

SECTION 3

PRELIMINARY
SITE CHARACTERIZATION
SEDIMENT
TECHNICAL MEMORANDUM

MOLYCORP MINE RI/FS

REVISION 0

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SECTION THREE

Sediment

This section presents and summarizes analytical results for sediment samples collected from the Molycorp mine and tailings facility in Questa, New Mexico. Sediment data collection for the RI began in fall 2002 and ended in spring 2004. Sediment samples were collected from the Red River, Cabresto Creek, Eagle Rock Lake, upper Fawn Lake, ponds on the Molycorp Tailings Facility, irrigation ditches, and unique habitats such as beaver ponds. A location map is presented in Figure 3-1.

Samples were collected quarterly from the Red River, Cabresto Creek, and the lakes for a year to characterize the seasonal changes in the sediments. Samples were collected in October 2002 (low flow), March 2003 (pre-snowmelt runoff, moderate flow), July 2003 (moderate flow), and September 2003 (low flow). The sampling design was biased in order to use historical surface water sample locations, and sediment samples were generally collected at the same locations as surface water. Sediment samples were collected prior to surface water, and generally from downstream to upstream.

At each sample location on the Red River and Cabresto Creek, separate samples were collected from riffle and depositional parts of the streambed and analyzed separately. Sediment is often partitioned differently between different areas of the streambed due to variation in stream velocity and differences in sediment particle density. An exception was made in the fall 2002 event when abnormally high amounts of sediment were deposited in the Red River, limiting the amount of sediment partitioning in the river. During that event, sediment was collected from riffle and depositional areas, and then combined into one sample.

The portion of the Red River upstream of the mine site was used as a reference for the parts of the river that flow adjacent to the mine and tailings facility. Cabresto Creek, the drainage to the north of the Molycorp Mine and unimpacted by the mine, also serves as a reference for the Red River. The upper portion of Cabresto Creek, which is located in a steep mountain valley, is used as a reference for the section of the Red River from the mine site to the Questa Ranger Station. The portion of Cabresto Creek that flows in the flat plains west of the mountains is used as a reference for the lower Red River, downstream of the Ranger Station.

Upper Fawn Lake, located above the mine, was used as a reference for Eagle Rock Lake. Grab samples of sediment were collected from the bottom of the lakes using a petite Ponar sampler dropped from a boat.

Tailings pond sediments were sampled only in the fall of 2002. After this sampling event, EPA considered that sufficient data had been collected in this area.

Sediment samples were analyzed for inorganic parameters pH, Specific Conductance, ammonia, chloride, fluoride, nitrate, phosphorus, sulfate, total Kjeldahl nitrogen (TKN), TOC, and metals concentrations. Cation Exchange Capacity (CEC), Sodium Absorption Ration (SAR), and percent solids and percent organic material were also determined. A limited number of the samples collected in fall 2002 were analyzed for explosives, dioxins–dibenzofurans, pesticides, PCBs, VOCs, and SVOCs.

The particle size distribution was determined on a limited number of sediment samples. These samples were sieved in the field using a No. 10 mesh (2 mm) sieve. Material coarser than this

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screen was classified as gravel and the percentage of the total sample estimated visually and recorded. This material was then discarded. Material finer than 2 mm was sent to the laboratory for particle size analysis. Any gravel measured in the laboratory was material that was inadvertently included in the sample during sieving. This material generally comprised less than 1 percent of any sample, with a few samples containing as much as 5.8 percent gravel.

The list of analytes for sediment samples was presented in Section 1.0. Tables 3-1 to 3-43 summarize the sediment data from each exposure area and contain the number of samples collected; percent of samples with detectable results; the minimum and maximum reporting limits for values non-detect; and the minimum, maximum, mean, and median values. These tables also provide the EPA Region 6 Risk-Based SLC for human health and ecological receptors for each analyte, and the percentage of samples with values above the SLC. Appendix A-3 presents the raw data from all sediments collected during the RI.

Section 15.4 describes an evaluation of observed field or laboratory contaminants and provides a list by medium of analytes that are considered as attributable to laboratory or field contamination rather than being related to presence in the medium under evaluation. These compounds are not included in the summary results tables in this section, but results for analysis of these compounds are included in the printout of the RI sample analysis results in Appendix A-3. In addition, there are compounds such as dichlorodiphenyl-trichloroethane (DDT) that may be considered as ubiquitous to the region or phenols whose presence might be attributable to forests. If such compounds were detected in the medium being presented in this section, then a discussion of their presence is included within this section.

All concentrations are in dry weight, unless otherwise noted.

3.1 REFERENCE RED RIVER ABOVE MINE SITE

The Red River reference area consists of the portion of the Red River above the mine site to the Zwergle sampling station, located 2.5 miles upstream from the town of Red River (Figure 3-1). The sample stations in this reference area are Zwergle, RR-1, RR-3, RR-4, RR-5, RR-6V, RR-6, RR-6A. The sections below summarize the results of analysis of sediment samples collected during each sediment-sampling event.

Fall 2002 Sampling Event

In a normal precipitation year, the flow in the Red River increases to approximately 10 times the base flow during the spring snowmelt. These high flows scour the riverbed of sediment deposited over the previous year. However, 2002 was a drought year in the Questa – Red River area and the maximum river level during the spring snowmelt was only four times the base flow (USGS National Water Information System [nwis.waterdata.usgs.gov]). No significant scouring took place during the snowmelt, and sediment that had entered the river during the previous year remained in the river. During the summer of 2002, several thunderstorms added additional sediment to the river. Unusually large amounts of fine material were washed from tributaries above the mine such as Hansen Creek and Hottentot Creek. The largest of these storms briefly

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dammed the river with sediment from Hansen Creek. This additional sediment further covered the riverbed such that only the tops of the largest cobbles were visible in what is normally a cobbly mountain river. At sample sites located immediately above and adjacent to the mine, riffle and depositional areas of the river were indistinguishable. Therefore, a single sediment sample was collected at each location during the fall 2002 sampling event.

Sediment samples collected during the fall 2002 sampling event were collected between October 2 and 7. During this event, sediment samples were collected at Zwergle, RR-1, RR-3, RR-4, RR-5, RR-6, and RR-6A. Samples were analyzed for inorganic compounds and parameters, metals concentrations, TOC concentrations, and laboratory parameters. Five of the seven samples (Zwergle, RR-4, RR-5, RR-6, RR-6A) were analyzed for organic compounds, including explosives, VOCs, SVOCs, pesticides, and PCBs. Samples collected from Zwergle, RR-4, RR-5, and RR-6 were analyzed for dioxins-dibenzofurans. Data for the fall 2002 sampling event are summarized and compared to human health and ecological SLCs in Table 3-1.

None of the samples contained detectable concentrations of explosive compounds, pesticides, or PCBs. Trichloroethene was detected in RR-5 and 2-butanone was detected in the Zwergle sample. Concentrations of both compounds were below the ecological and human health SLCs. Two compounds, 1,2,3,4,6,7,8-heptachlorodibenzofuran and 1,2,3,7,8-pentachlorodibenzo-p-dioxin, were detected in RR-4.

All inorganic parameters were detected in all samples, except for chloride and fluoride, which were not detected in any sample, and sulfate and TOC which were detected in 71 percent of samples.

Seventeen metals were detected in all seven samples. Selenium and sodium were detected in 86 percent and 71 percent of samples, respectively. Cadmium and silver were detected in 43 percent of the samples. Boron and thallium were detected in less than 30 percent of samples. Concentrations of antimony and mercury were non-detect in all samples.

Particle size distribution was determined on composite sediment samples collected from Zwergle, RR-4, RR-5, RR-6, and RR-6A. Samples contained primarily sand and fine sand with less than 12 percent silt and clay.

Spring 2003 Sampling Event

The spring 2003 sampling event was conducted during the initial rise of the river due to spring runoff. Samples were collected on March 18 and 19. Sediment was collected from both riffle and depositional areas, and these samples were analyzed separately. Samples were collected at Zwergle, RR-1, RR-3, RR-4, RR-5, RR-6, and RR-6A.

Samples collected during this event were analyzed for inorganic parameters and metals concentrations.

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Data for the riffle sediments are summarized in Table 3-2. The fluoride result was rejected for sample RR-1, so the table reflects six analyses instead of seven. Inorganic parameters were detected in all samples except for fluoride, which was detected in 83 percent of these six samples and chloride, nitrate, and TOC, which were detected in fewer than 30 percent of samples.

Seventeen metals were detected in all samples. Antimony and mercury were not detected in any of the riffle samples collected from this area. Cadmium, molybdenum, selenium, silver, sodium, and thallium were detected in 29 to 86 percent of the samples.

Depositional

Data for the depositional sediments are summarized in Table 3-3. Fluoride results were rejected for two samples, so that the table reflects five results for this parameter. Values were obtained for all inorganic parameters except for nitrate, which was not detected in any sample, and chloride, which was detected in two samples.

Eighteen metals were detected in all samples. No antimony or mercury was detected in any samples. Boron, cadmium, selenium, silver, and thallium were detected in 71 to 86 percent of samples. Sodium was detected in 43 percent of samples.

Summer 2003 Sampling Event

Stream flow in the Red River during the summer 2003 sampling event was moderate. Sediment samples were collected for this event between July 13 and 16. Sampling station RR-6V, a historical sampling location, was added to the surface water and sediment sampling for this and subsequent sampling events. Stations sampled during the summer 2003 sampling event included Zwergle, RR-1, RR-3, RR-4, RR-5, RR-6, RR-6A, and RR-6V.

Samples collected during this event were analyzed for inorganic parameters and metals.

Riffle

Data for summer 2003 riffle sediments are summarized in Table 3-4. Phosphorus and TKN were detected in all eight samples. Chloride and sulfate were detected in all but one sample. Fluoride, nitrate, and TOC were detected in 25 to 63 percent of the samples.

All metals were detected in all samples except cadmium, mercury, molybdenum, selenium, silver, and sodium, which were detected in 13 to 63 percent of the samples analyzed. Antimony and thallium were not detected in any of the riffle samples.

Depositional

Data for summer 2003 depositional sediments are summarized in Table 3-5. Values were obtained for all inorganic parameters in all samples except for chloride and TOC, which were

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detected in all but one sample and fluoride and nitrate, which were detected in 38 percent and 50 percent of the samples, respectively.

Seventeen metals were detected in all samples. Arsenic was detected in all but one sample. Cadmium and silver were detected in 50 percent of the samples, and antimony, mercury, selenium, sodium, and thallium were detected in 13 to 38 percent of the samples.

Fall 2003 Sampling Event

The fall 2003 sediment sampling event was conducted from September 22 through September 24, during low stream flow conditions. Sediment samples were collected at Zwergle, RR-1, RR-3, RR-4, RR-5, RR-6, RR-6A, and RR-6V.

Samples collected during this event were analyzed for inorganic parameters and metals. During the fall 2003 sampling event, particle distributions were determined on samples collected at Zwergle, RR-4, RR-5, and RR-6.

Riffle

Data for fall 2003 riffle sediments are summarized in Table 3-6. Nitrate was not detected in any sample. Fluoride was detected in 63 percent of samples, and TKN was detected in all but one sample. Chloride was detected in one sample and TOC was detected in 38 percent of samples.

Eighteen metals were detected in all samples. Antimony, boron, and mercury concentrations were non-detect in all samples. Cadmium, molybdenum, and selenium were detected in 63 to 80 percent of the samples. Silver was detected in 38 percent of samples and thallium was detected in one sample.

Riffle samples contained more than 80 percent sand. The amount of fine sand ranged from 5 to 16 percent. Silt and clay comprised less than 3 percent of the samples.

Depositional

Data for fall 2003 depositional sediments are summarized in Table 3-7. Values were determined for all inorganic parameters in all samples with the following exceptions. Nitrate was not detected in any sample. Fluoride was detected in 75 percent of samples, and TOC was detected in 63 percent of samples. Chloride was detected in one sample.

Seventeen metals were detected in all samples. Antimony and mercury concentrations were non-detect in all samples. Boron was detected in one sample. Cadmium, molybdenum, and selenium were detected in 75 percent to 88 percent of the samples. Thallium was detected in 50 percent of samples and silver was detected in 38 percent of samples.

Depositional samples were generally finer grained than riffle samples. Depositional samples collected from Zwergle and RR-6 contained greater than 70 percent sand. However, the sample collected at RR-4 contained 48 percent sand and 44 percent fine sand. The RR-5 sample

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contained 25 percent sand and 62 percent fine sand. Silt comprised less than 11 percent of the sample material, and clay comprised less than 3 percent.

3.2 REFERENCE UPPER CABRESTO CREEK

Upper Cabresto Creek was sampled as a reference area for the portion of the Red River adjacent to the mine site. Upper Cabresto Creek is defined here as the portion of Cabresto Creek within the mountains (Figure 3-1). The samples that are included in this area are RRS-9, RRS-12, RRS-13, RRS-15, and UPPER CABRESTO CREEK.

Samples were collected in this area during all four sampling events. The details of the events and the resulting data are provided below.

Fall 2002 Sampling Event

During the fall 2002 sampling event, samples were collected in upper Cabresto Creek on October 6 and 7. Samples were collected at RRS-9, RRS-12, RRS-13, and RRS-15. The sampling station UPPER CABRESTO CREEK was not sampled. Stream flow was low during this event. Material collected from riffle and depositional areas of the creek were combined into one sample. Samples were analyzed for inorganic parameters and metals

Data for the fall 2002 samples from upper Cabresto Creek are summarized in Table 3-8. Values were obtained for all inorganic parameters except chloride and nitrate, which were not detected in any sample, and organic soils, which were rejected in two samples.

Seventeen metals were detected in all samples. Antimony, mercury, selenium, silver, and sodium were not detected in any of the samples. Cadmium was detected in 75 percent of samples, boron was detected in 50 percent of samples, and thallium was detected in 25 percent of samples.

Spring 2003 Sampling Event

Samples from upper Cabresto Creek collected during the spring 2003 event were sampled on March 19. Samples were collected from RRS-9, RRS-12, RRS-13, RRS-15, and UPPER CABRESTO CREEK. The creek flows were moderate.

Samples collected during this event were analyzed for inorganic parameters and metals.

Riffle

Data for the 2003 spring riffle samples from upper Cabresto Creek are summarized in Table 3-9.

Values for all inorganic parameters were determined except nitrate, which was not detected in any of the riffle samples, chloride and TOC, which were each detected in one sample, and CEC, which was calculated for 40 percent of samples.

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Nineteen metals were detected in all samples. Antimony, mercury, selenium, silver, sodium, and thallium were not detected in any of the samples.

Depositional

Data for the 2003 depositional samples from upper Cabresto Creek are summarized in Table 3-10. Values for inorganic parameters were determined for all samples except chloride and nitrate, which were not detected in any of the depositional samples, and TOC, which was detected in one sample, as well as fluoride, which was detected in all but one sample. The CEC was calculated for 80 percent of samples.

Nineteen metals were detected in all samples. Antimony, mercury, selenium, silver, sodium, and thallium were not detected in any of the samples.

Summer 2003 Sampling Event

Samples were collected in upper Cabresto Creek during this event on July 14, from all five sites in this area: RRS-9, RRS-12, RRS-13, RRS-15, and UPPER CABRESTO CREEK.

Samples collected during this event were analyzed for inorganic parameters and metals.

Riffle

Data for the summer 20-03 riffle samples are summarized in Table 3-11. All parameters were detected in all riffle samples, except for chloride, fluoride, and nitrate, which had detectable concentrations in 60 to 80 percent of the samples.

Eighteen metals were detected in all samples. Antimony, selenium, silver, sodium, and thallium were not detected in all five samples. Calcium was detected in 80 percent of samples and mercury was detected in 20 percent of samples.

Depositional

Data for the summer 2003 depositional samples are summarized in Table 3-12. Values were obtained for all inorganic parameters except for chloride, nitrate, and TOC, which were detected in 80 percent of the samples, and fluoride was detected in 40 percent of the samples. The sodium absorption ratio was calculated for 80 percent of samples.

Eighteen metals were detected in all samples. Selenium, silver, sodium, and thallium were not detected in any of the samples. Arsenic and cadmium were detected in 80 and 60 percent of samples, respectively, and antimony and mercury were both detected in 20 percent of samples.

Fall 2003 Sampling Event

Sediment samples collected during the fall 2003 event were sampled on September 23. Samples were collected at all five sample locations included in the area of upper Cabresto Creek: RRS-9, RRS-12, RRS-13, RRS-15, and UPPER CABRESTO CREEK.

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Riffle

Data for the fall 2003 riffle samples are summarized in Table 3-13. All inorganic parameters were measured for all samples, except nitrate, which was not detected, chloride and fluoride, which were detected in 80 percent of samples. TOC was detected in 80 percent of the samples.

Nineteen metals were detected in all samples. Antimony, mercury, silver, and thallium were not detected in any samples. Boron and selenium were detected in 60 percent of samples.

Depositional

Data for the fall 2003 depositional samples are summarized in Table 3-14. Values were obtained for all inorganic parameters except nitrate, which was not detected in any of the depositional samples, and fluoride, which was detected in 80 percent of samples, as well as chloride, which was detected in 40 percent of samples.

Twenty-one metals were detected in all samples. Antimony and thallium were not detected in any of the samples. Mercury and silver were each detected in one sample.

3.3 REFERENCE LOWER CABRESTO CREEK RIPARIAN

The lower reach of Cabresto Creek is that part of the creek that is west of the mountains on the flats of the Rio Grande Valley (Figure 3-1). This is a reference area for the reach of the Red River adjacent to the tailings facility. The samples that are included in this area are RRS-18, RRS-20, RRS-23, and RRS-27.

Fall 2002 Sampling Event

Sampling on lower Cabresto Creek for the fall 2002 sampling event took place on October 6. Samples were collected at all four sampling stations listed above. Sediment was collected from riffle and depositional areas at each site and then composited into one sample. Data for the fall 2002 sampling event are summarized and compared to human health and ecological SLCs in Table 3-15.

Sediment samples collected during this event were analyzed for inorganic parameters and metals. Values were obtained for all inorganic parameters except chloride and nitrate, which were not detected in any of the four samples, and sulfate, which was detected in 50 percent of the samples.

Eighteen metals were detected in all samples. Antimony, mercury, silver, sodium, and thallium were not detected in any of the samples. Cadmium and selenium were detected in 25 percent of samples.

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Spring 2003 Sampling Event

Samples for this event were collected on March 19, 2003. Sediment was collected from riffle and depositional areas of the streambed at each site. Data for the spring 2003 sampling event are summarized and compared to human health and ecological SLCs in Tables 3-16 and 3-17.

During this event, sediment samples were analyzed for inorganic parameters and metals.

Riffle

Values for all inorganic parameters were determined except chloride, which was not detected in any of the samples, and nitrate, which was detected in one of the samples.

Eighteen metals were detected in all samples. Antimony, mercury, silver, and thallium were not detected in any of the samples. Sodium was detected in one sample, and boron was detected in two samples. Selenium was detected in three samples.

Depositional

Values for all inorganic parameters were determined except chloride and nitrate, which were not detected in any of the samples.

Twenty-one metals were detected in all samples. Antimony, mercury, silver, sodium, and thallium were not detected in any of the samples. Selenium was detected in three out of the four samples.

Summer 2003 Sampling Event

Samples were collected in lower Cabresto Creek on July 14. Samples were collected at RRS-20, RRS-23, and RRS-27. RRS-18 was dry during the summer 2003 sampling event as a result of diversion for irrigation. Only a depositional sample was collected at RRS-20 due to a narrow channel of flow and lack of riffle deposits. Data for the summer 2003 sampling event are summarized and compared to human health and ecological SLCs in Tables 3-18 and Table 3-19.

During this event, sediment samples were analyzed for inorganic parameters and metals. The particle size distribution was determined on the riffle and depositional fractions collected at RRS-20.

Riffle

All inorganic parameters were detected except fluoride and TOC, which were each detected in one sample.

Eighteen metals were detected in all samples. Antimony, cadmium, mercury, selenium, silver, sodium, and thallium were not detected in any of the samples.

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All inorganic parameters were detected except fluoride and TOC, which were detected in two out of the three depositional samples.

Eighteen metals were detected in all samples. Antimony, cadmium, selenium, silver, sodium, and thallium were not detected in any samples and mercury was detected in one sample.

Fall 2003 Sampling Event

Lower Cabresto Creek samples were collected for the fall 2003 sampling event on September 22 and 23. Samples were collected at RRS-18, RRS-20, RRS-23, and RRS-27. Sediment was collected from riffle and depositional areas at each location. Data for the fall 2003 sampling event are summarized and compared to human health and ecological SLCs in Tables 3-20 and Table 3-21.

During this event, sediment samples were analyzed for inorganic parameters and metals. Particle size distribution was determined on the riffle and depositional samples collected at RRS-20.

Riffle

Values for all inorganic parameters were determined for all samples with the following exception. Nitrate was not detected in any of the riffle samples. Chloride was detected in one sample and TOC was detected in three samples.

Eighteen metals were detected in all samples. Antimony, mercury, silver, and thallium were not detected in any of the samples. Boron, cadmium, and selenium were detected in three out of the four samples.

The riffle particle size distribution resulted in 86 percent sand, 8 percent fine sand, and less than 6 percent silt and clay.

Depositional

Values for all inorganic parameters were obtained for all samples except nitrate, which was not detected in any of the samples, and chloride, which was detected in one sample.

Nineteen metals were detected in all samples. Antimony, mercury, silver, and thallium were not detected in any of the samples. Boron was detected in 75 percent of the samples. Selenium was detected in 50 percent of the samples.

The depositional sample from RRS-20 contained 70 percent sand, 20 percent fine sand, and less than 10 percent silt and clay.

3.4 RED RIVER

The Red River area consists of the portion of the Red River from the eastern end of the mine property downstream to the Red River State Fish Hatchery. The sample stations in this area are

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RR-7, RR-8, RR-8A, RR-10, RR-10A1, RR-11A1, RR-11B, RR-11C, RR-12, RR-13, RR-14, RR-15, RR-16, RR-17, RR-18A, RR-18B, RR-20, LR-1, LR-5, LR-8A, LR-11A, LR-13, and LR-16 (Figure 3-1).

Fall 2002 Sampling Event

Sampling on the Red River for the fall 2002 sampling event occurred from September 26 to October 8. Samples were collected at all sampling stations listed above. Sediment was collected from riffle and depositional areas at each site and then composited into one sample. Data for the fall 2002 sampling event are summarized and compared to human health and ecological SLCs in Table 3-22.

During this event all sediment samples were analyzed for inorganic parameters and metals. Samples from selected sites were also analyzed for explosives, dioxins-dibenzofurans, pesticides-PCBs, semivolatiles, and volatile organics.

Four samples (RR-12, RR-20, LR-11A, and RR16) were analyzed for dioxins-dibenzofurans. 1,2,3,4,6,7,8-octachlorodibenzo-p-dioxin, and 1,2,3,4,6,7,8,9-heptachlorodibenzo-p-dioxin were each detected in one sample. Concentrations of all other analytes were non-detect.

No explosives were detected in any of the nine samples collected from RR-7, RR-8, RR-11A1, RR-12, RR-15, RR-20, LR-1, LR-8A, and LR-16.

All inorganic parameters were detected in all samples except chloride and nitrate, which were detected in less than 10 percent of samples, and sulfate and TOC, which were detected in 78 percent of the samples.

Eighteen metals were detected in all samples. Mercury was not detected in any of the 23 samples. Antimony and boron were detected in 30 percent and 26 percent of samples, respectively. Cadmium, silver, sodium, and thallium were detected in 65 to 78 percent of samples.

Samples collected from RR-7, RR-8, RR-11A1, RR-12, RR-15, RR-20, LR-1, LR-8A, LR-11A, and LR-16 were also analyzed for pesticides and PCBs. The one exception is RR-11A, which was not analyzed for Aroclors. Beta-hexachlorocyclohexane and DDT were detected in one sample. Concentrations of all other analytes were non-detect.

No semivolatile compounds were detected at the locations where they were analyzed (RR-7, RR-8, RR-11A1, RR-12, RR-15, RR-20, LR-1, LR-8A, and LR-16).

Volatile organic compounds were analyzed in samples collected at RR-7, RR-8, RR-11A1, RR-12, RR-15, RR-20, LR-1, LR-8A, and LR-16. 2-Butanone was detected in one of the nine samples. Concentrations of all other analytes were non-detect.

The particle size distribution was determined on samples from RR-7, RR-8, RR-11A1, RR-12, RR-15, RR-20, LR-1, LR-8A, and LR-16. River sediment tended to get finer downstream. The largest percentage of sand was found in both RR-7 and RR-8, the samples located furthest upstream in this section of the river. These samples contained greater than 70 percent sand. In the next three samples, RR-11A1, RR-12, and RR-15, the bulk of the sediment was present as

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sand (32 to 56 percent) and fine sand (38 to 54 percent). At sites RR-20, LR-1, LR-5, LR-8A, and LR-16 further down river, a greater portion of the sediment was present as silt (38 to 49 percent). The clay comprised less than 8 percent at all sites.

Spring 2003 Sampling Event

The spring 2003 sampling event was conducted during the rising limb of the spring runoff. Sediment was collected from both riffle and depositional areas, and these samples were analyzed separately. Samples were collected at RR-7 through RR-20 and LR-1 through LR-16.

Samples collected during this event were analyzed for inorganic parameters and metals.

Riffle

Data for the riffle sediments are summarized in Table 3-23. Values were obtained for all inorganic parameters in all samples, with the following exceptions. Chloride and TOC were detected in 48 percent of the samples. Nitrate was detected in 9 percent and TKN was detected in all but one sample. The CEC was calculated for 91 percent of samples.

Seventeen metals were detected in all samples. Antimony and mercury were not detected in any of the riffle sediments. Boron and cadmium were detected in 87 percent and 70 percent of samples, respectively. Selenium was detected in 52 percent of samples, silver in 4 percent, and sodium and thallium both in 35 percent of samples.

Depositional

Data for the depositional sediments are summarized in Table 3-24. Values were obtained for all inorganic parameters, in all samples, with the following exceptions. Twenty-three samples were collected and analyzed. Nitrate was detected in 9 percent of samples and chloride was detected in 52 percent of samples. TOC was detected in 83 percent of samples.

Eighteen metals were detected in all samples. Antimony and mercury were not detected in any depositional samples. Cadmium was detected in 61 percent of samples. Silver, selenium, and thallium were detected in greater than 83 percent of samples. Sodium was detected in 48 percent of the samples.

Summer 2003 Sampling Event

Sediment samples were collected during the summer of 2003 on July 13 and 14. The stream flow in the Red River during this time was moderate. Sample locations were RR-7 through RR-20 and LR-1 through LR-16. Samples collected during this event were analyzed for inorganic parameters and metals.

