

DO #0018-02-Site 6 Removal Action
NAWC Warminster

CLOSE-OUT REPORT

**SITE 6 REMOVAL ACTION
NAVAL AIR WARFARE CENTER
WARMINSTER, PENNSYLVANIA**

Prepared for:

**NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 Industrial Highway
Lester, PA 19113**

Prepared by:

**FOSTER WHEELER ENVIRONMENTAL CORPORATION
One Oxford Valley Suite 200
Langhorne, Pennsylvania 19047**

October, 1997

**Contract No. N62472-94-D-0398
Delivery Order No. 0018
Modification 02**

***I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number N62472-94-D-0398, is in compliance with the Contract drawings and specification, can be installed in the allocated spaces, and is submitted for Government approval, Government approval of proposed variation, if any, is recommended.**

**Certified by Submittal Reviewer [Signature], Date 10/27/97
(Signature when applicable)**

***Certified by QC Manager [Signature], Date 10/27/97
(Signature)**

CONTRACT NO N62472-94-D-0398	DELIVERY ORDER # 0018	ACTIVITY LOCATION Warminster, PA
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PROJECT TITLE:
Various Remedial Action at NAWC

FROM: Foster Wheeler Environmental Corp. - Program QCM: Akram Aziz	DATE October 27, 1997
TO S. Lehman (5 copies)	DATE October 27, 1997

- THE CONTRACTOR SUBMITTALS LISTED BELOW ARE FORWARDED FOR YOUR REVIEW AND RECOMMENDATIONS
 - APPLY APPROPRIATE STAMP IMPRINT TO EACH SUBMITTAL AND INDICATE REVIEW COMMENTS, AS REQUIRED
 - RETAIN ONLY (1) COPY OF THIS TRANSMITTAL FORM AND RETURN REMAINING COPIES WITH REVIEWED SUBMITTALS TO ROICC
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ITEM NO.	SUBMITTAL DESCRIPTION	PREPARED/SUBMITTED BY	APPROVED	DISAPPROVED	REMARKS
37	SD-18, Records	A. AZIZ			
	Site 6 Close-Out Report				

**CLOSE-OUT REPORT FOR
REMEDIAL ACTION CONTRACT N62472-94-D-0398 - DO #0018-02
NAWC, WARMINSTER, PA - SITE 6 REMOVAL ACTION**

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- Attachment A: Site 6 Target Cleanup Concentrations
- Attachment B: Generators Waste Profile Sheet (non-hazardous)
PADEP Form U Application
PADEP Form U Approval
- Attachment C: Waste Profile Shipment Report (non-hazardous)
- Attachment D: Generators Waste Profile Sheet (PCB)
Facility Approval
- Attachment E: Certificates of Disposal (PCB)
- Attachment F: Perimeter Air Sampling Results Summary
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1.0 INTRODUCTION

Foster Wheeler Environmental Corporation (Foster Wheeler Environmental) was contracted by the Northern Division, Naval Facilities Engineering Command, to provide various remedial actions at the Naval Air Warfare Center located in Warminster, Pennsylvania (NAWC Warminster). This Close-Out Report describes the field activities performed at Site 6 during the period November 1996 through October 3, 1997 and has been prepared to satisfy requirements of the Remedial Action Contract Number N62472-94-D-0398, Delivery Order No. 0018, Modification No. 02 - Site 6 Removal Action.

2.0 PROJECT LOCATION AND DESCRIPTION

NAWC Warminster is located approximately 28 miles northeast of Philadelphia, primarily in Warminster Township, Bucks County, Pennsylvania as shown in Figure 2-1. The facility lies in a populated suburban area surrounded by private homes, various commercial/industrial activities, and a golf course. On-base areas include various buildings and other complexes connected by paved roads, runways and ramp areas, mowed fields, and a small wooded area, as shown in Figure 2-2. The total area of NAWC Warminster facility is approximately 840 acres.

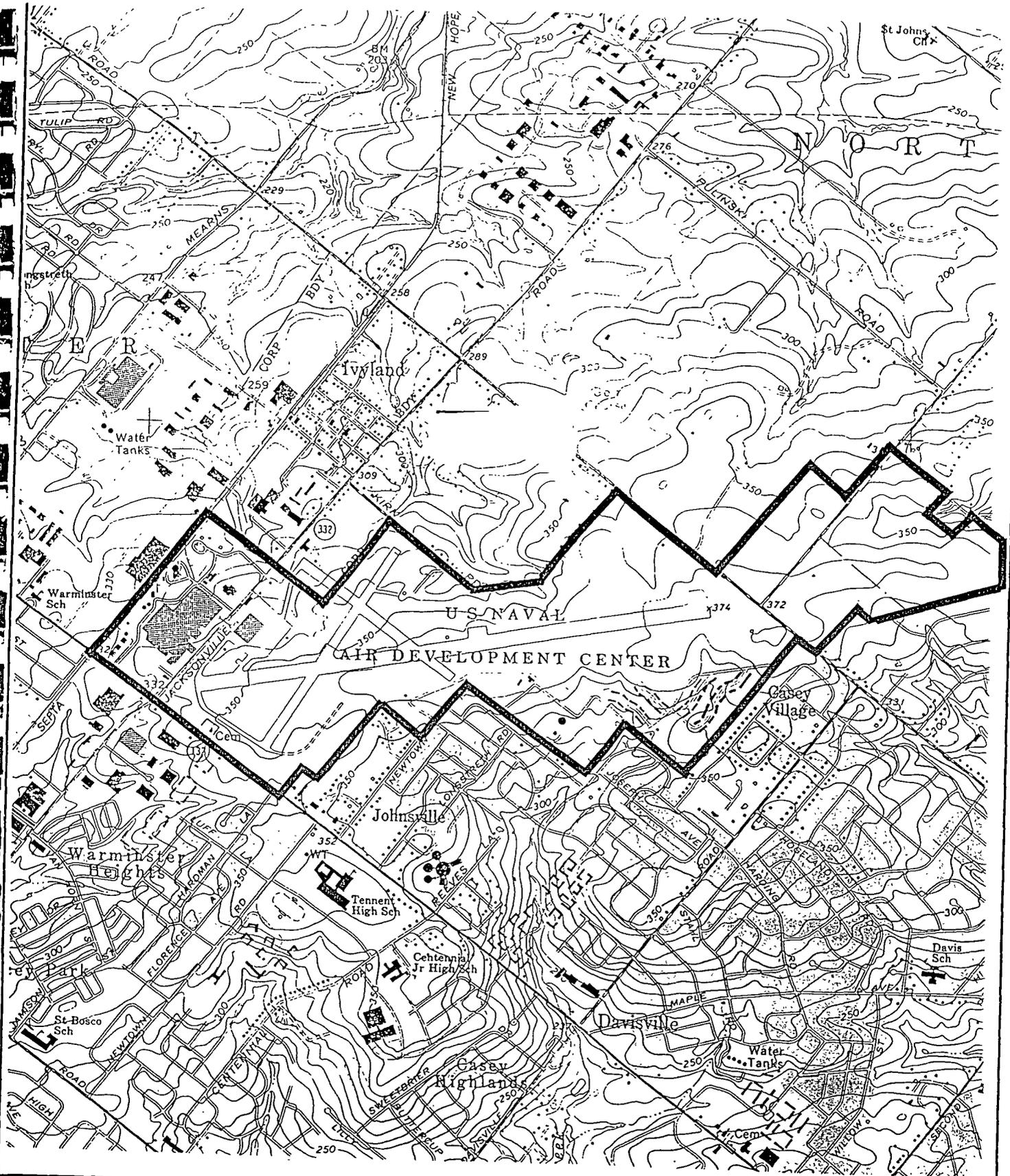
To date, at least eight sites on the NAWC Warminster property have been identified as sites used for disposal of wastes containing hazardous substances. The location of each site is shown in Figure 2-2. All eight sites are located within the facility boundaries and include the following:

- Three waste burn and disposal pits (Sites 1, 3 and 6);
- Two sludge disposal pit areas (Sites 2 and 7);
- Two landfills (Sites 4 and 5); and,
- One fire training area (Site 8).

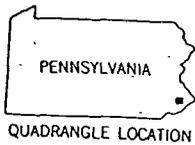
Historically, wastes at the facility were generated during aircraft maintenance and repair, pest control, fire fighting training, machine and plating shop operations, spray painting, and various materials research and testing activities. Wastes from these processes included paints, solvents, sludges from industrial wastewater treatment, waste oils, construction and demolition debris, office trash, general refuse and other forms of solid waste.

2.1 Site Location and Description

Site 6 reportedly consists of an unknown number of disposal trenches and pits located on the southern side of the NAWC Warminster main runway and north of the facility patrol road (see Figure 2-2). The area slopes gently to the south-southeast and is overgrown by brush. The southern, southeastern, and southwestern boundaries of the site are marked by a steep decline from the general site plateau to the NAWC Warminster patrol road. Base housing is located immediately southeast of the site outside of the facility perimeter fence.



Source: U.S.G.S. (7.5 Min.) Quadrangle Map, Hatboro, PA

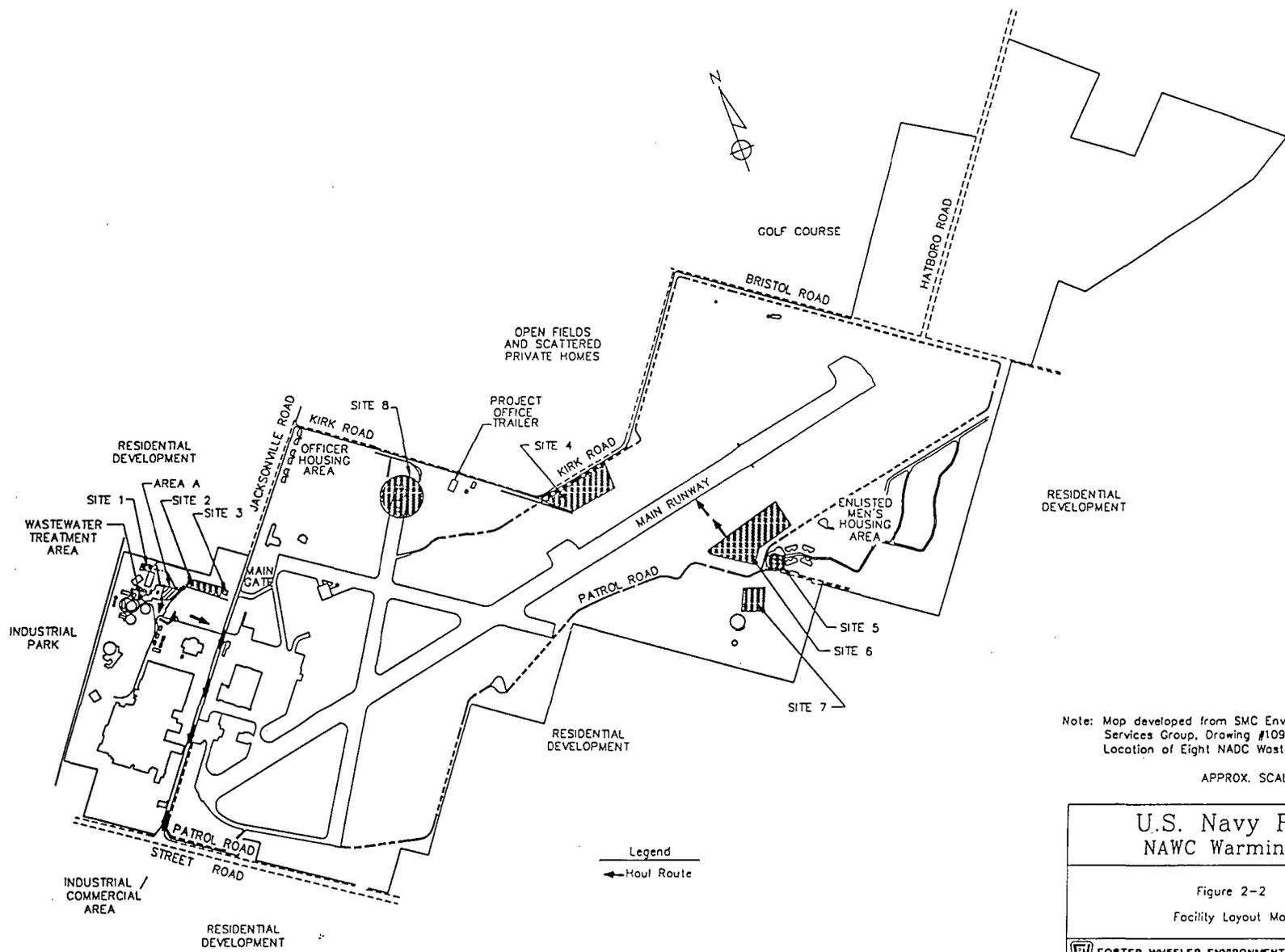


SCALE 1:24 000

U.S. Navy RAC
NAWC, Warminster, PA

Figure 2-1
Facility Location Map

FOSTER WHEELER ENVIRONMENTAL CORPORATION



Note: Map developed from SMC Environmental Services Group, Drawing #109 9328 880001, Location of Eight NADC Waste Sites, July 1990.

