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REMEDIAL ACTION REPORT SITE 11 SOURCE CONTROL NAS CECIL FIELD FL
10/1/1996
ABB ENVIRONMENTAL

REMEDIAL ACTION REPORT
SITE 11 SOURCE CONTROL

NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Unit Identification Code: N60200

Contract No.: N62467-89-D-0317/090

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October 1996

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/090 are complete and accurate and comply with all requirements of this contract.

DATE: October 17, 1996

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Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Robert C. Lunardini, Jr., P.E.
Project Technical Lead

(DFAR 252.227-7036)

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
BCT	BRAC cleanup team
bls	below land surface
BRAC	Base Realignment and Closure
DBCP	1,2-dibromo-3-chloropropane
FFS	Focused Feasibility Study
HDPL	high density polyethylene liner
IRA	interim remedial action
IROD	Interim Record of Decision
LDR	land disposal restriction
NAS	Naval Air Station
Omega	Omega Environmental Services, Inc.
PEL	permissible exposure limit
ppb	parts per billion
PWC	Public Works Center
RI	Remedial Investigation
TCLP	toxicity characteristic leachate procedure
yd^3	cubic yards

1.0 INTRODUCTION

This report documents events associated with an interim remedial action (IRA) performed at Site 11 to implement a September 1994 Interim Record of Decision (IROD) for source removal.

1.1 FACILITY AND SITE DESCRIPTION. Naval Air Station (NAS) Cecil Field, Jacksonville, Florida is located in the northeastern part of the state, primarily within Duval County. A general location map of NAS Cecil Field is provided on Figure 1-1. NAS Cecil Field has been an operational military base since the mid-1940s but is scheduled for closure and is currently undergoing Base Realignment and Closure (BRAC) activities.

The Golf Course Pesticide Disposal Area, Site 11, Operable Unit 6, is a Comprehensive Environmental Response, Compensation, and Liability Act site located in a wooded area between the 11th fairway and the 17th green of the NAS Cecil Field golf course (Figure 1-2). The area around Site 11 is covered with dense undercover. An access road and several small trails traverse the area. The fairways and greens located to the west and east of Site 11, respectively, are flat and grassy. The golf course maintenance area, located southeast of the site, consists of several small buildings and sheds with asphalt and concrete ground cover.

1.2 SITE HISTORY. Site 11 was used by the golf course maintenance personnel for the disposal of empty, partially full, and full pesticide, fungicide and herbicide containers from the early 1970s until 1978. Containers were reportedly buried in a pit approximately 40 feet wide and 40 feet long.

Two to four empty 5-gallon cans were believed to have been disposed of per month at the site. The cans were not rinsed prior to being taken to the site. The cans were allowed to accumulate for a number of months before they were crushed by a front-end loader and buried approximately 3 feet deep. It is estimated that between 200 and 450 empty 5-gallon cans were disposed of at the site during the time the site was used.

After the completion of the new pesticide facility in 1978, 2 to 3 30-gallon drums of unused pesticide, of which at least one was 1,2-dibromo-3-chloropropane (trade name Nemagon) and approximately 1 to 15 full 5-gallon containers of pesticides, herbicides, and fungicides were discarded and buried at the site. Many of these containers were beginning to rust and lacked identification labels and were considered unusable for the new facility. Once the move was made to the new maintenance facility, use of Site 11 for disposal purposes was discontinued. Potential waste disposed of at the site are Carbaryl, Dursban, Malathion, Propoxur and Nemagon (all insecticides); Buctril (Bromoxyril), Monosodium Acid Methane Arsenate, Round-up and Trimec, 2,4-D (all herbicides); Dithane (Manzate), Maneb (Tersan LSR), Maneb (Tersan), Form-A-Turf (Formaldehyde) and Daconil (all fungicides). Information on the inventory of pesticides and the disposition of pesticides were obtained through interviews and the 1979 Pesticide Management Plan. There is no written record of the types and quantities of pesticides disposed of at Site 11.