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Riffle

Data for the summer 2003 riffle sediments are summarized in Table 3-25. Values were determined for all inorganic parameters in all samples, with the following exceptions. TKN was detected in all but one of the 23 samples. TOC was detected in 39 percent of samples and fluoride was detected in 70 percent of samples. Chloride and nitrate were detected in 78 percent of the samples.

Eighteen metals were detected in all samples. Mercury was not detected in any of the riffle sediments. Antimony and thallium were detected in 8 percent of the samples. Boron was detected in all but one sample. Selenium, silver, and sodium were detected at 26 percent, 4 percent, and 65 percent of samples, respectively.

Depositional

Data for the summer 2003 depositional sediments are summarized in Table 3-26. Values were obtained for all inorganic parameters in all other samples, with the following exceptions. Chloride, fluoride, and nitrate were detected in greater than 74 percent of samples. TOC was detected in 44 percent of the samples.

Eighteen metals were detected in all samples. Mercury was not detected in any of the depositional sediments. Antimony was detected in 8 percent of samples. Cadmium was detected in all but one sample. Selenium, silver, sodium, and thallium were detected in less than 53 percent of the samples.

Fall 2003 Sampling Event

Sediment sampling during the fall of 2003 was conducted on September 21 and 22, during moderate stream flow conditions. Sampling locations were RR-7 through RR-20 and LR-1 through LR-16.

Samples collected during this event were analyzed for inorganic parameters and metals. Particle size distributions were determined on samples RR-4, RR-5, RR-6, RR-7, RR-8, RR-11A1, RR-12, RR-15, RR-20, LR-1, LR-5, LR-8A, LR-13, and LR-16.

Riffle

Riffle sediment data are summarized in Table 3-27. Values were obtained for all inorganic parameters for all other samples with the following exceptions. Nitrate was not detected in any of the samples. TOC was detected in 30 percent of samples and chloride was detected in 52 percent of samples. Fluoride and TKN were detected in greater than 82 percent of samples.

Seventeen metals were detected in all samples. Antimony and thallium were not detected in any of the samples collected. Mercury was detected in one sample. Boron and silver were detected in less than 35 percent of samples. Cadmium, selenium, and sodium were detected in greater than 56 percent of samples.

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Riffle samples contained greater than 80 percent sand at all sites and fine sand comprised 5 percent to 16 percent of the material. Silt and clay comprised less than 5 percent of the total sample for all sites.

Depositional

Data for the fall 2003 depositional sediments are summarized in Table 3-28. All inorganic parameters were obtained for all other samples, with the following exceptions. Nitrate was not detected in any samples. Chloride was detected in 44 percent of the samples. TOC was detected in 65 percent of the samples. TKN and fluoride were detected in greater than 90 percent of the samples.

Seventeen metals were detected in all samples. Antimony, boron, mercury, and thallium were detected in less than 27 percent of samples. Silver was detected in 39 percent of the samples. Cadmium, selenium, and sodium were detected in greater than 65 percent of samples.

The bulk of the sediment in the depositional samples was present as sand and fine sand, with less than 14 percent silt in any sample. The one exception was sample RR-15 that contained 27 percent silt and 61 percent fine sand. There was no trend in the distribution of the sand and fine sand with distance down river. Clay accounted for less than 3 percent of the total samples at all sites.

3.5 LAKES AND PONDS

Upper Fawn Lake and Eagle Rock Lake were included in the quarterly surface water and sediment sampling events. Both lakes are fed by water from the Red River and discharge back into the river. Upper Fawn Lake, located approximately 6 miles west of the town of Red River is upstream of the Molycorp Mine (Figure 3-1). This lake provides a reference area for Eagle Rock Lake, which is located downstream of the mine approximately 1 mile.

Samples were collected near the inflow of each lake, at the middle of the lake, and near the outflow. Sampling was conducted from a boat using a petite Ponar sampling device, a claw-like device that was dropped on a line to grab sediment from the lake bottom.

Lake sediment samples from all four sampling events were analyzed for inorganic parameters by a variety of methods, and for metals concentrations by Inductively Coupled Plasma/Mass Spectroscopy and Cold Vapor Atomic Absorption (ICP/MS/CVAA). Samples collected in the fall 2002 were also analyzed for metals using the acid volatile sulfide – simultaneously extracted metals (AVS-SEM) method. This is a technique for predicting sediment toxicity by determining the accessibility of heavy metals. Most divalent metals form precipitates with sulfides, and the most soluble of these are iron and manganese sulfides. Heavy metal sulfides are not likely to dissolve as long as there is sufficient sulfide available to form precipitates. Comparing the amount of readily AVS and metals can indicate the toxicity of the sediment to aquatic invertebrates. The method involves subjecting the sediment to a cold acid solution, and measuring the resulting amount of sulfide gas and metals. The amount of metals that are released the simultaneously extractable metals (SEM) are compared to the acid volatile sulfides

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in a ratio (SEM:AVS). If the amount of metals released is greater than the available sulfide (i.e., a ratio >1 on a milli-equivalent basis) then the sediments are considered to be toxic. A ratio less than one indicates that there is sufficient available sulfide that the metal sulfides will not dissolve and are therefore, not toxic. The actual sediment toxicity depends on the amount and type of metals available. This technique is controversial, and has not yet been endorsed in a final form by the EPA.

Samples collected in the fall 2002 event from the middle of each lake UFLMID and ERLMID were also analyzed for explosives, pesticides and PCBs, VOCs, and SVOCs.

EPA directed Molycorp to conduct a geochemical investigation of Hunt's Pond and include this work in the RI (EPA 2004). Hunt's Pond is located in the southern part of the Village of Questa (Figure 3-1). Soil, surface water, and sediment samples were collected in and around the pond in May 2004.

Upper Fawn Lake

The sediment samples UFLIN, UFLMID, and UFLOUT were collected near the inflow, middle, and outflow of upper Fawn Lake, respectively. One sample was collected from each location during each sampling event.

Fall 2002 Sampling Event

Upper Fawn Lake sediment samples were collected on October 8, 2002. The lake sediment data for the fall 2002 sampling event are summarized in Table 3-29.

No explosives were detected in UFL-MID.

All inorganic parameters were detected in all samples except for chloride, which was detected in one sample, and nitrate, which was not detected in any sample. All metal analytes were detected in all samples, except antimony, which was not detected in any of the three sediment samples, and selenium and mercury, which were both detected in one sample.

Two pesticide compounds, alpha-hexachlorocyclohexane and beta-hexachlorocyclohexane, were detected. Several SVOCs were detected: benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene. All other SVOCs were non-detect. 2-Butanone was the only VOC that was detected.

All three lake-sediment samples were analyzed by the AVS-SEM method and all had detectable concentrations of the seven metals that are included in the analysis, namely cadmium, copper, lead, iron, mercury, nickel, and zinc.

A sample was collected for particle size distribution from the UFLMID. The sample contained 66 percent silt, 34 percent clay, and less than 0.2 percent fine sand and sand.

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Spring 2003 Sampling Event

Lake sediment samples were collected from Eagle Rock Lake on March 21. Upper Fawn Lake was still frozen in March, so samples were collected from this lake on April 9. Samples were analyzed for inorganic parameters and metals concentrations.

Upper Fawn Lake sediment data are summarized in Table 3-30. All inorganic parameters were detected in all samples, except chloride and nitrate that were not detected in any of the three samples. Antimony, mercury, and selenium were not detected in any of the samples. Beryllium was detected in two of the three samples.

Summer 2003 Sampling Event

Lake sediment samples collected from upper Fawn Lake in the summer 2003 sampling event were collected on July 17. Data for the sediment samples collected in the summer of 2003 from upper Fawn Lake are summarized in Table 3-31. All inorganic parameters were detected in all samples, except that two samples contained detectable fluoride concentrations and one sample contained detectable nitrate concentrations. Twenty-one metals were detected in all samples, except antimony and sodium, which were not detected in any samples, cadmium which was detected in one sample, and mercury which was detected in two of the three sediment samples.

Fall 2003 Sampling Event

Fall 2003 upper Fawn Lake sediment samples were collected on September 25. Data for the sediment samples collected in the summer of 2003 from upper Fawn Lake are summarized in Table 3-32.

All inorganic parameters were detected in all samples except nitrate, which was not detected in any samples, and fluoride, which was detected in one sample. Antimony, boron, and mercury were not detected in any of the sediment samples. Twenty-two metals were detected in all samples.

A particle size analysis was conducted on the fall 2003 UFLMID sample. Silt comprised the greatest percentage of the material at 49 percent. Fine sand accounted for 35 percent of the sample and clay material accounted for 15 percent of the sample. Sand comprised less than 2 percent of the sample.

Surface Water Area 2 - Eagle Rock Lake

The sediment samples ERLIN, ERLMID, and ERLOUT were collected near the inflow, middle, and outflow of Eagle Rock Lake, respectively. One sample was collected from each location during each sampling event.

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Fall 2002 Sampling Event

In fall 2002, Eagle Rock Lake was sampled on October 7. The lake sediment data for the fall 2002 sampling event are summarized in Table 3-33.

ERLMID was analyzed for organic compounds. No explosives, pesticides, PCBs, VOCs, or SVOCs were detected in this sample.

All inorganic parameters were detected in all samples except chloride, which was detected in one sample, and nitrate, which was not detected in any sample. Twenty-two metals were detected in all samples. Antimony and mercury were not detected in any of the three sediment samples. Cadmium was detected in two samples.

All three samples analyzed by the AVS-SEM method had detectable concentrations of the seven metals that are included in the analysis, namely cadmium, copper, lead, iron, mercury, nickel, and zinc.

A sample was collected for particle size distribution from the middle area of ERLMID. The sample contained 52 percent silt, 46 percent clay, and less than 2 percent fine sand and sand.

Spring 2003 Sampling Event

Samples were collected on March 21. Samples were analyzed for inorganic parameters and metals concentrations. Data are summarized in Table 3-34.

All inorganic parameters were detected in all samples, except chloride and nitrate which were not detected in any of the three samples, and TOC which was detected in two of the samples. Twenty-one metals were detected in all samples. Antimony and mercury were not detected in the sediments. Silver and sodium were detected in two samples.

Summer 2003 Sampling Event

Data for the sediment samples collected in the summer of 2003 from Eagle Rock Lake are summarized in Table 3-35. Sediment samples for this event were collected on July 16.

All inorganic parameters were detected in all samples, except nitrate, which was detected in one sample. Twenty metals were detected in all samples. Antimony and sodium were not detected in any samples. Cadmium, silver, and thallium were detected in two of the three sediment samples.

Fall 2003 Sampling Event

Data for the sediment samples collected in the summer of 2003 from Eagle Rock Lake are summarized in Table 3-36. Sampling for this event was conducted on September 25.

All inorganic parameters were detected in all samples, except nitrate, which was not detected in any sample. Twenty-two metals were detected in all samples. Antimony, boron, and mercury were not detected in any of the sediment samples.

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The particle size distribution was determined for ERLMID. Silt comprised 60 percent of the sample and clay accounted for 39 percent of the sample. Fine sand and sand were less than 0.4 percent of the sample.

Hunt's Pond

Three sediment samples were collected from Hunt's Pond in May 2004 (Figure 3-2). Dredging of the pond in 2000 and 2003 removed most of the sediment from the pond bottom, and attempts to sample using a petite Ponar sampler were unsuccessful. Therefore, three sediment samples were collected from the east, south, and west sides of the pond just above the water level (HUNT-SED1, HUNT-SED2, HUNT-SED3, respectively). The results of analyses of these samples are summarized in Table 3-37.

All inorganic parameters were detected in all samples except for nitrate, which was detected in one sample and TOC which was detected in two samples. Eighteen metals were detected in all samples. Antimony, boron, mercury, selenium, silver, sodium, and thallium were not detected in any of the three sediment samples.

Unique Habitats

Samples were collected in ecologically unique aquatic habitats that were found during the RI (Figure 3-1). All of the unique habitats identified over the course of the RI were beaver ponds. Beaver ponds were built at different times at six different locations along the Red River. These were sampled for surface water and sediment.

Unique1 was a beaver pond behind a large dam across the Red River approximately 0.25 mile upstream of the entrance to the Molycorp administrative building. This site was sampled March 20, 2003. It was breached by the 2003 spring runoff and was not rebuilt. Unique2 and Unique3 were smaller dams built across the Red River downstream of the lower dump sump. These dams were sampled March 23, 2003 and later breached during the spring runoff of that year. Unique3 was rebuilt and sampled a second time in the fall of 2003 on September 26. Unique4 is a pond located adjacent to Unique1. This dam was originally built by beavers, but is now silted in. The pond is filled by a channel of the Red River. Unique5 was a pond formed by a small beaver dam built on the Red River approximately 500 feet upstream of Unique4. Unique6 was located at the confluence between outfall 002 and the Red River. The outfall drainage flows in a separate channel for approximately 100 feet before entering the river. A small dam was built at this confluence and the Unique6 sample collected behind it. Unique 4, Unique5, and Unique6 were all sampled on September 26, 2003.

All data resulting from sampling of the unique habitat sediment samples are summarized in Table 3-38. These samples were analyzed for inorganic parameters and metals concentration, and laboratory parameters were measured.

All inorganic parameters were detected in all samples, except nitrate, which was not detected in any of the sediments, and chloride and fluoride, which were detected in 71 percent and 86 percent of samples, respectively.

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Seventeen metals were detected in all samples. Antimony was not detected in any of the samples. Cadmium, selenium, sodium, and thallium were detected in six of the seven samples, and boron and silver were detected in 43 percent of samples. Mercury was detected in one sample.

Samples for particle size distribution were collected in fall 2003 at Unique3, Unique4, Unique5, and Unique6. Sand comprised greater than 50 percent of Unique3 and Unique6, and silt comprised 10 percent or less of the material. In contrast, silt was the main particle size at Unique4 and Unique5 at percentages greater than 50 percent, and sand comprised less than 2 percent. Fine sand was similar at all four locations ranging from 29 percent to 37 percent of the material. Clay comprised less than 17 percent of the material in the samples.

3.6 SOIL AREA 14 – TAILINGS IMPOUNDMENTS

Sediment samples were collected from the bottom of the tailings ponds during the fall 2002 event only. The sediment sample locations were the same as the surface water locations (Figure 3-1). These sample sites were selected randomly by dividing the surface of the tailings facility into 10 equally sized areas, and superimposing a numbered grid on each area. A randomly chosen number indicated the grid square that was to be sampled. The actual location in the field was an approximation of the random location since the actual points in the ponds could not easily be surveyed. Because the tailings facility is active and tailings were being deposited there prior to and during the sampling, the actual outlines of the ponds had changed in the time between the selection of the sample locations and sample collection. Some randomly selected points fell on dry land. In these cases, samples were collected at the nearest point to the randomly selected location that could be accessed by boat.

Tailings pond sediment samples were collected using the same technique as that used to sample sediments from upper Fawn Lake and Eagle Rock Lake, namely a petite Ponar grab sampling device was dropped on a line from a boat. Once the sampler had grabbed sediment from the pond bottom, the device was pulled out of the water and the sediment collected into sample bottles.

The 10 sediment samples collected from the tailings ponds were named SW12-1 through SW12-10. All samples were analyzed for inorganic parameters and metals concentrations.

Tailings sediment data are summarized in Table 3-39. All inorganic parameters were detected in all samples, with the following exceptions. None of the 10 tailings sediment samples contained detectable nitrate concentrations. TKN was detected in all but one sample, and TOC was detected in all but two samples. Nineteen metals were detected in all samples. None of the tailings samples contained detectable mercury. Antimony, boron, selenium, and sodium were detected in one sample. Silver was detected in 60 percent of samples.

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3.7 ADDITIONAL SEDIMENTS

Irrigation Ditch Return Flows

Sediments were collected in two irrigation return flow ditches, LR-4 and LR-6 (Figure 3-3). These return ditches drain fields located north of the Red River and discharge into the river. LR-4 is located approximately 1,000 feet upstream of outfall 002 and LR-6 is located approximately 1,000 feet downstream of the outfall. The return ditches were flowing when they were sampled. Samples were collected from LR-6 in September 21, 2003 and from both sites in November 5, 2003. The sample collected at LR-6 in September 2003 was described as a riffle sample, and results of this sample are presented in Table 3-40. The November samples were depositional samples and data are summarized in Table 3-41.

All inorganic parameters were detected in both samples with the exception of nitrate, which was not detected in either sample. Sixteen metals were detected in all samples. Antimony, mercury, and thallium were not detected in any sample. Cadmium, silver, and sodium were each detected in one sample. Boron, molybdenum, and selenium were each detected in two samples.

Irrigation Ditches

The Village of Questa diverts water in the spring for irrigation from the Red River and Cabresto Creek. Four irrigation ditches divert water from the Red River. These are the Southside (or South or High) ditch, the Embargo (or North) Ditch, the Middle (or Unnamed or Central) ditch, and the Gallegos Ditch. Samples were collected from these ditches from the following locations: SD-1, SD-2, SD-3, ND-1, ND-2A, ND-3A, ND-4A, ND-5, CD-1, UD-1, GD-1, GD-2, and GD-3. Several ditches also divert water from Cabresto Creek. Sediment was collected from one of these, Cabresto Ditch #4. All sample locations are shown in Figure 3-3.

The sampling events during which sediments were collected at each location are listed in the table below. Separate riffle and depositional samples were collected at three irrigation ditch sites, CD-1 collected in March 2003, and ND-1 collected in July and September 2003.

Sampling Event	Sites Sampled
March 19, 2003	CD-1 (riffle), CD-1 (depositional)
July 15 & 16, 2003	CD-1, ND-1 (riffle), ND-1 (depositional), SD-1, Cabresto Ditch #4
September 21 & 22, 2003	CD-1, ND-1 (riffle), and ND-1 (depositional), SD-1, Cabresto Ditch #4
November 5, 2003	ND-2A, ND-3A, ND-4A, ND-5
May 10, 11, & 12, 2004	SD-2, SD-3, GD-1, GD-2, GD-3, UD-1

Irrigation ditch sediment data are summarized in Table 3-42. Twenty-two irrigation ditch samples were collected during the RI. Fluoride, organic soils, phosphorus, and sulfate were

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detected in all samples. All but one sample had detectable concentrations of ammonia, chloride, TKN, and TOC. Fifty-nine percent of the samples had detectable nitrate.

Sixteen metals were detected in all samples. All but one sample had detectable molybdenum, and all but two samples had detectable cadmium. Boron, mercury, selenium, silver, sodium, and thallium were detected in 27 to 77 percent of samples. Antimony was detected in 9 percent of samples.

The particle size distribution was determined for the sample collected at ND-2A. Sand comprised 80 percent of the material. Fine sand accounted for 12 percent of the sediment, and silt and clay comprised less than 8 percent of the sample.

Reference Red River Above Mine Site (Hansen Creek)

One sample was collected from Hansen Creek on July 17, 2003 (Figure 3-1). This grab sample was the only sediment sample collected in Hansen Creek during the RI. The data are presented in Table 3-43. Nitrate, TKN, and TOC were not detected in the Hansen Creek sample.

Antimony, cadmium, mercury, silver, sodium, and thallium were not detected in the sample. Values were obtained for all other parameters.

3.8 SUMMARY

This section summarizes the sediment data that were collected during the RI.

Organic Parameters

Only sediment samples collected in the fall of 2002 were analyzed for organic parameters. Due to the low numbers of samples in which organic compounds were detected, later samples were not analyzed for these parameters.

Explosives were not detected in any sediments during the RI. Dioxins and dibenzofurans were detected at RR-4, approximately 3.4 miles above the mine site near the town of Red River, and at RR-20, located in the western part of Questa. The highest concentration detected was 24 picograms per gram (pg/g) at RR-20. The human health SLC for these compounds is 1,000 pg/g.

Pesticides were only detected in three samples: RR-11A1, LR-8A, and UFLMID. All values were below the SLCs except for beta-hexachlorocyclohexane in UFLMID. The concentration of this compound (0.0057 milligrams per kilogram [mg/kg]) was above the ecological SLC of 0.003 mg/kg.

VOCs were detected at three sample locations. 2-Butanone was detected at Zwergle, UFLMID, and LR-1. The highest concentration detected was 0.021 mg/kg, well below the ecological SLC of 0.27 mg/kg. Trichloroethene was detected at RR-5 and the value (0.0008 mg/kg) was below the 0.043 mg/kg human health SLC.

SVOCs were only detected in the UFLMID sample. The compounds were benzo (b)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, fluoranthene, and pyrene. The

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pyrene concentration of 0.069 mg/kg was above the 0.053 mg/kg ecological SLC. The other compounds were below the SLCs.

This review of organic compounds in RI sediments indicates that organic compounds were detected in seven of the 54 samples collected during the fall 2002 sampling event. Three of these seven samples (Zwergle, RR-4, and UFLMID) are located in the reference area above the mine site. Furthermore, the only compounds detected in concentrations that were above the SLCs were found in UFLMID, the sample collected from the center of upper Fawn Lake. No organic compounds were detected in the 10 samples collected from the tailings sediments.

3.8.1 Inorganics and Metals

Red River and Reference Areas

There are no ecological SLC for sediment for the inorganic analytes defined under the RI, and only fluoride has a human health SLC. All sediment samples collected from the Red River and the three reference areas, Red River above the mine site, upper Cabresto Creek, and lower Cabresto Creek, had fluoride concentrations below the human health SLC (3,700 mg/kg).

The tables below list metal analytes that exceeded the human health SLC in sediments for each sampling area and sampling event. The human health SLC for arsenic (0.39 mg/kg) was exceeded in the three reference areas and along the mine site for every sampling event. Arsenic concentrations exceeded the ecological SLC (5.9 mg/kg) in Red River sediments along the mine site and tailings facility in all sampling fractions and events, with the exception of fall 2003 riffle samples. The ecological SLC was also exceeded in several sample fractions collected from the Red River reference area upstream of the mine and in the summer 2003 depositional samples collected from the lower Cabresto Creek reference area.

Iron concentrations exceeded the human health SLC (23,000 mg/kg) in the Red River and the Red River reference areas upstream of the mine in most events/fractions. The exceptions were the fall 2002 and fall 2003 riffle samples collected from the Red River, and the riffle samples in spring and fall 2003 from the Red River reference area above the mine site.

A similar suite of analytes exceeded the ecological SLC in the Red River and Red River reference area. Nickel (18 mg/kg) and zinc (123 mg/kg) exceeded the SLC in all sample fractions and events in these two sample areas. Copper (35.7 mg/kg), iron (20,000 mg/kg), lead (353 mg/kg), and manganese (460 mg/kg) each exceeded the SLC in samples from all but one fraction and event. Arsenic (5.9 mg/kg) exceeded the SLC in all sampling events and fractions in the Red River area except for fall 2003 riffle samples. For the Red River reference area, arsenic exceeded the SLC in all but the fall 2002 composite, the spring 2003 riffle, and the fall 2003 riffle samples. Cadmium (0.6 mg/kg) exceeded the SLC in the Red River and Red River reference area in the fall 2002, spring 2003, summer 2003 depositional, and fall 2003 depositional samples. Silver (1 mg/kg) exceeded the SLC only in the spring 2003 depositional samples of these two areas. Chromium (37.3 mg/kg) exceeded the SLC in two groups of samples: fall 2003 riffle material from the Red River and spring 2003 riffle sample from the Red River reference area.

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Sampling Event	Sample Fraction	Metal Analytes Exceeding Human Health SLC In Red River and Reference Areas			
		Red River Reference Upstream of Mine	Upper Cabresto Creek Reference	Lower Cabresto Creek Reference	Red River Along Mine Site and Tailings Facility
Fall 2002	Composite	As	As	As	As, Fe
Spring 2003	Riffle	As, Fe	As	As	As
	Depositional	As, Fe	As	As	As, Fe
Summer 2003	Riffle	As, Fe	As	As	As, Fe
	Depositional	As, Fe	As	As	As, Fe
Fall 2003	Riffle	As	As	As	As
	Depositional	As, Fe	As	As	As, Fe
Fall 2002	Composite	Cd, Cu, Fe, Pb, Mn, Ni, Zn	Zn	--	As, Cd, Cu, Fe, Pb, Mn, Ni, Zn
Spring 2003	Riffle	Cd, Cr, Cu, Fe, Pb, Mn, Ni, Zn	Ni, Zn	Se	As, Cd, Cu, Pb, Mn, Ni, Zn
	Depositional	As, Cd, Cu, Fe, Pb, Mn, Ni, Ag, Zn	Pb, Zn	--	As, Cd, Cu, Fe, Pb, Mn, Ni, Se, Ag, Zn
Summer 2003	Riffle	As, Cu, Fe, Pb, Mn, Ni, Zn	Mn, Ni, Zn	--	As, Cu, Fe, Pb, Mn, Ni, Zn
	Depositional	As, Cu, Fe, Pb, Mn, Ni, Zn	Mn, Ni, Zn	As	As, Cd, Cu, Fe, Pb, Mn, Ni, Zn
Fall 2003	Riffle	Cu, Fe, Pb, Mn, Ni, Zn	Mn, Ni, Zn	--	Cr, Fe, Pb, Ni, Zn
	Depositional	As, Cd, Cu, Fe, Pb, Mn, Ni, Zn	Cd, Pb, Ni, Se, Zn	Mn, Zn	As, Cd, Cu, Fe, Pb, Mn, Ni, Zn

Zinc exceeded the ecological SLC (123 mg/kg) in samples from all events and sample fractions collected from upper Cabresto Creek, and nickel exceeded the SLC (18 mg/kg) in all but two events and sample fractions (fall 2002 composite and spring 2003 depositional samples). Manganese exceeded the SLC (460 mg/kg) in the riffle and depositional samples from the summer 2003, and in the riffle samples from fall 2003. Lead exceeded the SLC (35 mg/kg) in the spring and fall 2003 depositional samples. The only other exceedances in the upper Cabresto Creek reference area were cadmium (0.6 mg/kg) and selenium (2 mg/kg) in the fall 2003 depositional samples.

There were few exceedances in the Lower Cabresto Creek reference area sediments compared to the other areas. Selenium (2 mg/kg) exceeded the SLC in the spring 2003 riffle samples and

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arsenic exceeded the SLC in the summer 2003 depositional samples. Also, the fall 2003 depositional samples had exceedances of manganese and zinc.

Figures 3-4 through 3-13 compare the mean metal concentrations in Red River sediments to the mean metal concentrations in the three reference areas for the analytes that exceed an SLC. Each graph is divided into four sections; each section presenting data from one of the four sampling events: fall 2002; spring, summer, and fall 2003. In each section, the mean concentration of all samples collected during that sampling event from the Red River adjacent to and downstream of the mine site is shown as a solid colored column. The mean concentrations of samples collected from reference areas are shown with a notched pattern. For each metal, a mean value was calculated if at least half of the samples in the population had concentrations above the detection limit. Bars on some graphs are not shown because greater than 50 percent of the values were non-detect and a mean concentration was not calculated. The SLC for each metal is listed on each graph. SLC that are close to the mean concentrations are plotted on the graphs as dashed lines. SLC that are much higher than the mean concentrations are shown as text.