APPROX. SCALE: 1"=1000'

<p>U.S. Navy RAC NAWC Warminster</p>
<p>Figure 2-2 Facility Layout Map</p>
<p> FOSTER WHEELER ENVIRONMENTAL CORPORATION</p>

According to previous investigations, the site allegedly received paint, solvent, demolition, oil, flammable, and grease trap wastes from 1960 to 1980. Thirteen suspected disposal areas, which consist of trenches and pits, have been identified in this area which is approximately six (6) acres in size.

3.0 OBJECTIVES AND PROJECT SUMMARY

The general objective of the remediation was to remove and dispose of waste and contaminated soils from three (3) trenches/pits previously identified by the Navy's clean contractor. Removal was based on target clean-up concentrations established by the Base Closure Team with post-excavation verification sampling completed by Brown & Root Environmental under contract to the Navy. The target clean-up concentrations are included as *Attachment A*.

Remediation activities are summarized as follows:

- Completed pre-mobilization sampling and analysis for waste characterization purposes via borings and off-site analysis.
- Received PADEP Form U approval in support of waste profile WMNA 303141.
- Installed and maintained erosion control measures.
- Excavated trenches/pits to predetermined width and depth.
- Assisted Brown & Root Environmental in post-excavation verification sampling activities.
- Completed follow-up excavation as requested by Navy.
- Transported 3,648.53 tons of non-hazardous soil/debris to GROWS Landfill for disposal.
- Transported 49.42 tons of PCB contaminated soil to Model City for land disposal.
- Completed waste characterization sampling and analysis prior to shipping to G.R.O.W.S. Landfill and Model City for all material removed from beyond the original limits.
- Completed backfill of all trenches/pits with certified imported material. Topsoil placed on excavation areas.
- Completed site restoration with wildflower/grass seed mix.
- Chipped removed trees and stumps, spread on-site.
- Completed perimeter air monitoring/sampling.

- Completed all Health and Safety activities in accordance with the Site Specific Health and Safety Plan.

4.0 REMEDIAL ACTION

4.1 Site Remediation

4.1.1 Excavation and Backfill

Pre-mobilization waste characterization sampling was completed via borings in November of 1996. Due to the need for additional investigations the area was not released for soil removal until April 23, 1997. After site mobilization and preparatory work, excavation commenced on May 14, 1997. By May 21, 1997 the pre-determined areas of excavations at P6A, P6F and TR6E were completed. This material was shipped directly to G.R.O.W.S. Landfill as non-hazardous material under Waste Profile #303141.

Post-excavation verification sampling was then performed by Brown & Root Environmental under contract to the Navy. In trench areas where exceedances to the target clean-up levels were detected additional soil removal was conducted as directed by the Navy. All three areas required some additional excavation which was conducted on June 9, 23 and 24; July 9, 10, 22 and 23; August 4 and 14 and September 19, 1997. During the additional soil removal events all material was found to be non-hazardous except for three (3) roll-offs which were found to contain PCBs above the TSCA regulatory level of 50 ppm. This material was transported to Model City, NY for disposal in a TSCA approved landfill.

Prior to backfilling with imported screenings all excavations underwent confirmatory sampling by Brown & Root.

During the course of soil removal at P6F a small section of the patrol road was removed. When backfilled the area of former pavement was replaced with a blended roadstone. All surface debris, predominantly concrete debris, was also removed during the period of May 22-29, 1997. All backfilling efforts were completed on September 30, 1997.

Approximate final limits of excavation are included in Attachment H.

4.1.2 Waste Disposal

Advanced Environmental Technical Services (AETS) was selected as our subcontractor to provide transportation and disposal services for this delivery order. AETS utilized the following transporters and disposal facilities for non-hazardous bulk materials and PCB bulk material.

Transporters

Waste Management of Pennsylvania, Inc. - Hauling Division
400 Newbold Road
Fairless Hills, PA 19030
DOT No. 344050
Phone: (215) 736-5904

S&J Transportation Co.
P. O. Box 169
U. S. Route 40
Woodstown, NJ 08098
EPA ID# NJD 071629976

Disposal Facilities

G.R.O.W.S., Inc.
Waste Management of Pennsylvania, Inc.
1513 Bordentown Road
Morrisville, PA 19067
EPA ID No. PAD 000429589
Phone: (215) 736-5904

CWM Chemical Services, Inc.
1550 Balmer Road
P. O. Box 200
Model City, NY 14107
EPA ID No. NYD 049836679

Foster Wheeler Environmental initially submitted a waste profile and PADEP Form U application for the disposal of an estimated 12,000 tons of non-hazardous soil/debris. PADEP approved the Form U application on July 19, 1996. Subsequent requests for volume increases were approved. Copies of the Generator's Waste Profile Sheet, Form U Application and PADEP approvals are included as *Attachment B*.

The total tonnage of non-hazardous soil/debris shipped from Site 6 under profile WMNA 303141 was 3,648.53. The disposal facility returned all manifests directly to the NAWC Warminster ROICC. A Waste Profile Shipment Report is included as *Attachment C*.

Foster Wheeler submitted a waste profile for the land disposal of polychlorinated biphenyl contaminated materials to CWM Chemical Services, Inc. Copies of the Generators Waste Profile Sheet with approvals are included as *Attachment D*.

The total tonnage of PCB-contaminated soil shipped from Site 6 under waste profile No. B24398 was 49.42 tons. Certificates of Disposal are included as *Attachment E*.

4.1.3 Analytical Laboratories

The following off-site laboratories were contracted:

Waste Characterization

Laboratory Resources, Inc.
100 Hollister Road
Teterboro, NJ 07608
(201) 288-3700

Toxikon Environmental Sciences
15 Wiggins Avenue
Bedford, MA 01730
(617) 271-1136

Perimeter Air Samples

American Medical Labs
P. O. Box 10841
Chantilly, VA 20153
(800) 336-3718

Personnel Samples

S.S.M. Laboratories
30 Noble Street
Reading, PA 19611
(610) 376-4595

4.1.4 Project Schedule

Key completion dates in the performance of remedial actions at Site 6 are provided in the following table.

KEY COMPLETION DATES	
TASK	DATE
Pre-mobilization waste characterization sampling	27 November 1996
Mobilization	13 May 1997
Trench/pit Excavation	19 September 1997
Backfill	30 September 1997
Transportation and Disposal	03 October 97
Site Grading and Restoration	30 September 1997
Demobilization	05 September 1997

4.2 Sampling and Analyses

Sampling and analyses was completed in accordance with the approved Site 6 Work Plan and at the request of the Navy.

4.2.1 Waste Characterization Sampling and Analytical Results

The following is a summary of waste characterization sampling events.

Sampling Event	No. of Samples	Type	Collection Date
1. Site 6, P6F, P6A, TR6E (Pre-mobilization)	6	Composite	27 November 1997

The initial six (6) composite samples were collected via a hollow stem auger. Continuous split spoon sampling at 2-foot intervals through the full waste profile was completed. A PADEP Form U Table A analysis was completed for each sample and submitted with the PADEP Form U application. A sample location map can be found in the Site 6 Work Plan.

Soil removed during the seven (7) additional excavation events was staged on-site for waste characterization sampling which was conducted immediately after removal.

Preliminary soil characterization test results and Final Laboratory Analysis Reports have been forwarded under separate cover.

4.2.2 Perimeter Air Sampling and Analytical Results

Perimeter ambient air monitoring was conducted twice per week during excavation activities at Site 6 of the NAWC located in Warminster, PA. Sampling stations were located at the four cardinal directions (north - Station 1, west - Station 2, south - Stations 3 and 4, and east - Station 5) around Site 6. The collocated samplers were placed on the south side of the site because this was the side closest to the public (in this case residences). The meteorological station and precipitation gauge were sited in a level grassy area across the north runway from Site 6 (this same site was used for the Site 4 monitoring conducted in 1996).

Sampling was conducted on May 15, May 19, and June 9. All sampling events were 24-hours in duration. Fifteen exposed ambient samples and two blanks were analyzed for total suspended particulate (TSP), chromium, and lead. Detected TSP concentrations ranged from 12.0 to 77.5 micrograms per cubic meter with a mean of 39.9 micrograms per cubic meter. All detected concentrations were well below the Pennsylvania DEP and USEPA 24-hour particulate matter standard of 150 micrograms per cubic meter. The relatively small size of the exposed area and the areal vegetation were the main contributors to the low particulate levels detected. No TSP or

chromium was detected on any of the blanks. No chromium was detected on any of the samples analyzed.

No lead was detected on the May 15-16 or May 19-20 samples. Lead was detected on all six of the samples collected on June 9-10 including the field blank. Detected amounts ranged from 2.7 micrograms to 7.1 micrograms with a mean of 4.8 micrograms. Since the amounts detected on the exposed samples were very similar to the amount detected on the field blank it seems unlikely that the site was a contributor to the detected amounts. A review of concurrent on-site meteorological data showed that winds were predominantly from the west and south during this sampling event. Yet, the highest lead detection occurred at an upwind station (Station 2). In any event, all of the detected amounts were well below the Permissible Exposure Limit (PEL) for lead in air which is 50 micrograms per cubic meter for an 8-hour period.

The summarized air monitoring results are presented in *Attachment F*.

5.0 HEALTH AND SAFETY

The following is a summary of Site 6 Health and Safety activities conducted at the Naval Air Warfare Center, Warminster, PA.

Task No. 1 - Pre-Mobilization Sampling/Surveying

On November 27, 1997 a drill rig was mobilized to Site #6 and six soil samples were collected for analysis. During drilling activities, real time air monitoring was conducted for organic vapors, explosive atmospheres, ionizing radiation and dust. Organic vapor detection occurred during this activity to a maximum of two parts per million above background. There were no other elevated readings or significant events during this activity.

Task No. 2 - Mobilization

Mobilization commenced on May 8, 1997. At this time equipment and supplies were incorporated into the job. There was no air monitoring conducted or significant events during this activity.

Task No. 3 - Clearing Area for Site Access

Removal of trees and brush began on May 13, 1997 and continued, as needed, through May 27, 1997. Trees were stockpiled in a separate area of Site #6 and were shredded by a subcontractor on June 20, 1997. There was no air monitoring conducted or significant events during these activities.

Task No. 4 - Excavation/Confirmatory Sampling/Removal of Surface Debris

Excavation at Site #6 began on May 14, 1997 at location P6A. Locations TR6E and P6F were then excavated in order. Upon completion of these excavations, confirmatory samples were conducted to determine if established clean-up criteria were met.

After the initial excavation of the three "hot spots" at Site #6 was completed, concrete surface debris was shipped off-site. This debris was loaded into tri-axle trucks with an excavator. Shipping of concrete was conducted on May 22, 1997 through May 29, 1997. Real time air monitoring was conducted for organic vapors, oxygen, explosive atmosphere, ionizing radiation and dust throughout these activities with no significant detection. Personnel monitoring was conducted throughout excavation activities for total chromium and lead. Personnel monitoring results can be found in *Attachment G*. TLD badges were also worn as a radiation dose indicator. Excavation, confirmatory sampling and removal of surface debris were completed without incident.

During the excavation of a test pit along the south side of patrol road an active phone line was severed. Repairs were quickly made by Bell Atlantic. Dig Safe had been contacted prior to the work.

