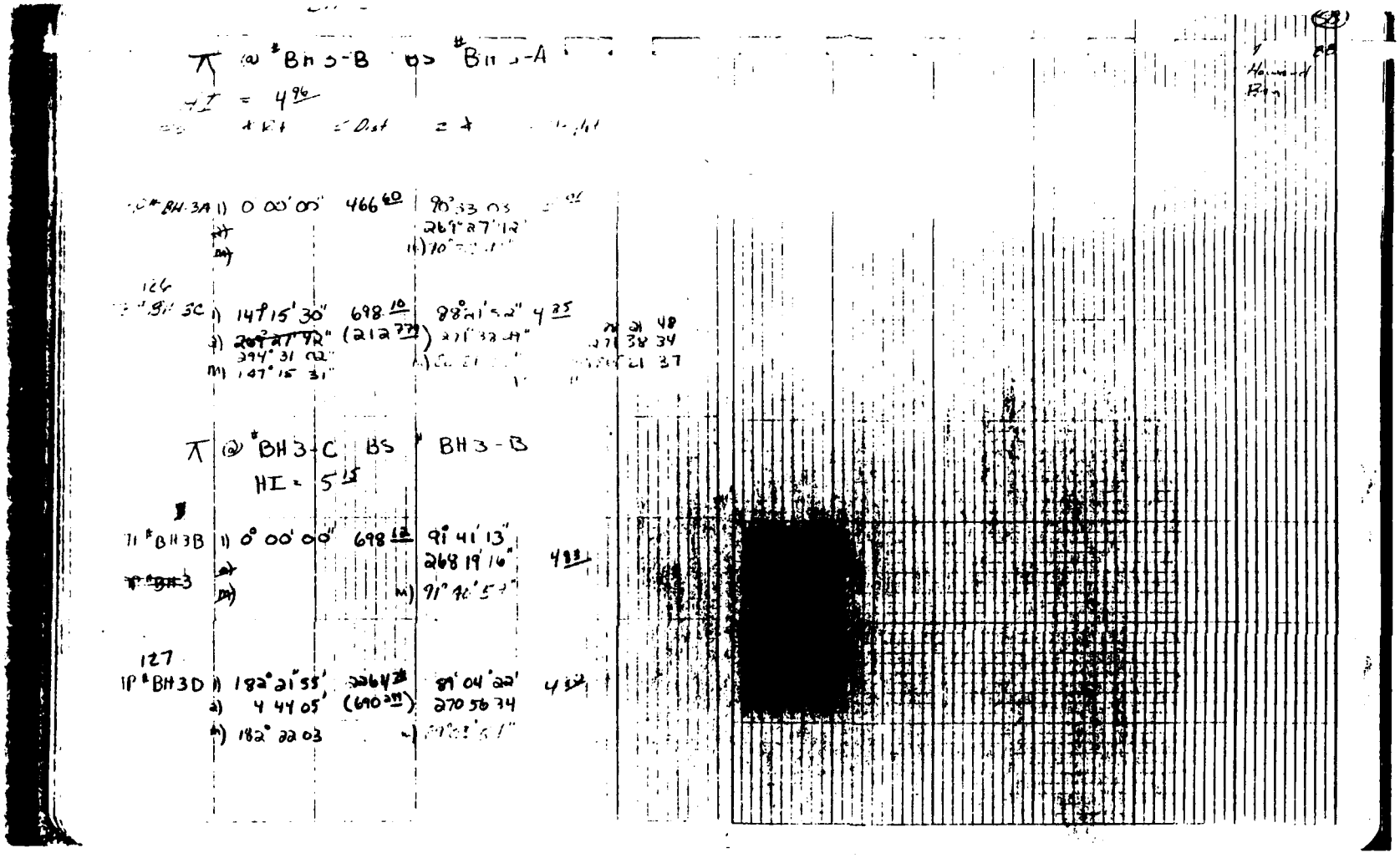
At D16-1 (1st boring) BS "N-11A"

HI = 5.33 + 274.87

FS	∠Rt	S. Dist	z ∠	P. Height
"N-11A"	0°00'00"	237.90	90°06'58"	4.54
			269°53'50"	
277 D16-2	a) 240°32'30"	250.48	[illegible]	
	b) 101°25'05"	72.86 (22.20)	90°03'[illegible]	4.9
	m) 230°42'35"		270°03'[illegible]	
280 D16-4	a) 216°34'40"		88°08'14"	10.72
	b) 73°08'30"	250.62 (71.40)	271°52'20"	
	m) 216°34'15"		[illegible]	

[illegible] 3.9-02" 37



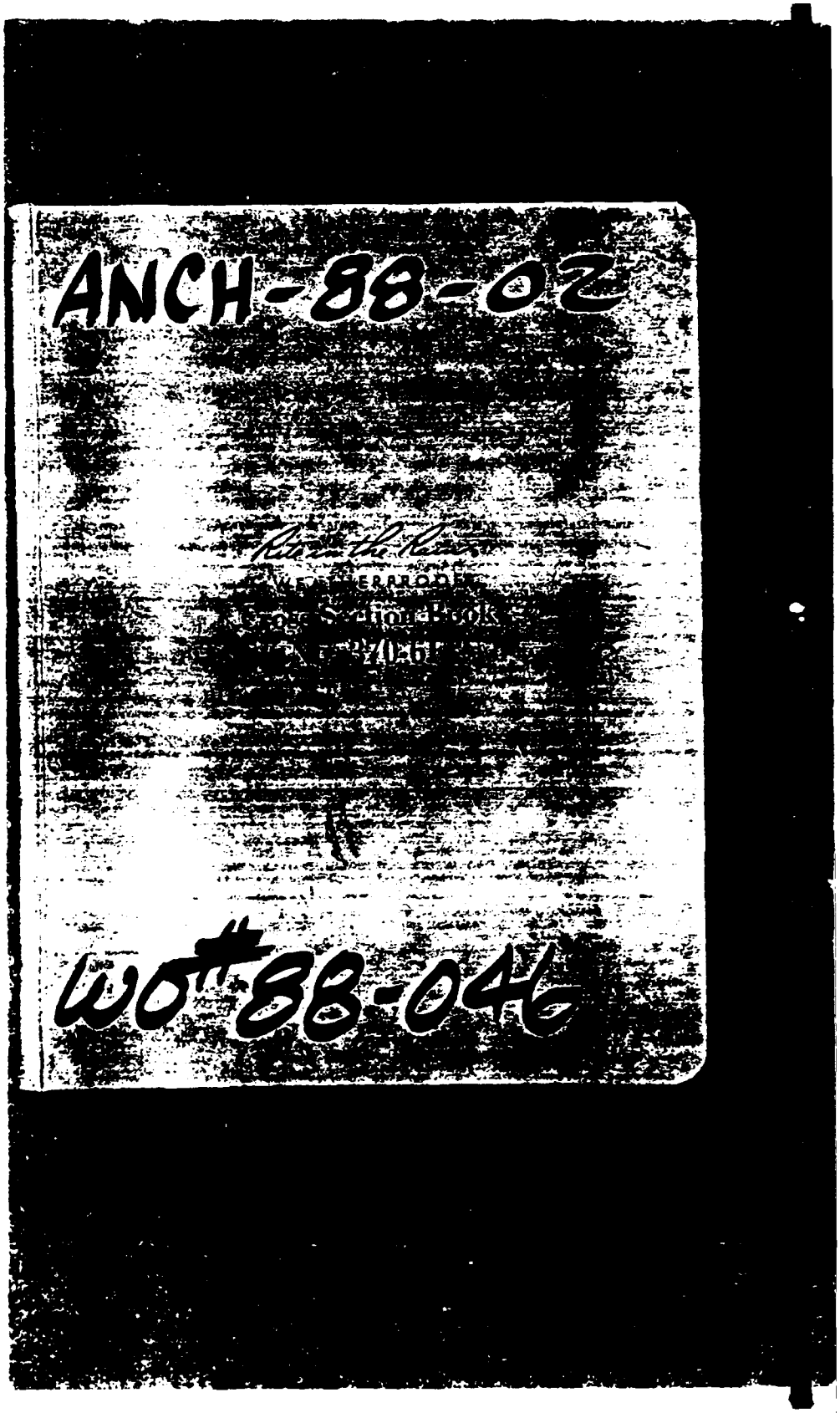


T @ BH3-D BS BH3-C
HI = 510

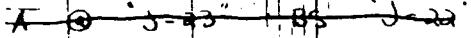
FS	HRT	SD ST	Z A	P Height
1) BH3-C	0°0 00"	664 22	90 58 05	5 00
128				
1) BH3-E	1) 173°54'33"	647 11	11'18'41"	4 35
	2) 347°48'58"	(1815 841)		
	M) 173°54 39"			

T @ BH3-E BS BH3-D
HI = 502

1) BH3-D	0°00'00"	604 21	88°45'13"	4 99
			271°15 34"	
			1) 11'51"	
231 BH-3 Test well	1) 87°10'38" 179 21' 10"	1129 (3 583)	101°22'30"	
	2) ~~271°15'30"~~		258°38'34"	
	3) 87°10'35"		1) 11°21'59"	


ANCH-88-02
WO# 88-046

INDEX Book - ANCH-88-02



3-5 Horz tie to BH-4

Horz tie to BH-5

7-8 Vert ties to BH-4 ; BH-5

9-12 Vert Ties For SP5A Site ; SP5-8 ; SP5-10; SP5-20; Check SP5-2 ; SP5-1

13 Vert tie to BH-3

14-15 Horz ; Vert to PT-1 ; PT-2 ; PT-3

16-19 " " NSZ-1 ; NSZ-2 ; D13-1, D13-2 ; D13-3 ; D13-4

20-22 Horz. ties to D3-1 ; D3-2 ; D3-3 and vert tie to D13-3

23-25 Horz ; Vert ties SP7/10 SITE

26-27 " " " IS-1 ; IS-2

28-29 " " " IS-3

30-31 " " " IS-4

32-33 " " " D3-4

34 Vert. ties to D3-1 ; D3-2

35-36 Horz ; Vert ties to BH-1

37 Vert ties to D16- Site

38 Check Elevs @ SP5 ; SP5A site

10-14-88

25 24

℄ @ J-23" BS J-22"

HI = 4[illegible]

Fs	∠ Rt	S. Dist.	Z	
J-22	0°0'00"	1349.48	90°16'35"	N/A
			26:43 50"	
124				
TI DH4-A 1)	25°35'58"	302.62	[illegible]	
2)	51°12 12	(92.240')	026 37 34'	5.00
3)	25°36'06			
133				
TI BH5-A 1)	153°36'38"	188.16	85 37 33	0.21
		(57.353)	271 23 18'	
o)	~~57~~			
m)	307°13'32"			
n)	153°36'46"			

10-14-RB
Hwy 10
Hwy

T @ BH4-A BS "J23"
HI: 5.13

J	FS	∠ RT	S. Dist	Z ∠	E. Height
J23		0° 00' 00"	302.51	88°43'43"	4.14
				271 17 09	
				m) [illegible]	
TP# 130 BH4B		1) 234°01'52"	665.22	86°45'38"	4.22
		2) 108°03'38"	(202.761)	273°14'52"	
		m) 234°01'49"		m) [illegible]	

T @ BH4-B BS BH-1A
HI = 5.03

TP# 1-					
BH4A		0°00'00"	665.34	93 17 57"	4.98
				266 42 54"	
				m) [illegible]	
TP# 131 BH4C		1) ~~171°05'48"~~ ~~171°06'00"~~	420.14	89 48 40"	4.35
		2) 342°11'28"	(138.059)	270 12 08"	
		3) 171°05'39.44"		m) [illegible]	

T @ *BH4-C BS *BH4-B
HI = 5.06

	∠ Rt	S. Dist	∠	P. Ht
*BH4-B	0°0'00"	420.16	90°17'30" 269°44'32"	4.84
*BH4-D	1) 138°04'17"	486.29	88°26'33"	4.85
	2) 276°08'55"	(148.202)	91°34'13"	
	M) 138°04'28"			

T @ BH4-D BS BH4-C
HI = 5.05

BH4-C	0°0'00"	486.29	91°38'04" 268°21'56"	4.91
BH4 Test well	1) 139°24'38"	529.36	90°52'25"	
	2) 278°49'22"	(161.38)	269°07'35"	0.21
	M) 139°24'31.41"			

-0.33 to top 2" PVC casing

10-14-88
Hazardous Ball

BH - 5

At TP "BH-5A" BS "J-23"

HI = 4.99

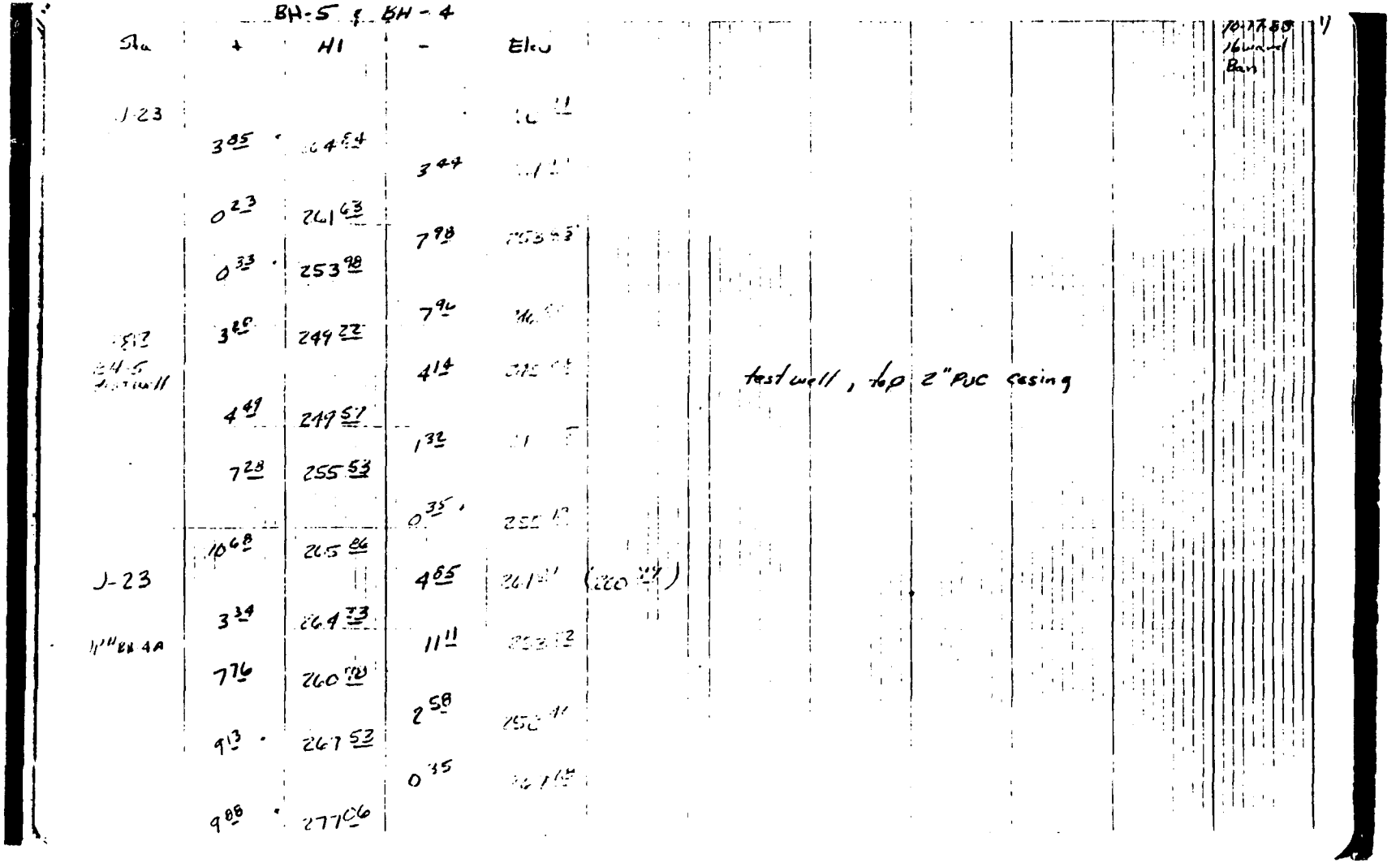
FS	∠ Rt	S. Dist	Z ∠	P Height
J-23	0°00'00"	188.36	92°58'42"	3.89
			267°02'17"	
TP "BH-5B"	1) 278°00'28"	567.92	92°40'05"	4.89
	2) 236°00'30"	(173.12)	087°20'53"	
	3) 298°00'15"		272°31'36"	

At TP "BH-5B" BS TP "BH-5A"

HI = 5.02

FS	∠ Rt	S. Dist	Z ∠	P Height
TP "BH-5A"	0°00'00"	567.90	87°23'53"	4.51
			272 36 46	
BH-5 test well	1) 203°38'07"	106.16	91°36'20"	0.21
	2) 47°16'16"	(32.35)	268 24 32	
	3) 203°38'08"		91°35'54"	TOW CTR outside 16.5

-0.18 to top 2" PVC


BH-5 & BH-4
Sta
+
HI
-
Elev
J-23
3 05
264 54
3 47
0 23
261 63
7 98
0 33
253 98
7 94
3 85
249 22
4 14
test well, top 2" PVC casing
4 49
247 57
1 32
7 28
255 53
0 35
10 68
265 86
J-23
4 65
(220 44)
3 34
264 73
11 11
7 76
260 92
2 58
9 13
267 53
0 35
9 88
277 06

BH-4

Sta	+	HI	-	Elev	
			0 51		
	10 18	256 73			
			0 11		
	7 81	256 35			
			3 77		
	6 18	248 76			
71+00 11.46			5 70	248 06	
	3 41	246 47			
			0 40		
	11 66	307 73			
			0 89		
	3 69	310 53			
			8 41		
	7 20	309 32			
			7 40		
	8 85	305 69			
BH-4			2 17		top Ctr outside casing } test well BH-4
BH-1 282			2 50		top 2" PVC casing

10 17 87
Normal Run

Sta	SPS			Elev	
Pt "B"				266.18	See Field Book "ANCH-88-01" P32
	1 77	268 15			
			11 40	256 75	
	1 74	258 49			
SPSA-15			5 51	252 73	top ctr outside casing, test well
	2 28	255 26			0 53 to top 2" PVC casing = 258 51
SPSA-14			(12 7)	242 56	test boring
TP			3 03	252 23	
	6 47	259 20			
upper trench			(7 3)	251 19	
SPSA-16			(5 15)		top ctr outside casing
SPSA-16			5 43	253 17	top 2" PVC casing
	1 39	255 16			
			10 32	244 01	
	1 67	246 51			
SPSA-17			(5 3)	241 01	test boring
SPSA-18			(30 8)		top ctr outside casing
SPSA-18			3 51	215 9	top 2" PVC casing
	1 33	244 33			

Sta	+	HI	−	El.	
SFSA-19			(6.91)		top of outside casing } test well SFSA-19
" 35			7.65	[illegible]	top 2" PVC casing }
" -19	6.17	242.85			
			0.68	[illegible]	
	10.48	252.65			
			0.89	[illegible]	
	10.16	261.92			
			0.89	[illegible]	
	8.60	261.64			
			3.49	[illegible] (266.13)	
"A B"					
	4.33	270.51			
			5.[illegible]	[illegible].41	
	3.34	269.25			
			3.73	[illegible].52	top 2" PVC Casing
SFS-02					
"11	4.20	270.22			
			1.47	268.75	
	8.49	277.24			
			1.65	275.[illegible]	
	5.67	281.26			
			1.21	279.17	top 2" PVC Casing
SFS-01					
"10	0.55	280.52			
			10.05	270.47	
	0.60	271.07			
			4.35	[illegible].72	
	2.85	266.57			
			6.71	259.[illegible]	

RM "SPS"

See Page 33 & 37 "ANCH-88-01"

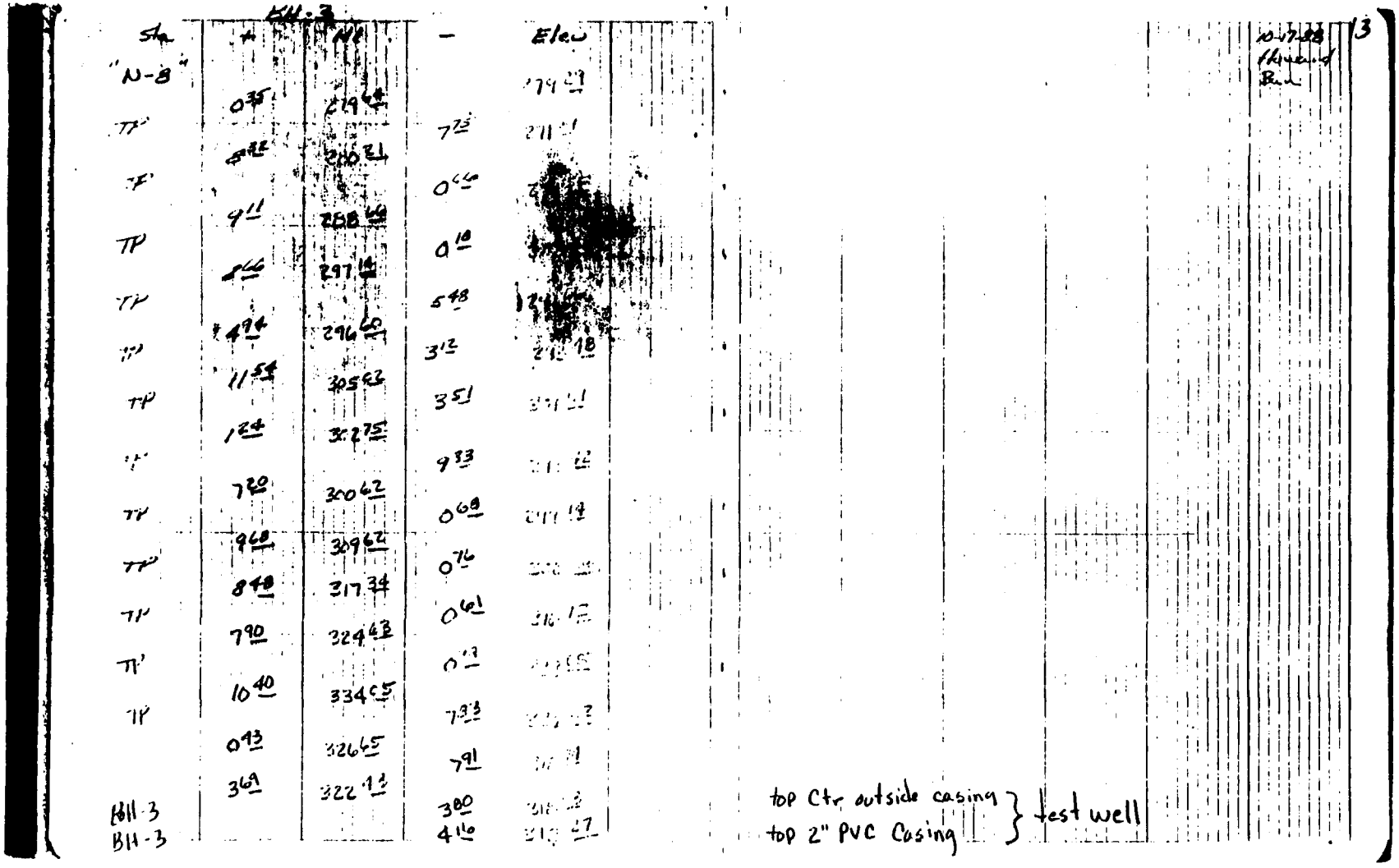
Sta	+	HI	−	Elev	
TBM "SPS"				254 86	
	1 68	261 54			
			10 59	251 95	
	3 03	253 98			
SPS-08			(3 78)		top Ctr. outside Casing } test well
250					
SPS-08			4 19	249 79	top 2" PVC Casing }
	1 10	260 89			
			9 03	241 86	
	2 20	244 06			
SPS-10			(3 49)		top Ctr. outside Casing } test well
245					
SPS-10			8 72	235 14	top 2" PVC Casing }
	0 85	235 99			
			15 4	220 43	
	1 27	227 70			
			9 16	218 54	
	2 99	221 53			
SPS-20			(2 11)		top Ctr. outside Casing }
249					
SPS-20			2 44	219 09	top 2" PVC Casing }
	3 54	222 63			
			0 10	[illegible]	
	11 13	233 16			
			0 30	[illegible]	
	10 49	243 35			
			0 35	243 00	
	10 01	253 01			

10-17-88
Hinman Ranch

11

	+	HI	−	Elev	
			2.35	260.72	
	10.25	260.10			
BM "SB"			1.22	259.88 (259.87)	See Page 3, Book "AUXH-88-01"

10-17-88
Hour
Rain


Elev
top Ctr outside casing
top 2" PVC Casing
test well

Pump Tests

At	"MB-137"	BS	"MB-136"
FS	∠R1	S. East	∠
"MB-136"	0°00'00"	731.48	89°56'34"
			270°04'30"
PT-1	1) 123°07'53"	647.22	90°25'08"
	4) 246°15'50"	(197.296)	269°35'50"
	m) 123°07'56"		
PT-3	1) 122°26'32	659.99	90°24'33"
	4) 244°52'50"	(201.164)	269°36'15"
	m) 122°26'25"		
PT-4	1) 119°50'30"	716.55	90°22'5
	4) 239°41'08"	(218.107)	269°37'18
	m) 119°50'34"		

10-17-88
Howard Barr

V4

Pump Tests

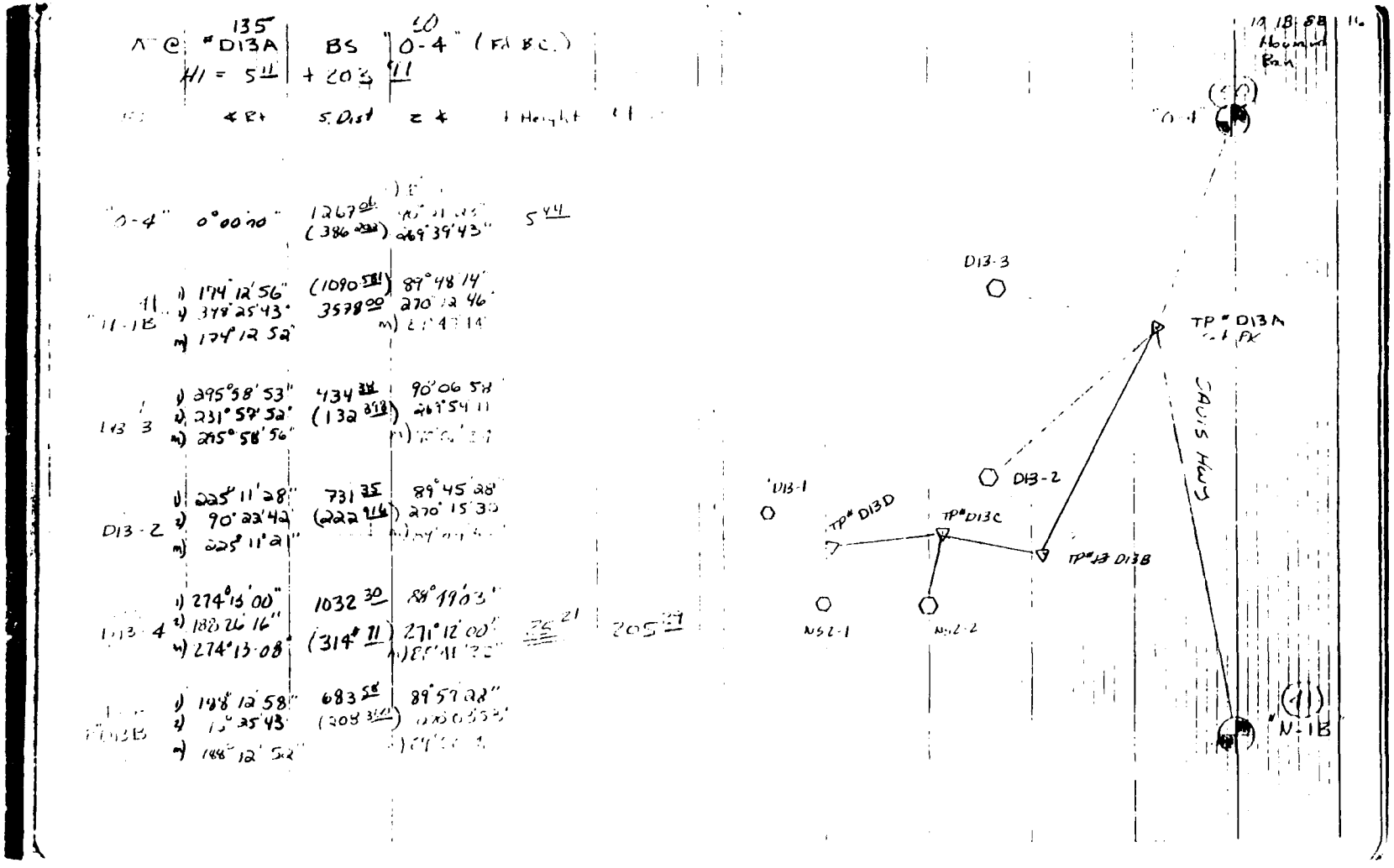
	+	Hz	−	Elev
5th "MB-137"	4[illegible]	181 95		176 [illegible]
TP	5[illegible]	176 05	7[illegible]	[illegible]
MT-4 (55)	2[illegible]		2[illegible]	[illegible]
MT-3 (113)	2[illegible]	178 41	1[illegible]	176 [illegible]
MT-1 (45)	203	178 52	1[illegible]	[illegible]
TP	2[illegible]	178 94	4[illegible]	[illegible]
"MB-137"	6[illegible]	181 15	4[illegible]	[illegible]