No graphs are presented for silver because too few samples had detectable concentrations for these graphs to be meaningful. Ninety river sediment samples had detectable silver concentrations. All concentrations were well below the 390 mg/kg human health SLC. Only two samples were above the ecological SLC of 1 mg/kg. These samples were collected at LR-11A and Zwergle.

All river and creek sediment samples, in both the reference and non-reference areas, contained arsenic concentrations that were above the human health SLC of 0.39 mg/kg, and the mean values in Figure 3-4 reflect this. Only the Red River area had data that was above the ecological SLC of 5.9 mg/kg. The mean arsenic concentrations for both the riffle and depositional samples collected in fall 2002, and the depositional samples collected in the spring and fall 2003 were above the ecological SLC.

Mean cadmium values were not calculated for the Red River reference and lower Cabresto Creek reference areas for riffle or depositional samples collected in fall 2002 and summer 2003 because more than half of these values were non-detect (Figure 3-5). Mean concentrations for all events/fractions were below the human health SLC (39 mg/kg). All mean concentrations were also below the 0.6 mg/kg ecological SLC with the exception of the mean value calculated for the Upper Cabresto Creek depositional samples collected in the fall 2003.

There was little variation in the mean chromium concentrations in both riffle and depositional fractions through the year (Figure 3-6). Concentrations were greater in one or more reference areas than in the Red River area. The highest mean concentration in the Red River was in spring 2003.

All copper concentrations were below 100 mg/kg, well below the human health SLC of 2,900 mg/kg (Figure 3-7). Mean copper concentrations in the Red River and in the reference area of the Red River upstream of the mine were above the ecological SLC of 35.7 mg/kg in depositional fractions for all events. Mean values in riffle samples also exceeded the SLC, except for the Red River area in summer 2003, and the Red River area and the Red River

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reference area above the mine site in fall 2003. All mean values calculated for upper and lower Cabresto Creek were below the ecological SLC.

The mean value for iron in the fall 2002 composite from the Red River was above both the ecological (20,000 mg/kg) and human health (23,000 mg/kg) SLCs with a mean value of 24,000 mg/kg (Figure 3-8). The mean values for the other composite samples were below both SLCs, and for all riffle samples were below both SLCs. For the depositional samples, mean iron concentrations calculated for the Red River area and the Red River reference area above the mine site exceeded one or both of the SLCs in the spring and fall 2003.

Mean lead values calculated for each area and event was below the human health SLC (400 mg/kg). Mean lead concentrations were above the ecological SLC of 35 mg/kg for the Red River area and Red River reference area above the mine site in both the riffle and depositional fractions for all sampling events, with the exceptions of spring and fall 2003 (Figure 3-9). All of the sample means for the Cabresto Creek reference areas were below the SLC.

Mean manganese values calculated for each area and event were below the human health SLC (3,200 mg/kg). Mean manganese concentrations were below the ecological SLC of 460 mg/kg for all sampling events with the exception of spring 2003 (Figure 3-10). For this event, the mean concentration of the Red River samples, both the riffle and depositional fractions, and the depositional sample from the Red River above the mine site were above the SLC. In all events except for fall 2003, the Red River area had greater mean concentrations than the reference areas.

Mean nickel values calculated for each area and event were below the human health SLC (1,600 mg/kg) (Figure 3-19). Mean concentrations of nickel for the Red River area were above the ecological SLC of 18 mg/kg for all sampling events and fractions. Mean values for both riffle and depositional fractions collected from the Red River reference area in spring 2003 were also above the ecological SLC. The mean values of samples collected during all other events were at or below the SLC.

Several events and/or sample fractions had too few detectable selenium results for a mean concentration to be calculated (Figure 3-12). For example, no data are shown for the summer 2003 sampling event. Of the events that had sufficient data to calculate a mean value, the concentrations of selenium were similar across fractions and sampling events (range of means = 0.4 to 1.4 mg/kg).

Mean zinc values for all events/fractions were below the 23,000 mg/kg human health SLC. For all sampling events, mean zinc concentrations for the Red River were above the 123 mg/kg ecological SLC (Figure 3-13). Mean concentrations from upper Cabresto Creek were also above the SLC for both riffle and depositional samples for most sampling events, with the exception of data from spring and fall 2003.

Finally, the one Hansen Creek collected sample had a fluoride concentration of 0.99 mg/kg, below the 3,700 mg/kg human health SLC. The only metals that exceeded the SLC at this site were arsenic and iron. Both metals exceeded both the human health and ecological SLC. The arsenic concentration in the sample was 7.9 mg/kg and the iron concentration was 29,500 mg/kg.

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Metal concentrations were generally highest in the Red River area and the Red River reference area above the mine site. Depositional samples generally had higher mean metal concentrations than riffle samples. The highest concentrations of aluminum, boron, calcium, chromium, cobalt, iron, magnesium, manganese, and vanadium were measured at Zwergle.

Lakes and Ponds

This section summarizes the results of inorganic parameter and metals results in sediments collected from lakes and ponds. The only inorganic parameter with a screening level is fluoride, and fluoride concentrations in all lake and pond sediments were below the human health SLC of 3,700 mg/kg.

The table below lists the analytes that exceeded the human health or ecological SLC in upper Fawn Lake or Eagle Rock Lake sediments. Arsenic (0.39 mg/kg) and iron (20,000 mg/kg) exceeded the human health SLC in sediments collected from both lakes. Manganese also exceeded the human health SLC (3,200 mg/kg) in one sample from Eagle Rock Lake. This sample was collected at the Eagle Rock Lake outfall location (ERLOUT) in March 2003.

Arsenic (5.9 mg/kg), copper (35.7 mg/kg), iron (23,000 mg/kg), lead (35 mg/kg), manganese (460 mg/kg), nickel (18 mg/kg), selenium (2 mg/kg), silver (1 mg/kg), and zinc (123 mg/kg) exceeded the ecological SLC in sediments from both lakes. Cobalt (50 mg/kg) and mercury (0.17 mg/kg) exceeded ecological SLC only in Eagle Rock Lake.

SLC	Metal Analytes Exceeding Ecological and Human Health SLC in Upper Fawn Lake and Eagle Rock Lake Sediments	
	Upper Fawn Lake	Eagle Rock Lake
Human Health SLC	As, Fe	As, Fe, Mn
Ecological SLC	As, Cd, Cu, Fe, Pb, Mn, Ni, Se, Ag, Zn	As, Cd, Cu, Fe, Pb, Mn, Ni, Se, Ag, Zn, Co, Hg

Antimony was not detected in any lake sediment samples. Mercury was detected in six of the 24 samples collected from the lakes, half from each lake. All, but one of these, were collected in July 2003. Only one sample, ERLOUT, had a mercury concentration above the ecological SLC of 0.17 mg/kg. All concentrations were below the human health SLC (23 mg/kg).

For the remaining metals listed in the table above, Figures 3-14 through 3-24 compare the mean concentrations in Eagle Rock Lake and upper Fawn Lake for each sampling event.

Figure 3-14 compares the mean concentrations of arsenic in lake sediments for each sampling event. The graph shows that the mean arsenic concentrations were above both the human health (0.39 mg/kg) and ecological (5.9 mg/kg) SLC in both lakes during all four sampling events. Mean concentrations were higher in the Eagle Rock Lake sediments than in upper Fawn Lake sediments for all sampling events.

Figure 3-15 shows the mean cadmium concentrations. Note that there is no column for sediment collected from upper Fawn Lake in the summer 2003. This is because greater than half the

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values from this event were non-detect. Mean cadmium concentrations for all other events/lakes were above the 0.6 mg/kg SLC. Except for the fall 2002 event, mean concentrations from Eagle Rock Lake were higher than the mean concentrations from upper Fawn Lake.

Mean concentrations of cobalt were below both the ecological SLC of 50 mg/kg, and the human health SLC (900 mg/kg) for both lakes, except for the spring 2003 Eagle Rock Lake samples which had a mean concentration of 50 mg/kg (Figure 3-16). Sample ERL0UT had a value of 123 mg/kg cobalt in the spring 2003 sample. The next greatest cobalt value in sediments from either lake was 45 mg/kg.

The mean copper concentrations for all sampling events (Figure 3-17) for both lakes were above the 35.7 mg/kg ecological SLC and below the human health SLC (2,900 mg/kg). As with cobalt, mean concentrations were higher in Eagle Rock Lake than upper Fawn Lake, except in fall 2002.

Mean iron concentrations were above both the ecological (20,000 mg/kg) and human health (23,000 mg/kg) SLC for all events (Figure 3-18).

Mean lead concentrations were above the ecological SLC of 35 mg/kg and below the human health SLC of 400 mg/kg in all lake sediments (Figure 3-19). Concentrations were the highest in the Eagle Rock Lake sediments.

The spring, summer, and fall 2003 Eagle Rock Lake sediments had mean manganese concentrations above the ecological SLC (460 mg/kg) and below the human health SLC (3200 mg/kg). The fall 2003 mean value for the upper Fawn Lake samples was at the ecological SLC (Figure 3-20).

All sampling events, for both lakes, had mean nickel concentrations that were above the 18 mg/kg ecological SLC and below the 1,600 mg/kg human health SLC (Figure 3-21).

For all events for which mean selenium values could be calculated, all either met or exceeded the ecological SLC of 2 mg/kg and were below the human health SLC (390 mg/kg) (Figure 3-22). Selenium concentrations in Eagle Rock Lake sediment were generally greater than upper Fawn Lake sediments.

Silver concentrations were generally greater in upper Fawn Lake sediments than Eagle Rock Lake sediments (Figure 3-23). Mean concentrations for all upper Fawn Lake events exceeded the ecological SLC (1 mg/kg). For Eagle Rock Lake, the mean concentrations exceeded and met the SLC in fall 2002 and spring 2003.

Mean zinc concentrations exceeded the ecological SLC (123 mg/kg) in all events for both lakes. Zinc concentrations were generally greater in Eagle Rock Lake than in upper Fawn Lake (Figure 3-24).

In summary, concentrations of arsenic, cadmium, copper, iron, manganese, nickel, selenium and zinc are slightly greater in Eagle Rock Lake than upper Fawn Lake for most sampling events. However, the concentrations of each of these elements in both lakes exceed one or more SLC, indicating that the reference concentrations of these metals are naturally high.

Concentrations of silver and lead are generally lower in Eagle Rock Lake than in upper Fawn Lake.

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There is no reference area for Hunt's Pond sediment samples since there is no lake that is similarly fed only by groundwater. Upper Fawn Lake is fed by, and discharges to, the Red River and, therefore, is not comparable.

All three Hunt's Pond sediments had fluoride concentrations below the human health SLC of 3,700 mg/kg. The only metal analyte that exceeded the SLC in the sediments was arsenic (Table 3-37). Arsenic concentrations in all the samples exceeded the human health SLC of 0.39 mg/kg.

Unique Habitats

The results of inorganic parameters and metals analyses of the sediment samples collected from the unique habitats are presented in Table 3-38. Fluoride concentrations in the unique habitat samples ranged from non-detect to 5.3 mg/kg. These concentrations are below the human health SLC of 3,700 mg/kg.

All of the unique habitat samples had arsenic concentrations that exceeded the human health SLC of 0.39 mg/L. Arsenic concentrations of five (Unique1, Unique2, Unique3 (spring 2003), Unique4, and Unique5) of the seven samples were also above the ecological SLC of 5.9 mg/kg. Cadmium concentrations in Unique1, Unique2, and Unique4 were greater than the 0.6 mg/kg ecological SLC. Unique1, Unique2, both samples from Unique3, Unique4, and Unique5 had copper concentrations above the 35.7 mg/kg ecological SLC. All but one sample (Unique6) had iron concentrations above the 20,000 mg/kg ecological SLC, and all but two (Unique3 [fall 2003] and Unique6) exceeded the 23,000 mg/kg human health SLC. All but one sample (Unique6) contained lead concentrations exceeding the 35 mg/kg ecological SLC. Unique2, Unique4, Unique5, and Unique6 contained concentrations of manganese that exceeded the 460 mg/kg ecological SLC. Nickel exceeded the 18 mg/kg ecological SLC in all samples but Unique6. Unique2 and Unique3 (spring 2004) had selenium values that exceeded the 2 mg/kg ecological SLC. Finally, all samples but Unique6 exceeded the 123 mg/kg SLC for zinc.

There is no reference area for the unique habitats.

Tailings

Tailings samples (SW12-1 through SW12-10) were collected from the tailings facility at random locations. Fluoride concentrations were below the human health SLC of 3,700 mg/kg for all tailings pond sediment samples.

Results for the tailings are summarized in Table 3-39. Arsenic, cadmium, chromium, copper, iron, lead, manganese, molybdenum, nickel, silver, and zinc exceeded SLC in some tailings samples. All tailings samples exceeded the human health SLC (0.39 mg/kg) for arsenic and the ecological SLC for copper (35.7 mg/kg), manganese (460 mg/kg), and nickel (18 mg/kg). The human health SLC for manganese (3,200 mg/kg) was exceeded in one sample. All but one sample exceeded the ecological SLC for cadmium (0.6 mg/kg) and zinc (123 mg/kg). Eight samples contained lead concentrations that exceeded the 35 mg/kg ecological SLC and six samples exceeded the 37.3 mg/kg ecological SLC for chromium. Three samples exceeded the human health SLC of 390 mg/kg for molybdenum, and two samples exceeded the ecological

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SLC of 1 mg/kg for silver. One sample exceeded both the ecological (20,000 mg/kg) and human health (23,000 mg/kg) SLC for iron.

There is no reference area for the tailings sediments.

Irrigation Return Ditches

Fluoride concentrations in the irrigation return ditch sediments did not exceed the human health SLC (3,700 mg/kg). All irrigation return ditch samples had arsenic concentrations above the human health SLC (0.39 mg/kg) and below the ecological SLC (5.9 mg/kg). No other analytes exceeded the SLC (Tables 3-40 and 3-41).

There is no reference area for the irrigation return ditch sediment samples.

Irrigation Ditches

Irrigation sediment data are summarized in Table 3-42. Fluoride concentrations in the irrigation ditch sediments did not exceed the human health SLC (3,700 mg/kg). All irrigation ditch samples had arsenic concentrations above the human health SLC (0.39 mg/kg), and 46 percent had arsenic concentrations above the ecological SLC (5.9 mg/kg). Iron (ecological SLC = 20,000 mg/kg), manganese (460 mg/kg), nickel (18 mg/kg), and zinc (123 mg/kg) concentrations exceeded the ecological SLC in 86 percent to 96 percent of samples. Cadmium (0.6 mg/kg), copper (36 mg/kg), and lead (35 mg/kg) exceeded the ecological SLC in 64 to 73 percent of samples. Fifty-nine percent of samples contained iron concentrations that exceeded the human health SLC (23,000 mg/kg) and 5 percent of samples contained manganese concentrations that exceeded the human health SLC for that analyte (3,200 mg/kg). Selenium (2 mg/kg) and silver (1 mg/kg) exceeded the ecological SLC in 8 percent and 7 percent of samples, respectively.

There is no reference area for the irrigation ditch sediment samples.

3.8.2 Particle Size Distributions

Results of particle size distribution analysis are presented in Appendix B-3. Red River sediments collected above the mine site in fall 2002 and fall 2003 consisted predominantly of sand with varying amounts of fine sand. Sediment samples collected on the rest of the river in the fall of 2002 also contained mainly sand, but showed an increase in finer material with distance downstream. No trends were seen in the fall 2003 data. Sand and fine sand, and little silt were the predominant components of these samples.

Sample RRS-20 collected in fall 2003 was the lower Cabresto Creek location sampled for particle size analysis. Both the riffle and depositional samples consisted primarily of sand and did not contain a large percentage of fines. This distribution is similar to riffle material collected from the Red River during fall 2003.

Sediments in upper Fawn Lake in fall 2002 and in Eagle Rock Lake in fall of both 2002 and 2003 showed similar particle size distributions. Silt was the main component with clay comprising the rest of the sample. The sediment sample collected from upper Fawn Lake in fall

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2003 was coarser grained. Although the primary constituent was silt, the sample also contained 35 percent fine sand and only 15 percent clay.

The Unique habitats varied between sand and silt as the predominant particle size, depending on location. Unique3 and Unique6 contained greater than 50 percent sand whereas Unique4 and Unique5 contained more of the finer material with the main component being silt. The fine sand percentages were similar for all four locations, but Unique4 and Unique5 contained very little sand.

Irrigation ditch sample ND-2A contained 80 percent sand and 12 percent fine sand. Less than 7 percent of the material was silt or clay. This distribution resembles that of most riffle samples collected from the Red River.

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TABLES

Table 3-1
Sediment - Composite Sample Fall 2002
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Dibenzodioxins-Dibenzofurans													
1,2,3,4,6,7,8-Heptachlorodibenzofuran	T	pg/g	4	25	HH Soil (HQ=1)	1000	0	0.16	0.43	ND	2.3		0.17
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.48	3.3	ND	ND		
1,2,3,4,7,8,9-Heptachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.1	2.3	ND	ND		
1,2,3,4,7,8-Hexachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.081	0.79	ND	ND		
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.084	1.4	ND	ND		
1,2,3,6,7,8-Hexachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.048	0.73	ND	ND		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.079	1.6	ND	ND		
1,2,3,7,8,9-Hexachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.057	1	ND	ND		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.079	1.7	ND	ND		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	T	pg/g	4	25	HH Soil (HQ=1)	1000	0	0.073	0.32	ND	0.63		0.12
2,3,4,7,8-Pentachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.065	0.72	ND	ND		
2,3,7,8-Tetrachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.099	0.37	ND	ND		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.14	0.53	ND	ND		
Explosives													
2,4,6-Trinitrotoluene	T	ug/Kg-dry	5	0	No SLC			120	120	ND	ND		
Cyclotetramethylenetetranitramine	T	ug/Kg-dry	5	0	No SLC			120	120	ND	ND		
Cyclotrimethylenetrinitramine	T	ug/Kg-dry	5	0	No SLC			120	120	ND	ND		
Pentaerythritol tetranitrate	T	ug/Kg-dry	5	0	No SLC			5000	5000	ND	ND		
PYX	T	ug/Kg-dry	5	0	No SLC			120	120	ND	ND		
Inorganics													
Cation-Exchange Capacity	T	meq/100g	7	100	No SLC					4.1	17.1	9.5	7.8
Chloride	T	mg/kg-Dry	7	0	No SLC			2.8	58.7	ND	ND		
Fluoride	T	mg/Kg-dry	6	100	HH Soil (HQ=1)	3700	0			0.14	0.42	0.28	0.3
Nitrate	T	mg/kg-Dry	7	0	No SLC			1.4	4.7	ND	ND		
Organic Soils	T	%	6	100	No SLC					1.7	7.9	3	2.2
pH	T	SU	7	100	No SLC					6.7	7	6.9	6.9
Phosphorus	T	mg/Kg-dry	7	100	No SLC					34.6	1560	602	375
Sodium Absorption Ratio	T	ratio	7	71.4	No SLC			0.1	0.12	ND	0.14	0.097	0.1
Solids, Percent	T	%	7	100	No SLC					42.6	78.5	70.3	73.9
Specific Conductance	T	umhos/cm	7	100	No SLC					77	148	122	133
Sulfate	T	mg/kg-Dry	7	71.4	No SLC			1.4	58.7	ND	129	45.7	29.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-1
Sediment - Composite Sample Fall 2002
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Total Kjeldahl Nitrogen	T	mg/Kg-dry	7	100	No SLC					38.9	1440	365	79.3
Total Organic Carbon	T	mg/Kg-dry	7	71.4	No SLC			128	140	ND	31200	5750	724
Metals													
Aluminum	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	76000	0			2610	14300	7080	4790
Aluminum	T	mg/Kg-dry	7	100	ECO Sed	25500	0			2610	14300	7080	4790
Antimony	T	mg/Kg-dry	7	0	HH Soil (HQ=1)	31	0	0.16	0.38	ND	ND		
Antimony	T	mg/Kg-dry	7	0	ECO Sed	2	0	0.16	0.38	ND	ND		
Arsenic	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	0.39	100			1.6	5.2	3.9	4.6
Arsenic	T	mg/Kg-dry	7	100	ECO Sed	5.9	0			1.6	5.2	3.9	4.6
Barium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	5500	0			82.2	427	254	280
Beryllium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	150	0			0.24	2	0.62	0.4
Boron	T	mg/Kg-dry	7	14.3	HH Soil (HQ=1)	5500	0	0.48	2.5	ND	9.8		0.26
Cadmium	T	mg/Kg-dry	7	42.9	HH Soil (HQ=1)	39	0	0.025	0.031	ND	1.9		0.015
Cadmium	T	mg/Kg-dry	7	42.9	ECO Sed	0.6	33.3	0.025	0.031	ND	1.9		0.015
Calcium	T	mg/Kg-dry	7	100	No SLC					889	6210	2600	1680
Chromium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	210	0			3.9	32.2	15.4	11.9
Chromium	T	mg/Kg-dry	7	100	ECO Sed	37.3	0			3.9	32.2	15.4	11.9
Cobalt	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	900	0			2.8	23.7	8.3	5.1
Cobalt	T	mg/Kg-dry	7	100	ECO Sed	50	0			2.8	23.7	8.3	5.1
Copper	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	2900	0			20	417	84	25.3
Copper	T	mg/Kg-dry	7	100	ECO Sed	35.7	42.9			20	417	84	25.3
Iron	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	0			13100	21700	19100	19300
Iron	T	mg/Kg-dry	7	100	ECO Sed	20000	42.9			13100	21700	19100	19300
Lead	T	mg/Kg-dry	7	100	ECO Sed	35	85.7			9.8	94.3	48	46
Lead	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	400	0			9.8	94.3	48	46
Magnesium	T	mg/Kg-dry	7	100	No SLC					1090	5990	3480	3150
Manganese	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	3200	0			162	915	389	238
Manganese	T	mg/Kg-dry	7	100	ECO Sed	460	28.6			162	915	389	238
Mercury	T	mg/Kg-dry	7	0	HH Soil (HQ=1)	23	0	0.02	0.038	ND	ND		
Mercury	T	mg/Kg-dry	7	0	ECO Sed	0.17	0	0.02	0.038	ND	ND		
Molybdenum	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	390	0			0.8	11.5	5.8	4.5
Nickel	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	1600	0			8	41.5	17.9	12.8
Nickel	T	mg/Kg-dry	7	100	ECO Sed	18	28.6			8	41.5	17.9	12.8

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-1
Sediment - Composite Sample Fall 2002
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Potassium	T	mg/Kg-dry	7	100	No SLC					1440	1810	1630	1660
Selenium	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	390	0	0.35	0.35	ND	2	0.9	0.73
Selenium	T	mg/Kg-dry	7	85.7	ECO Sed	2	0	0.35	0.35	ND	2	0.9	0.73
Silver	T	mg/Kg-dry	7	42.9	HH Soil (HQ=1)	390	0	0.12	0.15	ND	0.56		0.075
Silver	T	mg/Kg-dry	7	42.9	ECO Sed	1	0	0.12	0.15	ND	0.56		0.075
Sodium	T	mg/Kg-dry	7	71.4	No SLC			45.6	102	ND	131	85.4	75.7
Thallium	T	mg/Kg-dry	7	28.6	HH Soil (HQ=1)	5.5	0	0.08	0.19	ND	0.15		0.06
Vanadium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	78	0			6.3	45.9	19.8	12.5
Zinc	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	0			53.8	433	123	69.7
Zinc	T	mg/Kg-dry	7	100	ECO Sed	123	14.3			53.8	433	123	69.7
Pesticides-PCBs													
a-Chlordane	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Aldrin	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
alpha-Hexachlorocyclohexane	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Aroclor 1016	T	ug/Kg-dry	5	0	No SLC			42	46	ND	ND		
Aroclor 1221	T	ug/Kg-dry	5	0	No SLC			86	93	ND	ND		
Aroclor 1232	T	ug/Kg-dry	5	0	No SLC			42	46	ND	ND		
Aroclor 1242	T	ug/Kg-dry	5	0	No SLC			42	46	ND	ND		
Aroclor 1248	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.22	0	42	46	ND	ND		
Aroclor 1254	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.22	0	42	46	ND	ND		
Aroclor 1260	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.22	0	42	46	ND	ND		
beta-Hexachlorocyclohexane	T	ug/Kg-dry	5	0	ECO Sed	0.003	0	2.2	2.4	ND	ND		
delta-Hexachlorocyclohexane	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Dichlorodiphenyldichloroethane	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Dichlorodiphenyldichloroethylene	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Dichlorodiphenyltrichloroethane	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Dieldrin	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Endosulfan I	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Endosulfan II	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Endosulfan sulfate	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Endrin	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Endrin aldehyde	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		
Endrin ketone	T	ug/Kg-dry	5	0	No SLC			4.2	4.6	ND	ND		

