6280/9
FAC
14 AUG 1986

Mr Bruce Lloyd
U.S. Geological Survey
P.O. Box 2857
Raleigh, North Carolina 27602-2857

Re: Coordination of NACIP Study and USGS Appraisal of Groundwater Resources, Marine Corps Base, Camp Lejeune

Dear Mr. Lloyd:

We are forwarding the site maps and scope of work (SOW) for the characterization step of the Navy Assessment and Control of Installation Pollutants (NACIP) study. As noted in the SOW, the Hadnot Point water supply aquifer will be studied in detail during the coming months.

Your views on the SOW and any assistance you can provide to the contractor will be greatly appreciated. Our POC is Mr. Bob Alexander, FTS 676-3034.

Sincerely,

T. J. DALZELL
Colonel, U. S. Marine Corps
Assistant Chief of Staff, Facilities
By direction of the Commanding General

Encl: (1) Scope of Work
(2) Site Maps

Copy to:
LANTDIV (Code 114) w/o Encl
NCDEM, Wilmington Regional Office

Blind Copy to:
BMO
NREAD
EnvEngr

6280/S
P.C

3 0 AUG 1988

Mr Bruce Lloyd
U.S. Geological Survey
P.O. Box 2857
Raleigh, North Carolina 27602-2857

Re: Coordination of MACIP Study and USGS
Agricultural or Groundwater Resources,
Marine Corps Base, Camp Lejeune

Dear Mr. Lloyd:

We are forwarding the site maps and scope of work (SOW) for the characterization step of the Navy Assessment and Control of Installation Pollutants (NACIP) study. As noted in the SOW, the Hadnot Point water supply aquifer will be studied in detail during the coming months.

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Colonel, U. S. Marine Corps
Assistant Chief of Staff, Facilities
By direction of the Commanding General

Encl: (1) Scope of Work
(2) Site Maps

Copy to:
LANTDIV (Code 114) w/o encl
NCDENR, Wilmington Regional Office

Bldg Copy to:
BMO
NRCAD
EnvBrch

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511-6287

TELEPHONE NO.
(804) 445-1814
IN REPLY REFER TO:
5090
1143CFB
22 JUL 1986

U.S. Environmental Protection Agency
Attn: Mr. Jim Holdaway
Region IV
345 Courtland Street
Atlanta, GA 30365-2401

Re: NACIP Confirmation Study, Marine Corps Base, Camp Lejeune

Gentlemen:

As discussed in a telephone conversation between Jim Holdaway and Cherryl Barnett of July 19, 1986, we are enclosing the scope of work for additional NACIP efforts at Camp Lejeune. We hope you will have a chance to review this prior to our meeting of July 31, 1986, and that it may answer some of your comments on our previous submittal, the Round One Sampling report. We anticipate the NACIP contractor, Environmental Science and Engineering, Incorporated, beginning these efforts in the August/September timeframe.

Sincerely,

J. R. BAILEY, P.E.
Head, Environmental Quality Branch
Utilities, Energy and Environmental Division
By direction of the Commander

Encl:
(1) Scope of Work for Round Two Sampling and Characterization/Feasibility

Copy to:
MARCORB Camp Lejeune

Division of Environmental Management
Attn: Mr. R. Paul Williams
Director
P.O. Box 27687
Raleigh, NC 27611-7687

Enclosure (1)

APPENDIX A (REVISION 1) 8 July 1986

CONTRACT N62470-83-C-6106
SCOPE OF WORK FOR ROUND TWO SAMPLING
AND CHARACTERIZATION/FEASIBILITY

1. Verification Step Efforts

a. Site 1, French Creek Liquids Disposal Area: Sample and test surface water and sediments in two locations on Cogdels Creek; sample and test the six shallow wells. Add o,m,p-xylene, MEK, MIBK, EDB, and hexavalent Cr to the analytical parameters for round one.

b. Site 2, Former Nursery/Day Care Center: Sample and test Well 2GW1. Sample soil at four locations (0-1' composite) in the vicinity of sample 2S4; sample surface water and sediment from the drainage ditch in two locations; install four shallow two-inch wells in locations directed by the EIC. Sample new wells twice at an interval of 60 days. Analyze each sample for OCP, OCH, dioxin, and VOA.

c. Site 6, Storage lots 201 and 203: Install eight shallow two-inch wells in locations directed by the EIC. Sample wells twice at a 60-day interval. Sample surface water and sediment both upgradient and downgradient at Bearhead and Wallace Creeks adjacent to the site. Analyze all samples for DDT-R and VOA.

d. Site 9, Fire Fighting Training Pit: Resample and test the two shallow wells. Install a third well in a location directed by the EIC and sample twice at a 60-day interval. Analyze all samples for o,m,p-xylene, MEK, MIBK, EDB and hexavalent Cr in addition to round one parameters.

e. Site 21, Transformer Storage Lot 140: Sample soil at eight locations around perimeter of site, including two samples from drainage ditch. Sample four depths at each location (0-1', 1-3', 3-5', and at 5') and analyze for OCP, OCH, PCB, dioxin. Resample well GW21-1 and analyze for VOA, OCP, OCH, PCB, dioxin, xylene, MEK, MIBK, EDB, and oil and grease.

f. Site 24, Industrial Area Fly Ash Dump: Install two downgradient wells in locations directed by the EIC. Sample new wells twice at a 60-day interval. Sample five shallow wells, existing surface water locations and two new surface water/sediment locations on tributaries to Cogdels Creek and analyze all samples for metals A, VOA, and hexavalent Cr.

g. Site 28, Hadnot Point Burn Dump: Install new upgradient well and sample twice at a 60 day interval. Sample three existing shallow wells, New River surface water and sediments in four locations, resample surface water sediment at two previously identified locations, and one new surface water/sediment location in Cogdels Creek near new upgradient well. Analyze all samples for round one parameters, dioxin, o,m,p-xylene, MIBK, MEK, and hexavalent Cr.

h. Site 30, Combat Town Training Area: Install another well downgradient and sample twice at a 60-day interval. Sample shallow well, surface water/sediment in French Creek and analyze all samples for same parameters as listed for round one plus xylene, MEK, MIBK, and EDB.

i. Site 35, Camp Geiger Area Fuel Farm: Install three shallow two-inch wells in locations directed by the EIC. Sample twice at a 60-day interval. Sample surface water and sediments from Brinson Creek in two locations; analyze all samples for Pb, VOA, EDB, xylene, and O&G.

j. Site 36, Camp Geiger Area Dump: Install new upgradient well; sample twice at a 60-day interval. Resample four shallow wells; sample surface water and sediments from Brinson Creek and unnamed creek south of site in two locations. Analyze all samples for parameters listed in round one, o,m,p-xylene, MEK, MIBK, EDB, and hexavalent Cr.

k. Site 41, Camp Geiger Dump: Resample four shallow wells. Add new upgradient well and sample twice at a 60-day interval. Sample surface water and sediment from Tank Creek in two locations and unnamed creek in two locations and analyze all samples for parameters listed in round one plus dioxin, o,m,p-xylene, MEK, MIBK, and hexavalent Cr.

l. Site 45, Campbell Street Underground Fuel Storage Area: Install new well south of fuel farm; sample twice at 60-day interval. Resample three shallow wells and surface water/sediment from the drainage ditch in two locations. Analyze water samples for Pb, O&G, VOA, EDB, and xylene. Sample soil in six locations along perimeter of fuel farm and avgas storage. Composite 5' borings into 3 samples, 0-1', 1-3', and 3-5', analyze soil and sediment samples for Pb, O&G.

m. Site 54, Crash Crew Fire Training Burn Pit: Install one upgradient and one downgradient well at site and sample twice at a 60-day interval. Resample Well 54GW1, drainage ditch surface water and sediments in three locations and analyze for round one parameters, o,m,p-xylene, MEK, MIBK, EDB, and hexavalent Cr.

n. Site 68, Rifle Range Dump: Resample three shallow wells and analyze for round one constituents plus o,m,p-xylene, MEK, MIBK, and EDB.

o. Site 69, Rifle Range Chemical Dump: Resample eight shallow wells and three surface water locations. Sample surface water and sediments from two unnamed guts southeast of site. Analyze all samples for parameters listed in round one plus dioxin, o,m,p-xylene, MEK, MIBK, and EDB.

p. Site 73, Courthouse Bay Liquid Disposal Area: Replace failed Well 73GW4 at a location closer to Courthouse Bay to allow for construction activities in that area. Install new upgradient well and sample twice at a 60-day interval. Resample four shallow wells and sample Courthouse Bay surface water and sediments in three locations. Analyze all samples for parameters listed in round one, o,m,p-xylene, MEK, MIBK, EDB, and hexavalent Cr.

q. Site 74, Grease Pit and Pest Control Area: Install a third well west of site; sample twice at a 60-day interval. Resample two shallow wells and analyze all samples for OCP, OCH, PCBs, dioxin, and VOA.

r. Site 75, MCAS Basketball Court: Resample three shallow wells and analyze for VOA, chloropicrin, and dioxin.

s. Site 76, MCAS Curtis Road: Resample two shallow wells and analyze for VOA, chloropicrin, and dioxin.

t. Site A, MCAS (H) Officers Housing Area: Install three shallow wells along the perimeter of the site described in Attachment A. Sample wells twice at a 60-day interval; analyze for VOA, O&G, and free chlorine. Sample surface water and sediment and analyze for free chlorine (SW only), O&G, and VOA.

u. For the 54 wells installed under round one: Install two additional protective bollards and fill with concrete. Pour 5' x 5' concrete pad around well and bollards; paint well bollards day-glo orange. Use monitoring well construction specifications, Attachment B, for installation of new wells.

v. Sample all potable wells on MCB Camp Lejeune and MCAS New River (approx. 100). Composite samples from a maximum of ten wells serving the same water treatment plant (except for "contaminated" wells listed below) and analyze for priority pollutants except VOA; and barium, nitrate, chloride, iron, manganese, sodium, sulfate, THMs, color, TDS and turbidity; and EDB. Analyze all 100 samples for VOA, xylene, MEK and MIBK. If any parameter(s) from the composite exceed(s) regulatory limits or suggested guidelines for potable water, analyze samples for only that (those) parameters from the individual wells in the composite to pinpoint the source of contamination. Scope and analysis to be adjusted as needed by the EIC pending composite sample results. These "contaminated" wells have been shut down by MCB Camp Lejeune: 601, 602, 608, 634, 637, 651, 652 and 653. Sample these wells individually and analyze for priority pollutants, xylene, MEK, and MIBK, barium, nitrate, chloride, iron, manganese, sodium, sulfate, THMs, color, TDS, and turbidity.

w. For the contaminated wells 651, 652, and 653, conduct an extensive physical survey and document review to identify potential sources of contamination. Perform a 150 point (two-week) soil gas investigation to delineate potential contamination source areas; install additional shallow wells (up to six per potable well for cost estimating purposes) to verify findings. Perform two rounds of sampling at these wells; analyze samples for volatile organics, xylene, MEK, and MIBK.

x. Close out contaminated wells at Sites 36, 41, and 68 in accordance with state regulations (15 NCAC 2C). Submit an abandonment report including round one data and evaluation for these wells, to MCB Camp Lejeune for forwarding to the appropriate state agency.

y. Within 80 days of initiation of the on-site verification investigations, evaluate all data generated with the two sampling events and discuss quantitatively whether contamination has the potential to or is presently affecting the environment or human health. Present the findings as part of the monthly progress reports. Furnish the EIC with two copies and the activity with three copies of the progress report with the study results. The report should include: a description of all sampling and chemical analytical methods used; a presentation and evaluation of the analytical data; an assessment of actual/potential contamination and migration; ground level elevations and water levels (0.01 ft. accuracy) in all wells; boring logs; a detailed surveyed site plan showing the location of suspected contaminant sources, wells, etc.; known toxicity information on contaminants found; current standards/criteria for acceptable levels of contaminants found, including those issued/published by EPA, CDC, NIOSH, OSHA, State and local regulatory/health agencies and/or any other established regulatory/advisory agencies as approved by the EIC; and recommendations for immediate site clean up or third round monitoring. Government comments and recommendations will be made via the EIC within 30 calendar days after receipt of the progress report.

2. Characterization/Feasibility Step Efforts

a. In accordance with the original scope of work, conduct Step IB, Characterization, for the Hadnot Point industrial area (bounded by Sneads Ferry Road, Codgels Creek, the New River, and Wallace Creek) and for the deep potable water aquifer influenced by wells serving the Hadnot Point treatment plant. The pump houses for these wells are numbered:

601	613	633	642
602	614	634	650
603	615	635	651
606	616	636	652
608	620	637	653
609	621	638	654
610	626	639(2)	655
611	627	640	LCH-4006
612	632	641	LCH-4007

The objectives of the characterization step are as follows:

(1) Locate source of VOCs detected in deep water supply wells 601, 602, 608, 634, 637, and 642.

(2) Determine concentration of detected parameters in source area(s).

(3) Determine aquifer characteristics: transmissivity, hydraulic conductivity, permeability, storage coefficients and degree of confinement for both deep and shallow aquifers.

(4) Determine rate and direction of groundwater and contaminant flow for the deep potable water supply aquifer influenced by wells listed above, and for the shallow aquifer in the Hadnot Point industrial area.

Conduct an extensive physical survey and document review for activities within the industrial area to identify potential sources of contamination. Perform a 150 point (two week) soil gas investigation to delineate the source areas; install additional wells to verify findings. Fourteen additional shallow wells will be required in this area, including seven which will form pairs with potable wells 601, 602, 603, 608, 634, 637, and 642. Perform an estimated three rounds of sampling at the seventeen Site 22 shallow wells at 60-day intervals; add xylene, MEK, MIBK, and EDB to the round one verification step parameters.

