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PRESENTATION OF PHASE ONE FINDINGS SITE INSPECTION AT WASTE DISPOSAL AND
SPILL SITES NSWC INDIAN HEAD MD
3/17/1992
BERNARD JOHNSON INCORPORATED/ DAMES & MOORE SPECIAL SERVICES

**DEPARTMENT OF THE NAVY
SPECIAL PROGRAMS OFFICE**

**PRESENTATION OF PHASE ONE FINDINGS
SITE INSPECTION AT WASTE DISPOSAL
AND SPILL SITES
SECURED GOVERNMENT FACILITY, MARYLAND**

Contract N62477-91-C-5704

17 March 1992

**BERNARD JOHNSON INCORPORATED/
DAMES & MOORE SPECIAL SERVICES**

AGENDA

PRESENTATION OF PHASE ONE FINDINGS

SITE INSPECTION AT WASTE DISPOSAL AND SPILL SITES SECURED GOVERNMENT FACILITY, MARYLAND

**MARCH 17, 1992
1:00 PM**

- INTRODUCTION**
- MEETING OBJECTIVES**
- SITE INSPECTION RECAP**
- FINDINGS OF PHASE ONE STUDY**
- PLANNED SUPPLEMENTAL SITE ACCESS STUDY**
- PLANNED PHASE TWO STUDY ELEMENTS**
- SCHEDULE**
- DISCUSSION**

MEETING OBJECTIVES

- **FACILITATE OVERALL SI PROCESS THROUGH JOINT MEETING OF ALL PARTICIPANTS**
- **PRESENT PHASE ONE FINDINGS AND INITIAL RESPONSE TO GOVERNMENT COMMENTS**
- **AGREE ON HOW NPS REQUIREMENTS FOR SITE ACCESS ARE INTEGRATED INTO THE SI PROCESS**
- **AGREE ON SCOPE AND TIMING FOR SUPPLEMENTAL STUDY AND PHASE TWO**

SITE INSPECTION OBJECTIVES

- **EVALUATE IF CONTAMINATION IS PRESENT AT EACH SITE AS THE RESULT OF PREVIOUS ACTIVITIES OR WASTES DISPOSED AT THE SITES**
- **CONDUCT THE SI IN A MANNER THAT THE ANALYTICAL RESULTS CAN SUPPORT FOLLOW-ON ANALYSES**
- **DETERMINE THE COURSE OF ACTION FOR FOLLOW-ON STUDIES OR ACTIONS, IF REQUIRED**

SITE INSPECTION WORK ELEMENTS

PHASE ONE

PHASE ONE PROPOSAL/AUTHORIZATION

BACKGROUND INFORMATION REVIEW

SITE RECONNAISSANCE

GOVERNMENT COORDINATION

PREPARATION OF DRAFT WORK PLAN

GOVERNMENT REVIEW

PRESENTATION OF PHASE ONE FINDINGS

REVISIONS TO WORK PLAN

SUPPLEMENT

SUPPLEMENT PROPOSAL/AUTHORIZATION

SITE ACCESS SUPPLEMENTAL STUDIES

GOVERNMENT REVIEW

FINALIZE SITE ACCESS PLAN

PHASE TWO

PHASE TWO PROPOSAL/AUTHORIZATION

FIELD INVESTIGATION

LABORATORY ANALYSES

PREPARATION OF DRAFT SI REPORT

GOVERNMENT REVIEW

FINALIZE SI REPORT

FINDINGS OF PHASE ONE STUDY

SITE ONE - WASTE DISPOSAL SITE (LANDFILL OR "TRASHCAN")

HISTORY OF USE

- UNENGINEERED LANDFILL, DEVELOPED IN EARLY 1940'S, IN USE THROUGH EARLY 1980'S
- LONG-TERM, INCIDENTAL DISPOSAL OF A VARIETY OF POSSIBLE CONTAMINANTS
- COMBINATION OF SHOP WASTE, MAINTENANCE WASTE, CONSTRUCTION DEBRIS, AND DOMESTIC TRASH
- NO REPORTS OF LARGE-SCALE OR UNCONTROLLED DISPOSAL OF HAZARDOUS WASTES

PHYSICAL DESCRIPTION

- LOCATED INSIDE PARK BUT OUTSIDE SECURED AREA, AT EDGE OF STEEPLY SLOPING MOUNTAINSIDE, 2/3 MILE NORTH OF AND 200 FEET ELEVATION BELOW MAIN FACILITY
- VEHICLE ACCESS THROUGH FACILITY ONLY, FOOT ACCESS UNCONTROLLED
- SITE IS ROUGHLY CIRCULAR IN PLAN, ABOUT 350 FEET IN DIAMETER
- DRAINAGE IS TO OWENS CREEK AND TRIBUTARIES TO NORTH
- SITE IS SURROUNDED BY EASTERN HARDWOOD FOREST, NO PROTECTED PLANTS OR ANIMALS ARE KNOWN TO OCCUR
- NO CIVILIAN RESIDENCES IN SITE VICINITY

PREVIOUS REMEDIAL ACTIVITIES

- PARTIAL REMEDIATION IN 1988 BY NAVY PERSONNEL
- ENGINEERING DRAWINGS AVAILABLE, NO AS-BUILTS/RECORDS/MANIFESTS AVAILABLE
- REMOVAL OF SURFACE AND PARTIALLY BURIED WASTE MATERIALS
- EXTERIOR REGRADED TO SMOOTHER AND GENTLER SLOPES