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-1
Sediment - Composite Sample Fall 2002
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
g-Chlordane	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Heptachlor	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Heptachlor epoxide	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Lindane	T	ug/Kg-dry	5	0	No SLC			2.2	2.4	ND	ND		
Methoxychlor	T	ug/Kg-dry	5	0	No SLC			22	24	ND	ND		
Toxaphene	T	ug/Kg-dry	5	0	No SLC			220	240	ND	ND		
Semi-Volatile Organics													
1,1'-Biphenyl	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	3000	0	420	460	ND	ND		
2,4,5-Trichlorophenol	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
2,4,6-Trichlorophenol	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
2,4-Dichlorophenol	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
2,4-Dimethylphenol	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
2,4-Dinitrophenol	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
2,4-Dinitrotoluene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
2,6-Dinitrotoluene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	61	0	420	460	ND	ND		
2-Chloronaphthalene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
2-Chlorophenol	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	64	0	420	460	ND	ND		
2-Methylnaphthalene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
2-Methylphenol	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
2-Nitroaniline	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
2-Nitrophenol	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
3,3-Dichlorobenzidine	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
3-Nitroaniline	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
4,6-Dinitro-2-methylphenol	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
4-Bromophenyl phenyl ether	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
4-Chloro-3-methylphenol	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
4-Chloroaniline	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
4-Chlorophenyl phenyl ether	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
4-Methylphenol	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
4-Nitroaniline	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
4-Nitrophenol	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
Acenaphthene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	3700	0	420	460	ND	ND		
Acenaphthylene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-1
Sediment - Composite Sample Fall 2002
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Anthracene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	22000	0	420	460	ND	ND		
Benzo(a)anthracene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.62	0	420	460	ND	ND		
Benzo(a)pyrene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.062	0	420	460	ND	ND		
Benzo(b)fluoranthene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.62	0	420	460	ND	ND		
Benzo(g,h,i)perylene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Benzo(k)fluoranthene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	6.2	0	420	460	ND	ND		
Bis(2-chloroethoxy)methane	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Bis(2-chloroethyl)ether	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Carbazole	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	24	0	420	460	ND	ND		
Chrysene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	62	0	420	460	ND	ND		
Dibenz(a,h)anthracene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.062	0	420	460	ND	ND		
Dibenzofuran	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	150	0	420	460	ND	ND		
Dichlorodiisopropyl ether	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Fluoranthene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	2300	0	420	460	ND	ND		
Fluorene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	2600	0	420	460	ND	ND		
Hexachlorobenzene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Hexachlorobutadiene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Hexachlorocyclopentadiene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Hexachloroethane	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Indeno(1,2,3-cd)pyrene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.62	0	420	460	ND	ND		
Isophorone	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	510	0	420	460	ND	ND		
Naphthalene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	120	0	420	460	ND	ND		
Nitrobenzene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
N-Nitrosodi-n-propylamine	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.07	0	420	460	ND	ND		
N-Nitrosodiphenylamine	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	99	0	420	460	ND	ND		
Pentachlorophenol	T	ug/Kg-dry	5	0	No SLC			1100	1200	ND	ND		
Phenanthrene	T	ug/Kg-dry	5	0	No SLC			420	460	ND	ND		
Phenol	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	18000	0	420	460	ND	ND		
Pyrene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	2300	0	420	460	ND	ND		
Volatile Organics													
1,1,1-Trichloroethane	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	1400	0	6	47	ND	ND		
1,1,2,2-Tetrachloroethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,1,2-Trichloro-1,2,2-trifluoroethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-1
Sediment - Composite Sample Fall 2002
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
1,1,2-Trichloroethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,1-Dichloroethane	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	590	0	6	47	ND	ND		
1,1-Dichloroethene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	280	0	6	47	ND	ND		
1,2,4-Trichlorobenzene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,2-Dibromo-3-chloropropane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,2-Dichlorobenzene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,2-Dichloroethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,2-Dichloroethene (total)	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,2-Dichloropropane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,3-Dichlorobenzene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
1,4-Dichlorobenzene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
2-Butanone	T	ug/Kg-dry	5	20	HH Soil (HQ=1)	32000	0	6	47	ND	16		6.5
2-Butanone	T	ug/Kg-dry	5	20	ECO Sed	0.27	100	6	47	ND	16		6.5
2-Hexanone	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
4-Methyl-2-pentanone	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	5800	0	6	47	ND	ND		
Benzene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.66	0	6	47	ND	ND		
Bromodichloromethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Bromoform	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Bromomethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Carbon tetrachloride	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.24	0	6	47	ND	ND		
Chlorobenzene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	320	0	6	47	ND	ND		
Chloroethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Chloroform	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Chloromethane	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	1.2	0	6	47	ND	ND		
cis-1,2-Dichloroethene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
cis-1,3-Dichloropropene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Dibromochloromethane	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Dichlorodifluoromethane	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	94	0	6	47	ND	ND		
Ethylbenzene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	230	0	6	47	ND	ND		
Styrene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	1700	0	6	47	ND	ND		
Tetrachloroethene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	0.55	0	6	47	ND	ND		
Toluene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	520	0	6	47	ND	ND		
Total Xylene	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	210	0	6	47	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-1
Sediment - Composite Sample Fall 2002
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
trans-1,2-Dichloroethene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
trans-1,3-Dichloropropene	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		
Trichloroethene	T	ug/Kg-dry	5	20	HH Soil (HQ=1)	0.043	100	10	47	ND	0.8		6.5
Trichlorofluoromethane	T	ug/Kg-dry	5	0	HH Soil (HQ=1)	390	0	6	47	ND	ND		
Vinyl chloride	T	ug/Kg-dry	5	0	No SLC			6	47	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-2
Sediment - Riffle Spring 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	7	100	No SLC					7.2	15.8	11.5	11.5
Chloride	T	mg/kg-Dry	7	14.3	No SLC			3.1	5.2	ND	3.3		2
Fluoride	T	mg/Kg-dry	6	83.3	HH Soil (HQ=1)	3700	0	0.15	0.15	ND	0.56	0.32	0.33
Nitrate	T	mg/kg-Dry	7	28.6	No SLC			2.7	3.1	ND	3.2		1.5
Organic Soils	T	%	7	100	No SLC					1.5	2	1.8	1.9
pH	T	SU	7	100	No SLC					6.4	7.3	7	7
Phosphorus	T	mg/Kg-dry	7	100	No SLC					705	1420	990	891
Sodium Absorption Ratio	T	ratio	7	100	No SLC					0.09	0.17	0.14	0.16
Solids, Percent	T	%	7	100	No SLC					66.6	77.8	71.7	70
Specific Conductance	T	umhos/cm	7	100	No SLC					85.3	204	113	93.1
Sulfate	T	mg/kg-Dry	7	100	No SLC					7.7	55.5	30.7	31.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	7	100	No SLC					33.9	759	188	120
Total Organic Carbon	T	mg/Kg-dry	7	28.6	No SLC			129	145	ND	2100		71.5
Metals													
Aluminum	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	76000	0			4330	11700	7210	6630
Aluminum	T	mg/Kg-dry	7	100	ECO Sed	25500	0			4330	11700	7210	6630
Antimony	T	mg/Kg-dry	7	0	ECO Sed	2	0	0.33	0.36	ND	ND		
Antimony	T	mg/Kg-dry	7	0	HH Soil (HQ=1)	31	0	0.33	0.36	ND	ND		
Arsenic	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	0.39	100			1.8	4.3	3	2.9
Arsenic	T	mg/Kg-dry	7	100	ECO Sed	5.9	0			1.8	4.3	3	2.9
Barium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	5500	0			77.4	325	186	163
Beryllium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	150	0			0.51	1.1	0.73	0.64
Boron	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	5500	0			1.1	2.3	1.6	1.5
Cadmium	T	mg/Kg-dry	7	57.1	HH Soil (HQ=1)	39	0	0.053	0.15	ND	1.5	0.44	0.31
Cadmium	T	mg/Kg-dry	7	57.1	ECO Sed	0.6	50	0.053	0.15	ND	1.5	0.44	0.31
Calcium	T	mg/Kg-dry	7	100	No SLC					967	6420	2480	1720
Chromium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	210	0			5.1	38.6	16	12.6
Chromium	T	mg/Kg-dry	7	100	ECO Sed	37.3	14.3			5.1	38.6	16	12.6
Cobalt	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	900	0			4.9	16.2	8.9	6.8
Cobalt	T	mg/Kg-dry	7	100	ECO Sed	50	0			4.9	16.2	8.9	6.8
Copper	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	2900	0			18.4	133	43.3	21.2

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-2
Sediment - Riffle Spring 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	7	100	ECO Sed	35.7	28.6			18.4	133	43.3	21.2
Iron	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	14.3			9660	26400	17200	17700
Iron	T	mg/Kg-dry	7	100	ECO Sed	20000	42.9			9660	26400	17200	17700
Lead	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	400	0			8.8	44.2	30.6	31.8
Lead	T	mg/Kg-dry	7	100	ECO Sed	35	28.6			8.8	44.2	30.6	31.8
Magnesium	T	mg/Kg-dry	7	100	No SLC					1330	7130	3880	2940
Manganese	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	3200	0			166	810	452	376
Manganese	T	mg/Kg-dry	7	100	ECO Sed	460	42.9			166	810	452	376
Mercury	T	mg/Kg-dry	7	0	HH Soil (HQ=1)	23	0	0.021	0.024	ND	ND		
Mercury	T	mg/Kg-dry	7	0	ECO Sed	0.17	0	0.021	0.024	ND	ND		
Molybdenum	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	390	0	0.26	0.26	ND	7.4	3.6	2.6
Nickel	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	1600	0			14	32.7	19.6	14.9
Nickel	T	mg/Kg-dry	7	100	ECO Sed	18	28.6			14	32.7	19.6	14.9
Potassium	T	mg/Kg-dry	7	100	No SLC					1210	2030	1510	1480
Selenium	T	mg/Kg-dry	7	42.9	HH Soil (HQ=1)	390	0	0.54	0.58	ND	0.81		0.29
Selenium	T	mg/Kg-dry	7	42.9	ECO Sed	2	0	0.54	0.58	ND	0.81		0.29
Silver	T	mg/Kg-dry	7	42.9	HH Soil (HQ=1)	390	0	0.11	0.2	ND	0.53		0.1
Silver	T	mg/Kg-dry	7	42.9	ECO Sed	1	0	0.11	0.2	ND	0.53		0.1
Sodium	T	mg/Kg-dry	7	57.1	No SLC			37.2	106	ND	396	157	127
Thallium	T	mg/Kg-dry	7	28.6	HH Soil (HQ=1)	5.5	0	0.11	0.12	ND	0.13		0.06
Vanadium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	78	0			6.5	43	19.7	11.7
Zinc	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	0			57.5	233	116	105
Zinc	T	mg/Kg-dry	7	100	ECO Sed	123	28.6			57.5	233	116	105

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-3
Sediment - Depositional Spring 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	7	100	No SLC					11.8	28.1	17.6	17.4
Chloride	T	mg/kg-Dry	7	28.6	No SLC			4.4	8.8	ND	254		4
Fluoride	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3700	0			0.31	0.67	0.51	0.58
Nitrate	T	mg/kg-Dry	7	0	No SLC			2.7	3.8	ND	ND		
Organic Soils	T	%	7	100	No SLC					2.5	5.5	3.3	3.1
pH	T	SU	7	100	No SLC					6.6	7.1	6.9	6.9
Phosphorus	T	mg/Kg-dry	7	100	No SLC					657	2210	1490	1530
Sodium Absorption Ratio	T	ratio	7	100	No SLC					0.09	0.22	0.15	0.15
Solids, Percent	T	%	7	100	No SLC					52.9	75	67	67.1
Specific Conductance	T	umhos/cm	7	100	No SLC					111	245	156	144
Sulfate	T	mg/kg-Dry	7	100	No SLC					20.2	81.9	61.2	74.9
Total Kjeldahl Nitrogen	T	mg/Kg-dry	7	100	No SLC					131	1500	484	320
Total Organic Carbon	T	mg/Kg-dry	7	100	No SLC					2130	14700	7090	5880
Metals													
Aluminum	T	mg/Kg-dry	7	100	ECO Sed	25500	0			4800	15100	9360	9190
Aluminum	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	76000	0			4800	15100	9360	9190
Antimony	T	mg/Kg-dry	7	0	ECO Sed	2	0	0.31	0.46	ND	ND		
Antimony	T	mg/Kg-dry	7	0	HH Soil (HQ=1)	31	0	0.31	0.46	ND	ND		
Arsenic	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	0.39	100			2.2	6.5	4.2	4
Arsenic	T	mg/Kg-dry	7	100	ECO Sed	5.9	14.3			2.2	6.5	4.2	4
Barium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	5500	0			113	727	379	452
Beryllium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	150	0			0.71	1.4	1	1
Boron	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	5500	0	0.96	0.96	ND	3.4	2.1	2.1
Cadmium	T	mg/Kg-dry	7	71.4	HH Soil (HQ=1)	39	0	0.068	0.091	ND	1.5	0.53	0.58
Cadmium	T	mg/Kg-dry	7	71.4	ECO Sed	0.6	60	0.068	0.091	ND	1.5	0.53	0.58
Calcium	T	mg/Kg-dry	7	100	No SLC					1060	6640	2760	1810
Chromium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	210	0			5.3	37.3	18.2	14.8
Chromium	T	mg/Kg-dry	7	100	ECO Sed	37.3	0			5.3	37.3	18.2	14.8
Cobalt	T	mg/Kg-dry	7	100	ECO Sed	50	0			7.9	14.4	11.1	10.4
Cobalt	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	900	0			7.9	14.4	11.1	10.4
Copper	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	2900	0			29.5	201	76.4	56.2

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-3
Sediment - Depositional Spring 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	7	100	ECO Sed	35.7	85.7			29.5	201	76.4	56.2
Iron	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	28.6			12700	28500	21600	22100
Iron	T	mg/Kg-dry	7	100	ECO Sed	20000	71.4			12700	28500	21600	22100
Lead	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	400	0			12.8	92.5	53.8	50.9
Lead	T	mg/Kg-dry	7	100	ECO Sed	35	85.7			12.8	92.5	53.8	50.9
Magnesium	T	mg/Kg-dry	7	100	No SLC					1270	7070	4180	3450
Manganese	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	3200	0			366	676	481	422
Manganese	T	mg/Kg-dry	7	100	ECO Sed	460	42.9			366	676	481	422
Mercury	T	mg/Kg-dry	7	0	ECO Sed	0.17	0	0.022	0.03	ND	ND		
Mercury	T	mg/Kg-dry	7	0	HH Soil (HQ=1)	23	0	0.022	0.03	ND	ND		
Molybdenum	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	390	0			1.2	10.8	7.2	8.1
Nickel	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	1600	0			15.4	30.7	23.1	23
Nickel	T	mg/Kg-dry	7	100	ECO Sed	18	71.4			15.4	30.7	23.1	23
Potassium	T	mg/Kg-dry	7	100	No SLC					1740	2280	2010	1950
Selenium	T	mg/Kg-dry	7	85.7	ECO Sed	2	0	0.76	0.76	ND	1.2	0.79	0.68
Selenium	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	390	0	0.76	0.76	ND	1.2	0.79	0.68
Silver	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	390	0	0.11	0.11	ND	2.5	0.61	0.34
Silver	T	mg/Kg-dry	7	85.7	ECO Sed	1	16.7	0.11	0.11	ND	2.5	0.61	0.34
Sodium	T	mg/Kg-dry	7	42.9	No SLC			40.3	134	ND	523		67
Thallium	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	5.5	0	0.15	0.15	ND	0.17	0.13	0.14
Vanadium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	78	0			7.7	44.1	22.4	15.2
Zinc	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	0			73.3	281	181	170
Zinc	T	mg/Kg-dry	7	100	ECO Sed	123	71.4			73.3	281	181	170

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-4
Sediment - Riffle Summer 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	8	100	No SLC					4.7	9.1	6.7	6.3
Chloride	T	mg/kg-Dry	8	87.5	No SLC			344	344	ND	4.2	24.1	3
Fluoride	T	mg/Kg-dry	8	25	HH Soil (HQ=1)	3700	0	0.26	0.28	ND	0.37		0.14
Nitrate	T	mg/kg-Dry	8	50	No SLC			2.5	27.5	ND	1.6		1.4
Organic Soils	T	%	8	100	No SLC					1.5	9	2.6	1.7
pH	T	SU	8	100	No SLC					6.9	7.5	7.3	7.3
Phosphorus	T	mg/Kg-dry	8	100	No SLC					408	965	677	652
Sodium Absorption Ratio	T	ratio	8	100	No SLC					0.08	0.14	0.1	0.11
Solids, Percent	T	%	8	100	No SLC					71.5	79.2	74.3	74.1
Specific Conductance	T	umhos/cm	8	100	No SLC					70.4	127	94.6	89.6
Sulfate	T	mg/kg-Dry	8	87.5	No SLC			133	133	ND	42.4	31.3	28.2
Total Kjeldahl Nitrogen	T	mg/Kg-dry	8	100	No SLC					35.5	199	105	73.3
Total Organic Carbon	T	mg/Kg-dry	8	62.5	No SLC			134	136	ND	2880	1020	826
Metals													
Aluminum	T	mg/Kg-dry	8	100	ECO Sed	25500	0			3730	10300	5930	5140
Aluminum	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	76000	0			3730	10300	5930	5140
Antimony	T	mg/Kg-dry	8	0	ECO Sed	2	0	0.55	1.7	ND	ND		
Antimony	T	mg/Kg-dry	8	0	HH Soil (HQ=1)	31	0	0.55	1.7	ND	ND		
Arsenic	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	0.39	100			2.3	8.2	4.3	4
Arsenic	T	mg/Kg-dry	8	100	ECO Sed	5.9	12.5			2.3	8.2	4.3	4
Barium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	5500	0			73.6	1200	378	292
Beryllium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	150	0			0.36	0.63	0.46	0.44
Boron	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	5500	0			1.5	3	2	1.8
Cadmium	T	mg/Kg-dry	8	25	ECO Sed	0.6	0	0.036	0.08	ND	0.48		0.02
Cadmium	T	mg/Kg-dry	8	25	HH Soil (HQ=1)	39	0	0.036	0.08	ND	0.48		0.02
Calcium	T	mg/Kg-dry	8	100	No SLC					1310	4590	2080	1570
Chromium	T	mg/Kg-dry	8	100	ECO Sed	37.3	0			8.5	25.1	13.1	9.9
Chromium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	210	0			8.5	25.1	13.1	9.9
Cobalt	T	mg/Kg-dry	8	100	ECO Sed	50	0			4.5	10.8	7	5.8
Cobalt	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	900	0			4.5	10.8	7	5.8
Copper	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	2900	0			17.5	97.5	42.6	38.6

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-4
Sediment - Riffle Summer 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	8	100	ECO Sed	35.7	62.5			17.5	97.5	42.6	38.6
Iron	T	mg/Kg-dry	8	100	ECO Sed	20000	37.5			16200	25900	19800	19100
Iron	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	12.5			16200	25900	19800	19100
Lead	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	400	0			9.2	215	59.1	40.5
Lead	T	mg/Kg-dry	8	100	ECO Sed	35	75			9.2	215	59.1	40.5
Magnesium	T	mg/Kg-dry	8	100	No SLC					2200	6270	3560	3190
Manganese	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	3200	0			197	573	341	276
Manganese	T	mg/Kg-dry	8	100	ECO Sed	460	25			197	573	341	276
Mercury	T	mg/Kg-dry	8	50	ECO Sed	0.17	0	0.02	0.022	ND	0.14		0.019
Mercury	T	mg/Kg-dry	8	50	HH Soil (HQ=1)	23	0	0.02	0.022	ND	0.14		0.019
Molybdenum	T	mg/Kg-dry	8	87.5	HH Soil (HQ=1)	390	0	0.23	0.23	ND	9.9	5.1	4.5
Nickel	T	mg/Kg-dry	8	100	ECO Sed	18	37.5			11	20.1	15.2	13.6
Nickel	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	1600	0			11	20.1	15.2	13.6
Potassium	T	mg/Kg-dry	8	100	No SLC					1380	1830	1590	1600
Selenium	T	mg/Kg-dry	8	12.5	HH Soil (HQ=1)	390	0	0.88	1	ND	0.49		0.5
Selenium	T	mg/Kg-dry	8	12.5	ECO Sed	2	0	0.88	1	ND	0.49		0.5
Silver	T	mg/Kg-dry	8	62.5	ECO Sed	1	0	0.12	0.29	ND	0.37	0.19	0.16
Silver	T	mg/Kg-dry	8	62.5	HH Soil (HQ=1)	390	0	0.12	0.29	ND	0.37	0.19	0.16
Sodium	T	mg/Kg-dry	8	12.5	No SLC			63	236	ND	98.2		58.3
Thallium	T	mg/Kg-dry	8	0	HH Soil (HQ=1)	5.5	0	0.11	0.13	ND	ND		
Vanadium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	78	0			8.5	48.7	18.5	12.3
Zinc	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	0			62.2	189	95.4	89
Zinc	T	mg/Kg-dry	8	100	ECO Sed	123	12.5			62.2	189	95.4	89

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-5
Sediment - Depositional Summer 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	8	100	No SLC					5.7	15.7	8.9	8
Chloride	T	mg/kg-Dry	8	87.5	No SLC			350	350	ND	3.6	24.4	2.9
Fluoride	T	mg/Kg-dry	8	37.5	HH Soil (HQ=1)	3700	0	0.25	0.3	ND	0.57		0.15
Nitrate	T	mg/kg-Dry	8	50	No SLC			2.5	28	ND	1.6		1.4
Organic Soils	T	%	8	100	No SLC					1.4	3.6	2.1	1.9
pH	T	SU	8	100	No SLC					6.8	7.7	7.2	7.1
Phosphorus	T	mg/Kg-dry	8	100	No SLC					453	936	666	670
Sodium Absorption Ratio	T	ratio	8	100	No SLC					0.08	0.2	0.12	0.1
Solids, Percent	T	%	8	100	No SLC					68.2	80.9	74.9	75.1
Specific Conductance	T	umhos/cm	8	100	No SLC					34.1	208	120	108
Sulfate	T	mg/kg-Dry	8	100	No SLC					11.2	71.7	38.4	38.8
Total Kjeldahl Nitrogen	T	mg/Kg-dry	8	100	No SLC					68.4	463	217	151
Total Organic Carbon	T	mg/Kg-dry	8	87.5	No SLC			127	127	ND	21700	4840	1420
Metals													
Aluminum	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	76000	0			3400	9980	6170	4980
Aluminum	T	mg/Kg-dry	8	100	ECO Sed	25500	0			3400	9980	6170	4980
Antimony	T	mg/Kg-dry	8	12.5	ECO Sed	2	0	0.55	1.4	ND	0.5		0.53
Antimony	T	mg/Kg-dry	8	12.5	HH Soil (HQ=1)	31	0	0.55	1.4	ND	0.5		0.53
Arsenic	T	mg/Kg-dry	8	87.5	ECO Sed	5.9	28.6	1.9	1.9	ND	8.4	4.1	4.1
Arsenic	T	mg/Kg-dry	8	87.5	HH Soil (HQ=1)	0.39	100	1.9	1.9	ND	8.4	4.1	4.1
Barium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	5500	0			97.2	1300	507	369
Beryllium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	150	0			0.39	0.72	0.5	0.45
Boron	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	5500	0			1.2	2.9	2	1.7
Cadmium	T	mg/Kg-dry	8	50	HH Soil (HQ=1)	39	0	0.035	0.078	ND	0.52		0.07
Cadmium	T	mg/Kg-dry	8	50	ECO Sed	0.6	0	0.035	0.078	ND	0.52		0.07
Calcium	T	mg/Kg-dry	8	100	No SLC					1120	4330	2300	1870
Chromium	T	mg/Kg-dry	8	100	ECO Sed	37.3	0			5.9	24.9	14	12.8
Chromium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	210	0			5.9	24.9	14	12.8
Cobalt	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	900	0			3.9	10.1	6.8	6.4
Cobalt	T	mg/Kg-dry	8	100	ECO Sed	50	0			3.9	10.1	6.8	6.4
Copper	T	mg/Kg-dry	8	100	ECO Sed	35.7	50			15.4	112	43.7	36.3

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-5
Sediment - Depositional Summer 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	2900	0			15.4	112	43.7	36.3
Iron	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	12.5			12100	27200	18900	19500
Iron	T	mg/Kg-dry	8	100	ECO Sed	20000	50			12100	27200	18900	19500
Lead	T	mg/Kg-dry	8	100	ECO Sed	35	87.5			8	113	54.6	50.7
Lead	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	400	0			8	113	54.6	50.7
Magnesium	T	mg/Kg-dry	8	100	No SLC					1600	5960	3520	2880
Manganese	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	3200	0			187	570	332	304
Manganese	T	mg/Kg-dry	8	100	ECO Sed	460	25			187	570	332	304
Mercury	T	mg/Kg-dry	8	37.5	HH Soil (HQ=1)	23	0	0.019	0.024	ND	0.06		0.012
Mercury	T	mg/Kg-dry	8	37.5	ECO Sed	0.17	0	0.019	0.024	ND	0.06		0.012
Molybdenum	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	390	0			0.62	10	5.7	5.6
Nickel	T	mg/Kg-dry	8	100	ECO Sed	18	50			6.9	21.1	15.5	16.3
Nickel	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	1600	0			6.9	21.1	15.5	16.3
Potassium	T	mg/Kg-dry	8	100	No SLC					1260	2290	1610	1560
Selenium	T	mg/Kg-dry	8	12.5	ECO Sed	2	0	0.12	1.1	ND	0.71		0.46
Selenium	T	mg/Kg-dry	8	12.5	HH Soil (HQ=1)	390	0	0.12	1.1	ND	0.71		0.46
Silver	T	mg/Kg-dry	8	50	HH Soil (HQ=1)	390	0	0.11	0.29	ND	0.43		0.14
Silver	T	mg/Kg-dry	8	50	ECO Sed	1	0	0.11	0.29	ND	0.43		0.14
Sodium	T	mg/Kg-dry	8	12.5	No SLC			61.7	209	ND	96.5		45
Thallium	T	mg/Kg-dry	8	12.5	HH Soil (HQ=1)	5.5	0	0.014	0.14	ND	0.14		0.057
Vanadium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	78	0			7.7	41.4	18.1	13.9
Zinc	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	0			48.8	180	101	101
Zinc	T	mg/Kg-dry	8	100	ECO Sed	123	25			48.8	180	101	101

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-6
Sediment - Riffle Fall 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	8	100	No SLC					5.5	27.9	11.3	7.8
Chloride	T	mg/kg-Dry	8	12.5	No SLC			2.5	2.9	ND	6.2		1.4
Fluoride	T	mg/Kg-dry	8	62.5	HH Soil (HQ=1)	3700	0	0.14	0.15	ND	0.19	0.13	0.14
Nitrate	T	mg/kg-Dry	8	0	No SLC			2.5	2.9	ND	ND		
Organic Soils	T	%	8	100	No SLC					1.2	2.5	1.8	1.8
pH	T	SU	8	100	No SLC					7.3	7.6	7.5	7.5
Phosphorus	T	mg/Kg-dry	8	100	No SLC					270	1240	815	861
Sodium Absorption Ratio	T	ratio	8	87.5	No SLC			0.08	0.08	ND	0.1	0.088	0.095
Solids, Percent	T	%	8	100	No SLC					70.5	81	74.6	73.5
Specific Conductance	T	umhos/cm	8	100	No SLC					67.6	134	97.2	93.3
Sulfate	T	mg/kg-Dry	8	100	No SLC					11.8	93.9	39.4	34.2
Total Kjeldahl Nitrogen	T	mg/Kg-dry	8	87.5	No SLC			25.9	25.9	ND	166	82.9	67.7
Total Organic Carbon	T	mg/Kg-dry	8	37.5	No SLC			125	142	ND	3570		70
Metals													
Aluminum	T	mg/Kg-dry	8	100	ECO Sed	25500	0			3730	9190	5140	4210
Aluminum	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	76000	0			3730	9190	5140	4210
Antimony	T	mg/Kg-dry	8	0	HH Soil (HQ=1)	31	0	0.56	0.71	ND	ND		
Antimony	T	mg/Kg-dry	8	0	ECO Sed	2	0	0.56	0.71	ND	ND		
Arsenic	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	0.39	100			2	5.9	3.9	3.8
Arsenic	T	mg/Kg-dry	8	100	ECO Sed	5.9	0			2	5.9	3.9	3.8
Barium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	5500	0			62.9	451	179	148
Beryllium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	150	0			0.34	0.58	0.43	0.39
Boron	T	mg/Kg-dry	8	0	HH Soil (HQ=1)	5500	0	0.59	0.87	ND	ND		
Cadmium	T	mg/Kg-dry	8	75	ECO Sed	0.6	0	0.06	0.065	ND	0.45	0.16	0.13
Cadmium	T	mg/Kg-dry	8	75	HH Soil (HQ=1)	39	0	0.06	0.065	ND	0.45	0.16	0.13
Calcium	T	mg/Kg-dry	8	100	No SLC					1280	4170	2120	1750
Chromium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	210	0			5.3	24.9	11.9	8.6
Chromium	T	mg/Kg-dry	8	100	ECO Sed	37.3	0			5.3	24.9	11.9	8.6
Cobalt	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	900	0			3.2	10.9	5.6	4.2
Cobalt	T	mg/Kg-dry	8	100	ECO Sed	50	0			3.2	10.9	5.6	4.2
Copper	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	2900	0			18.2	86.7	35.7	25.1