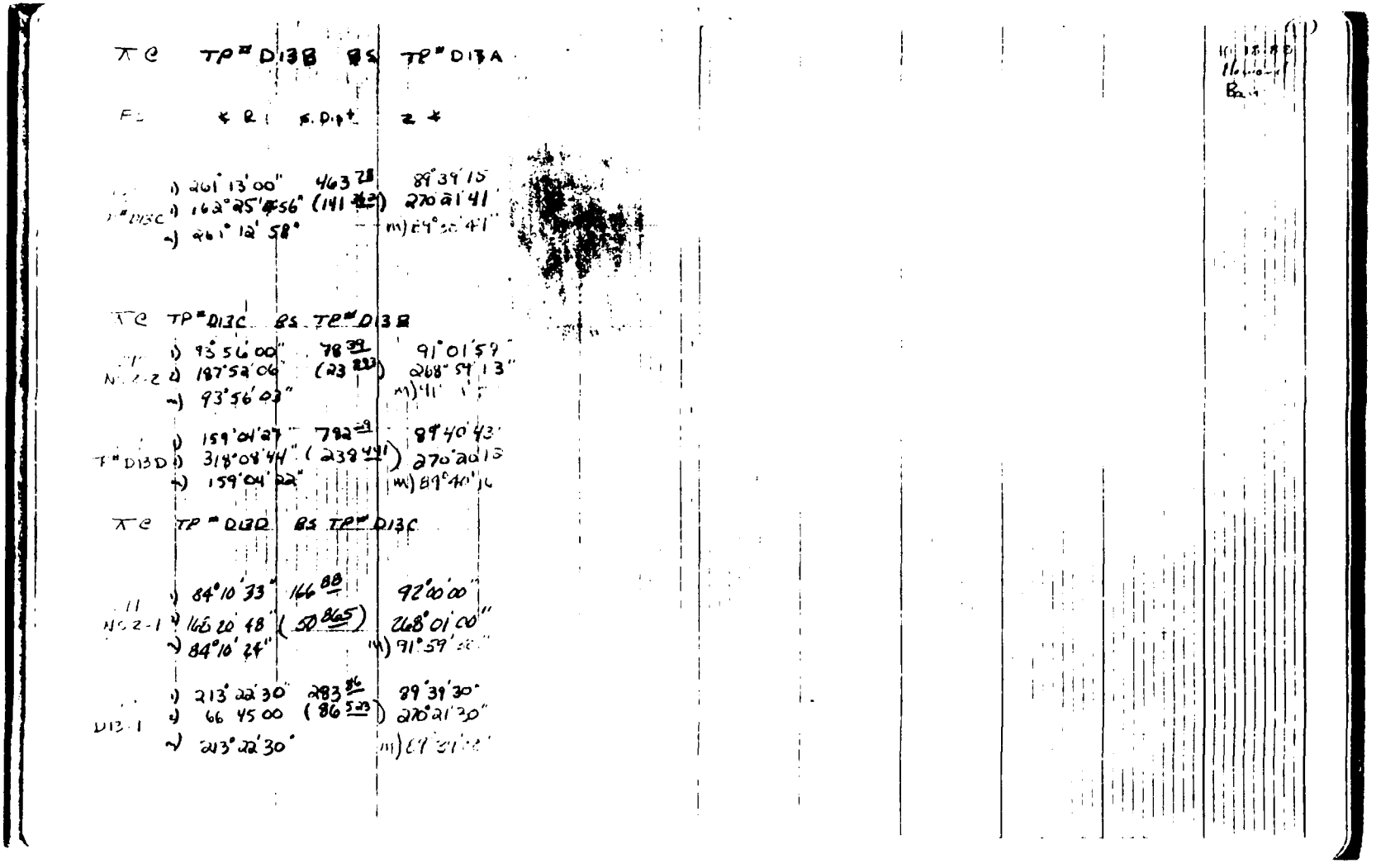
top 2" PVC Casing

top 2" PVC Casing

Top 4" PVC casing

10-17-89
Howard
Ban


D13-3
TP" D13A
D13-2
D13-1
TP" D13D
TP"D13C
TP"13 D13B
NSL-1
NSL-2
Davis Hwy
N-1B



At TP"D13B BS TP"D13A

FS	∠ R	s.d.p.t.	z ±
	i) 261°13'00"	463.78	89°39'15"
TP"D13C	ii) 162°25'56"	(141.42)	270°21'41"
	iv) 261°12'58"		iii) 89°38'41"

At TP"D13C BS TP"D13B

FS			
	i) 93°56'00"	78.39	91°01'59"
N.G.Z-2	ii) 187°52'06"	(23.33)	268°59'13"
	iv) 93°56'03"		iii) 91°01'57"
	i) 159°04'27"	792.59	89°40'43"
TP"D13D	ii) 318°08'44"	(238.41)	270°20'13"
	iv) 159°04'22"		iii) 89°40'16"

At TP"D13D BS TP"D13C

FS			
	i) 84°10'33"	166.88	92°00'00"
N.G.Z-1	ii) 165°20'48"	(50.865)	268°01'00"
	iv) 84°10'24"		iii) 91°59'28"
	i) 213°22'30"	283.86	89°39'30"
D13-1	ii) 66°45'00"	(86.529)	270°21'30"
	iv) 213°22'30"		iii) 89°38'31"

Sta	+	HI	−	Elev	
"D-4"				196.06	
	6 50	202 52			
	4 61	205 54	181		
			3 21	202 13	
	6 68	204 01			
DB-3			1 39	207 62	top 2" PVC test well casing
	3 88	211 51	3 32	207 [illegible]	
	5 63	213 22	2 06	210 [illegible]	top 2" PVC test well casing
DB-2	3 10	213 14	2 30	210 76	" " " " " "
DNS2-2	2 07	212 83	5 07	207 [illegible]	
	6 18	213 89	4 11		
	7 53	217 25	5 91	211 [illegible]	top 2" PVC test well casing
NS2-1	6 69	216 03	3 10	211 [illegible]	" " " "
DB-1	3 41	218 26	7 71	210 [illegible]	
	3 80	214 91	6 11	208 [illegible]	
	3 40	211 18	6 20	205 [illegible]	
	2 74	207 72	5 59	202 [illegible]	
	5 29	207 42	3 51	203 [illegible]	
TP 1-13A					

10-16-86
11-20-11
Ben

Sta	+	HI	−	Elev
	4 37	205 73		
			5 81	
	4 39	206 72		
	7 20		7 20	
	4 44	203 96		
"0-4"			7 75	196 21

D-3

(27)

℄ @ "MB-116" BS TP"D3-A"

FS ∠ R+ S. Dist Z d

D3-1 l) 259°38'00" 225.43 ✓ 86°50'18"
h) 159°15'40" (68.800) 273°11'00"
m) 259°37'50" (68.824) n) 86°49'39"

℄ @ TP"D3-B BS "MB-116"

FS ∠ R+ S. Dist Z d

TP"D3-B l) 165°20'23" 354.48 ✓ 90°5'34"
h) 330°40'28" (108.016) 269°34'58"
m) 165°20'14" 03'43"
n) 90°02'51"

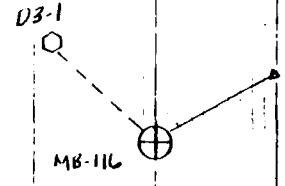
MB-116" 0°00'00" 116.25 (35.422) 90°25'52"
269°34'53"

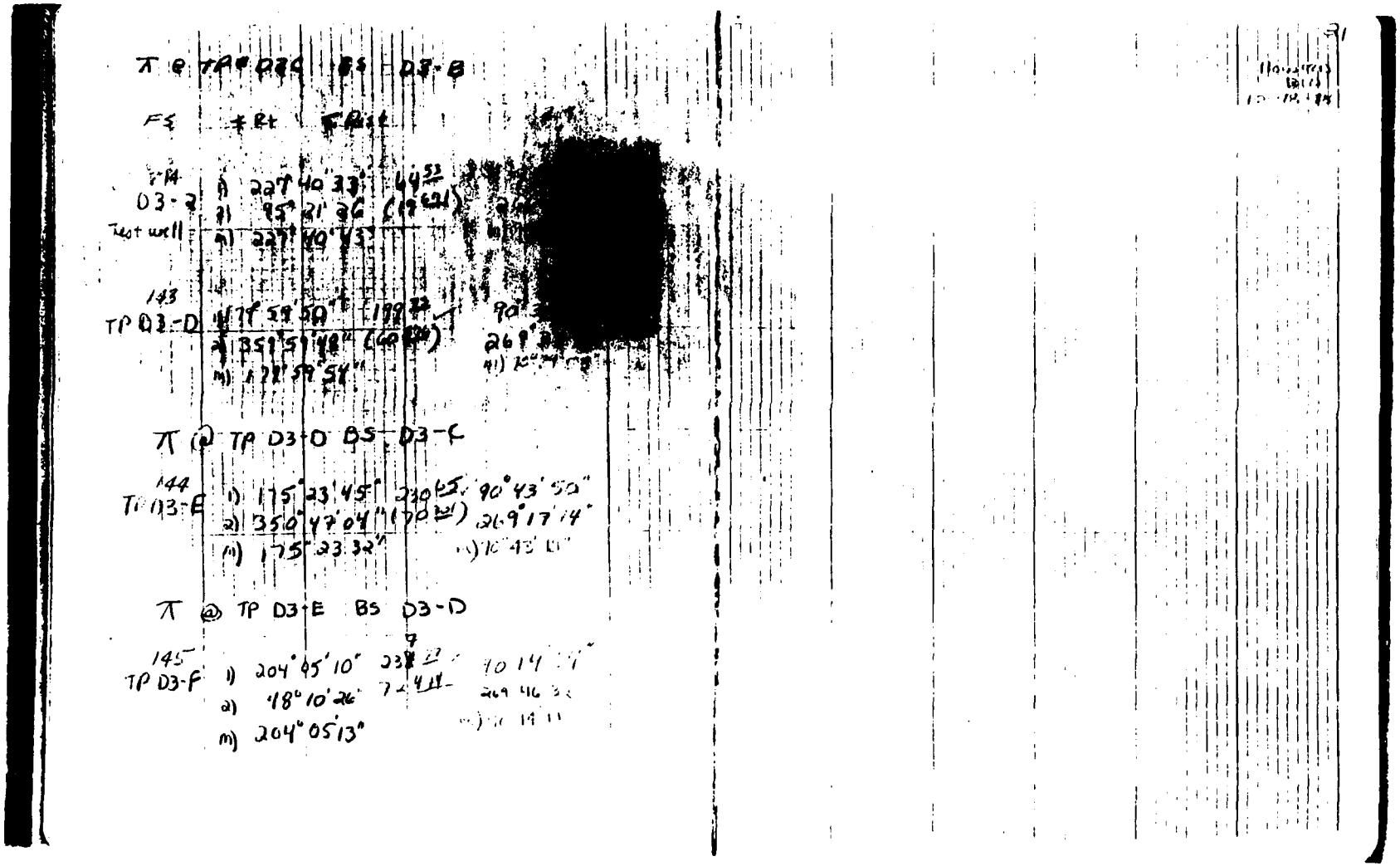
℄ @ TP"D3-B BS TP"D3-A

FS ∠ R+ S. Dist Z d

D3-C l) 196°40'07" 309.42 90°04'51"
h) 353°20'14" (94.031) 269°56'
m) 196°40'01" n) 90°04'11"

Checked dist 11-4-88





T @ TP D3-C BS D3-B

FS +Rt -Rt

TP D3-B	a)	229° 40' 33"	44.53	
	b)	95° 21' 36"	(19.621)	
Test well	m)	229° 40' 43"		

143

TP D3-D	a)	179° 59' 50"	199.22	90°
	b)	359° 59' 48"	(69.[illegible])	269°
	m)	179° 59' 54"		

T @ TP D3-D BS D3-C

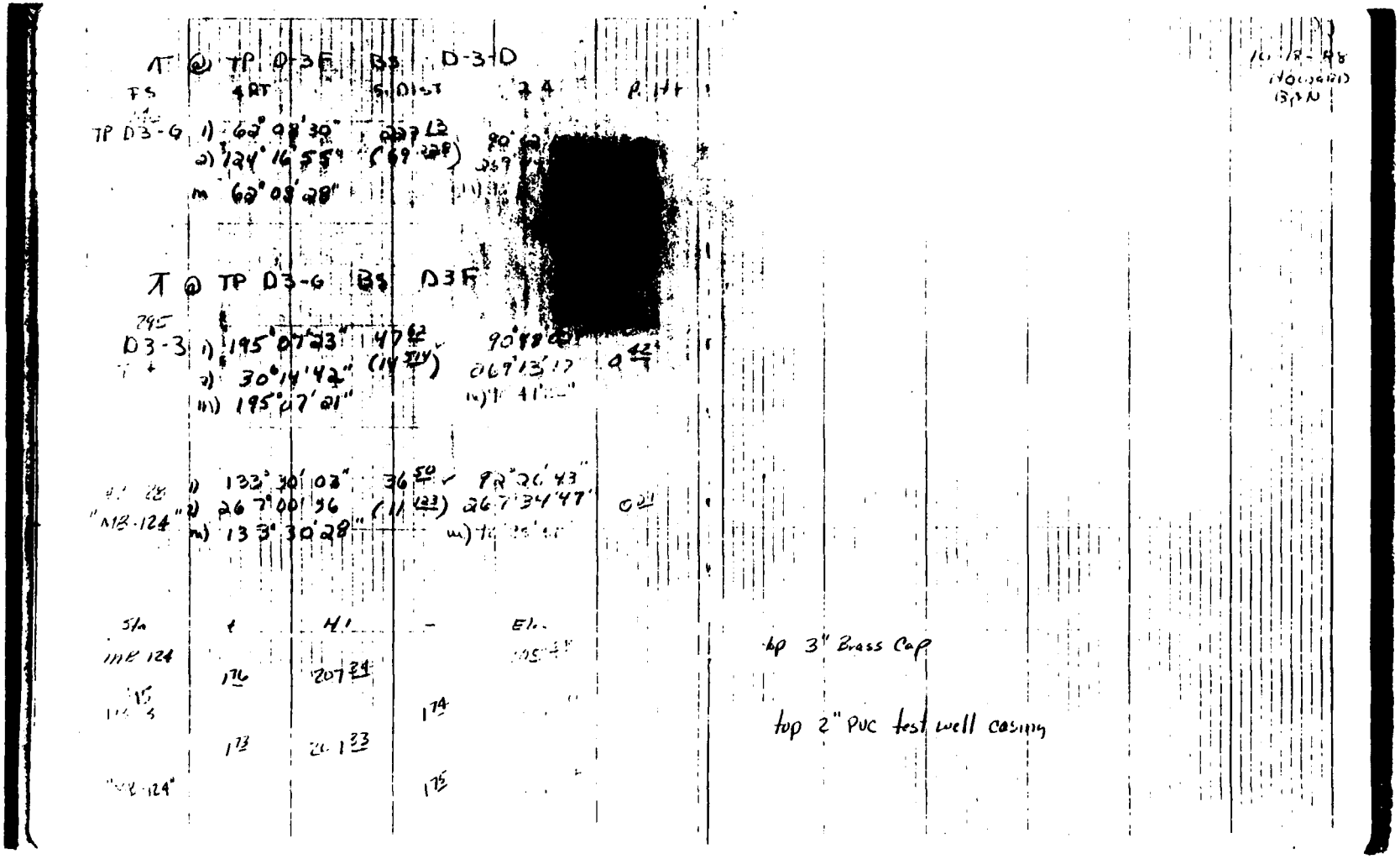
144

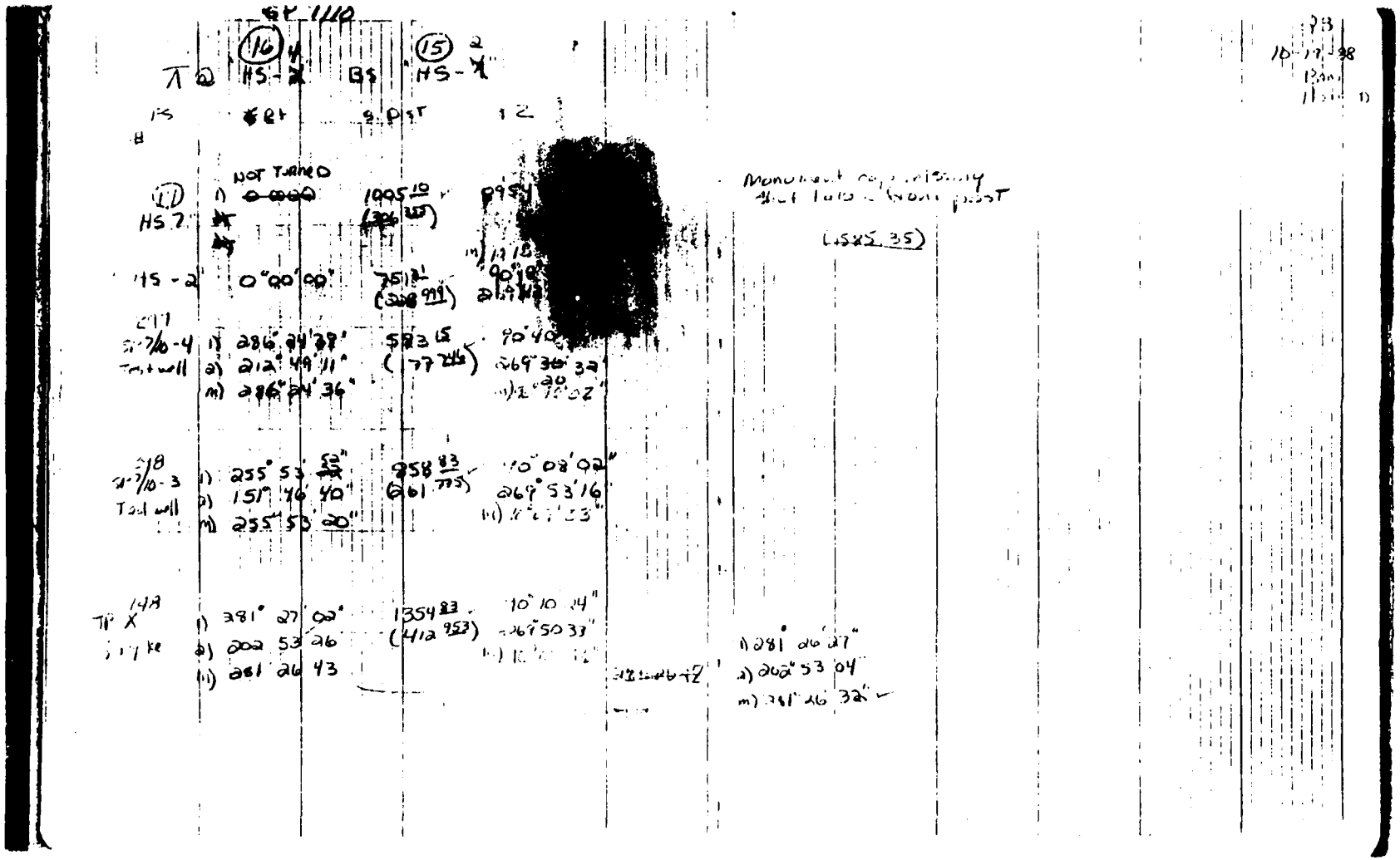
TP D3-E	a)	175° 23' 45"	230.65	90° 43' 50"
	b)	350° 47' 04"	(70.21)	269° 17' 14"
	m)	175° 23' 32"		

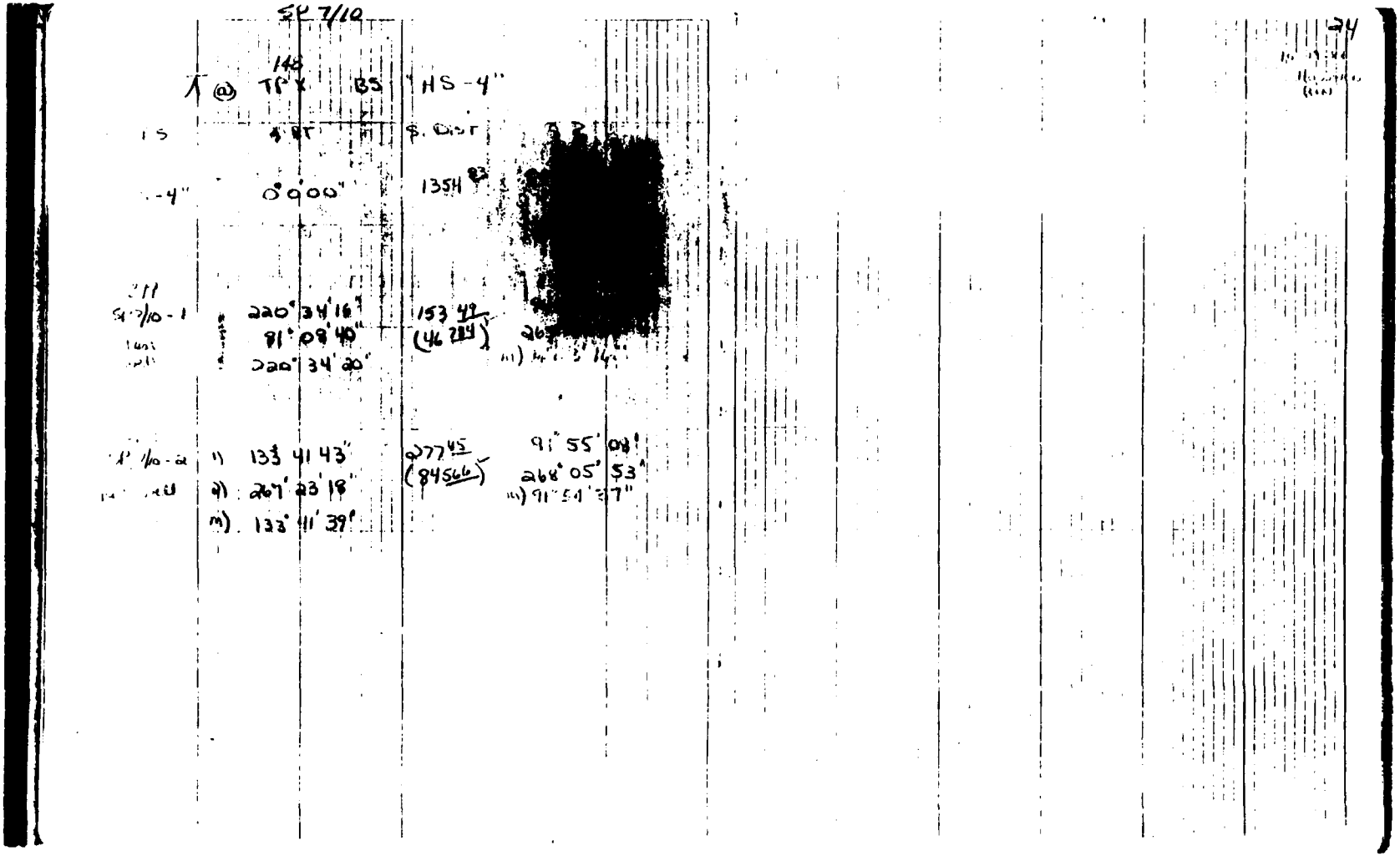
T @ TP D3-E BS D3-D

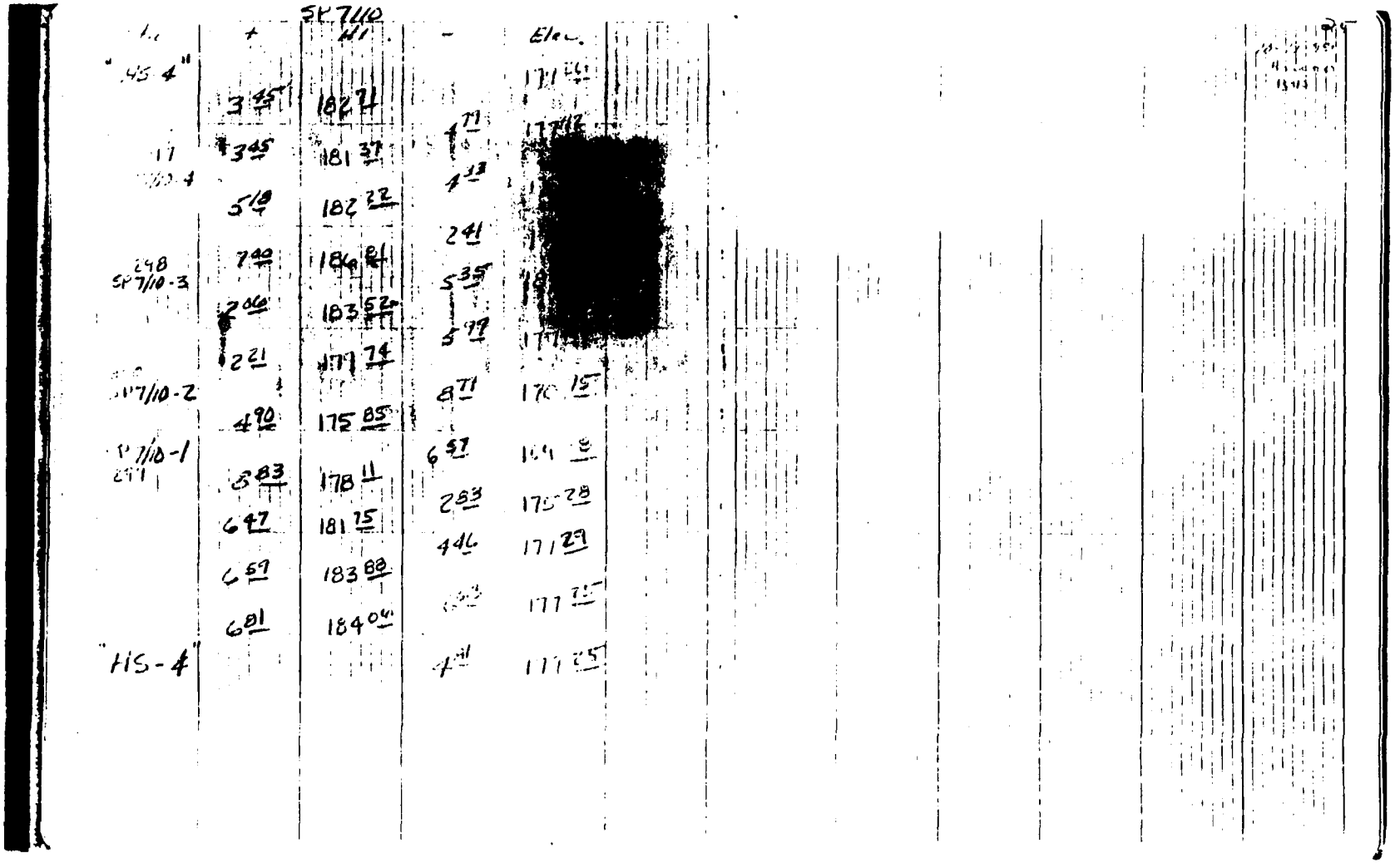
145

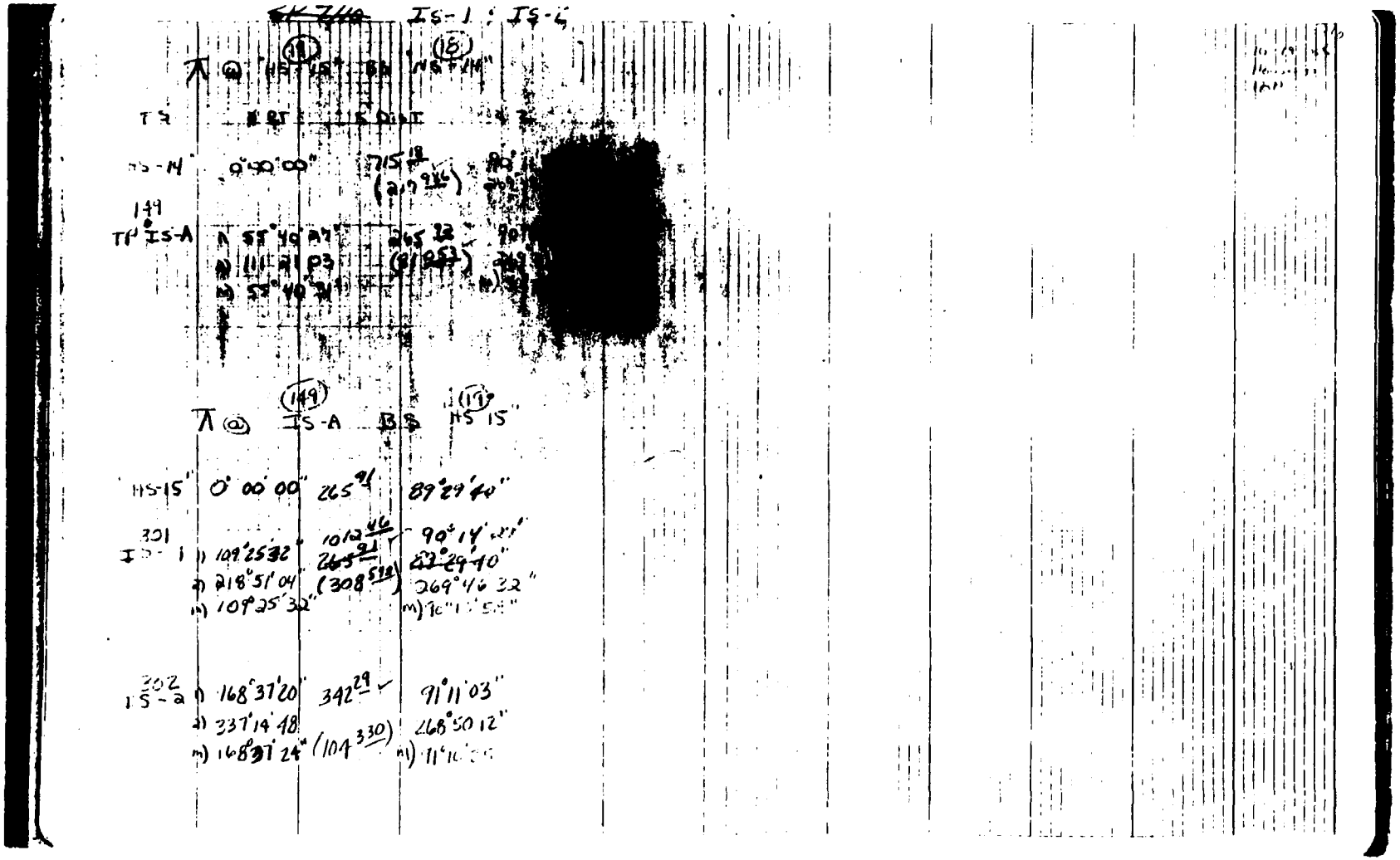
TP D3-F	a)	204° 05' 10"	238.27	
	b)	18° 10' 26"	(72.41)	
	m)	204° 05' 13"		