SOIL GAS SURVEY RESULTS

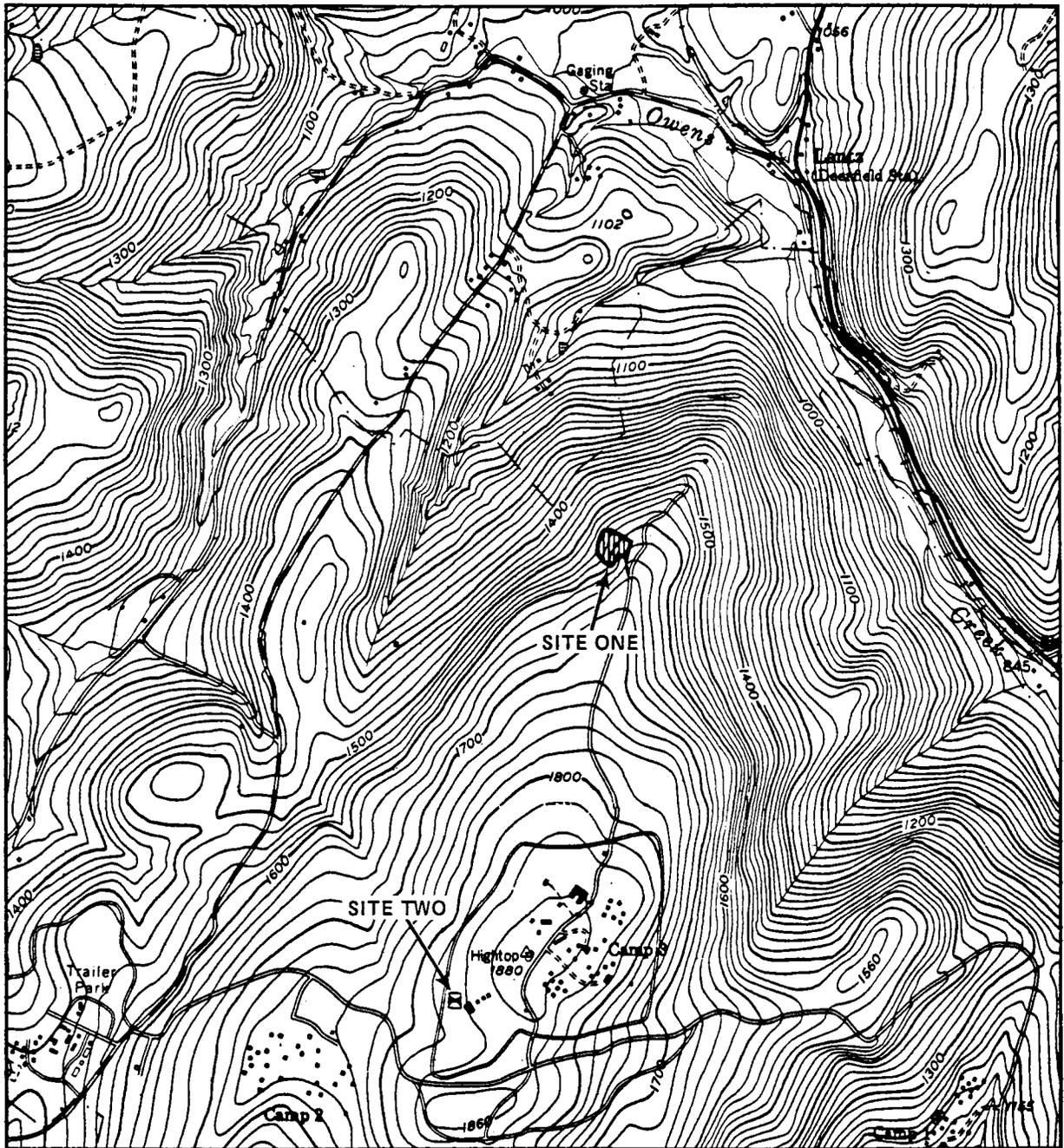
- 51 SAMPLES COLLECTED ON 50-FOOT GRID SPACING, AND ANALYZED FOR PETROLEUM AND CHLORINATED HYDROCARBONS
- RESULTS DO NOT SUGGEST CONTAMINATION IN THE NEAR-SURFACE ENVIRONMENT

GEOPHYSICAL SURVEY RESULTS

- MAGNETIC AND ELECTROMAGNETIC SURVEYS CONDUCTED ON 15-FOOT GRID SPACING
- REPORTS OF METALLIC DEBRIS IN LANDFILL CORROBORATED BY GEOPHYSICAL SURVEY
- ONLY LIMITED AREAS ARE LIKELY LOCATIONS OF BURIED WASTE MATERIALS

FINDINGS

- RELATIVELY HIGH POTENTIAL FOR DETECTABLE CONCENTRATIONS OF WASTES AND WASTE DEGRADATION PRODUCTS IN ENVIRONMENTAL MEDIA (GROUNDWATER, SURFACE WATER, SOIL, AND SEDIMENT)
- RELATIVELY LOW POTENTIAL FOR SIGNIFICANT CONTAMINATION



BASE MAP SOURCE: Blue Ridge Summit, PA-MD, 1985

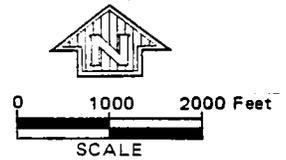


FIGURE 1-1
SITE MAP

TABLE B-5

Detection Limits for other Analytes^a

Analytical Parameter	Detection Limits	
	Water (mg/l)	Soil (ug/kg)
Total Phenols	10	400
Oil and Grease	1,000	10,000
Total Petroleum Hydrocarbons (TPH)	1,000	10,000
Total Explosives	50	200
Nitrate/Nitrite	50	1,000 ^b
Asbestos ^c	c	c

^a Test Methods for Evaluating Solid Waste (SW-846) - Physical/Chemical Methods, USEPA, 1989.

^b Extractable

^c CLP or Level C protocols are not available for asbestos. Water detection = 0.05 fibers/liter; soil detection limit = 1 percent.