Perform 144 hour aquifer testing to determine aquifer characteristics and rate and direction of ground water and contaminant flow. Install three observation wells of 70', 90' and 200' for aquifer testing. Potable water wells shall be evaluated for various well pumping combinations. Access holes will be drilled, threaded and removable plugs installed in the tops of potable wells to provide a means of logging the depths of the water levels in the wells under study. The elevations of these plug holes above mean-sea-level shall be accurately determined by surveying. The method described in Attachment C or another commonly used method/model, as approved by the EIC, shall be used to determine the flow characteristics and contaminant profiles of the aquifers under study.

Within 30 days of completion of the Characterization Step on-site investigation, submit the Step IB preliminary report of the study results. The report should

include: a description of all sampling and chemical analytical methods used; a presentation and evaluation of the analytical and geotechnical data; an assessment of actual/potential migration; detailed surveyed site plan with surface elevations, well locations (horizontal and vertical from benchmarks as directed by the EIC) and water levels (0.01 ft. accuracy) in all wells; the location and levels of suspected contaminant plumes and/or contaminant sources; known toxicological information on contaminants found, and current standards/ criteria for acceptable levels of contaminants found, including those issued/ published by EPA, CDC, NIOSH, OSHA, State and local regulatory/health agencies, and/or any other established regulatory/advisory agencies as approved by the EIC. Requirements for preliminary and draft report, submissions for Step IB are outlined in Section 3.

b. Conduct Step II Feasibility for the Hadnot Point industrial area. Specify and evaluate five each interim and long-term feasible alternatives for cleanup of contaminated aquifers; include projected effectiveness and cost estimate for each alternative in your evaluation.

c. At the Government's option, conduct additional services at the prenegotiated prices as described below:

(1) Conduct additional laboratory sampling and analysis per the Marine Corps Base, Camp Lejeune Round Two Sampling and Analysis Summary Table attached.

(2) Conduct additional well drilling at a total cost of $39.00 per foot.

(3) Conduct additional one week (75 points) soil gas investigation at a total cost of $23,356 each.

Within 30 days of submission of the characterization step draft report, submit a preliminary report of the feasibility study. Preliminary and draft report submission requirements for Step II are outlined in Section 3.

3. Preliminary and Draft Confirmation Study Reports

In accordance with the completion dates established for each step, furnish the EIC with five copies and the activity with five copies of the preliminary report. Within 30 days, the Government will review and provide comments to the contractor via the EIC. Present EIC/Activity debriefing at the activity during the Government review period. Address the comments, and within 30 days provide five copies of the draft report to the EIC and five copies of the draft report to the activity for issuance to the regulatory agencies for their review.

Present the findings of the draft report for each study step to EPA Region IV and to the North Carolina Division of Environmental Management. These briefings shall be held at the Marine Corps Base, Camp Lejeune as arranged by the EIC and in consort with the activity representative.

MILESTONE CHART

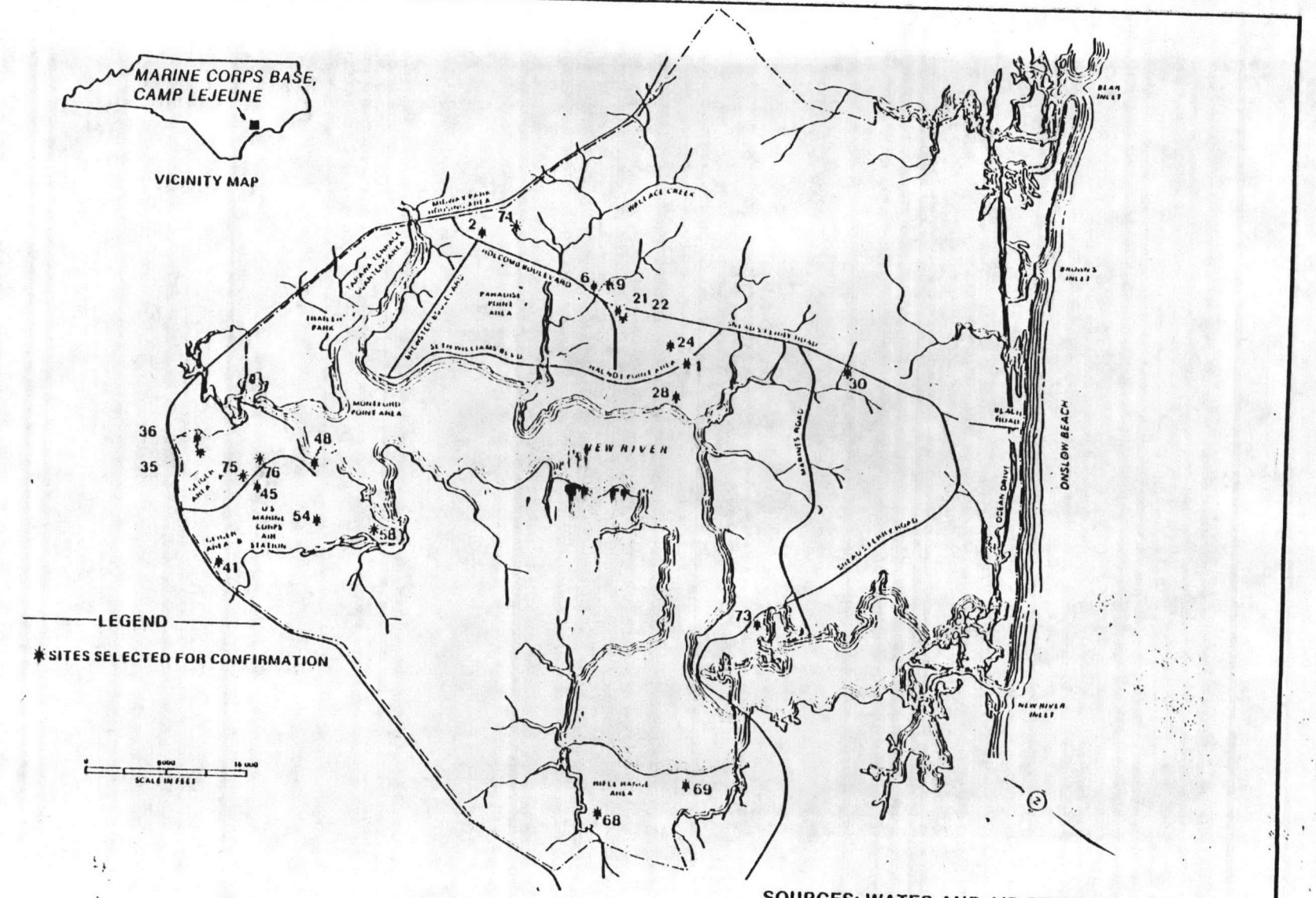
Milestone	Day
Government Issuance of Change Order	0
Submit POA&M and Safety/Contingency Plan for Characterization Effort	10
Government Approval of POA&M and Safety/Contingency Plan	17
Initiate Characterization On-Site Investigations for Hadnot Point Industrial Area	45
Initiate Round Two Sampling, Verification Step	45
Initiate Potable Well Sampling	45
Submit Report with Round Two Results, Potable Well Results	125
Return of Government Comments	155
Complete Characterization On-Site Investigation	260
Submit Preliminary Report with Hadnot Point Characterization Step Results	290
Return of Government Comments	320
Submit Characterization Step Draft Report for Hadnot Point	350
Submit Preliminary Feasibility Step Report for Hadnot Point	380
Return of Government Comments	410
Submit Feasibility Step Draft Report for Hadnot Point	440

SCOPE OF WORK FOR ADDITIONAL SOIL BORINGS,
MCAS (H) NEW RIVER FUEL PIPELINE INVESTIGATION

1. Perform 23 soil borings to depths of 10' at the locations shown in Attachment A. (The attached sketch is from a 1983-Soil and Materials Engineering-Study which was forwarded to you on 8 February 1984). A drill rig will be required for this effort, since previous attempts at hand augering have been unsuccessful. Note the presence or absence of fuel by visual inspection during the drilling. After a period of 24 hours, measure and record the depth to water or fuel in each borehole; sample the liquid and note the presence or absence of fuel and the thickness of the fuel lens.

2. Prepare a separate report on this investigation, to include boring logs and sketches, and submit three copies to this Command and three copies to MCB Camp Lejeune.

3. This investigation should be completed within ninety days of contract award.



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-1
SITE MAP SHOWING LOCATIONS OF SITES OF POTENTIAL CONTAMINATION AT MARINE CORPS BASE, CAMP LEJEUNE

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE

Enclosure (2)

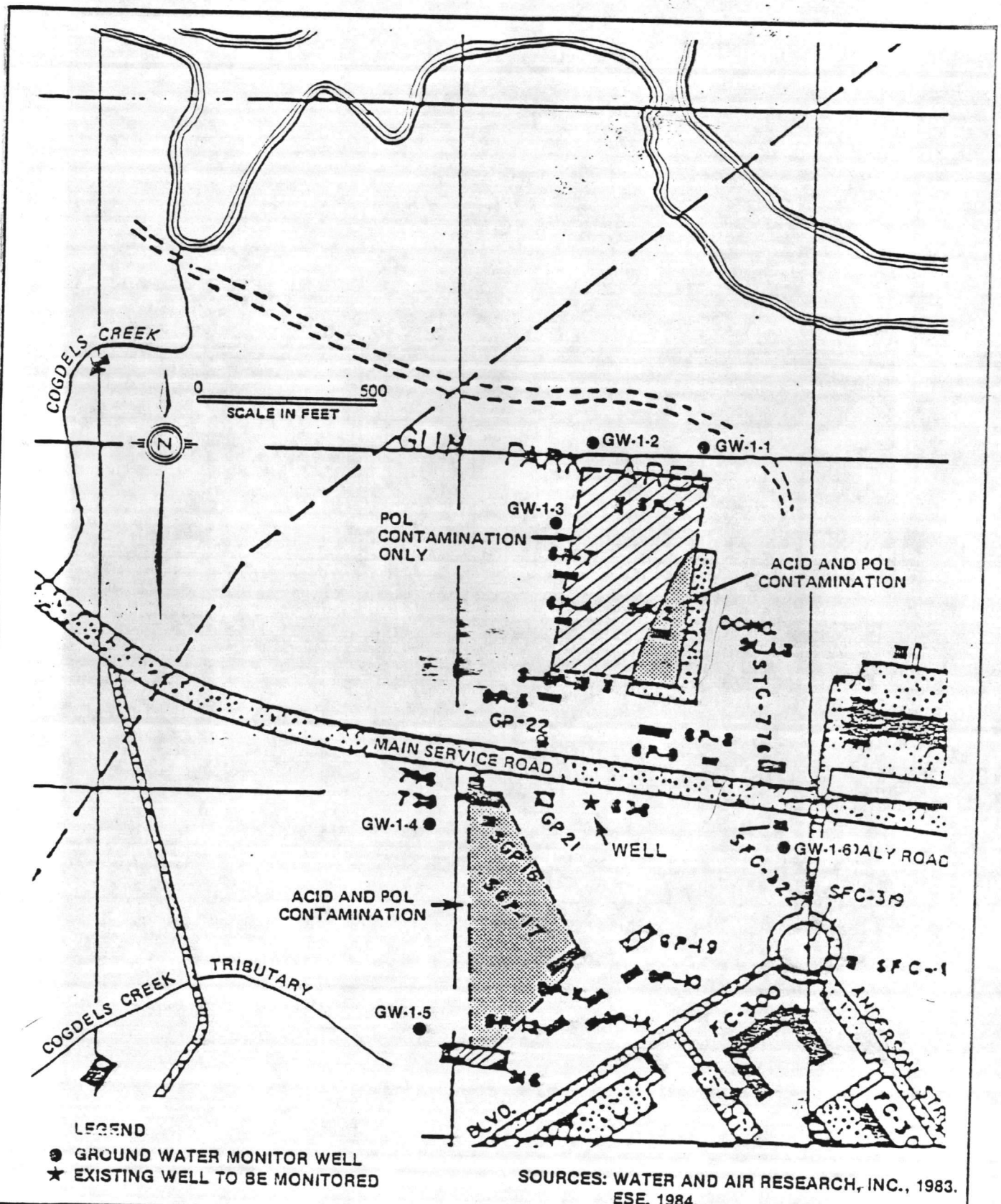
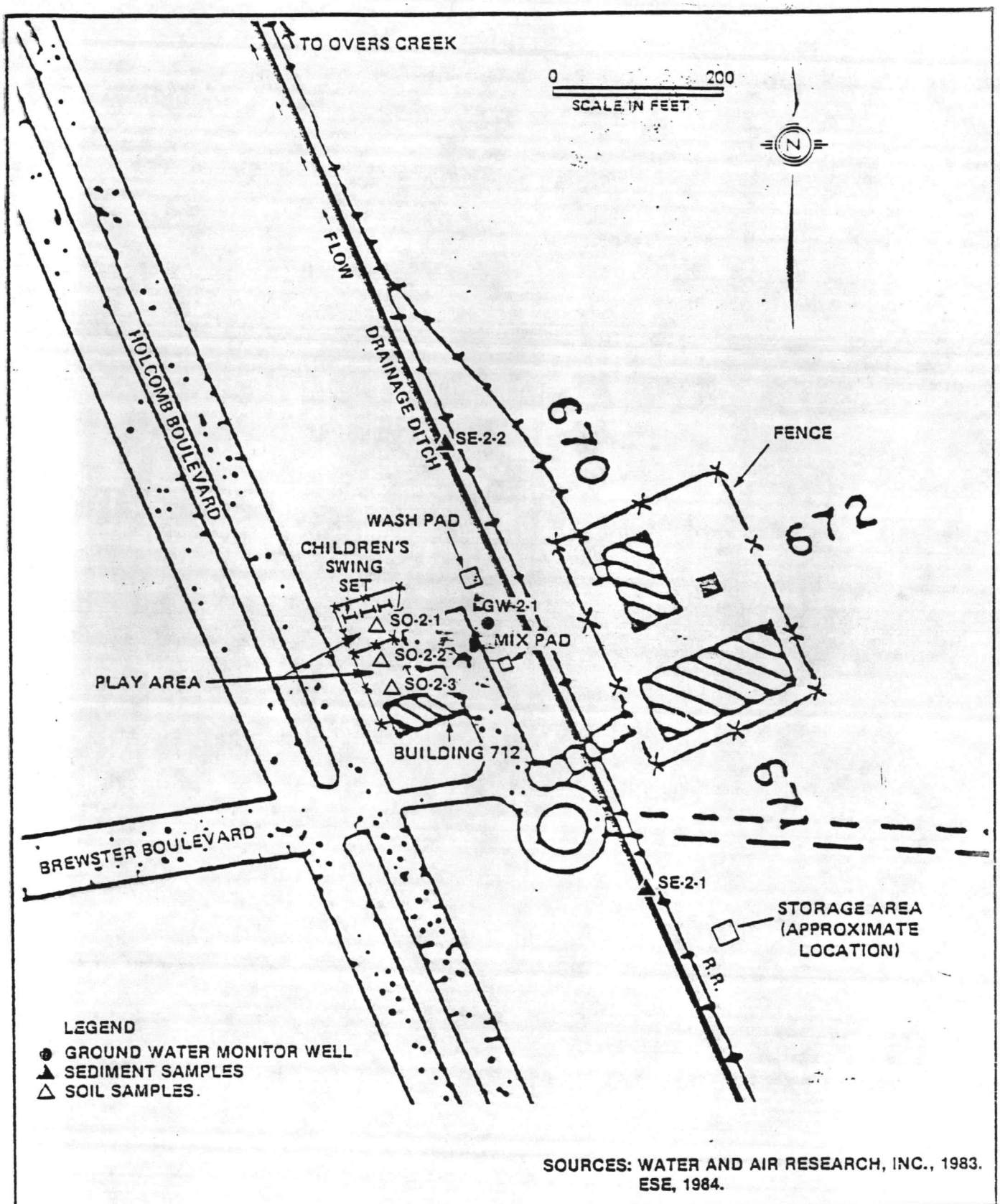


