

## 5.19 SWMU 29: METAL SCRAP LANDFILL

### 5.19.1 Site Description and Waste Generation

SWMU 29, located in the east central portion of TEAD-S west of Montgomery Road, is a former borrow pit encompassing approximately 1 acre (Figure 5.19-1). The pit is 15 to 20 ft deep (NUS 1987). The pit contains piles of scrap metal banding, steel, and numerous 2-1/2- to 3-gallon buckets containing a white granular substance (EBASCO 1991). The buckets are badly rusted and broken, and are labeled with corrosivity and toxicity warnings and "handle with care" signs. The white granular substance was sampled in October 1989.

SWMU 29 may be Site 25 of the 1982 EPIC study. It was described in 1974 as an inactive landfill with partially covered debris located in a large pit to the west of the sewage treatment facility (SWMU 27).

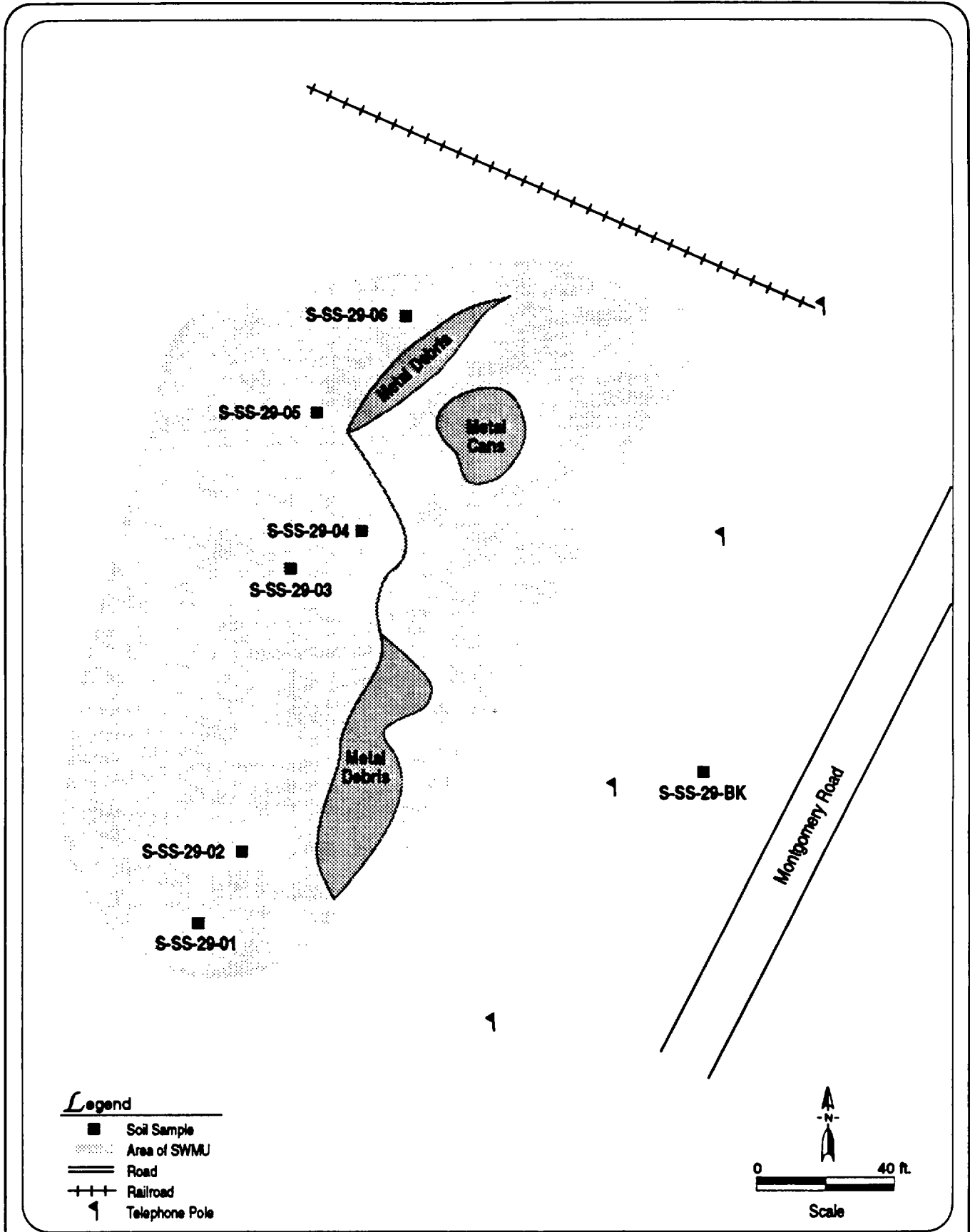
### 5.19.2 Site Hydrogeology

SWMU 29 is located on a very gentle southwest-sloping topographic surface at approximately 5,225 ft above msl, in the northeastern quadrant of TEAD-S. Quaternary alluvial gravel deposits underlie the site. Details on subsurface lithology were extrapolated from the closest monitoring well (S-36-90), and from soil samples S-SS-29-01, S-SS-29-02, S-SS-29-03, S-SS-29-04, S-SS-29-05, S-SS-29-06, and S-SS-29-BK.

Surface soil is light brownish-gray, organic-rich (e.g., roots and rootlets), silty gravel with a trace of fine-grained sand (GM). The unsaturated zone is approximately 110 ft thick and is composed of brownish-gray, sandy gravel (GP). The saturated zone in well S-36-90 from approximately 115 to 226 ft is composed of pale brown, sandy and silty gravel (GM). In July 1990, groundwater at SWMU 29 was estimated to be 115 ft below ground surface at an elevation of 5,110 ft msl. The groundwater flow direction is indefinite, but may be to the west because of a groundwater high that appears to underlie a water main paralleling Montgomery Road.