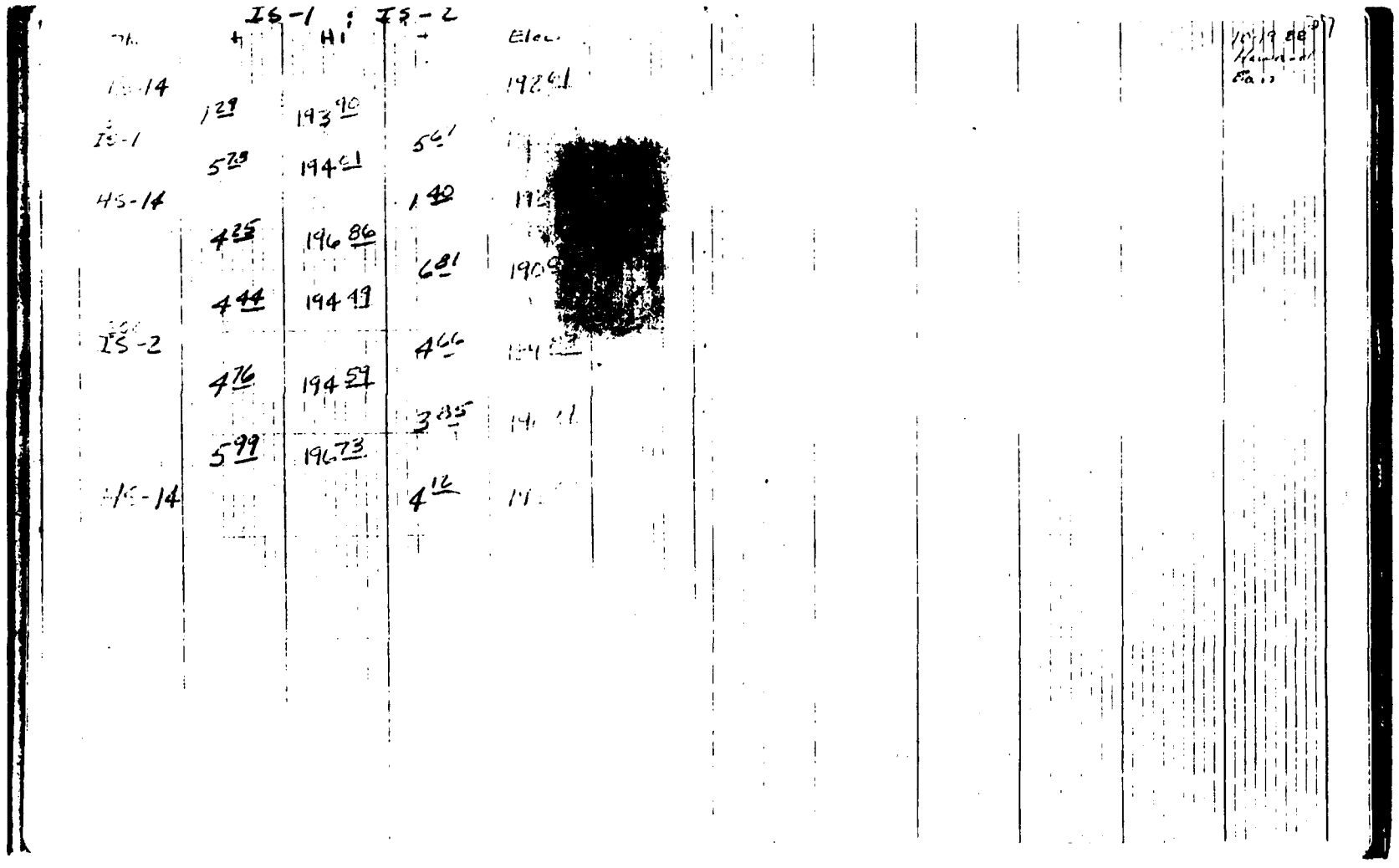

@ TP D3E BS D3D
FS
TP D3-G
@ TP D3-G BS D3E
D3-3
"MB-124"
top 3" Brass Cap
top 2" PVC test well casing

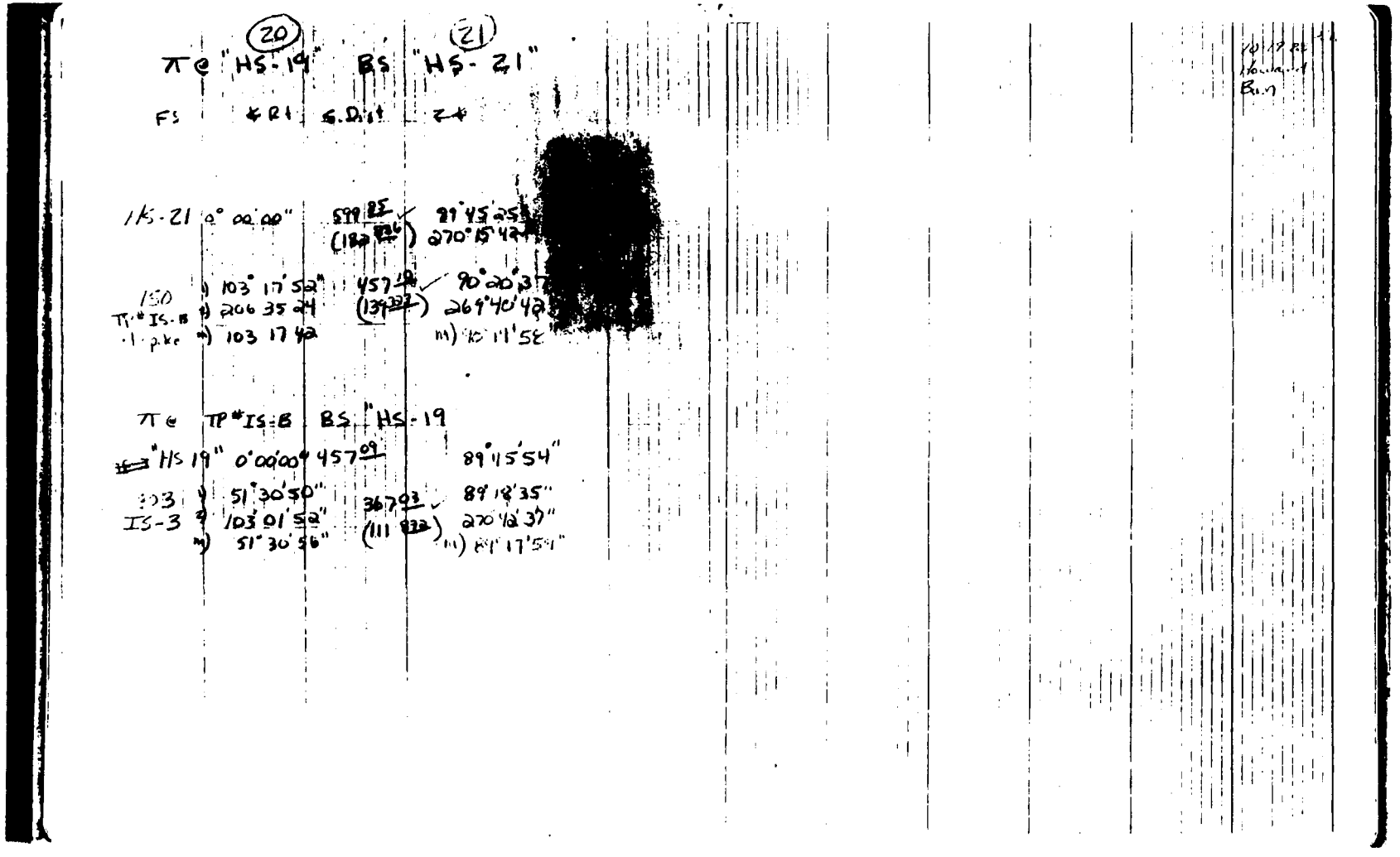

(16)
HS-2
(15)
HS-2
NOT TURNED
HS-2
0°00'00"
Monument
(LSXS 35)
1) 281° 26' 27"
2) 202° 53' 04"
m) 241° 26' 32"








IS-1 ; IS-2
Hi
Elec
IS-14
1929
1939 90
IS-1
529
1941
5 61
HS-14
425
1940 86
140
681
1909
444
1944 99
IS-2
466
476
1945 57
3 85
599
1967 73
HS-14
4 12



(20)

(21)

At "HS-19" BS "HS-21"

FS | ∠ R1 | S. Dist | Z

HS-21 | 0° 00' 00" | 599.85 | 89°45'25"
(180 | 270°15'42"

ISO | a) 103° 17' 52" | 457.10 | 90°20'37"
TP "IS-B | b) 206 35 24 | (139.232) | 269°40'42"
1 pke | m) 103 17 42 | m) 90 19'58"

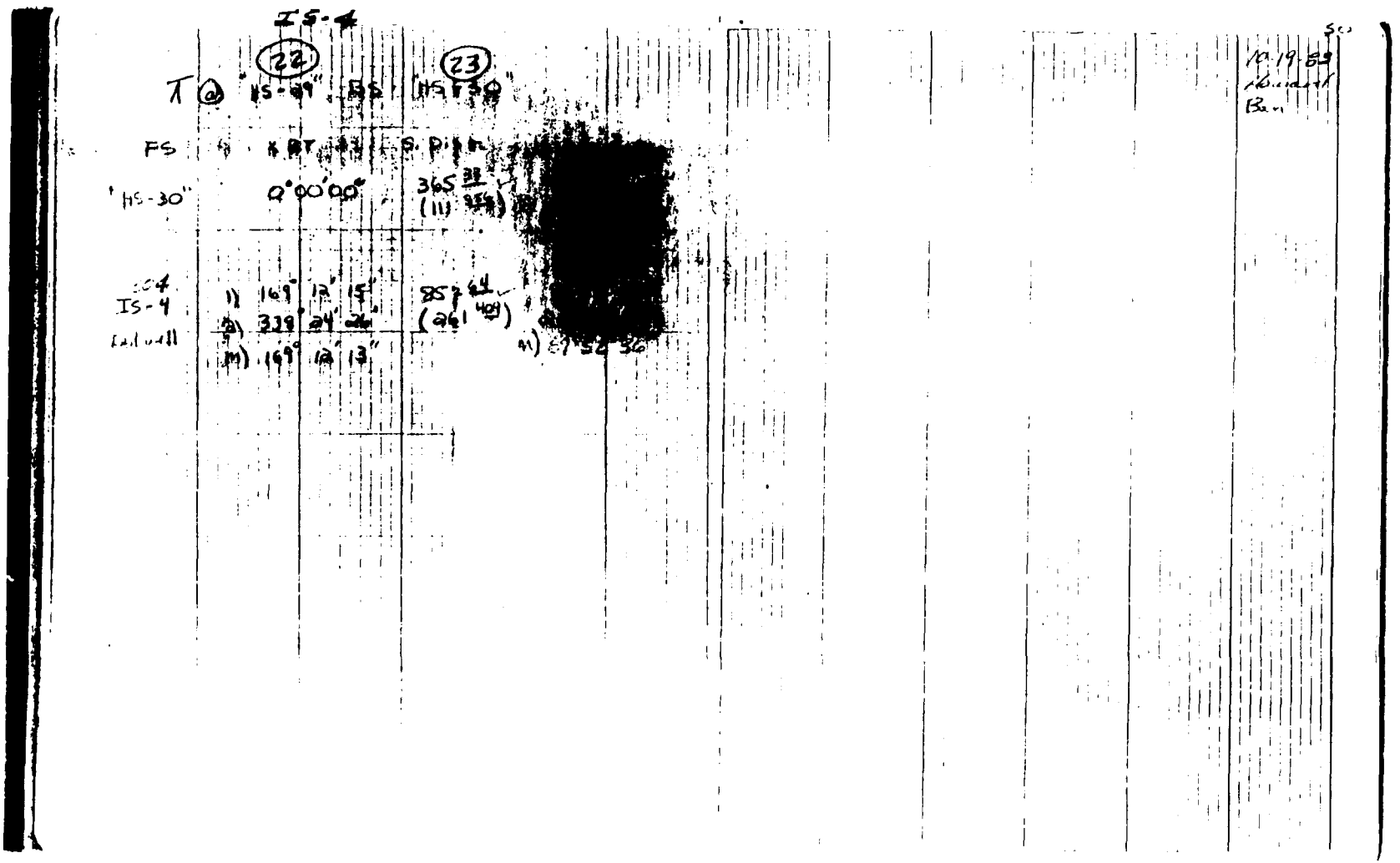
At TP "IS-B BS "HS-19

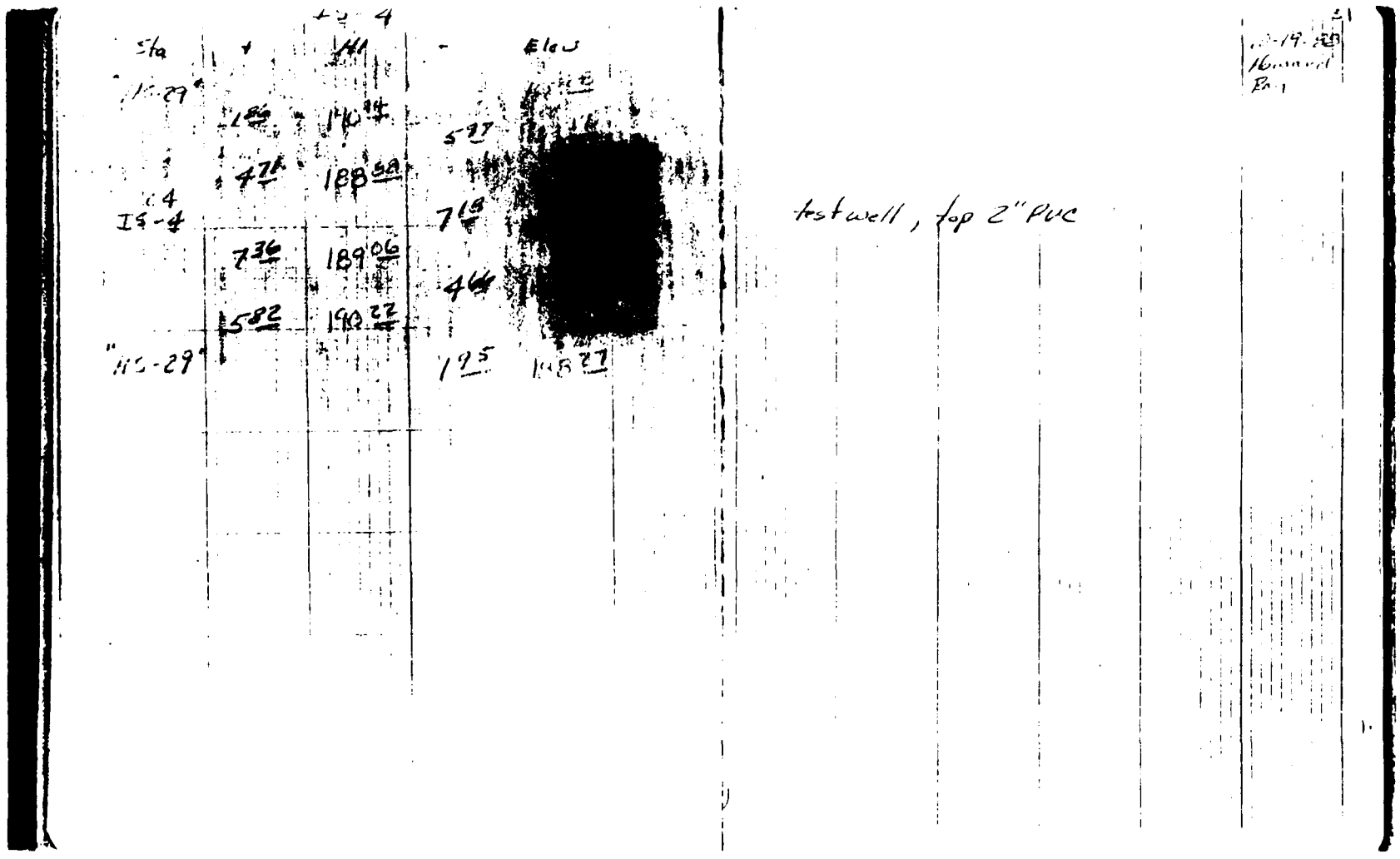
"HS 19" 0°00'00" 457.09 89°15'54"

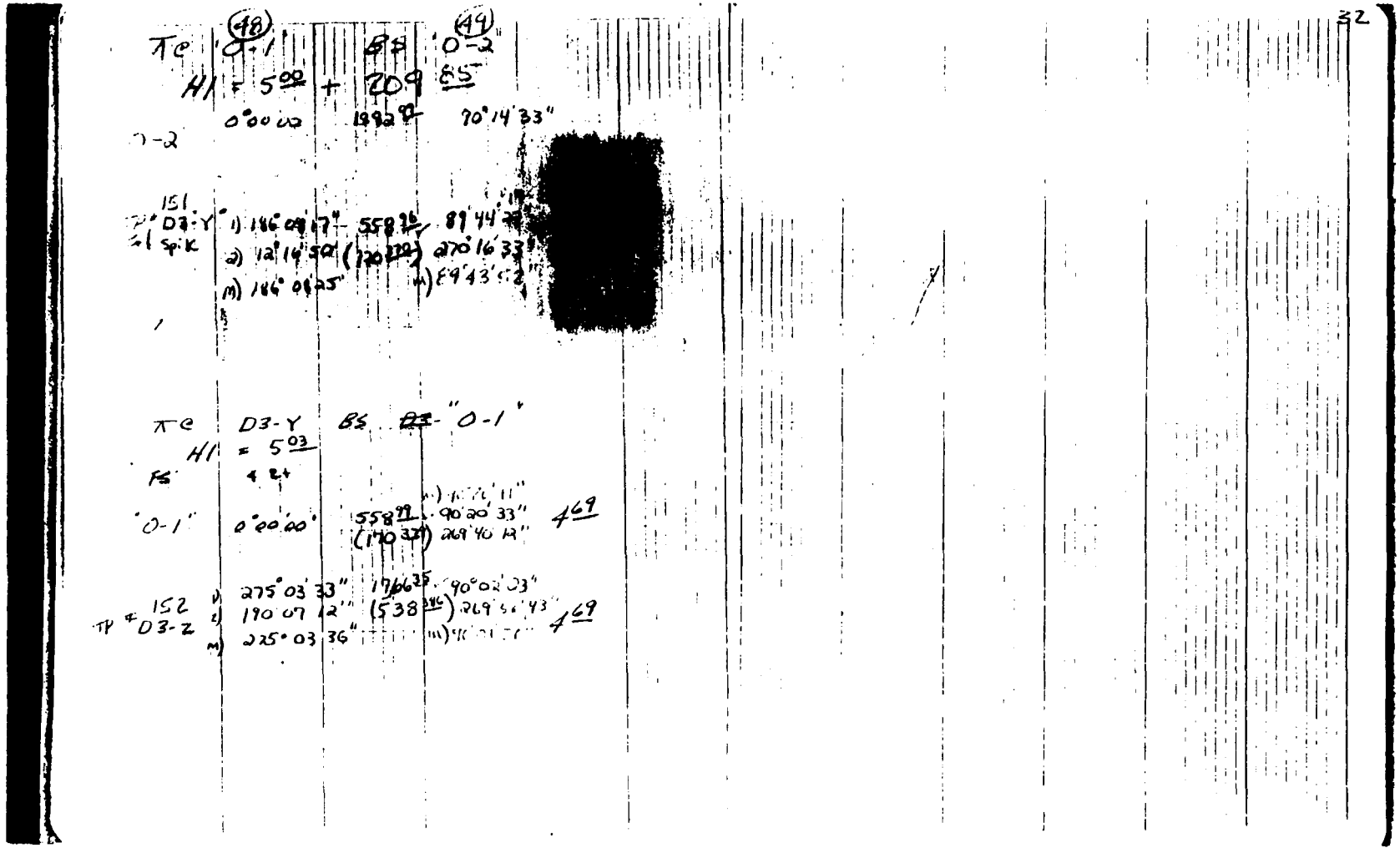
103 | a) 51°30'50" | 367.03 | 89°18'35"
IS-3 | b) 103°01'52" | (111.832) | 270°42'37"
m) 51°30'56" | m) 89°17'51"

IS-3

Sta	+	HI	−	Elev
HS 19				
	3 38	205 EC		
	3		C 07	
	6 46	209 19		
HS-19			4 31	




Sta
Elev
"HS-29"
test well, top 2" PVC



(48) (49)

TP "O-1" BS "O-2"

HI = 5.00 + 7.09 BS

0°00'00" 199.28' 90°14'33"

"O-2"

151

TP "D3-Y"

1) 186°09'17" 558.35' 89°44'28"

2) 12°14'50" (120.39') 270°16'33"

M) 186°09'25" M) 89°43'52"

TP D3-Y BS "O-1"

HI = 5.03

FS 4.24

"O-1" 0°00'00" 558.27' 90°20'33" 469

(170.37') 269°40'19"

152

TP "D3-Z"

1) 275°03'33" 176.35' 90°02'03"

2) 190°07'12" (538.96') 269°56'43" 469

M) 275°03'36" M) 90°02'07"

15'

@ TP# D3-Z BS TP# D3-Y

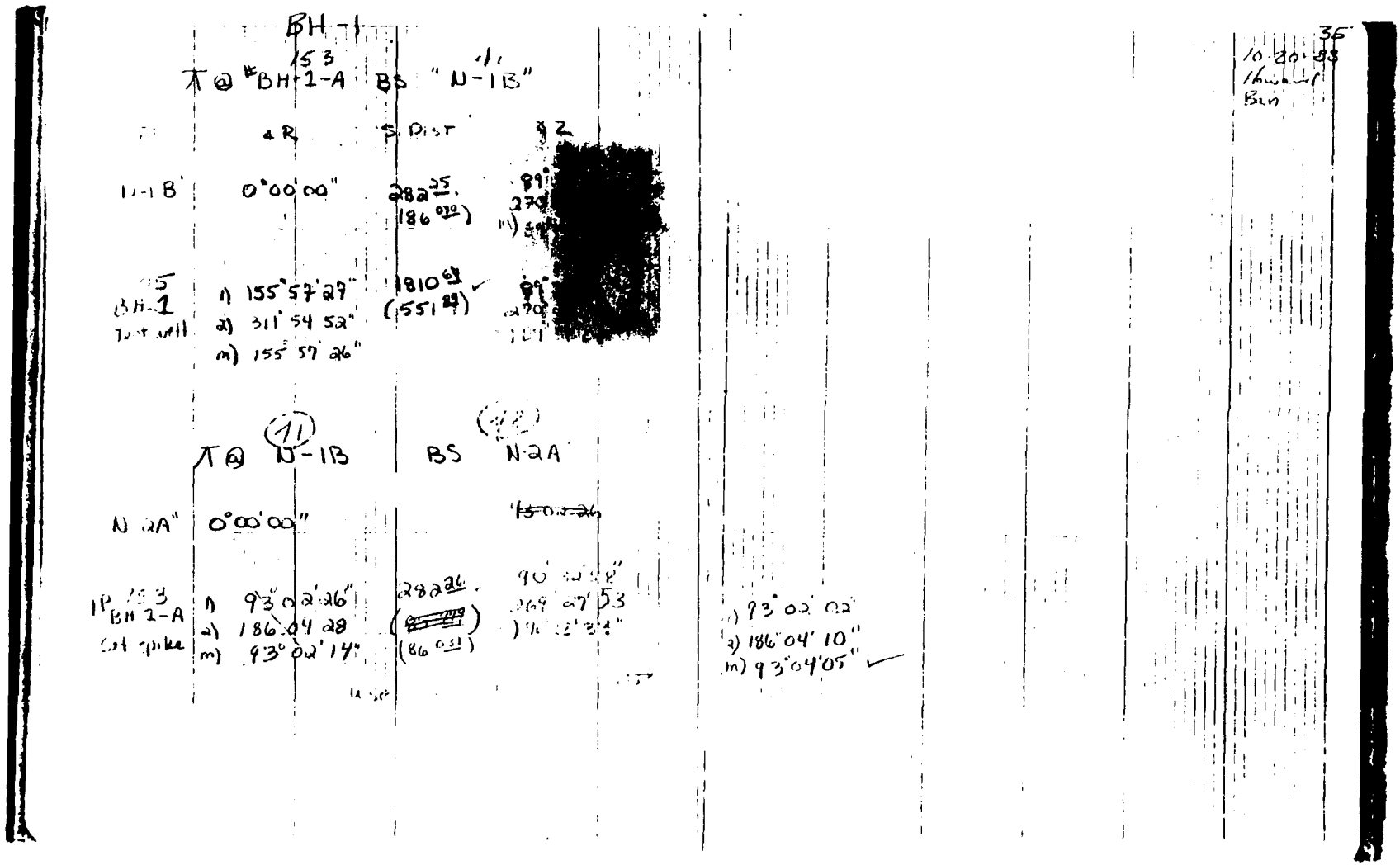
HI = 5.00

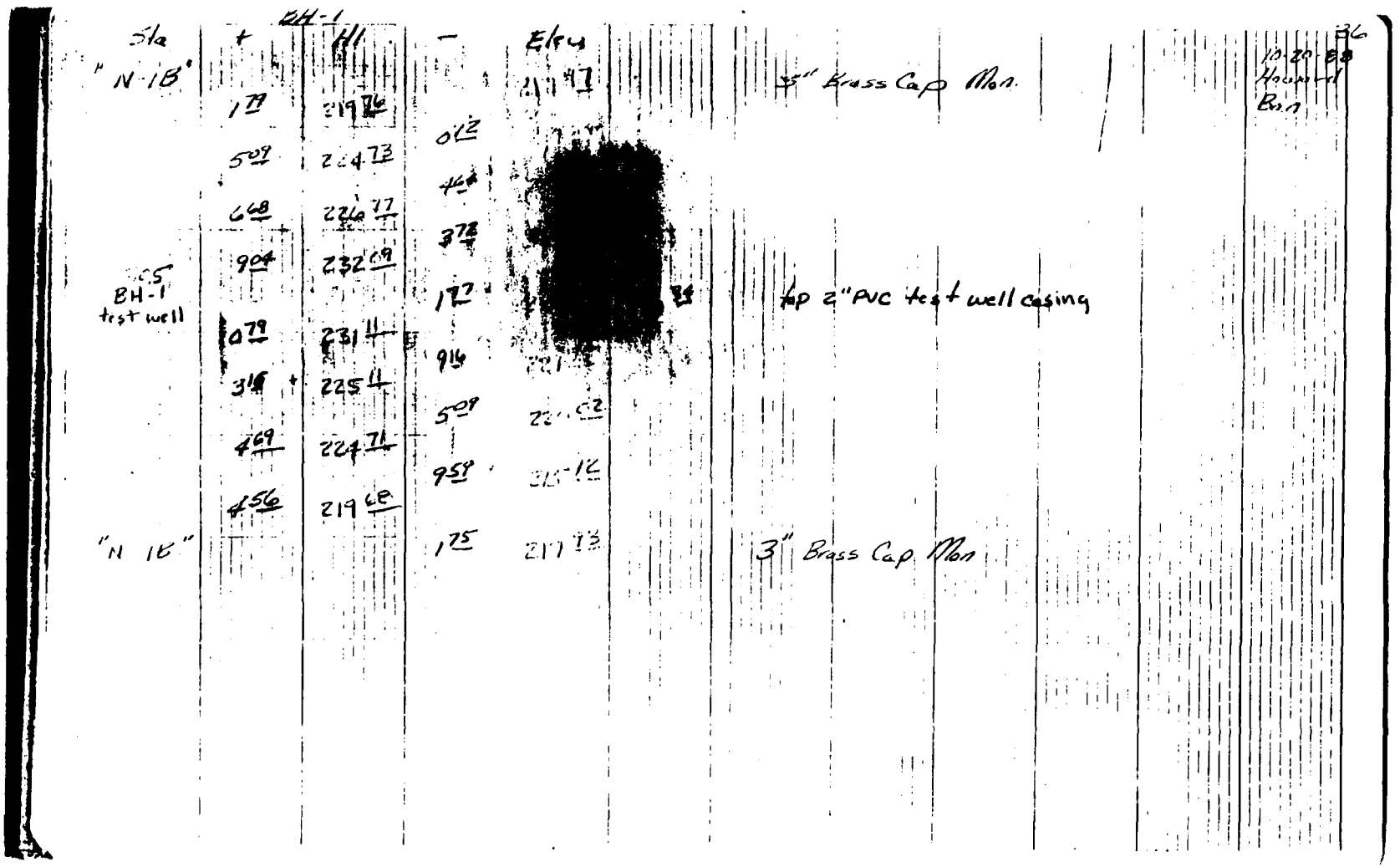
	∠Rt	S. Dist	z ∠
		1766.36	90°00'00"
TP# D3-Y	0°00'00"	(5[illegible] 288)	270°01'02"
			89°59'21"
	j) 270°39'54"	526.42	89°36'57"
D3-4	k) 101°20'06"	(160 453)	270°23'50"
	m) 270°40'03"		

15

10-20-88
Hummel Rain

Sta	+	HI	−	Elev	
"MB-116"					
	5 13	218 74			top 3" Brass Cap
	1 45	212 74	1 [illegible]	[illegible]	
	1 58	212 88	5 14		
DB-2 test well			4 03		top 2" PVC test well casing
	4 30	212 65			
	5 77	213 18	5 24		
	6 30	218 24	1 24	211 94	
"MB-116"			4 60	213 64	(213 62) top Brass Cap
	11 80	225 42			
DB-1 test well			1 34	[illegible]	top 2" PVC test well casing
	1 50	225 58			
"MB-116"			11 95	213 63	


BH-1
@ BH-1-A BS "N-1B"
4R
S. Dist
N-1B
0°00'00"
282 25
186 02
BH-1
Test will
1) 155°57'27"
2) 311°54'52"
m) 155°57'26"
1810 61
(551 89)
@ N-1B
BS N-2A
N-2A
0°00'00"
IP BH-1-A
Set spike
1) 93°02'26"
2) 186°04'28"
m) 93°02'14"
282 26
(86 03)
1) 93°02'02"
2) 186°04'10"
m) 93°04'05"
10-20-93



Sta	+	Elev	−	Elev	
"N 1B"	1 79	219 76		219 97	3" Brass Cap Mon.
	5 09	224 73	0 42		
	6 68	226 77	4 64		
	9 04	232 69	3 78		
BH-1 test well	0 79	231 11	1 77		top 2" PVC test well casing
	3 16	225 11	9 16		
	4 69	224 71	5 09		
	4 56	219 68	9 59		
"N 1E"			1 75		3" Brass Cap Mon.