Figure 2-2
PROPOSED SAMPLING LOCATIONS AT SITE NO. 1, FRENCH CREEK LIQUIDS DISPOSAL AREA

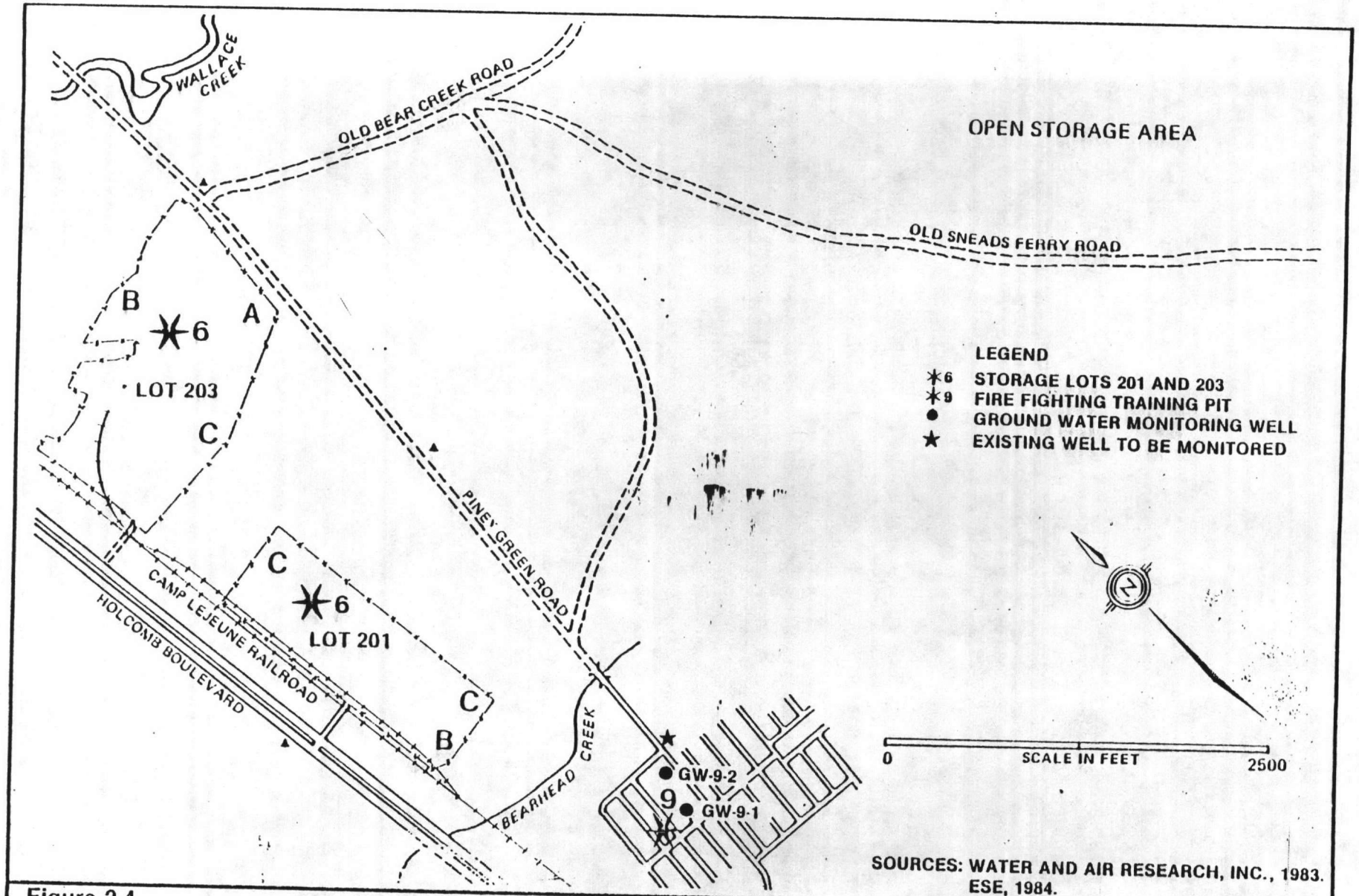
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-3
PROPOSED SAMPLING LOCATIONS AT SITE NO. 2, FORMER NURSERY/DAY CARE CENTER

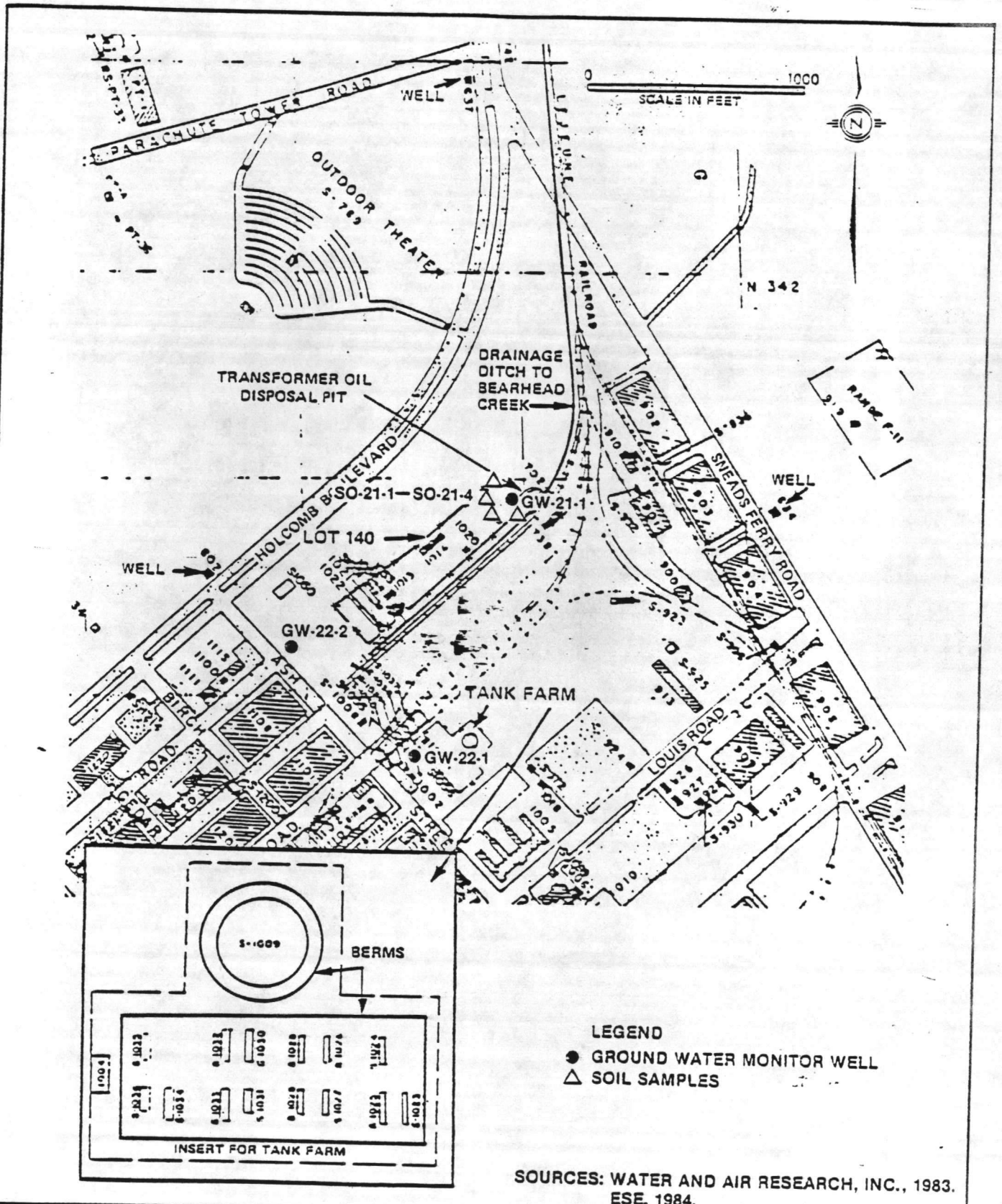
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-4
PROPOSED SAMPLING LOCATIONS AT SITE NOS. 6 AND 9, STORAGE LOTS 201 AND 203 AND FIRE FIGHTING TRAINING PIT

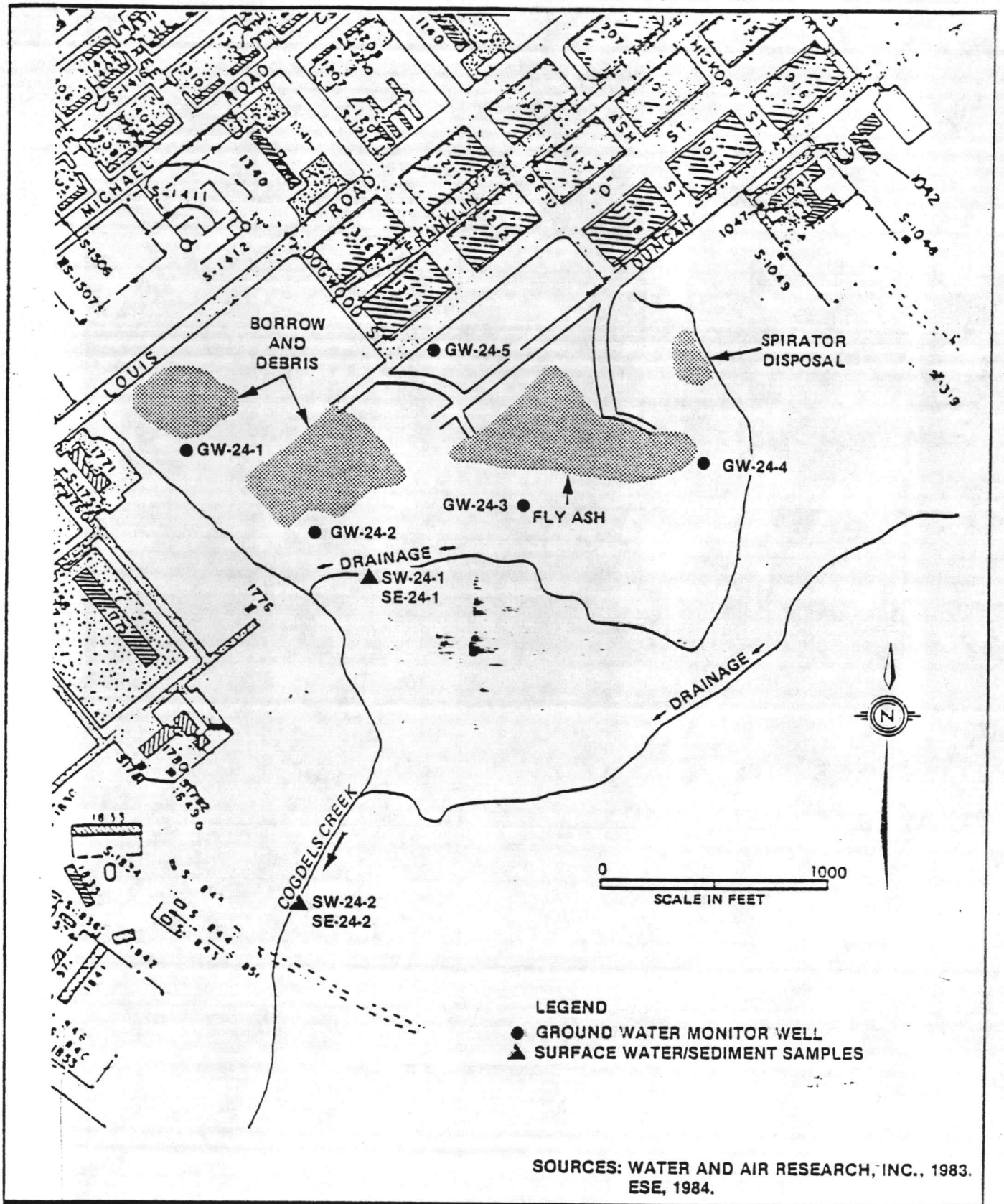
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-5
PROPOSED SAMPLING LOCATIONS AT SITE NOS. 21 AND 22, TRANSFORMER STORAGE LOT 140 AND INDUSTRIAL AREA TANK FARM