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-6
Sediment - Riffle Fall 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	8	100	ECO Sed	35.7	37.5			18.2	86.7	35.7	25.1
Iron	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	0			13000	22800	17100	17200
Iron	T	mg/Kg-dry	8	100	ECO Sed	20000	12.5			13000	22800	17100	17200
Lead	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	400	0			9.4	53.1	29.8	27.3
Lead	T	mg/Kg-dry	8	100	ECO Sed	35	25			9.4	53.1	29.8	27.3
Magnesium	T	mg/Kg-dry	8	100	No SLC					2000	5870	3240	2930
Manganese	T	mg/Kg-dry	8	100	ECO Sed	460	25			128	655	311	229
Manganese	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	3200	0			128	655	311	229
Mercury	T	mg/Kg-dry	8	0	ECO Sed	0.17	0	0.02	0.024	ND	ND		
Mercury	T	mg/Kg-dry	8	0	HH Soil (HQ=1)	23	0	0.02	0.024	ND	ND		
Molybdenum	T	mg/Kg-dry	8	87.5	HH Soil (HQ=1)	390	0	0.53	0.53	ND	7.2	4	4
Nickel	T	mg/Kg-dry	8	100	ECO Sed	18	12.5			8.6	20.3	13.4	12.3
Nickel	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	1600	0			8.6	20.3	13.4	12.3
Potassium	T	mg/Kg-dry	8	100	No SLC					878	1550	1200	1150
Selenium	T	mg/Kg-dry	8	62.5	HH Soil (HQ=1)	390	0	0.38	0.42	ND	1.3	0.6	0.56
Selenium	T	mg/Kg-dry	8	62.5	ECO Sed	2	0	0.38	0.42	ND	1.3	0.6	0.56
Silver	T	mg/Kg-dry	8	37.5	HH Soil (HQ=1)	390	0	0.18	0.22	ND	0.33		0.11
Silver	T	mg/Kg-dry	8	37.5	ECO Sed	1	0	0.18	0.22	ND	0.33		0.11
Sodium	T	mg/Kg-dry	8	100	No SLC					119	218	163	165
Thallium	T	mg/Kg-dry	8	12.5	HH Soil (HQ=1)	5.5	0	0.11	0.14	ND	0.14		0.065
Vanadium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	78	0			7.1	37.4	14.9	10.5
Zinc	T	mg/Kg-dry	8	100	ECO Sed	123	12.5			46.3	160	77.2	66.9
Zinc	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	0			46.3	160	77.2	66.9

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-7
Sediment - Depositional Fall 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	8	100	No SLC					8.6	31.2	15.2	13.9
Chloride	T	mg/kg-Dry	8	12.5	No SLC			2.6	4	ND	5.5		1.4
Fluoride	T	mg/Kg-dry	8	75	HH Soil (HQ=1)	3700	0	0.14	0.2	ND	0.31	0.21	0.2
Nitrate	T	mg/kg-Dry	8	0	No SLC			2.6	4	ND	ND		
Organic Soils	T	%	8	100	No SLC					1.7	4.3	2.6	2.3
pH	T	SU	8	100	No SLC					7.1	7.6	7.4	7.4
Phosphorus	T	mg/Kg-dry	7	100	No SLC					594	1920	1340	1610
Sodium Absorption Ratio	T	ratio	8	87.5	No SLC			0.06	0.06	ND	0.12	0.093	0.1
Solids, Percent	T	%	8	100	No SLC					50.9	77.7	70.3	72.8
Specific Conductance	T	umhos/cm	8	100	No SLC					71.2	167	128	131
Sulfate	T	mg/kg-Dry	8	100	No SLC					14.9	195	79.6	67.6
Total Kjeldahl Nitrogen	T	mg/Kg-dry	8	100	No SLC					73.3	494	194	98.4
Total Organic Carbon	T	mg/Kg-dry	8	62.5	No SLC			129	144	ND	23300	5390	1520
Metals													
Aluminum	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	76000	0			4330	12100	6980	5960
Aluminum	T	mg/Kg-dry	8	100	ECO Sed	25500	0			4330	12100	6980	5960
Antimony	T	mg/Kg-dry	8	0	ECO Sed	2	0	0.59	0.84	ND	ND		
Antimony	T	mg/Kg-dry	8	0	HH Soil (HQ=1)	31	0	0.59	0.84	ND	ND		
Arsenic	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	0.39	100			2.5	8.7	5.3	5.2
Arsenic	T	mg/Kg-dry	8	100	ECO Sed	5.9	25			2.5	8.7	5.3	5.2
Barium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	5500	0			125	534	306	248
Beryllium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	150	0			0.36	0.75	0.55	0.52
Boron	T	mg/Kg-dry	8	12.5	HH Soil (HQ=1)	5500	0	0.71	0.83	ND	1.7		0.39
Cadmium	T	mg/Kg-dry	8	75	HH Soil (HQ=1)	39	0	0.059	0.063	ND	0.66	0.24	0.25
Cadmium	T	mg/Kg-dry	8	75	ECO Sed	0.6	16.7	0.059	0.063	ND	0.66	0.24	0.25
Calcium	T	mg/Kg-dry	8	100	No SLC					1390	5530	2730	2050
Chromium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	210	0			7.6	25.6	15.4	12.7
Chromium	T	mg/Kg-dry	8	100	ECO Sed	37.3	0			7.6	25.6	15.4	12.7
Cobalt	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	900	0			3.5	10.6	8.1	8.4
Cobalt	T	mg/Kg-dry	8	100	ECO Sed	50	0			3.5	10.6	8.1	8.4
Copper	T	mg/Kg-dry	8	100	ECO Sed	35.7	50			17.2	128	46.6	39.6

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-7
Sediment - Depositional Fall 2003
RI/FS Reference Red River Above Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	2900	0			17.2	128	46.6	39.6
Iron	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	25			15700	27600	21100	20800
Iron	T	mg/Kg-dry	8	100	ECO Sed	20000	50			15700	27600	21100	20800
Lead	T	mg/Kg-dry	8	100	ECO Sed	35	75			10.5	77.4	46.8	44.4
Lead	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	400	0			10.5	77.4	46.8	44.4
Magnesium	T	mg/Kg-dry	8	100	No SLC					2300	6660	4000	3530
Manganese	T	mg/Kg-dry	8	100	ECO Sed	460	25			135	689	410	394
Manganese	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	3200	0			135	689	410	394
Mercury	T	mg/Kg-dry	8	0	ECO Sed	0.17	0	0.019	0.029	ND	ND		
Mercury	T	mg/Kg-dry	8	0	HH Soil (HQ=1)	23	0	0.019	0.029	ND	ND		
Molybdenum	T	mg/Kg-dry	8	87.5	HH Soil (HQ=1)	390	0	0.77	0.77	ND	9.9	6.2	6.9
Nickel	T	mg/Kg-dry	8	100	ECO Sed	18	25			10	21.6	16.1	16.9
Nickel	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	1600	0			10	21.6	16.1	16.9
Potassium	T	mg/Kg-dry	8	100	No SLC					1110	2050	1620	1720
Selenium	T	mg/Kg-dry	8	87.5	HH Soil (HQ=1)	390	0	0.59	0.59	ND	1.7	1	1.1
Selenium	T	mg/Kg-dry	8	87.5	ECO Sed	2	0	0.59	0.59	ND	1.7	1	1.1
Silver	T	mg/Kg-dry	8	37.5	ECO Sed	1	0	0.19	0.31	ND	0.39		0.13
Silver	T	mg/Kg-dry	8	37.5	HH Soil (HQ=1)	390	0	0.19	0.31	ND	0.39		0.13
Sodium	T	mg/Kg-dry	8	100	No SLC					145	279	212	215
Thallium	T	mg/Kg-dry	8	50	HH Soil (HQ=1)	5.5	0	0.13	0.17	ND	0.18		0.12
Vanadium	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	78	0			7.5	32.9	17.9	12.9
Zinc	T	mg/Kg-dry	8	100	ECO Sed	123	12.5			57.6	200	99.4	88.9
Zinc	T	mg/Kg-dry	8	100	HH Soil (HQ=1)	23000	0			57.6	200	99.4	88.9

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-8
Sediment - Composite Sample Fall 2002
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	4	100	No SLC					4.5	7.6	5.6	5.2
Chloride	T	mg/kg-Dry	4	0	No SLC			1.3	3.1	ND	ND		
Fluoride	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3700	0			0.18	1	0.61	0.64
Nitrate	T	mg/kg-Dry	4	0	No SLC			1.3	3.1	ND	ND		
Organic Soils	T	%	2	100	No SLC					1.5	1.7	1.6	1.6
pH	T	SU	4	100	No SLC					6.5	7.2	6.8	6.8
Phosphorus	T	mg/Kg-dry	4	100	No SLC					298	941	652	685
Sodium Absorption Ratio	T	ratio	4	100	No SLC					0.1	0.15	0.12	0.11
Solids, Percent	T	%	4	100	No SLC					66	80.7	74.2	75
Specific Conductance	T	umhos/cm	4	100	No SLC					63	239	152	153
Sulfate	T	mg/kg-Dry	4	100	No SLC					11.6	166	66.2	43.6
Total Kjeldahl Nitrogen	T	mg/Kg-dry	4	100	No SLC					236	304	258	246
Total Organic Carbon	T	mg/Kg-dry	4	100	No SLC					874	9150	3600	2190
Metals													
Aluminum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	76000	0			4910	7280	6020	5940
Aluminum	T	mg/Kg-dry	4	100	ECO Sed	25500	0			4910	7280	6020	5940
Antimony	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	31	0	0.16	0.2	ND	ND		
Antimony	T	mg/Kg-dry	4	0	ECO Sed	2	0	0.16	0.2	ND	ND		
Arsenic	T	mg/Kg-dry	4	100	ECO Sed	5.9	0			1.6	2.6	2	1.8
Arsenic	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	0.39	100			1.6	2.6	2	1.8
Barium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			29.4	60.8	42.2	39.3
Beryllium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	150	0			0.45	1.8	0.89	0.66
Boron	T	mg/Kg-dry	4	50	HH Soil (HQ=1)	5500	0	0.47	0.48	ND	6.6		3.3
Cadmium	T	mg/Kg-dry	4	75	HH Soil (HQ=1)	39	0	0.027	0.027	ND	0.55	0.27	0.26
Cadmium	T	mg/Kg-dry	4	75	ECO Sed	0.6	0	0.027	0.027	ND	0.55	0.27	0.26
Calcium	T	mg/Kg-dry	4	100	No SLC					1940	2400	2090	2010
Chromium	T	mg/Kg-dry	4	100	ECO Sed	37.3	0			9.1	20.5	14.1	13.4
Chromium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	210	0			9.1	20.5	14.1	13.4
Cobalt	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	900	0			4.4	7.2	5.2	4.5
Cobalt	T	mg/Kg-dry	4	100	ECO Sed	50	0			4.4	7.2	5.2	4.5
Copper	T	mg/Kg-dry	4	100	ECO Sed	35.7	0			7.5	10.4	9.2	9.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-8
Sediment - Composite Sample Fall 2002
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	2900	0			7.5	10.4	9.2	9.4
Iron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			12200	14500	13100	12800
Iron	T	mg/Kg-dry	4	100	ECO Sed	20000	0			12200	14500	13100	12800
Lead	T	mg/Kg-dry	4	100	ECO Sed	35	0			14.6	27.9	18.6	16
Lead	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	400	0			14.6	27.9	18.6	16
Magnesium	T	mg/Kg-dry	4	100	No SLC					2310	4380	3190	3040
Manganese	T	mg/Kg-dry	4	100	ECO Sed	460	0			223	341	292	302
Manganese	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3200	0			223	341	292	302
Mercury	T	mg/Kg-dry	4	0	ECO Sed	0.17	0	0.019	0.025	ND	ND		
Mercury	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	23	0	0.019	0.025	ND	ND		
Molybdenum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	390	0			0.56	2.1	1.3	1.3
Nickel	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	1600	0			11.5	16.4	14.1	14.3
Nickel	T	mg/Kg-dry	4	100	ECO Sed	18	0			11.5	16.4	14.1	14.3
Potassium	T	mg/Kg-dry	4	100	No SLC					893	1560	1110	985
Selenium	T	mg/Kg-dry	4	0	ECO Sed	2	0	0.17	1.2	ND	ND		
Selenium	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	390	0	0.17	1.2	ND	ND		
Silver	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	390	0	0.13	0.57	ND	ND		
Silver	T	mg/Kg-dry	4	0	ECO Sed	1	0	0.13	0.57	ND	ND		
Sodium	T	mg/Kg-dry	4	0	No SLC			48.6	107	ND	ND		
Thallium	T	mg/Kg-dry	4	25	HH Soil (HQ=1)	5.5	0	0.079	0.098	ND	0.097		0.046
Vanadium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	78	0			13	20.9	17.6	18.2
Zinc	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			60.9	272	145	123
Zinc	T	mg/Kg-dry	4	100	ECO Sed	123	50			60.9	272	145	123

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-9
Sediment - Riffle Spring 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	5	40	No SLC			13	13	ND	14.4		6.5
Chloride	T	mg/kg-Dry	5	20	No SLC			2.7	2.8	ND	4.6		1.4
Fluoride	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3700	0			0.15	0.36	0.21	0.18
Nitrate	T	mg/kg-Dry	5	0	No SLC			2.7	2.8	ND	ND		
Organic Soils	T	%	5	100	No SLC					1	1.3	1.2	1.2
pH	T	SU	5	100	No SLC					6.3	6.9	6.7	6.7
Phosphorus	T	mg/Kg-dry	5	100	No SLC					728	1050	877	870
Sodium Absorption Ratio	T	ratio	5	100	No SLC					0.1	0.15	0.12	0.12
Solids, Percent	T	%	5	100	No SLC					72.2	76.4	75.1	75.6
Specific Conductance	T	umhos/cm	5	100	No SLC					41.8	54.3	46.9	43.4
Sulfate	T	mg/kg-Dry	5	100	No SLC					8.9	30.9	16.9	15.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	5	100	No SLC					75.1	109	92.9	86.9
Total Organic Carbon	T	mg/Kg-dry	5	20	No SLC			131	133	ND	246		66.5
Metals													
Aluminum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	76000	0			4850	7750	5570	5060
Aluminum	T	mg/Kg-dry	5	100	ECO Sed	25500	0			4850	7750	5570	5060
Antimony	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	31	0	0.31	0.33	ND	ND		
Antimony	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.31	0.33	ND	ND		
Arsenic	T	mg/Kg-dry	5	100	ECO Sed	5.9	0			1.1	2.4	1.6	1.4
Arsenic	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	0.39	100			1.1	2.4	1.6	1.4
Barium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			22	59.7	33.1	26.8
Beryllium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	150	0			0.4	0.91	0.58	0.53
Boron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			1.3	2.3	1.7	1.6
Cadmium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	39	0			0.2	0.36	0.26	0.25
Cadmium	T	mg/Kg-dry	5	100	ECO Sed	0.6	0			0.2	0.36	0.26	0.25
Calcium	T	mg/Kg-dry	5	100	No SLC					1180	2690	1770	1560
Chromium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	210	0			9.2	20.9	15	15.9
Chromium	T	mg/Kg-dry	5	100	ECO Sed	37.3	0			9.2	20.9	15	15.9
Cobalt	T	mg/Kg-dry	5	100	ECO Sed	50	0			4.4	9.1	5.7	4.9
Cobalt	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	900	0			4.4	9.1	5.7	4.9
Copper	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	2900	0			6.9	11.9	8.8	8.1

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-9
Sediment - Riffle Spring 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	5	100	ECO Sed	35.7	0			6.9	11.9	8.8	8.1
Iron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			9650	18600	12400	11200
Iron	T	mg/Kg-dry	5	100	ECO Sed	20000	0			9650	18600	12400	11200
Lead	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	400	0			12.7	18.6	15.7	15.5
Lead	T	mg/Kg-dry	5	100	ECO Sed	35	0			12.7	18.6	15.7	15.5
Magnesium	T	mg/Kg-dry	5	100	No SLC					2590	5270	3660	3560
Manganese	T	mg/Kg-dry	5	100	ECO Sed	460	0			204	389	279	273
Manganese	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3200	0			204	389	279	273
Mercury	T	mg/Kg-dry	5	0	ECO Sed	0.17	0	0.019	0.023	ND	ND		
Mercury	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	23	0	0.019	0.023	ND	ND		
Molybdenum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	390	0			0.24	5.9	1.6	0.71
Nickel	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	1600	0			10.1	20.3	13.7	13.5
Nickel	T	mg/Kg-dry	5	100	ECO Sed	18	20			10.1	20.3	13.7	13.5
Potassium	T	mg/Kg-dry	5	100	No SLC					725	1210	1010	1070
Selenium	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.51	0.55	ND	ND		
Selenium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.51	0.55	ND	ND		
Silver	T	mg/Kg-dry	5	0	ECO Sed	1	0	0.18	0.18	ND	ND		
Silver	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.18	0.18	ND	ND		
Sodium	T	mg/Kg-dry	5	0	No SLC			53.7	56.2	ND	ND		
Thallium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	5.5	0	0.1	0.11	ND	ND		
Vanadium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	78	0			11.3	21.5	14.6	13.1
Zinc	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			66.8	199	110	99.9
Zinc	T	mg/Kg-dry	5	100	ECO Sed	123	20			66.8	199	110	99.9

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-10
Sediment - Depositional Spring 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	5	80	No SLC			13	13	ND	15.7	13.3	15.2
Chloride	T	mg/kg-Dry	5	0	No SLC			2.5	2.8	ND	ND		
Fluoride	T	mg/Kg-dry	5	80	HH Soil (HQ=1)	3700	0	0.14	0.14	ND	0.48	0.22	0.21
Nitrate	T	mg/kg-Dry	5	0	No SLC			2.5	2.8	ND	ND		
Organic Soils	T	%	5	100	No SLC					1	1.4	1.3	1.3
pH	T	SU	5	100	No SLC					6.5	6.9	6.8	6.8
Phosphorus	T	mg/Kg-dry	5	100	No SLC					486	998	759	766
Sodium Absorption Ratio	T	ratio	5	100	No SLC					0.11	0.14	0.12	0.12
Solids, Percent	T	%	5	100	No SLC					73.7	80.5	76.8	76.5
Specific Conductance	T	umhos/cm	5	100	No SLC					37	65.7	53.1	51.4
Sulfate	T	mg/kg-Dry	5	100	No SLC					9.1	21.5	14	13.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	5	100	No SLC					111	170	149	164
Total Organic Carbon	T	mg/Kg-dry	5	20	No SLC			125	135	ND	1820		65.5
Metals													
Aluminum	T	mg/Kg-dry	5	100	ECO Sed	25500	0			3940	6970	5110	4690
Aluminum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	76000	0			3940	6970	5110	4690
Antimony	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	31	0	0.29	0.32	ND	ND		
Antimony	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.29	0.32	ND	ND		
Arsenic	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	0.39	100			0.86	2.1	1.6	1.7
Arsenic	T	mg/Kg-dry	5	100	ECO Sed	5.9	0			0.86	2.1	1.6	1.7
Barium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			17.1	46.6	31.1	32.4
Beryllium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	150	0			0.34	0.8	0.55	0.55
Boron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			1.1	1.8	1.4	1.3
Cadmium	T	mg/Kg-dry	5	100	ECO Sed	0.6	0			0.15	0.32	0.25	0.24
Cadmium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	39	0			0.15	0.32	0.25	0.24
Calcium	T	mg/Kg-dry	5	100	No SLC					1050	2380	1670	1740
Chromium	T	mg/Kg-dry	5	100	ECO Sed	37.3	0			7.9	17.3	11.4	10.3
Chromium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	210	0			7.9	17.3	11.4	10.3
Cobalt	T	mg/Kg-dry	5	100	ECO Sed	50	0			3	7.3	4.8	4.3
Cobalt	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	900	0			3	7.3	4.8	4.3
Copper	T	mg/Kg-dry	5	100	ECO Sed	35.7	0			4.5	10.6	7.7	8

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-10
Sediment - Depositional Spring 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	2900	0			4.5	10.6	7.7	8
Iron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			8280	14700	10400	9260
Iron	T	mg/Kg-dry	5	100	ECO Sed	20000	0			8280	14700	10400	9260
Lead	T	mg/Kg-dry	5	100	ECO Sed	35	20			8.3	110	32.2	14.3
Lead	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	400	0			8.3	110	32.2	14.3
Magnesium	T	mg/Kg-dry	5	100	No SLC					2390	4770	3300	2890
Manganese	T	mg/Kg-dry	5	100	ECO Sed	460	0			169	397	302	311
Manganese	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3200	0			169	397	302	311
Mercury	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	23	0	0.02	0.023	ND	ND		
Mercury	T	mg/Kg-dry	5	0	ECO Sed	0.17	0	0.02	0.023	ND	ND		
Molybdenum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	390	0			0.21	1	0.58	0.56
Nickel	T	mg/Kg-dry	5	100	ECO Sed	18	0			7.5	16.9	12	12.2
Nickel	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	1600	0			7.5	16.9	12	12.2
Potassium	T	mg/Kg-dry	5	100	No SLC					699	1070	907	883
Selenium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.48	0.54	ND	ND		
Selenium	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.48	0.54	ND	ND		
Silver	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.17	0.19	ND	ND		
Silver	T	mg/Kg-dry	5	0	ECO Sed	1	0	0.17	0.19	ND	ND		
Sodium	T	mg/Kg-dry	5	0	No SLC			49.7	57.3	ND	ND		
Thallium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	5.5	0	0.096	0.11	ND	ND		
Vanadium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	78	0			9	18.2	12.5	10.7
Zinc	T	mg/Kg-dry	5	100	ECO Sed	123	40			58.1	152	101	107
Zinc	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			58.1	152	101	107

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-11
Sediment - Riffle Summer 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	5	100	No SLC					6.7	9.6	8	7.7
Chloride	T	mg/kg-Dry	5	80	No SLC			338	338	ND	2.7	35.9	2.7
Fluoride	T	mg/Kg-dry	5	60	HH Soil (HQ=1)	3700	0	0.25	0.28	ND	0.35	0.24	0.28
Nitrate	T	mg/kg-Dry	5	80	No SLC			27	27	ND	3.3	4.2	1.8
Organic Soils	T	%	5	100	No SLC					1.3	1.8	1.5	1.5
pH	T	SU	5	100	No SLC					6.9	7.2	7.1	7.2
Phosphorus	T	mg/Kg-dry	5	100	No SLC					230	527	403	438
Sodium Absorption Ratio	T	ratio	5	100	No SLC					0.08	0.22	0.15	0.15
Solids, Percent	T	%	5	100	No SLC					73.6	83	78.4	80
Specific Conductance	T	umhos/cm	5	100	No SLC					62	83.9	75	76
Sulfate	T	mg/kg-Dry	5	100	No SLC					10.1	129	39.2	14.2
Total Kjeldahl Nitrogen	T	mg/Kg-dry	5	100	No SLC					102	777	268	160
Total Organic Carbon	T	mg/Kg-dry	5	100	No SLC					1180	8960	3190	1920
Metals													
Aluminum	T	mg/Kg-dry	5	100	ECO Sed	25500	0			5420	7180	6120	6180
Aluminum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	76000	0			5420	7180	6120	6180
Antimony	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	31	0	0.47	1.2	ND	ND		
Antimony	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.47	1.2	ND	ND		
Arsenic	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	0.39	100			1.3	3.5	2.3	2.2
Arsenic	T	mg/Kg-dry	5	100	ECO Sed	5.9	0			1.3	3.5	2.3	2.2
Barium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			30.8	203	72.4	44.2
Beryllium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	150	0			0.66	1.1	0.82	0.72
Boron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			1.3	2.1	1.8	1.8
Cadmium	T	mg/Kg-dry	5	80	HH Soil (HQ=1)	39	0	0.04	0.04	ND	0.29	0.15	0.14
Cadmium	T	mg/Kg-dry	5	80	ECO Sed	0.6	0	0.04	0.04	ND	0.29	0.15	0.14
Calcium	T	mg/Kg-dry	5	100	No SLC					1540	2180	1850	1920
Chromium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	210	0			11.2	14.1	12.2	11.7
Chromium	T	mg/Kg-dry	5	100	ECO Sed	37.3	0			11.2	14.1	12.2	11.7
Cobalt	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	900	0			4.9	8.7	6.1	5.7
Cobalt	T	mg/Kg-dry	5	100	ECO Sed	50	0			4.9	8.7	6.1	5.7
Copper	T	mg/Kg-dry	5	100	ECO Sed	35.7	0			8.4	31.2	13.2	8.7

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-11
Sediment - Riffle Summer 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	2900	0			8.4	31.2	13.2	8.7
Iron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			12400	18100	14300	13600
Iron	T	mg/Kg-dry	5	100	ECO Sed	20000	0			12400	18100	14300	13600
Lead	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	400	0			11.4	22.9	16.4	16.3
Lead	T	mg/Kg-dry	5	100	ECO Sed	35	0			11.4	22.9	16.4	16.3
Magnesium	T	mg/Kg-dry	5	100	No SLC					3120	4300	3530	3360
Manganese	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3200	0			231	494	327	326
Manganese	T	mg/Kg-dry	5	100	ECO Sed	460	20			231	494	327	326
Mercury	T	mg/Kg-dry	5	20	ECO Sed	0.17	0	0.018	0.022	ND	0.071		0.01
Mercury	T	mg/Kg-dry	5	20	HH Soil (HQ=1)	23	0	0.018	0.022	ND	0.071		0.01
Molybdenum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	390	0			0.69	12.1	3.2	1.1
Nickel	T	mg/Kg-dry	5	100	ECO Sed	18	20			10.6	26.8	16.1	15.1
Nickel	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	1600	0			10.6	26.8	16.1	15.1
Potassium	T	mg/Kg-dry	5	100	No SLC					1190	1540	1340	1290
Selenium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.33	1.1	ND	ND		
Selenium	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.33	1.1	ND	ND		
Silver	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.12	0.27	ND	ND		
Silver	T	mg/Kg-dry	5	0	ECO Sed	1	0	0.12	0.27	ND	ND		
Sodium	T	mg/Kg-dry	5	0	No SLC			50.8	216	ND	ND		
Thallium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	5.5	0	0.11	0.13	ND	ND		
Vanadium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	78	0			15	18.1	16	15.6
Zinc	T	mg/Kg-dry	5	100	ECO Sed	123	60			110	211	154	154
Zinc	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			110	211	154	154