### 5.19.3 Previous Sampling and RFI-Phase I Sampling Results

No groundwater or soil sampling was conducted at SWMU 29 prior to the RFI-Phase I. The RFI-Phase I sampling at SWMU 29 included collecting a grab sample of a white granular to powdery material labeled with a poisonous and corrosive material warning. This grab sample was analyzed for EPTOX and ICP metals, chloride, semivolatile organics, organophosphorus pesticides, chlorinated herbicides, oil and grease, moisture, pH, reactivity, and flashpoint. Six soil samples were collected from 0 to 3 ft in SWMU 29 in depressions, near metal debris, or in discolored soil. A background soil sample was collected from the area southeast of the SWMU. The background sample was analyzed for metals only, and the other soil samples were analyzed for volatiles, semivolatiles, explosives, and metals. The results of analyses of the grab samples and soil samples are tabulated in Table 5.19-1. Sampling locations, detected compounds, and their concentrations are presented in Figures 5.19-2 through 5.19-3.



Source:  
EBASCO Field Measurement  
Basic Information Maps 1985  
EPIC 1986

**Figure 5.18-1  
Site Map  
SWMU 29 - Metal Scrap Landfill**

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**TABLE 5.19-1 Summary of RFI-Phase I Investigations for SWMU 29:  
Metal Scrap Landfill**

<b>PRODUCT</b>	
Analytical Group and Analytes Detected	PR-29
<b>Semivolatile Organics: (µg/g)</b>	
Acenaphthene (ANAPNE)	0.040J
Bis(2-ethylhexyl) phthalate (B2EHP)	0.070J
Diethyl phthalate (DEP)	0.080J
1,2,4-Trichlorobenzene (124TCB)	0.040J
2-Chlorophenol (2CLP)	0.070J
4-Chloro-3-methylphenol (4CL3C)	0.060J
2,5-Dimethylfuran	3.2 J,B
2,3-Dimethylheptane	0.45 J,B
2,4-Dimethylheptane	0.77 J,B
Unknowns	9.0 J,B
<b>EP Toxic Metals (ug/l):</b>	
Chromium (Cr)	21 (5.0)
Silver (Ag)	17 (5.0)
<b>Inorganics (ug/l):</b>	
Chloride (Cl)	82 (.25)
<b>Reactivity</b>	
Cyanide	X
Sulfide	X
	8.3
<b>pH</b>	
	NF (60°C)
<b>Flashpoint</b>	
	.71%
<b>Moisture</b>	
	BDL
<b>Chlorinated Herbicides</b>	
	BDL