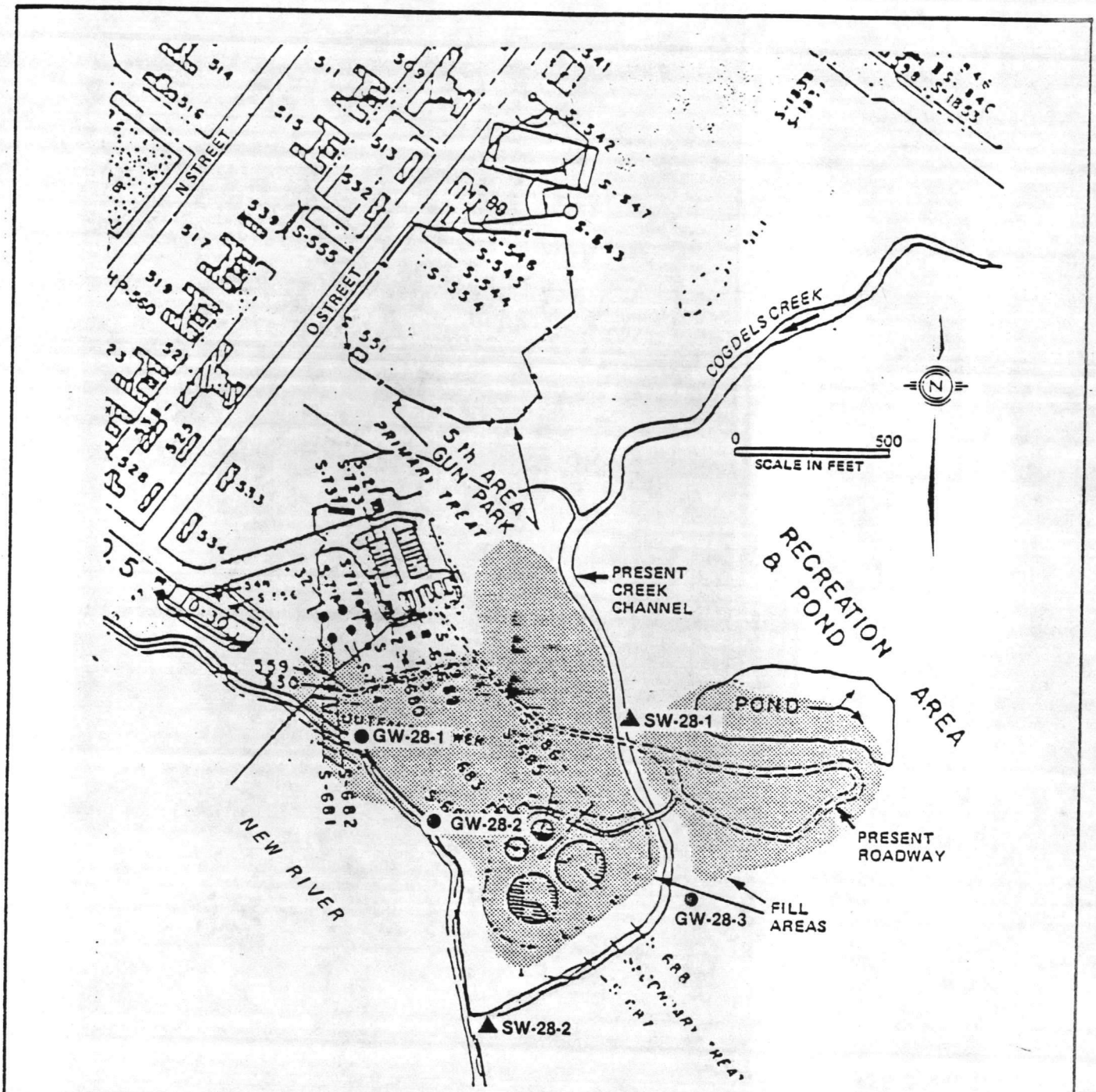
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-6
PROPOSED LOCATIONS AT SITE NO. 24,
INDUSTRIAL AREA FLY ASH DUMP

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-7
PROPOSED SAMPLING LOCATIONS AT
SITE NO. 28, HADNOT POINT BURN DUMP

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE

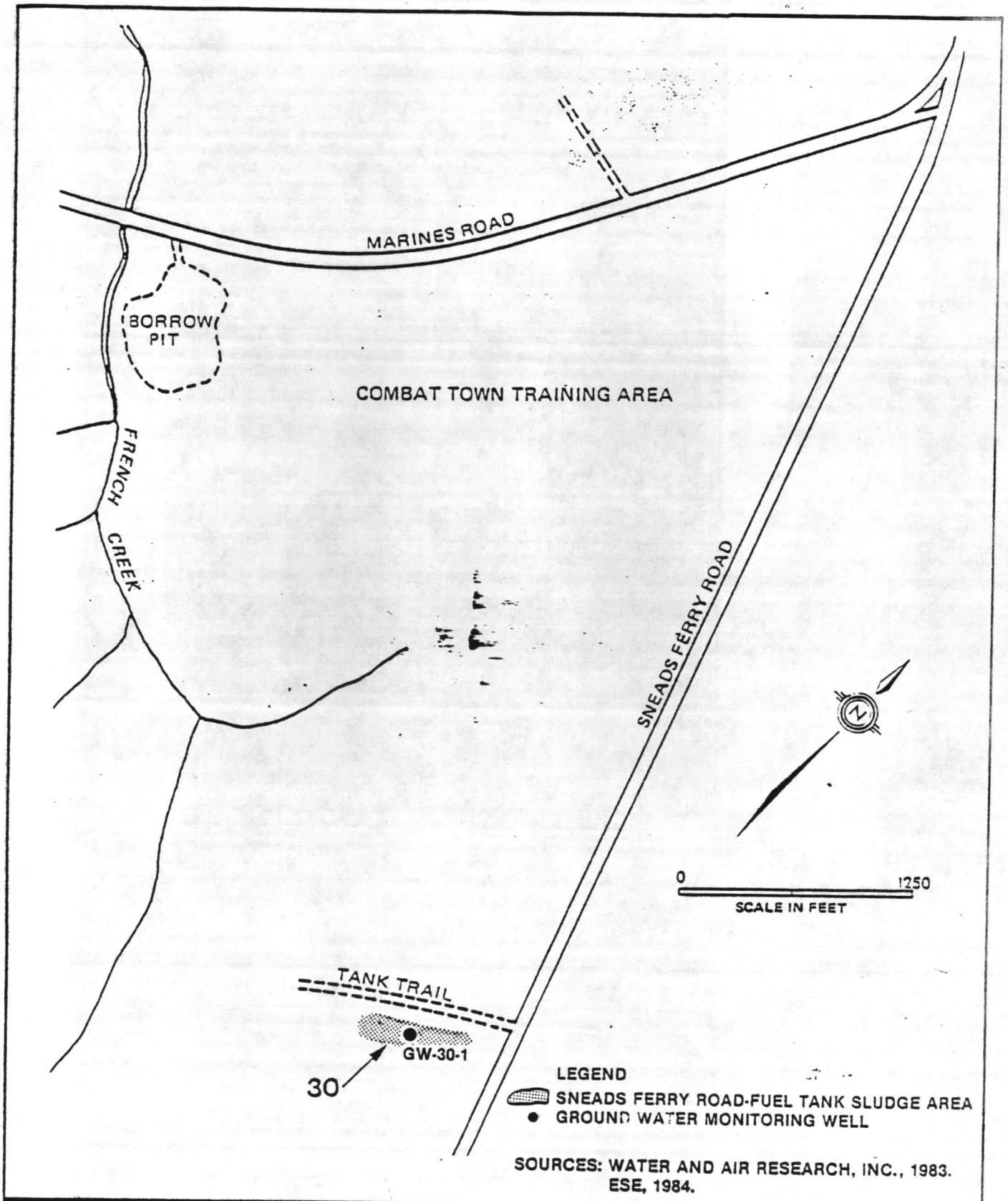


Figure 2-8
PROPOSED SAMPLING LOCATIONS AT SITE NO. 30, COMBAT TOWN TRAINING AREA

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE

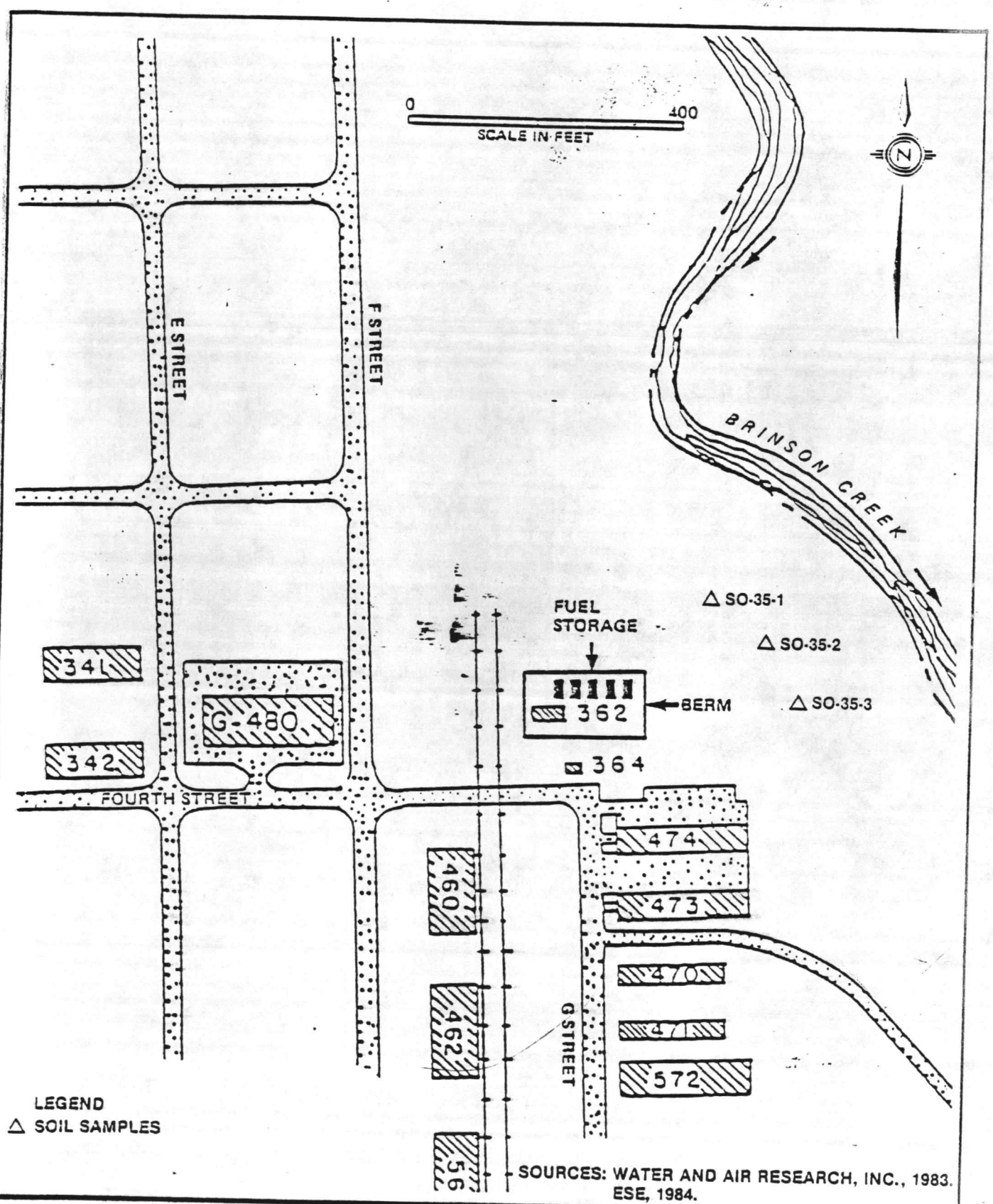
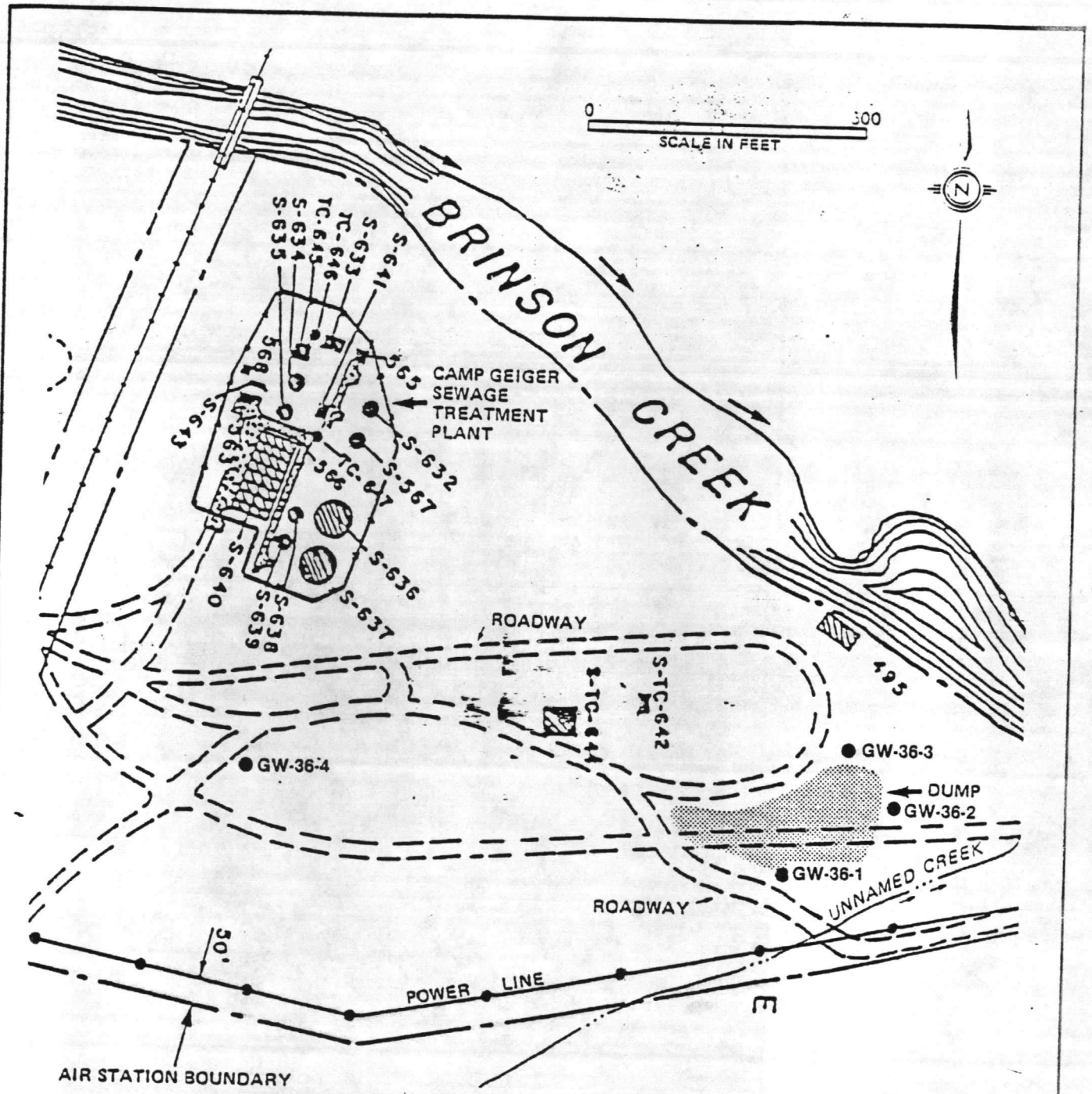