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-12
Sediment - Depositional Summer 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	5	100	No SLC					3.9	10.2	7.6	8.5
Chloride	T	mg/kg-Dry	5	80	No SLC			353	353	ND	3.6	37.5	2.5
Fluoride	T	mg/Kg-dry	5	40	HH Soil (HQ=1)	3700	0	0.27	0.3	ND	0.33		0.15
Nitrate	T	mg/kg-Dry	5	80	No SLC			28.2	28.2	ND	1.5	3.8	1.3
Organic Soils	T	%	5	100	No SLC					1.7	2	1.8	1.8
pH	T	SU	5	100	No SLC					6.9	7.3	7	7
Phosphorus	T	mg/Kg-dry	5	100	No SLC					223	636	434	460
Sodium Absorption Ratio	T	ratio	5	80	No SLC			0.07	0.07	ND	0.25	0.16	0.18
Solids, Percent	T	%	5	100	No SLC					67	80.7	74.8	75.3
Specific Conductance	T	umhos/cm	5	100	No SLC					60.8	118	91.8	93.8
Sulfate	T	mg/kg-Dry	5	100	No SLC					28.2	47.2	35.7	33.9
Total Kjeldahl Nitrogen	T	mg/Kg-dry	5	100	No SLC					202	708	384	302
Total Organic Carbon	T	mg/Kg-dry	5	80	No SLC			142	142	ND	3200	1880	2060
Metals													
Aluminum	T	mg/Kg-dry	5	100	ECO Sed	25500	0			5750	9400	7180	7010
Aluminum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	76000	0			5750	9400	7180	7010
Antimony	T	mg/Kg-dry	5	20	ECO Sed	2	0	0.56	0.71	ND	0.62		0.29
Antimony	T	mg/Kg-dry	5	20	HH Soil (HQ=1)	31	0	0.56	0.71	ND	0.62		0.29
Arsenic	T	mg/Kg-dry	5	80	HH Soil (HQ=1)	0.39	100	1.9	1.9	ND	2.9	1.9	1.7
Arsenic	T	mg/Kg-dry	5	80	ECO Sed	5.9	0	1.9	1.9	ND	2.9	1.9	1.7
Barium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			31	75.5	48.5	44.4
Beryllium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	150	0			0.49	1.1	0.82	0.95
Boron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			1.6	2.1	1.8	1.6
Cadmium	T	mg/Kg-dry	5	60	HH Soil (HQ=1)	39	0	0.04	0.073	ND	0.17	0.094	0.084
Cadmium	T	mg/Kg-dry	5	60	ECO Sed	0.6	0	0.04	0.073	ND	0.17	0.094	0.084
Calcium	T	mg/Kg-dry	5	100	No SLC					1540	2750	2130	1980
Chromium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	210	0			9.9	20.2	15	14.8
Chromium	T	mg/Kg-dry	5	100	ECO Sed	37.3	0			9.9	20.2	15	14.8
Cobalt	T	mg/Kg-dry	5	100	ECO Sed	50	0			4.2	10.3	6.4	5.9
Cobalt	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	900	0			4.2	10.3	6.4	5.9
Copper	T	mg/Kg-dry	5	100	ECO Sed	35.7	0			7.6	14.4	10.1	9.3

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-12
Sediment - Depositional Summer 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	2900	0			7.6	14.4	10.1	9.3
Iron	T	mg/Kg-dry	5	100	ECO Sed	20000	0			12300	18100	15000	13700
Iron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			12300	18100	15000	13700
Lead	T	mg/Kg-dry	5	100	ECO Sed	35	0			13.8	25.7	19.6	20
Lead	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	400	0			13.8	25.7	19.6	20
Magnesium	T	mg/Kg-dry	5	100	No SLC					3110	5420	4110	3980
Manganese	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3200	0			227	499	326	292
Manganese	T	mg/Kg-dry	5	100	ECO Sed	460	20			227	499	326	292
Mercury	T	mg/Kg-dry	5	20	ECO Sed	0.17	0	0.019	0.022	ND	0.027		0.011
Mercury	T	mg/Kg-dry	5	20	HH Soil (HQ=1)	23	0	0.019	0.022	ND	0.027		0.011
Molybdenum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	390	0			0.48	2.1	1.1	0.93
Nickel	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	1600	0			9.2	20.7	15.1	15
Nickel	T	mg/Kg-dry	5	100	ECO Sed	18	20			9.2	20.7	15.1	15
Potassium	T	mg/Kg-dry	5	100	No SLC					1060	1460	1300	1270
Selenium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.38	1.1	ND	ND		
Selenium	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.38	1.1	ND	ND		
Silver	T	mg/Kg-dry	5	0	ECO Sed	1	0	0.12	0.31	ND	ND		
Silver	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.12	0.31	ND	ND		
Sodium	T	mg/Kg-dry	5	0	No SLC			53.7	188	ND	ND		
Thallium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	5.5	0	0.11	0.14	ND	ND		
Vanadium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	78	0			13.5	25.8	19.1	16.1
Zinc	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			79.7	188	137	154
Zinc	T	mg/Kg-dry	5	100	ECO Sed	123	60			79.7	188	137	154

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-13
Sediment - Riffle Fall 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	5	100	No SLC					14	16.2	15.6	16.1
Chloride	T	mg/kg-Dry	5	60	No SLC			2.5	2.7	ND	3.7	2.3	2.6
Fluoride	T	mg/Kg-dry	5	60	HH Soil (HQ=1)	3700	0	0.13	0.14	ND	0.33	0.16	0.16
Nitrate	T	mg/kg-Dry	5	0	No SLC			2.5	2.7	ND	ND		
Organic Soils	T	%	5	100	No SLC					1.1	2	1.5	1.4
pH	T	SU	5	100	No SLC					7.2	7.4	7.3	7.3
Phosphorus	T	mg/Kg-dry	5	100	No SLC					446	805	608	588
Sodium Absorption Ratio	T	ratio	5	100	No SLC					0.09	0.14	0.12	0.12
Solids, Percent	T	%	5	100	No SLC					76.6	81	79.3	80.3
Specific Conductance	T	umhos/cm	5	100	No SLC					59.5	96.9	75.6	69.2
Sulfate	T	mg/kg-Dry	5	100	No SLC					8.1	23.7	15.7	16.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	5	100	No SLC					108	193	149	129
Total Organic Carbon	T	mg/Kg-dry	5	80	No SLC			208	208	ND	13200	3420	1290
Metals													
Aluminum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	76000	0			4280	8740	5700	4990
Aluminum	T	mg/Kg-dry	5	100	ECO Sed	25500	0			4280	8740	5700	4990
Antimony	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.53	0.62	ND	ND		
Antimony	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	31	0	0.53	0.62	ND	ND		
Arsenic	T	mg/Kg-dry	5	100	ECO Sed	5.9	0			1.1	2.7	1.9	2.1
Arsenic	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	0.39	100			1.1	2.7	1.9	2.1
Barium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			21.9	58.1	33.3	27.7
Beryllium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	150	0			0.45	0.82	0.64	0.67
Boron	T	mg/Kg-dry	5	60	HH Soil (HQ=1)	5500	0	0.68	0.75	ND	1.1	0.71	0.84
Cadmium	T	mg/Kg-dry	5	100	ECO Sed	0.6	0			0.12	0.39	0.23	0.18
Cadmium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	39	0			0.12	0.39	0.23	0.18
Calcium	T	mg/Kg-dry	5	100	No SLC					1170	3740	2110	1800
Chromium	T	mg/Kg-dry	5	100	ECO Sed	37.3	0			7.7	18	11.9	11.5
Chromium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	210	0			7.7	18	11.9	11.5
Cobalt	T	mg/Kg-dry	5	100	ECO Sed	50	0			3.6	11.2	5.9	4.9
Cobalt	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	900	0			3.6	11.2	5.9	4.9
Copper	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	2900	0			6.4	16.9	10.5	9.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-13
Sediment - Riffle Fall 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	5	100	ECO Sed	35.7	0			6.4	16.9	10.5	9.4
Iron	T	mg/Kg-dry	5	100	ECO Sed	20000	0			9610	16600	12000	11300
Iron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			9610	16600	12000	11300
Lead	T	mg/Kg-dry	5	100	ECO Sed	35	0			11.2	23.1	18.2	20.3
Lead	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	400	0			11.2	23.1	18.2	20.3
Magnesium	T	mg/Kg-dry	5	100	No SLC					2730	5140	3420	3250
Manganese	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3200	0			226	570	328	253
Manganese	T	mg/Kg-dry	5	100	ECO Sed	460	20			226	570	328	253
Mercury	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	23	0	0.018	0.02	ND	ND		
Mercury	T	mg/Kg-dry	5	0	ECO Sed	0.17	0	0.018	0.02	ND	ND		
Molybdenum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	390	0			0.57	1.5	0.95	0.95
Nickel	T	mg/Kg-dry	5	100	ECO Sed	18	20			8.3	20.9	13.8	13.7
Nickel	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	1600	0			8.3	20.9	13.8	13.7
Potassium	T	mg/Kg-dry	5	100	No SLC					685	806	751	775
Selenium	T	mg/Kg-dry	5	60	ECO Sed	2	0	0.32	0.36	ND	0.76	0.38	0.37
Selenium	T	mg/Kg-dry	5	60	HH Soil (HQ=1)	390	0	0.32	0.36	ND	0.76	0.38	0.37
Silver	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	390	0	0.17	0.19	ND	ND		
Silver	T	mg/Kg-dry	5	0	ECO Sed	1	0	0.17	0.19	ND	ND		
Sodium	T	mg/Kg-dry	5	100	No SLC					104	139	124	130
Thallium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	5.5	0	0.11	0.12	ND	ND		
Vanadium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	78	0			9.4	17.8	12.7	12.4
Zinc	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			77.7	175	118	117
Zinc	T	mg/Kg-dry	5	100	ECO Sed	123	40			77.7	175	118	117

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-14
Sediment - Depositional Fall 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	5	100	No SLC					17.8	25.1	21.6	22.4
Chloride	T	mg/kg-Dry	5	40	No SLC			2.6	3.9	ND	19.7		2
Fluoride	T	mg/Kg-dry	5	80	HH Soil (HQ=1)	3700	0	0.14	0.14	ND	0.82	0.36	0.3
Nitrate	T	mg/kg-Dry	5	0	No SLC			2.6	4.2	ND	ND		
Organic Soils	T	%	5	100	No SLC					1.7	13.5	5.6	4.8
pH	T	SU	5	100	No SLC					6.9	7.5	7.1	7
Phosphorus	T	mg/Kg-dry	5	100	No SLC					626	1570	1090	1030
Sodium Absorption Ratio	T	ratio	5	100	No SLC					0.1	0.15	0.12	0.11
Solids, Percent	T	%	5	100	No SLC					48.2	79.1	63.6	63.3
Specific Conductance	T	umhos/cm	5	100	No SLC					80.6	170	123	131
Sulfate	T	mg/kg-Dry	5	100	No SLC					13.8	1640	377	43.8
Total Kjeldahl Nitrogen	T	mg/Kg-dry	5	100	No SLC					237	2220	1200	1300
Total Organic Carbon	T	mg/Kg-dry	5	100	No SLC					955	36100	18000	22100
Metals													
Aluminum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	76000	0			6120	9630	8130	7970
Aluminum	T	mg/Kg-dry	5	100	ECO Sed	25500	0			6120	9630	8130	7970
Antimony	T	mg/Kg-dry	5	0	ECO Sed	2	0	0.58	0.95	ND	ND		
Antimony	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	31	0	0.58	0.95	ND	ND		
Arsenic	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	0.39	100			1.4	3.8	2.7	2.8
Arsenic	T	mg/Kg-dry	5	100	ECO Sed	5.9	0			1.4	3.8	2.7	2.8
Barium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			26.7	89.1	59.2	62.6
Beryllium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	150	0			0.61	4.1	1.8	1.3
Boron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	5500	0			0.87	2.4	1.6	1.6
Cadmium	T	mg/Kg-dry	5	100	ECO Sed	0.6	40			0.19	1.7	0.67	0.47
Cadmium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	39	0			0.19	1.7	0.67	0.47
Calcium	T	mg/Kg-dry	5	100	No SLC					1450	3460	2810	3200
Chromium	T	mg/Kg-dry	5	100	ECO Sed	37.3	0			8.8	24.3	14	12.4
Chromium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	210	0			8.8	24.3	14	12.4
Cobalt	T	mg/Kg-dry	5	100	ECO Sed	50	0			4.2	10.2	6.3	5.8
Cobalt	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	900	0			4.2	10.2	6.3	5.8
Copper	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	2900	0			7.7	15.4	13	14.6

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-14
Sediment - Depositional Fall 2003
RI/FS Reference Upper Cabresto Creek
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	5	100	ECO Sed	35.7	0			7.7	15.4	13	14.6
Iron	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			11700	16100	13500	13300
Iron	T	mg/Kg-dry	5	100	ECO Sed	20000	0			11700	16100	13500	13300
Lead	T	mg/Kg-dry	5	100	ECO Sed	35	40			14.4	41.7	26.6	25.5
Lead	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	400	0			14.4	41.7	26.6	25.5
Magnesium	T	mg/Kg-dry	5	100	No SLC					1890	5930	3700	3720
Manganese	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	3200	0			207	428	333	346
Manganese	T	mg/Kg-dry	5	100	ECO Sed	460	0			207	428	333	346
Mercury	T	mg/Kg-dry	5	20	HH Soil (HQ=1)	23	0	0.019	0.028	ND	0.041		0.012
Mercury	T	mg/Kg-dry	5	20	ECO Sed	0.17	0	0.019	0.028	ND	0.041		0.012
Molybdenum	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	390	0			0.49	1.7	1.2	1.3
Nickel	T	mg/Kg-dry	5	100	ECO Sed	18	60			8.9	23	17.7	19
Nickel	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	1600	0			8.9	23	17.7	19
Potassium	T	mg/Kg-dry	5	100	No SLC					909	1410	1200	1280
Selenium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	390	0			0.4	2.6	1.1	1
Selenium	T	mg/Kg-dry	5	100	ECO Sed	2	20			0.4	2.6	1.1	1
Silver	T	mg/Kg-dry	5	20	HH Soil (HQ=1)	390	0	0.18	0.3	ND	0.21		0.13
Silver	T	mg/Kg-dry	5	20	ECO Sed	1	0	0.18	0.3	ND	0.21		0.13
Sodium	T	mg/Kg-dry	5	100	No SLC					124	257	164	141
Thallium	T	mg/Kg-dry	5	0	HH Soil (HQ=1)	5.5	0	0.12	0.19	ND	ND		
Vanadium	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	78	0			9.8	21.5	14.5	14.8
Zinc	T	mg/Kg-dry	5	100	HH Soil (HQ=1)	23000	0			90.5	557	258	224
Zinc	T	mg/Kg-dry	5	100	ECO Sed	123	60			90.5	557	258	224

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-15
Sediment - Composite Sample Fall 2002
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	4	100	No SLC					5.8	7.5	6.6	6.5
Chloride	T	mg/kg-Dry	4	0	No SLC			2.5	2.7	ND	ND		
Fluoride	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3700	0			0.18	0.26	0.22	0.22
Nitrate	T	mg/kg-Dry	4	0	No SLC			2.5	2.7	ND	ND		
Organic Soils	T	%	4	100	No SLC					1.2	2.4	1.8	1.8
pH	T	SU	4	100	No SLC					6.9	7.3	7.1	7.1
Phosphorus	T	mg/Kg-dry	4	100	No SLC					290	317	306	309
Sodium Absorption Ratio	T	ratio	4	100	No SLC					0.11	0.15	0.14	0.14
Solids, Percent	T	%	4	100	No SLC					74.2	81.8	78.3	78.6
Specific Conductance	T	umhos/cm	4	100	No SLC					88.4	179	120	107
Sulfate	T	mg/kg-Dry	4	50	No SLC			31.6	32.1	ND	71.3		25.9
Total Kjeldahl Nitrogen	T	mg/Kg-dry	4	100	No SLC					110	431	247	223
Total Organic Carbon	T	mg/Kg-dry	4	100	No SLC					2280	10900	4920	3250
Metals													
Aluminum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	76000	0			4090	5280	4640	4590
Aluminum	T	mg/Kg-dry	4	100	ECO Sed	25500	0			4090	5280	4640	4590
Antimony	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	31	0	0.18	0.21	ND	ND		
Antimony	T	mg/Kg-dry	4	0	ECO Sed	2	0	0.18	0.21	ND	ND		
Arsenic	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	0.39	100			1.6	2.9	2.4	2.5
Arsenic	T	mg/Kg-dry	4	100	ECO Sed	5.9	0			1.6	2.9	2.4	2.5
Barium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			22.4	27.2	25.6	26.3
Beryllium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	150	0			0.41	0.71	0.57	0.58
Boron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			4.3	5.4	4.8	4.8
Cadmium	T	mg/Kg-dry	4	25	HH Soil (HQ=1)	39	0	0.028	0.031	ND	0.06		0.015
Cadmium	T	mg/Kg-dry	4	25	ECO Sed	0.6	0	0.028	0.031	ND	0.06		0.015
Calcium	T	mg/Kg-dry	4	100	No SLC					1340	2070	1690	1670
Chromium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	210	0			8.3	12	10.1	10
Chromium	T	mg/Kg-dry	4	100	ECO Sed	37.3	0			8.3	12	10.1	10
Cobalt	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	900	0			3.2	4.4	3.7	3.6
Cobalt	T	mg/Kg-dry	4	100	ECO Sed	50	0			3.2	4.4	3.7	3.6
Copper	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	2900	0			6.2	8.7	7.4	7.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-15
Sediment - Composite Sample Fall 2002
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	4	100	ECO Sed	35.7	0			6.2	8.7	7.4	7.4
Iron	T	mg/Kg-dry	4	100	ECO Sed	20000	0			10600	13300	12000	12000
Iron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			10600	13300	12000	12000
Lead	T	mg/Kg-dry	4	100	ECO Sed	35	0			9.3	13.9	11.6	11.7
Lead	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	400	0			9.3	13.9	11.6	11.7
Magnesium	T	mg/Kg-dry	4	100	No SLC					2240	2980	2600	2590
Manganese	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3200	0			201	239	216	212
Manganese	T	mg/Kg-dry	4	100	ECO Sed	460	0			201	239	216	212
Mercury	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	23	0	0.018	0.021	ND	ND		
Mercury	T	mg/Kg-dry	4	0	ECO Sed	0.17	0	0.018	0.021	ND	ND		
Molybdenum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	390	0			0.87	1.6	1.2	1.1
Nickel	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	1600	0			7.1	10	8.3	8.1
Nickel	T	mg/Kg-dry	4	100	ECO Sed	18	0			7.1	10	8.3	8.1
Potassium	T	mg/Kg-dry	4	100	No SLC					1010	1230	1120	1130
Selenium	T	mg/Kg-dry	4	25	HH Soil (HQ=1)	390	0	0.23	0.31	ND	0.4		0.15
Selenium	T	mg/Kg-dry	4	25	ECO Sed	2	0	0.23	0.31	ND	0.4		0.15
Silver	T	mg/Kg-dry	4	0	ECO Sed	1	0	0.13	0.15	ND	ND		
Silver	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	390	0	0.13	0.15	ND	ND		
Sodium	T	mg/Kg-dry	4	0	No SLC			50.8	58.6	ND	ND		
Thallium	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	5.5	0	0.089	0.11	ND	ND		
Vanadium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	78	0			11.1	14.7	12.8	12.6
Zinc	T	mg/Kg-dry	4	100	ECO Sed	123	0			56.1	98	82	87
Zinc	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			56.1	98	82	87

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-16
Sediment - Riffle Spring 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	4	100	No SLC					4.3	10.5	6.9	6.4
Chloride	T	mg/kg-Dry	4	0	No SLC			2.9	3.1	ND	ND		
Fluoride	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3700	0			0.17	0.27	0.22	0.22
Nitrate	T	mg/kg-Dry	4	25	No SLC			2.9	2.9	ND	5.8		1.5
Organic Soils	T	%	4	100	No SLC					1.1	2	1.7	1.8
pH	T	SU	4	100	No SLC					6.8	7.2	7	7.1
Phosphorus	T	mg/Kg-dry	4	100	No SLC					384	489	434	431
Sodium Absorption Ratio	T	ratio	4	100	No SLC					0.1	0.1	0.1	0.1
Solids, Percent	T	%	4	100	No SLC					69.5	69.8	69.7	69.7
Specific Conductance	T	umhos/cm	4	100	No SLC					50.7	63.2	56.1	55.3
Sulfate	T	mg/kg-Dry	4	100	No SLC					15.1	16.6	16	16.2
Total Kjeldahl Nitrogen	T	mg/Kg-dry	4	100	No SLC					182	411	303	310
Total Organic Carbon	T	mg/Kg-dry	4	100	No SLC					1320	7100	4640	5070
Metals													
Aluminum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	76000	0			4710	6120	5340	5270
Aluminum	T	mg/Kg-dry	4	100	ECO Sed	25500	0			4710	6120	5340	5270
Antimony	T	mg/Kg-dry	4	0	ECO Sed	2	0	0.34	0.37	ND	ND		
Antimony	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	31	0	0.34	0.37	ND	ND		
Arsenic	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	0.39	100			2	2.9	2.4	2.4
Arsenic	T	mg/Kg-dry	4	100	ECO Sed	5.9	0			2	2.9	2.4	2.4
Barium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			28.6	53	37.8	34.7
Beryllium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	150	0			0.53	0.75	0.63	0.62
Boron	T	mg/Kg-dry	4	50	HH Soil (HQ=1)	5500	0	0.92	1	ND	1.6		0.9
Cadmium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	39	0			0.3	0.43	0.36	0.34
Cadmium	T	mg/Kg-dry	4	100	ECO Sed	0.6	0			0.3	0.43	0.36	0.34
Calcium	T	mg/Kg-dry	4	100	No SLC					1570	2380	2040	2110
Chromium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	210	0			9.6	14	11.5	11.2
Chromium	T	mg/Kg-dry	4	100	ECO Sed	37.3	0			9.6	14	11.5	11.2
Cobalt	T	mg/Kg-dry	4	100	ECO Sed	50	0			3.7	4.8	4.3	4.2
Cobalt	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	900	0			3.7	4.8	4.3	4.2
Copper	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	2900	0			7	9.7	8.1	8

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-16
Sediment - Riffle Spring 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	4	100	ECO Sed	35.7	0			7	9.7	8.1	8
Iron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			10800	12500	11600	11500
Iron	T	mg/Kg-dry	4	100	ECO Sed	20000	0			10800	12500	11600	11500
Lead	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	400	0			10.2	15.4	13.3	13.8
Lead	T	mg/Kg-dry	4	100	ECO Sed	35	0			10.2	15.4	13.3	13.8
Magnesium	T	mg/Kg-dry	4	100	No SLC					2530	3540	3010	2990
Manganese	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3200	0			225	409	311	305
Manganese	T	mg/Kg-dry	4	100	ECO Sed	460	0			225	409	311	305
Mercury	T	mg/Kg-dry	4	0	ECO Sed	0.17	0	0.022	0.024	ND	ND		
Mercury	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	23	0	0.022	0.024	ND	ND		
Molybdenum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	390	0			1.1	1.4	1.3	1.3
Nickel	T	mg/Kg-dry	4	100	ECO Sed	18	0			8.8	12.7	10.8	10.8
Nickel	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	1600	0			8.8	12.7	10.8	10.8
Potassium	T	mg/Kg-dry	4	100	No SLC					1000	1280	1140	1150
Selenium	T	mg/Kg-dry	4	75	HH Soil (HQ=1)	390	0	0.57	0.57	ND	2.4	1.2	0.99
Selenium	T	mg/Kg-dry	4	75	ECO Sed	2	33.3	0.57	0.57	ND	2.4	1.2	0.99
Silver	T	mg/Kg-dry	4	0	ECO Sed	1	0	0.19	0.22	ND	ND		
Silver	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	390	0	0.19	0.22	ND	ND		
Sodium	T	mg/Kg-dry	4	25	No SLC			60.5	66.9	ND	59.2		32.6
Thallium	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	5.5	0	0.11	0.12	ND	ND		
Vanadium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	78	0			10.7	14.1	12.1	11.8
Zinc	T	mg/Kg-dry	4	100	ECO Sed	123	0			70.8	110	94.5	98.6
Zinc	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			70.8	110	94.5	98.6

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-17
Sediment - Depositional Spring 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	4	100	No SLC					7.2	14.6	10.5	10.1
Chloride	T	mg/kg-Dry	4	0	No SLC			2.8	3	ND	ND		
Fluoride	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3700	0			0.16	0.3	0.25	0.26
Nitrate	T	mg/kg-Dry	4	0	No SLC			2.8	3	ND	ND		
Organic Soils	T	%	4	100	No SLC					2.1	4	3	2.9
pH	T	SU	4	100	No SLC					6.8	7.2	7	7
Phosphorus	T	mg/Kg-dry	4	100	No SLC					527	611	559	549
Sodium Absorption Ratio	T	ratio	4	100	No SLC					0.09	0.11	0.1	0.11
Solids, Percent	T	%	4	100	No SLC					14.3	70.6	54.7	67
Specific Conductance	T	umhos/cm	4	100	No SLC					73.3	93.4	83.9	84.5
Sulfate	T	mg/kg-Dry	4	100	No SLC					13.1	22.8	18.3	18.6
Total Kjeldahl Nitrogen	T	mg/Kg-dry	4	100	No SLC					264	574	455	491
Total Organic Carbon	T	mg/Kg-dry	4	100	No SLC					9320	15700	12800	13200
Metals													
Aluminum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	76000	0			4750	6140	5520	5590
Aluminum	T	mg/Kg-dry	4	100	ECO Sed	25500	0			4750	6140	5520	5590
Antimony	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	31	0	0.33	0.38	ND	ND		
Antimony	T	mg/Kg-dry	4	0	ECO Sed	2	0	0.33	0.38	ND	ND		
Arsenic	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	0.39	100			1.7	3.3	2.6	2.8
Arsenic	T	mg/Kg-dry	4	100	ECO Sed	5.9	0			1.7	3.3	2.6	2.8
Barium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			33.8	48.6	39.2	37.2
Beryllium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	150	0			0.5	0.76	0.67	0.72
Boron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			1.2	1.8	1.4	1.3
Cadmium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	39	0			0.3	0.42	0.37	0.38
Cadmium	T	mg/Kg-dry	4	100	ECO Sed	0.6	0			0.3	0.42	0.37	0.38
Calcium	T	mg/Kg-dry	4	100	No SLC					2030	2680	2340	2330
Chromium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	210	0			11.1	13.8	12.3	12.2
Chromium	T	mg/Kg-dry	4	100	ECO Sed	37.3	0			11.1	13.8	12.3	12.2
Cobalt	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	900	0			4.1	4.7	4.4	4.5
Cobalt	T	mg/Kg-dry	4	100	ECO Sed	50	0			4.1	4.7	4.4	4.5
Copper	T	mg/Kg-dry	4	100	ECO Sed	35.7	0			7.9	13.1	10	9.5