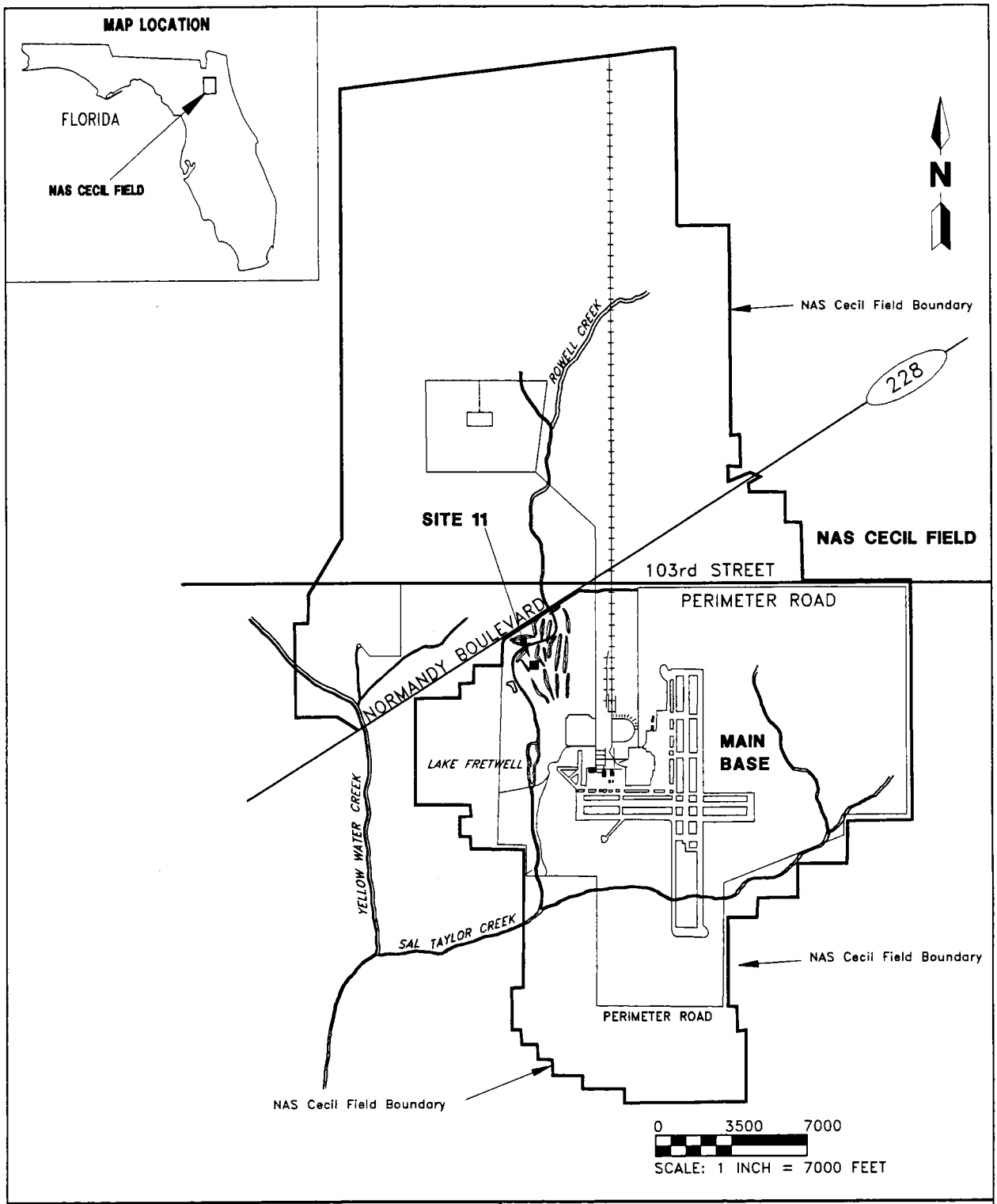

FIGURE 1-1
GENERAL LOCATION MAP

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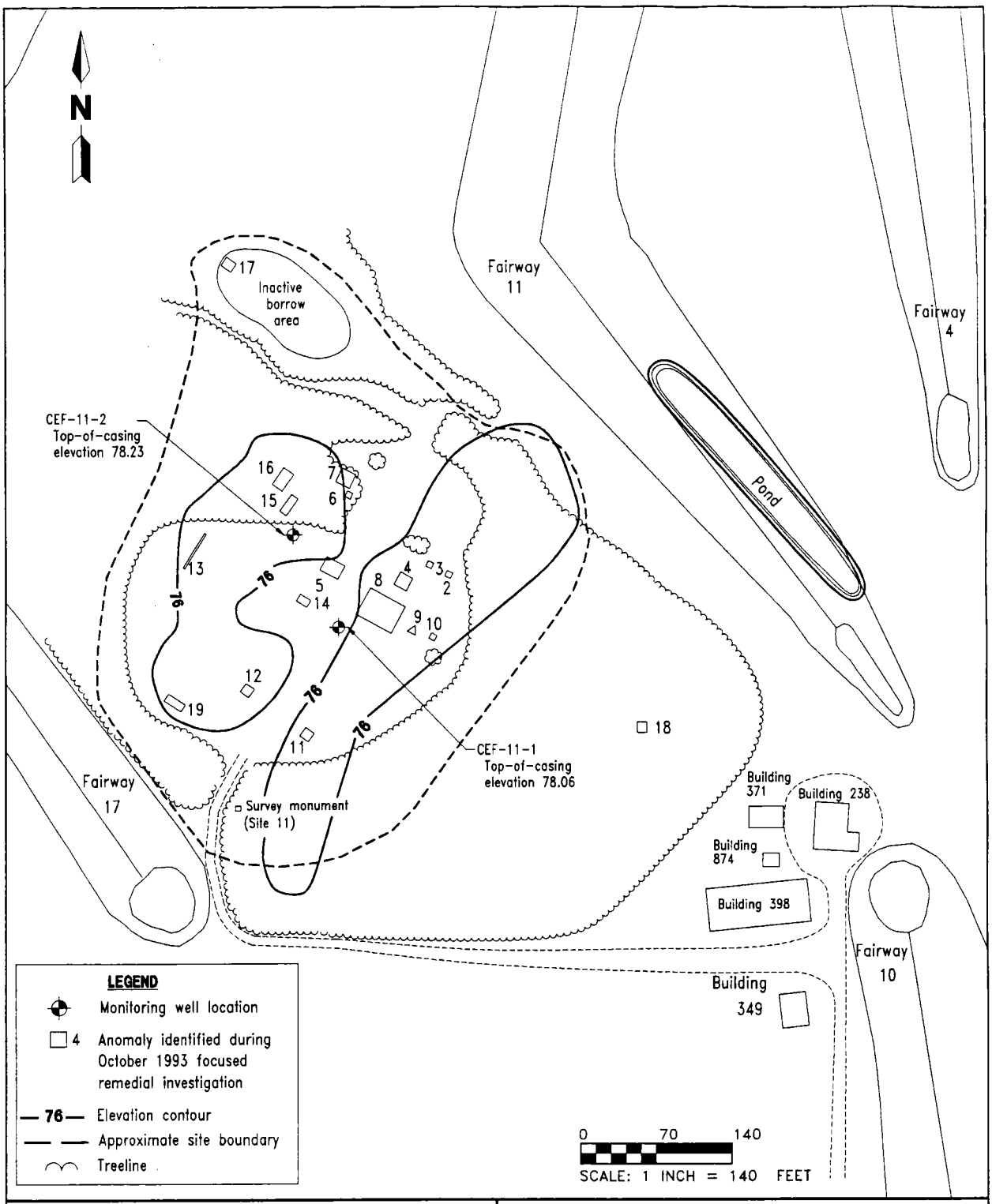

FIGURE 1-2
SITE LOCATION MAP

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1.3 CHEMICAL OF CONCERN. The compound 1,2-dibromo-3-chloropropane (DBCP) is the chemical of concern at Site 11. DBCP is a listed hazardous waste, U066. This compound has an Occupational Safety and Health Administration permissible exposure limit (PEL) of 1 part per billion (ppb), cannot be detected adequately by any real-time monitoring instrumentation, is absorbed through all routes of entry into the body (inhalation, ingestion, dermal, and eye), can cause breakthrough in impermeable work clothing and causes cancer, atrophy of the testicles (men), changes in the estrous cycle (women), liver disease, kidney disease, skin disease, and blood disorders.

1.4 PREVIOUS INVESTIGATIONS. A focused remedial investigation (RI) was performed at Site 11 from July 25 through October 2, 1993, to define the volume, location, and characteristics of the reportedly buried pesticide containers and debris. This investigation was accomplished by clearing the underbrush and vegetation, identifying anomalies through geophysical methods, then test pitting the identified anomalies to characterize the contents. During the second phase of the investigation beginning on September 17, all field activities were conducted in Level B personal protection because of potential exposure to 1,2-dibromo-3-chloropropane.