Figure 2-9
PROPOSED SAMPLING LOCATIONS AT SITE NO. 35, CAMP GEIGER AREA FUEL FARM

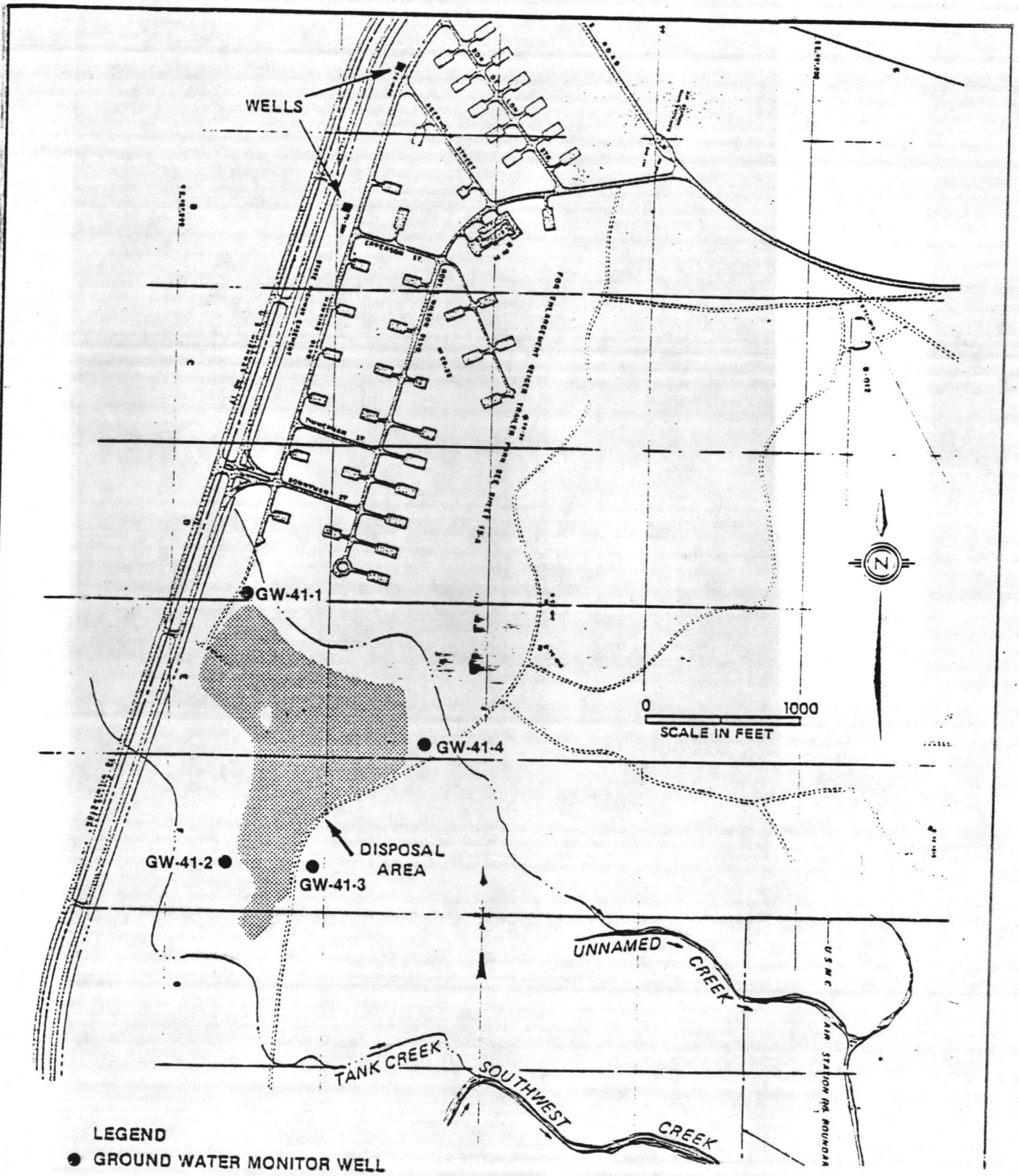
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-10
PROPOSED SAMPLING LOCATIONS AT SITE NO. 36, CAMP GEIGER AREA DUMP (NEAR STP)

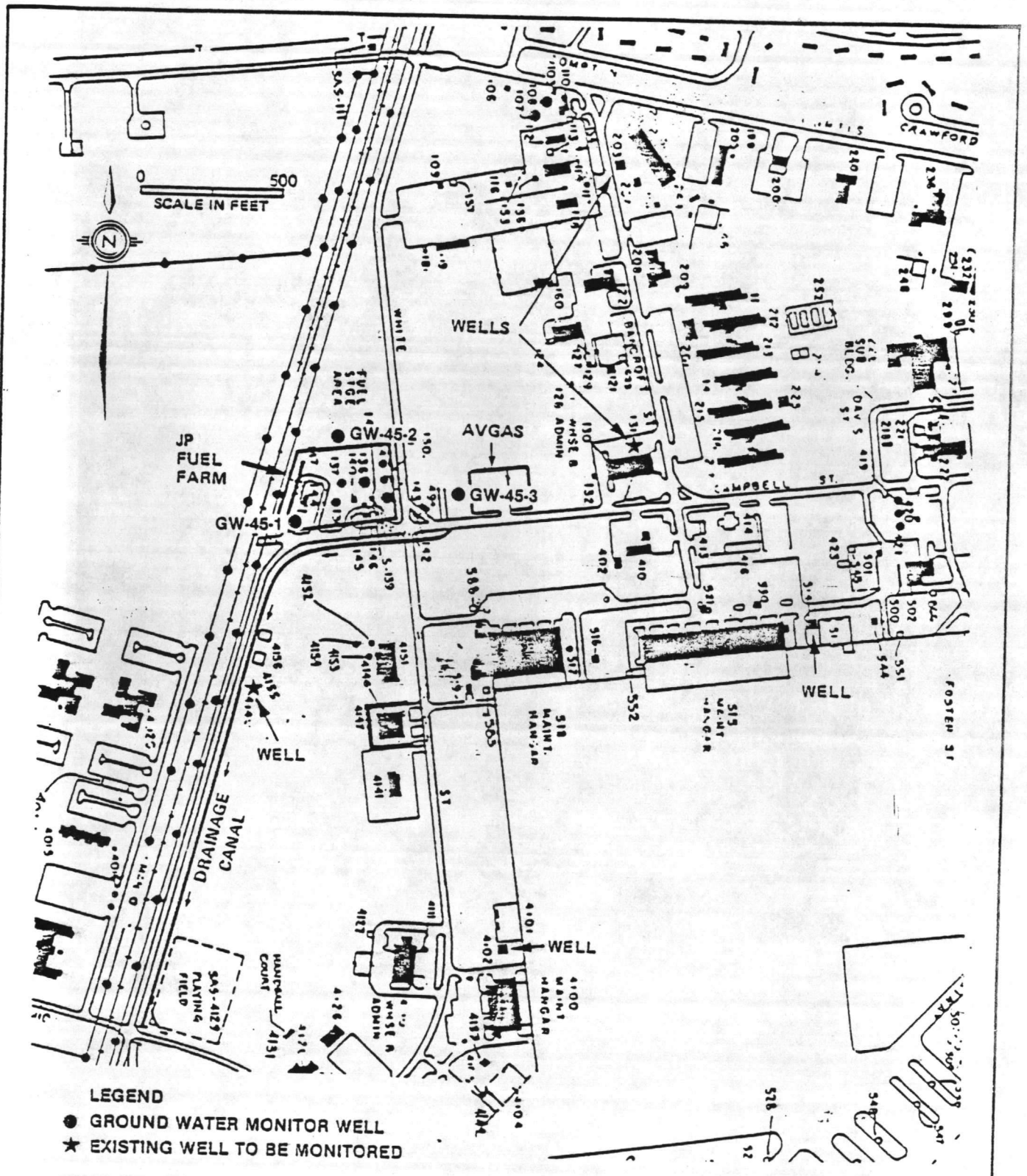
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-11
PROPOSED SAMPLING LOCATIONS AT SITE NO. 41, CAMP GEIGER DUMP (NEAR FORMER TRAILER PARK)

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-12
PROPOSED SAMPLING LOCATIONS AT SITE NO. 45, CAMPBELL STREET UNDERGROUND FUEL STORAGE AREA