Task No. 5 - Backfill

Backfill operations began following the Navy's notification to proceed on a trench-by-trench or pit-by-pit basis. This activity was monitored for organic vapors and dust. All trenches were backfilled and the site graded without any significant air monitoring results or incident.

Summary

In conclusion, all work on Site 4 was completed without an injury (first aid, lost time, restricted duty, etc.). In addition, monitoring results (real time and integrated) indicate that there were no exposures to personnel in exceedance of published exposure limits.

6.0 PHOTOGRAPHIC LOG

A photographic log recording the progress of construction is provided in *Attachment I*.

ATTACHMENT A
SITE 6 TARGET CLEANUP CONCENTRATIONS

TARGET CLEAN-UP CONCENTRATIONS SUMMARY

SITE 6 REMOVAL ACTION

NAWC

WARMINSTER, PENNSYLVANIA

Contaminant (Inorganics)	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Aluminum	NA	1,300,000	2550	2550	15,300	15,300
Antimony	0.6	504	5.42	0.6	4.7	4.7
Arsenic	3	8.4	29.2	3	10.5	10.5
Barium	200	88,000	1650	200	73.5	200
Beryllium	0.4	2.9	63.2	0.4	0.9	0.9
Cadmium	0.5	630	7.52	0.5	NA	0.5
Chromium (total)	10	6,300	36	10	21.6	21.6
Cobalt	NA	76,000	1190	1190	10.3	1,190
Copper	100	50,400	1060	100	14	100
Lead	500	NA	81.1	81.1	15.4	81.1
Manganese	NA	29,000	843	843	585	843
Mercury	20	380	2.09	2.09	0.1	2.09
Nickel	200	25,000	130	130	12.2	130
Selenium	5	6,300	5.2	5	NA	5
Silver	NA	6,300	30.6	30.6	NA	30.6
Thallium	0.2	101	2.85	0.2	0.44	0.44
Vanadium	NA	8,800	5200	5200	32.2	5,200
Zinc	NA	380,000	13700	13700	32.8	13,700

Footnotes

1) Values presented are from the "Technical Guidance Manual- Pennsylvania's Land Recycling Program" Attachment E (Interim Statewide Health Tables-Soils) 11/6/96. The most restrictive value from "Residential", "Non-Residential", and "Soil to Groundwater Pathway" value

P6A
TARGET CLEAN-UP CONCENTRATIONS SUMMARY
SITE 6 REMOVAL ACTION
NAWC
WARMINSTER, PENNSYLVANIA

Contaminant (Semivolatile Organics)	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Benzo(a)anthracene	6	17	0.73	0.73	NA	0.73
Benzo(a)pyrene	0.6	1.7	44	0.6	NA	0.6
Benzo(b)fluoranthene	6	17	2	2	NA	2
Benzo(ghi)perylene	500	NA	NA	500	NA	500
Benzo(k)fluoranthene	60	170	20	20	0.05	20
Bis(2-ethylhexyl)phthalat	300	900	NA	0	50	50
Chrysene	500	1,700	73	73	51	73
Fluoranthene	400	50,400	2,290	400	92	400
Fluorene	40	50,400	440	40	NA	40
Indeno(1,2,3,-cd)pyrene	6	17	59	6	NA	6
Pyrene	300	38,000	76.0	76	0.1	76

PSA
 TARGET CLEAN-UP CONCENTRATIONS SUMMARY

SITE 6 REMOVAL ACTION

NAWC

WARMINSTER, PENNSYLVANIA

Contaminant Pesticides/PCB's	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Polychlorinated Biphenyls	5	1.6	5.5	1.6	NA	1.6
Dieldrin			0.003			0.003
DDD			11.2			11.2
Endrin			0.92			0.92

A
TARGET CLEAN-UP CONCENTRATIONS SUMMARY
SITE 6 REMOVAL ACTION
NAWC
WARMINSTER, PENNSYLVANIA

was listed for each contaminant.

2) USEPA Region III Risk-Based Concentration Table, ^{3/14/97} ~~January--June 1996~~

3) Three references: "Soil Screening Guidance Users Guide", April 1996, "Aquatic Fate Process Data for Organic Priority Pollutants", USEPA, 1982, and the "Drinking Water Regulations and Health Advisories", October 1996

4) Values were presented to two significant figures

5) Most restrictive level from "PADEP", "Risk-Based," and "Groundwater Protection" columns used

6) Background concentrations as presented in the "Site 6 Removal Action Report" (Brown and Root Environmental, 1996)

7) Final Target Concentration equal to the higher value from the "Minimum" and "Background" columns

NA =Not Available

TARGET CLEAN-UP CONCENTRATIONS SUMMARY
 SITE 6 REMOVAL ACTION
 NAWC
 WARMINSTER, PENNSYLVANIA

Contaminant (Semivolatile Organics)	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Benzo(a)anthracene	6	17	0.73	0.73	NA	0.73
Benzo(a)pyrene	0.6	1.7	44	0.6	NA	0.6
Benzo(b)fluoranthene	6	17	2	2	NA	2
Benzo(ghi)perylene	500	NA	NA	500	NA	500
Benzo(k)fluoranthene	60	170	20	20	0.05	20
Bis(2-ethylhexyl)phthalat	300	900	NA	0	50	50
Chrysene	500	1,700	73	73	51	73
Fluoranthene	400	50,400	2,290	400	92	400
Fluorene	40	50,400	440	40	NA	40
Dibenzo(a,h)anthracene	0.6	2	1.2	0.6	NA	0.6
Indeno(1,2,3,-cd)pyrene	6	17	59	6	NA	6
Phenanthrene	80	NA	NA	80	NA	80
Pyrene	300	38,000	76.0	76	0.1	76

TR6E
 TARGET CLEAN-UP CONCENTRATIONS SUMMARY
 SITE 6 REMOVAL ACTION
 NAWC
 WARMINSTER, PENNSYLVANIA

Contaminant Pesticides/PCB's	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Polychlorinated Biphenyls	5	1.6	5.5	1.6	NA	1.6
Dieldrin	0.3	0.36	0.003	0.003	NA	0.003
DDD	24	24	11.2	11.2	0.002	11.2
DDT	17	37	31	17	0.02	17
DDE	17	37	35	17	0.01	17
Endrin	20	378	0.92	0.92	NA	0.92
Methoxychlor	200	6,300	2.75	2.75	NA	2.75

TARGET CLEAN-UP CONCENTRATIONS SUMMARY
 SITE 6 REMOVAL ACTION
 NAWC
 WARMINSTER, PENNSYLVANIA

Contaminant (Inorganics)	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Aluminum	NA	1,300,000	2550	2550	15,300	15,300
Antimony	0.6	504	5.42	0.6	4.7	4.7
Arsenic	3	8.4	29.2	3	10.5	10.5
Barium	200	88,000	1650	200	73.5	200
Beryllium	0.4	2.9	63.2	0.4	0.9	0.9
Cadmium	0.5	630	7.52	0.5	NA	0.5
Chromium (total)	10	6,300	36	10	21.6	21.6
Cobalt	NA	76,000	1190	1190	10.3	1,190
Copper	100	50,400	1060	100	14	100
Lead	500	NA	81.1	81.1	15.4	81.1
Manganese	NA	29,000	843	843	585	843
Mercury	20	380	2.09	2.09	0.1	2.09
Nickel	200	25,000	130	130	12.2	130
Selenium	5	6,300	5.2	5	NA	5
Silver	NA	6,300	30.6	30.6	NA	30.6
Thallium	0.2	101	2.85	0.2	0.44	0.44
Vanadium	NA	8,800	5200	5200	32.2	5,200
Zinc	NA	380,000	13700	13700	32.8	13,700

Footnotes

1) Values presented are from the "Technical Guidance Manual- Pennsylvania's Land Recycling Program" Attachment E (Interim Statewide Health Tables-Soils), 11/6/95. The most restrictive value from "Residential", "Non-Residential", and "Soil to Groundwater Pathway" value

TARGET CLEAN-UP CONCENTRATIONS SUMMARY
SITE 6 REMOVAL ACTION
NAWC
WARMINSTER, PENNSYLVANIA

was listed for each contaminant.

- 2) USEPA Region III Risk-Based Concentration Table, January - June 1996 and updated using the March 14, 1997 release. Concentration is based on Recreational land use scen
- 3) Three references: "Soil Screening Guidance: Users Guide", April 1996, "Aquatic Fate Process Data for Organic Priority Pollutants", USEPA, 1982, and the "Drinking Water Regulations and Health Advisories", October 1996
- 4) Values were presented to two significant figures
- 5) Most restrictive level from "PADEP", "Risk-Based," and "Groundwater Protection" columns used.
- 6) Background concentrations as presented in the "Site 6 Removal Action Report" (Brown and Root Environmental, 1996)
- 7) Final Target Concentration equal to the higher value from the "Minimum" and "Background columns

NA =Not Available

TARGET CLEAN-UP CONCENTRATIONS SUMMARY
 SITE 6 REMOVAL ACTION
 NAWC
 WARMINSTER, PENNSYLVANIA

Contaminant (Semivolatile Organics)	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Benzo(a)anthracene	6	17	0.73	0.73	NA	0.73
Benzo(a)pyrene	0.6	1.7	44	0.6	NA	0.6
Benzo(b)fluoranthene	6	17	2	2	NA	2
Benzo(ghi)perylene	500	NA	NA	500	NA	500
Benzo(k)fluoranthene	60	170	20	20	0.05	20
Bis(2-ethylhexyl)phthalat	300	900	NA	0	50	50
Chrysene	500	1,700	73	73	51	73
Fluoranthene	400	50,400	2,290	400	92	400
Fluorene	40	50,400	440	40	NA	40
Dibenzo(a,h)anthracene	0.6	2	1.2	0.6	NA	0.6
Indeno(1,2,3,-cd)pyrene	6	17	59	6	NA	6
Phenanthrene	80	NA	NA	80	NA	80
Acenaphthene	30	75,600	376	30	NA	30
Anthracene	70	378,000	5,690	70	NA	70
Pyrene	300	38,000	76.0	76	0.1	76

TARGET CLEAN-UP CONCENTRATIONS SUMMARY
 SITE 6 REMOVAL ACTION
 NAWC
 WARMINSTER, PENNSYLVANIA

Contaminant Pesticides/PCB's	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Polychlorinated Biphenyls	5	1.6	5.5	1.6	NA	1.6
Dieldrin	0.3	0.36	0.003	0.003	NA	0.003
DDD	24	24	11.2	11.2	0.002	11.2
DDT	17	37	31	17	0.02	17
DDE	17	37	35	17	0.01	17
Chlordane	3	9.7	0.25	0.25	NA	0.25
Endrin	20	378	0.92	0.92	NA	0.92
Methoxychlor	200	6,300	2.75	2.75	NA	2.75

GEOTECHNICAL CONCENTRATIONS SUMMARY
 SITE 6 REMOVAL ACTION
 NAWC
 WARMINSTER, PENNSYLVANIA

Contaminant (Inorganics)	PADEP (1) (mg/kg)	Risk-Based (2)(4) (mg/kg)	Groundwater Protection (3,4) (mg/kg)	Minimum (4,5) (mg/kg)	Background Level (4,6) (mg/kg)	Final Target Concentrations(4,7) (mg/kg)
Aluminum	NA	1,300,000	2550	2550	15,300	15,300
Antimony	0.6	504	5.42	0.6	4.7	4.7
Arsenic	3	8.4	29.2	3	10.5	10.5
Barium	200	88,000	1650	200	73.5	200
Beryllium	0.4	2.9	63.2	0.4	0.9	0.9
Cadmium	0.5	630	7.52	0.5	NA	0.5
Chromium (total)	10	6,300	36	10	21.6	21.6
Cobalt	NA	76,000	1190	1190	10.3	1,190
Copper	100	50,400	1060	100	14	100
Lead	500	NA	81.1	81.1	15.4	81.1
Manganese	NA	29,000	843	843	585	843
Mercury	20	380	2.09	2.09	0.1	2.09
Nickel	200	25,000	130	130	12.2	130
Selenium	5	6,300	5.2	5	NA	5
Silver	NA	6,300	30.6	30.6	NA	30.6
Thallium	0.2	101	2.85	0.2	0.44	0.44
Vanadium	NA	8,800	5200	5200	32.2	5,200
Zinc	NA	380,000	13700	13700	32.8	13,700

Footnotes:

1) Values presented are from the "Technical Guidance Manual- Pennsylvania's Land Recycling Program" Attachment E (Interim Statewide Health Tables Soils) 11/6/96. The most restrictive value from "Residential", "Non-Residential", and "Soil to Groundwater Pathway" value

TARGET CLEAN-UP CONCENTRATIONS SUMMARY
SITE 6 REMOVAL ACTION
NAWC
WARMINSTER, PENNSYLVANIA

was listed for each contaminant.