An area of approximately 2.5 acres was investigated. This was much larger than the reported historical pit area. The 200 to 450 reportedly buried empty pesticide containers were not located during this investigation. Nineteen anomalies were identified during the geophysical survey and test pitted. Containers with pesticides were found buried in five anomalies and miscellaneous debris was found in eight anomalies. Nothing was found in six anomalies. A total of 41 empty containers and 10 full or partially full containers were found.

In addition, 1,2-dibromo-3-chloropropane was detected in air samples collected from pumps worn by personnel performing the test pitting. During the focused RI, levels above the PEL were detected (1 to 4 ppb) at the edge of Anomaly 4.

1.5 COMPONENTS OF THE IRA. The purpose of the IRA was to remove buried containers of pesticides, fungicide, and herbicide as well as associated contaminated soil. Once completed, it would allow future investigative work to be done in Level D protection.

The remedy implemented at Site 11 was a combination of Alternatives 1 and 3 that were developed and evaluated in the focused feasibility study (FFS). A brief description of the remedy, as described in the IROD, is given below.

- Excavation of contaminated debris (i.e., empty, partially full, full, or leaking pesticide, fungicide, and herbicide containers) found while excavating the anomalies and site clearance.

- Repackaging (overpacking) of full, partially full and leaking containers in an area where spills are controlled with subsequent sampling of contents for waste profiling. These containers include the overpacks (85 gallon) and the 55-gallon drums.

- Excavation of contaminated soil.

- Testing of excavated soils to determine if they are hazardous and to determine if treatment is required prior to disposal (i.e., if the soils are subject to land disposal restriction [LDRs]).

- Onsite treatment of contaminated debris (i.e., empty containers) using high pressure water washing.

- Transportation and disposal of decontaminated debris to a solid waste landfill.

- Transportation of full, partially full, or leaking pesticide containers for offsite incineration.

- Transportation and disposal of existing 55-gallon drums.

- Transportation and disposal of soil with concentrations below the LDR treatment standards to a hazardous waste landfill.

- Transportation, treatment, and disposal in a hazardous waste landfill of all soil with concentrations of hazardous constituents that are higher than the LDR treatment standards.

- Transportation, treatment (if necessary), and disposal of water used in high pressure water washing of hazardous debris.

- Backfilling of excavated areas with clean soil.

2.0 CHRONOLOGY OF EVENTS

April 25, 1994, the Final Design for Environmental Remediation (plans and specifications) for Site 11 were completed by ABB Environmental Services, Inc. (ABB-ES).

September 1, 1994, the IROD for Site 11 was signed. In an effort to expedite the interim action, the Navy intentionally proceeded with and completed the design before the IROD was signed. The risk that no significant changes would occur during the public comment period or during agency review paid off, as no significant changes to the design were required.

September 1994 - June 1995, the project was selected as an 8A set aside. Negotiations with the minority contractor occurred during this time.

June 5-16, 1995, the first phase of the IRA field work was completed. This phase included site clearing, excavation of the soil and debris from the anomalies, repackaging contents of the overpacks, drums, and containers and sampling and laboratory analysis of the soil, overpack, and drum material.

September 18, 1995, the second phase of the IRA field work was initiated. This phase included overexcavation of soil from Anomaly 4, which still contained DBCP as determined from Phase I sidewall sampling. Also completed were the disposal of hazardous soil and containers, nonhazardous debris, and the backfilling of anomalies with soil that was determined by analyses to be nonhazardous.

August 5, 1996, the final inspection was conducted.

3.0 PERFORMANCE STANDARDS AND CONSTRUCTION QUALITY CONTROL

3.1 PERFORMANCE STANDARDS. The FFS identified the following remedial action objectives:

- reduce migration and volatilization of pesticide contaminants to the surrounding environment at the site by removing pesticide wastes, containers, and associated obviously contaminated soil and

- characterize wastes removed from the site.

The design called for excavation of five anomalies where pesticide containers were found during the focused RI (see Figure 3-1). Anomalies 5,7,8, and 16 were shallow excavations to 2 feet below land surface (bls). Anomaly 4 was initially excavated to 5 feet bls. Soil from each anomaly was put into individual stockpiles, sampled, and analyzed to determine if it was hazardous. The design also called for the removal and disposal of pesticide containers and drums and overpacks left from the focused RI.

Below are detailed actions taken to meet performance standards in accordance with the remedial action objectives stated above.

Pesticide Containers. A total of 35 empty pesticide containers plus 20 other containers, in various stages of decomposition, were removed from the five anomalies designated for excavation. The containers were then moved to the decontamination area for treatment by high pressure water washing. All these containers were put into overpack (85 gallon) drums and sealed. The overpack drums were taken offsite for disposal.

Existing Overpacks and Drums. A composite sample was collected from the three existing overpacks (left from the 1993 focused RI). The liquid in the overpacks was then pumped into four new 55-gallon drums. The four drums were then disposed of offsite. Drums of decontamination water generated during this remedial action will also be disposed of offsite.

Excavated Soil. All excavated soil was suspected to be contaminated until proven to be noncontaminated by analytical results. One sample was taken for every 20 cubic yards (yd^3) of soil excavated. Each sample was analyzed for the following:

(1) toxicity characteristic leachate procedure (TCLP) constituents
(2) 1,2-dibromo-3-chloropropane
(3) organophosphorus pesticides

The excavated soils having a TCLP constituent concentration greater than regulatory levels, and/or containing 1,2-dibromo-3-chloropropane, and/or containing an organophosphorus pesticide was handled, transported, treated (if greater than LDRs) and disposed of as a hazardous waste. However, if the analysis found TCLP constituent concentrations below regulatory levels and did not contain the above mentioned contaminants, the excavated soil was determined to be non-hazardous and was put back onto the site.