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE

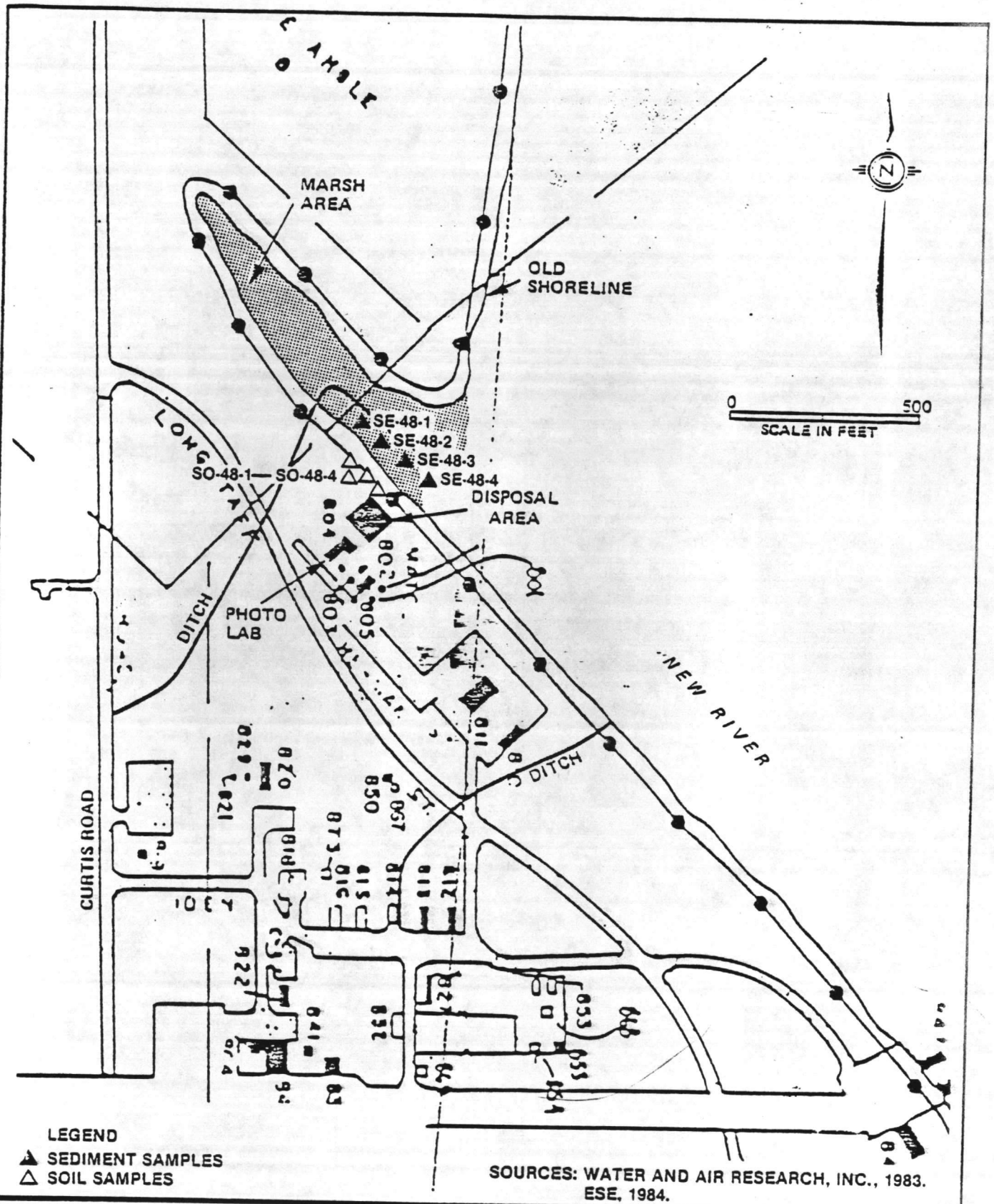


Figure 2-13
PROPOSED SAMPLING LOCATIONS AT SITE NO. 48, MCAS NEW RIVER MERCURY DUMP SITE

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE

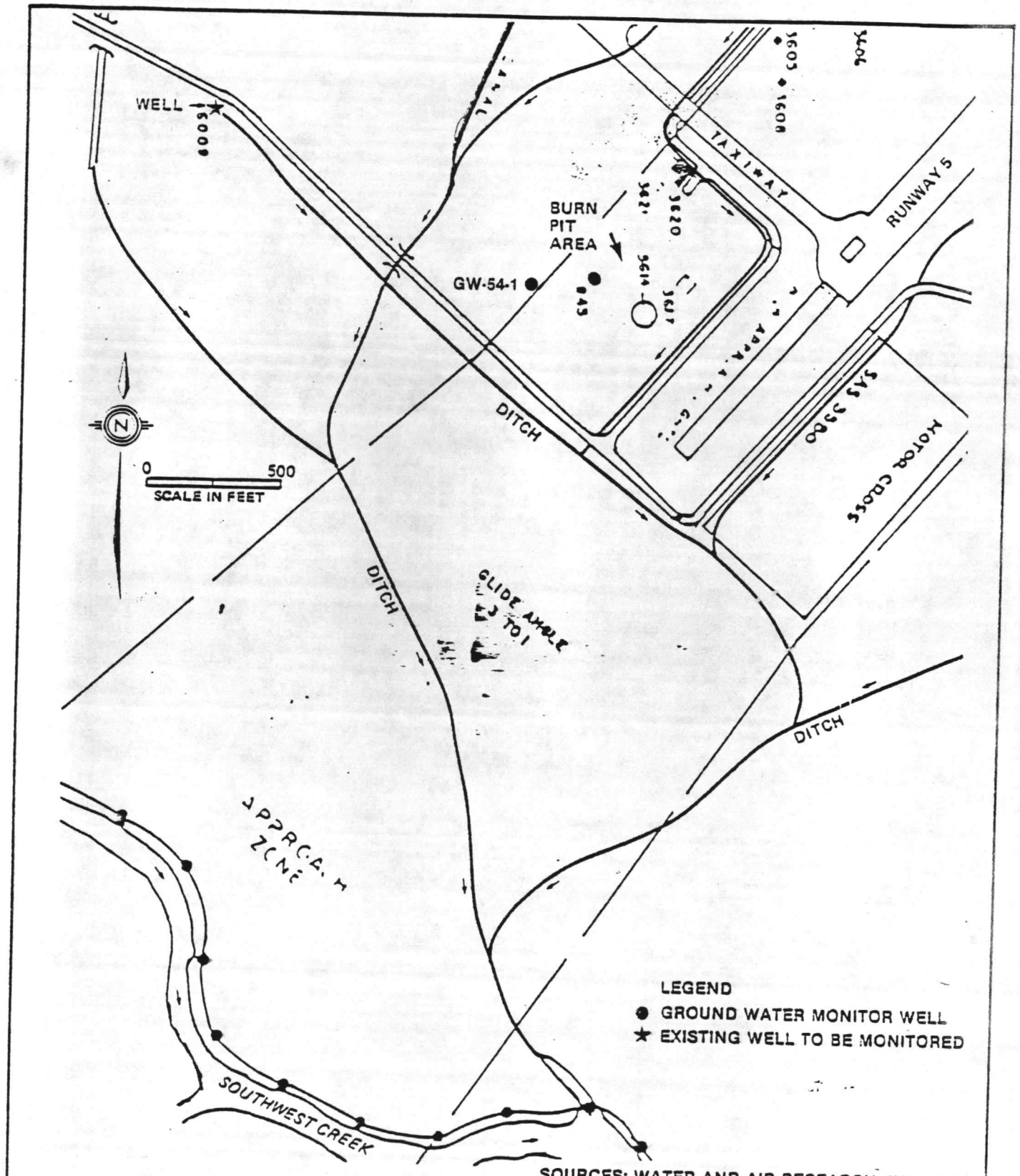
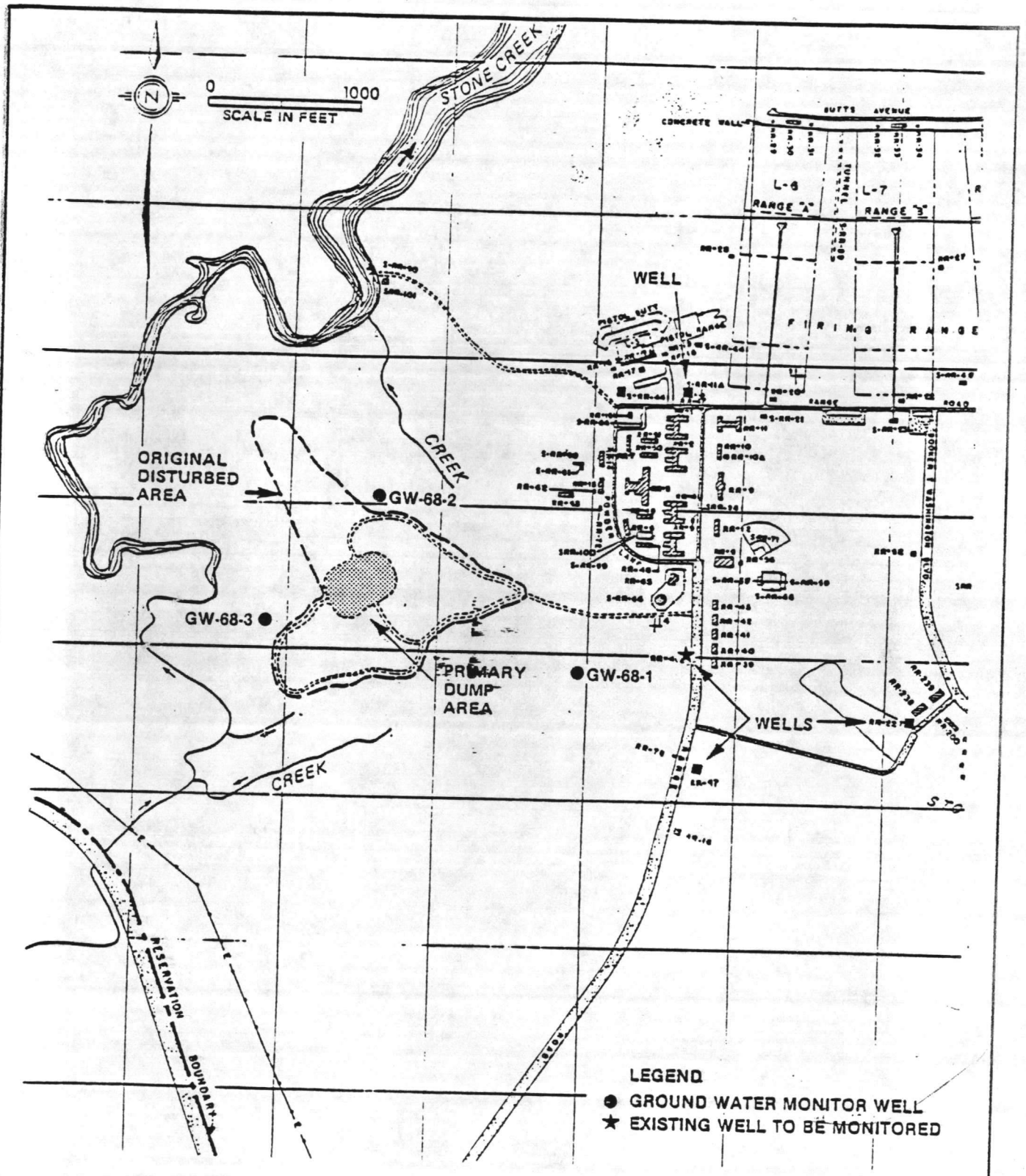


Figure 2-14
PROPOSED SAMPLING LOCATIONS AT SITE NO. 54, CRASH CREW FIRE TRAINING BURN PIT

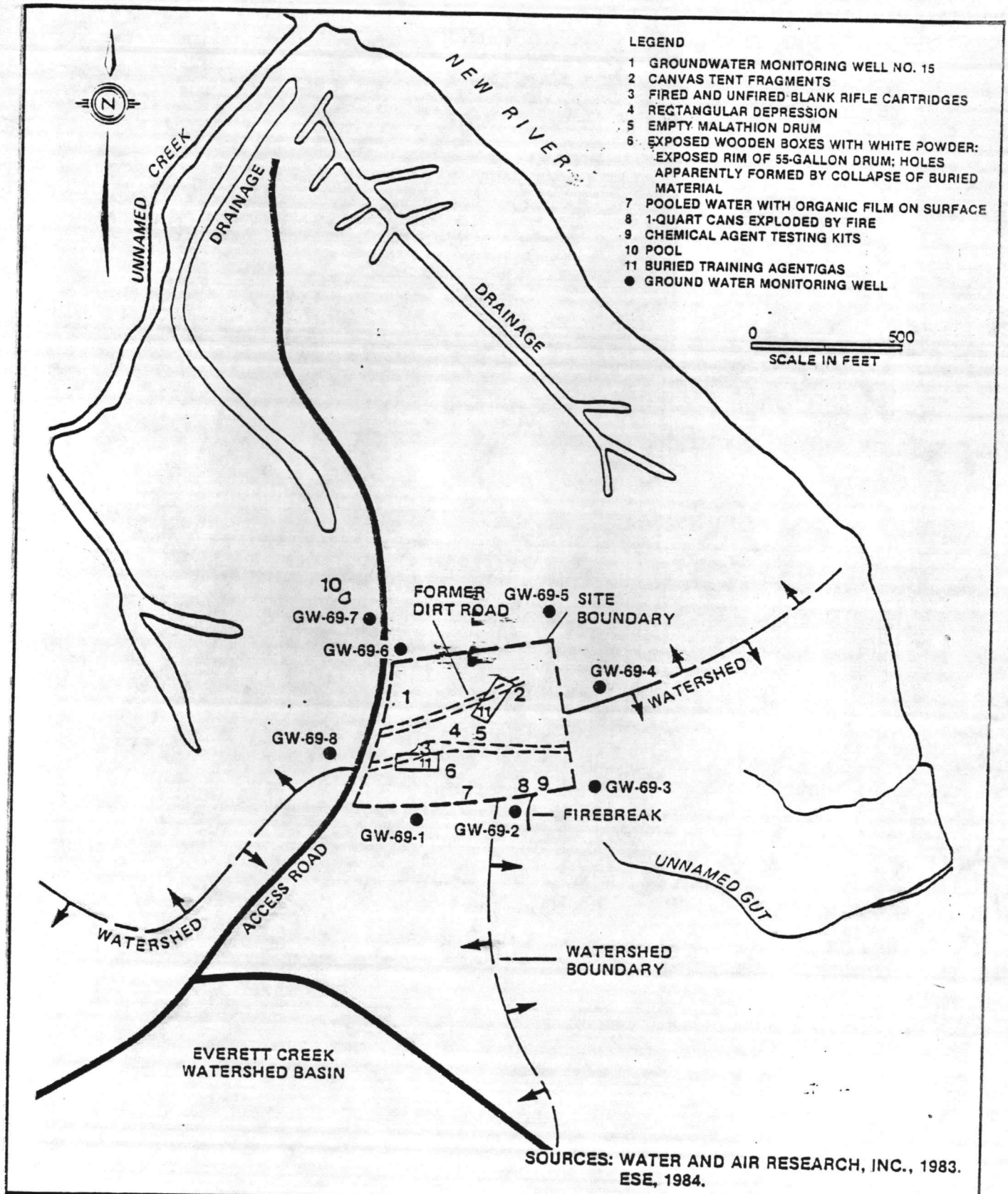
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-15
PROPOSED SAMPLING LOCATIONS AT SITE NO. 68, RIFLE RANGE DUMP