5-201

J Estimated value below the detection limit  
 B Detected in method blank  
 µg/g Microgram per gram  
 µg/l Microgram per liter  
 () Detection limit  
 NF No flashpoint  
 X Sample is non-reactive  
 BDL Below Detection Limit

Reference: MetaTrace, Inc. 1989

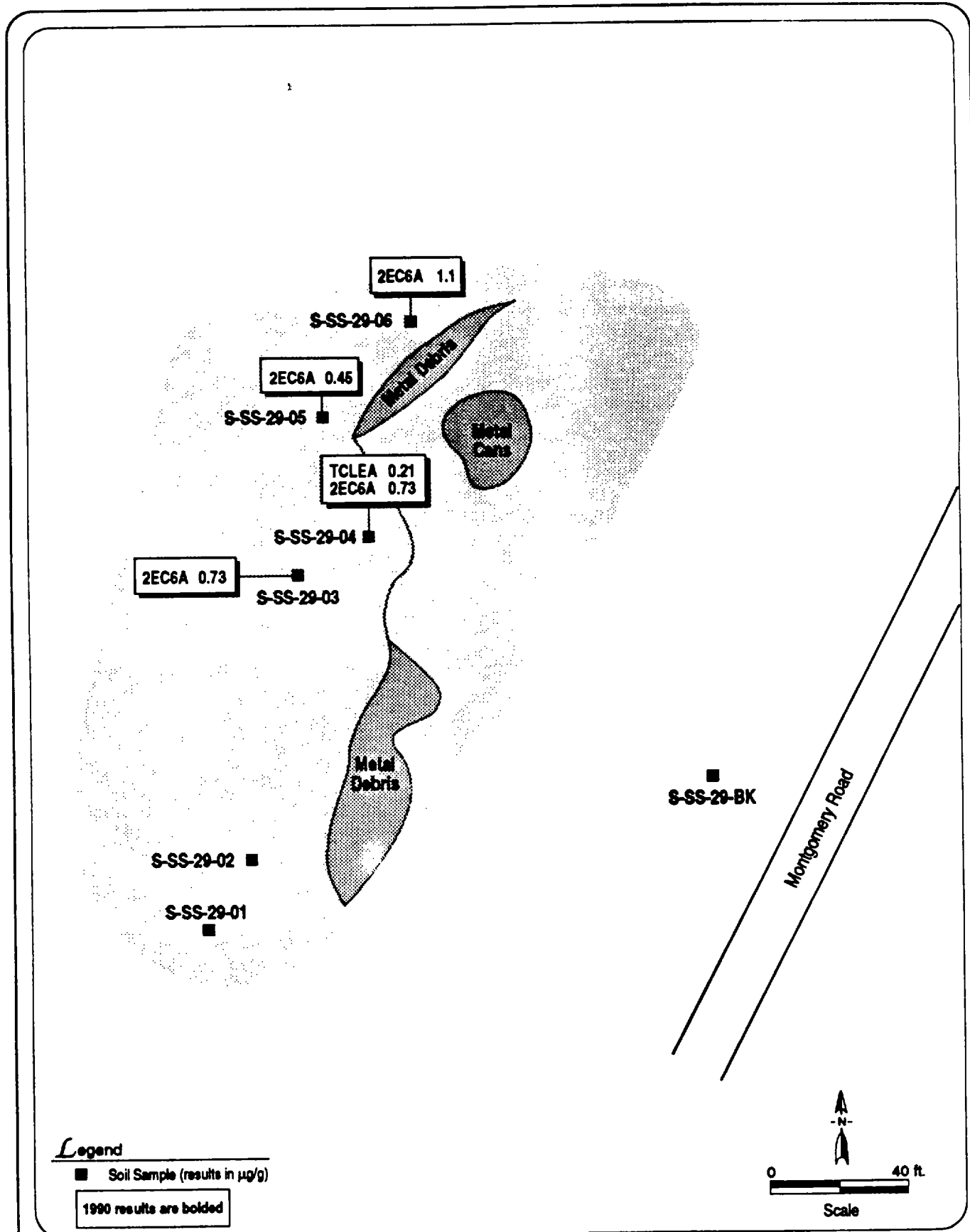
TABLE 5.19-1

**Summary of RFI-Phase I Investigations for SWMU 29:  
Metal Scrap Landfill**

## SOIL (µg/g)

Analytical Groups and Analytes Detected	S-SS-29-01	S-SS-29-02	S-SS-29-03	S-SS-29-04	S-SS-29-05	S-SS-29-06	S-SS-29-BK <sup>1</sup>
<b>Volatile Organics:</b>							
Unknowns	0.083	0.21	0.021*			0.021	
<b>Semivolatile Organics:</b>							
1,1,2,2 - Tetrachloroethane (TCLEA)	LT 0.016	LT 0.016	LT 0.016	0.21*	LT 0.016	LT 0.016	
2 - Ethylhexanoic acid (2EC6A)	NA	NA	0.73	0.73	0.45	1.1	
Unknowns	9.5	8.8	15	15	11	38	
<b>Explosives: None detected</b>							
<b>Metals:</b>							
Arsenic (As)	16	29	16	18	14	60	12
Beryllium (Be)	0.25	0.27	0.31	0.36	0.29	0.30	0.23
Chromium (Cr)	23	23	21	21	18	16	19
Copper (Cu)	8.7*	8.9*	10*	12*	11*	11*	19*
Lead (Pb)	18	21	17	18	15	17	12
Nickel (Ni)	9.9	LT 4.9	LT 4.9	LT 4.0	LT 4.9	LT 4.9	LT 4.9
Silver (Ag)	0.15	1.6	0.19	0.18	0.19	0.17	0.16
Sodium (Na)	LT 100	LT 100	LT 100	LT 100	500	1200	LT 100
Zinc (Zn)	73	78	67	94	62	59	47