- 2) USEPA Region III Risk-Based Concentration Table, January - June 1996 and updated using the March 14, 1997 release. Concentration is based on Recreational land use scen
- 3) Three references: "Soil Screening Guidance: Users Guide", April 1996, "Aquatic Fate Process Data for Organic Priority Pollutants", USEPA, 1982, and the "Drinking Water Regulations and Health Advisories", October 1996
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- 6) Background concentrations as presented in the "Site 6 Removal Action Report" (Brown and Root Environmental, 1996)
- 7) Final Target Concentration equal to the higher value from the "Minimum" and "Background" columns

NA =Not Available

ATTACHMENT B

**GENERATOR'S WASTE PROFILE SHEET (NON-HAZARDOUS)
PADEP FORM U APPLICATION
PADEP FORM U APPROVAL**

GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

Waste Profile Sheet Cod

WMNA 303141

This form is to be used to comply with the requirements of a waste agreement.

INSTRUCTIONS FOR COMPLETING THIS FORM ARE ATTACHED

(Hatched Areas For Contractor Use Only)

Decision Expiration Date: / /

Service Agr. Renewal Date: / /

Contractor Sales Rep#: _____

WASTE GENERATOR INFORMATION

Generator Name: Naval Air Warfare Center, Aircraft Division - Warminster 2. SIC Code: 9999
Facility Address (site of waste generation): Street Road & Jacksonville Road
Generator City, State/Province: Warminster 5. Zip/Postal Code: 18974
Generator USEPA/Federal ID #: PA6170024545 7. State/Province ID #: N/A
Technical Contact: Frank Kurdziel (mail stop 14) 9. Phone: (215) 441-7118

WASTE STREAM INFORMATION (See Instructions)

Name of Waste: Solid waste/contaminated soil
Process Generating Waste: Site clean up of on site waste disposal
Annual Amount/Units: 8,000 cy (12,000 tons) 4. Type A Type B
Special Handling Instructions/Supplemental Information: None

Incidental Waste Types and Amounts: None

TRANSPORTATION INFORMATION

Method of Shipment: Bulk Liquid Bulk Sludge Bulk Solid Drum/Box Other _____
Supplemental Shipping Information: Cover with tarps

Is this a DOT hazardous material? No Yes (If yes, complete 4, 5 & 6) 4. Hazard Class/ID #: N/A
Reportable Quantity/Units (lb/kg): N/A 6. Shipping Name: N/A

TECHNICAL MANAGER DECISION (Check One) APPROVED DISAPPROVED Check if additional information is attached

If Disapproved, Explain: _____
If Approved, Continue. _____
Management Method(s) _____

Precautions, Conditions, or Limitations on Approval: _____

For Type A Wastes, Laboratory Analysis of a Representative Sample Was: Waived Attached
If waived, explain why: _____

List Non-WMI Facility that is Approved to Manage this Waste: _____ Date: _____

Tech. Mgr. Signature: _____ Name (Print): _____ Date: _____

MANAGEMENT FACILITY INFORMATION / DECISION

Proposed Management Facility: _____
Proposed Intermediate Transfer Facility: _____ 3. Transporter: _____

Management Facility Gen. Mgr. Decision (Check One) APPROVED DISAPPROVED

If Disapproved, Explain: _____
If Approved, List _____

Precautions, Conditions, or Limitations on Approval: _____

General Mgr. Signature: _____ Name (Print): _____ Date: _____

Turn Page and Complete Side 2 (If Type B Special Waste, only complete Part J of Side 2)



GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

PHYSICAL CHARACTERISTICS OF WASTE (See Instructions)

Color Varies	2. Does the waste have a strong incidental odor? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, if so, describe: _____	3. Physical State @ 70 F/21°C: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Powder <input type="checkbox"/> Other: _____	4. Layers <input checked="" type="checkbox"/> Multi-layered <input type="checkbox"/> Bi-layered <input type="checkbox"/> Single Phased	5. Specific Gravity Range <u>>1.0-</u>	6. Free Liquids: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Volume: <u>N/A</u> %
7. pH: <input type="checkbox"/> ≤2 <input type="checkbox"/> > 2-4 <input type="checkbox"/> 4-7 <input type="checkbox"/> 7 <input type="checkbox"/> 7-10 <input type="checkbox"/> 10- <12.5 <input type="checkbox"/> ≥12.5 <input checked="" type="checkbox"/> Range 5.05 <input type="checkbox"/> N/A to 8.25					
Flash Point: <input type="checkbox"/> None <input type="checkbox"/> <140°F/60°C <input checked="" type="checkbox"/> 140 - 199°F/60 - 93°C <input type="checkbox"/> ≥200°F/93°C <input checked="" type="checkbox"/> Closed Cup <input type="checkbox"/> Open Cup					

G. CHEMICAL COMPOSITION

	RANGE (MIN-MAX)		
See Attachment 1 -	-	%	2. Does the waste contain any of the following? (provide concentration if known): NO or LESS THAN or ACTUAL PCBs <input type="checkbox"/> < 50 ppm ND - <u>42</u> ppm Cyanides <input type="checkbox"/> < 30 ppm ND - <u>1.6</u> ppm Sulfides <input type="checkbox"/> < 500 ppm ND - <u>92</u> ppm ND = Non-detect
Analytical Data Results	-	%	
_____	-	%	
_____	-	%	
_____	-	%	
_____	-	%	
_____	-	%	
Total	_____	%	

Please note: Unless analytical results are attached, the chemical composition identification should include, at a minimum, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Pesticides, Herbicides, and any other TCLP constituents that may be present in the waste. The total composition must be greater than or equal to 100%. (0001% = 1 ppm or 1 mg/l)

Indicate method used to determine composition (if provided): TCLP Total Other: _____

H. SAMPLING SOURCE (e.g., Drum, Lagoon, Pit, Pond, Tank, Vat) Waste Trenches (Composite Sample)

REPRESENTATIVE SAMPLE CERTIFICATION

1. Print Sampler's Name: James Ruffing 2. Sample Date: June 25 to 28, 1996

3. Sampler's Title: Chemist

4. Sampler's Employer (if other than Generator): Foster Wheeler Environmental Corporation

The sampler's signature certifies that any sample submitted is representative of the waste described above pursuant to 40 CFR 261.20(c) or equivalent rules.

5. Sampler's Signature: *James M. Ruffing*

J. GENERATOR CERTIFICATION

By signing this profile sheet, the Generator certifies:

- This waste is not a "Hazardous Waste" as defined by USEPA or Canadian Federal regulation and/or the state/province.
- This waste does not contain regulated radioactive materials or regulated concentrations of PCB's (Polychlorinated Biphenyls).
- The unshaded portions of this sheet and the attachments contain true and accurate descriptions of the waste material. All relevant information regarding known or suspected hazards in the possession of the Generator has been disclosed.
- The Generator has read and understands the Contractor's Definition of Special Waste included in Part B.5. of the attached instructions form. All types and amounts of special wastes provided in incidental amounts have been identified in section B.6. of this form.
- The analytical data presented herein or attached hereto were derived from testing a representative sample taken in accordance with 40 CFR 261.20(c) or equivalent rules.
- If any changes occur in the character of the waste, the Generator shall notify the Contractor prior to providing the waste to the Contractor.

7. Signature: *Frederick George Trunza* 8. Title: *Public Works Officer*

9. Name (Type or Print): FREDERICK GEORGE TRUNZA 10. Date: 16 JUL 96

Date Prepared/Revised

July 11, 1996

Waste Code

920

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WASTE MANAGEMENT

Facility I.D. Number

100148

FORM U

REQUEST TO PROCESS OR DISPOSE OF RESIDUAL
WASTE

SEE INSTRUCTIONS BEFORE COMPLETING THIS FORM, In addition to this form, submit Form A.

I. GENERAL INFORMATION (must be completed by facility operator)

A. Processing or Disposal Facility

- 1. Name of facility G.R.O.W.S., Inc.
Address 1000 New Ford Mill Road Morrisville, PA Zip: 19067
Municipality Falls Township County Bucks
- 2. Solid waste permit number(s) for processing or disposal facility to be utilized
100148
- 3. Facility contact person
Name Amy Meacock Title Laboratory Manager
Telephone Number 215/736- 9475

B. Generator of the Waste

- 1. Name of company Naval Air Warfare Center, Aircraft Division - Warminster
Mailing address Street Road & Jacksonville Road Zip: 18974
Location of site if different from mailing address N/A
Municipality Warminster County Bucks
- 2. If a subsidiary, name of parent co. US Navy
- 3. Identification number

P	A	6	1	7	0	0	2	4	5	4	5		
---	---	---	---	---	---	---	---	---	---	---	---	--	--
- 4. Company contact person
Name Frank Kurdziel (mail stop 14) Title Environmental Engineer
Telephone Number (215) 441-7118

101494

July 11, 1996
Waste Code
920

FORM U

REQUEST TO PROCESS OR DISPOSE OF RESIDUAL WASTE

SEE INSTRUCTIONS BEFORE COMPLETING THIS FORM, In addition to this form, submit Form A.

I. GENERAL INFORMATION (must be completed by facility operator)

A. Processing or Disposal Facility

- Name of facility Tullytown Resource Recovery Facility
Address 200 Bordentown Road, Tullytown, PA Zip: 19007
Municipality Borough of Tullytown County Bucks
- Solid waste permit number(s) for processing or disposal facility to be utilized
101494
- Facility contact person
Name Amy Meacock Title Laboratory Manager
Telephone Number 215/736- 9475

B. Generator of the Waste

- Name of company Naval Air Warfare Center, Aircraft Division - Warminster
Mailing address Street Road & Jacksonville Road Zip: 18974
Location of site if different from mailing address N/A
Municipality Warminster County Bucks
- If a subsidiary, name of parent co. US Navy
- Identification number

P	A	6	1	7	0	0	2	4	5	4	5		
---	---	---	---	---	---	---	---	---	---	---	---	--	--
- Company contact person
Name Frank Kurdziel (mail stop 14) Title Environmental Engineer
Telephone Number (215) 441-7118

Waste Code

920

II. WASTE DESCRIPTION (Must be completed by generator)

A. General Properties

1. pH range 5.05 to 8.25 (based on analyses or knowledge)

2. Physical state:

- a. liquid waste (EPA Method 9095)
- b. solid (EPA Method 9095)
- c. gas (ambient temperature and pressure)

3. Physical appearance:

Color Varies

Number of solid or liquid phases or separation Three Solid layers

Describe each phase of separation.

A. Layers 1 and 3 consist of contaminated soil

B. Layer 2 is a mixture of contaminated soil and non-hazardous solid waste.

4. Maximum volume of waste to be shipped to processing or disposal facility on a monthly basis:

8,000 (one time) (cubic yards) gallons, pounds, or tons (circle one)

5. Processing or disposal frequency: N/A times per year; one time

6. Current volume of waste to be shipped to processing or disposal facility: 8,000 (cubic yards) gallons, pounds, or tons (circle one)

7. Is the waste a hazardous waste as defined in 25 Pa. Code 261 and/or 40 CFR 261
 Yes No

a. If yes, is the hazardous waste generated by a conditionally exempt small quantity generator as defined in 40 CFR 261.5? Yes No N/A

b. If yes, list the appropriate hazardous waste number (s): N/A

c. If yes, describe the hazardous waste. N/A

8. Has the waste been delisted as a hazardous waste by DER? Yes No N/A.

9. a. Has the waste been accepted for disposal/processing at another Pennsylvania facility? Yes No

b. If yes, list the facility ID number(s).