	Dig Site			
Sta	+	41	-	Elev
11-9				
	8 08	293 46		278 38
			8 41	
	7 30	287 41		
			8 37	
	0 13	279 43		
			8 90	
	7 90	278 23		
11 11A			2 81	
11 11A	3 05	278 47		
			7 11	277 36
	10 32	281 68		
			1 40	280 28
	7 61	297 79		
			8 99	276 80
	3 73	282 53		
			7 17	276 36

11-4-68
Hamilton

Sta	+	Ht.	−	Elev	
SPSA-15	5' SA - 15				
Pt "B"				266 10	
	155	267 73			
SPSA-15			14 75		
230					
SPSA+15			15 22		
SPS-OL				265 52	Top 2" Pvc Casing
	131	266 83			
245 SPS-11			4 6	262 2	
246 SPS-12			6 5	260 3	
247 SPS-13		37	32 4	234 43	

IRP STAGE 3 RI/FS

ELMENDORF AFB, AK

APPENDIX F

CHAIN-OF-CUSTODY FORMS

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611, Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 1202

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: SP-4/ Equipment Blank
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/16/88		ACB SP-4	Aqueous	3	8020	
8/16/88		EB 8/16/88	Aqueous	2	418.1	B = Breakage
8/16/88		↓	Aqueous	2	8270	↓
8/16/88			Aqueous	3	8020	
8/16/88			Aqueous	1	160.1	
8/16/88		0687-NG-010 GN-88-0001R	Aqueous	1	6010, 7060, 7421, 7470, 7740	
8/16/88		0687-NG-010 GN-88-0001DR	Aqueous	1	6010, 7060, 7421, 7470, 7740	
8/16/88		0687-NG-011 GN-88-0001R	Aqueous	1	6010, 7060, 7421, 7470, 7740	
8/16/88		0687-NG-014 GN-88-0001R	Aqueous	1	6010, 7060, 7421, 7470, 7740	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P H Spatz	8/17/88	0825
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 565-735 1602
Received for Lab: BAB Signed: Date/Time 8/18/88
Enseco Project No. 1278

White and Pink Copies to Lab Yellow to Sampler

SS (01)

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 1204

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: 15-5
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice.
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/17/88		0687-NG-037 GN-88-0003	Aqueous	3	✓ 8010	
8/17/88			Aqueous	3	8015	
8/17/88			Aqueous	3	✓ 8020	
8/17/88			Aqueous	2	418.1	B: Breakage
8/17/88			Aqueous	2	✓ 8270	
8/17/88			Aqueous	2	✓ 8080	
8/17/88			Aqueous	1	160.1 / E300	✓
8/17/88			Aqueous	2	6010/7060/7421/7470/7740	Total & Dissolved "D" has been filtered
8/17/88			Aqueous	1	9010	
8/17/88		TRIP BLANK	Aqueous	1	8010	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S M Pe	P H Spatz	8/18/88	0900
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed. Ex. Airbill # 565735 76013
Received for Lab: RMA Signed: Date/Time 8/19/88 0900
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-(K)1

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 1203

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: SP-2/6 & SP-4
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/16/88		0687-NG-055 GN-88-0003	Aqueous	2	418.1	B= Breakage
8/16/88		↓	Aqueous	2	8270	↓
8/16/88			Aqueous	1	1601	
8/16/88			Aqueous	3	8020	
8/16/88		0687-NG-064 GN-88-0003	Aqueous	2	418.1	B= Breakage
8/16/88		↓	Aqueous	2	8270	↓
8/16/88			Aqueous	3	8020	
8/16/88		Trip Blank	Aqueous	1	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Sam Bo	Paige H Spatz	8/17/88	0820
2	Paige H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex Airbill # 565735746 2
Received for Lab: BMT Signed: Date/Time 8/18/88
Enseco Project No. 1278 8:35

White and Pink Copies to Lab Yellow to Sampler

SS-001

#41

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 1205

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: IS-6
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/[illegible]/88		0687-N6-03B GN-88-0003	Aqueous	3	8010	
8/18/88				3	8015	
8/17/88				3	8020	
8/17/88				2	418.1	B = Breakage
8/17/88				2	8270	
8/17/88				2	8080	
8/17/88				1	160.1/E300	
8/17/88				1	9010	
8/17/88				2	6010/7060/7421/7470/7740	Total & Dissolved "4D" has been followed

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[illegible]	P.H. Spatz	8/18/88	0805
2	P.H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 565735763
Received for Lab: RMA Signed: [illegible] Date/Time 8/18/88 8:50
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

#41

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 1206

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: IS-7
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/17/88		0687-NG-039 GN-88-0003	Aqueous	3	8010	
8/17/88				3	8015	
8/17/88				3	8020	
8/17/88				1	160.1/E300	
8/17/88				2 pds	8080	B=Breakage
8/17/88				2	8270	
8/17/88				2	418.1	
8/17/88				1	9010	
8/17/88				2	6010/7060/7421/7470/7740	Total & Dissolved "4D" has been filt.

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	8/18/88	0810
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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White and Pink Copies to Lab Yellow to Sampler

SS 001

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 1207

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward - Clyde
Sampling Site: 15-8
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/17/88		0687-NG-040 GN-88-0003	Aqueous	3	8010	
8/17/88				3	8015	
8/17/88				3	8020	
8/17/88				1	160.1 / E300	
8/17/88				2	418.1	B= Brookside
8/17/88				2	8270	
8/17/88				2	8080	
8/17/88				1	9010	
8/17/88				2	6010/7060/7421/7770/7740	Total & Dissolved "4D" has been filtered

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[illegible]	P.H. Spatz	8/18/88	0815
2	P.H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 1,[illegible]

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: SP 7/10
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/15/88		0687-NG-085 GN-88-0003	Aqueous	2	418.1	B=Bromo
8/15/88		↓	Aqueous	1	160.1	
8/15/88		↓	Aqueous	3	8020	
8/15/88		0687-NG-084 GN-88-0003	Aqueous	2	418.1	B=Bromo
8/15/88		↓	Aqueous	1	160.1	
8/15/88		↓	Aqueous	3	8020	
8/15/88		0687-NG-086 GN-88-0003	Aqueous	2	418.1	B=Bromo
8/15/88		↓	Aqueous	1	160.1	
8/15/88		↓	Aqueous	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	P.H. Spatz	8/16/88	0815
2	P.H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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FF 4 1

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: SP 7/10
Team Leader: Robin Hamlet (B&V)

CHAIN OF CUSTODY

No. 17111

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/15/88		0687-NG-087 GN-88-0003	Aqueous	2	418.1	B = Bromoform
8/15/88		↓	Aqueous	1	160.1	
8/15/88		↓	Aqueous	3	8020	
8/15/88		0687-NG-088 GN-88-0001	Aqueous	2	418.1	B = Bromoform
8/15/88		↓	Aqueous	1	160.1	
8/15/88		↓	Aqueous	3	8020	
8/15/88		0687-NG-089 GN-88-0001	Aqueous	2	418.1	B = Bromoform
8/15/88		↓	Aqueous	1	160.1	
8/15/88		↓	Aqueous	3	8020	
8/15/88		ACB - SP 7/10	Aqueous	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Spatz	P H Spatz	8/16/88	0812
2	P H Spatz			
3				

SHIPPING DETAILS

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Enseco - Rocky Mountain Analytical

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 17111

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: D-5 / D-13
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/15/88		0687-NG-005 GN-88-0001R	Aqueous	1	6010, 7060, 7421, 7470, 7740	P: Pe... Dissolved
8/15/88		0687-NG-008 GN-88-0001R	Aqueous	1	6010, 7060, 7421, 7470, 7740	"
8/15/88		0687-NG-016 GN-88-0003R	Aqueous	1	6010, 7060, 7421, 7470, 7740	"
8/15/88		EB 8/15/88	Aqueous	2	418.1	B: Bo...
8/15/88		↓	Aqueous	1	160.1	
8/15/88		↓	Aqueous	3	8020	
8/15/88		Trip Blank W-084	Aqueous	1	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Sam Bo	P.H Spatz	8/16/88	0812
2	P.H Spatz			
3				

SHIPPING DETAILS

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303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 1211

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: IS-2
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/17/88		0687-NG-034 GN-88-0003	Aqueous	3	8010	
8/17/88				3	8015	
8/17/88				3	8020	
8/17/88				2	418.1	B= Breakage
8/17/88				2	8270	
8/17/88				2	8080	
8/17/88				1	9010	
8/17/88				1	160.1 / E300	
8/17/88				2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been filtered

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S m B	P H Spatz	8/18/88	0825
2	P H Spatz			
3				

SHIPPING DETAILS

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450

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 1212

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: IS-8
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/17/88		0687-NG-040 GN-88-0003D	Aqueous	3	8010	Cl
8/17/88				3	8015	Cl
8/17/88				3	8020	
8/17/88				1	160.1/E300	
8/17/88				2	418.1	B: Breakage
8/17/88				2	8270	
8/17/88				2	8080	
8/17/88				1	9010	
8/17/88				2	6010/7060/7421/7470/7740	Total & Dissolved '40' has been followed

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SM Bc	PH Spatz	8/18/88	0820
2	PH Spatz			
3				

SHIPPING DETAILS

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Enseco - Rocky Mountain Analytical

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303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 171

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/NCC
Sampling Site: ~~D-15~~ PHS D-13
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/9/88		0687-NG-015 GN-88-0003	Water	3	8010	
8/9/88			Water	3	8010	MS
8/9/88			Water	3	8010	MSD
8/9/88			Water	3	8020	
8/9/88			Water	3	8020	MS
8/9/88			Water	3	8020	MSD
8/9/88			Water	2	8270	1
8/9/88			Water	2	8270	MS
8/9/88			Water	2	8270	MSD
8/9/88			Water	2	418.1	B = Breakage

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Paige H Spatz	8/10/88	9:00
2	Paige H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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7H-31

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 1711

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V/WCC
Sampling Site: D-5
Team Leader: Robin Hamlet (B & V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/9/88		0687-NG-008 GN-88-0001	Water	3	8010	
8/9/88		↓	Water	3	8020	
8/9/88			Water	2	8270	B: Breakage
8/9/88			Water	2	418.1	↓
8/9/88			Water	1	160.1, E300	
8/9/88			Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved
8/9/88		0687-NG-005 GN-88-0001	Water	3	8010	
8/9/88		↓	Water	3	8020	
8/9/88			Water	2	8270	B: Breakage
8/9/88			Water	2	418.1	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Paige H Spatz	8/9/88	3:20p
2	P H Spatz			
3				

SHIPPING DETAILS

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#36

Enseco - Rocky Mountain Analytical

CHAIN OF CUSTODY

No. 1215

Arvada, Colorado 80002
Phone: 303/431-7171
Attn: J. Zimmerman

Enseco Client: Black & Veatch
Project: Riverleaf
Sampling Co: B & V / WCC
Sampling Site: D-13
Team Leader: Peter Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8		C682-N6-017 GN-88-0003	Water	1	160.1, E300	
			Water	2	418.1	B: Breakage
			Water	2	8270	↓
			Water	2	6010, 7060, 7421, 7740, 7470	Total & Dissolved
			Water	3	8010	
			Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
	P. Spatz	8/8/88	9:05

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex Airbill # 7071901981
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SS 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 12116

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: D-5/D-7
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/9/88		0687-NG-005 GN-88-0001	Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved
8/9/88		0687-NG-006 GN-88-0004	Water	1	160.1, E300	
8/9/88		0687-NG-013 GN-88-0001	Water	3	8010	
8/9/88		↓	Water	3	8020	
8/9/88			Water	2	8270	Base Breakup
8/9/88			Water	2	418.1	↓
8/9/88			Water	1	160.1, E300	
8/9/88			Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved
8/9/88		AGB-D-5	Water	3	8010	
8/9/88		↓		3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P. Spatz	~~8/9/88~~ 8/10/88	~~7:15~~ 9:10
2	P. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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#36

Enseco - Rocky Mountain Analytical

[illegible] Simms Street
[illegible] Colorado 80002
303 [illegible] Facsimile: 303/431 7171

Attn: Zimmerman

CHAIN OF CUSTODY

No. 1217

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co: B & V / WCC
Sampling Site: D-13
Team Leader: Robin Hamlet (B & V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8	[illegible]	1187-NE-016 GW-88-0003	Water	1	160.1, E300	
8/8	[illegible]		Water	2	418.1	B = Breakage
8/8	[illegible]		Water	2	8270	↓
8/8	[illegible]		Water	2	6010, 7060, 7421, 7740, 7470	(Total & Dissolved)
8/8	[illegible]		Water	3	8010	
8/8	[illegible]		Water	3	8020	
8/8	[illegible]	ACE - D-13	Water	3	8010	
8/8	[illegible]	↓	Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
	P. Spatz	8/9/88	9:10

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 707190198[illegible]
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#36

Rocky Mountain Analytical

CHAIN OF CUSTODY

No. 1218

J. Zimmerman

Black & Veatch

Elmendorf

Company: B & V / WCC

Company Code: NS - 2

Project Leader: Peter Hamlet (B & V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8		ACB - NS - 2	Water	3	8010	RMA's Entry
8/8		↓	Water	3	8015	
8/8		Blanket	Water	3	8020	
8/8		CL81 - NS - 106 GN - 88 - 0003	Water	1	160.1, E300	
8/8			Water	2	418.1	BE Breakage
8/8			Water	2	8270	↓
8/8			Water	2	6010, 7060, 7421, 7740 7470,	Total & Dissolved
8/8			Water	3	8010	
8/8			Water	3	8015	
8/8		↓	Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
P. Spatz	P. Spatz	8/9/88	9:05

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz

Method of Shipment: Fed. Ex. Airbill # 7071901981

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J Zimmerman

CHAIN OF CUSTODY

No. 1211

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site:
Team Leader: Robin Hamlett (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice.
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8/88		0687-SD-114 GS-88-0001D	Soil	2	418.1, 6010, 7471, 9010	B: Breakage
8/8/88		↓	Soil	2	8240	↓
8/8/88		↓	Soil	1	8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S m B	P A Spatz	8/9/88	9:05
2	P A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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#37

Enseco - Rocky Mountain Analytical

[illegible] Simms Street
[illegible] Colorado 80002
303 421 6611 Facsimile: 303/431 7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 1220

Enseco Client: Black & Veatch
Project: Woodward
Sampling Co: R&V/UCC
Sampling Site: Equipment Blank / Ambient Condition Blank
Team Leader: Pete Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/		EB 8/8/88	Water	1	160.1, E300	
8/		EB 8/8/88	Water	2	418.1	B = Breakage
8/		EB 8/8/88	Water	2	8270	↓
8/		EB 8/8/88	Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved
8/		EB 8/8/88	Water	3	8010	
8/		EB 8/8/88	Water	3	8015	
8/		EB 8/8/88	Water	3	8020	
8/		ACB SC-4,5,6	Water	3	8010	
8/		ACB SC-4,5,6	Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
	P.A. Spatz	8/9/88	8:50

SHIPPING DETAILS

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1001 #44

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 1733

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE/B&V
Sampling Site BH
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	RMA #	Sample Type	No. Containers	Analysis Parameters	Remarks
8/11		0687-SO-122 GS-BB-0001	09	SOIL	2	418.1/7470/D2216 6010	B=BREAKAGE
↓		0687-SO-122 GS-BB-0001		SOIL	2	8240	↓
↓		0687-SO-122 GS-BB-0001		SOIL	1	8270	
8/11		0687-SO-122 GS-BB-0002	11	SOIL	2	418.1/7470/D2216 6010	B=BREAKAGE
↓		↓		SOIL	2	8240	↓
↓		↓		SOIL	1	8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/12/88	0715
2				
3				

SHIPPING DETAILS

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TR #-20

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2108

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE (B&V)
Sampling Site: SP7/10 & SP2/6
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/26		0687-SO-085 GS-BB-0001	SOIL	2	418.1	B=BREAKAGE	01
7/26		↓	SOIL	2	8240	↓	
7/26		0687-SO-085 GS-BB-0002	SOIL	2	418.1		02
7/26		↓	SOIL	2	8240	MS/MSD	
7/26		0687-SO-085 GS-BB-0002	SOIL	2	418.1	B=BREAKAGE D=DUPLICATE	02M 02D
7/26		↓	SOIL	2	8240	↓	
7/26		0687-SO-059 GS-BB-0001	SOIL	2	8240	B=BREAKAGE	03
7/26		↓	SOIL	1	418.1		
7/26			SOIL	1	8270/D2216		
7/26			SOIL	1	418.1/8270/D2216		

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
1.		7/27/88	0715
2.			
3.			

SHIPPING DETAILS

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#27

Enseco • Rocky Mountain Analytical — **CHAIN OF CUSTODY** — No. 21091

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile 303/431-7171

Attn: JEAN ZIMMERMAN
Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co: WOODWARD CLYDE / B&V
Sampling Site: IS6
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes / No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C — Seal #
6. Sampling Status: Done — Continuing Until: MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes / No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/2		0687-SO-038 IS6-SB-0002	SOIL	1	418.1/6010/7471	
8/2			SOIL	1	8270/8080/D2216	
8/2			SOIL	2	8240	B = BREAKAGE
8/2			SOIL	1	418.1/6010/7471 8270/8080/D2216	B = BREAKAGE
8/2		0687-SO-038 IS6-SB-0002	SOIL	1	418.1/6010/7471	D = DUPLICATE
8/2			SOIL	1	8270/8080/D2216	↓
8/2			SOIL	2	8240	D = DUPLICATE B = BREAKAGE
8/2			SOIL	1	418.1/6010/7471 8270/8080/D2216	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/3/88	0700
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No 2111

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: Woodward-Clyde / B&V
Sampling Site: SP-5
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L Evans P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/4/88		0687-NB-079 GN-88-0003	Water	3	8020	
8/4/88		↓	Water	1	160.1	
8/4/88		↓	Water	2	418.1	B = Bleed cap
8/4/88		EB-SP5 8/4/88	Water	3	8020	
8/4/88			Water	1	160.1	
8/4/88			Water	2	418.1	B = Bleed cap
8/4/88		Trip Blank - 079	Water	1	8020	
8/5/88		EB-SP5A 8/5/88	Water	3	8020	
8/5/88		↓	Water	2	418.1	B = Bleed cap
8/5/88		↓	Water	1	160.1	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	Luigi Hy-Spatz	8/5/88	8:45
2	Luigi H Spatz			
3				

SHIPPING DETAILS

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TR # 28

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 2112

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward - Clyde/B&V
Sampling Site: IS-4
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Evers / P Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Evers
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	PCMA #
8/3/88		0687-SO-036 65-88-0001	SOIL	1	418.1/6010/7471		03
8/3/88		↓	SOIL	1	8270/8080/D2216		03
8/3/88		↓	SOIL	1	418.1/6010/7471/8270/8080 D2216	B = Breakage	03
8/3/88		↓	SOIL	2	8240	↓	03
8/3/88		0687-SO-036 65-88-0002	SOIL	1	418.1/6010/7471		04
8/3/88		↓	SOIL	1	8270/8080/D2216		04
8/3/88		↓	SOIL	2	8240	B = Breakage	04
8/3/88		↓	SOIL	1	418.1/600/7471/8270/8080 D2216	B = Breakage	04
	*	NO TRIP BLANK W/ THIS SHIPMENT, per B&V request					

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	Regi H Spatz	8/4/88	0840
2	Regi H Spatz			
3				

SHIPPING DETAILS

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#27

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2111

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE (B&V)
Sampling Site: IS-1
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/2		0687-SO-033 GS-BB-0001	SOIL	1	418.1/6010/7471	
8/2		↓	SOIL	1	8270/8080/D2216	
8/2		↓	SOIL	2	8240	B = BREAKAGE
8/2		↓	SOIL	1	418.1/6010/7471 8270/8080/D2216	↓
8/2		0687-SO-033 GS-BB-0002	SOIL	1	418.1/6010/7471	
8/2		↓	SOIL	1	8270/8080/D2216	
8/2		↓	SOIL	2	8240	B = BREAKAGE
8/2		↓	SOIL	1	418.1/6010/7471 8270/8080/D2216	↓
8/2		TRIP BLANK-033		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/3/88	0700
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
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11/91 IRM-31

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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2111

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE / B&V
Sampling Site: SP5 / SP5A
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/5		06BT-NG-081 GN-BB-0003	AQUEOUS	2	418.1	B=BREAKAGE
8/5		↓	AQUEOUS	1	160.1	
8/5		↓	AQUEOUS	3	8020	
8/5		ACB-SP5A	AQUEOUS	3	8020	
8/5		TRIP BLANK-08IW	AQUEOUS	1		
8/5		06BT-NG-071 GN-BB-0004	AQUEOUS	2	418.1	B=BREAKAGE
8/5		↓	AQUEOUS	1	160.1	
8/5		↓	AQUEOUS	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/6/88	0730
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2115

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WCC / B&V
Sampling Site SPS / SP5A
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/5		0687-NG-078 GN-88-0003	AQUEOUS	2	418.1	B = BREAKAGE
8/5		↓	↓	1	160.1	
8/5		↓	↓	3	8020	
8/5		0687-NG-071 GN-88-0004	AQUEOUS	2	418.1	D = DUPLICATE B = BREAKAGE
8/5		↓	↓	1	160.1	
8/5		↓	↓	3	8020	
8/5		0687-NG-067 GN-88-0004	AQUEOUS	2	418.1	B = BREAKAGE
8/5		↓	↓	1	160.1	
8/5		↓	↓	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/6/88	0730
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIRLINES Airbill # 5326 9753
Received for Lab: RMAL Signed: _____ Date/Time 8/7/88
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1121 TRIP 21

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2116

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE/B&V
Sampling Site SPSA
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/5		0687-NG-068 GN-88-0004	AQUEOUS	2	418.1	B= BREAKAGE
8/5		↓	↓	1	160.1	
8/5		↓	↓	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/6/88	0730
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIRLINES Airbill # 5326 9753
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4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 2111

SAMPLE SAFE™ CONDITIONS

1. Packed by: PH Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: PH Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / WCC
Sampling Site: SP-5
Team Leader: Robin Hamlett

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/4/88		0687-NG-072 GN-88-0003	Water	3	8020		1
8/4/88		↓	Water	1	160.1		1
8/4/88		↓	Water	2	418.1	B = Bleed keys	1
8/4/88		0687-NG-077 GN-88-0004	Water	1	160.1		2
8/4/88		↓	Water	3	8020		2
8/4/88		↓	Water	3	8020	MS 72-	2
8/4/88		↓	Water	3	8020	MSD 70-	2
8/4/88		↓	Water	2	418.1	B = Bleed keys	2

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Regi Hargett	8/5/88	9:15
2	Regi H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. SPATZ
Method of Shipment: FED EX Airbill # 707190815
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TR # 33

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 111

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site NS-1 / SP1
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # ____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: ____ °C
9. Condition of Contents: ____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/6		0687-SO-105 GS-BB-0001	SOIL	1	418.1/7471/6010 D2216/9010	
8/6		↓	↓	1	8270	
8/6		↓	↓	2	8240	B=BREAKAGE
8/6		↓	↓	1	418.1/7471/6010 D2216/9010/8270	↓
8/6		0687-SO-050 GS-BB-0001	SOIL	2	418.1 / D2216	B=BREAKAGE
8/6		↓	—	—	—	—
8/6		0687-SO-050 GS-BB-0002	SOIL	2	418.1 / D2216	B=BREAKAGE
8/6		↓	—	—	—	—

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/6/88	1500
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
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827 TR# 14

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2119

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE / B&V
Sampling Site: D-16
Team Leader: ROBIN HAMLET (B&V

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/18		0687-SO-021 GS-88-0001	SOIL	2	418.1/7420/D2216	B=BREAKAGE
7/18		0687-SO-021 GS-88-0002	SOIL	2		
7/18		0687-SO-022 GS-88-0001	SOIL	2		
7/18		0687-SO-022 GS-88-0002	SOIL	2		
7/18		0687-SO-023 GS-88-0001	SOIL	2		
7/18		0687-SO-023 GS-88-0002	SOIL	2		
7/18		0687-SO-024 GS-88-0001	SOIL	2		
7/18		0687-SO-024 GS-88-0002	SOIL	2		
7/18		0687-SO-022 GS-88-0001	SOIL	2		B=BREAKAGE D=DUPLICATE
		~~0687-SO-XXX GS-88-0002~~	~~SOIL~~	~~X~~		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Linda N. Lyon	7/18/88	1730
2	Linda N. Lyon			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 7071901653
Received for Lab: RAM Signed: [signature] Date/Time 7/19/88
Enseco Project No. 8120

White and Pink Copies to Lab Yellow to Sampler

SS 001

837 TR# 15

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2120

Enseco Client: BLACK & VEATCH
Project: EIMENDORF AFB
Sampling Co.: WOODWARD-CLYDE / B&V
Sampling Site: SP-15
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/19		06B7-SO-100 GS-BB-0001	SOIL	2	418.1/7420/D2216	B= BREAKAGE	1
7/19		↓	SOIL	2	8240	↓	1
7/19		06B7-SO-100 GS-BB-0002	SOIL	2	418.1/7420/D2216		2
7/19		↓	SOIL	2	8240	↓	2
7/19		TRIP BLANK-100		1			3
7/19		06B7-[redacted]NG-070 GN-BB-0004	WATER	2	418.1	B= BREAKAGE	4
7/19		↓	WATER	1	160.1		4
7/19		↓	WATER	3	8020		4

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/19/88	1200
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 7071901642
Received for Lab: BMSL Signed: [signature] Date/Time 7/21/88 8:36
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

837 TR#15

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvad , Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2121

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site SP-5
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/19		OGBT-NG-073 GN-BB-0003	WATER	2	418.1	B=BREAKAGE	5
7/19		↓	WATER	1	160.1		5
7/19		↓	WATER	3	8020		5
7/19		EQUIPMENT BLANK-SP5	WATER	2	418.1	B=BREAKAGE	6
7/19		↓	WATER	1	160.1		6
7/19		↓	WATER	3	8020		6
7/19		ACB-SP5	WATER	3	8020		7

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/19/88	1500
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 707190 1642
Received for Lab: RMAL Signed [signature] Date/Time 7/21/88 8:36
Enseco Project No. _____

4947 NE # 16

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2122

Attn: JEAN Zimmerman

Enseco Client Black & Veatch
Project Elmendorf AFB
Sampling Co. Woodward Clyde/B&V
Sampling Site SP 2/6
Team Leader Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewens Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED w/ Blue Ice
4. Sealed for Shipping by: L. Ewens
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mid-Sept °C
9. Condition of Contents: _____

	Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
1	7/20		0687-SO-051 GS-BB-0001	SOIL	2	418.1	B = BREAKAGE	1
	7/20		↓	SOIL	2	8240	↓	1
	7/20		↓	SOIL	1	8270/D2216		1
	~~TBD~~							
2	7/20		TRIP BLANK-051	~~SOIL~~	1			2

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	July 20	1500
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewens
Method of Shipment: FED-EX Airbill # 7071901631
Received for Lab: RMAL Signed: [signature] Date/Time 7/22/88 8:57
Enseco Project No. _____