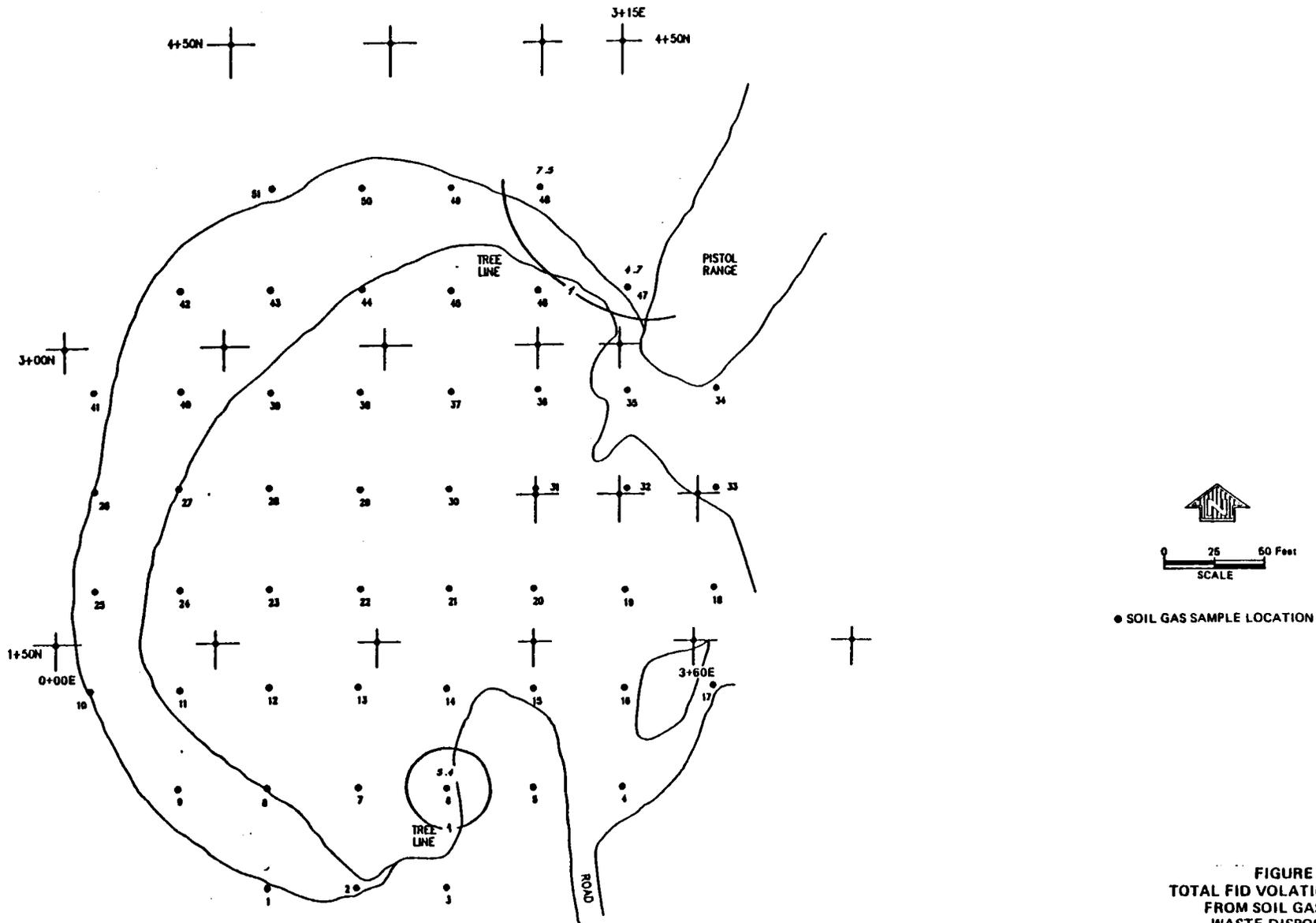
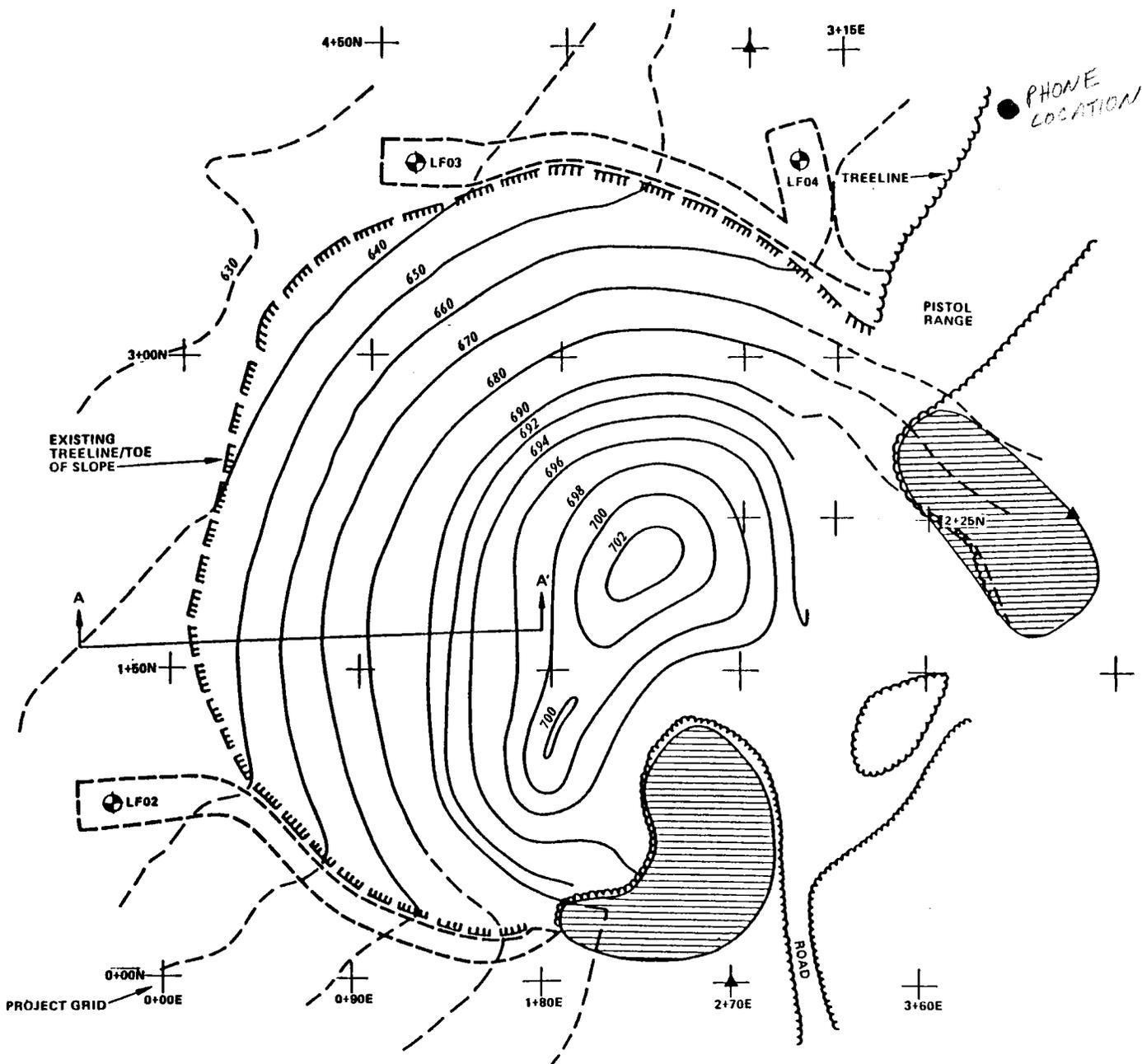