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-17
Sediment - Depositional Spring 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	2900	0			7.9	13.1	10	9.5
Iron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			10600	12900	12000	12200
Iron	T	mg/Kg-dry	4	100	ECO Sed	20000	0			10600	12900	12000	12200
Lead	T	mg/Kg-dry	4	100	ECO Sed	35	0			11.6	16.1	14.2	14.5
Lead	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	400	0			11.6	16.1	14.2	14.5
Magnesium	T	mg/Kg-dry	4	100	No SLC					2960	3090	3020	3020
Manganese	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3200	0			236	330	273	264
Manganese	T	mg/Kg-dry	4	100	ECO Sed	460	0			236	330	273	264
Mercury	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	23	0	0.022	0.025	ND	ND		
Mercury	T	mg/Kg-dry	4	0	ECO Sed	0.17	0	0.022	0.025	ND	ND		
Molybdenum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	390	0			0.93	1.3	1.2	1.2
Nickel	T	mg/Kg-dry	4	100	ECO Sed	18	0			10.1	11.1	10.8	10.9
Nickel	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	1600	0			10.1	11.1	10.8	10.9
Potassium	T	mg/Kg-dry	4	100	No SLC					867	1370	1160	1210
Selenium	T	mg/Kg-dry	4	75	ECO Sed	2	0	0.64	0.64	ND	1.1	0.72	0.72
Selenium	T	mg/Kg-dry	4	75	HH Soil (HQ=1)	390	0	0.64	0.64	ND	1.1	0.72	0.72
Silver	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	390	0	0.18	0.21	ND	ND		
Silver	T	mg/Kg-dry	4	0	ECO Sed	1	0	0.18	0.21	ND	ND		
Sodium	T	mg/Kg-dry	4	0	No SLC			54.2	63.9	ND	ND		
Thallium	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	5.5	0	0.11	0.13	ND	ND		
Vanadium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	78	0			12.6	14.2	13.3	13.2
Zinc	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			67.6	122	102	109
Zinc	T	mg/Kg-dry	4	100	ECO Sed	123	0			67.6	122	102	109

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-18
Sediment - Riffle Summer 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	2	100	No SLC					6.2	6.8	6.5	6.5
Chloride	T	mg/kg-Dry	2	100	No SLC					3.3	4.2	3.7	3.7
Fluoride	T	mg/Kg-dry	2	50	HH Soil (HQ=1)	3700	0	0.25	0.25	ND	0.29		0.21
Nitrate	T	mg/kg-Dry	2	100	No SLC					1	1.1	1.1	1.1
Organic Soils	T	%	2	100	No SLC					1	1.2	1.1	1.1
pH	T	SU	2	100	No SLC					7.1	7.2	7.1	7.1
Phosphorus	T	mg/Kg-dry	2	100	No SLC					287	325	306	306
Sodium Absorption Ratio	T	ratio	2	100	No SLC					0.2	0.22	0.21	0.21
Solids, Percent	T	%	2	100	No SLC					74.6	80.8	77.7	77.7
Specific Conductance	T	umhos/cm	2	100	No SLC					64.3	64.8	64.6	64.6
Sulfate	T	mg/kg-Dry	2	100	No SLC					18	18.8	18.4	18.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	2	100	No SLC					59.4	185	122	122
Total Organic Carbon	T	mg/Kg-dry	2	50	No SLC			135	135	ND	766		417
Metals													
Aluminum	T	mg/Kg-dry	2	100	ECO Sed	25500	0			4210	6180	5200	5200
Aluminum	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	76000	0			4210	6180	5200	5200
Antimony	T	mg/Kg-dry	2	0	ECO Sed	2	0	0.56	0.58	ND	ND		
Antimony	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	31	0	0.56	0.58	ND	ND		
Arsenic	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	0.39	100			1.3	2.6	1.9	1.9
Arsenic	T	mg/Kg-dry	2	100	ECO Sed	5.9	0			1.3	2.6	1.9	1.9
Barium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	5500	0			22.7	39.2	31	31
Beryllium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	150	0			0.39	0.6	0.5	0.5
Boron	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	5500	0			1.2	1.5	1.4	1.4
Cadmium	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	39	0	0.07	0.074	ND	ND		
Cadmium	T	mg/Kg-dry	2	0	ECO Sed	0.6	0	0.07	0.074	ND	ND		
Calcium	T	mg/Kg-dry	2	100	No SLC					1220	1770	1500	1500
Chromium	T	mg/Kg-dry	2	100	ECO Sed	37.3	0			12.9	13.4	13.1	13.1
Chromium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	210	0			12.9	13.4	13.1	13.1
Cobalt	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	900	0			3.6	5.5	4.5	4.5
Cobalt	T	mg/Kg-dry	2	100	ECO Sed	50	0			3.6	5.5	4.5	4.5
Copper	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	2900	0			8.6	10.4	9.5	9.5

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-18
Sediment - Riffle Summer 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	2	100	ECO Sed	35.7	0			8.6	10.4	9.5	9.5
Iron	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	23000	0			11900	14400	13200	13200
Iron	T	mg/Kg-dry	2	100	ECO Sed	20000	0			11900	14400	13200	13200
Lead	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	400	0			7.4	14.6	11	11
Lead	T	mg/Kg-dry	2	100	ECO Sed	35	0			7.4	14.6	11	11
Magnesium	T	mg/Kg-dry	2	100	No SLC					2750	3750	3250	3250
Manganese	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	3200	0			196	392	294	294
Manganese	T	mg/Kg-dry	2	100	ECO Sed	460	0			196	392	294	294
Mercury	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	23	0	0.021	0.022	ND	ND		
Mercury	T	mg/Kg-dry	2	0	ECO Sed	0.17	0	0.021	0.022	ND	ND		
Molybdenum	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	390	0			0.39	0.65	0.52	0.52
Nickel	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	1600	0			8.4	12.1	10.3	10.3
Nickel	T	mg/Kg-dry	2	100	ECO Sed	18	0			8.4	12.1	10.3	10.3
Potassium	T	mg/Kg-dry	2	100	No SLC					990	1390	1190	1190
Selenium	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	390	0	0.89	0.92	ND	ND		
Selenium	T	mg/Kg-dry	2	0	ECO Sed	2	0	0.89	0.92	ND	ND		
Silver	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	390	0	0.26	0.27	ND	ND		
Silver	T	mg/Kg-dry	2	0	ECO Sed	1	0	0.26	0.27	ND	ND		
Sodium	T	mg/Kg-dry	2	0	No SLC			55.2	58.1	ND	ND		
Thallium	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	5.5	0	0.11	0.12	ND	ND		
Vanadium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	78	0			12.5	16	14.3	14.3
Zinc	T	mg/Kg-dry	2	100	ECO Sed	123	0			47.9	93.2	70.5	70.5
Zinc	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	23000	0			47.9	93.2	70.5	70.5

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-19
Sediment - Depositional Summer 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					4.8	7.4	6.2	6.5
Chloride	T	mg/kg-Dry	3	100	No SLC					2.9	4.2	3.5	3.3
Fluoride	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	3700	0	0.27	0.27	ND	0.32	0.25	0.3
Nitrate	T	mg/kg-Dry	3	100	No SLC					0.98	1.1	1	1
Organic Soils	T	%	3	100	No SLC					1.1	10.1	4.3	1.7
pH	T	SU	3	100	No SLC					6.7	7.1	6.9	7
Phosphorus	T	mg/Kg-dry	3	100	No SLC					280	576	452	500
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.13	0.2	0.16	0.14
Solids, Percent	T	%	3	100	No SLC					72.1	76.3	74.2	74.3
Specific Conductance	T	umhos/cm	3	100	No SLC					47.5	66.7	56.9	56.5
Sulfate	T	mg/kg-Dry	3	100	No SLC					16.6	46.1	27.4	19.6
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					62.4	265	136	80.3
Total Organic Carbon	T	mg/Kg-dry	3	66.7	No SLC			139	139	ND	1950	1040	1100
Metals													
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			4780	5470	5130	5150
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	0			4780	5470	5130	5150
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.63	1.1	ND	ND		
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.63	1.1	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	33.3			2.6	10.2	5.2	2.7
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			2.6	10.2	5.2	2.7
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			27.9	37.7	32.9	33.2
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			0.5	0.78	0.64	0.63
Boron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			1.4	1.6	1.5	1.6
Cadmium	T	mg/Kg-dry	3	0	ECO Sed	0.6	0	0.039	0.079	ND	ND		
Cadmium	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	39	0	0.039	0.079	ND	ND		
Calcium	T	mg/Kg-dry	3	100	No SLC					1440	1790	1630	1660
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			11.9	14.8	13.1	12.7
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			11.9	14.8	13.1	12.7
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			4.3	4.8	4.5	4.3
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			4.3	4.8	4.5	4.3
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			7.7	11.8	9.6	9.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-19
Sediment - Depositional Summer 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	0			7.7	11.8	9.6	9.4
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			13600	14200	13900	13900
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	0			13600	14200	13900	13900
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			10.7	30.9	18.4	13.6
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	0			10.7	30.9	18.4	13.6
Magnesium	T	mg/Kg-dry	3	100	No SLC					2850	3370	3130	3170
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	0			132	285	223	251
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			132	285	223	251
Mercury	T	mg/Kg-dry	3	33.3	ECO Sed	0.17	0	0.02	0.022	ND	0.033		0.011
Mercury	T	mg/Kg-dry	3	33.3	HH Soil (HQ=1)	23	0	0.02	0.022	ND	0.033		0.011
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			0.97	1.6	1.3	1.2
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	0			10.6	10.8	10.7	10.7
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			10.6	10.8	10.7	10.7
Potassium	T	mg/Kg-dry	3	100	No SLC					1250	1660	1440	1420
Selenium	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	390	0	1	1	ND	ND		
Selenium	T	mg/Kg-dry	3	0	ECO Sed	2	0	1	1	ND	ND		
Silver	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	390	0	0.12	0.29	ND	ND		
Silver	T	mg/Kg-dry	3	0	ECO Sed	1	0	0.12	0.29	ND	ND		
Sodium	T	mg/Kg-dry	3	0	No SLC			60.7	274	ND	ND		
Thallium	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	5.5	0	0.13	0.13	ND	ND		
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			11.4	15	12.7	11.6
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			53.9	95.7	75.8	77.8
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	0			53.9	95.7	75.8	77.8

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-20
Sediment - Riffle Fall 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	4	100	No SLC					13.8	21.4	17.3	16.9
Chloride	T	mg/kg-Dry	4	25	No SLC			2.6	2.7	ND	3.5		1.3
Fluoride	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3700	0			0.14	0.38	0.3	0.34
Nitrate	T	mg/kg-Dry	4	0	No SLC			2.6	2.7	ND	ND		
Organic Soils	T	%	4	100	No SLC					1	3.2	1.9	1.6
pH	T	SU	4	100	No SLC					7.3	7.5	7.5	7.5
Phosphorus	T	mg/Kg-dry	4	100	No SLC					461	747	591	577
Sodium Absorption Ratio	T	ratio	4	100	No SLC					0.08	0.15	0.11	0.1
Solids, Percent	T	%	4	100	No SLC					76.5	79.5	78	78
Specific Conductance	T	umhos/cm	4	100	No SLC					54.6	132	82.7	72.1
Sulfate	T	mg/kg-Dry	4	100	No SLC					10	22.6	15.4	14.6
Total Kjeldahl Nitrogen	T	mg/Kg-dry	4	100	No SLC					67.3	299	198	213
Total Organic Carbon	T	mg/Kg-dry	4	75	No SLC			131	131	ND	24200	8180	4230
Metals													
Aluminum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	76000	0			4290	5830	4980	4900
Aluminum	T	mg/Kg-dry	4	100	ECO Sed	25500	0			4290	5830	4980	4900
Antimony	T	mg/Kg-dry	4	0	ECO Sed	2	0	0.57	0.78	ND	ND		
Antimony	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	31	0	0.57	0.78	ND	ND		
Arsenic	T	mg/Kg-dry	4	100	ECO Sed	5.9	0			2	3.1	2.5	2.4
Arsenic	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	0.39	100			2	3.1	2.5	2.4
Barium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			28.3	40.9	32.9	31.2
Beryllium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	150	0			0.42	0.71	0.58	0.59
Boron	T	mg/Kg-dry	4	75	HH Soil (HQ=1)	5500	0	0.79	0.79	ND	0.99	0.8	0.91
Cadmium	T	mg/Kg-dry	4	75	ECO Sed	0.6	0	0.063	0.063	ND	0.14	0.11	0.13
Cadmium	T	mg/Kg-dry	4	75	HH Soil (HQ=1)	39	0	0.063	0.063	ND	0.14	0.11	0.13
Calcium	T	mg/Kg-dry	4	100	No SLC					1460	1800	1630	1630
Chromium	T	mg/Kg-dry	4	100	ECO Sed	37.3	0			8.7	12	10.2	10
Chromium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	210	0			8.7	12	10.2	10
Cobalt	T	mg/Kg-dry	4	100	ECO Sed	50	0			3.4	5.4	4.4	4.5
Cobalt	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	900	0			3.4	5.4	4.4	4.5
Copper	T	mg/Kg-dry	4	100	ECO Sed	35.7	0			6.7	9.6	7.9	7.6

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-20
Sediment - Riffle Fall 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	2900	0			6.7	9.6	7.9	7.6
Iron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			9740	13400	11400	11300
Iron	T	mg/Kg-dry	4	100	ECO Sed	20000	0			9740	13400	11400	11300
Lead	T	mg/Kg-dry	4	100	ECO Sed	35	0			8.1	14	11.1	11.2
Lead	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	400	0			8.1	14	11.1	11.2
Magnesium	T	mg/Kg-dry	4	100	No SLC					2500	3620	3050	3030
Manganese	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3200	0			226	316	276	280
Manganese	T	mg/Kg-dry	4	100	ECO Sed	460	0			226	316	276	280
Mercury	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	23	0	0.018	0.019	ND	ND		
Mercury	T	mg/Kg-dry	4	0	ECO Sed	0.17	0	0.018	0.019	ND	ND		
Molybdenum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	390	0			0.81	2.6	1.5	1.4
Nickel	T	mg/Kg-dry	4	100	ECO Sed	18	0			9.1	11.9	10.4	10.3
Nickel	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	1600	0			9.1	11.9	10.4	10.3
Potassium	T	mg/Kg-dry	4	100	No SLC					792	1130	929	896
Selenium	T	mg/Kg-dry	4	75	ECO Sed	2	0	0.4	0.4	ND	0.71	0.52	0.58
Selenium	T	mg/Kg-dry	4	75	HH Soil (HQ=1)	390	0	0.4	0.4	ND	0.71	0.52	0.58
Silver	T	mg/Kg-dry	4	0	ECO Sed	1	0	0.18	0.2	ND	ND		
Silver	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	390	0	0.18	0.2	ND	ND		
Sodium	T	mg/Kg-dry	4	100	No SLC					132	202	153	139
Thallium	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	5.5	0	0.11	0.13	ND	ND		
Vanadium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	78	0			8.8	12.7	10.5	10.3
Zinc	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			54.3	123	82.2	75.8
Zinc	T	mg/Kg-dry	4	100	ECO Sed	123	0			54.3	123	82.2	75.8

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-21
Sediment - Depositional Fall 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	4	100	No SLC					13.2	24	19.7	20.8
Chloride	T	mg/kg-Dry	4	25	No SLC			2.8	3.5	ND	3.9		1.6
Fluoride	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3700	0			0.32	0.53	0.4	0.38
Nitrate	T	mg/kg-Dry	4	0	No SLC			2.5	3.5	ND	ND		
Organic Soils	T	%	4	100	No SLC					1.6	6.5	4.8	5.5
pH	T	SU	4	100	No SLC					7	7.5	7.3	7.3
Phosphorus	T	mg/Kg-dry	4	100	No SLC					245	890	505	443
Sodium Absorption Ratio	T	ratio	4	100	No SLC					0.09	0.12	0.1	0.095
Solids, Percent	T	%	4	100	No SLC					58.3	81.8	70.8	71.5
Specific Conductance	T	umhos/cm	4	100	No SLC					59.8	159	118	127
Sulfate	T	mg/kg-Dry	4	100	No SLC					21.4	84.1	42.3	31.9
Total Kjeldahl Nitrogen	T	mg/Kg-dry	4	100	No SLC					695	1010	810	768
Total Organic Carbon	T	mg/Kg-dry	4	100	No SLC					14900	52200	28000	22500
Metals													
Aluminum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	76000	0			4210	7080	5620	5590
Aluminum	T	mg/Kg-dry	4	100	ECO Sed	25500	0			4210	7080	5620	5590
Antimony	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	31	0	0.59	0.84	ND	ND		
Antimony	T	mg/Kg-dry	4	0	ECO Sed	2	0	0.59	0.84	ND	ND		
Arsenic	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	0.39	100			1.5	3.7	2.6	2.6
Arsenic	T	mg/Kg-dry	4	100	ECO Sed	5.9	0			1.5	3.7	2.6	2.6
Barium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	5500	0			31.7	60.4	47.5	48.9
Beryllium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	150	0			0.48	0.92	0.75	0.79
Boron	T	mg/Kg-dry	4	75	HH Soil (HQ=1)	5500	0	1	1	ND	1.4	1	1.1
Cadmium	T	mg/Kg-dry	4	100	ECO Sed	0.6	0			0.064	0.3	0.21	0.24
Cadmium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	39	0			0.064	0.3	0.21	0.24
Calcium	T	mg/Kg-dry	4	100	No SLC					1650	3100	2550	2720
Chromium	T	mg/Kg-dry	4	100	ECO Sed	37.3	0			9.3	13	11.1	11.1
Chromium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	210	0			9.3	13	11.1	11.1
Cobalt	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	900	0			2.9	6.6	4.7	4.6
Cobalt	T	mg/Kg-dry	4	100	ECO Sed	50	0			2.9	6.6	4.7	4.6
Copper	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	2900	0			7.5	13	9.8	9.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-21
Sediment - Depositional Fall 2003
RI/FS Reference Lower Cabresto Creek Riparian
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	4	100	ECO Sed	35.7	0			7.5	13	9.8	9.4
Iron	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			9300	12500	11600	12300
Iron	T	mg/Kg-dry	4	100	ECO Sed	20000	0			9300	12500	11600	12300
Lead	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	400	0			10.8	18.7	15.9	17
Lead	T	mg/Kg-dry	4	100	ECO Sed	35	0			10.8	18.7	15.9	17
Magnesium	T	mg/Kg-dry	4	100	No SLC					2400	3800	3010	2920
Manganese	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	3200	0			107	461	315	346
Manganese	T	mg/Kg-dry	4	100	ECO Sed	460	25			107	461	315	346
Mercury	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	23	0	0.018	0.025	ND	ND		
Mercury	T	mg/Kg-dry	4	0	ECO Sed	0.17	0	0.018	0.025	ND	ND		
Molybdenum	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	390	0			0.58	1.8	1.4	1.6
Nickel	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	1600	0			7.3	13.8	11.2	11.8
Nickel	T	mg/Kg-dry	4	100	ECO Sed	18	0			7.3	13.8	11.2	11.8
Potassium	T	mg/Kg-dry	4	100	No SLC					827	1680	1210	1180
Selenium	T	mg/Kg-dry	4	50	HH Soil (HQ=1)	390	0	0.36	0.5	ND	0.73		0.43
Selenium	T	mg/Kg-dry	4	50	ECO Sed	2	0	0.36	0.5	ND	0.73		0.43
Silver	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	390	0	0.19	0.26	ND	ND		
Silver	T	mg/Kg-dry	4	0	ECO Sed	1	0	0.19	0.26	ND	ND		
Sodium	T	mg/Kg-dry	4	100	No SLC					117	130	123	122
Thallium	T	mg/Kg-dry	4	0	HH Soil (HQ=1)	5.5	0	0.12	0.17	ND	ND		
Vanadium	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	78	0			11	15.5	12.3	11.3
Zinc	T	mg/Kg-dry	4	100	HH Soil (HQ=1)	23000	0			60.3	148	108	112
Zinc	T	mg/Kg-dry	4	100	ECO Sed	123	50			60.3	148	108	112

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-22
Sediment - Composite Sample Fall 2002
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Dibenzodioxins-Dibenzofurans													
1,2,3,4,6,7,8-Heptachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.15	0.65	ND	ND		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	T	pg/g	4	25	HH Soil (HQ=1)	1000	0	0.2	1.5	ND	2.8		0.61
1,2,3,4,7,8,9-Heptachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.2	0.28	ND	ND		
1,2,3,4,7,8-Hexachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.1	0.17	ND	ND		
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.18	0.26	ND	ND		
1,2,3,6,7,8-Hexachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.1	0.27	ND	ND		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.17	0.25	ND	ND		
1,2,3,7,8,9-Hexachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.14	0.23	ND	ND		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.17	0.25	ND	ND		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.19	0.26	ND	ND		
2,3,4,7,8-Pentachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.17	0.26	ND	ND		
2,3,7,8-Tetrachlorodibenzofuran	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.3	0.53	ND	ND		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	T	pg/g	4	0	HH Soil (HQ=1)	1000	0	0.43	0.75	ND	ND		
Explosives													
2,4,6-Trinitrotoluene	T	ug/Kg-dry	9	0	No SLC			120	120	ND	ND		
Cyclotetramethylenetetranitramine	T	ug/Kg-dry	9	0	No SLC			120	120	ND	ND		
Cyclotrimethylenetrinitramine	T	ug/Kg-dry	9	0	No SLC			120	120	ND	ND		
Pentaerythritol tetranitrate	T	ug/Kg-dry	9	0	No SLC			5000	5000	ND	ND		
PYX	T	ug/Kg-dry	9	0	No SLC			120	120	ND	ND		
Inorganics													
Cation-Exchange Capacity	T	meq/100g	23	100	No SLC					3.2	17.6	9.8	8.8
Chloride	T	mg/kg-Dry	23	8.7	No SLC			12.6	44	ND	4.7		16.3
Fluoride	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3700	0			0.13	0.53	0.36	0.37
Nitrate	T	mg/kg-Dry	23	4.3	No SLC			0.36	8.8	ND	0.55		1.3
Organic Soils	T	%	15	100	No SLC					1.8	2.7	2.2	2.2
pH	T	SU	23	100	No SLC					4.6	8	6.5	6.4
Phosphorus	T	mg/Kg-dry	23	100	No SLC					14.7	1660	690	708
Sodium Absorption Ratio	T	ratio	23	95.7	No SLC			0.13	0.13	ND	0.71	0.19	0.13
Solids, Percent	T	%	25	100	No SLC					45.3	79.9	70.7	76.1
Solids, Percent - VOCs Only	T	%	1	100	No SLC					82.7	82.7	82.7	82.7
Specific Conductance	T	umhos/cm	23	100	No SLC					73.8	484	160	110

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-22
Sediment - Composite Sample Fall 2002
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Sulfate	T	mg/kg-Dry	23	78.3	No SLC			128	176	ND	1520	189	58.6
Total Kjeldahl Nitrogen	T	mg/Kg-dry	23	100	No SLC					34.2	658	192	75.6
Total Organic Carbon	T	mg/Kg-dry	23	78.3	No SLC			126	132	ND	14200	3280	2840
Metals													
Aluminum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	76000	0			4270	11100	7330	7500
Aluminum	T	mg/Kg-dry	23	100	ECO Sed	25500	0			4270	11100	7330	7500
Antimony	T	mg/Kg-dry	23	30.4	HH Soil (HQ=1)	31	0	0.04	0.22	ND	0.1		0.1
Antimony	T	mg/Kg-dry	23	30.4	ECO Sed	2	0	0.04	0.22	ND	0.1		0.1
Arsenic	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	0.39	100			2.7	10.2	6.8	6.9
Arsenic	T	mg/Kg-dry	23	100	ECO Sed	5.9	65.2			2.7	10.2	6.8	6.9
Barium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			49.6	522	336	346
Beryllium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	150	0			0.35	1.3	0.75	0.83
Boron	T	mg/Kg-dry	23	26.1	HH Soil (HQ=1)	5500	0	0.39	2.2	ND	1.5		0.64
Cadmium	T	mg/Kg-dry	23	69.6	ECO Sed	0.6	12.5	0.024	0.032	ND	0.79	0.24	0.24
Cadmium	T	mg/Kg-dry	23	69.6	HH Soil (HQ=1)	39	0	0.024	0.032	ND	0.79	0.24	0.24
Calcium	T	mg/Kg-dry	23	100	No SLC					1030	3120	1700	1530
Chromium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	210	0			8.2	20.7	14.3	14
Chromium	T	mg/Kg-dry	23	100	ECO Sed	37.3	0			8.2	20.7	14.3	14
Cobalt	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	900	0			3.2	15.2	8.1	7.6
Cobalt	T	mg/Kg-dry	23	100	ECO Sed	50	0			3.2	15.2	8.1	7.6
Copper	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	2900	0			16.5	68.6	40.6	42.8
Copper	T	mg/Kg-dry	23	100	ECO Sed	35.7	60.9			16.5	68.6	40.6	42.8
Iron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	52.2			11000	36200	24000	23300
Iron	T	mg/Kg-dry	23	100	ECO Sed	20000	73.9			11000	36200	24000	23300
Lead	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	400	0			20.6	118	59.9	55.6
Lead	T	mg/Kg-dry	23	100	ECO Sed	35	78.3			20.6	118	59.9	55.6
Magnesium	T	mg/Kg-dry	23	100	No SLC					2420	5150	3540	3490
Manganese	T	mg/Kg-dry	23	100	ECO Sed	460	34.8			130	869	428	401
Manganese	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3200	0			130	869	428	401
Mercury	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	23	0	0.018	0.029	ND	ND		
Mercury	T	mg/Kg-dry	23	0	ECO Sed	0.17	0	0.018	0.029	ND	ND		
Molybdenum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			2.4	30.8	10.8	8.2
Nickel	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	1600	0			10.4	37.8	22.9	23.3