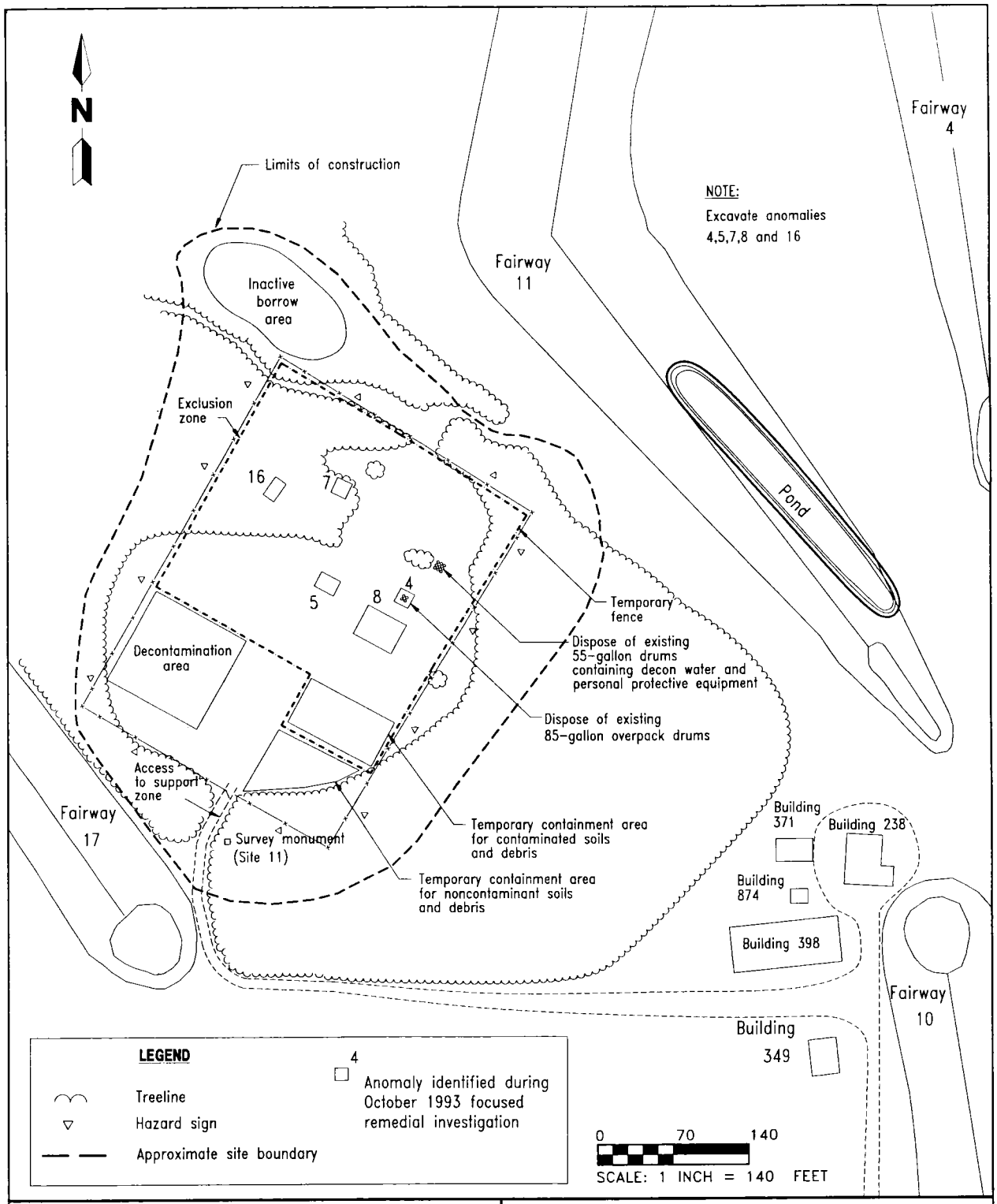

FIGURE 3-1
SITE DETAILS

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3.2 FIELD SAMPLING RESULTS.

3.2.1 Phase I A total of five overpack drums were onsite from the focused RI. Three of the five overpack drums contained liquid and containers, the other two were empty. A composite sample of the three overpack drums containing liquid was collected by Omega Environmental Services, Inc. (Omega) for analysis and the liquid was pumped into four new 55-gallon drums. Three of these overpack drums were used for packing the empty pesticide containers. Also, nine 55-gallon drums were left onsite from the 1993 focused RI. Six of the nine drums contained decontamination water generated during the focused RI, two contained personal protective equipment, and the other contained Visqueen. A composite sample of the six drums containing decontamination water was collected by Omega for analysis.

Table 3-1 shows a summary of the analyses. A summary of detections and concentrations is presented in Appendix A.

Analytical results indicated soil samples from Anomalies 4 and 8 failed the 1,2-dibromo-3-chloropropane test therefore, these soils were considered hazardous. Results also indicated the overpack drums and 55 gallon drums contained 1,2-dibromo-3-chloropropane and were therefore, considered hazardous.

The soil was taken offsite and disposed of at Waste Management's Pinewood, South Carolina, Subtitle C hazardous waste facility. All drums have not been removed from the site.

Before soil disposal, samples from each of the four sidewalls and the bottom of Anomalies 4 and 8 were collected by ABB-ES to confirm no additional 1,2-dibromo-3-chloropropane contaminated soil remained in these anomalies. Table 3-2 shows a summary of this analysis.

3.2.2 Phase II Results of the post Phase I confirmatory samples collected by ABB-ES from the sidewalls and bottom of Anomalies 4 and 8 indicated that remaining Anomaly 8 soil did not contain 1,2-dibromo-3-chloropropane while remaining Anomaly 4 soil was still contaminated with 1,2-dibromo-3-chloropropane.

The excavation had been left open and groundwater and rainwater had entered the bottom of the excavation. A surface water sample was collected by ABB-ES to determine if groundwater contained DBCP. The sample contained DBCP at a concentration of 24 micrograms per liter.

Phase II construction activities began with a 2-foot overexcavation in all directions (including vertically) of Anomaly 4. After the excavation, four sidewall samples were collected above the water table (approximately 4 feet bls) and one bottom (sediment) sample was collected from approximately 7 feet bls. Table 3-3 shows a summary of the analytical results.

The results indicated that soil from the south and east sidewalls in Anomaly 4 still contained 1,2-dibromo-3-chloropropane. Because the sediment sample was collected from below the water table it was decided not to chase the contamination vertically but, instead, address this contamination as part of the groundwater remediation. The engineer of record recommended a second overexcavation of the south and east sidewall, however, the BRAC cleanup team (BCT) made

Table 3-1
Initial Sampling Results

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	TCLP[1]	1,2-dibromo-3-chloropropane[2]	Organophosphorus Pesticides[3]
Anomaly 4 Soil	Pass	Fail	Pass
Anomaly 5 Soil	Pass	Pass	Pass
Anomaly 7 Soil	Pass	Pass	Pass
Anomaly 8 Soil	Pass	Fail	Pass
Anomaly 16 Soil	Pass	Pass	Pass
Composite of Overpack Drums	Pass	Fail	Pass
Composite of 55-Gallon Drums	Pass	Fail	Pass

[1] If the detected TCLP constituents in the sample is below regulatory levels, the sample passes the TCLP test.
[2] If the sample did not contain any 1,2-dibromo-3-chloropropane using a minimum detection limit of 2.0 micrograms per kilogram, the sample passes the 1,2-dibromo-3-chloropropane test.
[3] If the sample did not contain any organophosphorus pesticides, the sample passes the organophosphorus pesticide test.