1 Metals analysis only  
 \* Detected in associated method blank  
 NA Not analyzed  
 µg/g Microgram per gram



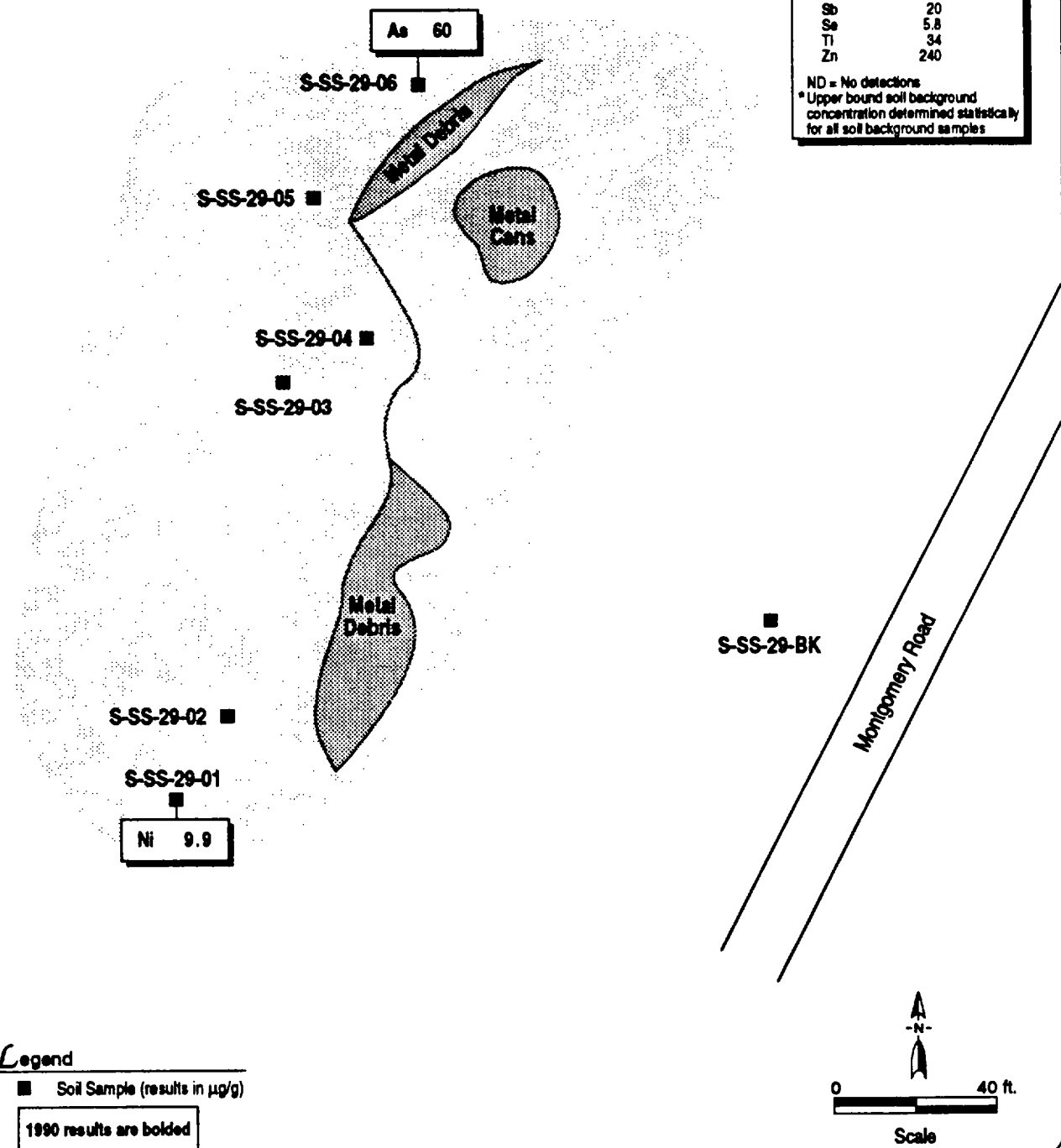
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**Figure 5.19-2**  
**SWMU 29 - Metal Scrap Landfill**  
**Semivolatile Organics**

Statewide Upper Boundaries\* for  
Soil Background Concentrations

Metal	Upper Bound /ppm
Ag	1.9
As	41
Be	0.45
Cd	21
Cr	62
Cu	61
Hg	0.32
Na	3400
Ni	2.7
Pb	250
Sb	20
Se	5.8
Tl	34
Zn	240

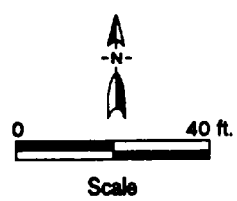
ND = No detections  
\* Upper bound soil background concentration determined statistically for all soil background samples



**Legend**

■ Soil Sample (results in µg/g)

**1990 results are bolded**



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**Figure 5.19-3**  
**SWMU 29 - Metal Scrap Landfill**  
**Metals**

#### 5.19.4 Contamination Assessment

The white powdery material sampled in SWMU 29 metal containers is a mixture of metals, semivolatile compounds, an organophosphorus compound, and chloride. A name and use for this material has not been established, but all parameters analyzed indicate that the compound is not EP toxic.

Four SWMU 29 soil samples contained 2-ethyl hexanoic acid. The 2-ethyl hexanoic acid is expected to be naturally occurring as it is a common organic fatty acid that is probably a natural constituent of the soil. No explosive compounds were detected. Trichloroethylene and Tetryl recoveries in MS/MSD samples were outside the 95 percent confidence limit, indicating inaccuracy in the quantification of these and similar compounds. One sample analyzed for volatile organics (S-SS-29-03) also missed holding time. Since no evidence of solvents or explosives disposal was seen in the pit contents, these invalid analytical results should not be replaced. The detected concentrations of organics were 1.1 µg/g or less. Arsenic and nickel were each detected in one sample at levels slightly above background.

#### 5.19.5 Recommendations

No further sampling is recommended at SWMU 29. The Army will request funding to remove the solid waste scrap metal debris to SWMU 26 – Sanitary Landfill. As the waste is nonhazardous, no further soil or water sampling is recommended at this SWMU.