FIGURE 2-4
TOTAL FID VOLATILES (calc'd µg/l)
FROM SOIL GAS SURVEY
WASTE DISPOSAL SITE



- NOTES:**
1. CONTOURS AND TREELINE ARE EXISTING, FOLLOWING 1988 PRELIMINARY REMEDIATION.
 2. CROSS HATCHED AREAS WERE PROTECTED DURING 1988 WORK. SOME DEBRIS REMAINS.
 3. FOR DETAIL OF SECTION A-A', SEE FIGURE 2.2.
 4. PROJECT GRID ESTABLISHED USING EXISTING MONUMENTS (▲), WHICH ARE AN ASSUMED SYSTEM.
 5. BASE MAP - NATIONAL PARK SERVICE DRAWING No. 841 8042, DATED 1-22-87.
 6. WELL LOCATIONS (⊕) AND ACCESS WAYS (---) ARE TENTATIVE, PENDING NATIONAL PARK SERVICE APPROVAL.
 7. FOR UPGRADIENT WELL (LF01) LOCATION, SEE FIGURE 2.5.

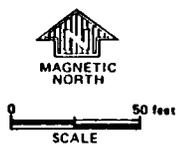
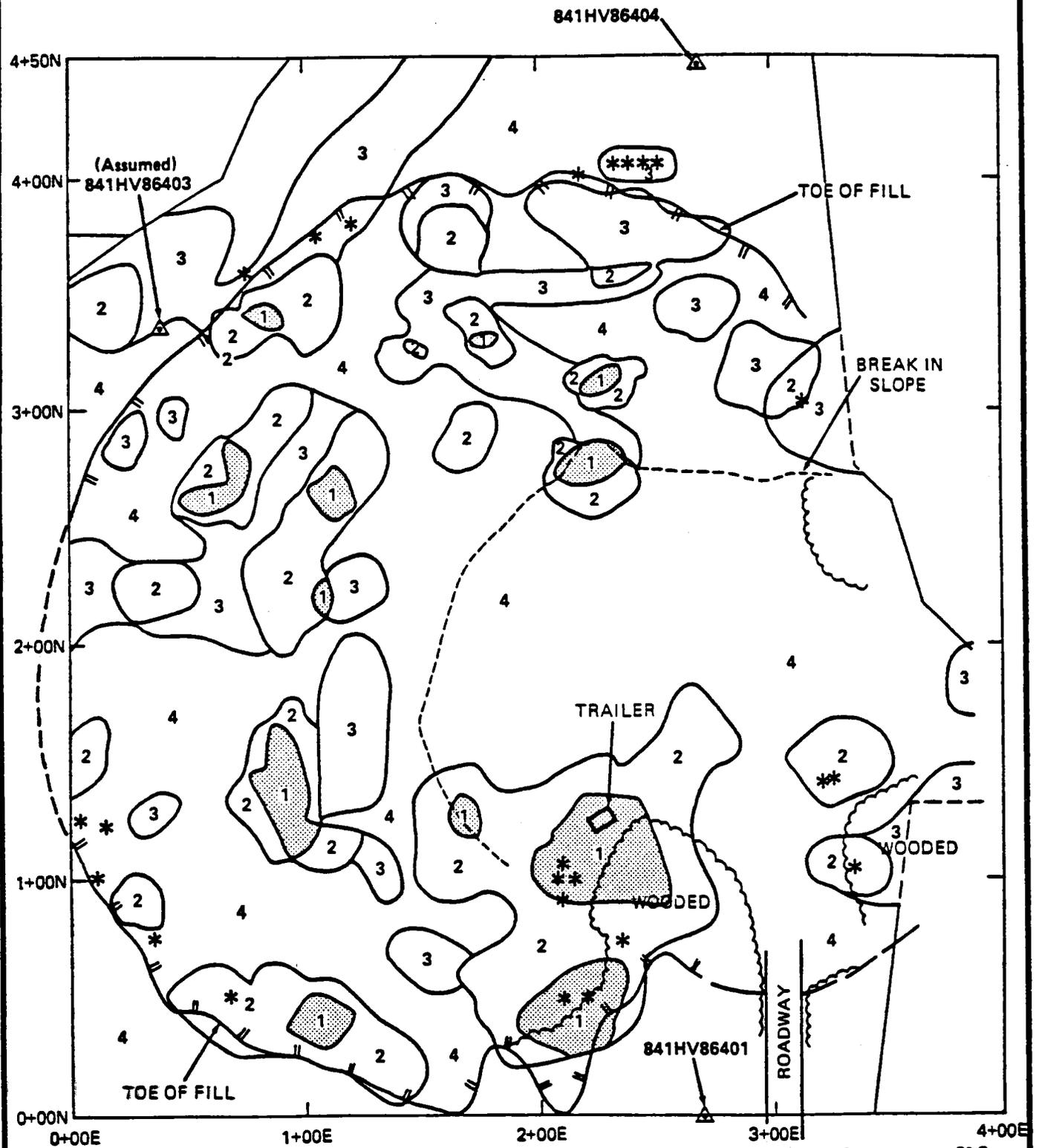


