N60478.AR.000455
NWS EARLE
5090.3a

FOSTER WHEELER ENVIRONMENTAL CORPORATION

March 10, 1998

Contracting Officer
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113
Attn: P. Briegel

SUBJECT: US NAVY CONTRACT NO. N62472-94-D-0398
DELIVERY ORDER 30017-MOD. NO. 8
NAVAL WEAPONS STATION-EARLE
SITE 19 CONFIRMATORY SOIL SAMPLING

Dear Mr. Briegel:

This letter report summarizes the second round of analytical results of the confirmatory (post-excavation) soil samples obtained from Site 19 at the Navy Weapons Station-Earle facility in Colts Neck, New Jersey. Soil was excavated from the settling pond and drainage ditch, between February 17 and February 19, 1998. The settling pond was excavated to a depth of 2 feet below the original grade and the drainage ditch was excavated to a depth of 6 inches below the original grade.

Confirmatory soil samples were collected on February 19, 1998. Laboratory analyses revealed that three of the surface soil/sediment samples were above the established NJDEP Cleanup criteria for this project. One soil sample (19SS09-98-01), collected from the southern corner of the sedimentation pond, had concentrations of lead (650 mg/kg) and zinc (1,970 mg/kg) above the NJDEP Residential Cleanup Criteria for lead (400 mg/kg) and zinc (1,500 mg/kg). Two sediment samples, collected from the drainage ditch, had concentrations of metals above the Effects Range-Median (ER-M) Sediment Quality Criteria established in the NJDEP Guidance for Sediment Quality Evaluations, dated March 1991. Sediment sample 19SS12-98-01 contained a concentration of lead (155 mg/kg) above the NJDEP ER-M Concentration for lead (110 mg/kg). Sediment sample 19SS16-98-01 contained concentrations of lead (288 mg/kg) and zinc (633 mg/kg) above the NJDEP ER-M Concentrations for lead (110 mg/kg) and zinc (270 mg/kg).

On March 3, 1998, Foster Wheeler Environmental excavated the areas surrounding the soil and sediment samples which had concentrations above the NJDEP Cleanup criteria. Approximately 20 yds^3 of additional soil was excavated from the settling pond and the

2300 LINCOLN HIGHWAY EAST, ONE OXFORD VALLEY, SUITE 200, LANGHORNE, PA 19047-1829
TEL: 215-702-4000 FAX: 215-702-4045

drainage ditch. Post-excavation samples were collected from the three excavated areas and the soil/sediment samples were analyzed for TAL Metals. The analytical results of the post-excavation soil sample (19SS09-98-2) collected from the settling pond determined that the soils in that area were excavated to below the NJDEP Residential Soil Cleanup Criteria. The analytical results of the two sediments in the drainage ditch determined that one area (19SS12-98-2) was excavated to below the NJDEP ER-M Sediment Quality Criteria, and that one area (19SS16-98-2) still contained sediments with concentrations of lead (298 mg/kg) and zinc (878 mg/kg) above the ER-M criteria for lead (110 mg/kg) and zinc (270 mg/kg). Table 1 presents a summary of the lead, and zinc concentrations as compared to the NJDEP Cleanup Criteria. Figure 1 depicts the soil sample locations, and Attachment 1 contains the complete TAL Metal analyses of the soil samples.

Foster Wheeler Environmental shall further excavate the area around 19SS16-98-2, which is the northeastern end of the drainage ditch, to ensure all effected sediments are removed to below the NJDEP established Cleanup criteria. The excavation activities are scheduled for March 11, 1998. An additional post-excavation soil sample shall be obtained from the excavated area and analyzed for TAL Metals.

If you have any questions or comments, please feel free to contact me at (215) 702-4015.