July 11, 1996

FORM U

Waste Code
920

10. a. Has an application for disposal/processing of the waste at another Pennsylvania facility been submitted? Yes No

b. If yes, list the facility ID number(s) 100148 & 101494

B. Chemical Analysis - Please attach the following:

1. The results of a detailed physical and chemical characterization of the waste and its leachate, as described in the instructions.
See Attachment 1 - Analytical Data Results
2. A description of the waste sampling method, in accordance with the waste sampling plan as required in §271.611(a)(3) or §287.132(a)(3).
See Attachment 2 - Work Plan
3. Provide a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis, if applicable.

N/A

C. Process Description and Schematic - Please attach the following:

1. A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions.
See Attachment 3 - Background Summary
2. A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions.
See Above
3. The substantiation for a confidentiality claim, as described in the instructions, if portions of the information you have submitted are confidential.

N/A

III. EVALUATION WITH WASTE ANALYSIS AND CLASSIFICATION PLAN (must be completed by facility operator) THIS APPLICATION SATISFIES THE REQUIREMENTS OF THE FORM R MAJOR PERMIT AMENDMENT ISSUED 12/27/93.

IV. PROPOSED PROCESSING, STORAGE, AND/OR DISPOSAL METHOD (must be completed by facility operator. Use additional sheets if necessary. Check box marked "N/A" if not applicable.)

A. Proposed Processing method - N/A

B. Proposed Storage Method and Length of Storage - N/A

C. Proposed Disposal Method - N/A

Co-disposal with Municipal and Residual Solid Waste Material on Double-lined Areas of the Landfill.

July 11, 1996

Waste Code

920

FORM U

100148

V. SOURCE REDUCTION STRATEGY (Form 25R must be completed by generator and attached to this application unless waived in the instructions to that form)

See VI.A.

VI. ALTERNATIVE TO PROPOSED PROCESSING AND/OR DISPOSAL METHODS (must be provided by generator. Use additional sheets, if necessary.)

A. What other processing, disposal, recycling, reuse, or reclamation methods can be used? Briefly describe alternatives to your proposal.

None, as directed by Action Memorandum the contaminated soils and burried waste will be disposed of without treatment at a municipal waste landfill.

B. Why was the processing and/or disposal method in Section IV chosen?

See VI.A.

VII. CERTIFICATION OF DOCUMENTS BY GENERATOR

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Name of Responsible Official

FREDERICK GEORGE TRUMMER

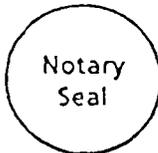
Title PUBLIC WORKS OFFICER

Signature

Fredrick George Trummer

Date 16 Jul 96

Taken, sworn, and subscribed before me, this



16 day of July, A.D. 1996
Jill Tangye

NOTARIAL SEAL
JILL L. TANGYE, Notary Public
Warminster Twp., Bucks County
My Commission Expires Dec. 2, 1999

July 11, 1996

FORM U

101494

Waste Code
920

V. SOURCE REDUCTION STRATEGY (Form 25R must be completed by generator and attached to this application unless waived in the instructions to that form)

See VI.A.

VI. ALTERNATIVE TO PROPOSED PROCESSING AND/OR DISPOSAL METHODS (must be provided by generator. Use additional sheets, if necessary.)

A. What other processing, disposal, recycling, reuse, or reclamation methods can be used? Briefly describe alternatives to your proposal.

None, as directed by Action Memorandum the contaminated soils and buried waste will be disposed of without treatment at a municipal waste landfill.

B. Why was the processing and/or disposal method in Section IV chosen?

See VI.A.

VII. CERTIFICATION OF DOCUMENTS BY GENERATOR

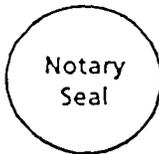
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Name of Responsible

Official FREDERICK GEORGE THUMMER Title PUBLIC WORKS OFFICER

Signature Fredrick George Thummer Date 16 Jul 96

Taken, sworn, and subscribed before me, this



16 day of July A.D. 19 96
Jill Tangye

NOTARIAL SEAL
JILL L. TANGYE, Notary Public
Warrinster Twp., Bucks County
My Commission Expires Dec. 2, 1999



PCB CERTIFICATION

I, FRANK J KURDZIEL JR. (customer representative) certify to Tullytown Resource Recovery Facility (WM Facility) that within my company I would have knowledge concerning the accuracy of the following representations and that the following representations are correct to the best of my knowledge.

CHECK THIS SECTION if customer has "historic" contamination, and cannot attribute the contamination to any particular source:

- (1) I am unable to locate any records which indicate that a spill of PCBs occurred subsequent to February 17, 1978 which could have contaminated the material accompanying this certification.
- (2) Any polychlorinated biphenyls (PCBs) detected in the material accompanying this certification resulted from a spill of PCBs that occurred prior to February 17, 1978.

CHECK THIS SECTION when spill occurred after February 17, 1978 and the customer has records or knowledge that the contaminant source has concentrations below 50 ppm. You should also have any pertinent sampling data attached to this certification:

- The materials accompanying this certification have a concentration of polychlorinated biphenyls (PCBs) below 50 ppm.
- The source of the PCB contamination was sampled and found to have a PCB concentration below 50 ppm, and was the result of a spill which occurred on or about _____ (date).

Frank Kurdziel Jr.
Customer Signature Date

Naval Air Warfare Center
Aircraft Division - Warminster
Company Name

FRANK J KURDZIEL JR.
Printed Name



Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
July 19, 1996

Southeast Regional Office

610-832-6212
Fax 610-832-6143

Ms. Amy Meacock
Laboratory Manager
Tullytown Resource Recovery Facility
200 Bordentown Road
Tullytown, PA 19007

Re: Tullytown Landfill
Form U application
July 19, 1996
No. T-0320
Naval Air Warfare Center

Dear Mr. Heffner:

The following Form U Application for the disposal of 12,000 tons of contaminated soil and debris on a one-time basis has been reviewed by the Department's Waste Management Program and is approved pursuant to your approved Waste Analysis Plan and permit conditions:

No. T-0329, Naval Air Warfare Center, Aircraft Division, Bucks County, disposal of 12,000 tons of contaminated soil and debris on a one-time basis.

If you have any questions concerning this matter, please feel free to contact Roger Savage, Environmental Chemist, at the above number.

Sincerely,

James Wentzel, P. E.
Chief, Engineering Services Section
Waste Management Program

cc: F. Kurdziel, Naval Air Warfare Center
L. Lursk
J. Pagano
R. Savage
Re 30 (RN)201-22





Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
September 19, 1996

Southeast Regional Office

610-832-6212
Fax 610-832-6143

Mr. Donald Demkovitz
Technical Services Manager
Geological Reclamation Operations and
Waste Systems, Inc.
1000 New Ford Mill Road
Morrisville, PA 19067

Re: GROWS Landfill
Form U, Request for volume increase
September 13, 1996
No. G-0756
Naval Air Warfare Center

Dear Mr. Demkovitz:

The Department's Waste Management Program has reviewed your request for a volume increase from 12000 tons to 19500 tons of contaminated soil and debris generated by the Naval Air Warfare Center located in Warminster Township, Bucks County. Your request is approved pursuant to your approved Waste Analysis Plan and permit conditions.

If you have any questions concerning this matter, please feel free to contact Roger Savage, Environmental Chemist, at the above number.

Sincerely,

Lawrence H. Lusk
Facilities Manager
Waste Management Program

cc: R. France
R. Savage
Re 30 (DF)263-4





Pennsylvania Dep

Post-It Fax Note

To: <i>Sh...</i>	From: <i>LAB</i>
Co./Dept.	Co.
Phone #	Phone #
Fax #	Fax #

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
October 22, 1996

theast Regional Office

610-832-6212

Fax 610-832-6143

Don Demkovitz
Technical Services Manager
Ecological Reclamation Operations and Waste Systems, Inc.
10 New Ford Mill Road
Plymouthville, PA 19067

Re: GROWS Landfill
Form U, Request for volume increase
October 8, 1996
No. G-0756
Naval Air Warfare Center

Dear Mr. Demkovitz:

The Department's Waste Management Program has reviewed your request for a volume increase from 19500 tons to 21000 tons of contaminated soil and debris generated by the Naval Air Warfare Center located in Warminster Township, Bucks County. Your request is approved pursuant to your approved Waste Analysis Plan and permit conditions.

If you have any questions concerning this matter, please feel free to contact Roger Savage, Environmental Chemist, at the above number.

Sincerely,

Lawrence H. Lusk
Facilities Manager
Waste Management Program

R. France
R. Savage
Re 30 (RN)296-6

Rec. D & 11-13-96**Pennsylvania Department of Environmental Protection**

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
November 8, 1996

Southeast Regional Office

610-832-6212
Fax 610-832-6143

Mr Don Demkovitz
Technical Services Manager
Geological Reclamation Operations and Waste Systems, Inc.
1000 New Ford Mill Road
Morrisville, PA 19067

Re: GROWS Landfill
Form U, Request for volume increase
November 4, 1996
No. G-0756
Naval Air Warfare Center

Dear Mr. Demkovitz:

The Department's Waste Management Program has reviewed your request for a volume increase from 21000 tons to 22400 tons of contaminated soil and debris generated by the Naval Air Warfare Center located in Warminster Township, Bucks County. Your request is approved pursuant to your approved Waste Analysis Plan and permit conditions.

If you have any questions concerning this matter, please feel free to contact Roger Savage, Environmental Chemist, at the above number.

Sincerely,

Lawrence H. Lusk
Facilities Manager
Waste Management Program

cc: J. Pagano
R. Savage





Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19328
December 18, 1996

Southeast Regional Office

610-832-6212
Fax 610-832-6143

Ms. Amy Meacock
Laboratory Manager
Geological Reclamation Operations and Waste Systems, Inc.
1000 New Ford Mill Road
Morrisville, PA 19067

Re: GROWS Landfill
Form U, Request for Volume Increase
December 16, 1996
No. G-0756
Naval Air Warfare Center

Dear Ms. Meacock:

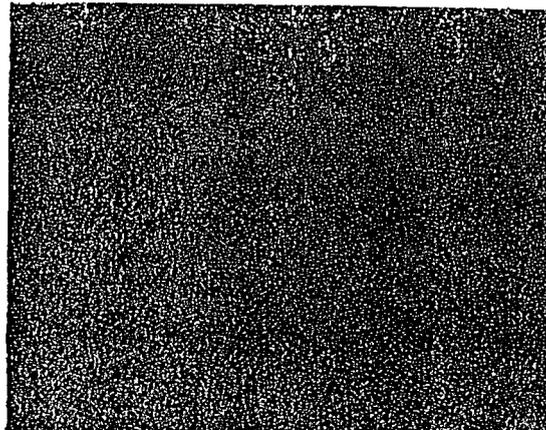
The Department's Waste Management Program has reviewed your request for a volume increase from 22,400 tons to 25,460 tons of contaminated soil and debris generated by the Naval Air Warfare Center located in Warrminster Township, Bucks County. Your request is approved pursuant to your approved Waste Analysis Plan and permit conditions.

If you have any questions concerning this matter, please feel free to contact Roger Savage, Environmental Chemist, at the above number.

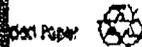
Sincerely,

Lawrence H. Lusk
Facilities Manager
Waste Management

cc: Mr. Pagano
Mr. Savage
Re 30 (GJC)353-5



An Equal Opportunity/Affirmative Action Employer





Geological Reclamation Operations and Waste Systems, Inc.
1000 New Ford Mill Road
Morrisville, Pennsylvania 19067
Administrative Offices: 215/736-9400
Site: 215/736-9540

June 20, 1997

Foster Wheeler Environmental Corporation
2300 Lincoln Highway East
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047-1829
Attn: Mr. Carl Dannenberger, CHMM

Re: NAWC Warminster, PA
Profile Number: WMNA303141
Application #: G-756

Dear Mr. Dannenberger:

In accordance with the G.R.O.W.S., Inc. Waste Acceptance Plan Permit(Form R), the above referenced waste stream is approved for disposal effective June 16, 1997. This specific approval is for an additional 2000 tons of waste material requested via my May 23, 1997 correspondence to PaDEP.