FIGURE 2-1
SITE PLAN
WASTE DISPOSAL SITE



KEY TO WASTE CATEGORIES
 (see text for discussion)

- 1 - Highest Probability
- 2 - Some Probability
- 3 - Slight Probability
- 4 - Limited Probability



FIGURE 2-3
COMPOSITE ANOMALY MAP

SITE TWO - SPILL SITES (NONPOTABLE WELLS)

HISTORY OF USE

- CONSTRUCTED IN LATE 1950'S FOR WATER SUPPLY; SUPERSEDED BY OTHER WELLS
- USED FOR EQUIPMENT WASHDOWN, SHOP MAINTENANCE, AND LANDSCAPING
- LONG-TERM, INCIDENTAL SURFACE SPILLAGE OF A VARIETY OF POSSIBLE CONTAMINANTS
- INCIDENTAL SPILLS OF PETROLEUM PRODUCTS, MAINTENANCE SOLVENTS, PESTICIDES, AND AGRICULTURAL CHEMICALS

PHYSICAL DESCRIPTION

- LOCATED IN SECURED AREA, IN EQUIPMENT STORAGE AREA
- CONVENTIONAL WATER WELLS WITH SUBMERSIBLE PUMP, SURFACE PIPING, AND SPIGOT

PREVIOUS REMEDIAL ACTIVITIES

- NONE

FINDINGS

- CONTAMINATION OF THE WELLS PAST THE SURFACE CASING IS POSSIBLE, DUE TO LONG DURATION OF EXPOSURE AND POTENTIAL QUANTITIES OF SPILLAGE

PLANNED SUPPLEMENTAL SITE ACCESS STUDY

NEED

- MONITORING WELLS ARE REQUIRED TO EVALUATE HYDROGEOLOGY AND GROUNDWATER QUALITY OF LANDFILL SITE
- WELLS WILL BE DRILLED INTO BEDROCK, REQUIRING A LARGE, TRUCK-MOUNTED RIG
- TOE OF LANDFILL IS PRESENTLY INACCESSIBLE

PROPOSAL

- EVALUATE ENVIRONMENTAL IMPACT AND SECURE NECESSARY APPROVALS FOR LEAST-IMPACT ACCESS ROUTE TO WELL LOCATIONS (THERE IS SOME FLEXIBILITY IN WELL SITING)
- INCLUDE SITING OF ON-SITE DRILLING/SAMPLING WASTE STORAGE AREA IN ANALYSIS
- CONSTRUCT WELL ACCESS AND CONDUCT SITE WORK USING APPROVED PLANS
- RESTORE WORK AREA PER APPROVED PLANS, OR STABILIZE AREA PENDING FURTHER SITE ACTIVITY

ASSUMPTIONS

- NAVY AND NPS ARE THE PARTICIPATING AGENCIES
- NO PROTECTED PLANT OR ANIMAL SPECIES ARE PRESENT

SCOPE OF STUDY

- AIR PHOTO INTERPRETATION OF SITE AND BASE MAP PREPARATION
- SITE SURVEY FOR SPECIES, SIZES, AND LOCATION OF FOLIAGE
- SITE SURVEY FOR WETLANDS, DRAINAGEWAYS, AND OTHER FEATURES
- SITE SURVEY FOR HISTORIC RESOURCES (DARLING HOMESITE SPRINGHOUSE AND WATERLINE)
- SURVEY FOR CONSTRUCTION AND RESTORATION MATERIALS

PRODUCTS

- ENVIRONMENTAL ASSESSMENT
 - SEDIMENT AND EROSION CONTROL PLAN
 - CONSERVATION AND RESTORATION PLAN
- involving a lot of work*

PLANNED PHASE TWO STUDY ELEMENTS

WELL INSTALLATION PROGRAM (LANDFILL)