Note: TCLP = toxicity characteristic leachate procedure.

Table 3-2
Sampling Results from Anomalies 4 and 8 After the Initial Excavation

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Sample Location	Result (Anomaly 4) (μg/kg)	Result (Anomaly 8)
North Wall	3.8	Not Detected
South Wall	3.8	Not Detected
East Wall	3.4	Not Detected
West Wall	4.4	Not Detected
Bottom	1,300	Not Detected (both samples)

Note: μg/kg = micrograms per kilogram.

Table 3-3
Sampling Results from Anomaly 4
After the First Overexcavation

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Sample Location	Result (Anomaly 4) (μg/kg)
North Wall	BDL
South Wall	2
East Wall	230
West Wall	BDL
Sediment Sample	620

Notes: μg/kg = micrograms per kilogram.
BDL = below detection limits.

the decision to cease any further excavation at this time. The BCT was concerned about continuing to chase the contamination without knowing beforehand where it stopped. At this point approximately 309 yd^3 had been removed for disposal as hazardous waste. The design had a soil volume cap of 360 yd^3. A summary of all sample collection activities is given in Table 3-4.

Table 3-4
Sample Collection Activities

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Date	Media	Number of Samples	Collected By	Analyses
June 8, 1995	liquid, 6 drum composite of IDW water from 1993 focused RI	1	Omega	OP, RCRA metals
June 9, 1995	soil, Anomaly 4 excavation samples, 1 sample per 20 yd^3 excavated	5	Omega	DBCP, OP, TCLP, VOAs SVOAs Pesticides, Herbicides, PCBs, Metals
June 12, 1995	soil, Anomaly 8 excavation samples, 1 sample per 20 yd^3 excavated	6	Omega	DBCP, OP, TCLP, VOAs, SVOAs, Pesticides, Herbicides, PCBs, Metals
June 13, 1995	soil, anomalies 5 and 16 excavation samples, 1 sample per 20 yd^3 excavated	4	Omega	DBCP, OP, TCLP, VOAs SVOAs, Pesticides, Herbicides, PCBs, Metals
June 14, 1995	soil, Anomaly 7 excavation samples, 1 sample per 20 yd^3 excavated	3	Omega	DBCP, OP, TCLP, VOAs, SVOAs, Pesticides, Herbicides, PCBs, Metals
July 20, 1995	soil, Anomalies 4 and 8 post excavation sidewall and bottom confirmatory samples	10	ABB-ES	DBCP on all samples, TCL and TAL on 2 samples
August 8, 1995	surface water, Anomaly 4, collected from open excavation to determine if groundwater contained DBCP	1	ABB-ES	DBCP
September 19, 1995	soil, Anomaly 4 post excavation sidewall and bottom confirmatory samples	5	Omega	DBCP
September 26, 1995	soil, anomalies 7A, 7B, 15, and 16 collected to satisfy BCT prior to returning soils to site	4	ABB-ES	Pesticides/PCBs totals

Notes: IDW = investigative-derived wastes.
RI = remedial investigation.
OP = organophosphorus pesticides.
RCRA = Resource Conservation and Recovery Act.
yd^3 = cubic yards.
DBCP = 1,2-dibromo-3-chloropropane.
TCLP = toxicity characteristic leachate procedure.
VOA = volatile organic aromatic.
SVOA = semivolatile organic aromatics
PCB = polychlorinated biphenyl.
TCL = target compound list.
TAL = target analyte list.
BCT = Base Realignment and Closure (BRAC) cleanup team.
ABB-ES = ABB Environmental Services, Inc.

4.0 CONSTRUCTION ACTIVITIES

The IRA construction activities for Site 11 were done in two phases. The first phase began on June 5, 1995 and continued through June 16, 1995. The second phase began on September 18, 1995 and continued through September 22, 1995. Table 4-1 lists the individuals and organizations involved in implementing this remedial action.

Construction activities conducted during the Phase I activities are described below.

The site was cleared, fenced, and secured for work. With permission from the Navy two trees greater than 12-inches in diameter were cut during clearing. Danger signs were attached to the fence, and the exclusion and support zones were delineated using red and yellow tapes, respectively.

A decontamination zone (outside the exclusion zone), a temporary containment area for the drums and an area to contain excavated soil (both in the exclusion zone) were constructed. The existing overpacks (five) and drums (nine) were moved from their existing location to the temporary containment area.

Anomalies 4, 5, 7, 8, and 16 were excavated in Level B according to the specifications. Two pits were excavated for Anomaly 7 since the exact location of this anomaly was unclear. They were named 7A and 7B, and later it was determined that 7B was the actual Anomaly 7. No full or leaking containers were found while excavating the anomalies. Table 4-2 provides data on volumes removed during the IRA. The soil excavated was placed on top of a plastic liner and covered with plastic. Soil piles excavated from each anomaly were separated from each other. A trackhoe and a front-end loader were used in the excavation activities. Standard equipment was used for sampling activities.

Construction activities conducted during the Phase II activities are described below.

Anomaly 4 was overexcavated 2 feet in all directions (including vertically). A total of 90 yd^3 was excavated. The soil was laid on top of a plastic liner and covered with plastic as before. Anomaly 4 sidewalls were sampled again. The results indicated that DBCP was still present along the south and east wall. The contractor was then instructed by the BCT to stop any further excavation, leave the Anomaly 4 excavation open, erect a chainlink fence around the open excavation, and transport soil excavated from Anomalies 4 and 8 (classified as hazardous) offsite for proper disposal. If all soil containing DBCP could have been removed before reaching the soil volume cap then the subsequent RI could have been done in Level D instead of Level B.

All soil excavated from Anomalies 4 and 8 were transported to a Subtitle C landfill in Pinewood, South Carolina. Copies of manifests were requested but not made available to ABB-ES and are, therefore, not included in this report. Contaminant concentrations in soil were below land disposal restrictions, therefore, no treatment was required before disposal.