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

Enseco Client Black & Veatch
Project Elmendorf AFB
Sampling Co. WOODWARD CLYDE / B&V
Sampling Site SP2/6
Team Leader Robin Hamlet (B&V)

CHAIN OF CUSTODY

No. 2172

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mid. Sept °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/23		06B7-SO-057 GS-BB-0001	SOIL	2	418.1	B = BREAKAGE	1
7/23		MS/MSD	SOIL	2	8240	↓	1
7/23		MS/MSD	SOIL	2	8270/D2216		1
7/23		TRIP BLANK-057		1			2
7/23		06B7-SO-052 GS-BB-0001	SOIL	2	418.1	B = BREAKAGE	3
7/23		↓	SOIL	2	8240	↓	3
7/23		↓	SOIL	1	8270/D2216		3
		TOTAL CONTAINERS = 12					

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/23/88	1100
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIR LINES Airbill # 5326 9705
Received for Lab: _____ Signed: _____ Date/Time _____
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sampler

4160

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2124

Attn: Jean Zimmerman
Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: Woodward Clyde / B&V
Sampling Site: SPZ/6
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Ewers
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mid-Sept °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/25		0687-SO-058 GS-BB-0001	SOIL	2	418.1	B = BREAKAGE
7/25		↓	SOIL	2	8240	↓
7/25		↓	SOIL	1	8270 / D2216	
7/25		0687-SO-060 GS-BB-0001	SOIL	2	418.1	B = BREAKAGE
7/25		↓	SOIL	2	8240	↓
7/25		↓	SOIL	1	8270 / D2216	
		CHAIN OF CUSTODY #'S 2124/2138 SHIPPED TOGETHER. TOTAL CONTAINERS = 16				

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/25/88	1620
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: FED-EX Airbill # 707190164
Received for Lab: for RML Signed: Date/Time 7/27/88 8:00
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

071 DRAFT

Enseco - Rocky Mountain Analytical

1955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN Zimmerman

CHAIN OF CUSTODY

No. 71

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: IS-8
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewens — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Ewens
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until ____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mid-Sept °C
9. Condition of Contents: ____

	Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
1	7/21		0687-SO-040 GS-BB-0001	SOIL	1	418.1/6010/7471	
1	7/21		↓	SOIL	1	8270/8080/D2216	
1	7/21		↓	SOIL	2	8240	B=BRIANNA
1	7/21		↓	SOIL	1	418.1/6010/7471 8270/8080/D2216	↓
2	7/21		0687-SO-040 GS-BB-0002	SOIL	1	418.1/6010/7471	
2	7/21		↓	SOIL	1	8270/8080/D2216	
2	7/21		↓	SOIL	2	8240	B=BRIANNA
2	7/21		↓	SOIL	1	418.1/6010/7471 8240/8080/D2216	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/21/88	1715
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWENS
Method of Shipment: FED-EX Airbill # 701[illegible]
Received for Lab: RMAL Signed: [signature] Date/Time [illegible]
Enseco Project No. ____

White and Pink Copies to Lab Yellow to Sampler

[redacted] Rocky Mountain Analytical

[redacted] Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: SP-15
Team Leader: Robin Hamlet

CHAIN OF CUSTODY

No. [redacted]

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED w/ Blue Ice
4. Sealed for Shipping by: L. Ewers
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description		Sample Type	No. Containers	Analysis Parameters	Remarks
7/21	[redacted]	0687-SO-101 GS-BB-0001	3	SOIL	2	418.1/7420/D2216	B=BREAKAGE
7/21		↓	3	SOIL	2	8240	
7/21		0687-SO-101 GS-BB-0002	4	SOIL	2	418.1/7420/D2216	
7/21		↓	4	SOIL	2	8240	
7/21		0687-SO-101 GS-BB-0002	BD-04	SOIL	2	418.1/7420/D2216	B=BREAKAGE D=DUPLICATE
7/21		↓	BD-04	SOIL	2	8240	↓
7/21		TRIP BLANK	5	Did not rec. trip blank			
		CHAIN OF CUSTODY #'s 2124 & 2125 SHIPPED TOGETHER.					
		TOTAL CONTAINERS = 23					

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[redacted]	[redacted]	7/21/88	1215
2	[redacted]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: FED-EX Airbill #: 7071901620
Received for Lab: RMA Signed: [redacted] Date/Time: 7/21/88
Enseco Project No.:

White and Pink Copies to Lab Yellow to Sampler

1017 TR #22

Enseco - Rocky Mountain Analytical

1923 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2128

Enseco Client: Black & Veatch
Project: Ellsworth AFB
Sampling Co: WOODWARD CLYDE / BRV
Sampling Site: SP 3/6 & SP14
Team Leader: ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/28		0687-SO-056/GS-88-0001	SOIL	1	418.1		08
7/28		↓	SOIL	1	8270/D2216		
7/28		↓	SOIL	2	8240	B = BREAKAGE	
7/28		↓	SOIL	1	418.1/D2216/8270	↓	
7/28		TRIP BLANK 056		1			09
7/28		0687-SO-096 GS-88-0001	SOIL	2	8240	B = BREAKAGE	10
7/28		↓	SOIL	2	418.1/D2216/7420	↓	
7/28		0687-SO-096 GS-88-0002	SOIL	2	8240	B = BREAKAGE	11
7/28		↓	SOIL	2	418.1/D2216/7420	↓	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by (signed)	Received by (signed)	Date	Time
[illegible]	D. McCormick	7/28/88	1415

SHIPPING DETAILS

Delivered to Shipper by: D. McCormick
Method of Shipment: FEDEX Airbill #: 7071901690
Received for Lab: RML Signed: Joseph A. Mill Date/Time: 7/29/88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

KNIH 1022 TR# 33

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile 303/431 7171
Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2129

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: NS-3
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewin Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Ewin
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mel-Spl °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/29		0687-SO-108 GS-88-0001	SOIL	2	418.1/D3216	B=BREAKAGE
7/29		↓	SOIL	2	8240	↓
7/29		0687-SO-108 GS-88-0002	SOIL	2	418.1/D3216	B=BREAKAGE
7/29		↓	SOIL	2	8240	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	[signature]	D. McCormick	7/29	1500
2	D. McCormick			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewin
Method of Shipment: United Airlines Airbill # 5336 9731
Received for Lab: FLYING Signed [signature] Date/Time

Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

KUMA #1026 TR#34

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2145

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: NS-3
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ Blue Ice
4. Sealed for Shipping by: L. Ewers
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/30		0687-SO-110 GS-88-0001	SOIL	2	418.1 / D2216	B = BREAKAGE
7/30		↓	SOIL	2	8240	↓
7/30		0687-SO-110 GS-88-0002	SOIL	2	418.1 / D2216	B = BREAKAGE
7/30		↓	SOIL	2	8240	↓
7/30		0687-SO-112 GS-88-0001	SOIL	2	418.1 / D2216	B = BREAKAGE
7/30		↓	SOIL	2	8240	↓
7/30		0687-SO-112 GS-88-0002	SOIL	2	418.1 / D2216	B = BREAKAGE
7/30		↓	SOIL	2	8240	↓
		TRIP BLANK				

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	D. McCormick	7/30	2100
2	D. McCormick			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: UNITED AIRLINES Airbill # 5326-9747
Received for Lab: FMAL Signed: [signature] Date/Time 8/1 10:5
Enseco Project No.

White and Pink Copies to Lab · Yellow to Sampler

SS (01)

TR # 25

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 21311

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: IS3 / NS3
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewing Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED w/ Blue Ice
4. Sealed for Shipping by: L. Ewing
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mid-Sept °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/1		0687-SO-109 GS-BB-0001	SOIL	2	418.1 / D2216	B = BREAKAGE
8/1		↓	SOIL	2	8240	↓
8/1		0687-SO-109 GS-BB-0002	SOIL	2	418.1 / D2216	
8/1		↓	SOIL	2	8240	
8/1		0687-SO-035 GS-BB-0001	SOIL	1	418.1/6010/7471	
8/1		↓	SOIL	1	8270/D2216/8080	
8/1		↓	SOIL	2	8240	B- BREAKAGE
8/1		↓	SOIL	1	418.1/6010/7471 8270/8080/D2216	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/1/88	1600
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewing
Method of Shipment: FED-EX Airbill # 7071901701
Received for Lab: RMAL Signed: Date/Time 8/3/88 9:20
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

TR #26

Enseco · Rocky Mountain Analytical — CHAIN OF CUSTODY — No. 2131

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman
Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co: Woodward-Clyde/B&V
Sampling Site: SPA
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewins — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes / No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Ewins
5. Initial Contents Temp: °C — Seal #
6. Sampling Status: Done / Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes / No
8. Contents Temperature Upon Receipt by Lab: Mid-Sept °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/2		0687-SO-064 GS-SB-0001	SOIL	2	418.1/6010/7471	B=BREAKAGE
8/2			SOIL	2	8240	↓
8/2			SOIL	1	8270/8080/D2216	
8/2		0687-SO-064 GS-SB-0002	SOIL	2	418.1/6010/7471	B=BREAKAGE
8/2			SOIL	2	8240	↓
8/2			SOIL	1	8270/8080/D2216	
8/2		TRIP BLANK-064		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (Signed)	Received by: (Signed)	Date	Time
1			8/3/88	0700
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewins
Method of Shipment: FED EX — Airbill # 7071901857
Received for Lab: RMAL — Signed: KM Flaherty — Date/Time 8/4/88 0800
Enseco Project No. 1075

White and Pink Copies to Lab · Yellow to Sampler

SS (R11)

4/9 IR#1C

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2113

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward / Bell
Sampling Site: D-13
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed in Blue Ice
4. Sealed for Shipping by: L. Ewers
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/16		0687-SO-015 GS-BB-0001	SOIL	2	418.1/6010/7471	B=BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/D2216	
7/16		0687-SO-015 GS-BB-0002	SOIL	2	418.1/6010/7471	B=BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/D2216	
7/16		0687-SO-015 GS-BB-0002	SOIL	2	418.1/6010/7471	D=DUPLICATE B=BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/D2216	
		TRIP BLANK -015		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1			7/16/88	1315
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: UNITED AIR LINES Airbill #: 5326 [illegible]
Received for Lab: RMAL Signed: KMF Date/Time:
Enseco Project No:

White and Pink Copies to Lab Yellow to Sampler

-170 IR-11 15

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde / B&V
Sampling Site: D-17
Team Leader: Robin Hamlet

CHAIN OF CUSTODY

No. 713

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Ewers
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mid-Sept °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/16		0687-SO-027 CS-88-0002	SOIL	2	418.1/6010/7471	B = BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	
7/16		0687-SO-030 CS-88-0001	SOIL	2	418.1/6010/7471	B = BREAKAGE
7/16		↓	SOIL	2	8270/8080/D2216	↓
7/16		↓	SOIL	1	8240	
7/16		0687-SO-030 CS-88-0002	SOIL	2	418.1/6010/7471	B = BREAKAGE
7/16		↓	SOIL	2	8270/8080/D2216	↓
7/16		↓	SOIL	1	8240	
		TRIP BLANK 027		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by: (signed)	Date	Time
1			7/17/87	1615
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: UNITED AIRLINES Airbill #: 5326 9168 3
Received for Lab: PMAL Signed: KHF Date/Time: 7/17
Enseco Project No.:

White and Pink Copies to Lab Yellow to Sampler

448 12 11 [illegible]

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. [illegible]

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: D-17
Team Leader: Robin Hamlet

SAMPLE "SAFE" CONDITIONS

1. Packed by: L. Evans Seal # ____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Evans
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: ____ °C
9. Condition of Contents: ____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/16		0687-SO-026 CS-88-0001	SOIL	2	418.1/6010/7471	B= BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	
7/16		0687-SO-024 CS-88-0002	SOIL	2	418.1/6010/7471	B= BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	
7/16		0687-SO-027 CS-88-0001	SOIL	2	418.1/6010/7471	B= BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/16/88	1615
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Evans
Method of Shipment: UNITED AIR Airbill # 5326 [illegible]6 83
Received for Lab: DMAL Signed: KMF Date/Time [illegible]
Enseco Project No. ____

TOTAL CONTAINERS = 31

White and Pink Copies to Lab Yellow to Sampler

827 TR #14

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2135

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: D-17
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Ewers
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/18		0687-SO-029 CS-88-0201	SOIL	2	418.1/6010/7471	B= BREAKAGE
7/18		↓	SOIL	2	8240	↓
7/18		↓	SOIL	1	8270/8080/DZ216	
7/18		0687-SO-029 CS-88-0203	SOIL	2	418.1/6010/7471	B= BREAKAGE
7/18		↓	SOIL	2	8240	↓
7/18		↓	SOIL	1	8270/8080/DZ216	
		TRIP BLANK - 029		1	"	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/18/98	1700
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: FED EX Airbill # 707190653
Received for Lab: [illegible] Signed: [signature] Date/Time 7/20/98
Enseco Project No. 515

White and Pink Copies to Lab Yellow to Sampler

SS 001

2137

Enseco - Rocky Mountain Analytical

CHAIN OF CUSTODY

No. 2136

Arvada, Colorado 80002
303-421-6611 Facsimile: 303/431-7171
Attn: MARY ZIMMERMAN

Enseco Client: PARSONS
Project: LAUNCH COMPLEX AFB
Sampling Co: WOODWARD CLYDE / B&V
Sampling Site: NS-2
Team Leader: PAUL HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	EMA #	Sample Type	No. Containers	Analysis Parameters	Remarks
7/16		OGB7-SO-106 GS-BB-0001	04	SOIL	2	8240	MS + MSD B = BREAKAGE
7/16		↓	04	SOIL	2	8270/8080	MS + MSD B = BREAKAGE
7/16		↓	04	SOIL	1	418.1/7471/6010/ D2216/9010	MS + MSD
7/16		↓	04	SOIL	1	418.1/7471/6010/D2216 9010	B = BREAKAGE
7/16		OGB7-SO-106 GS-BB-0002	05	SOIL	2	8240	B = BREAKAGE
7/16		↓	05	SOIL	1	8270/8080	
7/16		↓	05	SOIL	1	418.1/7471/6010 D2216/9010	
7/16		↓	05	SOIL	1	418.1/7471/6010/D2216 8270/8080	B = BREAKAGE

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by (signed)	Received by: (signed)	Date	Time
		7/15/88	800

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIR LINES Airbill # 5326 9661
Received for Lab: RMAL Signed: Joseph A. Mas Date/Time 7/17/88 1pm
Enseco Project No.

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SS-001

1660

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2138

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/B&V
Sampling Site: SP2/6
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/25		0687-50-053 GS-88-0001	SOIL	2	418.1	B=BREATHE
7/25		↓	SOIL	2	8240	↓
7/25		↓	SOIL	1	D2216/8270	
7/25		TRIP BLANK - 053		1		
~~7/25~~						
~~7/25~~						
~~7/25~~						

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/25/88	1610
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: FED-EX Airbill # 7071901616
Received for Lab: RMAL Signed: Date/Time 12/7/88 0:48
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SS 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward Clyde/BW
Sampling Site: IS-7
Team Leader: Robin Hamlet

CHAIN OF CUSTODY

No. 2140

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W Blue Ice
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/22		0687-SO-039 GS-BB-0001	SOIL	1	418.1/6010/7471	
7/22		↓	SOIL	1	8270/8080/D2216	
7/22		↓	SOIL	2	8240	B=BREAKAGE
7/22		↓	SOIL	1	8270/8080/6010 418.1/7471/D2216	↓
7/22		0687-SO-039 GS-BB-0002	SOIL	1	418.1/6010/7471	
7/22		↓	SOIL	1	8270/8080/D2216	
7/22		↓	SOIL	2	8240	B=BREAKAGE
7/22		↓	SOIL	1	8270/8080/6010 418.1/7471/D2216	↓
7/22		TRIP BLANK-039		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/22/88	1600
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: UNITED AIRLINES Airbill # 5326 9694
Received for Lab: RMAL Signed: [signature] Date/Time 7/25 0830
Enseco Project No.

SS-001

UNIHY 10/40 TR 11.21

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2141

Enseco Client BLACK + VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD CLYDE CONSULTANTS
Sampling Site IS
Team Leader ROBIN HAMLET (B+V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: D. McCORMICK
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/30		0687-SO-034 GS-88-0001	SOIL	2	8240	B=BREAKAGE
				1	418.1/6010/7471	
				1	8270/8080/D2216	
				1	8270/8080/418.1 6010/7471/D2216	B=BREAKAGE
		0687-SO-034 GS-88-0001 0002		2	8240	B=BREAKAGE
				1	418.1/6010/7471	
				1	8270/8080/D2216	
				1	8270/8080/418.1 6010/7471/D2216	B=BREAKAGE

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	D. McCormick	7/30	2100
2	D. McCormick			
3				

SHIPPING DETAILS

Delivered to Shipper by: D. McCormick
Method of Shipment: United Airlines Airbill # 53269742
Received for Lab: RMAL Signed: [signature] Date/Time 9/

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TR # 25

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2142

Attn: JEAN ZIMMERMAN

Enseco Client BLACK [redacted] & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site IS-6
Team Leader ROBIN HAMLET

SAMPLE CAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/1		06B7-50-038 GS-BB-0001	SOIL	1	418.1/6010/7471	
8/1		↓	SOIL	1	8270/8080/D2216	
8/1			SOIL	2	8240	B = BREAKAGE
8/1			SOIL	1	418.1/6010/7471 8270/8080/D2216	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/2/96	0115
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 707190170 1
Received for Lab: RMAL Signed: [signature] Date/Time 8/2/96 9:20
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

IR #165

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

Enseco Client: BLACK + VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE / B+V
Sampling Site: IS3/NS3
Team Leader: ROBIN HAMLET (B+V)

CHAIN OF CUSTODY

No. 2143

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/1		0687-SO-035 GS-BB-0002	SOIL	1	418.1/6010/7471	
8/1		"	SOIL	1	8270/8080/DZ216	
8/1		"	SOIL	2	8240	B=BREAKAGE
8/1		"	SOIL	1	418.1/6010/7471 8270/8080/DZ216	"
8/1		0687-SO-111 GS-BB-0001	SOIL	2	418.1/DZ216	B=BREAKAGE
8/1		"	SOIL	2	8240	
8/1		0687-SO-111 GS-BB-0002	SOIL	2	418.1/DZ216	
8/1		"	SOIL	2	8240	
8/1		TRIP BLANK		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/1/88	1600
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 707190170 1
Received for Lab: [signature] Signed: [signature] Date/Time 9:25 8/3/88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 1001

RMH 1022 TR # 23

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2114

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE (B&V)
Sampling Site SP14
Team Leader ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: D. McCormick
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: Mid-Sept °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/29		0687-SO-097 GS-88-0001	SOIL	2	418.1/7420/D2216	B=BREAKAGE
7/29		↓	SOIL	2	8240	↓
7/29		0687-SO-097 GS-88-0002	SOIL	2	418.1/7420/D2216	B=BREAKAGE
7/29		↓	SOIL	2	8240	↓
7/29		TRIP BLANK-097		1		
7/29		0687-SO-097 GS-88-0001	SOIL	2	418.1/7420/D2216	B=BREAKAGE. D=DUPLICATE
7/29		↓	SOIL	2	8240	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	D. McCormick	7/29	1500
2	D. McCormick			
3				

SHIPPING DETAILS

Delivered to Shipper by: D. McCormick
Method of Shipment: United Airlines Airbill # 5336 9731
Received for Lab: RMAL Signed _____ Date/Time _____
Enseco Project No _____

White and Pink Copies to Lab Yellow to Sampler

TR #20

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2145

Attn: Jean Zimmerman

Enseco Client: Black & Veatch

Project: Elmendorf AFB

Sampling Co.: Woodward Clyde / B&V

Sampling Site: SP7/10

Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ Blue Ice
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/26		OGBT-SO-084 GS-BB-0001	SOIL	2	418.1/D2216	B=BREAKAGE	A
7/26		↓	SOIL	2	8240	↓	
7/26		OGBT-SO-084 GS-BB-0002	SOIL	2	418.1/D2216		N
7/26		↓	SOIL	2	8240		
7/26		TRIP BLANK-084		1			C
		C OF C #'s 2145 & 2108	SHIPPED TOGETHER.				
		TOTAL CONTAINERS =	26				

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/27/88	0715
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers

Method of Shipment: FED EX Airbill # 7071901605

Received for Lab: RMM Signed: Date/Time 7/28/88 8:45

Enseco Project No. 975

White and Pink Copies to Lab Yellow to Sampler

SS-001

1017 TR#21

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303 421 6611 Facsimile: 303/431 7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2146

Enseco Client: Black & Veatch
Project: Lowry AFB
Sampling Co: Ecology and Environment
Sampling Site: SP 7/10
Team Leader: Rohini Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/27		0687-SO-087 GS-BB-0001	SOIL	2	418.1 / D2216	B= BREAKAGE	01
7/27		↓	SOIL	2	8240	↓	
7/27		0687-SO-087 GS-BB-0002	SOIL	2	418.1 / D2216	B= BREAKAGE	02
7/27		↓	SOIL	2	8240	↓	
7/27		0687-SO-086 GS-BB-0001	SOIL	2	418.1/D2216	B= BREAKAGE	03
7/27		↓	SOIL	2	8240	↓	
7/27		0687-SO-086 GS-BB-0002	SOIL	2	418.1 / D2216	B= BREAKAGE	04
7/27		↓	SOIL	2	8240	↓	
7/27		TRIP BLANK - 086		1			05

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by (signed)	Received by (signed)	Date	Time
L. Ewers	Joseph A. Miller	7/27/88	1615
Joseph A. Miller			

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: FED-EX Airbill # 7071901594
Received for Lab: FDX Signed: Joseph A. Miller Date/Time 7/28/88 0900
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sampler

SS 001

107 TR #22

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303 421 6611 Facsimile: 303/431 7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2147

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co: Weatherford Clyde / BaV
Sampling Site: SP 216
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/28		0687-SO-054 GS-88-0001	SOIL	2	418.1	B = BREAKAGE
7/28		↓	SOIL	2	8240	B = BREAKAGE
7/28		↓	SOIL	1	8270 / D2216	
7/28		0687-SO-055 GS-88-0001	SOIL	2	418.1	B = BREAKAGE
7/28		↓	SOIL	2	8240	↓
7/28		↓	SOIL	1	8270 / D2216	
7/28		0687-SO-055 GS-88-0001	SOIL	2	418.1	D = DUPLICATE B = BREAKAGE
7/28		↓	SOIL	2	8240	↓
7/28		↓	SOIL	1	8270 / D2216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by (signed)	Received by (signed)	Date	Time
L. Ewers	D. McCormick	7/28/88	1430
D. McCormick			

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: FedEx Airbill # 7071901690
Received for Lab: Paul Signed: Joseph A. Miller Date/Time 7/30/88 0730
Enseco Project No _____

White and Pink Copies to Lab Yellow to Sampler

SS 001

700

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile 303/431 7171

CHAIN OF CUSTODY

No. 2141

Attn: _____

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. B&V/WCC
Sampling Site SP-5
Team Leader ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by L.EWERS Seal # —
2. Seal Intact Upon Receipt by Sampling Co.: (Yes) No
3. Condition of Contents: FINE
4. Sealed for Shipping by: LE
5. Initial Contents Temp.: — °C Seal # —
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/6		0681-SO-[illegible]076 GS-BB-0001	SOIL	2	418.1/D2216	B=BREAKAGE
7/6		0687-SO-#076 GS-BB-0001	SOIL	2	8240	B=BREAKAGE
7/6		0687-SO-#076 GS-BB-0002	SOIL	2	418.1/D2216	"
7/6		0687-SO-#076 GS-BB-0003	SOIL	2	8240	"
7/6		0687-SO-076→075 GS-BB-0001	SOIL	2	418.1/D2216	"
7/6		0687-SO-076→075 GS-BB-0001	SOIL	2	8240	"
7/6		0687-SO-076→075 GS-BB-0002	SOIL	2	418.1/D2216	"
7/6		0687-SO-076→075 GS-BB-0002	SOIL	2	8240	"
		TRIP BLANK		(1)		
				TOTAL = 16 + (1) TRIP BLANK		

"76" 0-1' 1-3" should be 75 0-1' 1-3" both 2 sets

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	[signature]	[signature]	7/6/88	1614
2	[signature]		7/7/88	1430
3				

SHIPPING DETAILS

Delivered to Shipper by: FEDERAL EXPRESS 3657557705
Method of Shipment: AIR Airbill # [redacted]
Received for Lab: RMAL Signed: [signature] Date/Time 7/9/88 8:18
Enseco Project No _____

White and Pink Copies to Lab Yellow to Sampler

/000

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile: 303/431 7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2150

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE CONSULTANTS / BV
Sampling Site: SP-5
Team Leader: ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # —
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: 11°C °C
9. Condition of Contents: ____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/7		0687-SO-079 GS-BB-0001	SOIL	2	418.1 / D2216	B= BREAKAGE	5
7/7		0687-SO-079 GS-BB-0002	SOIL	2	418.1 / D2216		6
7/7		0687-SO-079 GS-BB-0001 ~~0002~~	SOIL	2	8240		5
7/7		0687-SO-079 GS-BB-0002	SOIL	2	8240		6
7/7		0687-SO-084 GS-BB-0001	SOIL	2	418.1 / D2216		1
7/7		0687-SO-084 GS-BB-0002	SOIL	2	418.1 / D2216		8
7/7		0687-SO-084 GS-BB-0002	SOIL	2	8240		8
7/7		0687-SO-084 GS-BB-0001	SOIL	2	8240		1
		TRIP BLANK		1			10

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/7/88	1600
2	[signature]		7/8/88	0930
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill #
Received for Lab: RMAL Signed: [signature] Date/Time 7/9/88 6:45
Enseco Project No

COFC No's 2150 & 2151 SHIPPED TOGETHER White and Pink Copies to Lab Yellow to Sampler TOTAL CONTAINERS 36 + 1 TRIP BLANK

000760

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: _____

CHAIN OF CUSTODY

No. 2151

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE CONSULTANTS / BV
Sampling Site: SP-5
Team Leader: ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #: _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal #: _____
6. Sampling Status: Done Continuing Until: MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: (Yes) Paper No
8. Contents Temperature Upon Receipt by Lab: 11 °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/7		0687-SO-074 GS-BB-0001	SOIL	2	418.1 / D2216	B = BREAKAGE
7/7		0687-SO-074 GS-BB-0002	SOIL	2	418.1 / D2216	
7/7		0687-SO-074 GS-BB-0001	SOIL	2	8240	
7/7		0687-SO-074 GS-BB-0002	SOIL	2	8240	
7/7		0687-SO-080 GS-BB-0001	SOIL	2	418.1 / D2216	
7/7		0687-SO-080 GS-BB-0002	SOIL	2	418.1 / D2216	
7/7		0687-SO-080 GS-BB-0001	SOIL	2	8240	
7/7		0687-SO-080 GS-BB-0002	SOIL	2	8240	
7/7		0687-SO-080 GS-BB-0001	SOIL	2	418.1	D = DUPLICATE DB = DUPL. BREAKAGE
7/7		0687-SO-080 GS-BB-0001	SOIL	2	8240	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	[signature]	[signature]	7/7/88	1600
2	[signature]	[signature]	7/8/88	0930
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill #: _____
Received for Lab: RMAL Signed: [signature] Date/Time: 7/9/88 8:43
Enseco Project No: _____

C of C No's 2150 & 2151 SHIPPED TOGETHER White and Pink Copies to Lab Yellow to Sampler TOTAL SAMPLE BOTTLES 36 + 1 TRIP BLANK (6)

1200

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: _____

CHAIN OF CUSTODY

No. 2152

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE / B&V
Sampling Site: SP-5
Team Leader: ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: SHIPPED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: (Yes) No
8. Contents Temperature Upon Receipt by Lab: 12° °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/8		0687-SO-078 GS-BB-0001	SOIL	2	418.1 / D2216	B = BREAKAGE	11
7/8		0687-SO-078 GS-BB-0001	SOIL	2	8240		10
7/8		0687-SO-078 GS-BB-0002	SOIL	2	418.1 / DD2216		12
7/8		0687-SO-078 GS-BB-0002	SOIL	2	8240		13
7/8							
7/8		TRIP BLANK		1			14
7/8							
7/8							
		TOTAL SAMPLES		9			

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
[signature]	[signature]	7/8/88	1200
[signature]	[signature]	7/8/88	1:15P

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # _____
Received for Lab: RMAL Signed: [signature] Date/Time 7/8/88 847
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sampler

SS 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2152

Attn: _____

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co: WOODWARD CLYDE / B&V
Sampling Site: SP-5
Team Leader: ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/8		0687-SO-073 GS-BB-0001	SOIL	2	418.1/D2216	B = BREAKAGE
7/8		0687-SO-073 GS-BB-0001	SOIL	2	8240	
7/8		0687-SO-073 GS-BB-0002	SOIL	2	418.1/D2216	
7/8		0687-SO-073 GS-BB-0002	SOIL	2	8240	
7/8		0687-SO-073 GS-BB-0003	SOIL	2	418.1/D2216	
7/8		0687-SO-073 GS-BB-0003	SOIL	2	8240	
7/8		0687-SO-082 GS-BB-0001	SOIL	2	418.1/D2216	
7/8		0687-SO-082 GS-BB-0001	SOIL	2	8240	
		TRIP BLANK		1		
		TOTAL THIS SHIPMENT		33		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/8/88	1700
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS Fed Ex UAL 5326 9624
Method of Shipment: ~~United Airlines~~ Airbill #: ~~5326 9624~~
Received for Lab: RMAL Signed: K Hoose Date/Time: 7/11/88
Enseco Project No: 7060

White and Pink Copies to Lab Yellow to Sampler

SS 001

8241 IR # 14

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2154

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site D-13
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/18		0687-SO-017 GS-88-0001	SOIL	1	418.1/6010/7471	
7/18		↓	SOIL	1	8270/D2216	
7/18		↓	SOIL	2	8240	B= BREAKAGE
7/18		↓	SOIL	1	418.1/6010/7471 8270/D2216	↓
7/18		0687-SO-017 GS-88-0002	SOIL	1	418.1/6010/7471	
7/18		↓	SOIL	1	8270/D2216	
7/18		↓	SOIL	2	8240	B= BREAKAGE
7/18		↓	SOIL	1	418.1/6010/7471 8270/D2216	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/18/88	1500
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 7071901653
Received for Lab: [signature] Signed: [signature] Date/Time 7/18/88 15:17
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sampler

SS 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2151

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AIR FORCE BASE
Sampling Co.: WOODWARD-CLYDE / B+V
Sampling Site: SP-5
Team Leader: ROBIN HAMLET (B+V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/9		0687-SO-077 GS-BB-0001	SOIL	2	418.1/D2216	B=BREAKAGE
7/9		0687-SO-077 GS-BB-0001	SOIL	2	8240	
7/9		0687-SO-077 GS-BB-0002	SOIL	2	418.1/D2216	MS/MSD
7/9		0687-SO-077 GS-BB-0002	SOIL	2	8240	
7/9		0687-SO-077 GS-BB-0003	SOIL	2	418.1/D2216	
7/9		0687-SO-077 GS-BB-0003	SOIL	2	8240	
7/9		0687-SO-072 GS-BB-0001	SOIL	2	418.1/D2216	
7/9		0687-SO-072 GS-BB-0001	SOIL	2	8240	
7/9		0687-SO-072 GS-BB-0002	SOIL	2	418.1/D2216	
7/9		0687-SO-072 GS-BB-0002	SOIL	2	8240	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/9/88	1530
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS 5326 9650
Method of Shipment: [redacted] UAL Airbill #
Received for Lab: RMAL Signed: Heller Date/Time 7/11/88
Enseco Project No. RMAL

TRIP BLANK

White and Pink Copies to Lab Yellow to Sampler

TOTAL CONTAINERS = 21

USB 001

827 TR #14

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2157

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site D-13
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/18		0687-SO-018 GS-88-0001	SOIL	1	418.1/6010/7471	
7/18		↓	SOIL	1	8270/D2216	
7/18		↓	SOIL	2	8240	B= BREAKAGE
7/18		↓	SOIL	1	418.1/6010/7471 8270/D2216	↓
7/18		0687-SO-018 GS-88-0002	SOIL	1	418.1/6010/7471	
7/18		↓	SOIL	1	8270/D2216	
7/18		↓	SOIL	2	8240	B= BREAKAGE
7/18		↓	SOIL	1	418.1/6010/7471 8270/D2216	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/18/88	1300
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 7071901653
Received for Lab: RMA Signed: [signature] Date/Time 7/18/88 1300
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sampler

SS-001

1410

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile: 303/431 7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2115

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE CONS
Sampling Site D-17
Team Leader Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ Blue Ice
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/16		0687-SO-028 CS-88-0001	SOIL	2	418.1/6010/7471	B=BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	
7/16		0687-SO-028 CS-88-0002	SOIL	2	418.1/6010/7471	B=BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	
		TOTAL CONTAINERS THIS SHIPMENT = 51				
		C OF C #'s 2158, 2629, 2132, 2627				

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/16/88	1600
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers
Method of Shipment: United Air Airbill # 5326 96[illegible]
Received for Lab: RMAL Signed: KHF Date/Time [illegible]
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sampler

#56

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2169

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: Black & Veatch / Woodward-Clyde
Sampling Site: NS-1 / SC 4,5,6
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/20/88		0687-NS-102 GN-88-0002R	Aqueous	1	6010, 7060, 7421, 7470, 7740	R = Resample
8/20/88		0687-NS-103 GN-88-0002R		1		
8/20/88		0687-NS-104 GN-88-0002R		1		
8/20/88		0687-NS-105 GN-88-0002R		1		
8/20/88		0687-NS-114 GN-88-0002R		1		
8/20/88		0687-NS-115 GN-88-0002R		1		
8/20/88		0687-NS-116 GN-88-0002R		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SM Bo	PH Spatz	8/20/88	1700
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: United Airlines Airbill # 6008 8000
Received for Lab: KMay Signed: K Mason Date/Time 0900 8-22
Enseco Project No.