- ALL FIELD ACTIVITIES TO BE INITIATED WITH LEVEL D PROTECTIVE EQUIPMENT, WITH LEVEL C AVAILABLE ONSITE IF ACTION LEVELS ARE REACHED
- CONSTRUCT WELL ACCESS
- INSTALL 3 DOWNGRADIENT AND 1 UPGRADIENT WELLS
 - * DEPTH ESTIMATED AT 100 TO 250 FEET
 - * WELL CONSTRUCTED OPEN HOLE BELOW SURFACE CASING
 - * DRILLED USING AIR ROTARY OR DOWN HOLE HAMMER
- SOIL/CUTTINGS SAMPLES ANALYZED FOR PARAMETERS SHOWN IN TABLE 2-1
- DRILLING WASTES (CUTTINGS AND DEVELOPMENT WATER) STORED ONSITE FOR DISPOSAL AS DIRECTED BY THE NAVY
- FIELD OPERATIONS MONITORED AND LOGGED BY DMSS HYDROGEOLOGIST
- MEASURE WATER LEVELS IN WELLS AND CONDUCT SLUG TESTS

GROUNDWATER SAMPLING PROGRAM (LANDFILL AND NONPOTABLE WELLS)

- SAMPLE EACH WELL IN TWO SAMPLING EVENTS MINIMUM TWO MONTHS APART
- PURGE WATER STORED ONSITE (LANDFILL ONLY) FOR DISPOSAL AS DIRECTED BY THE NAVY
- MEASURE TEMPERATURE, pH, CONDUCTIVITY, AND WATER LEVEL
- ANALYZE FOR PARAMETERS SHOWN IN TABLE 2-1

SURFACE SOIL, SURFACE WATER, AND SEDIMENT SAMPLING PROGRAM (LANDFILL)

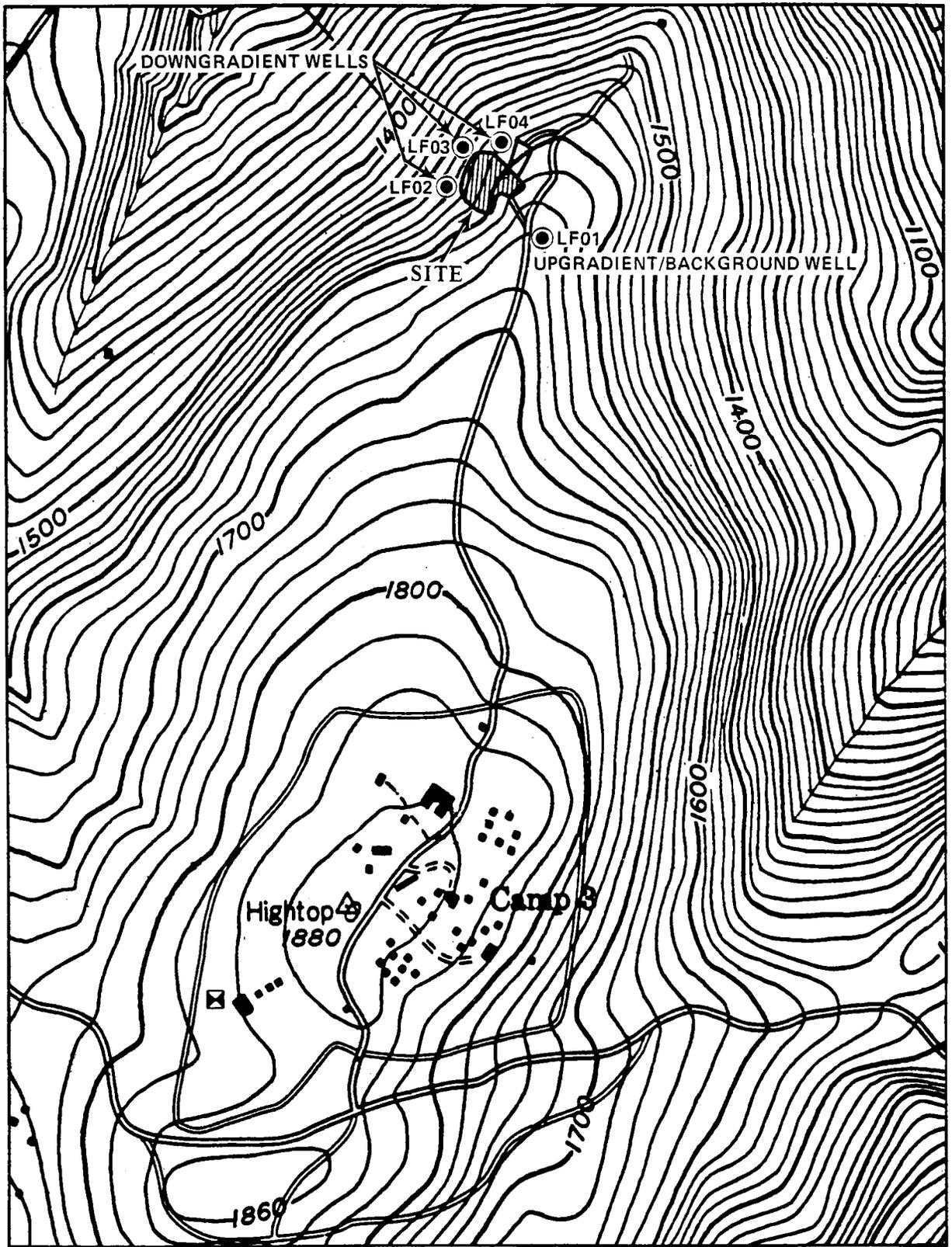
- 10 SAMPLES FROM SITE VICINITY, ONE TIME ONLY
 - * GROUNDWATER DISCHARGES (SPRINGS OR SEEPS)
 - * SOIL/SEDIMENT NEAR TOE OF LANDFILL AND NEARBY AREAS
 - * DARLING HOMESITE WATERLINE ?
- MEASURE TEMPERATURE, pH, CONDUCTIVITY
- ANALYZE FOR PARAMETERS SHOWN IN TABLE 2-1