Table 4-1 Interim Remedial Action Participants Remedial Action Report Site 11 Source Control Naval Air Station Cecil Field Jacksonville, Florida	
Client	Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) North Charleston, South Carolina 29419-9010
Base Realignment and Closure Cleanup Team	Steve Wilson, P.E., SOUTHNAVFACENGCOM Dave Kruzicki, Naval Air Station (NAS) Cecil Field John Dingwall, P.E., NAS Cecil Field Bart Reedy, U.S. Environmental Protection Agency Mike Deliz, P.G., Florida Department of Environmental Protection Lynn Sims, Bechtel Rao Angara, ABB Environmental Services, Inc. (ABB-ES)
Resident Officer in Charge of Construction (ROICC)	Wayne Oehlman, P.E. Duke Inman
Engineering	ABB-ES 2590 Executive Center Circle, East Tallahassee, Florida 32301 ABB-ES Engineering Personnel Robert Lunardini, Jr., P.E. (Engineer of Record) Rohan Wikramanayake (oversight engineer) ABB-ES Sampling Crew Maria Pijnenburg, P.G. Steve Grietens Courtney Brooks Tom Cramer Rohan Wikramanayake
Contractor	Omega Environmental Services, Incorporated 4661 Hammermill Road, Suite B Tucker, Georgia 30084 Telephone: (404) 621-9414, Facsimile: (404) 934-2451 Omega personnel Doug Driver (project manager) John Fleming (field supervisor) John Mount (health and safety officer) Bobby Styles (heavy-equipment operator) Robert Jackson (technician) Leslie Balfor (technician) Juan King (technician) Mike Warren (technician)
Analytical Laboratory	KIBER Environmental Services, Incorporated 3786 Dekalb Technology Parkway, N.E. Atlanta, Georgia 30340 Telephone: (404) 455-3944, Facsimile: (404) 451-0155

Table 4-2
Volumes Removed

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Anomaly	Yards to be excavated according to specs.	Yards actually excavated (estimated in field)	Contents supposed to be in anomaly according to specs.	Contents actually found in the anomaly	Number of samples taken
4	100 yards	95 yards Phase I 90 yards Phase II	4 metal 30-gallon cans 2 metal 5-gallon cans (crushed) 2 plastic 5-gallon cans 1 metal 30-gallon drum	Four 5-gallon cans, ten 1-gallon cans (all empty) and about 20 small metal pieces (ex., lids, caps, etc.)	5
5	40 yards	44 yards	1 plastic 1-gallon can 1 plastic 1-gallon can (subdue) 1 metal 5-gallon can 1 plastic 1-gallon can (exhalt 800)	One broken can. No visible metal pieces.	2
7	35 yards	30 yards	3 metal 5-gallon cans 1 plastic 1-gallon can (DACONIL) 1 plastic 1-gallon can (Weedout) 2 plastic 1-gallon cans (subdue)	Eight 5-gallon cans, ten 1-gallon cans (all empty). No visible metal pieces	1
8	125 yards	124 yards	1 metal 55-gallon drum 2 plastic 1-gallon cans (DACONIL) 1 metal 5-gallon can	One 5-gallon can, one 1-gallon can (all empty). No visible metal pieces.	6
16	35 yards	34 yards	1 metal 5-gallon can	No cans or metal pieces found.	2
Containers found at surface during clearing	Not applicable	Not applicable	1 plastic 5-gallon can (crushed) 1/2 metal 55-gallon drum 1 plastic 1-gallon can 1 plastic 5-gallon can 3 metal 5-gallon cans 3 metal 55-gallon drums 1 metal 55-gallon drum (crushed)	Empty drum pieces were found.	None

Note: Soil volume disposed as hazardous was 309 cubic yards, approximately 402 tons.

Manifests for soil transportation were signed by a representative from the base Public Works Center (PWC). After an initial round of sampling, the contractor was required to perform further sampling and analyses to satisfy PWC. A letter instructing the contractor to perform this sampling and analyses and a memo from the engineer of record are included in Appendix B. This same issue arose for drum disposal and has not been resolved to date. As a result there are twelve 55-gallon drums and three overpacks remaining onsite in Omega's decon/storage area. Table 4-3 lists these remaining drums and their contents based on a site visit by ABB-ES on July 24, 1996.

Table 4-3
Drum Inventory

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Item	Remarks
7 55-gallon drums with labels	Unable to read writing, sun faded
5 55-gallon drums with labels	Unable to read writing, drums marked on with grease pen: decon water
2 overpacks	Marked on with grease pen: hazardous waste liquid/sludge, accumulation date 6-14-95
1 overpack	Marked on with grease pen: decon water, Site 11 9-29-93

Note: Information based on an inventory conducted by ABB Environmental Services, Inc., on July 24, 1996.

5.0 FINAL INSPECTION

A final inspection was conducted on August 5, 1996, by Randy Holloway, ABB-ES, under the direction of Robert Lunardini, P.E., engineer of record. The site has been returned to pre-interim action conditions except for the two items listed below.

- There are twelve 55-gallon drums and three overpacks remaining onsite. See Table 4-3 for an inventory.

- Anomaly 4 is an open excavation lined with a high density polyethylene liner (HDPL) and enclosed with a 6-foot chainlink fence. One extra fence post and some excess fencing remain on the ground near the gate to Anomaly 4.

In general, the site was in good condition. No health and safety issues were noticed. Nothing was found at the site that would prevent future work at the site.

6.0 CERTIFICATION THAT REMEDY IS OPERATIONAL AND FUNCTIONAL

By signature, the signer certifies that the interim action was completed in accordance with the plans and specifications except as noted below. All pesticide containers identified during the focused RI were removed and properly disposed of. Soil containing hazardous waste was excavated, characterized, and transported to a Subtitle C facility.

Deviations from the original design occurred and are listed below.

- The design specified that all soil containing hazardous substances should be excavated and disposed of up to the soil volume cap of 360 yd^3. All soil containing DBCP was not removed from Anomaly 4.
- Anomaly 4 was not backfilled. The excavation was lined with HDPL and a chainlink fence was erected around the excavation.
- Twelve 55-gallon drums and three overpacks remain onsite.

Robert C. Lunardini, Jr.
Professional Engineer No. 46657
Expires February 28, 1997

Robert C Lunardini Jr
10/18/96

7.0 OPERATION AND MAINTENANCE

No operation and maintenance activities or costs are associated with this interim action.