Sincerely,

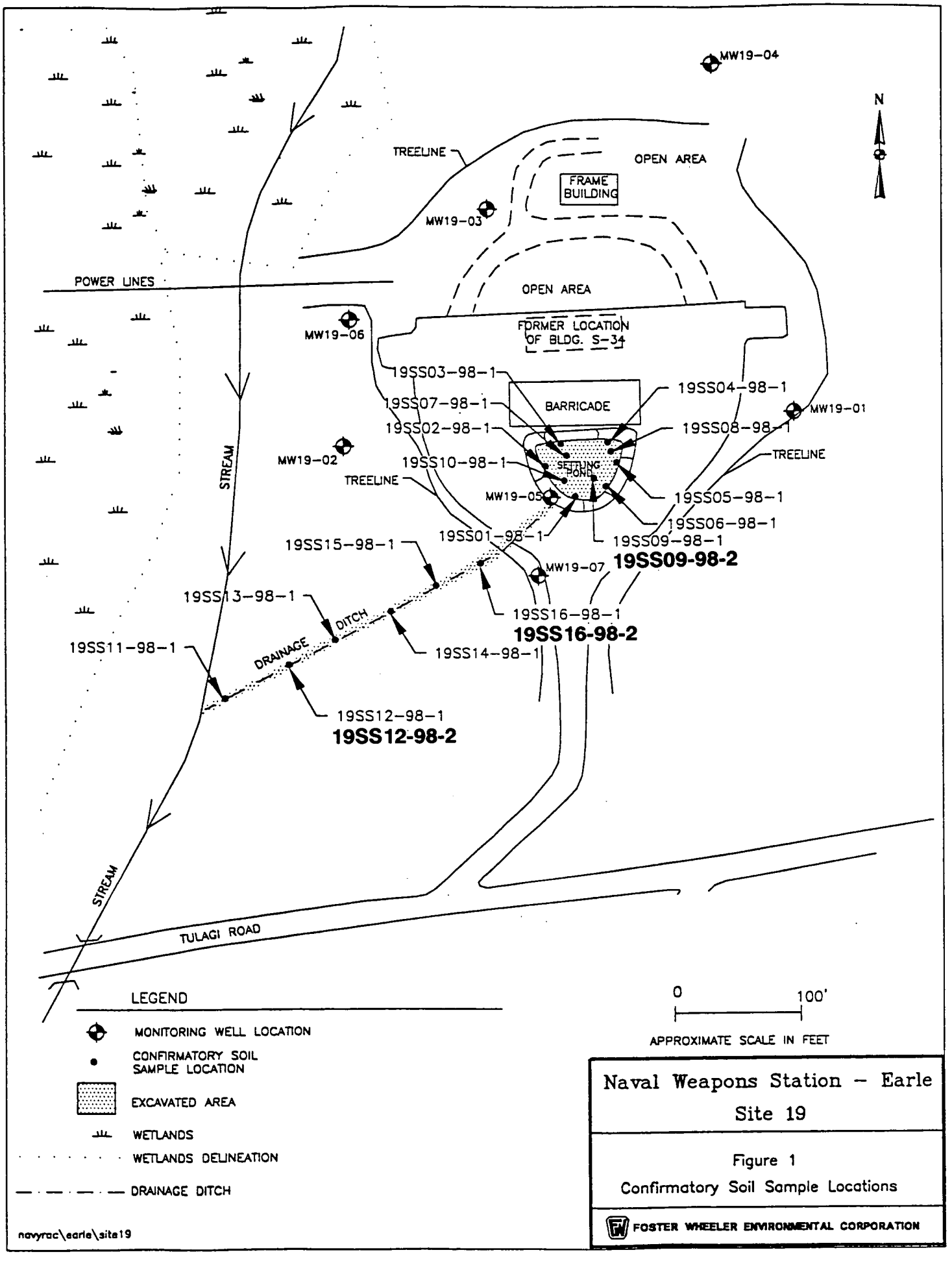
Michael Heffron
Delivery Order Manager

cc: T. Dunn
G. Goepfert
J. Carroll
File

TABLE 1: SOIL SEDIMENT RESULTS AND CLEANUP CRITERIA

Sample Number	Analyte	Sample Concentration	NJDEP Residential Soil Cleanup Criteria	NJDEP ER-M Sediment Quality Criteria
SOIL				
19-SS09-98-2	Lead	26 mg/kg	650 mg/kg	N/A
19-SS09-98-2	Zinc	223 mg/kg	1,500 mg/kg	N/A
19-SS12-98-2	Lead	15 mg/kg	N/A	110 mg/kg
19-SS12-98-2	Zinc	155 mg/kg	N/A	270 mg/kg
19-SS16-98-2	Lead	298 mg/kg	N/A	110 mg/kg
19-SS16-98-2	Zinc	878 mg/kg	N/A	270 mg/kg