DATA REVIEW/EVALUATION

- 100% VALIDATION PERFORMED BY ANALYTICAL LABORATORY
- 10% DATA VALIDATION BY DMSS

ANALYSIS AND REPORT

- HYDROGEOLOGIC CHARACTERIZATION
- FATE AND TRANSPORT ASSESSMENT
- CONTAMINATION ASSESSMENT
- HAZARD RANKING SCORING
- RECOMMENDATION FOR FURTHER ACTION



BASE MAP SOURCE: Blue Ridge Summit, PA-MD, 1985

LEGEND:

- ☒ EXISTING WELLS
- PROPOSED MONITORING WELL



FIGURE 2-5
EXISTING AND PROPOSED WELLS

TABLE 2-1

Summary of Environmental Sampling Program

Matrix/ Sample Type	Source Type	Number of Locations	Description/Frequency of Sampling	Number of Samples Round I	Number of Samples Round II	Total Number of Samples	Parameters to be Analyzed
Site One - Laboratory Waste Disposal Area							
1. Groundwater	Monitoring Wells (one upgradient; three downgradient)	4	Rounds I and II: 1GW01-1GW04, 1GW11-1GW14, respectively	4	4	8	TCL Volatile Organic Compounds (TCL VOCs) TCL Semivolatile Organic Compounds (TCL BNAs) TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease Total Petroleum Hydrocarbons (TPH) Total Explosives Nitrate/Nitrite Temperature, pH, conductivity ^(a)
2. Surface Water ^(b)	Seeps/Springs; Unnamed tributary to Owens Creek	4	Round I: 1SW01-1SW04	4	0	4	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Total Explosives Nitrate/Nitrite Temperature, pH, conductivity ^(a)
3A. Soil/Cuttings	Borings for Monitoring Wells (surface soil and two cuttings)	4	Round I (three per well): 1SO01-1SO12	12	0	12	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Total Explosives Nitrate/Nitrite Asbestos ^(c)

TABLE 2-1 (cont'd)

Matrix/ Sample Type	Source Type	Number of Locations	Description/Frequency of Sampling	Number of Samples Round I	Number of Samples Round II	Total Number of Samples	Parameters to be Analyzed
3B. Surface Soil ^(a)	Surface Soil	3	Round I: ISO13-ISO15	3	0	3	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Total Explosives Nitrate/Nitrite Asbestos ^(a)
3C. Sediment ^(a)	Seep/Spring Locations; Streambed of unnamed tributary to Owens Creek	3	Round I: ISD01-ISD03	3	0	3	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Total Explosives Nitrate/Nitrite Asbestos ^(a)
3D. Soil Gas	Soil; Landfill	51	Phase One (see Appendix H)	0	0	51	Petroleum and Chlorinated Hydrocarbons (see Appendix H)
Site Two - Nonpotable Wells							
4. Groundwater	Nonpotable Wells	2	Rounds I and II: 2GW01-2GW02, 2GW11-2GW12, respectively	2	2	4	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Nitrate/Nitrite Temperature, pH, conductivity ^(a)
Quality Assurance/Quality Control Samples							

TABLE 2-1 (cont'd)

Matrix/ Sample Type	Source Type	Number of Locations	Description/Frequency of Sampling	Number of Samples Round I	Number of Samples Round II	Total Number of Samples	Parameters to be Analyzed
5. Trip Blanks	CLP Laboratory	N/A	1 per cooler	10 ^(a)	3 ^(a)	13 ^(a)	TCL VOCs
6. Equipment Rinsate Blanks	Distilled water: ASTM Type II	Multiple	For non-dedicated equipment: 1 per day	5 ^(a)	0 ^(a)	5 ^(a)	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Total Explosives ^(b) Nitrate/Nitrite Asbestos ^(c)
7. Field Duplicates	Monitoring Wells; Soil/Cuttings; Seep/Spring Locations	3	Duplicates at a frequency of 10% per sample matrix for the normal sample, duplicate and matrix spike	3 ^(a)	1 ^(a)	4 ^(a)	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Total Explosives ^(b) Nitrate/Nitrite Asbestos ^(c)
8. Field Blanks	Unchlorinated or distilled water source used/ASTM Type II water source	N/A	1 per round per water source	1	1	2	TCL VOCs TCL BNAs TAL Metals and Cyanide TCL Pesticides/PCBs Total Phenols Oil and Grease TPH Total Explosives ^(b) Nitrate/Nitrite Asbestos ^(c)

TABLE 2-1 (cont'd)

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- (a) Water samples only. To be measured in the field by DMSS personnel.**
 - (b) A total of ten surface water, surface soil, and sediment samples will be collected; the exact number of each type of sample will be determined in the field.**
 - (c) Soil and sediment samples, and associated rinsate, only.**
 - (d) Number of trip blanks is based on 2 water samples per cooler and 8 soil/sediment samples per cooler; trip blanks required only for coolers containing VOC samples.**
 - (e) Number of equipment rinsate blanks (ERB) is based on a total of 5 days of soil/sediment sampling. All groundwater and surface water sampling equipment will be dedicated and will not require ERB samples. Where required, ERB will be collected every day but only samples from every other day will be analyzed.**
 - (f) Site One only.**
 - (g) Duplicate samples are collected at a frequency of 10% of the environmental samples.**

Sample numbering system:

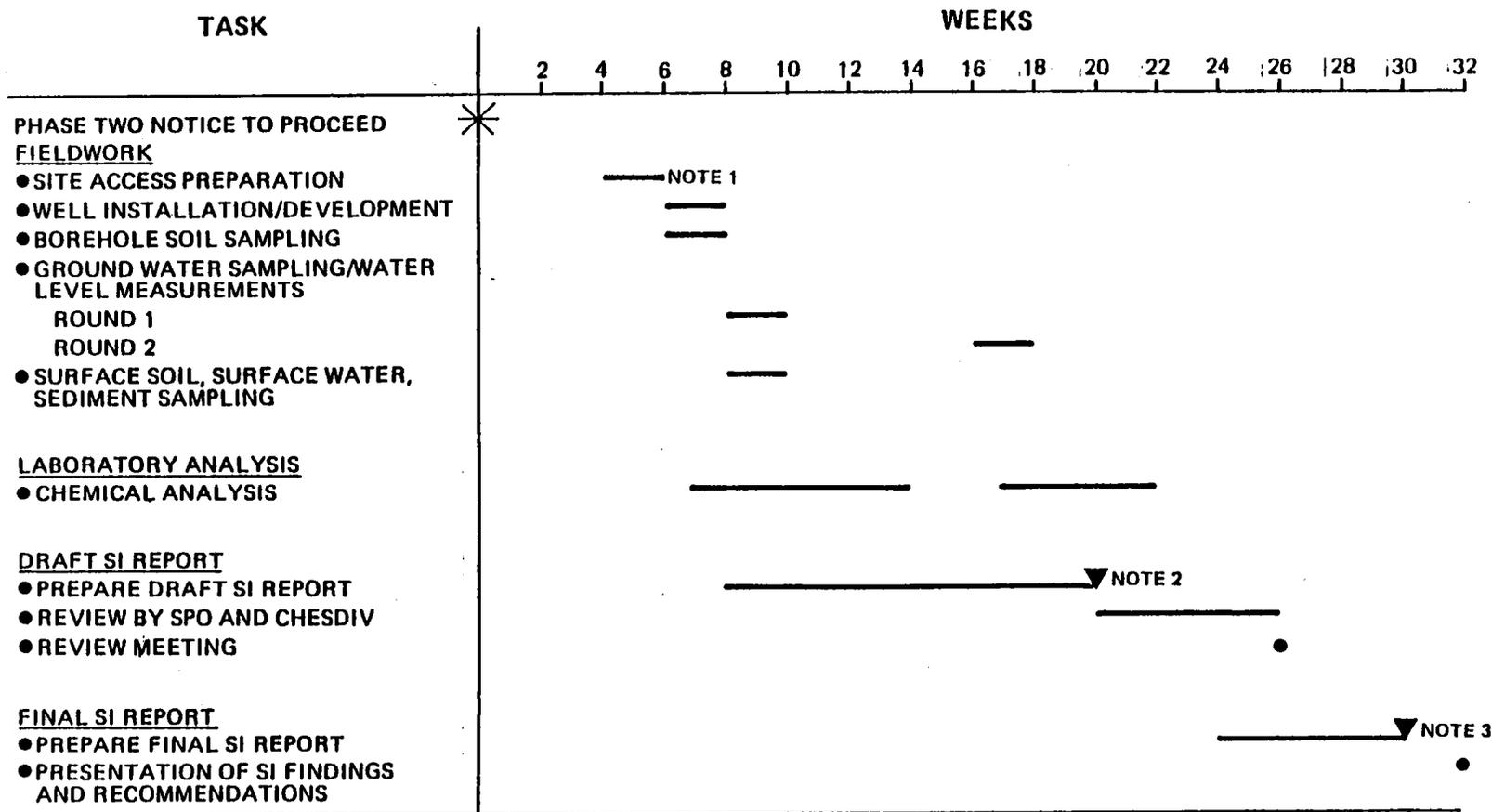
GW = Groundwater sample
SW = Surface Water sample
SO = Soil sample
SD = Sediment sample

The number preceding any of the above abbreviations represents the site number; the number following represents the sequence number of that type of sample at a particular site.

Example: 1SD02 = Sediment sample #2 at Site 1.

SCHEDULE FOR SUPPLEMENTAL STUDIES AND PHASE TWO

MILESTONE	PLANNED DATE	MODIFIED DATE
AWARD	OCTOBER 8, 1991	OCTOBER 8, 1991
DRAFT WORK PLAN SUBMITTAL (10 WEEKS)	DECEMBER 17, 1991	JANUARY 17, 1992
RECEIPT OF DWP COMMENTS	JANUARY 28, 1992	MARCH 11, 1992
FINAL WORK PLAN SUBMITTAL (3 WEEKS)	FEBRUARY 18, 1992	APRIL 7, 1992
WORK PLAN APPROVAL	MARCH 3, 1992	APRIL 28, 1992
DRAFT ENVIRONMENTAL ASSESSMENT		MAY 5, 1992
RECEIPT OF DEA COMMENTS		JUNE 2, 1992
FINAL ENVIRONMENTAL ASSESSMENT		JUNE 16, 1992
START PHASE TWO FIELDWORK (4 WEEKS)	MARCH 31, 1992	JUNE 23, 1992
DRAFT SITE INSPECTION REPORT SUBMITTAL (16 WEEKS)	JULY 21, 1992	OCTOBER 13, 1992
RECEIPT OF DSIR COMMENTS	SEPTEMBER 1, 1992	NOVEMBER 24, 1992
FINAL SITE INSPECTION REPORT SUBMITTAL (4 WEEKS)	SEPTEMBER 29, 1992	DECEMBER 22, 1992



NOTES:

1. SITE ACCESS WORK CONTINGENT ON APPROVAL OF ACCESS PLAN BY NATIONAL PARK SERVICE.
2. SUBMITTED WITH ROUND 1 DATA, 16 WEEKS AFTER START OF FIELD WORK.
3. SUBMITTED WITH ROUND 1 AND 2 DATA, 4 WEEKS AFTER RECEIPT OF COMMENTS.

**FIGURE 4-1
PROPOSED SCHEDULE
SITE INSPECTION AT SECURED GOVERNMENT FACILITY, MARYLAND**