8.0 SUMMARY OF PROJECT COSTS

The prebid engineering cost estimate for this work was $397,766. The Navy entered into negotiations with Omega, an 8A contractor. The negotiated cost estimate for this work was $411,075.10, 3.3 percent higher than the engineering estimate. The Navy's contract with Omega is still open. The Resident Officer in Charge of Construction office estimates final costs to be approximately $300,000.

REFERENCES

ABB Environmental Services, Inc., 1994, Focused Feasibility Study, Site 11, Operable Unit 6, Source Control Remedial Alternatives, Naval Air Station Cecil Field, Jacksonville, Florida: prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina, January.

APPENDIX A

SUMMARY OF PHASE 1 ANALYTICAL RESULTS

Table A-1
Summary of Site 11 Phase 1 Analytical Results

Remedial Action Report
Site 11 Source Control
Naval Air Station Cecil Field
Jacksonville, Florida

Analyte	Anomaly 4					Anomaly 8					
	CFA4-S1	CFA4-S2	CFA4-S3	CFA4-S4	CFA4-S5	CFA8001	CFA8002	CFA8003	CFA004	CFA8005	CFA8006
1,2-Dibromo-3-chloropropane (504) µg/kg	34.3	21.5	1.2	4.9				21.2	12.1		
Organophosphorus Pesticides (8140) µg/kg											
TCLP Volatiles (8260) µg/ℓ											
Acetone					17	44	39	37	37		
1,2-Dichloropropane				28	29						
cis-1,3-Dichloropropene											
Methylene chloride	38 J	44 J	7 J	13	11	5 J	7 J	5 J	5 J	31 J	11
Tetrachloroethane				1 J							
Toluene					1 J						
Trichloroethane				2 J	2 J						
Vinyl acetate		81			16					100	
TCLP Semivolatiles (8270A) µg/ℓ											
Benzoic acid											
bis(2-Ethylhexl)phthalate	5.1 B	15 B	8.4 BJ	3.4 BJ	1.8 BJ	19 B	9.5 BJ	6.3 BJ	5.3 BJ	8.6 BJ	8.7 BJ
Di-n-butylphthalate	0.7 BJ	2.7 BJ	1.7 BJ	1.6 BJ	2.1 BJ	0.6 BJ	1.1 BJ	1.2 BJ	1.1 BJ	1.2 BJ	0.9 BJ
2,4-Dichlorophenol	9.3 J	1.8 J									
Diethylphthalate	0.6 BJ	1 BJ	0.8 BJ	0.9 BJ	0.8 BJ	0.7 BJ	0.8 BJ	0.7 BJ	0.7 BJ	0.7 BJ	0.9 BJ
2,6-Dinitrotoluene											
Naphthalene											
TCLP Pesticides (8080) µg/ℓ											
4,4'-DDD	0.32								0.12 J		
4,4'-DDT	0.75					0.23					
TCLP Herbicides (615) mg/ℓ											
2,4-D	0.24	0.62		0.022				0.051	0.009 J	0.024	0.001 J
TCLP PCBs (8080) µg/ℓ											

See notes at end of table.

DRAFT

Table A-1 (Continued)
Summary of Site 11 Phase 1 Analytical Results

Remedial Action Report
Site 11 Source Control
Naval Air Station Cecil Field
Jacksonville, Florida

Analyte	Anomaly 4					Anomaly 8					
	CFA4-S1	CFA4-S2	CFA4-S3	CFA4-S4	CFA4-S5	CFA8001	CFA8002	CFA8003	CFA004	CFA8005	CFA8006
TCLP Metals (7470/3015/6010A) mg/ℓ											
Arsenic	1.3	0.72	0.05 J	0.06 J	0.10 J		0.05 J	0.11 J	0.08 J	0.09 J	
Barium	0.88 B	0.83 B	0.12 BJ	0.40 B	0.44 B	0.12 BJ	0.42 B	0.27 B	0.16 BJ	0.71 B	0.46 B
Cadmium											
Chromium	0.004 J		0.003 J		0.003 J	0.007 J				0.005 J	
Lead											

See notes at end of table.

DRAFT

Table A-1 (Continued)
Summary of Site 11 Phase 1 Analytical Results

Remedial Action Report
Site 11 Source Control
Naval Air Station Cecil Field
Jacksonville, Florida

Analyte	Anomaly 7			Anomaly 16		Anomaly 5		Decon Water
	CFA7A001S	CFA7A002S	CFA7B001S	CFA16001S	CFA16002S	CFA5001S	CFA5002S	6 Drum composite
1,2-Dibromo-3-chloropropane (8260) µg/kg								0.29 µg/ℓ
Organophosphorus Pesticides (8140) µg/kg								NA
TCLP Volatiles (8260) µg/ℓ						24	29	
Acetone								
1,2-Dichloropropane							4 J	
cis-1,3-Dichloropropene								
Methylene chloride	38 B	27 B	30 B	30 B	17 B	2 BJ	4 BJ	
Tetrachloroethane								
Toluene								
Trichloroethane						8 J	6 J	
Vinyl acetate								
TCLP Semivolatiles (8270A) µg/ℓ								NA
Benzoic acid				0.6 J		21		
bis(2-Ethylhexl)phthalate	0.8 BJ	0.6 BJ	0.8 BJ			0.6 BJ	0.7 BJ	
Di-n-butylphthalate	0.9 BJ	14 B	10 B	5.4 BJ	0.8 BJ	4.3 BJ	1.7 BJ	
2,4-Dichlorophenol								
Diethylphthalate	1.2 BJ	1.3 BJ	1 BJ	0.9 BJ	0.6 BJ	1.8 BJ	1.1 BJ	
2,6-Dinitrotoluene		0.9 J						
Naphthalene	0.8 J							
TCLP Pesticides (8080) µg/ℓ								NA
4,4'-DDD								
4,4'-DDT								
TCLP Herbicides (615) mg/ℓ								
2,4-D					0.017 J			
TCLP PCBs (8080) µg/ℓ								NA

See notes at end of table.

DRAFT

Table A-1 (Continued)
Summary of Site 11 Phase 1 Analytical Results

Remedial Action Report
Site 11 Source Control
Naval Air Station Cecil Field
Jacksonville, Florida

Analyte	Anomaly 7			Anomaly 16		Anomaly 5		Decon Water
	CFA7A001S	CFA7A002S	CFA7B001S	CFA16001S	CFA16002S	CFA5001S	CFA5002S	6 Drum composite
TCLP Metals (7470/3015/6010A) mg/ℓ								
Arsenic			0.06 J					0.19
Barium	0.63 B	0.48 B	0.60 B	0.86 BJ	0.15 BJ	0.48 B	0.3 B	0.22 B
Cadmium								0.01 J
Chromium	0.007 J							0.05
Lead								0.08 J

Notes: J = Estimated value (less than PQL but greater than zero).
B = Analyte found in blank (possible/probable blank contamination).
PQL = Practical Quantitation Limit.
NA = not applicable.