White and Pink Copies to Lab — Yellow to Sampler

SS-001

7450

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 21711

SAMPLE SAFE™ CONDITIONS

1. Packed by: P Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: Equipment Blank 8/17/88
Team Leader: Robin Hamlet (B&V)

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/17/88		EB 8/17/88	Aqueous	3	8010	
8/17/88				3	8015	
8/17/88				3	8020	
8/17/88				1	9010	
8/17/88				1	160.1/E300	
8/17/88				2	418.1	B = Breakage
8/17/88				2	8270	
8/17/88				2	8080	
8/17/88				2	6010/7060/7421/7470/7740	Total & Dissolved "4D"s have been filtered
8/17/88		Trip Blank	Aqueous	1	8015	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	~~8/18/88~~ 8/18/88	0830
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 565735 7624
Received for Lab: RMA Signed: Date/Time 8/19/88
Enseco Project No. _____

White and Pink Copies to Lab Yellow to Sampler

SS 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2171

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: IS 1-8
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/17/88		ACB 15	Aqueous	3 ✓	8010	
8/17/88		↓	↓	3	8015	
8/17/88		↓	↓	3 ✓	8020	
		Trip blank added by CK		1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P.H. Spatz	8/18/88	0800
2	P.H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex — Airbill # 565735 7624
Received for Lab: BMS — Signed: 8/19/88 — Date/Time 8:50
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No.

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / WCC
Sampling Site: NS-2
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: ____ °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: ____
9. Condition of Contents: ____

	Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
01	8/6/88	*	see attached 0687-N6-107 GN-88-0003	Water	1	160.1, E300	
01	8/6/88	↓	0687-N6-107 GN-88-0003	Water	2	418.1	B: Barium
01	8/6/88	↓	0687-N6-107 GN-88-0003	Water	2	6010, 7060, 7421, 7740 7470	Total Metals
01	8/6/88	↓		Water	3	8010	
01	8/6/88	↓		Water	3	8015	
01	8/6/88	↓		Water	3	8020	
01	8/6/88	↓		Water	2	8270	B: Barium
02	8/6/88		ACB - NS-1	Water	3	8010	
02	8/6/88	↓		Water	3	8015	
02	8/6/88	↓		Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	Paige H Spatz	8/7/88	8:50
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed. Ex. Airbill #: [illegible]
Received for Lab: RMA Signed: [illegible] Date/Time:
Enseco Project No.: 1167

White and Pink Copies to Lab Yellow to Sampler

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jim Zimmerman

CHAIN OF CUSTODY

No. [illegible]

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V/Woodward Clyde
Sampling Site: Drill Cuttings - Base Wide
Team Leader: Robin Hamlet (B & V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Sparks Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Sparks
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
~~8/31/88~~	~~1600~~	~~456-CS-D~~	~~Soil~~	~~1~~	~~8240~~	~~B= Breakage~~
8/31/88		456-CS-D	Soil	2	8270	B= Breakage
8/31/88		456-CS-D	Soil	1	1310/D2216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	9/1/88	0945
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Sparks
Method of Shipment: Fed. Ex Airbill # 916554295 6
Received for Lab: RMAL Signed: [signature] Date/Time 9/1/88 08
Enseco Project No. 1477

White and Pink Copies to Lab Yellow to Sampler

SS-001

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERSON

CHAIN OF CUSTODY

No. [redacted]

Enseco Client _____

Project _____

Sampling Co. _____

Sampling Site _____

Team Leader _____

SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: _____
4. Sealed for Shipping by: _____
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: (Yes) Taped No
8. Contents Temperature Upon Receipt by Lab: @ 12° °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
		NOTE: RED LABELS ON JAR TOPS SIGNIFY SAMPLES WHERE WE GOT A READING ON OUR ORGANIC VAPOR INSTRUMENTS. WE ARE REQUIRED TO PACK EACH OF THESE IN PLASTIC BAGS, BUT THEY MAY BE SHIPPED W/ OTHER SAMPLES. -L. EWERS SAMPLE MGR. (WCC)				

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1				
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: _____

Method of Shipment: _____ Airbill # _____

Received for Lab: RMAL Signed [redacted] Date/Time 3/9/88 6:47

Enseco Project No _____

White and Pink Copies to Lab Yellow to Sampler

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2181

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V/ Woodward-Clyde
Sampling Site: IS-1
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE" CONDITIONS

1. Packed by: P Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/18/88		0687-NS-041 GN-88-0001	Aqueous	3	8010	
8/18/88				3	8015	
8/18/88				3	8020	
8/18/88				2	418.1	B= Breakage
8/18/88				2	8080	
8/18/88				2	8270	
8/18/88				1	9010	
8/18/88				1	160.1 / E300	
8/18/88				PHJ 2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been filled

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	[illegible]	P H Spatz	8/19/88	0655
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 707190175 6
Received for Lab: R n A Signed: Date/Time 8/19/88
Enseco Project No

White and Pink Copies to Lab Yellow to Sampler

SS 0

1318 #53

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 2182

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: IS-1
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/15/88		0681-NG-033 GW-88-0003	Aqueous	1	160.1/E300	
8/15/88				2	418.1	B = Breakage
8/15/88				1	9010	
8/15/88				2	6010/7060/7421/7470, 7740	Total & Dissolved 'AD' has been filtered
8/15/88				3	8010	
8/14/88				3	8015	
8/15/88				3	8020	
8/15/88				2	8270	B = Breakage
8/15/88		↓	↓	2	8080	↓
8/16/88		Trip Blank	Aqueous	1	8010	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Sam Bo	Phil Spatz	8/17/88	0650
2	Phil Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 707190175 6
Received for Lab: RMA Signed: Date/Time 8/17/88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

ES 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2184

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: IS-4
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/18/88		0687-MG-036 GN-38-0003	Aqueous	3	8010	
8/18/88				3	8015	
8/18/88				3	8020	
8/18/88				2	418.1	B = Breakage
8/18/88				2	8080	
8/18/88				2	8270	
8/18/88				1	1601 / E300	
8/18/88				1	9010	
8/18/88				PHS # 2	600/7000/7421/7420/7240	Total & Dissolved "40" has been filtered

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[illegible]	P.H. Spatz	8/19/88	0710
2	P.H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex. Airbill # 1071901745
Received for Lab: RMA Signed: [illegible] Date/Time 8/20/88 10:00
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2185

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: IS-3
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/18/88		0687-N6-035 6N-88-0003	Aqueous	1	160.1/E300	
8/18/88				1	9010	
8/18/88				2	6010/7060/7421/1470/7740	Total & Dissolved 40° has been filtered
8/18/88				2	418.1	B= Breakage
8/18/88				2	8080	
8/18/88				2	8270	
8/18/88				3	8010	
8/18/88				3	8015	
8/18/88				3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S M Bo	P H Spatz	8/19/88	0710
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 707190174 5
Received for Lab: RMA Signed: Date/Time 8/20/88 0900
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

15/6 ++5

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2186

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/Woodward-Clyde
Sampling Site: Equipment Blank
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/18/88		EB 8/18/88	Aqueous	2	418.1	B- Breakage
8/18/88			"	2	8080	
8/18/88			"	2	8270	
8/18/88				3	8010	
8/18/88				3	8015	
8/18/88				5	8020	
8/18/88				1	160.1/E300	
8/18/88				1	9010	
8/18/88				2	6010/7060/7421/7470/7740	Total & Dissolved 40' has been filtered.
8/18/88		Trip Blank	Aqueous	1	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P.J. Spatz	8/19/88	0800
2	P.J. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex. Airbill # 707190174 5
Received for Lab: R.NA Signed: Date/Time
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2187

Enseco Client: Black & Veatch
Project: Elmendurf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: IS-1
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/18/88		0687-NG-042 GW-88-0001	Aqueous	2	418.1	BE Breakage
8/18/88				2	8080	
8/18/88				2	8270	
8/18/88				2	8080	MS
8/18/88				2	8270	MS
8/18/88				2	8080	MSD
8/18/88				2	8270	MSD
8/18/88				1	160.1 | E300	
8/18/88				1	9010	
8/18/88				2	6010/7060/7421/7470/7740	total & D soaked 40" has been filtered

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	P.H. Spatz	8/19/88	0850
2	P.H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 565235 7646
Received for Lab: [illegible] Signed: [signature] Date/Time 8/20/88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS (X)

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2188

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward-Clyde
Sampling Site: IS-1
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice.
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/18/88		0687-NG-012 GN-88-0001	Aqueous	3	8010	
8/18/88				3	8015	
8/18/88				3	8020	
8/18/88				3	8010	ms
8/18/88				3	8015	ms
8/18/88				3	8020	ms
8/18/88				3	8010	msd
8/18/88				3	8015	msd
8/18/88				3	8020	msd
8/18/88		Trip Blank	Aqueous	1	8015	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Sim Bo	P.A. Spatz	8/19/88	0850
2	P.A. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 565735764 6
Received for Lab: RMA Signed: Date/Time

Enseco Project No.

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SS 0

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2189

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V (Woodward-Clyde
Sampling Site:
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/19/88		EB 8/19/88	Aqueous	2	418.1	B = Breakage	1
8/19/88		↓	↓	2	8270	↓	1
8/19/88				1	160.1/E300		1
8/19/88				2	6010/7060/7421/7470/7740	Total & Dissolved '40' has been filtered	1
8/19/88				3	8010		1
8/19/88		↓	↓	3	8020		1

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S m B	Paige A Spatz	8/19/88	2020
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: United Airlines Airbill # 6008 7996
Received for Lab: CMA Signed: B Magn Date Time 12:00PM 8-22-88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

TKFF 541

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 7191

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site NS1
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/6		0687-SO-102 GS-BB-0001	SOIL	1	418.1/7471/6010 D2216/9010	
↓		↓	↓	1	8270	
				2	8240	B = BREAKAGE
				1	418.1/7471/6010 D2216/9010/8270	↓
8/6		0687-SO-103 GS-BB-0001	SOIL	1	D2216/9010 418.1/7471/6010	
↓		↓	↓	1	8270	
				2	8240	B = BREAKAGE
				1	D2216/9010/8270 418.1/7471/6010	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/6/88	1500
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIRLINES Airbill # 5326 9764
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Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

TR #31

[redacted] Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. [illegible]

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site NS1
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/6		0687-SO-104 GS-88-0001	SOIL	1	418.1/7471/6010 D2216/9010	
↓		↓	↓	1	8270	
				2	8240	B=BREAKAGE
				1	418.1/7471/6010 D2216/9010/8270	↓
8/6		TRIP BLANK 104W	AQUEOUS	1		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/6/88	1500
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIRLINES Airbill # 5326 9161
Received for Lab: RMA Signed: [signature] Date/Time:
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

TR# 34

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2206

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD-CLYDE / B&V

Sampling Site NS-1

Team Leader ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/6		NS 0687-NG-105 GN-BB-0002	AQUEOUS	3	8010	
				3	8020	
				3	8015	
				2	7471/6010/7060 7421/7470	(1) 4T, (1) 40
				1	160.1 / E300	(1T)
				1	9010	
				2	418.1	B = BREAKAGE
				2	8270	↓

COMP# OF BY OF 08/06/88 07

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/6/88	1500
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS

Method of Shipment: UNITED AIRLINES Airbill # 5326 9764

Received for Lab: B May Signed: B Mayo Date/Time 8-8-88 0800

Enseco Project No. 1126

White and Pink Copies to Lab Yellow to Sampler

SS-001

TR # 34

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2207

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE / B&V
Sampling Site: NS1
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/6		NS 0687-NS-104 GN-BB-0002	AQUEOUS	3	8010	
				3	8015	
				3	8020	
				2	7471/6010/7060 7421/7240	(1) 4T, (1) 4D
				1	160.1/E300	(1T)
				1	9010	
				2	418.1	B = BREAKAGE
				2	8270	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
1		8/6/88	1500
2			

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIR LINES Airbill # 5326 9764
Received for Lab: AMA Signed: B Magee Date/Time 8-8-88 0800
Enseco Project No. 1126

White and Pink Copies to Lab Yellow to Sampler

SS-001

PR#733

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: ERN ZIMMERMAN

CHAIN OF CUSTODY

No. 2208

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE/B&V
Sampling Site: NS-1
Team Leader: ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L-EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
e/w		NS 0687-NG-102 GN-BB-0002	AQUEOUS	3	8010	
				3	8020	
				3	8015	
				2	7470/6010/7060 7471/7740	(1) 4D, (1) 4T
				1	160.1 / E300	(1T)
				1	9010	
				2	418.1	B = BREAKAGE
				2	8270	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/6/88	1500
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L-EWERS
Method of Shipment: UNITED AIRLINES Airbill # 5326 9764
Received for Lab: L Mast Signed: L Mast Date/Time 08-8-88 0800
Enseco Project No. 1126

White and Pink Copies to Lab Yellow to Sampler

SS-001

1120 TR # 32

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 22119

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site SPI/BH2
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/5		0687-SO-049 GS-88-0001	SOIL	2	418.1 / D2216	B = BREAKAGE
8/5		0687-SO-049 GS-88-0002	SOIL	2	418.1 / D2216	B = BREAKAGE
8/5		0687-SO-120 GS-88-0001	SOIL	1	418.1/7471 6010/D2216	
8/5		↓	SOIL	1	8270	
8/5		↓	SOIL	1	418.1/7471/6010 D2216/8270	B = BREAKAGE
8/5		↓	SOIL	2	8240	↓
8/5		0687-SO-120 GS-88-0002	SOIL	1	418.1 /7471 6010 / D2216	
8/5		↓	SOIL	1	8270	
8/5		↓	SOIL	1	418.1 /7471/6010 D2216/8270	B = BREAKAGE
8/5		↓	SOIL	2	8240	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/6/88	0730
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIRLINES Airbill # 5326 9753
Received for Lab: EMAIL Signed: Date/Time 8/7/88 1000
Enseco Project No. 1120

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 0110

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: SP-4
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: P.H Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P.H Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until mid Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/4/88		0687-50-065 GS-88-0001	Soil	2	418.1, 6010, 7471	B: Backup
8/4/88		↓	Soil	2	8240	B: Backup
8/4/88		↓	Soil	1	8270, 8080, D2216	
8/4/88		0687-50-065 GS-88-0002	Soil	2	418.1, 6010, 7471	B: Backup
8/4/88		↓	Soil	2	8240	B: Backup
8/4/88		↓	Soil	1	8270, 8080, D2216	
8/4/88		0687-50-065 GS-88-0002D	Soil	2	418.1, 6010, 7471	B: Backup
8/4/88		↓	Soil	2	8240	B: Backup
8/4/88		↓	Soil	1	8270, 8080, PAH	D: Duplicate

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	P.H Spatz	Paul H Spatz	8/5/88	9:25
2	Paul H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex. Airbill # 7071901333
Received for Lab: Signed Date/Time
Enseco Project No. 1116

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#F 2.1

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 - Facsimile 303/431-7171

CHAIN OF CUSTODY

No. 2211

Attn: JEAN ZIMMERMAN
Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co: WOODWARD-CLYDE (B&V)
Sampling Site: SP4
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/2		0687-SO-063 GS-BB-0001	SOIL	2	418.1 / 6010 / 7471	B= BREAKAGE
8/2		↓	SOIL	2	8240	↓
8/2		↓	SOIL	1	8270 / 8080 / D2216	
8/2		0687-SO-063 GS-BB-0002	SOIL	2	418.1 / 6010 / 7471	B= BREAKAGE
8/2		↓	SOIL	2	8240	B= BREAKAGE
8/2		↓	SOIL	1	8270 / 8080 / D2216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
[signature]	[signature]	8/3/88	0700
[signature]			

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 7071901896
Received for Lab: RMAL Signed: KM Zalesky Date/Time 8/4/88 0900
Enseco Project No. 1075

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TR # 28

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2212

Enseco Client: Black & Veatch
Project: Elmendorf AFB
Sampling Co.: Woodward-Clyde / B&V
Sampling Site: ~~SP-6~~ NS-3
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. Ewers / P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: L. Ewers
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	RMA #
8/3/88		0687-SO-113 GS-88-0001	SOIL	2	418.1/D2216	B = Breakage	01
8/3/88		0687-SO-113 GS-88-0001	SOIL	2	8240	B = Breakage	01
8/3/88		0687-SO-113 GS-88-0002	SOIL	2	418.1/D2216	B = Breakage	02
8/3/88		↓	SOIL	2	8240	↓	02
8/3/88		0687-SO-113 GS-88-0002D	SOIL	2	418.1/D2216	B = Breakage	02D1
8/3/88		↓	SOIL	2	8240	D = Duplicate	02D1
	*	NO Trip Blank w/ this shipment, per B&V request.					

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	R. Hamlet	Paige H Spatz	8/4/88	08:40
2	Paige H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. Ewers / P Spatz
Method of Shipment: Fed Ex Airbill # 7071901841
Received for Lab: Signed: Date/Time 8/
Enseco Project No. 1099

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SS-001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2221

Attn: J. Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/NCC
Sampling Site: SP-13
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

RMA	Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
01	8/8/88		0687-SO-094 GS-88-0001	Soil	2	418.1, D2216	B = Breakage
01	8/8/88		0687-SO-094 GS-88-0001	Soil	2	8240	MS/MSD
01	8/8/88		0687-SO-094 GS-88-0001	Soil	2	8270	MS/MSD
01DU	8/8/88		0687-SO-094 GS-88-0001D	Soil	2	418.1	B = Breakage
01DU	8/8/88		0687-SO-094 GS-88-0001D	Soil	2	8240	D = Duplicate
01DU	8/8/88		0687-SO-094 GS-88-0001D	Soil	1	8270	
02	8/8/88		0687-SO-095 GS-88-0001	Soil	2	418.1, D2216	B = Breakage
02	8/8/88		0687-SO-095 GS-88-0001	Soil	2	8240	↓
02	8/8/88		0687-SO-095 GS-88-0001	Soil	1	8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Paul A Spatz	8/9/88	8:30
2	Paul A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed. Ex. Airbill # 20 1170 1170
Received for Lab: RMA Signed: [signature] Date/Time 8/10/88 9:30
Enseco Project No. 1170

White and Pink Copies to Lab Yellow to Sampler

SS (01)

Enseco - Rocky Mountain Analytical
9555 Yarrow Street
Arvada, Colorado 80002
303-421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2214

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD-CLYDE / BIV

Sampling Site NS1

Team Leader ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/6		0687-NS-103 GW-RB-0002	AQUEOUS	3	8010	
				3	8015	
				3	8020	
				2	7470/6010/7060 7421/7740	(1)4D, (1)4T
				1	160.1/E300	
				1	9010	
				2	418.1	B= BREAKAGE
				2	8270	

RUN# 02 03 03 03 03 03 03 03 03

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
		8/6/88	1500

SHIPPING DETAILS

Delivered to Shipper by: L-EWERS

Method of Shipment: UNITED AIRLINES Airbill # 5326 9764

Received for Lab: RMA Signed: B Magill Date/Time 08-08-88 0800

Enseco Project No. 1126

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SS-001

IR-37

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J Zimmerman

CHAIN OF CUSTODY

No. 2211

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P H Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: IS-5
Team Leader: Robin Hamlet

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/4/88		0687-SO-037 65-88-0001	Soil	1 PAS	8270, 8080, D2216	
8/7/88		-0001	Soil	1	418.1, 6010, 7471	
8/4/88		-0001B	Soil	1	418.1, 6010, 7471, 8270, 8080, D2216	B = Blank
8/4/88		-0001	Soil	2	8240	B = Blank
8/4/88		0687-SO-037 65-88-0002	Soil	1	418.1, 6010, 7471	
8/4/88		↓	Soil	1	8270, 8080, D2216	
8/4/88			Soil	1	418.1, 6010, 7471, 8270, 8080, D2216	B = Blank
8/7/88			Soil	2	8240	B = Blank

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Kelly Graham	Craig Hempfast	8/5/88	8:50
2	Craig A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. SPATZ
Method of Shipment: FED EX Airbill # 7071901815
Received for Lab: _____ Signed: KM Hathaway Date/Time 0806 88
Enseco Project No. 1116

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: J Zimmerman

CHAIN OF CUSTODY

No. 1116

Enseco Client Black & Veatch
Project Elmendorf
Sampling Co. B&V/WCC
Sampling Site BH-6
Team Leader Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: PH Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: PH Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/4/88		0687-50-124 65-88-0001	Soil	1	8270		03
8/4/88		↓	Soil	2	8240	B-Bottles	03
8/4/88		↓	Soil	1	418.1, 6010, 7471, 8270, D2216	B-Bottle	03
8/4/88		↓	Soil	1	418.1, 6010, 7471, D2216		03
8/4/88		0687-50-124 65-88-0002	Soil	1	8270		04
8/4/88		↓	Soil	2	8240	B-Bottles	04
8/4/88		↓	Soil	1	418.1, 6010, 7471, D2216		04
8/4/88		↓	Soil	1	418.1, 6010, 7471, 8270, D2216	B-Bottle	04

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Kelly Graham	Paige A Spatz	8/5/88	9:05
2	Paige A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 7071901733
Received for Lab: _____ Signed: _____ Date/Time 8/8/88 0900
Enseco Project No. 1116

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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Attn: J. Zimmerman

CHAIN OF CUSTODY

No.