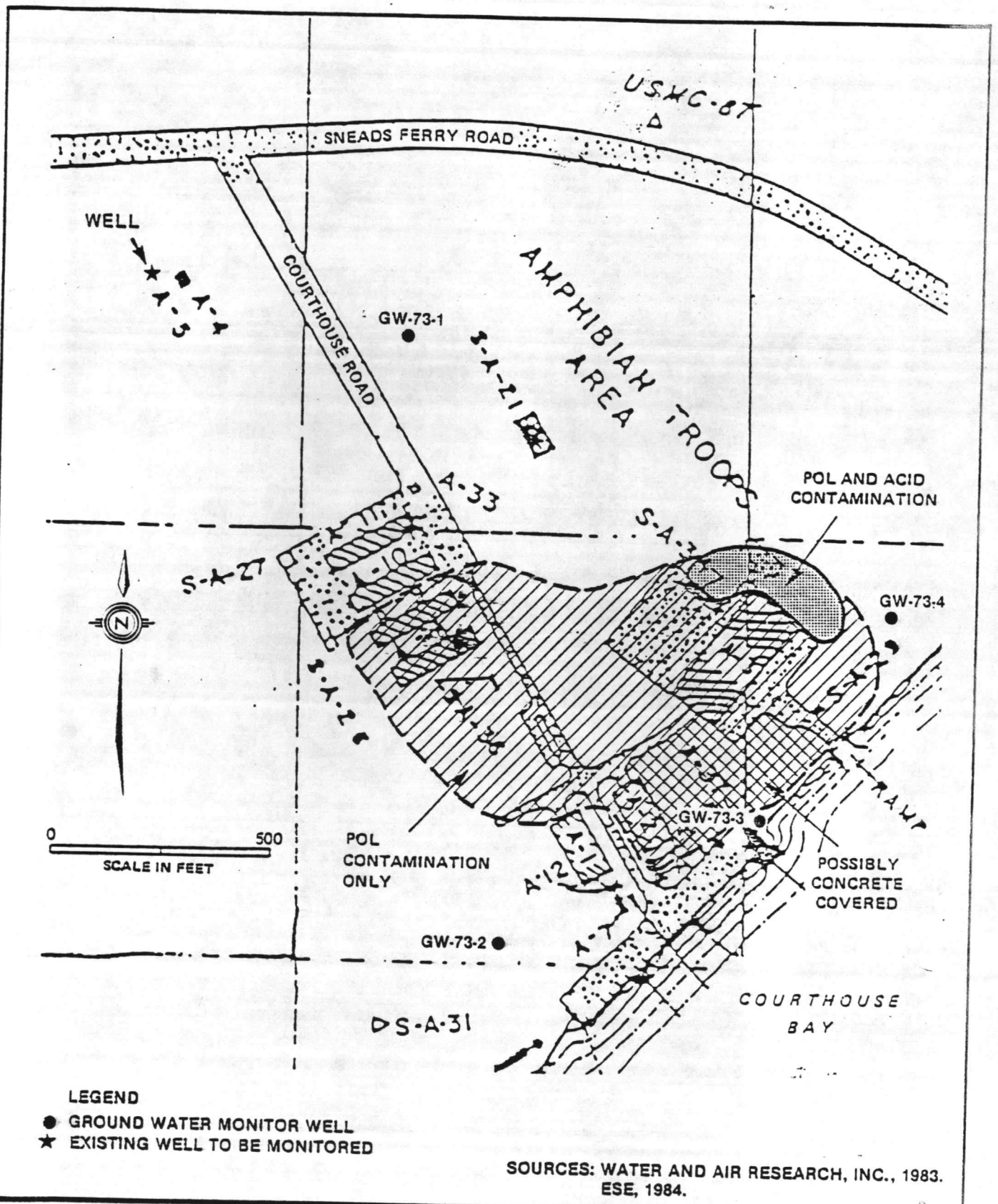
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-16
PROPOSED SAMPLING LOCATIONS AT SITE NO. 69, RIFLE RANGE CHEMICAL DUMP

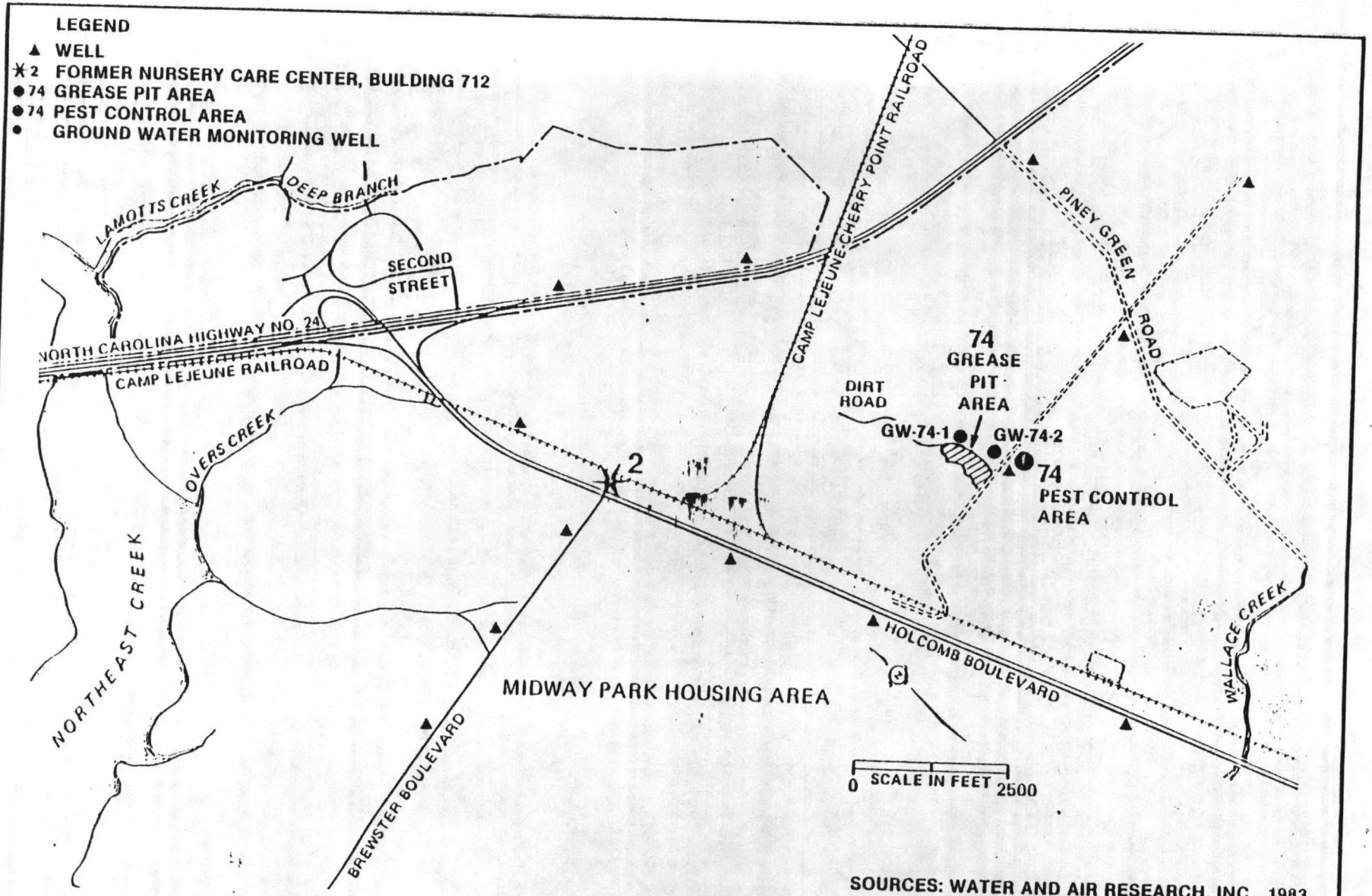
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-17
PROPOSED SAMPLING LOCATIONS AT SITE NO. 73, COURTHOUSE BAY LIQUID DISPOSAL AREA

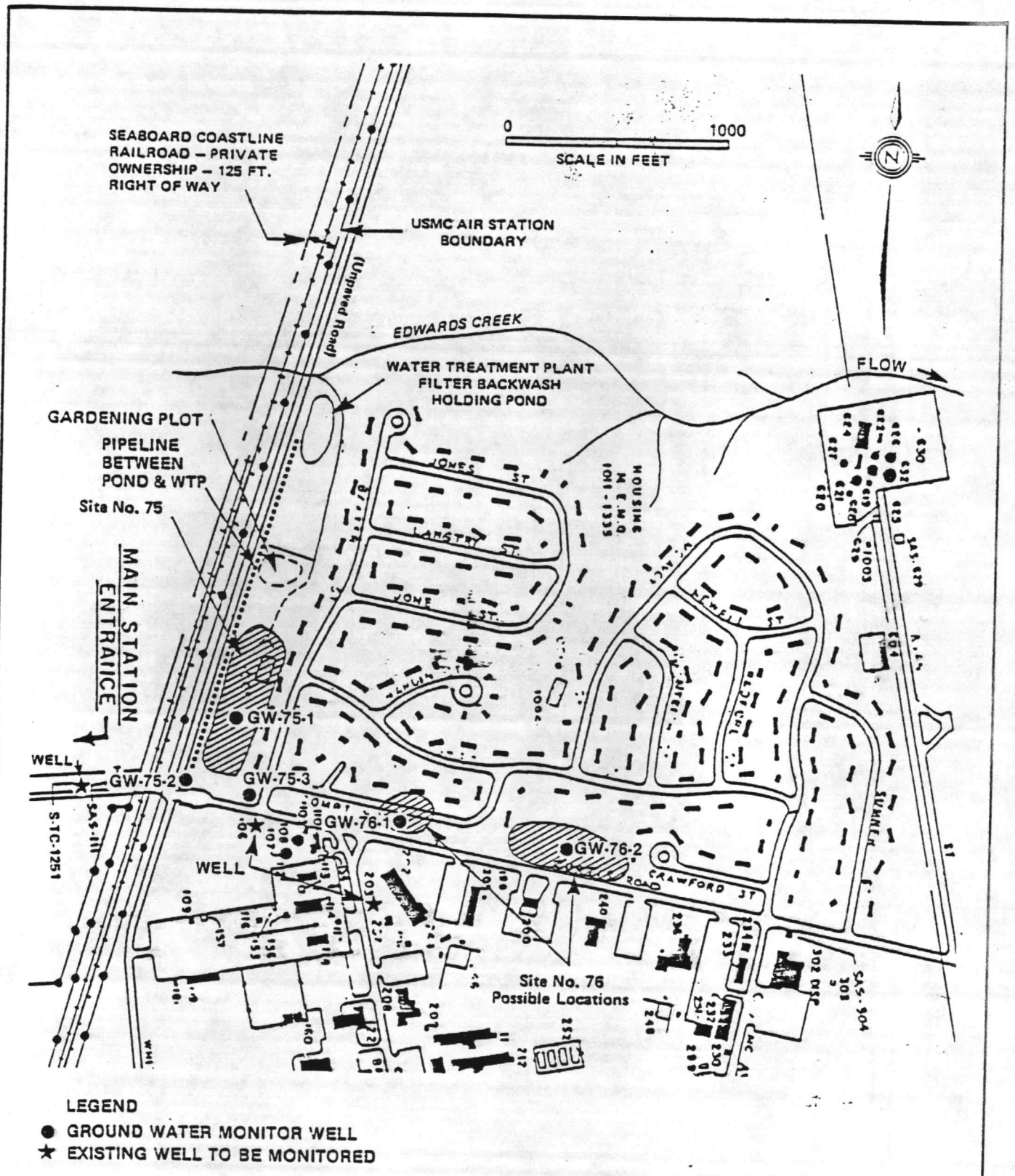
CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-18
PROPOSED SAMPLING LOCATIONS AT SITE NO. 74, GREASE PIT AND PEST CONTROL AREA

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE



SOURCES: WATER AND AIR RESEARCH, INC., 1983.
ESE, 1984.

Figure 2-19
PROPOSED SAMPLING LOCATIONS AT SITE NOS. 75 AND 76, MCAS BASKETBALL COURT AND MCAS CURTIS ROAD SITES

CONFIRMATION STUDY
MARINE CORPS BASE
CAMP LEJEUNE

J dW Danny RES Charles CDB Pete File

1 3 AUG 1986

6280
FAC

Environmental Engineer

Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune
Via: Facilities Management Officer

FY 87 OTHER ENGINEERING SUPPORT (OES) STUDY REQUIREMENTS

Ref: (a) CG MCB msg 041758Z Aug 86

Encl: (1) List of FY 87 OES Needs

1. I recommended the OES requirements per the enclosure. These were sent to CMC (LFF-2) per the reference. This list is based on FY 85 and FY 86 requirements which remain unfunded plus new initiatives:

Tank Trail Repairs - Environmental Study	$ 20K
Base-wide Asbestos Analyses	$100K
Groundwater Supply Study, Phase II	$114K
Underground Tank Monitoring Systems	$ 90K
New River Shore Protection Plan	$ 30K

2. Notably absent from this list are funding for the land acquisition EIS and the Range Master Plan, which I have addressed separately. Per discussions with Mr Hubbell, CMC (LFL), a number of the studies are both "facilities maintenance" and "environmental" in nature. He advised to include these in the response to LFF-2 and the CMC staff would sort them out.

3. CMC (LFL) advises FY 87 funding will likely be available for at least two FY 87 environmental studies. These were also submitted in the NREAD Annual Operations Plan: Onslow Beach Study, Phase II ($105K); and Historic Resources Protection ($140K).

4. We already have a draft scope of work for the beach project. As soon as funding is approved by HQMC, we'll get final contract scopes developed with milestones for your concurrence.

R. E. ALEXANDER

Copy to:
BMO
PWO
Dir, NREAD
Range Control Officer

FY 87 OTHER ENGINEERING SUPPORT REQUIREMENTS

1. Tank Trail Repairs - Environmental Study. Environmental design of four FY 87 M-2 projects (cost approximately $2.0 million) to renovate about 30 miles of tank trails is required during early stage of project development. Significant environmental problems in the form of erosion and impaired drainage have been caused due to lack of maintenance associated with these trails. Major renovation of these trails with earthwork, drainage, and clearing efforts requires approval of project plans by State and Federal environmental agencies.

2. Base-wide Asbestos Analyses. Proper identification of all asbestos in renovation projects is required during planning and design stages of project development. These anlyses are required by Federal Clean Air Act, OSHA, and by DOD directives to reduce unnecessary military construction cost growth due to asbestos removal.

3. Groundwater Supply Study, Phase II. The second of four phases of the ongoing study will be done in FY 87 to define groundwater aquifer conditions with test drilling (500 to 600 feet deep). Test wells will be installed by the U.S. Geological Survey under the existing agreement initiated in FY 86. The twofold purpose of the study is to determine groundwater capacity to (1) assure future water supply needs can be met and (2) reduce potential for future groundwater contamination.

4. Underground Tanks Monitoring Systems. Tank monitoring is required by 1986 EPA regulations which must be initiated in FY 87. An estimated 30 tanks must be studied at an average cost of $3,000 each. Tank monitoring regulations are also being adopted by North Carolina groundwater agencies to prevent and detect underground spills of hazardous substances.

5. New River Shore Protection Plan.

a. Problem: The lack of shoreline erosion control of the New River with severe erosion in some areas continually takes land from the Marine Corps which could be used for military training and creates adverse environmental and aesthetically displeasing conditions.

b. Purpose: To protect the New River shore using engineered solutions which are within the resources of (a) ongoing programmed construction projects, and (b) Marine Corps Base maintenance capabilities, and/or eligible for Marine Corps funding.

c. Objective: Define requirements for shoreline stabilization of the New River with recommended erosion control measures. The requirements include using masonry rubble generated by proposed demolition of structures, associated with military construction projects, where applicable.

d. Tasks:

(1) Describe the erosion processes and causes of erosion of the New River shoreline, and describe the erosion rates of the area calculated in feet per year.