Please contact me if you have any questions regarding this matter at 215/736-9400.

Sincerely,

Don Demkovitz
Manager Technical Services

REVISED
TOTAL 27,460 TONS

ATTACHMENT C

WASTE PROFILE SHIPMENT REPORT
(NON-HAZARDOUS)



AETS/CWM



TO: Carl Dannenberger- Foster Wheeler Env. Corp.

FROM: Karen Ockford *KO*

SUBJECT: Detail summary report for profile 303141

DATE: October 10, 1997

Carl, please find a copy of the detail summary report year to date for profile #303141. The total amount shipped from 5/14/97- 10/03/97 was 3648.53 tons.



G.R.O.W.S., INC.

PROFILE REPORT
 01/01/97 TO 10/03/97
 PROFILE: 303141
 DETAIL: Y

TICKET	MANIFEST	DATE	CUYD	TONS
303141	NAVAL AIR STATION	CONTAMINATED SOIL		
840561	09843	05/13/97	0.00	18.23
840645	09846	05/16/97	0.00	17.32
840646	09845	05/16/97	0.00	21.37
840647	09844	05/16/97	0.00	22.95
840666	09847	05/16/97	0.00	15.94
841281	09878	05/19/97	0.00	17.81
841292	09849	05/19/97	0.00	20.94
841351	09816	05/19/97	0.00	23.19
841359	09820	05/19/97	0.00	20.59
841371	09822	05/19/97	0.00	20.57
841373	09821	05/19/97	0.00	22.66
841374	09819	05/19/97	0.00	21.83
841381	09818	05/19/97	0.00	21.26
841382	09824	05/19/97	0.00	19.91
841389	09876	05/19/97	0.00	20.23
841397	09823	05/19/97	0.00	18.37
841455	09817	05/19/97	0.00	18.20
841466	13194	05/19/97	0.00	18.16
841474	13195	05/19/97	0.00	15.06
841480	13196	05/19/97	0.00	17.74
841487	13198	05/19/97	0.00	14.59
841493	13197	05/19/97	0.00	17.28
841538	13200	05/19/97	0.00	20.01
841542	13201	05/19/97	0.00	17.09
841579	13199	05/19/97	0.00	17.47
841605	09804	05/19/97	0.00	17.94
841606	09806	05/19/97	0.00	18.24
841607	09803	05/19/97	0.00	20.07
841608	09805	05/19/97	0.00	16.70
841694	09807	05/20/97	0.00	17.53
841748	09808	05/20/97	0.00	19.87
841764	09809	05/20/97	0.00	24.10
841772	13193	05/20/97	0.00	17.89
841775	13192	05/20/97	0.00	19.89
841784	09810	05/20/97	0.00	17.63
841795	09812	05/20/97	0.00	16.70
841799	09813	05/20/97	0.00	16.73
841800	09811	05/20/97	0.00	21.47
841808	09814	05/20/97	0.00	18.04
841859	13176	05/20/97	0.00	18.44
841866	13177	05/20/97	0.00	17.29
841878	13178	05/20/97	0.00	19.29
841881	13179	05/20/97	0.00	20.18
841889	13181	05/20/97	0.00	12.83



G.R.O.W.S., INC.

PROFILE REPORT
01/01/97 TO 10/03/97
PROFILE: 303141
DETAIL: Y

TICKET	MANIFEST	DATE	CUYD	TONS
303141	NAVAL AIR STATION	CONTAMINATED SOIL		
841893	13180	05/20/97	0.00	17.34
841906	13182	05/20/97	0.00	19.06
841907	13183	05/20/97	0.00	17.12
841910	13184	05/20/97	0.00	16.96
841911	13185	05/20/97	0.00	14.34
841921	13186	05/20/97	0.00	15.51
841970	13187	05/20/97	0.00	17.24
841978	13188	05/20/97	0.00	18.61
841994	13189	05/20/97	0.00	17.78
842004	13190	05/20/97	0.00	18.70
842017	13214	05/20/97	0.00	16.13
842018	13213	05/20/97	0.00	14.53
842020	13191	05/20/97	0.00	17.13
842023	13212	05/20/97	0.00	22.19
842024	13211	05/20/97	0.00	17.07
842029	13209	05/20/97	0.00	17.49
842177	13210	05/21/97	0.00	17.03
842188	13202	05/21/97	0.00	19.46
842195	13208	05/21/97	0.00	16.67
842203	13207	05/21/97	0.00	17.11
842210	13206	05/21/97	0.00	14.64
842212	13203	05/21/97	0.00	18.32
842220	13205	05/21/97	0.00	16.95
842230	13204	05/21/97	0.00	18.96
842312	13215	05/21/97	0.00	18.98
842323	12700	05/21/97	0.00	21.41
842330	12701	05/21/97	0.00	19.33
842333	12702	05/21/97	0.00	19.20
842342	13229	05/21/97	0.00	18.48
842343	13228	05/21/97	0.00	16.07
842349	13226	05/21/97	0.00	19.47
842432	13225	05/21/97	0.00	21.77
842438	13224	05/21/97	0.00	19.66
842440	13227	05/21/97	0.00	18.58
842447	13223	05/21/97	0.00	19.96
842460	13222	05/21/97	0.00	21.23
842473	13220	05/21/97	0.00	22.20
842477	13221	05/21/97	0.00	18.91
842637	13219	05/22/97	0.00	18.32
842639	13218	05/22/97	0.00	17.76
842646	13216	05/22/97	0.00	17.37
842662	13217	05/22/97	0.00	19.04
842663	13230	05/22/97	0.00	20.05
842670	13231	05/22/97	0.00	17.93



G.R.O.W.S., INC.

PROFILE REPORT
01/01/97 TO 10/03/97
PROFILE: 303141
DETAIL: Y

TICKET	MANIFEST	DATE	CUYD	TONS
303141	NAVAL AIR STATION	CONTAMINATED SOIL		
842702	13232	05/22/97	0.00	17.68
842726	13234	05/22/97	0.00	19.30
842742	13233	05/22/97	0.00	17.48
842791	13235	05/22/97	0.00	22.70
842838	13236	05/22/97	0.00	20.54
842864	13237	05/22/97	0.00	14.67
842901	13239	05/22/97	0.00	18.42
842908	13240	05/22/97	0.00	20.74
842995	13238	05/23/97	0.00	18.16
843757	13300	05/27/97	0.00	20.85
844189	13299	05/28/97	0.00	18.42
844204	13296	05/28/97	0.00	17.64
844205	13297	05/28/97	0.00	14.81
844225	13298	05/28/97	0.00	19.50
844232	13295	05/28/97	0.00	20.55
844318	13294	05/28/97	0.00	20.75
844333	13270	05/28/97	0.00	17.62
844334	13269	05/28/97	0.00	17.14
844353	13289	05/28/97	0.00	20.91
844387	13293	05/28/97	0.00	20.28
844459	13292	05/28/97	0.00	21.49
844469	13291	05/28/97	0.00	22.00
844581	13278	05/29/97	0.00	18.01
844582	13277	05/29/97	0.00	20.93
844583	13290	05/29/97	0.00	17.64
844697	13276	05/29/97	0.00	20.80
844716	13272	05/29/97	0.00	18.92
844744	13273	05/29/97	0.00	20.81
844836	12690	05/29/97	0.00	22.33
844863	12691	05/29/97	0.00	22.12
853222	16249	06/23/97	0.00	17.19
853228	16248	06/23/97	0.00	20.73
853335	16251	06/23/97	0.00	17.64
853337	16250	06/23/97	0.00	14.23
853497	16272	06/24/97	0.00	17.24
853498	16270	06/24/97	0.00	19.80
853608	16273	06/24/97	0.00	20.25
853715	16274	06/24/97	0.00	4.51
862594	14920	07/22/97	0.00	15.94
862595	14065	07/22/97	0.00	12.49
862733	16271	07/22/97	0.00	4.89
867256	14064	08/06/97	0.00	20.56
867258	14066	08/06/97	0.00	18.83
867555	14068	08/06/97	0.00	18.68



G.R.O.W.S., INC.

PROFILE REPORT
01/01/97 TO 10/03/97
PROFILE: 303141
DETAIL: Y

TICKET	MANIFEST	DATE	CUYD	TONS
303141	NAVAL AIR STATION	CONTAMINATED SOIL		
867356	14072	08/06/97	0.00	16.51
867732	14073	08/07/97	0.00	20.34
867733	14074	08/07/97	0.00	13.72
868007	14076	08/07/97	0.00	16.85
868008	14075	08/07/97	0.00	12.06
868190	14078	08/08/97	0.00	16.63
868192	14077	08/08/97	0.00	20.26
868387	14067	08/08/97	0.00	13.89
868388	14079	08/08/97	0.00	18.97
868772	21326	08/11/97	0.00	20.62
869262	21325	08/12/97	0.00	24.70
869505	21324	08/12/97	0.00	12.39
869734	21322	08/13/97	0.00	21.57
869735	21323	08/13/97	0.00	20.47
869979	12668	08/13/97	0.00	23.71
869982	14921	08/13/97	0.00	10.48
871118	12669	08/18/97	0.00	14.40
875409	12670	08/28/97	0.00	11.96
887416	09529	10/03/97	0.00	20.93
887417	09528	10/03/97	0.00	19.46
PROFILE TRANS:		196	0.00	3648.53
TRANSACTIONS:	196			
TOTAL CUYDS:	0.00			
TOTAL TONS:	3648.53			



ATTACHMENT D

GENERATORS WASTE PROFILE SHEET
(PCB)
FACILITY APPROVAL



Chemical Waste Management, Inc. BZ 4398

Profile #

WASTE PROFILE

(Please carefully read the instructions before completing this form)

TSDF requested _____

Technology requested M132

Sales # _____

Check here if this is a Recertification

Check here if a Certificate of Destruction or Disposal is required

GENERAL INFORMATION OIC

- X 1. GENERATOR NAME: Caretaker Site Office Generator USEPA ID: PA6170024545
- X 2. Generator Address: P.O. Box 2609 Billing Address: Same AETS
Warminster, PA 18974-0061 3100 HEDLEY ST
- 3. Technical Contact/Phone: DAVE HEDGER (AETS) 215-289-3700 Phila. PA 19137
- 4. Alternate Contact/Phone: TIM ZIEGLER 215-289-3700 Billing Contact/Phone: ACCTS PAYABLE

PROPERTIES AND COMPOSITION

- 5. A. Process Generating Waste: Site Cleanup / REMEDIATION
- B. Is the waste from a CERCLA or state mandated cleanup? Yes No Location name: _____
- 6. Waste Name: Soil with PCB
- 7. A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes No
- B. If D001, D002, D012- D043 do any underlying hazardous constituents (UHC's) apply? Yes No (If yes, attach UHC form)
- C. Does this waste contain debris (List size and type in chemical composition)? Yes No
- D. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): NONE PCB 2

- 8. Physical State @ 70°F: A. Solid Liquid Both Gas B. Single Layer Multilayer C. Free liquid range 0 to 0 %
- 9. A. pH: Range _____ to _____ or Not applicable B. Strong Odor describe _____
- 10. Liquid Flash Point: < 73°F 73-99°F 100-139°F 140-199°F ≥ 200°F N.A.

11. CHEMICAL COMPOSITION: List ALL constituents (including halogenated organics and UHC's) present in any concentration and forward available analysis

Constituents	Range	Units	Constituents	Range	Units
<u>Soil with 7.50 but</u>	<u>100</u>	<u>ppm</u>			
<u>< 500 ppm PCB</u>					

TOTAL COMPOSITION MUST EQUAL OR EXCEED 100%

- 12. OTHER: PCBs if yes, concentration 50-500 ppm, PCBs regulated by 40 CFR 761 Pyrophoric Explosive Radioactive
Water Reactive Shock Sensitive Oxidizer Carcinogen Infectious Other _____
- 13. If Benzene, concentration _____ ppm. Is the waste subject to the Benzene Waste Operations NESHAP? Yes No Unknown
- 14. Is the waste subject to RCRA subpart CC controls? Yes No Volatile organic concentration, if known _____ ppmw.
- 15. If the waste is subject to the land ban and meets the treatment standards, check here: _____ and supply analytical results where applicable.