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: BH-1
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/9/88		0687-SO-119 GS-88-0001	Soil	2	418.1, 6010, 7471, D2216	B = Bottle
8/9/88		↓	Soil	2	8240	↓
8/9/88		↓	Soil	1	8270	
8/5/88		0687-SO-119 GS-88-0002	Soil	2	418.1, 6010, 7471, D2216	B = Bottle
8/5/88		↓	Soil	2	8240	↓
8/5/88		↓	Soil	1	8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
1 R Hamlet	P Spatz	8/10/88	8:15
P Spatz			

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 7011 0470 0002 ...
Received for Lab: Rmay Signed: B Mayer Date/Time
Enseco Project No. 4860 in Lab

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4 of 5

Enseco - Rocky Mountain Analytical

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2222

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V & WCC
Sampling Site: S-6
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8/88		0687-SO-043 GS-88-0001	Soil	2	8080, D2216	BE Breakage
8/8/88		0687-SO-044 GS-88-0001	Soil	2	8080, D2216	
8/8/88		0687-SO-045 GS-88-0001	Soil	2	8080, D2216	
8/8/88		0687-SO-046 GS-88-0001	Soil	2	8080, D2216	
8/8/88		0687-SO-047 GS-88-0001	Soil	2	8080, D2216	
8/8/88		0687-SO-048 GS-88-0001	Soil	2	8080, D2216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Paige A Spatz	8/9/88	8:30
2	Paige A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 7071901910
Received for Lab: BMA Signed: [signature] Date/Time 8/10/88
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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
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Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: SC-4,5,6
Team Leader: Robin Hamlet

CHAIN OF CUSTODY

No. 2224

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8/88		0687-SO-114 GS-88-0001	Soil	2	418.1, 7471, 6010, 9010, D2216	B = Breakage
8/8/88		0687-SO-114 GS-88-0001	Soil	2	8240	B = Breakage
8/8/88		0687-SO-114 GS-88-0001	Soil	1	8270	
8/8/88		0687-NS-114 GN-88-0002	Water	3	8010	
8/8/88		0687-NS-114 GN-88-0002	Water	3	8020	
8/8/88		0687-NS-114 GN-88-0002	Water	PMS 2	8270	B = Breakage
8/8/88		0687-NS-114 GN-88-0002	Water	2	418.1	B = Breakage
8/8/88		0687-NS-114 GN-88-0002	Water	1	160.1, E300	
8/8/88		0687-NS-114 GN-88-0002	Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	Paige H Spatz	8/9/88	8:35
2	Paige H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 7071901805
Received for Lab: RMA Signed: [signature] Date/Time 8/9 8:35
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#35

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2221

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / WCC
Sampling Site: SC-4,5,6
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8/88		0687-SO-115 GS-88-0001	Soil	2	418.1, 6010, 7471, D2216, 9010	B=Breakage ↓
8/8/88		0687-SO-115 GS-88-0001	Soil	2	8240	
8/8/88		0687-SO-115 GS-88-0001	Soil	1	8270	
8/8/88		0687-NS-115 GW-88-0002	Water	3	8010	
8/8/88		0687-NS-115 GW-88-0002	Water	3	8020	
8/8/88		0687-NS-115 GW-88-0002	Water	2	418.1	B=Breakage ↓
8/8/88		0687-NS-115 GW-88-0002	Water	2	8270	
8/8/88		0687-NS-115 GW-88-0002	Water	1	160.1 / E300	
8/8/88		0687-NS-115 GW-88-0002	Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Spatz Ron	Craig A Spatz	8/9/88	8:30
2	Craig A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 7071991304
Received for Lab: RMA Signed: Date/Time 8/9/88 9:24
Enseco Project No. 1170

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SS-1001

Enseco - Rocky Mountain Analytical
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303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2221

Attn: J. Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ WCC
Sampling Site: SC-4,5,6
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/8/88		0687-SO-116 GS-88-0001	Soil	2	418.1, 6010, 7471, D2216, 9010	B= Breakage ↓
8/8/88		0687-SO-116 GS-88-0001	Soil	2	PNS 8240	
8/8/88		0687-SO-116 GS-88-0001	Soil	1	8270	
8/8/88		0687-NS-116 GN-88-0002	Water	3	8010	
8/8/88		0687-NS-116 GN-88-0002	Water	3	8020	
8/8/88		0687-NS-116 GN-88-0002	Water	2	418.1	B= Breakage ↓
8/8/88		0687-NS-116 GN-88-0002	Water	2	8270	
8/8/88		0687-NS-116 GN-88-0002	Water	1	160.1, E300	
8/8/88		0687-NS-116 GN-88-0002	Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SM B	Paige H Spatz	8/9/88	8:30
2	Paige H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: Paige Spatz
Method of Shipment: Fed. Ex. Airbill # 7021901301
Received for Lab: RMA Signed: Date/Time 8/10/88 9:35
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4955 Yarrow Street
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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2227

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site D-15
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/28
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/10		0687-SO-019 GS-BB-0001	SOIL	2	418.1/7420/D2216	
		0687-SO-019 GS-BB-0002	SOIL	2	↓	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	J C Duncan	P Spatz	8/11/88	0915
2	P Spatz			
3				

SHIPPING DETAILS

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Method of Shipment: FED EX Airbill # 7071901760
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1-1-1 #44

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4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile 303/431-7171

CHAIN OF CUSTODY

No. 2228

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / BSV
Sampling Site D-15
Team Leader ROBIN HAMLET (BSV)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	RMA #	Sample Type	No. Containers	Analysis Parameters	Remarks
8/11		0687-SO-020 GS-BB-0001	08	SOIL	2	418.1/7420/D2216	B = BREAKAGE
8/11		0687-SO-020 GS-BB-0002	10	SOIL	2	↓	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/12/88	0715
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: P. SPATZ
Method of Shipment: FED EX Airbill # 5657357580
Received for Lab: RMA Signed: _____ Date/Time 8/13/88 0800
Enseco Project No. _____

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile: 303/431 7171

Attn: _____

CHAIN OF CUSTODY

No. 2621

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE CONSULTANTS
Sampling Site: SP-5
Team Leader: ROBIN HAMLET (BEV)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #: _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal #: _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/9		0687-SO-082 GS-BB-0002	SOIL	2	418.1/D2216	B = BREAKAGE
7/9		0687-SO-082 GS-BB-0002	SOIL	2	8240	↓
7/9		0687-SO-082 GS-BB-0002	SOIL	2	418.1/D2216	D = DUPLICATE B = BREAKAGE
7/9		0687-SO-082 GS-BB-0002	SOIL	2	8240	↓
7/9		0687-SO-083 GS-BB-0001	SOIL	2	418.1/D2216	B = BREAKAGE
7/9		0687-SO-083 GS-BB-0001	SOIL	2	8240	↓
7/9		0687-SO-083 GS-BB-0002	SOIL	2	418.1/D2216	
7/9		0687-SO-083 GS-BB-0002	SOIL	2	8240	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
1		7/9/88	1550
2			
3			

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS 5326 9624
Method of Shipment: ~~FED EX~~ UAL Airbill #: ~~5826 0887 7~~
Received for Lab: RMAL Signed: Y. Hoek Date/Time: 7/11/88 0911
Enseco Project No.: 1060

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1 of 2 TRACKING # [illegible]

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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2626

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co WOODWARD-CLYDE CONSULTANTS
Sampling Site SP-5
Team Leader ROBIN HAMLET (BTV)

SAMPLE SAFE™ CONDITIONS

1 Packed by L. EWERS Seal # _____
2 Seal Intact Upon Receipt by Sampling Co Yes No
3 Condition of Contents PACKED W/ BLUE ICE
4 Sealed for Shipping by L. EWERS
5 Initial Contents Temp _____ °C Seal # _____
6 Sampling Status Done Continuing Until _____
7 Seal Intact Upon Receipt by Laboratory Yes No
8 Contents Temperature Upon Receipt by Lab _____ °C
9 Condition of Contents _____

Date	Time	Sample ID/Description	Sample Type	No Containers	Analysis Parameters	Remarks
7/11		0687-SO-068 GS-BB-0001	SOIL	2	418.1 / D2216	B = BREAKAGE
7/11		0687-SO-068 GS-BB-0001	SOIL	2	8240	
7/11		0687-SO-068 GS-BB-0002	SOIL	2	418.1 / D2216	
7/11		0687-SO-068 GS-BB-0002	SOIL	2	8240	
7/11		0687-SO-068 GS-BB-0002	SOIL	2	418.1 / D2216	D = DUPLICATE B = BREAKAGE
7/11		0687-SO-068 GS-BB-0002	SOIL	2	8240	
7/11		0687-SO-068 GS-BB-0003	SOIL	2	418.1 / D2216	B = BREAKAGE
7/11		0687-SO-068 GS-BB-0003	SOIL	2	8240	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	[signature]	[signature]		
2	[signature]			
3	[signature]			

SHIPPING DETAILS

Delivered to Shipper by FED-EX L. EWERS
Method of Shipment _____ Airbill # 5657357554
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-142

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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2[illegible]

Enseco Client BLACK + VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD-CLYDE CONSULTANTS

Sampling Site D-13

Team Leader ROBIN HAMLET (B+V)

SAMPLE SAFE™ CONDITIONS

1. Packed by L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/16		0687-SO-016 GS-BB-0001	SOIL	2	418.1/6010/7471	B=BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/DZ216	
7/16		0687-SO-016 GS-BB-0002	SOIL	2	418.1/6010/7471	B=BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/DZ216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1	[signature]	[signature]	7/16/88	1320
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS

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Received for Lab: RMAL Signed [signature] Date/Time [illegible]

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797 NR # 11

Enseco - Rocky Mountain Analytical

CHAIN OF CUSTODY

No. 2628

Attn: LORI ZIMMERMAN

Enseco Client: BLACK & VEATCH

Project: LOWRY AFB

Sampling Co.: WOODWARD-CLYDE CONSULTANTS (B&V)

Sampling Site: NS-2

Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/15		0027-SO-107 GW-BK-0002 8001	SOIL	1	418.1/7471/6010/9010 D2216/8270/8080	D= DUPLICATE B= BREAKAGE
7/15		↓ 8002	SOIL	2	8240	↓
7/15		RINSE BLANK - 107 03		1		
		TOTAL SAMPLES THIS SHIPMENT =		27		
		CHAIN OF CUSTODY #'s 2136/2631/2628				

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by (signed)	Received by: (signed)	Date	Time
[illegible]	[signature]	7/15/88	1300

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS

Method of Shipment: UNITED AIRLINES Airbill # 5326 7661

Received for Lab: Email Signed: Joseph Q. Mac Date/Time 7/17/88 0081

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SS-001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 26,[illegible]

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co WOODWARD - CLYDE CONSULTANTS

Sampling Site D-17

Team Leader ROBIN HALLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/16		0687-SO-025 CS-BB-0001	SOIL	2	418.1/6010/7471	B = BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	
7/16		0687-SO-025 CS-BB-0001	SOIL	2	418.1/6010/7471	D = DUPLICATE B = BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	
7/16		0687-SO-025 CS-BB-0002	SOIL	2	418.1/6010/7471	B = BREAKAGE
7/16		↓	SOIL	2	8240	↓
7/16		↓	SOIL	1	8270/8080/D2216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
[signature]	[signature]	7/16/88	1600

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS

Method of Shipment: UNITED AIR Airbill # 5326 7618

Received for Lab: RMAL Signed: KMF Date/Time [illegible]

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7/7 TR #11

Enseco - Rocky Mountain Analytical

1935 Yarrow Street
Arvada, Colorado 80002
303-421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2631

Enseco Client: BLACK & VEATCH
Project: LOWRY AFB
Sampling Co: WOODWARD-CLYDE CONSULTANTS / B&V
Sampling Site: NS-2
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description		Sample Type	No. Containers	Analysis Parameters	Remarks
7/15		OU87-SO-107 GS-BB-0001	01	SOIL	1	8270/8080	
7/15		↓	01	SOIL	1	418.1/7471/6010 9010/D2216	
7/15		↓	01	SOIL	1	418.1/7471/6010/9010 D2216/8270/8080	B=BREAKAGE
7/15		OU87-SO-107 GS-BB-0001	01	SOIL	2	8240	↓
7/15		OU87-SO-107 GS-BB-0002	02	SOIL	1	8270/8080	
7/15		↓	02	SOIL	1	418.1/7471/6010 9010/D2216	
7/15		↓	02	SOIL	1	418.1/7471/6010/9010 D2216/8270/8080	B=BREAKAGE
7/15		↓	02	SOIL	2	8240	↓
7/15		OU87-SO-107 GS-BB-0002	SD-02	SOIL	1	8270/8080	D=DUPLICATE
7/15		↓	SD-02	SOIL	1	418.1/7471/6010 9010/D2216	↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by (signed)	Received by (signed)	Date	Time
		7/15/88	1300

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: UNITED AIRLINES Airbill # 5326 9661
Received for Lab: RMAL Signed: Joseph A. Mora Date/Time 7/19/88 700PM
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS-001

805

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: ERIC ZIMMERMAN

CHAIN OF CUSTODY

No. 2632

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE CONSULTANTS
Sampling Site D-3
Team Leader ROBIN HAMLET (B & V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/14		0687-SO-004 GS-BB-0001	SOIL	1	418.1/6010/7471		01
7/14		↓	SOIL	1	8270/D2216		01
7/14		↓	SOIL	1	418.1/6010/7471 8270/D2216	B= BREAKAGE	01
7/14		↓	SOIL	2	8240	↓	01
7/14		0687-SO-004 GS-BB-0002	SOIL	1	418.1/6010/7471		02
7/14		↓	SOIL	1	8270/D2216		02
7/14		↓	SOIL	1	418.1/6010/7471 8270/D2216	B= BREAKAGE	02
7/14		↓	SOIL	2	8240	↓	02
7/15		TEST BLANK FOR POSSIBLE BOTTLE CONTAMINATION		1		NO	05

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/14/88	1300
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 7071901664
Received for Lab: RMAL Signed: [signature] Date/Time 7/15/88
Enseco Project No. 756

White and Pink Copies to Lab Yellow to Sampler

SS-001

805

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2633

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE CONSULTANTS
Sampling Site: SP-5
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/14		0687-SO-081 GS-88-0001	SOIL	2	418.1/D2216	B=BREAKAGE
7/14		0687-SO-081 GS-88-0001	SOIL	2	8240	↓
7/14		0687-SO-081 GS-88-0002	SOIL	2	418.1/D2216	
7/14		0687-SO-081 GS-88-0002	SOIL	2	8240	↓
7/14		0687-SO-081 GS-88-0002	SOIL	2	418.1/D2216	D=DUPLICATE B=BREAKAGE
7/14		0687-SO-081 GS-88-0002	SOIL	2	8240	↓
7/14		TRIP BLANK 081		1		
		TOTAL CONTAINERS THIS	SHIPMENT	=		
		(C OF C #'s 2633 & 2632	SHIPPED TOGETHER			

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/14/88	1330
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 7071901664
Received for Lab: Signed: Date/Time /88
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SS 001

TTY TR. #4

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2634

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE CONSULTANTS
Sampling Site C-3
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/13		0687-SO-003 GS-BB-0001	SOIL	1	418.1/6010/7471		1
7/13		0687-SO-003 GS-BB-0001	SOIL	1	8270/D2216		1
7/13		0687-SO-003 GS-BB-0001	SOIL	2	8240	B= BREAKAGE	1
7/13		0687-SO-003 GS-BB-0001	SOIL	1	418.1/6010/7471 8270/D2216	B= BREAKAGE HOLD	1
7/13		0687-SO-003 GS-BB-0002	SOIL	1	418.1/6010/7471		2
7/13		0687-SO-003 GS-BB-0002	SOIL	1	8270/D2216		2
7/13		0687-SO-003 GS-BB-0002	SOIL	2	8240	B= BREAKAGE	2
7/13		0687-SO-003 GS-BB-0002	SOIL	1	418.1/6010/7471 8270/D2216	↓	2 HOLD
7/13		0687-SO-003 GS-BB-~~0002~~ 0001	SOIL	1	8270	D= DUPLICATE B= BREAKAGE	1
7/13		0687-SO-003 GS-BB-~~0002~~ 0001	SOIL	1	↓	↓	1

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/13/88	1730
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 7071901675
Received for Lab: RMAL Signed: Date/Time 8:41 7/15/88
Enseco Project No.

TRIP BLANK

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TOTAL CONTAINERS = 13 3

SS (XII)

768 TR. #8 10

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171
Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2635

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE CONSULTANTS
Sampling Site D-3
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/12		0687-SO-0001 GS-BB-0001	SOIL	1	418.1/6010/7471	43
7/12		0687-SO-001 GS-BB-0001	SOIL	1	8270/D2216	43
7/12		0687-SO-001 GS-BB-0001	SOIL	1	418.1/6010/7471 8270/D2216	3&4-Held B=BREAKAGE
7/12		0687-SO-001 GS-BB-0001	SOIL	2	8240	43 ↓
7/12		0687-SO-001 GS-BB-0002	SOIL	1	418.1/6010/7471	54
7/12		0687-SO-001 GS-BB-0002	SOIL	1	8270/D2216	54
7/12		0687-SO-001 GS-BB-0002	SOIL	1	418.1/6010/7471 8270/D2216	4&5-Held B=BREAKAGE
7/12		0687-SO-001 GS-BB-0002	SOIL	2	8240	54 ↓

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/12/88	1820
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 707190168 86
Received for Lab: RMAL Signed: [signature] Date/Time 7/14/88 8:59
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768 TR #8

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 2636

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD - CLYDE CONSULTANTS
Sampling Site D-3
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED ON BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/12		0687-SO-002 GS-BB-0001	SOIL	2	8240		1
7/12		0687-SO-002 GS-BB-0001	SOIL	1	418.1/6010/7471		1
7/12		0687-SO-002 GS-BB-0001	SOIL	1	8270/D2216		1
7/12		0687-SO-002 GS-BB-0002	SOIL	2	8240		2
7/12		0687-SO-002 GS-BB-0001	SOIL	1	418.1/6010/7471 8270/D2216	B = BREAKAGE-Held	
7/12		0687-SO-002 GS-BB-0002	SOIL	1	8270/D2216		2
7/12		0687-SO-002 GS-BB-0002	SOIL	1	418.1/6010/7471 8270/D2216	B = BREAKAGE-Held	2
7/12		0687-SO-002 GS-BB-0002	SOIL	1	418.1/6010/7471		2
		TRIP BLANK DID NOT ARRIVE		1			3
	C of C #'s 2635, 2636, 2637		SHIPPED TOGETHER -		TOTAL CONTAINERS = 33		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/12/88	1810
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 7071901686
Received for Lab: RMAL Signed: _____ Date/Time 7/14/88 9:00
Enseco Project No. _____

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768 TR #8 12

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2637

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD-CLYDE CONSULTANTS

Sampling Site SP-5

Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/12		0687-SO-066 GS-BB-0001	SOIL	2	418.1 / D2216	B=BREAKAGE 765
7/12		0687-SO-066 GS-BB-0001	SOIL	2	8240	765
7/12		0687-SO-066 GS-BB-0002	SOIL	2	418.1 / D2216	776
7/12		0687-SO-066 GS-BB-0002	SOIL	2	8240	776
7/12		0687-SO-066 GS-BB-0002	SOIL	2	418.1 / D2216	D=DUPLICATE 770 B=BREAKAGE 770
7/12		0687-SO-066 GS-BB-0007	SOIL	2	8240	770 770 770

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/12/88	1200
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS

Method of Shipment: FED-EX Airbill # 7071901686

Received for Lab: RMAL Signed: [signature] Date/Time 7/14/88 8:59

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-146 TRACKING #6

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2638

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE CONSULTANTS
Sampling Site: SP-5
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED ~~BOTTLES~~ IN BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/11		0687-SO-069 GS-BB-0001	SOIL	2	418.1 / D2216	B=BREAKABLE	14
7/11		0687-SO-069 GS-BB-0001	SOIL	2	8240		14
7/11		0687-SO-069 GS-BB-0002	SOIL	2	418.1 / D2216		15
7/11		0687-SO-069 GS-BB-0002	SOIL	2	8240		15
7/11		0687-SO-069 GS-BB-0003	SOIL	2	418.1 / D2216		16
7/11		0687-SO-069 GS-BB-0003	SOIL	2	8240		16
		TRIP BLANK		1			17

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/11/88	1930
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 5657357554
Received for Lab: RMAL Signed: Date/Time 7/13/88 8:25
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

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146 TRACKING #

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile: 303/431 7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2639

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE CONSULTANTS
Sampling Site SP-5
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/11		0687-SO-~~069~~ 067 GS-BB-0001	SOIL	2	418.1/D2216	B=BREAKAGE	6
7/11		0687-SO-~~069~~ 067 GS-BB-0001	SOIL	2	8240		6
7/11		0687-SO-~~069~~ 067 GS-BB-0002	SOIL	2	418.1/D2216		1
7/11		0687-SO-~~069~~ 067 GS-BB-0002	SOIL	2	8240		1
7/11		0687-SO-~~069~~ 067 GS-BB-0003 X	SOIL	2	418.1/D2216		8
7/11		0687-SO-~~069~~ 067 GS-BB-0003 X	SOIL	2	8240		8
7/11		0687-SO-~~069~~ 067 GS-BB-0004	SOIL	2	418.1/D2216		9
7/11		0687-SO-~~069~~ 067 GS-BB-0004	SOIL	2	8240		9
		TRIP BLANK		1			11
		TOTAL CONTAINERS = 17		[redacted]			

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	7/11/88	1930
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED EX Airbill # 5657357532
Received for Lab: RMAL Signed: [signature] Date/Time 7/13/88 8:26
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146 TRACKING #

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile: 303/431 7171

CHAIN OF CUSTODY

No. 2641

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD - CLYDE CONSULTANTS

Sampling Site

Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/11		0687-SD-071 GS-BB-0003	SOIL	2	418.1 / D2216	B = BREAKAGE
7/11		0687-SD-071 GS-BB-0003	SOIL	2	8240	↓
		TRIP BLANK		1		
		C OF C #'s 2640 & 2641 SHIPPED TOGETHER				
		TOTAL CONTAINERS = 25				

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			7/11/88	1450
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS

Method of Shipment: FED-EX Airbill # 5657357543

Received for Lab: RMA Signed: Date/Time 7/13/88 8:26

Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

746 HACKING 115

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile 303/431 7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2611

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co: WOODWARD - CLYDE CONSULTANTS
Sampling Site: SP-5
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: L. EWERS Seal #
2. Seal Intact Upon Receipt by Sampling Co: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: L. EWERS
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until MID-SEPT
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
7/11		0687-SO-070 GS-BB-0001	SOIL	2	418.1/D2216	B=BREAKAGE	1
7/11		0687-SO-070 GS-BB-0001	SOIL	2	8240		1
7/11		0687-SO-070 GS-BB-0002	SOIL	2	418.1/D2216		2
7/11		0687-SO-070 GS-BB-0002	SOIL	2	8240		2
7/11		0687-SO-070 GS-BB-0003	SOIL	2	418.1/D2216		3
7/11		0687-SO-070 GS-BB-0003	SOIL	2	8240		3
7/11		0687-SO-071 GS-BB-0001	SOIL	2	418.1/D2216		4
7/11		0687-SO-071 GS-BB-0001	SOIL	2	8240		4
7/11		0687-SO-071 GS-BB-0002	SOIL	2	418.1/D2216		5
7/11		0687-SO-071 GS-BB-0002	SOIL	2	8240		5

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by (signed)	Received by (signed)	Date	Time
1			7/11/88	1450
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: L. EWERS
Method of Shipment: FED-EX Airbill # 565735754 3
Received for Lab: Ronx Signed: Date/Time 7/12/88 8:25
Enseco Project No

White and Pink Copies to Lab Yellow to Sampler

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2871

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co: B&V/ Woodward-Clyde
Sampling Site: BH
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/30/88	930	0697-NG-122 GW-88-0003	Aqueous	2	418.1	B = Breakage
8/30/88				2	8270	↓
8/30/88				3	8010	
8/31/88				3	8010	MS
8/31/88				3	8010	MSD
8/31/88				2	8270	MS B = Breakage
8/30/88				2	8270	MSD ↓
8/31/88				3	8020	
8/30/88				3	8020	MS
8/30/88	SMS			3	8020	MSD

9-1-88

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Jim Ba	PH Spatz	8/31/88	0955
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 916554282 0
Received for Lab: RRA Signed Cecil Cagle Date/Time 9-1-88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421 6611 Facsimile 303/431 7171

CHAIN OF CUSTODY

No. 2872

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: BH
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/31/88	1350	0642-NG-123 GN-88-0003	Aqueous	2	418.1	B = Breakage	01
8/31/88				2	8270	↓	01
8/30/88				3	8010		01
8/31/88				3	8020		01
8/31/88				1	160.1/E300		01
8/31/88	1350*			2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been filtered	01
	* grab						
	9418						

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Jim Bo	P. Spatz	8/31/88	0855
2	P. Spatz			
3				

SHIPPING DETAILS

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1452 1465

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2873

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward-Clyde
Sampling Site: BH
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz — Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
5/31/88	1230*	0687-NG-124 GN-88-0003	Aqueous	2	418.1	B: Breakage
5/31/88				2	8270	↓
5/31/88				1	160.1 / E300	
5/31/88				2	6010/7060/7421/7470/7740	total & Dissolved "45" has been filtered
5/31/88				3	8010	
5/31/88	1230	↓		3	8020	
5/31/88		ACB - BH	Aqueous	3	8010	
5/31/88		↓	Aqueous	3	8020	

* BMS 9/1/88

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	BM Bu	PH Spatz	8/31/88	0900
2	PH Spatz			
3				

SHIPPING DETAILS

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2879

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: BH
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/30/88	1730*	EB 8/30/88	Aqueous	2	418.1	B = Breakage
8/30/88	1530*			2	8270	↓
8/30/88				1	160.1 / E300	
8/30/88				2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been filtered
8/30/88				3	8010	
8/31/88	1530	↓	↓	3	8020	
8/30/88		0687-N6-122 GN-88-0003	Aqueous	1	160.1 / E30	
8/30/88		↓	↓	2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been filtered
8/31/88		Trip Blank W-122	Aqueous	1	8020	
	*6ms					

9-1-88

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	Paige A Spatz	8/31/88	0900
2	P A Spatz			
3				

SHIPPING DETAILS

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Enseco - Rocky Mountain Analytical

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Attn: J. Zimmerman

CHAIN OF CUSTODY

No. [illegible]

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: Equipment Blank
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/9/88		EB 8/8/88	Water	3	8010	
8/9/88			Water	3	8020	
8/9/88			Water	2	8270	B = Bromide
8/7/88			Water	2	418.1	
8/7/88			Water	2	6010, 7060, 7421, 7740, 7770	Total & Dissolved
8/7/88			Water	1	160.1, E300	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	P H Spatz	8/9/88	4:00
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # [illegible]
Received for Lab: Brian Signed: [signature] Date/Time [illegible]
Enseco Project No. [illegible] 240 9

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#38

Enseco - Rocky Mountain Analytical

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Attn: J. Zimmerman

CHAIN OF CUSTODY

No. 2884

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: D13 / D-7
Team Leader: Peter Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until Mid-Sept.
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/9/88		0687-NG-015 GN-88-0003	Water	2	6010, 7060, 7421, 7740 7470,	Total & Dissolved
8/1/88		↓	Water	1	160.1 / E300	
8/9/88		0687-NG-012 GN-88-0001	Water	3	8010	
8/1/88			Water	3	8020	
8/1/88			Water	1	160.1, E300	
8/1/88			Water	2	418.1	B = Breakage
8/9/88			Water	2	8270	↓
8/9/88			Water	2	6010, 7060, 7421, 7740 7470,	Total & Dissolved

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
	P H Spatz	8/9/88	1:30

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 7071901966
Received for Lab: Pina M Signed: B Mangot Date/Time 8-11-88 0900
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Attn: J. Zimmerman

CHAIN OF CUSTODY

No.

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: D-7
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until (Mid Sept)
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/9/88		ACB - D7	Water	3	8010	
8/9/88		ACB - D7	Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/10/88	8:15
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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CHAIN OF CUSTODY

No. 2886

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: Decon Barrels
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: (Done) Continuing Until
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7/1/88		891011-CS	Soil	2	8270	B=Breakage
7/1/88		↓	Soil	2	8240	↓
7/1/88		↓	Soil	1	1310, D3216	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Sam B	PA Spatz	7/2/88	1030
2	PA Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex Airbill # 916554287 5
Received for Lab: RMA Signed: Date/Time 7/3/88 8'24
Enseco Project No. 1507

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1 of 1 A-45

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2887

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/WCC
Sampling Site: SP-14
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	RMA #	Remarks
8/11/88		0687-NG-099 GN-88-0001	Aqueous	2	418.1	06	Bc Breakage
8/11/88		↓	Aqueous	2	7421	↓	Total & Dissolved
8/11/88			Aqueous	1	160.1		
8/11/88			Aqueous	3	E504		
8/11/88			Aqueous	3	8020		
8/11/88		0687-NG-098 GN-88-0001D	Aqueous	2	418.1	07 Bc	Bc Breakage
8/11/88		↓	Aqueous	2	7421	↓	Total & Dissolved
8/11/88			Aqueous	1	160.1		
8/11/88			Aqueous	3	E504		
8/11/88			Aqueous	3	8020		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SmB		8/12/88	0715
2				
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 565735 7576
Received for Lab: RMA Signed: Date/Time 8/13/88 0830
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2889

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/Woodward-Clyde
Sampling Site: BH
Team Leader: Rubin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/30/88	1500*	0687-N6-121 GW-88-0002	Aqueous	1	418.1	
8/30/88				1	8270	
8/30/88				1	~~160.1/E 300~~	Total & Dissolved
8/30/88				2	6010/7060/7421/7470/7740	"40" has been filtered
8/31/88				3	8010	
8/30/88				3	8020	
8/30/88	1500			1	160.1/E300	
8/30/88		Trip Blank W-121	Aqueous	1	8020	
	* 8AM 9-1-88					

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	8/31/88	0945
2	PH Spatz			
3				

SHIPPING DETAILS

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 2890

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: B11
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/30/88	1100*	0687-NG-119 GN-88-0003	Aqueous	2	418.1	B = Breakage
8/30/88				2	8270	↓
8/30/88				1	160.1/E300	
8/30/88				2	6010/7060/7421/7420/7740	Total & Dissolved "TD" has been Filtered
8/30/88				3	8010	
8/30/88		↓	↓	3	8020	
8/30/88		0687-NG-119 GN-88-0003D	Aqueous	3	8010	D = Duplicate
	* SMCS 9-1-88					

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Sm Ba	P.D. Spatz	8/31/88	0850
2	P.D. Spatz			
3				

SHIPPING DETAILS

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H56

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 2900

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site BH-3/BH-5
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/20/88		0687-SO-121 GS-88-0001	Soil	2	418.1/7471/6010/D2216	B = Breakage	17
8/20/88		↓	Soil	2	8240	↓	17
8/20/88		↓	Soil	1	8270		17
8/20/88		0687-SO-123 GS-88-0001	Soil	2	418.1/6010/7471/D2216	B = Breakage	18
8/20/88		↓	Soil	2	8240	↓	18
8/20/88		↓	Soil	1	8270		18
8/20/88		0687-SO-123 GS-88-0002	Soil	2	418.1/6010/7471/D2216	B = Breakage	19
8/20/88		↓	Soil	2	8240	↓	19
8/20/88		↓	Soil	1	8270		19

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	R L Hamlet	Paul H Spatz	8/20/88	1710
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: United Airlines Airbill # 6008 8000
Received for Lab: Mark Signed: M Mayer Date/Time 0900 8/22/88
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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3114

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward - Clyde
Sampling Site: SP-15
Team Leader: Robin Hamlet (B & V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/22/88		0687-NG-100 GN-88-0003	Aqueous	2	418.1	B = Breakage	5
8/22/88		↓	↓	1	160.1		5
8/22/88				2	7421	Total & Dissolved '40' has been filtered	5
8/22/88				3	E504		5
8/22/88				3	8020		5
8/22/88		0687-NG-101 GN-88-0003	Aqueous	2	418.1	B = Breakage	6
8/22/88		↓	↓	1	160.1		6
8/22/88				2	7421	Total & Dissolved '40' has been filtered	6
8/22/88				3	E504		6
8/22/88				3	8020		6

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[illegible]	P.M. Spatz	8/23/88	0750
2	P.M. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 7071901830
Received for Lab: P May Signed: B Mayo Date/Time 0800 8-24-88
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Enseco - Rocky Mountain Analytical

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3115

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: SP-15
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/22/88		0687-NG-~~100~~ 101 MS GN-88-0003D	Aqueous	2	418.1	B = Breakage D = Duplicate
8/22/88		↓	↓	1	160.1	
8/22/88				2	7421	Total & Dissolved 40' has been filtered
8/22/88				3	E504	
8/22/88				3	8020	
8/22/88		ACB-SP-15	Aqueous	3	E504	
8/22/88		↓	↓	3	8020	
8/22/88		Trip Blank W-101	Aqueous	1	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S M Be	P H Spatz	8/23/88	0755
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 7071901830
Received for Lab: L May Signed: L Mayo Date/Time 0800 8-24-88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3116

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V/ Woodward-Clyde
Sampling Site: D-17
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/22/88		0687-NG-031 GN-88-0001	Aqueous	2	418.1	B = Breakage
8/22/88				1	160.1/E300	
8/22/88				1	9010	
8/22/88				2	6010/7060/7421/7470/7740	Total & Dissolved "D" has been filtered
8/22/88				3	8010	
8/22/88				3	8015	
8/22/88				3	8020	
8/22/88				2	8080	B = Breakage
8/22/88				2	8270	
8/22/88		Trip Blank W-031	Aqueous	1	8010	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SM Be	PH Spatz	8/23/88	0800
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 707190[illegible]863
Received for Lab: RMA Signed: [signature] Date/Time 0900 8-23-88
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White and Pink Copies to Lab Yellow to Sampler

