BSC's petition in the Federal Register (see 56 FR 41944; August 26, 1991), BSC conducted additional sampling and testing of its petitioned waste. BSC established a uniform grid over the landfill dividing the landfill into seventeen sections, each 100 feet by 100 feet. Within each grid section a second uniform grid of 10-foot intervals was established for the selection of the individual boring locations. Alternating 10,000 square foot grid sections were selected for sampling. BSC used a random number table to select five boring locations within each 10,000 square foot grid section. This resulted in the selection of eight grid sections to yield eight composite samples of the material in the landfill, with each composite representative of five fullcore sample aliquots from each grid section. These eight composite samples were analyzed for total constituent concentrations of 83 toxicants of potential concern¹ (including the eight TC metals). These eight composite samples were also analyzed for TCLP leachate concentrations of the toxicants of potential concern (excluding cyanide and polychlorinated biphenyls (PCBs)); and total oil and grease.

BSC claims that the analytical data obtained from the four sampling events that occurred from April 1984 through June 1992 are representative of any variation in the constituent concentrations in the petitioned waste. BSC believes that the data from the preliminary grab samples obtained in January 1984 are not representative of the entire waste volume contained in the landfill. BSC also believes that it has addressed the Agency's concern regarding the number of samples collected and the target analyses, as originally noted by the Agency in the April 7, 1989 proposal to deny BSC's petition. Specifically, in that proposal the Agency noted that, based on the dimensions of the landfill containing the petitioned waste, BSC should have

collected at least one sample for every 10,000 square foot section of the landfill. BSC's original estimate of the areal extent of the landfill was 5.3 acres; however, as discussed later in today's notice. BSC has demonstrated through detailed calculations (discussed later in today's notice) that a better estimate of the landfill area is 3.5 acres. Therefore, based on this revised estimate, BSC should have collected at least 15 composite samples. Since the April 1989 proposal, BSC has conducted additional sampling of the waste, bringing the total number of composite samples to 21, including 8 composite samples collected in June 1992 that have been analyzed for total constituent concentrations of 70 volatile organic and semivolatile organic constituents. The Agency believes, based on its reevaluation of BSC's petition, that the combined results of BSC's sampling events are sufficient to characterize any variation in the constituent concentrations in the petitioned waste.

BSC also submitted ground-water monitoring information collected from wells monitoring the landfill to demonstrate that the petitioned waste was not adversely impacting groundwater quality. The ground-water monitoring information submitted by BSC, and more recent data received from State and EPA Regional authorities, included: (1) Well location information; (2) boring logs and well construction information for each well; (3) water levels and water level contour maps; and (4) results of the analysis of ground-water samples.

C. Agency Analysis

BSC used SW-846 Methods 7060 through 7760 (January 1984, April 1984, and February 1985 samples) to quantify the total constituent concentrations of the eight TC metals and nickel. BSC used SW-846 Method 6010 (June 1992 samples) to quantify the total constituent concentrations of the eight

TC metals (with the exception of mercury and selenium, for which BSC used SW-846 Methods 7471 and 7740, respectively), nickel, antimony, and thallium. "Methods for Chemical Analysis of Water and Wastes" Method 335.2 (April 1984 samples), SW-846 Method 9010 (February 1985 samples) and SW-846 Method 9012 (June 1992 samples) were used to quantify total cyanide concentrations in the petitioned waste. SW-846 Method 9030 (February 1985 samples) was used to quantify total sulfide levels in the petitioned waste. SW-846 Method 7.3.4.1 (June 1992 samples) was used to quantify reactive sulfide levels in the petitioned waste. SW-846 Method 1310 (samples prior to 1988) was used to determine the leachable concentrations of the eight TC metals, nickel, and cyanide. BSC prepared a toxicity characteristic leachate (according to the procedure in 51 FR 21685, June 13, 1986) to determine the leachable concentrations of the eight TC metals in the September 1988 sample. SW-846 Method 1311 was used to determine the leachable concentrations of the eight TC metals, nickel, antimony, and thallium in the June 1992 samples. Table 1 presents the maximum reported, and 95% Upper Confidence Limit (UCL) total constituent concentrations of the eight TC metals listed in §261.24, nickel, antimony, thallium, cyanide, and sulfide. Table 1 also identifies the number of samples in which each constituent was detected. Table 2 presents the maximum reported, and 95% UCL EP leachate and TCLP leachate concentrations of the eight TC metals listed in §261.24, nickel, antimony, thallium, and cyanide. (Analysis for leachable concentrations of sulfide or reactive sulfide is not necessary because the Agency's level of regulatory concern is based on the total constituent concentration of reactive sulfide.)

TABLE 1.—TOTAL CONSTITUENT CONCENTRATIONS (MG/KG) INORGANIC CONSTITUENTS

Constituents	Total Concentrations (mg/kg)		Number of
	Maximum ¹	95% UCL ²	Samples in which de- tected/total number of samples
Antimony	<12	<12	0/8
Arsenic	16.2	10.3	12/23
Barium	1,660	791	13/20
Cadmium	3.3	2.1	12/20
Chromium	172	100	20/20
Lead	7,520	2,810	20/20

¹BSC chose to analyze waste samples for these constituents because they were: (1) identified by EPA during previous actions concerning this petition as constituents of regulatory concern, or (2) identified as constituents that reasonably may be expected to be potentially present in the petitioned

waste, based on the processes from which the waste components were derived.