SHIPPING INFORMATION

- 16. PACKAGING: Bulk Solid Type/Size: Roll off Bulk Liquid Type/Size: _____ Drum Type/Size: _____ Other _____
- 17. SHIPPING FREQUENCY: Units 3 Per: Month Qtr. Year One Time Other _____

SAMPLING INFORMATION

- 18. A. Sample source (drum, lagoon, pond, tank, vat, etc.) _____
Date Sampled: _____ Sampler's Name/Company: _____
- 18. B. Generator's Agent Supervising Sampling: _____ 19. No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261. Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification. If this certification is made by a broker, the undersigned signs as authorized agent of the generator and has confirmed the information contained in this Profile Sheet from information provided by the generator and additional information as it has determined to be reasonably necessary.

Michael Hunter
Signature Printed (or typed) name and title Environmental Engineer 21 Jul 97 Date

18. Check ONE: This Waste is a _____ Wastewater Nonwastewater.
19. If this waste is subject to any California list restrictions enter the letter from below (either A or B.2) next to each restriction that is applicable:
 _____ HOCs, _____ PCBs, _____ Acid, _____ Metals, _____ Cyanides
20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION - IF NOT APPLICABLE, _____ SIMPLY CHECK NONE		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? ENTER THE LETTER FROM BELOW
				PERFORMANCE-BASED: CHECK AS APPLICABLE		SPECIFIED TECHNOLOGY: IF APPLICABLE ENTER THE 40 CFR 268 42 TABLE 1 TREATMENT CODE(S)	
				DESCRIPTION	NONE	268 41(a)	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

To list additional USEPA waste numbers and categories use additional page and check here: _____

Management under the land disposal restrictions:

- A. RESTRICTED WASTE REQUIRES TREATMENT
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
- B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

21. Is this waste a soil and/or debris? No: _____ Yes, Soil: Yes, Debris: _____ Yes, Both: _____

22. Specific Gravity Range: 1.2 to 1.5

23. Indicate the range of each: _____ Units _____

Cyanides: _____ to _____ None Type (free, total, amenable, etc.) _____

Cyanides: _____ to _____ None Type (free, total, amenable, etc.) _____

Sulfides: _____ to _____ None Type _____

Optional Phenolics: _____ to _____ None

24. Identify the waste color brown and physical appearance solid



31. OTHER HAZARDOUS CONSTITUENTS indicate if the waste contains any of the following.

METALS	TCLP Data: Check only ONE for each constituent Use units; ppm, mg/l					TCA or TOTAL Use units: ppm, mg/l, mg/kg or percent			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	California List			Actual
						Less Than	Regulated Level	Equal or More	
Arsenic as As	✓	5.0 mg/l		D004			500 mg/l		
Barium as Ba	✓	100.0 mg/l		D005					
Cadmium as Cd	✓	1.0 mg/l		D006			100 mg/l		
Chromium (Total) as Cr	✓	5.0 mg/l		D007					
Lead as Pb	✓	5.0 mg/l		D008			500 mg/l		
Mercury as Hg	✓	0.2 mg/l		D009			20 mg/l		
Selenium as Se	✓	1.0 mg/l		D010			100 mg/l		
Silver as Ag	✓	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl.							130 mg/l		
Chromium (hexavalent) as Cr + 6							500 mg/l		
Antimony As Sb									
Beryllium as Be									
Copper as Cu									
Vanadium as V									
Zinc as Zn									



July 29, 1997

Mr. Carl Dannenberger
Foster Wheeler Environmental
One Oxford Valley
Suite 200
Langhorne, PA 19047

Subject: U S Navy Contract No. N62472-94-D-0398
Remediation Action Contract (RAC) - Delivery Order 0018
Naval Air Warfare Center, Warminster, PA
Basic Ordering Agreement No. 9000-95S-3246

Dear Carl:

On Friday, July 25, 1997, I spoke with Jim Callahan of CWM Chemical Services, Model City, New York in reference to the status of profile BZ4398 for the PCB soil in rolloff boxes RO3 and RO4. He informed me that this profile was approved both by the site and the state and we could ship the PCB soil any time after July 25, 1997.

Should you have further questions, please contact me at (215) 289-3700.

Sincerely,

Dave Ledger
Technical Service Representative

DL/co

ledger/fostwhe.729

ATTACHMENT E
CERTIFICATES OF DISPOSAL
(PCB)



AETS/CWM



TO: Carl Dannenberger-Foster Wheeler Environmental
FROM: Karen Ockford *KO*
SUBJECT: Certificates of Disposal
DATE: August 5, 1997

The following are copies of Certificate of Disposal from the PCB soil shipped from the Naval Air Development Center on July 31, 1997.





Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Belmar Rd.
P.O. Box 200
Madison City, N. Y. 14107

Federal EPA ID: NYD049836679

DRMO-NAVAL AIR DEVELOPMENT CTR
ATTN: C/O CARETAKER SITE OFFICE
PA6170024545
P.O. BOX 2609
WARMINSTER PA 18974

CERTIFICATE OF DISPOSAL

CWM Chemical Services, Inc. has received waste material from DRMO-NAVAL AIR DEVELOPMENT CTR on 07/31/97 as described on Hazardous Waste Manifest number NYB8777862 Sequence number 01. CWM Chemical Services, Inc., hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: BZ4398
CWM Tracking ID: 8147039101
CWM Unit #: 1*0
Disposal Date: 07/31/97

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Jill Knickerbocker

JILL KNICKERBOCKER
TECHNICAL MANAGER
Certificate # 89544
08/04/97

For questions please call
our Customer Service Dept.
at (800) 843-3604





Waste Management, Inc.

CWM Chemical Services, Inc. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

Federal EPA ID: NYD049836679

DRMO-NAVAL AIR DEVELOPMENT CTR
ATTN: C/O CARETAKER SITE OFFICE
PA6170024545
P.O. BOX 2609
WARMINSTER PA 18974

CERTIFICATE OF DISPOSAL

CWM Chemical Services, Inc. has received waste material from DRMO-NAVAL AIR DEVELOPMENT CTR on 07/31/97 as described on Hazardous Waste Manifest number NYB8778447 Sequence number 01. CWM Chemical Services, Inc., hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: BZ4398
CWM Tracking ID: 8147039201
CWM Unit #: 1*0
Disposal Date: 07/31/97

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for th persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Jill Knickerbocker

JILL KNICKERBOCKER
TECHNICAL MANAGER
Certificate # 89545
08/04/97

For questions please call
our Customer Service Dept.
at (800) 843-3604





AETS/CWM



TO: Carl Dannenberger - Foster Wheeler Environmental
FROM: Karen Ockford *KO*
SUBJECT: Certificate of Disposal
DATE: September 9, 1997

The following is a copy of the Certificate of Disposal from the PCB soil shipped to Model City on 8/7/97 It was delivered on 8/8/97

karen/carole/foster 909



**Waste Management, Inc.**

CWM Chemical Services, Inc.
1550 Balmer Rd.
P.O. Box 200
Model City, N. Y. 14107

Phone 716/754-8231

Federal EPA ID: NYD049836679

DRMO-NAVAL AIR DEVELOPMENT CTR
ATTN: C/O CARETAKER SITE OFFICE
PA6170024545
P.O. BOX 2609
WARMINSTER PA 18974

CERTIFICATE OF DISPOSAL

CWM Chemical Services, Inc. has received waste material from DRMO-NAVAL AIR DEVELOPMENT CTR on 08/08/97 as described on Hazardous Waste Manifest number NYB8778627 Sequence number 01. CWM Chemical Services, Inc., hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: BZ4398
CWM Tracking ID: 8147089201
CWM Unit #: 1*0
Disposal Date: 08/08/97

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Jim Knickerbocker

JIM KNICKERBOCKER
TECHNICAL MANAGER
Certificate # 90220
08/11/97

For questions please call
our Customer Service Dept.
at (800) 843-3604

ATTACHMENT F
PERIMETER AIR SAMPLING RESULTS SUMMARY

ATTACHMENT F
PERIMETER AIR SAMPLING RESULTS FOR LEAD AND CHROMIUM
NAWC WARMINSTER - SITE 6

Station	Sampling Date	TSP	Lead	Chromium
1	May 15-16, 1997	49.0	ND	ND
2		31.3	ND	ND
3		43.3	ND	ND
4		26.9	ND	ND
5		42.8	ND	ND
1	May 19-20, 1997	77.5	ND	ND
2		44.7	ND	ND
3		31.5	ND	ND
4		16.3	ND	ND
5		67.8	ND	ND
Blank		ND	ND	ND
1	June 9-10, 1997	19.1	0.76 (5.5 ug)	ND
2		41.0	0.99 (7.1 ug)	ND
3		12.0	0.57 (4.1 ug)	ND
4		44.2	0.38 (2.7 ug)	ND
5		50.5	0.70 (5.0 ug)	ND
Blank		ND	(4.3 ug)	ND

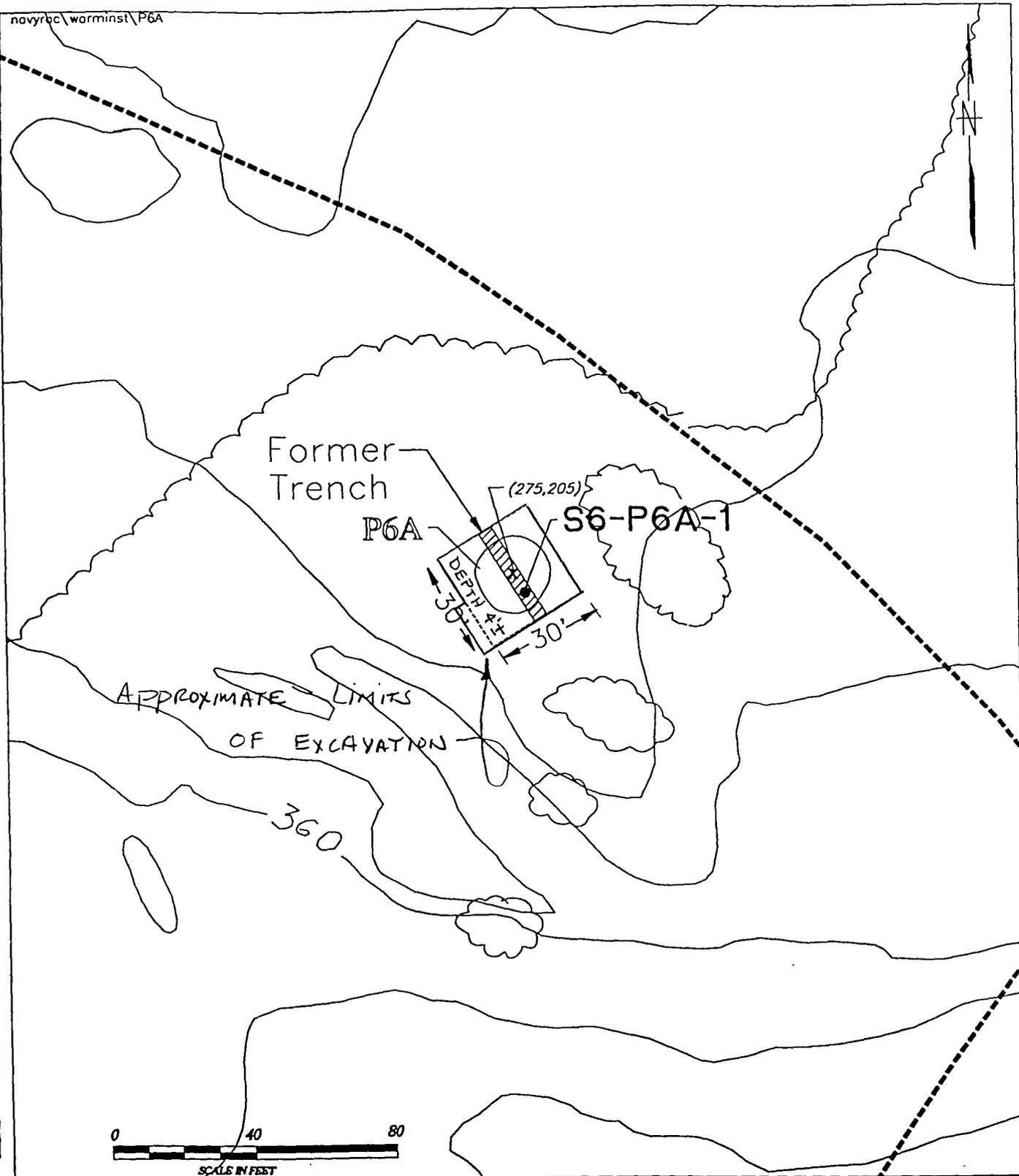
1. All tabled detected amount in micrograms per cubic meter unless otherwise noted.
2. ND denotes non-detect.
3. PADEP and USEPA 24-hour Standard for Particulate Material is 150 ug/m³
4. Permissible Exposure Limit (PEL) for lead in air is 50 ug/m³ for an 8-hour period.