(2) Identify the linear extent of significant erosion sites in priority categories.

(3) Describe structural and non-structural means of shoreline protection which can be employed as recommended by the Army Corps of Engineers.

(4) Identify environmental constraints/impacts associated with each alternative.

(5) Evaluate existing and proposed construction plans for FY 87/92 at MCB which will generate masonry rubble and recommend the most efficient use of the rubble for shoreline protection. (Information on estimated quantities of rubble to be generated by contractor operations through FY 88 will be provided by the ROICC.)

(6) Recommend erosion control measures for each identified site with a cost estimate and prioritized schedule of implementation. Cost estimate should address providing access to stabilization project areas.

(7) Prepare draft (five copies) and final reports (12 copies) containing results of tasks (1) through (6).

(8) Camp Lejeune points of contact for this study are Mr. Carl Baker, Public Works Division, Civil Engineering Branch (ext. 3238) and Mr. Bob Alexander, Environmental Engineer, Facilities Dept, ext. 3034.

Dennis 003
Charles CSP
Peter
File

13 AUG 1986

6280
FAC

Assistant Chief of Staff, Facilities, Marine Corps Base,
Camp Lejeune
Base Maintenance Officer

ENVIRONMENTAL DOCUMENTATION FOR FY-87 TANK TRAIL REPAIRS

Ref: (a) BO 11000.1B
(b) MCO P11000.8B
(c) CG, MCB msg 041758Z Aug 86

Encl: (1) Proposed Scope of Work

1. A Request for Environmental Review should be prepared for approval per reference (a) prior to awarding construction contracts. As discussed during the 17 July meeting of the Environmental Impact Review Board, the repair projects may be considered as part of the Environmental Assessment (EA) being developed for the G-10/ Mechanized Maneuver Game. The relation ship of the repair projects and the EA can be determined by the Board upon review of the above submittal.

2. Due to the scope of the projects and the potential for significant impacts on wetlands and endangered species habitat, an EA for these repairs per reference (b) may be required. Development of an EA would require an Engineering Service Request and funding for LANTDIV assistance.

3. The enclosure provides brief scope for inclusion in an ESR as needed. Consideration has been given to FY-87 funding for any required EA per reference (c).

4. Our POC is Mr. Alexander, ext. 3034.

K. J. KIRIACOPOULOS
By direction

Copy to:
PWO
NREAD
EnvEngr

SCOPE OF WORK

Environmental Documentation, Tank Trail Repairs Action Sponsor - Base Maintenance Officer: Three FY-87 M-2 projects are being designed: LE5045M and LE5046M (A&E Contract 86-5533), and LE5047M (A&E Contract 86-5534). Total length of these ~~again~~ repairs exceeds twenty miles of trail at an estimated cost of almost $2 million. Significant environmental problems have been caused by lack of maintenance of these trails. Major renovation with earthwork, drainage, and cleaning will cause temporary adverse environmental impacts with a long-term positive effect if implemented properly. The significance of these impacts should be assessed during the design stage to avoid change orders to design and construction contracts which may be required following review of plans by State and Federal environmental agencies.

Enclosure (1)

07 AUG 1986

MEMORANDUM FOR FILES

Subj: NACIP PROGRAM MEETING AT MCB CAMP LEJEUNE OF 31 JUL - 1 AUG 86

Encl: (1) Agenda
(2) List of Attendees
(3) Draft Conference Committee Languages, CERCLA Reauthorization

1. I attended a meeting at Camp Lejeune that was requested by EPA so they could comment on the material we sent them last spring. The meeting agenda is provided as enclosure (1); enclosure (2) is a list of attendees.

2. First, EPA had no technical comments on ESE's first round report, the accompanying data, or our round two SOW. We explained that the ESE report was an interim progress report, not the final product of our study. Their general comments are as follows:

a. Our end result should meet the requirements of the NCP. Guidance along these lines should be filtering down from DOD.

b. We should accelerate our study for highly-contaminated sites.

c. Camp Lejeune will definitely make the NPL. It takes about a year after the scoring process has begun.

d. They recommend the modified Appendix VIII (or priority pollutants?) scan be done at each site before deleting it from the program. This should also satisfy the RCRA 3004u requirements for SWMUs. Mathis suggested we sample the most downgradient well as a worst-case.

e. We may want to consider stainless steel (SS) wells if low levels of contaminants are detected (for example, use SS for one well at a site). We can check on the RCRA protocol with John Dickenson (NC RCRA). If we elect not to use SS wells, we should discuss in the report that we considered the need and made our decision based on engineering judgement.

f. We should ask ESE to evaluate the SOW from the RI/FS perspective. (Per Bob Gregory, our CS end result will be pretty much the same as an RI/FS).

3. We discussed briefly the USGS groundwater study. Bob Alexander summarized the scope and mentioned that the data would be useful to ESE. EPA stated that they didn't want USGS to look at contamination problems because, historically, they haven't been very cognizant of EPA regulations or very cooperative with the agency.

4. Bob Gregory reviewed the SOW for round two sampling and characterization/feasibility in the Hadnot Point area.

5. Junior Johnson discussed CLEJ's water distribution system. Their wells tap into the Castle Hayne aquifer at depths ranging from 150 to 250 feet.

(The country wells tap another aquifer approximately 500' deep). Average yield is 250 gpm, however, TT wells yield only 90 gpm. The Tarawa Terrace system is now being supplemented by the Holcomb Boulevard system through an 8" raw water main. CLEJ may abandon all the TT wells due to the low yields.

6. Rick Shriver reviewed the state's progress on the Tarawa Terrace investigation. They determined that ABC Cleaners had been discharging chlorinated solvents through their septic tank system since the early 1950's. The state has issued a NOV to the owner and put the site on their CERCLA inventory. Their legal people have the next move, however, the state will probably ask the owner to conduct a study to determine the extent of the contamination and perhaps, to remove the septic tank and sludges. (This would entail destruction of the building, since the septic tank drainfield is underneath it). EPA said the state was proceeding properly and they would check with their CERCLA people on the site status. They recommended the government (i.e., CLEJ) look at filing suit for restitution for the contaminated wells, however, base personnel were reluctant to take any action. It seems they are in the midst of acquiring additional acreage and are adamant about not generating any more adverse publicity.

7. EPA was most anxious to talk about SWMUs. They're planning to go back to their legal staff to find out how to open CLEJ's permit to apply 3004u. They stated that should we wait for permit reissuance in the 1990's, the RCRA people may dismiss our NACIP data as being too old. EPA distributed a draft of conference committee language on CERCLA reauthorization (Encl (3)). It seem these sections have already been agreed on by the conferees. In the draft document, the 3004u provision is applied to all facilities, even those not seeking Part B permits. EPA will expect the same IRP process to be followed for all SWMUs and urged CLEJ to request their permit be reopened to include these. I pointed out that we have yet to receive any guidance from DOD on how the 3004u process will be funded and implemented, so it would be premature for CLEJ to request permitting for these units. I also asked if we will have to work with both EPA's RCRA and CERCLA people for the duration of the NACIP program. It seems EPA headquarters has not yet determined which branch will have the lead.

8. On August 1, we toured the NACIP sites by car. After an out-briefing, we adjourned at 2:00 pm.

Cherryl Barnett

Cherryl Barnett
Environmental Engineer

TO: Bob Alexander

Junior Johnson

Mr. Price / DAVIS

E. BETZ
VIA JULIAN WOOTEN

13 aug 84

Got these from

My buddy at

Onslow Co. Health Dept.

D Sharpe

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS
Marine Corps Base
Camp Lejeune, North Carolina 28542

_____
Date

From: Director
To:

Subj:

Richard Rose

AUG 7

State of North Carolina
Department of Natural Resources and Community Development

Division of Environmental Management

512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
S. Thomas Rhodes, Secretary

R. Paul Wilms
Director

August 4, 1986

Mr. J.R. Bailey, P.E.
Head, Environmental Quality Branch
Utilities Energy & Environmental Division
Department of Navy
Norfolk, Virginia 23511-6287

SUBJECT: Permit No. NC0003239
Authorization to Construct
U.S. Navy
Camp Geiger and Hadnot Point
Sludge Drying Beds
Onslow County

Dear Mr. Bailey:

A letter of request for Authorization to Construct was received April 17, 1986, by the Division and final plans and specifications for the subject project have been reviewed and found to be satisfactory. Authorization is hereby granted for the modification of two wastewater treatment facilities consisting of adding 8 lined sludge drying beds each measuring 20 feet by 73 feet and 8-inches to the Camp Gieger wastewater treatment facility and 8 lined sludge drying beds each measuring 20 feet by 73 feet and 8-inches to the Hadnot Point wastewater treatment facility.

This Authorization to Construct is issued in accordance with Part III paragraph B of the NPDES Permit NO. NC0003239 issued March 26, 1980, and shall be subject to revocation unless the wastewater treatment facilities are constructed in accordance with the conditions and limitations specified in Permit No. NC0003239.

The Permittee must employ a certified wastewater operator in accordance with Part III paragraph D of the referenced permit.

The sludge generated from these treatment facilities must be disposed of in accordance with G.S. 143.215.1 and in a manner approvable by the North Carolina Division of Environmental Management.

The Wilmington Regional Office, telephone number 919/256-4161 shall be notified in advance of operation of the installed system so that an in-place inspection can be made. Such notification to the Regional Supervisor shall be made during normal office hours from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays.

In event the facilities fail to perform satisfactorily in meeting its NPDES permit effluent limits, the permittee shall take such immediate corrective action as may be required by this Division, including the construction of additional wastewater treatment and disposal facilities.

One (1) set of approved plans and specifications is being forwarded to you. If you have any questions or need additional information, please contact Mr. Cecil G. Madden, telephone No. 919/733-5083, ext. 122.

Sincerely yours,

for R. Paul Wilms

cc: Onslow County Health Department
Groundwater Section
Mr. Dennis R. Ramsey
Wilmington Regional Supervisor

Richard Rowell

AUG 7

State of North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
S. Thomas Rhodes, Secretary

July 30, 1986

R. Paul Wilms
Director

Mr. J. R. Bailey, P.E. Code 114, Head
Environmental Quality Branch
United States Navy
LANTNAVFACENGCOM
Norfolk, Va 23511-6287

SUBJECT: Permit No. 13462
United States Navy
Camp Lejeune - French Creek
Pump Station/Force Main
Onslow County

Dear Mr. Bailey:

In accordance with your application received April 14, 1986, we are forwarding herewith Permit No. 13462, dated July 30, 1986, to the United States Navy for the construction and operation of the subject wastewater collection system extensions.

This permit shall be effective from the date of issuance until rescinded, and shall be subject to the conditions and limitations as specified therein.

If any parts, requirements, or limitations contained in this permit are unacceptable to you, you have the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of North Carolina General Statutes, and filed with the Office of Administrative Hearings, Post Office Drawer 11666, Raleigh North Carolina 27604.

If you wish to have the hearing before the Hearing Officer with this Department, you must indicate in the petition that you waive the right to have the contested case conducted by a Hearing Officer in the office of Administrative Hearings, and wish to have the matter conducted in the Department of Natural Resources and Community Development. Unless such demands are made this permit shall be final and binding.

One (1) set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Ms. Cyretha Irving, telephone No. 919/733-5083, ext. 119.

Sincerely yours,

R. Paul Wilms

cc: Onslow County Health Department
Wilmington Regional Supervisor
Atlantic Division, Naval Facilities Engineering Command

NORTH CAROLINA

ENVIRONMENTAL MANAGEMENT COMMISSION

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

RALEIGH

P E R M I T

For the discharge of Sewage, Industrial Wastes, or Other Wastes

---

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Regulations

PERMISSION IS HEREBY GRANTED TO

United States Navy
Onslow County

FOR THE

construction and operatin of a 175 GPM wet well pump station with triple non-submersible pumps, high water alarm, approximately 1580 lineal feet of 16-inch force main, and 50 lineal feet of 24-inch gravity sewer to serve the French Creek Area and to discharge collected domestic wastewater into Camp Lejeune's existing sewage system,

pursuant to the application received April 14, 1986, and in conformity with the project plan, specifications, and other supporting data subsequently filed and approved by the Department of Natural Resources and Community Development and considered a part of this permit.

This permit shall be effective from the date of issuance until rescinded, and shall be subject to the following specified conditions and limitations:

1. This permit shall become voidable unless the facilities are constructed in accordance with the approved plans, specifications and other supporting data.

2. This permit is effective only with respect to the nature and volume of wastes described in the application and other supporting data.

3. The facilities shall be properly maintained and operated at all times.

4. The sewage and wastewater collected by this system shall be adequately treated in the Hadnot Point Wastewater Treatment Plant prior to being discharged into the receiving stream.

5. Construction of the sewers shall be so scheduled so as not to interrupt service by the existing utilities nor result in an overflow or bypass discharge of wastewater to the surface waters of the State.

6. This permit is not transferable.

7. The Permittee shall provide for the pump station and force main the following items:

   a. Pump-on/pump-off elevations located so that 2-8 pumping cycles may be achieved per hour in the pump station.

   b. An air relief valve located at all high points along the force main.

   c. A screened vent for the wet well.

   d. Fillets located in the wet well at the intersection of the flooring and sidewalls.

   e. Three (3) feet of cover (minimum) over the force main or the use of ferrous material where three (3) feet cannot be maintained.

   f. Sufficient devices which will protect the pump station from vandals.

   g. Flood protection if the pump station is located below the 100-year flood elevation.

Permit issued this the 30th day of July, 1986.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

R. Paul Wilms, Director
Division of Environmental Management
By Authority of the Environmental Management Commission

Permit No. 13462