DRAFT

APPENDIX B

CORRESPONDENCE CONCERNING MANIFESTS

6-5-95
Extension

5090
18410.IR
02 Oct 95

From: IR Program Manager, Naval Air Station, Cecil Field
To: ROICC

Subj: SITE 11 ANALYSES REQUIRED FOR DISPOSAL

Ref: (a) 40 CFR, Subpart D

1. As discussed in the pre-construction meeting with the contractor, hazardous waste manifests for NAS Cecil Field are signed by PWC and it is the contractor's responsibility to coordinate disposal with PWC. Reference (a) provides land disposal restrictions for various compounds. Some of these restrictions are for TCLP analyses and others require that the analysis be performed "not on an extract of such waste or residual". Analyses of some compounds run by the contractor did not provide total concentrations as required by the regulations, but TCLP analyses. The PWC representative who will sign the hazardous waste manifest and certify that the waste needs no further treatment before land disposal is not comfortable doing this with the wrong analyses. Therefore, the contractor needs to provide 8240/8260 compound analyses by totals, 8270 compound analyses by totals and 8080 pesticide analyses by totals. Once these analyses are complete, the contractor needs to coordinate with PWC for disposal.

2. NAS Cecil Field point of contact is Mr. John Dingwall, P.E. , Installation Restoration Program Manager, DSN 860-6495 or commercial (904) 778-6495.

John D

John Dingwall

M. Amy Driver,

I received this at approx. 1400 from Dingwall. I hope it will help straighten out this mess.

DVR

DEPARTMENT OF THE NAVY
OFFICER IN CHARGE OF CONSTRUCTION
RESIDENT OFFICER IN CHARGE OF CONSTRUCTION
NAVAL FACILITIES ENGINEERING COMMAND CONTRACTS
JACKSONVILLE AREA
P. O. BOX 139
NAVAL AIR STATION
JACKSONVILLE, FLORIDA 32212-0139

R13
October 27, 1995

Omega Environmental Services, Inc.
4661 Hammermill Rd., Suite B
Tucker, GA 30084

Re: Contract N62467-93-C-1052, Environmental Remediation, Site 11, NAS, Cecil Field, FL

Gentlemen:

composite sample

Per our previous correspondence of September 21, 1995, the soil from anomalies #4 & #8 will be treated per bid item 1b, which includes offsite transportation and disposal. As you know, the manifests for that shipment have not been approved and signed. This is due to a discrepancy in the analysis procedures.

Specification section 02057, in particular paragraph 3.6, of your contract requires that disposal meet the requirements of local, State, and federal regulatory agencies, and the contractor is responsible for coordinating and obtaining approvals. In accordance with 40 CFR 268, particularly 268.43, some of the waste compounds and constituents referenced in section 02057, paragraph 3.3.6d, require direct analysis; analysis by TCLP, which your lab performed, is not acceptable.

Therefore, in order to be properly manifested, some additional tests will be required, and the results provided to the signer of the manifests. You will need to provide 8240/8260 compound analyses by totals, 8270 analyses by totals, and 8080 pesticide analyses by totals. As discussed above, these are considered within your contract requirements.

Excavated material from anomalies #5, #7, & #16 has been resampled, and been approved to remain on site. No further work will be required with this soil.

Sincerely,

W L Oehlman

W. L. Oehlman
Ass't. Resident Engineer

3-8 02

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▸ 1

To DOUG DRIVER	From Wayne / ROICC
Dept./Agency OMEGA	Phone # 904/772-5571
Fax # 404/934-2451	Fax # x 133

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

TECHNICAL MEMORANDUM

TO: Wayne Oehlman - ROICC, John Dingwall - IR Program Manager
cc: Steve Wilson, Dave Kruzicki, Mark Davidson
FROM: Bob Lunardini, P.E. - ABB Environmental Services Inc.
Rao Angara, ABB-ES
DATE: 8 November 1995

SUBJECT: NAS Cecil Field, Site 11, Manifests

==========

ABB-ES believes the analytical suite done to date is sufficient to manifest the hazardous waste from Anomalies 4 and 8 to a Subtitle C facility. The following is a list of the contaminants of concern based on a) site history, and b) analytical results from the initial (1994) field investigation.

Compound	Waste Code	LDR	Ref.
1,2-dibromo-3-chloropropane	U066	15 mg/kg	CCW
Parathion	P089	0.1 mg/kg	CCW
Arsenic	D004	5.0 mg/l	CCWE
Barium	D005	100 mg/l	CCWE
Chromium (total)	D007	5.0 mg/l	CCWE

CCW = 40 CFR 268.43 Table CCW - Constituent Concentration in Wastes

CCWE = 40 CFR 268.41 Table CCWE - Constituent Concentrations in Waste Extract

The LDR's listed are for nonwastewaters (soils). The metals are listed as mg/l because TCLP is the analytical method used. Aluminum, Copper, Iron, Magnesium, and Zinc were present in soil samples but are not regulated in soils. Parathion in Soil Sample No. 1 from Anomaly 4 was above LDRs.

The following is the rational for each analyses required in the plans and specs prepared for this work.

1,2,-dibromo-3-chloropropane. This was the contaminant of concern at Site 11. It was found during the field investigation. It is a listed hazardous waste (U066).

Organophosphorus pesticides. One hit of parathion was detected during the field investigation. This analysis was required to verify the presence or absence of organophosphorus pesticides.

TCLP full suite. This analyses was required to determine if there was any characteristically hazardous waste at the site. The specifications gave the contractor the option of running totals and then determining if the waste would pass TCLP using the 20 times rule.

Analytical results from the samples taken from Anomalies 4 and 8 by Omega indicated the presence of 1,2,-dibromo-3-chloropropane, no organophosphorus pesticides, and the samples pass TCLP. Therefore, the soil should be manifested out as a U066 waste. We have no reason to believe any other listed or characteristic wastes are present (see 40 CFR 262.11). The contractor has met the analytical requirements of the contract. Requesting additional analyses may require a change order.

If you have any questions please contact me at (904) 656-1293 ext 248.