ATTACHMENT G
PERSONNEL SAMPLING RESULTS SUMMARY

ATTACHMENT G
PERSONNEL SAMPLING RESULTS FOR BERYLLIUM AND CADMIUM
NAWC WARMINSTER - SITE 6

SAMPLE NUMBER	DATE SAMPLED	EMPLOYEE NAME	ACTIVITY	TWA RESULT in mg/m³ (lead)	TWA RESULT in mg/m³ (chromium)
5.14.97.01	5/14/97	Bruce Reid	Operating excavator during excavation of P6-A and TR-6E	<.0003	<.00005
5.14.97.02	5/14/97	David Dougherty	Health and safety monitoring of excavation of P6-A and TR-6E	<.0003	<.00005
5.15.97.01	5/15/97	David Dougherty	Health and safety monitoring of excavation of TR-6E and P6-F	<.0003	<.00005
5.15.97.02	5/15/97	Bruce Reid	Operating excavator during excavation of TR-6E and P6-F	<.0003	<.00005
5.19.97.01	5/19/97	Bruce Reid	Operating excavator during excavation of P6-F	<.0003	<.00005
5.19.97.02	5/19/97	David Dougherty	Health and Safety monitoring at excavation of P6-F	<.0003	.00010
5.21.97.01	5/21/97	Bruce Reid	Operating excavator during excavation of P6-F	<.0003	.00011
5.21.97.02	5/21/97	David Dougherty	Health and safety monitoring of excavation at P6-F	<.0003	<.00005
6.23.97.01	6/23/97	Bruce Reid	Excavation in Area P6-F	.0003	.0002
7.09.97.01	7/09/97	David Dougherty	Excavating in TR6-E	<.0003	<.00005

ATTACHMENT H
FINAL EXCAVATION LIMITS



LEGEND:

- LIMITS OF PROPOSED EXCAVATION
- APPROXIMATE BOUNDARY FOR SITE 6

P6A TRENCH OR PIT IDENTIFIER

S6-P6A-1 BORING/SAMPLE LOCATION

(210,65) SURVEY COORDINATES

U.S. Navy RAC
NAWC Warminster, PA

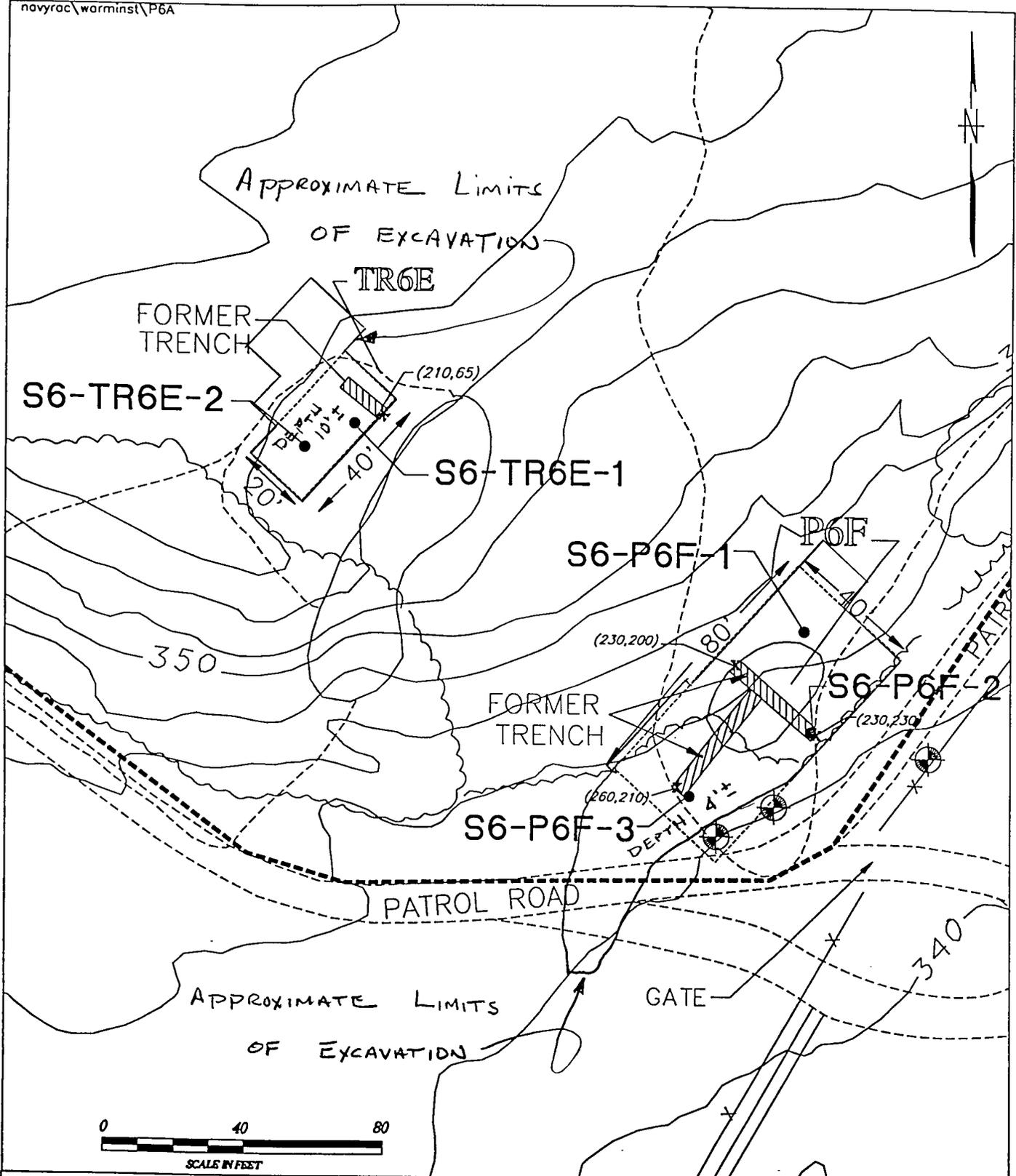
Figure 1

Site 6

P6A Boring/Sample Locations



FOSTER WHEELER ENVIRONMENTAL CORPORATION



LEGEND:

- LIMITS OF PROPOSED EXCAVATION
- APPROXIMATE BOUNDARY FOR SITE 6

TR6E TRENCH OR PIT IDENTIFIER

S6-P6F-2 BORING/SAMPLE LOCATION

(210,65) SURVEY COORDINATES

U.S. Navy RAC
NAWC Warminster, PA

Figure 2

Site 6
TR6E & P6F Boring/Sample Locations

FOSTER WHEELER ENVIRONMENTAL CORPORATION

ATTACHMENT I

PHOTOGRAPHIC LOG

**SITE 6 REMOVAL ACTION
NAVAL AIR WARFARE CENTER
US NAVY CONTRACT NO. N62472-94-D-0398
DELIVERY ORDER NO. 0018-02
WARMINSTER, PA**

OCTOBER 1997

Foster Wheeler Environmental Corporation
One Oxford Valley, Suite 200
Langhorne, PA 19047

SERIAL	FRAME	DATE	BY	PHOTO DESCRIPTION
001		5/14/97		Site #6 P6F. View N. to S. area prior to excavation. Clearing completed.
002		5/14/97		Site #6 TR6E. View E. looking W. area prior to excavation.
003		5/14/97		Site #6 P6A. View NE. to SW. Debris in SW. wall during excavation.
004		5/14/97		Site #6 P6A. View NE. to SW. North wall
005		5/15/97		Site #6 P6A. Initial excavation complete. Viewed S. to N.
006		5/15/97		Site #6 P6A. Initial excavation complete. View N. to S.
007		5/15/97		Site #6 TR6E. Initial excavation. Viewed N. to S.
008		5/15/97		Site #6 TR6E. Excavation and loading of material
009		5/15/97		Site #6 TR6E. View N. to S. Excavation at depth of 10 ft.
010		5/15/97		Site #6 TR6E. View E. to W. Visible dark areas in W. wall.
011		5/15/97		Site #6. Clearing and stockpiling for concrete debris removal. View W. to E.
012		5/17/97		Site #6. Stockpiled concrete viewed E. to W.
013		5/27/97		Site #6. View S. to N. 1 of 2, composite photo. Removing surface debris.
014		5/27/97		Site #6. 2 of 2. Same as 013.
015		6/5/97		Site #6. P6F. Viewed S. to N.
016		6/5/97		Site #6. Surface debris removal complete. View SE to NW.
017		6/20/97		1 of 2. Site #6. Whole tree grinding of cleared trees and brush.

SERIAL	FRAME	DATE	BY	PHOTO DESCRIPTION
018		6/20/97		2 of 2. Site #6. Whole tree grinding of cleared trees and brush.
019		7/2/97		Test pit. S. side of patrol road adjacent to P6F. S. wall.
020		7/2/97		Test Pit P6F. N. wall view E. to W.
021		7/2/97		Test pit S. side of patrol road. Stained soil visible near phone line.
022		7/2/97		Test pit S. side of patrol road.
023		7/2/97		Test pit S. side of patrol road. Stained soil visible.
024		7/2/97		Surplus materials relocated to basin near GWTS.
025		7/2/97		Surplus materials relocated to basin near GWTS.
026		7/2/97		Surplus materials relocated to basin near GWTS.
027		7/3/97		Site #6. P6A backfilled with screenings.
028		7/3/97		Site #6. P6F backfill begins.
029		7/3/97		Site #6. P6F backfill continues.
030		7/3/97		Site #6. P6F backfill continues. Looking S. Stained soil visible.
031		7/3/97		Site #6. P6F backfill continues. Looking S. Stained soil visible.
032		7/9/97		Site #6, TR6E. Additional excavation event #3, looking NW.
033		7/9/97		Site #6, P6F. Additional excavation stops at edge of patrol road, looking S.
034		7/9/97		Storage container
035		7/9/97		Site #6, TR6E looking W.
036		7/9/97		Site #6 roll-offs awaiting shipment to G.R.O.W.S. Landfill.
037		7/9/97		Site #6, P6F layer of debris on N. end.
038		7/9/97		Site #6 P6F. Additional excavation along N. end.

SERIAL	FRAME	DATE	BY	PHOTO DESCRIPTION
039		9/30/97		Site #6 P6F. Additional excavation of stained soil south of patrol road (note phone line).
040		9/30/97		Site #6 P6F. Overburden removed from area of additional excavation No. 7.
041		9/30/97		Site #6 P6F. Area of excavation prior to beginning backfill efforts.
042		9/30/97		Site #6 P6F. Area of excavation prior to beginning backfill efforts.
043		9/30/97		Site #6 P6F. Backfill completed.
044		9/30/97		Site #6 P6F. Roadstone placed over area of excavation.
045		9/30/97		Site #6 P6F. Work complete. P6F previously restored in background.
046		9/30/97		Site #6. P6F complete.
047		9/30/97		Site #6. P6F restoration complete.
048		9/30/97		Site #6. Looking S. across site, P6F at base of slope.
049		9/30/97		Site #6. Looking N, P6A in background.
050		9/30/97		Site #6. Looking N.
051		9/30/97		Site #6. Looking S. TR6E on right side.
052		9/30/97		Site #6. Looking E. along former haul road.
053		9/30/97		Site #6. Looking W. along former haul road, runway in background.



005



006



007



008





013



014



015



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021



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024



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028









041



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049



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052



053



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