N/A = Non Applicable



Naval Weapons Station – Earle
Site 19

Figure 1
Confirmatory Soil Sample Locations

FOSTER WHEELER ENVIRONMENTAL CORPORATION

ATTACHMENT 1

Report of Analysis

Client Sample ID: 19SS09-98-2
Lab Sample ID: E31548-1
Matrix: SO - Soil
Project: NWS - Earle, Colts Neck, NJ

Date Sampled: 03/03/98
Date Received: 03/04/98
Percent Solids: 80.9

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Aluminum	4240	25	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Antimony	<7.4	7.4	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Arsenic	2.0	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Barium	<25	25	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Beryllium	<0.62	0.62	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Cadmium	<0.62	0.62	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Calcium	650	620	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Chromium	60.6	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Cobalt	<6.2	6.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Copper	4.4	3.1	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Iron	3590	12	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Lead	26.0	12	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Magnesium	<620	620	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Manganese	18.1	1.8	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Mercury	<0.097	0.097	mg/kg	1	03/05/98	03/05/98	PGC	SW846 7471A
Nickel	<4.9	4.9	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Potassium	<620	620	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Selenium	<12	12	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Silver	<1.2	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Sodium	<620	620	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Thallium	<1.2	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Vanadium	9.3	6.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Zinc	223	2.5	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B

RDL = Reported Detection Limit

Report of Analysis

Client Sample ID: 19SS12-98-2
Lab Sample ID: E31548-2
Matrix: SO - Soil
Project: NWS - Earle, Colts Neck, NJ

Date Sampled: 03/03/98
Date Received: 03/04/98
Percent Solids: 79.5

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Aluminum	2870	25	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Antimony	<7.5	7.5	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Arsenic	1.9	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Barium	<25	25	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Beryllium	<0.63	0.63	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Cadmium	<0.63	0.63	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Calcium	<630	630	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Chromium	79.5	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Cobalt	<6.3	6.3	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Copper	4.5	3.1	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Iron	2700	12	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Lead	15.0	12	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Magnesium	<630	630	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Manganese	11.0	1.9	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Mercury	<0.099	0.099	mg/kg	1	03/05/98	03/05/98	PGC	SW846 7471A
Nickel	<5.0	5.0	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Potassium	<630	630	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Selenium	<12	12	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Silver	<1.2	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Sodium	<630	630	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Thallium	<1.2	1.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Vanadium	7.7	6.3	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Zinc	155	2.5	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B

RDL = Reported Detection Limit

Report of Analysis

Client Sample ID: 19SS16-98-2
Lab Sample ID: E31548-3
Matrix: SO - Soil
Project: NWS - Earle, Colts Neck, NJ

Date Sampled: 03/03/98
Date Received: 03/04/98
Percent Solids: 76.4

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed	By	Method
Aluminum	4000	26	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Antimony	<7.8	7.8	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Arsenic	2.7	1.3	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Barium	115	26	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Beryllium	<0.65	0.65	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Cadmium	1.4	0.65	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Calcium	980	650	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Chromium	110	1.3	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Cobalt	<6.5	6.5	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Copper	30.5	3.3	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Iron	5930	13	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Lead	298	13	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Magnesium	677	650	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Manganese	35.1	2.0	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Mercury	<0.10	0.10	mg/kg	1	03/05/98	03/05/98	PGC	SW846 7471A
Nickel	<5.2	5.2	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Potassium	<650	650	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Selenium	<13	13	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Silver	<1.3	1.3	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Sodium	<650	650	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Thallium	<1.3	1.3	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Vanadium	14.9	6.5	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B
Zinc	878	2.6	mg/kg	1	03/04/98	03/05/98	MMC	SW846 6010B

RDL = Reported Detection Limit