SS-00

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3117

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: D-17
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/22/88		0687-NG-032 GW-88-0001	Aqueous	2	418.1	B = Breakage
8/22/88				2	8080	
8/22/88				2	8270	
8/22/88				3	8010	
8/22/88				3	8015	
8/22/88				3	8020	
8/22/88				1	160.1 / E300	
8/22/88				1	9010	
8/22/88				2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been Filtered

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	P. Spatz	8/23/88	0805
2	P. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 707190186 3
Received for Lab: RMA Signed: C. Heckel Date/Time 0800 8-23-88
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler

SS 00

#58

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3118

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/Woodward-Clyde
Sampling Site: D-17
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/22/88		0682-NG-032 GN-88-0001D	Aqueous	1	160.1/E300	D=Duplicate
8/22/88				1	9010	
8/22/88				2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been filtered
8/22/88				3	8010	
8/22/88				3	8015	
8/22/88				3	8020	
8/22/88				2	418.1	B=Breakage
8/22/88				2	8080	
8/22/88				2	8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/23/88	0810
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 7071901863
Received for Lab: LMAY Signed: LMason Date/Time 0800 8-24-88
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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 3119

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward - Clyde
Sampling Site: D-17
Team Leader: Robin Hamlett (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/22/88		ACB - D-17	Aqueous	3	8010	
8/22/88		~~EB 8/22/88~~ PHS	↓	3	8015	
8/22/88		↓	↓	3	8020	
8/22/88		EB 8/22/88	Aqueous	2	418.1	Be Breakage
8/22/88		↓	↓	2	8080 ✓	↓
8/22/88				2	8270 ✓	
8/22/88				1	160.1/E300	
8/22/88				1	9010	
8/22/88				2	6010/7060/7421/7470/7740	Total & Dissolved "4D" has been fil
8/22/88		↓	↓	3	8010 ✓	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SmBe	PH Spatz	8/23/88	0815
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 7071901874
Received for Lab: LMay Signed: LB Mason Date/Time 0800 8-24-88
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SS-001

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3120

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward - Clyde
Sampling Site: Equipment Blank / SP-1
Team Leader: Robin Hamlett (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/22/88		EB 8/22/88	Aqueous	3	8015	
8/22/88		↓	↓	3	8020	
8/22/88		↓	↓	3	E504	
8/22/88		0687-N6-050 GN-88-0003D	Aqueous	3	8020	80
8/22/88		↓	↓	1	160.1	
8/22/88		↓	↓	2	418.1	Bc Breakage
8/22/88		↓	↓	2	8270	↓
8/22/88		Trip Blank W-050	Aqueous	1	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SmBc	P A Spatz	8/23/88	0820
2	P A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex Airbill # 7071901874
Received for Lab: PMcL Signed: B Mayo Date/Time 0800 8-24-88
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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 3121

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/Woodward-Clyde
Sampling Site: SP-1
Team Leader: Robin Hamlett (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/22/88		0687-N6-049 GN-88-0009	Aqueous	2	418.1	B = Breakage
8/22/88		↓	↓	2	8270	↓
8/22/88				1	160.1	
8/22/88				3	8020	
8/22/88		0687-N6-050 GN-88-0003	Aqueous	2	418.1	B = Breakage
8/22/88		↓	↓	2	8270	↓
8/22/88				1	160.1	
8/22/88				3	8020	
8/22/88		ACB - SP-1	Aqueous	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	8/23/88	0825
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 7071901874
Received for Lab: LMay Signed: B Mayo Date/Time 0800 8-24-88
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Enseco - Rocky Mountain Analytical

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Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

SAMPLE ... 3122

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward-Clyde
Sampling Site:
Team Leader: Robin Hamlet (B&V)

1. Packed by: P. Spatz
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: ____ °C
9. Condition of Contents: ____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		0687-NG-111 GN-88-0003	Aqueous	3	8010	
8/23/88				3	8020	
8/23/88				2	418.1	B: Breakage
8/23/88				2	8270	
8/23/88				1	160.1	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P Spatz	8/23/88	1000
2	P Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 707190183(
Received for Lab: R May Signed: B Mayn Date/Time 8-2(
Enseco Project No. ____

White and Pink Copies to Lab Yellow to Sampler

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 3124

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: SP-5/SP-4
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice.
4. Sealed for Shipping by: P Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/29/88		0687-N6-126 GN-88-0003	Aqueous	2	418.1	B = Breakage
8/29/88		↓	↓	1	160.1	
8/29/88		↓	↓	3	8020	
8/29/88		0687-N6-065 GN-88-0003	Aqueous	2	418.1	B = Breakage
8/29/88		↓	↓	2	8270	↓
8/29/88		↓	↓	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	BMB	Brigid Spatz	8/30/88	0730
2	PB Spatz			
3				

SHIPPING DETAILS

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Method of Shipment: Fed Ex Airbill # 916554281 6
Received for Lab: LMAX Signed: B Mason Date/Time 0800 8-31-88
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#63

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3125

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward-Clyde
Sampling Site: D-5
Team Leader: Robin Hamlett (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/29/88		0687-NG-007 GW-88-0001	Aqueous	2	418.1	B: Breakage
8/29/88		↓	↓	2	8270	↓
8/29/88				1	160.1/E300	
8/29/88				2	600/7060/7421/7470/7740	Total & Dissolved "4D" has been filtered
8/29/88				3	8010	
8/29/88				3	8020	
8/29/88		EB 8/29/88	Aqueous	3	8010	
8/29/88		↓	↓	3	8020	
8/29/88		Trip Blank W-007	Aqueous	1	8010	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMBon	P H Spatz	8/30/88	0740
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
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Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 3146

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: D-5
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/29/88		0687-NG-009 GN-88-0001	Aqueous	2	418.1	B: Breakage
8/29/88				2	8270	↓
8/29/88				1	160.1/E300	
8/29/88				2	6010/7060/7421/7470/7740	
8/29/88				3	8010	
8/29/88		↓	↓	3	8020	
8/29/88		EB 8/29/88	Aqueous	2	418.1	B = Breakage
8/29/88				2	8270	↓
8/29/88				1	160.1/E300	
8/29/88		↓	↓	2	6010/7060/7421/7470/7740	Total & Dissolved "4D" has been filtered

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	P D Spatz	8/30/88	0750
2	P D Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex Airbill # 916554281 6
Received for Lab: Lmad Signed: [signature] Date/Time 0800 8-31-88
Enseco Project No.

White and Pink Copies to Lab — Yellow to Sampler

SS-001

RMA 1477 #66

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3147

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: Drill Cuttings - Base Wide
Team Leader: Robin Hamlett (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P Spatz Seal #:
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #:
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/31/88	1600 (now 9-1-88)	123-CS	Soil	2	8240	B = Breakage	02
		↓	Soil	2	8270	↓	02
		↓	Soil	1	1310/D2216		02
		456-CS	Soil	2 PHLS	8240	B = Breakage	03
		↓	Soil	2	8270	↓	03
		↓	Soil	1	1310/D2216		03
		7-CS	Soil	2	8240	B = Breakage	04
		↓	Soil	2	8270	↓	04
		↓	Soil	1	1310/D2216		04
		Trip Blank CS	~~Soil~~ Aqueous	1	8240		05

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	9/1/88	0945
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 916554295 6
Received for Lab: RMA Signed: [signature] Date/Time 9-2-88
Enseco Project No. 1477

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SS-001

1384

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3148

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: SP-14
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 7/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab:
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
3/24/88		0687-NG-096 GN-88-0003R	Aqueous	1	6010/7060/7421/7470/7740	R = Re-sample
3/24/88		0687-NG-097 GN-88-0003R		1	6010/7060/7421/7470/7740	
3/24/88		0687-NG-098 GN-88-0001R		1	6010/7060/7421/7470/7740	
3/24/88		0687-NG-098 GN-88-0001DR		1	6010/7060/7421/7470/7740	D = Duplicate
3/24/88		0687-NG-099 GN-88-0001R		1	6010/7060/7421/7470/7740	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S m Ba	P.D Spatz	3/25/88	0930
2	P.D Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex. Airbill # 916554 2 1 1 1
Received for Lab: RMG Signed: Date/Time
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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3149

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward-Clyde
Sampling Site: Equipment Blank
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/6/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		EB 8/23/88	Aqueous	2	418.1	Bottle Broken
8/23/88				2	8270	↓
8/23/88				1	160.1/E300	
8/23/88				3	8010	
8/23/88				3	8020	
8/23/88		↓	↓	2	6010/7060/7421/7740/7740	Total & Dissolved 40 ml Vial Broken Cl

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	Sam Barr	P Spatz	8/24/88	0915
2	P Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
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White and Pink Copies to Lab Yellow to Sampler

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4955 Yarrow Street
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303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 31511

Attn: Jean Zimmerman

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: BW-52
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/'88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		0687-NG-125 GN-88-0001 PHS	Aqueous	1	160.1 / E300	PHS Bicarbonate
8/23/88		↓	↓	3	8010	
8/23/88				3	8020	
8/23/88				2	418.1	Benzene
8/23/88				3	8270	1
8/23/88				2	6010/7060/7421/7470/7761	Total & Dissolved Mo has been added

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	8/24/88	0915
2	PH Spatz			
3				

SHIPPING DETAILS

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3151

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B & V / Woodward-Clyde
Sampling Site: SP-5 / NS-3
Team Leader: Rubin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		0687-SO-126 GS-88-0001	Soil	2	418.1/D3216	Ba,Ba,Cr,Pb
8/23/88		↓	↓	2	8240	↓
8/23/88		0687-SO-126 GS-88-0002		2	418.1/D3216	
8/23/88		↓	↓	2	8240	
8/23/88		ACB-NS-3	Aqueous	3	8010	
8/23/88		↓		3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P.H. Spatz	8/24/88	0905
2	P.H. Spatz			
3				

SHIPPING DETAILS

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3152

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: BW-2
Team Leader: Robin Hamlet

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal # ____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until 7/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: ____ °C
9. Condition of Contents: ____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		0687-NG-118 GN-88-0001D	Aqueous	1	160.1/E300	
8/23/88		↓	↓	2	418.1	
8/23/88				2	8270	
8/23/88				2	6010/7060/7421/7740/7740	
8/23/88				3	8010	
8/23/88		↓	↓	3	8020	
8/23/88		ACB-BW	Aqueous	3	8010	
8/23/88		↓		3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P.H. Spatz	8/24/88	0700
2	P.H. Spatz			
3				

SHIPPING DETAILS

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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3153

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V / Woodward-Clyde
Sampling Site: NS-3
Team Leader: Robin Hamlett (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		0687-NG-110 GN-88-0003	Aqueous	2	418.1	B. Brockway
8/23/88				2	8270	
8/23/88				1	160.1	
8/23/88				3	8010	
8/23/88				3	8020	
8/23/88		0687-NG-113 GN-88-0003	Aqueous	2	418.1	B. Brockway
8/23/88				2	8270	
8/23/88				1	160.1	
8/23/88				3	8010	
8/23/88				3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	8/24/88	0855
2	PH Spatz			
3				

SHIPPING DETAILS

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4955 Yarrow Street
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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3154

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE/B&V
Sampling Site SP 2/6
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/13/88		0687-NG-054 GN-88-0002	Aqueous	2	418.1	B = Breakage	05
8/13/88		↓	Aqueous	2	8270	↓	05
8/13/88			Aqueous	1	160.1		05
8/13/88			Aqueous	3	8020		05
8/13/88		EB 8/13/88	Aqueous	PHS # 2	418.1	B = Breakage	06
8/13/88			Aqueous	2	8270		06
8/13/88			Aqueous	1	160.1		06
8/13/88			Aqueous	3	8020		06
8/13/88		0687-NG-015 GN-88-0002R	Aqueous	1	6010, 7060, 7421, 7470, 7740	R = Resampled Dissolved only	07

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	8/13/88	1545
2	PH Spatz			
3				

SHIPPING DETAILS

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1229 #45

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Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 3155

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site SP-4
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	RMA#
8/12/88		0687-NG-063 GN-88-0003	Aqueous	2	418.1	B: Breakage	14
8/12/88		↓	Aqueous	2	8270	↓	14
8/12/88		↓	Aqueous	3	8020		14
8/12/88		EB 8/12/88	Aqueous	2	418.1	B: Breakage	15
8/12/88		↓	Aqueous	2	8270	↓	15
8/12/88		↓	Aqueous	1	160.1		15
8/12/88		↓	Aqueous	3	8020		15

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S M B	Doug H. Spatz	8/12/88	1700
2	D H Spatz			
3				

SHIPPING DETAILS

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Method of Shipment: United Airlines Airbill # 5326 9775
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1229 #45

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3156

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD-CLYDE / B&V

Sampling Site SP-12

Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	RCMA
8/12/88		0687-NG-092 GN-88-0001	Aqueous	2	418.1	B = Breakage	04
8/12/88		↓	Aqueous	1	160.1		05
8/12/88		↓	Aqueous	3	8020		06
8/12/88		0687-NG-093 GN-88-0001	Aqueous	2	418.1	B = Breakage	09
8/12/88		↓	Aqueous	1	160.1		09
8/12/88		↓	Aqueous	3	8020		09
8/12/88		ACB-SP12	Aqueous	3	8020		10

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	P H Spatz	8/12/88	1415
2	P H Spatz			
3				

SHIPPING DETAILS

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Method of Shipment: United Airlines Airbill # 5326 9775

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4955 Yarrow Street
Arvada, Colorado 80002
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Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3157

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site SP 2/6
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/13/88		0687-NG-053 GN-88-0002	Aqueous	2	418.1	B= Breakage	11
8/13/88		↓	Aqueous	2	8270	↓	11
8/13/88			Aqueous	1	160.1		11
8/13/88		↓	Aqueous	3	8020		11
8/13/88		0687-NG-053 GN-88-0002D	Aqueous	2	418.1	D= Duplicate	11 DU
8/13/88		↓	Aqueous	2	8270	B= Breakage	11 DU
8/13/88			Aqueous	1	160.1		11 DU
8/13/88		↓	Aqueous	3	8020		11 DU
8/13/88		0687-NG-107 GN-88-0002R	Aqueous	1	6010, 7060, 7421, 7470, 7740	(Dissolved only) R= Resample	12
8/13/88		0687-NG-106 GN-88-0002R	Aqueous	1	6010, 7060, 7421, 7470, 7740	"	13

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	P.H. Spatz	8/13/88	1530
2	P.H. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: United Airlines Airbill # 5326 9790 090
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Enseco Project No. 1229

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1221 #44

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Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3158

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site SP-14
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description (RMA #)	Sample Type	No. Containers	Analysis Parameters	Remarks
8/11		EB-8/11/88 01	AQUEOUS	2	418.1	B = BREAKAGE
↓		↓	AQUEOUS	1	160.1	
			AQUEOUS	2	7421	
			AQUEOUS	3	8020	
			AQUEOUS	3	E504	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1			8/12/88	0715
2				
3				

SHIPPING DETAILS

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1229 #45

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3163

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE/B&V
Sampling Site: SP-11
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/12/88		0687-N6-090- GN-88-0001	Aqueous	2	418.1	B: Breakage	01
8/12/88		↓	Aqueous	1	160.1		01
8/12/88		↓	Aqueous	3	8020		01
8/12/88		0687-N6-091 GN-88-0001	Aqueous	2	418.1	B: Breakage	0
8/12/88		↓	Aqueous	1	160.1		0
8/12/88		↓	Aqueous	3	8020		0
8/12/88		ACB - SP 11	Aqueous	3	8020		0
8/12/88		Trip Blank W-90	Aqueous	1	8020		0

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMBa	Paige A Spatz	8/12/88	1400
2	Paige A Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: United Airlines Airbill # 5326 9775
Received for Lab: [illegible] Signed: [illegible] Date/Time 8-15-88 0800
Enseco Project No. 1229

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4955 Yarrow Street
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3183

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/Woodward-Clyde
Sampling Site: D-3 / D-7 / D-13
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
17/88		0687-NG-001 GN-88-0003	Aqueous	3	8010		5
17/88				3	8020		5
17/88				2	418.1	B = Breakage	5
17/88				2	8270	↓	5
17/88				1	160.1/E300		5
17/88		↓		2	6010/7060/7421/7470/7740	Total & Dissolved "40" has been filtered	5
19/88		0687-NG-012 GN-88-0001R		1	6010/7060/7421/7470/7740	R = Resampled	6
17/88		0687-NG-013 GN-88-0001R		1	6010/7060/7421/7470/7740	↓	7
17/88		0687-NG-017 GN-88-0003R		1	6010/7060/7421/7470/7740		8
19/88		Trip Blank W-001	Aqueous	1	8010		9

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
SMBc	PH Spatz	6/19/88	2010
PH Spatz			

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: United Airlines Airbill # 016-6008 7996
Received for Lab: RMAL Signed: B Mayo Date/Time 12:00 P.M. 8-22-88
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Arvada, Colorado 80002
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Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3184

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/ Woodward-Clyde
Sampling Site: D-3
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/19/88		0687-NG-002 GN-88-0003	Aqueous	2	418.1	B = Breakage	3
8/19/88		↓	↓	2	8270	↓	3
8/19/88				1	160.1/E300		3
8/19/88				2	6010/7060/7421/7470/7740	Total & Dissolved "D" has been filtered	3
8/19/88				3	8010		3
8/19/88				3	8020		3
8/19/88		ACB - D-3		3	8010		4
8/19/88		↓		3	8020		4

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	PH Spatz	8/19/88	2015
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: United Airlines Airbill # 600879[illegible]
Received for Lab: [illegible] Signed: [signature] Date/Time 12:00PM 8-22-88
Enseco Project No.

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#55

Enseco - Rocky Mountain Analytical
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Jean Zimmerman

CHAIN OF CUSTODY

No. 3185

Enseco Client: Black & Veatch
Project: Elmendorf
Sampling Co.: B&V/Woodward-Clyde
Sampling Site: D-3
Team Leader: Robin Hamlet (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P Spatz Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Packed w/ Blue Ice
4. Sealed for Shipping by: P. Spatz
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done - Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/19/88		0687-NG-003 GN-88-0003	Aqueous	2	418.1	B = Breakage	2
8/19/88		↓		2	8270	↓	2
8/19/88				1	160.1/E300		2
8/19/88				2	6010/7060/7421/7470/7740	Total & Dissolved "AD" has been filtered	2
8/19/88				3	8010		2
8/19/88		↓		3	8020		2

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	SMB	PH Spatz	8/19/88	2020
2	PH Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: United Airlines Airbill # 6008 7996
Received for Lab: EMad Signed: B Mayo Date/Time 8-22-88 12 pm
Enseco Project No.

White and Pink Copies to Lab Yellow to Sampler SS 001

#40

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3194

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site D-7
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/10/88		C687-NG-010 GN-88-0001	Water	1	160.1 / E300	
8/10/88		↓	Water	2	418.1	B: Breakage
8/10/88			Water	2	8270	↓
8/10/88			Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved
8/10/88			Water	3	8010	
8/10/88			Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	P. Spatz	P. Spatz	8/11/88	9:15
2	P. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # 7071901782
Received for Lab: RMA Signed: L Magee Date/Time 8-12-88 8:35
Enseco Project No. 1206

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SS (M)

#40

Enseco - Rocky Mountain Analytical
9933 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 3195

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site D-7
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/10/88		0682-NG-010 GN-88-0001D	Water	1	160.1/E300	D = Duplicate
8/10/88			Water	2	418.1	B = Breakage
8/10/88			Water	2	8270	↓
8/10/88			Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved
8/10/88			Water	3	8010	
8/10/88		↓	Water	3	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	P H Spatz	8/11/88	9:11
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed. Ex Airbill # 707190782 7:30 pm
Received for Lab: Rma Signed: B Magor Date/Time 8-12-88
Enseco Project No. 1206

White and Pink Copies to Lab Yellow to Sampler

'456

Enseco - Rocky Mountain Analytical
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CHAIN OF CUSTODY

No. 3197

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD-CLYDE / B&V

Sampling Site BH-5

Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/20/88		0687-SO-123 GS-88-0002D	Soil	2	418.1, 6010, 7471, D2216	B = Breakage
8/20/88		↓	Soil	2	8240	↓
8/20/88		↓	Soil	1	8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	R Hamlet	P H Spatz	8/20/88	1715
2	P H Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz

Method of Shipment: United Airlines Airbill # 6008 8000

Received for Lab: L Mayo Signed: K Mayo Date/Time 0900 8-22-88

Enseco Project No. _____

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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303-421-6611 Facsimile: 303-431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3198

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / BIV
Sampling Site ~~ES~~ BIS D-7
Team Leader ROBIN HAMLET (BIV)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/10/88		0687-NG-011 GN-88-0001	Water	1	160.1 / E300		05
8/10/88			Water	2	418.1	BC Breakage	05
8/10/88			Water	2	8270	↓	05
8/10/88			Water	2	6010, 7060, 7421, 7740, 7470,	Total & Dissolved	05
8/10/88			Water	3	8010		05
8/10/88		↓	Water	3	8020		05

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[illegible]	P. Spatz	8/11/88	9:11
2	P. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 7071901782
Received for Lab: _____ Signed: Joseph C. Moore Date/Time 8/12/88 8:30am
Enseco Project No. 1206

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Arvada, Colorado 80002
303-421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3199

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE/B&V
Sampling Site D-7
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/10/88		0687-NS-014 GN-88-0001	Water	1	160.1 / E300		01
8/10/88			Water	2	418.1	B = Breakage	01
8/10/88			Water	2	8270	↓	01
8/10/88			Water	2	6010, 7060, 7421, 7470, 7740	Total & Dissolved	01
8/10/88			Water	3	8010 Broke VOA		01
8/10/88		↓	Water	3	8020		01

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	P. Spatz	P. Spatz	8/11/88	9:15
2	P. Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 707190178 2
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4141

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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CHAIN OF CUSTODY

No. 3200

Attn: JEAN ZIMMERMAN

Enseco Client: BLACK & VEATCH
Project: ELMENDORF AFB
Sampling Co.: WOODWARD-CLYDE / B&V
Sampling Site: SP2/6
Team Leader: ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal #
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: °C Seal #
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: °C
9. Condition of Contents:

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/10		OW87-NG-061 GN-88-0001	AQUEOUS	2	418.1	B=BREAKAGE
↓		↓	AQUEOUS	1	160.1	
			AQUEOUS	3	8020	
			AQUEOUS	2	8270	B=BREAKAGE
8/10		OW87-NG-062 GN-88-0001	AQUEOUS	2	418.1	↓ 01
↓			AQUEOUS	1	160.1	01
			AQUEOUS	3	8020	01
			AQUEOUS	2	8270	B=BREAKAGE

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
[signature]	[signature]	8/11/88	0915
[signature]			

SHIPPING DETAILS

Delivered to Shipper by: P. SPATZ
Method of Shipment: FED-EX Airbill # 707190176D 8-24
Received for Lab: R May Signed: B Mayor Date/Time 8-12-88
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#41

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Arvada, Colorado 80002
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CHAIN OF CUSTODY

No. 3202

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH

Project ELMENDORF AFB

Sampling Co. WOODWARD-CLYDE / B&V

Sampling Site EB's QUILY

Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 7/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/10		EB 8/10/88	AQUEOUS	2	418.1	B= BREAKAGE	07
		EB 8/10/88	AQUEOUS	2	8270	B= BREAKAGE	07
		EB 8/10/88	AQUEOUS	3	8010		07
		EB 8/10/88	AQUEOUS	3	8020		07
		EB 8/10/88	AQUEOUS	1	160.1		07
8/10		EB 8/10/88	AQUEOUS	2	6010/7060/7421 7470/7740	B= BREAKAGE	07

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/11/88	0915
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. SPATZ

Method of Shipment: FED-EX Airbill # 707190176O

Received for Lab: RMA Signed: L Mason Date/Time 8-12-88 8:35 am

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Enseco - Rocky Mountain Analytical

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303 421-0611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3201

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site SP2/6
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

PMA #

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks	
8/10		OWBT-NG-051 GN-88-0002	AQUEOUS	1	160.1		01
			AQUEOUS	2	418.1	B= BREAKAGE	01
			AQUEOUS	3	8020		01
			AQUEOUS	2	8270	B= BREAKAGE	01
8/10		OWBT-NG-052 GN-88-0002	AQUEOUS	1	160.1		02
			AQUEOUS	2	418.1	B = BREAKAGE	02
			AQUEOUS	3	8020		02
			AQUEOUS	2	8270	B= BREAKAGE	02
8/10		ACB-SP 2/6 8/8/88	AQUEOUS	3	8020		03
8/10		EB 8/10/88 KE	~~AQUEOUS~~	~~2~~	~~6010/7060/7421 7470/7740~~		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/11/88	9:15
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. SPATZ
Method of Shipment: FED EX Airbill # 7071901771
Received for Lab: [signature] Signed: [signature] Date/Time 8-12-88 8:38
Enseco Project No. 1206

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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
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303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3203

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE (BiV)
Sampling Site BW-2
Team Leader ROBIN HAMLET (BiV)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # ____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: ____ °C
9. Condition of Contents: ____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		0687-NG-118 GW-88-0001	Aqueous	PAS ~~1~~ 1	1160.1/E300	
8/23/88		↓	↓	2	9060/6010/7421/7420/7740	
8/23/88				2	418.1	
8/23/88				2	8270	
8/23/88				3	8010	
8/23/88				3	8020	
8/23/88		Trip Blank W-118	Aqueous	1	8020	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[illegible]	[illegible]	8/24/88	0850
2	[illegible]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex Airbill # [illegible]
Received for Lab: RMA Signed: [illegible] Date/Time [illegible]
Enseco Project No. 1370

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1001 #43

Enseco - Rocky Mountain Analytical

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Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3204

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE/(B&V)
Sampling Site SP-14
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	RMA #	Remarks
8/11/88		0687-NB-097 GN-88-0003	Aqueous	2	418.1	01	B= Breakage
8/11/88			Aqueous	1	160.1		
8/11/88			Aqueous	2	7421		Total & Dissolved
8/11/88			Aqueous	3	8020		
8/11/88			Aqueous	3	8020		MS
8/11/88			Aqueous	3	8020		MSD
8/11/88			Aqueous	3	E504		
8/11/88			Aqueous	3	E504		MS
8/11/88			Aqueous	3	E504		MSD
8/11/88		ACB-SP14	Aqueous	3	E504	05	Ambient Cond. Blank
8/11/88		[redacted]	[redacted]	[redacted]	[redacted]		

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/12/88	0715
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed. Ex Airbill # 5657357576
Received for Lab: RMA Signed: [signature] Date/Time 8/12/88 0600
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1221 FF 43

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303/421-6611 Facsimile: 303/431-7171

CHAIN OF CUSTODY

No. 3205

Attn: JEAN ZIMMERMAN

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / B&V
Sampling Site SP-14
Team Leader ROBIN HAMLET (B&V)

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers (RMA #)	Analysis Parameters	Remarks
8/11/88		0687-NG-096 GN-88-0003	Aqueous	2 02	418.1	B = Breakage
8/11/88		↓	Aqueous	1	160.1	
8/11/88			Aqueous	2	7421	Total & Dissolved
8/11/88			Aqueous	3	8020	
8/11/88			Aqueous	3	E504	
8/11/88		0687-NG-098 GN-88-0001	Aqueous	2 03	418.1	B = Breakage
8/11/88		↓	Aqueous	1	160.1	
8/11/88			Aqueous	2	7421	Total & Dissolved
8/11/88			Aqueous	3	8020	
8/11/88			Aqueous	3	E504	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	[signature]	[signature]	8/12/88	0715
2	[signature]			
3				

SHIPPING DETAILS

Delivered to Shipper by: P. Spatz
Method of Shipment: Fed Ex Airbill # 5657357576
Received for Lab: RMA Signed: [signature] Date/Time 8/12/88 0800
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Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: JEAN ZIMMERMAN

CHAIN OF CUSTODY

No. 3206

Enseco Client BLACK & VEATCH
Project ELMENDORF AFB
Sampling Co. WOODWARD-CLYDE / BIV
Sampling Site BW-1
Team Leader ROBIN HAMLET

SAMPLE SAFE™ CONDITIONS

1. Packed by: P. SPATZ Seal # ____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: PACKED W/ BLUE ICE
4. Sealed for Shipping by: P. SPATZ
5. Initial Contents Temp.: ____ °C Seal # ____
6. Sampling Status: Done Continuing Until 9/88
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: ____ °C
9. Condition of Contents: ____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
8/23/88		0687-NG-117 GW-88-0001	Aqueous	2	418.1	B.E. Duplicate
8/23/88		↓	↓	2	8270	↓
8/23/88				2	6010/7060/7421/7740/7740	Total & Dissolved
8/23/88				1	160.1/E300	
8/23/88				3	8010	
8/23/88				3	8020	
8/23/88		Trip Blank W-117	Aqueous	1	8010	

CUSTODY TRANSFERS PRIOR TO SHIPPING

	Relinquished by: (signed)	Received by: (signed)	Date	Time
1	S M Bo	Paige H Spatz	8/24/88	0810
2	P Spatz			
3				

SHIPPING DETAILS

Delivered to Shipper by: P Spatz
Method of Shipment: Fed Ex Airbill # ____
Received for Lab: LMT Signed ____ Date/Time ____
Enseco Project No. 1370

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