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-22
Sediment - Composite Sample Fall 2002
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Nickel	T	mg/Kg-dry	23	100	ECO Sed	18	65.2			10.4	37.8	22.9	23.3
Potassium	T	mg/Kg-dry	23	100	No SLC					924	3480	2120	1940
Selenium	T	mg/Kg-dry	23	100	ECO Sed	2	0			0.33	1.6	1	1.1
Selenium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			0.33	1.6	1	1.1
Silver	T	mg/Kg-dry	23	78.3	HH Soil (HQ=1)	390	0	0.13	0.16	ND	0.71	0.26	0.22
Silver	T	mg/Kg-dry	23	78.3	ECO Sed	1	0	0.13	0.16	ND	0.71	0.26	0.22
Sodium	T	mg/Kg-dry	23	69.6	No SLC			130	225	ND	347	160	128
Thallium	T	mg/Kg-dry	23	65.2	HH Soil (HQ=1)	5.5	0	0.09	0.11	ND	0.22	0.11	0.11
Vanadium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	78	0			8.5	21.8	15.1	15.5
Zinc	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			50	289	147	149
Zinc	T	mg/Kg-dry	23	100	ECO Sed	123	65.2			50	289	147	149
Pesticides-PCBs													
a-Chlordane	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Aldrin	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
alpha-Hexachlorocyclohexane	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Aroclor 1016	T	ug/Kg-dry	9	0	No SLC			41	58	ND	ND		
Aroclor 1221	T	ug/Kg-dry	9	0	No SLC			84	120	ND	ND		
Aroclor 1232	T	ug/Kg-dry	9	0	No SLC			41	58	ND	ND		
Aroclor 1242	T	ug/Kg-dry	9	0	No SLC			41	58	ND	ND		
Aroclor 1248	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.22	0	41	58	ND	ND		
Aroclor 1254	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.22	0	41	58	ND	ND		
Aroclor 1260	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.22	0	41	58	ND	ND		
beta-Hexachlorocyclohexane	T	ug/Kg-dry	10	10	ECO Sed	0.003	100	2.1	3	ND	1.8		1.3
delta-Hexachlorocyclohexane	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Dichlorodiphenyldichloroethane	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		
Dichlorodiphenyldichloroethylene	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		
Dichlorodiphenyltrichloroethane	T	ug/Kg-dry	10	10	No SLC			4.1	5.8	ND	15		2.3
Dieldrin	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		
Endosulfan I	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Endosulfan II	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		
Endosulfan sulfate	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		
Endrin	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		
Endrin aldehyde	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-22
Sediment - Composite Sample Fall 2002
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Endrin ketone	T	ug/Kg-dry	10	0	No SLC			4.1	5.8	ND	ND		
g-Chlordane	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Heptachlor	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Heptachlor epoxide	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Lindane	T	ug/Kg-dry	10	0	No SLC			2.1	3	ND	ND		
Methoxychlor	T	ug/Kg-dry	10	0	No SLC			21	30	ND	ND		
Toxaphene	T	ug/Kg-dry	10	0	No SLC			210	300	ND	ND		
Semi-Volatile Organics													
1,1'-Biphenyl	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	3000	0	410	580	ND	ND		
2,4,5-Trichlorophenol	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
2,4,6-Trichlorophenol	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
2,4-Dichlorophenol	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
2,4-Dimethylphenol	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
2,4-Dinitrophenol	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
2,4-Dinitrotoluene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
2,6-Dinitrotoluene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	61	0	410	580	ND	ND		
2-Chloronaphthalene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
2-Chlorophenol	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	64	0	410	580	ND	ND		
2-Methylnaphthalene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
2-Methylphenol	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
2-Nitroaniline	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
2-Nitrophenol	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
3,3-Dichlorobenzidine	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
3-Nitroaniline	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
4,6-Dinitro-2-methylphenol	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
4-Bromophenyl phenyl ether	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
4-Chloro-3-methylphenol	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
4-Chloroaniline	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
4-Chlorophenyl phenyl ether	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
4-Methylphenol	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
4-Nitroaniline	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
4-Nitrophenol	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
Acenaphthene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	3700	0	410	580	ND	ND		

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-22
Sediment - Composite Sample Fall 2002
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Acenaphthylene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Anthracene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	22000	0	410	580	ND	ND		
Benzo(a)anthracene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.62	0	410	580	ND	ND		
Benzo(a)pyrene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.062	0	410	580	ND	ND		
Benzo(b)fluoranthene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.62	0	410	580	ND	ND		
Benzo(g,h,i)perylene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Benzo(k)fluoranthene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	6.2	0	410	580	ND	ND		
Bis(2-chloroethoxy)methane	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Bis(2-chloroethyl)ether	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Carbazole	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	24	0	410	580	ND	ND		
Chrysene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	62	0	410	580	ND	ND		
Dibenz(a,h)anthracene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.062	0	410	580	ND	ND		
Dibenzofuran	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	150	0	410	580	ND	ND		
Dichlorodiiisopropyl ether	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Fluoranthene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	2300	0	410	580	ND	ND		
Fluorene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	2600	0	410	580	ND	ND		
Hexachlorobenzene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Hexachlorobutadiene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Hexachlorocyclopentadiene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Hexachloroethane	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Indeno(1,2,3-cd)pyrene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.62	0	410	580	ND	ND		
Isophorone	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	510	0	410	580	ND	ND		
Naphthalene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	120	0	410	580	ND	ND		
Nitrobenzene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
N-Nitrosodi-n-propylamine	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.07	0	410	580	ND	ND		
N-Nitrosodiphenylamine	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	99	0	410	580	ND	ND		
Pentachlorophenol	T	ug/Kg-dry	9	0	No SLC			1000	1400	ND	ND		
Phenanthrene	T	ug/Kg-dry	9	0	No SLC			410	580	ND	ND		
Phenol	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	18000	0	410	580	ND	ND		
Pyrene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	2300	0	410	580	ND	ND		
Volatile Organics													
1,1,1-Trichloroethane	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	1400	0	7	21	ND	ND		
1,1,2,2-Tetrachloroethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-22
Sediment - Composite Sample Fall 2002
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
1,1,2-Trichloro-1,2,2-trifluoroethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,1,2-Trichloroethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,1-Dichloroethane	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	590	0	7	21	ND	ND		
1,1-Dichloroethene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	280	0	7	21	ND	ND		
1,2,4-Trichlorobenzene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,2-Dibromo-3-chloropropane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,2-Dichlorobenzene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,2-Dichloroethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,2-Dichloroethene (total)	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,2-Dichloropropane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,3-Dichlorobenzene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
1,4-Dichlorobenzene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
2-Butanone	T	ug/Kg-dry	9	11.1	HH Soil (HQ=1)	32000	0	7	21	ND	8		7
2-Butanone	T	ug/Kg-dry	9	11.1	ECO Sed	0.27	100	7	21	ND	8		7
2-Hexanone	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
4-Methyl-2-pentanone	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	5800	0	7	21	ND	ND		
Benzene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.66	0	7	21	ND	ND		
Bromodichloromethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Bromoform	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Bromomethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Carbon tetrachloride	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.24	0	7	21	ND	ND		
Chlorobenzene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	320	0	7	21	ND	ND		
Chloroethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Chloroform	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Chloromethane	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	1.2	0	7	21	ND	ND		
cis-1,2-Dichloroethene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
cis-1,3-Dichloropropene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Dibromochloromethane	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Dichlorodifluoromethane	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	94	0	7	21	ND	ND		
Ethylbenzene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	230	0	7	21	ND	ND		
Styrene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	1700	0	7	21	ND	ND		
Tetrachloroethene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.55	0	7	21	ND	ND		
Toluene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	520	0	7	21	ND	ND		

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"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-22
Sediment - Composite Sample Fall 2002
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Total Xylene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	210	0	7	21	ND	ND		
trans-1,2-Dichloroethene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
trans-1,3-Dichloropropene	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		
Trichloroethene	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	0.043	0	7	21	ND	ND		
Trichlorofluoromethane	T	ug/Kg-dry	9	0	HH Soil (HQ=1)	390	0	7	21	ND	ND		
Vinyl chloride	T	ug/Kg-dry	9	0	No SLC			7	21	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

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Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-23
Sediment - Riffle Spring 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	23	91.3	No SLC			13	13	ND	15.2	8.1	7.3
Chloride	T	mg/kg-Dry	23	47.8	No SLC			2.6	5.9	ND	8		2.8
Fluoride	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3700	0			0.39	4.1	1.2	1.1
Nitrate	T	mg/kg-Dry	23	8.7	No SLC			2.4	3	ND	3.5		1.4
Organic Soils	T	%	23	100	No SLC					1.4	3.7	2	1.9
pH	T	SU	23	100	No SLC					6.2	7.2	6.8	6.9
Phosphorus	T	mg/Kg-dry	23	100	No SLC					276	1610	909	845
Sodium Absorption Ratio	T	ratio	23	100	No SLC					0.11	0.3	0.16	0.14
Solids, Percent	T	%	23	100	No SLC					66.7	84.6	74.5	73.7
Specific Conductance	T	umhos/cm	23	100	No SLC					72.6	233	122	110
Sulfate	T	mg/kg-Dry	23	100	No SLC					36.5	201	79.2	69.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	23	95.7	No SLC			30.4	30.4	ND	258	84.2	65.4
Total Organic Carbon	T	mg/Kg-dry	23	47.8	No SLC			126	141	ND	8570		70.5
Metals													
Aluminum	T	mg/Kg-dry	23	100	ECO Sed	25500	0			4580	12100	6520	6230
Aluminum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	76000	0			4580	12100	6520	6230
Antimony	T	mg/Kg-dry	23	0	ECO Sed	2	0	0.28	0.38	ND	ND		
Antimony	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	31	0	0.28	0.38	ND	ND		
Arsenic	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	0.39	100			1.6	6.1	3.8	3.8
Arsenic	T	mg/Kg-dry	23	100	ECO Sed	5.9	4.3			1.6	6.1	3.8	3.8
Barium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			67	442	192	172
Beryllium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	150	0			0.42	1.8	0.99	0.89
Boron	T	mg/Kg-dry	23	87	HH Soil (HQ=1)	5500	0	0.92	1	ND	1.8	1.2	1.2
Cadmium	T	mg/Kg-dry	23	69.6	HH Soil (HQ=1)	39	0	0.048	0.067	ND	1.2	0.35	0.35
Cadmium	T	mg/Kg-dry	23	69.6	ECO Sed	0.6	25	0.048	0.067	ND	1.2	0.35	0.35
Calcium	T	mg/Kg-dry	23	100	No SLC					1080	1830	1370	1350
Chromium	T	mg/Kg-dry	23	100	ECO Sed	37.3	0			8.4	14.7	11.5	11.6
Chromium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	210	0			8.4	14.7	11.5	11.6
Cobalt	T	mg/Kg-dry	23	100	ECO Sed	50	0			6.5	24	10.6	10
Cobalt	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	900	0			6.5	24	10.6	10
Copper	T	mg/Kg-dry	23	100	ECO Sed	35.7	69.6			19.6	124	46.7	39.3

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

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Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-23
Sediment - Riffle Spring 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	2900	0			19.6	124	46.7	39.3
Iron	T	mg/Kg-dry	23	100	ECO Sed	20000	0			10000	19800	15400	14900
Iron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			10000	19800	15400	14900
Lead	T	mg/Kg-dry	23	100	ECO Sed	35	39.1			16	63	32.4	30.5
Lead	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	400	0			16	63	32.4	30.5
Magnesium	T	mg/Kg-dry	23	100	No SLC					2210	3490	2900	2960
Manganese	T	mg/Kg-dry	23	100	ECO Sed	460	52.2			214	1560	600	490
Manganese	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3200	0			214	1560	600	490
Mercury	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	23	0	0.019	0.024	ND	ND		
Mercury	T	mg/Kg-dry	23	0	ECO Sed	0.17	0	0.019	0.024	ND	ND		
Molybdenum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			2.2	26.7	8	7.5
Nickel	T	mg/Kg-dry	23	100	ECO Sed	18	100			18.1	63.5	32.6	30.5
Nickel	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	1600	0			18.1	63.5	32.6	30.5
Potassium	T	mg/Kg-dry	23	100	No SLC					1010	1870	1460	1420
Selenium	T	mg/Kg-dry	23	52.2	HH Soil (HQ=1)	390	0	0.46	0.63	ND	1.5	0.6	0.58
Selenium	T	mg/Kg-dry	23	52.2	ECO Sed	2	0	0.46	0.63	ND	1.5	0.6	0.58
Silver	T	mg/Kg-dry	23	4.3	ECO Sed	1	0	0.09	0.21	ND	0.11		0.06
Silver	T	mg/Kg-dry	23	4.3	HH Soil (HQ=1)	390	0	0.09	0.21	ND	0.11		0.06
Sodium	T	mg/Kg-dry	23	34.8	No SLC			35.2	128	ND	118		22.3
Thallium	T	mg/Kg-dry	23	34.8	HH Soil (HQ=1)	5.5	0	0.1	0.13	ND	0.13		0.055
Vanadium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	78	0			8.7	15	12.2	13.1
Zinc	T	mg/Kg-dry	23	100	ECO Sed	123	91.3			97.7	462	211	212
Zinc	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			97.7	462	211	212

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-24
Sediment - Depositional Spring 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	23	100	No SLC					8.8	26	15.8	15.3
Chloride	T	mg/kg-Dry	23	52.2	No SLC			2.8	10.7	ND	18.5	5.3	4.9
Fluoride	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3700	0			0.45	9.2	1.9	0.9
Nitrate	T	mg/kg-Dry	23	8.7	No SLC			2.6	6.1	ND	3.4		1.6
Organic Soils	T	%	23	100	No SLC					2.3	6.8	4.5	4.2
pH	T	SU	23	100	No SLC					6	7.3	6.7	6.7
Phosphorus	T	mg/Kg-dry	23	100	No SLC					1250	6060	2670	2490
Sodium Absorption Ratio	T	ratio	23	100	No SLC					0.12	0.58	0.23	0.16
Solids, Percent	T	%	23	100	No SLC					33.1	79.3	60.4	61.6
Specific Conductance	T	umhos/cm	23	100	No SLC					120	370	215	204
Sulfate	T	mg/kg-Dry	23	100	No SLC					59.1	1030	266	232
Total Kjeldahl Nitrogen	T	mg/Kg-dry	23	100	No SLC					126	1270	442	368
Total Organic Carbon	T	mg/Kg-dry	23	82.6	No SLC			140	195	ND	18600	6230	6910
Metals													
Aluminum	T	mg/Kg-dry	23	100	ECO Sed	25500	0			7330	20800	12200	11500
Aluminum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	76000	0			7330	20800	12200	11500
Antimony	T	mg/Kg-dry	23	0	ECO Sed	2	0	0.34	0.71	ND	ND		
Antimony	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	31	0	0.34	0.71	ND	ND		
Arsenic	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	0.39	100			4.8	16.2	8.7	8.2
Arsenic	T	mg/Kg-dry	23	100	ECO Sed	5.9	91.3			4.8	16.2	8.7	8.2
Barium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			375	855	561	549
Beryllium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	150	0			0.75	3.8	1.9	1.8
Boron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			1.3	8.9	2.7	2.2
Cadmium	T	mg/Kg-dry	23	60.9	HH Soil (HQ=1)	39	0	0.05	0.12	ND	2	0.44	0.15
Cadmium	T	mg/Kg-dry	23	60.9	ECO Sed	0.6	50	0.05	0.12	ND	2	0.44	0.15
Calcium	T	mg/Kg-dry	23	100	No SLC					1500	3340	2150	1960
Chromium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	210	0			10.2	30.3	17.5	17.1
Chromium	T	mg/Kg-dry	23	100	ECO Sed	37.3	0			10.2	30.3	17.5	17.1
Cobalt	T	mg/Kg-dry	23	100	ECO Sed	50	0			6.3	18.4	12.8	13.7
Cobalt	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	900	0			6.3	18.4	12.8	13.7
Copper	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	2900	0			40.1	168	81.3	68.1

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-24
Sediment - Depositional Spring 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	23	100	ECO Sed	35.7	100			40.1	168	81.3	68.1
Iron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	82.6			17000	52900	29400	27400
Iron	T	mg/Kg-dry	23	100	ECO Sed	20000	91.3			17000	52900	29400	27400
Lead	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	400	0			38.3	200	83.4	72.6
Lead	T	mg/Kg-dry	23	100	ECO Sed	35	100			38.3	200	83.4	72.6
Magnesium	T	mg/Kg-dry	23	100	No SLC					2380	7110	4030	3700
Manganese	T	mg/Kg-dry	23	100	ECO Sed	460	69.6			195	988	592	638
Manganese	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3200	0			195	988	592	638
Mercury	T	mg/Kg-dry	23	0	ECO Sed	0.17	0	0.021	0.05	ND	ND		
Mercury	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	23	0	0.021	0.05	ND	ND		
Molybdenum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			5.8	37.4	15.5	12.9
Nickel	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	1600	0			19.1	47.1	34.1	34.9
Nickel	T	mg/Kg-dry	23	100	ECO Sed	18	100			19.1	47.1	34.1	34.9
Potassium	T	mg/Kg-dry	23	100	No SLC					1820	5920	2880	2690
Selenium	T	mg/Kg-dry	23	91.3	HH Soil (HQ=1)	390	0	0.61	1.1	ND	2.7	1.4	1.3
Selenium	T	mg/Kg-dry	23	91.3	ECO Sed	2	19	0.61	1.1	ND	2.7	1.4	1.3
Silver	T	mg/Kg-dry	23	82.6	HH Soil (HQ=1)	390	0	0.1	0.21	ND	1.1	0.33	0.26
Silver	T	mg/Kg-dry	23	82.6	ECO Sed	1	5.3	0.1	0.21	ND	1.1	0.33	0.26
Sodium	T	mg/Kg-dry	23	47.8	No SLC			37.6	189	ND	444		80
Thallium	T	mg/Kg-dry	23	87	HH Soil (HQ=1)	5.5	0	0.12	0.13	ND	0.39	0.2	0.19
Vanadium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	78	0			10.2	29.6	17.5	16.9
Zinc	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			127	439	283	267
Zinc	T	mg/Kg-dry	23	100	ECO Sed	123	100			127	439	283	267

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-25
Sediment - Riffle Summer 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	23	100	No SLC					2.9	9	5.5	5.5
Chloride	T	mg/kg-Dry	23	78.3	No SLC			320	346	ND	3.9	38.3	3.3
Fluoride	T	mg/Kg-dry	23	69.6	HH Soil (HQ=1)	3700	0	0.25	0.28	ND	1.1	0.54	0.59
Nitrate	T	mg/kg-Dry	23	78.3	No SLC			25.6	27.7	ND	1.9	3.9	1.3
Organic Soils	T	%	23	100	No SLC					1.4	2.5	1.6	1.6
pH	T	SU	23	100	No SLC					5.4	7.8	7.3	7.4
Phosphorus	T	mg/Kg-dry	23	100	No SLC					237	648	448	433
Sodium Absorption Ratio	T	ratio	23	100	No SLC					0.09	0.35	0.15	0.12
Solids, Percent	T	%	23	100	No SLC					72.3	82.7	77.8	78
Specific Conductance	T	umhos/cm	23	100	No SLC					71.7	173	109	100
Sulfate	T	mg/kg-Dry	23	100	No SLC					22	144	45	37.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	23	95.7	No SLC			137	137	ND	86.2	46.7	41.5
Total Organic Carbon	T	mg/Kg-dry	23	39.1	No SLC			121	139	ND	9660		66.5
Metals													
Aluminum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	76000	0			3550	6570	4900	5000
Aluminum	T	mg/Kg-dry	23	100	ECO Sed	25500	0			3550	6570	4900	5000
Antimony	T	mg/Kg-dry	23	8.7	ECO Sed	2	0	0.45	0.64	ND	0.63		0.26
Antimony	T	mg/Kg-dry	23	8.7	HH Soil (HQ=1)	31	0	0.45	0.64	ND	0.63		0.26
Arsenic	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	0.39	100			2.8	7	4	4.1
Arsenic	T	mg/Kg-dry	23	100	ECO Sed	5.9	4.3			2.8	7	4	4.1
Barium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			127	583	248	238
Beryllium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	150	0			0.34	0.89	0.57	0.56
Boron	T	mg/Kg-dry	23	95.7	HH Soil (HQ=1)	5500	0	0.52	0.52	ND	2.7	1.3	1.2
Cadmium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	39	0			0.086	0.53	0.28	0.24
Cadmium	T	mg/Kg-dry	23	100	ECO Sed	0.6	0			0.086	0.53	0.28	0.24
Calcium	T	mg/Kg-dry	23	100	No SLC					922	2040	1380	1320
Chromium	T	mg/Kg-dry	23	100	ECO Sed	37.3	0			7.7	15.4	9.9	9.6
Chromium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	210	0			7.7	15.4	9.9	9.6
Cobalt	T	mg/Kg-dry	23	100	ECO Sed	50	0			4.1	26.9	6.9	6
Cobalt	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	900	0			4.1	26.9	6.9	6
Copper	T	mg/Kg-dry	23	100	ECO Sed	35.7	21.7			19.9	48.2	30.8	29.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-25
Sediment - Riffle Summer 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	2900	0			19.9	48.2	30.8	29.4
Iron	T	mg/Kg-dry	23	100	ECO Sed	20000	8.7			11100	25100	16000	15700
Iron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	4.3			11100	25100	16000	15700
Lead	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	400	0			18.3	83	36.4	34.3
Lead	T	mg/Kg-dry	23	100	ECO Sed	35	43.5			18.3	83	36.4	34.3
Magnesium	T	mg/Kg-dry	23	100	No SLC					2270	3370	2720	2660
Manganese	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3200	0			199	1240	363	302
Manganese	T	mg/Kg-dry	23	100	ECO Sed	460	17.4			199	1240	363	302
Mercury	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	23	0	0.018	0.14	ND	ND		
Mercury	T	mg/Kg-dry	23	0	ECO Sed	0.17	0	0.018	0.14	ND	ND		
Molybdenum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			2.9	34.6	6.9	5.2
Nickel	T	mg/Kg-dry	23	100	ECO Sed	18	73.9			13.7	135	25.9	21.2
Nickel	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	1600	0			13.7	135	25.9	21.2
Potassium	T	mg/Kg-dry	23	100	No SLC					1240	2190	1500	1520
Selenium	T	mg/Kg-dry	23	26.1	HH Soil (HQ=1)	390	0	0.73	1	ND	0.75		0.43
Selenium	T	mg/Kg-dry	23	26.1	ECO Sed	2	0	0.73	1	ND	0.75		0.43
Silver	T	mg/Kg-dry	23	4.3	ECO Sed	1	0	0.11	0.28	ND	0.14		0.11
Silver	T	mg/Kg-dry	23	4.3	HH Soil (HQ=1)	390	0	0.11	0.28	ND	0.14		0.11
Sodium	T	mg/Kg-dry	23	65.2	No SLC			53.9	247	ND	202	99.4	86
Thallium	T	mg/Kg-dry	23	8.7	HH Soil (HQ=1)	5.5	0	0.091	0.13	ND	0.11		0.05
Vanadium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	78	0			7.1	17.1	10.6	10.3
Zinc	T	mg/Kg-dry	23	100	ECO Sed	123	56.5			76.7	222	142	149
Zinc	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			76.7	222	142	149

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-26
Sediment - Depositional Summer 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	23	100	No SLC					5	12.6	8	7.6
Chloride	T	mg/kg-Dry	23	82.6	No SLC			326	394	ND	5.1	33.7	3.5
Fluoride	T	mg/Kg-dry	23	73.9	HH Soil (HQ=1)	3700	0	0.25	0.3	ND	1.7	0.68	0.78
Nitrate	T	mg/kg-Dry	23	78.3	No SLC			2.8	31.5	ND	2.2	3.7	1.5
Organic Soils	T	%	23	100	No SLC					1.7	2.3	1.9	1.9
pH	T	SU	23	100	No SLC					4.9	7.5	7.1	7.3
Phosphorus	T	mg/Kg-dry	23	100	No SLC					301	1090	640	552
Sodium Absorption Ratio	T	ratio	23	100	No SLC					0.09	0.5	0.18	0.13
Solids, Percent	T	%	23	100	No SLC					63.5	80.6	75	75.1
Specific Conductance	T	umhos/cm	23	100	No SLC					0	593	183	116
Sulfate	T	mg/kg-Dry	23	100	No SLC					30.1	326	90.4	59.9
Total Kjeldahl Nitrogen	T	mg/Kg-dry	23	100	No SLC					52.8	1000	144	86.3
Total Organic Carbon	T	mg/Kg-dry	23	43.5	No SLC			125	145	ND	7010		70.5
Metals													
Aluminum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	76000	0			4570	10200	6140	5980
Aluminum	T	mg/Kg-dry	23	100	ECO Sed	25500	0			4570	10200	6140	5980
Antimony	T	mg/Kg-dry	23	8.7	ECO Sed	2	0	0.44	0.67	ND	0.53		0.27
Antimony	T	mg/Kg-dry	23	8.7	HH Soil (HQ=1)	31	0	0.44	0.67	ND	0.53		0.27
Arsenic	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	0.39	100			2.9	8.7	5.2	5.1
Arsenic	T	mg/Kg-dry	23	100	ECO Sed	5.9	21.7			2.9	8.7	5.2	5.1
Barium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			155	785	419	356
Beryllium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	150	0			0.38	2	0.79	0.75
Boron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			0.53	3.5	1.5	1.3
Cadmium	T	mg/Kg-dry	23	95.7	ECO Sed	0.6	18.2	0.04	0.04	ND	1.9	0.48	0.43
Cadmium	T	mg/Kg-dry	23	95.7	HH Soil (HQ=1)	39	0	0.04	0.04	ND	1.9	0.48	0.43
Calcium	T	mg/Kg-dry	23	100	No SLC					1010	2440	1560	1540
Chromium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	210	0			8.3	15.5	11.5	11
Chromium	T	mg/Kg-dry	23	100	ECO Sed	37.3	0			8.3	15.5	11.5	11
Cobalt	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	900	0			4.9	14.6	7.6	7.2
Cobalt	T	mg/Kg-dry	23	100	ECO Sed	50	0			4.9	14.6	7.6	7.2
Copper	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	2900	0			23.7	85.4	39.1	36.9

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-26
Sediment - Depositional Summer 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	23	100	ECO Sed	35.7	56.5			23.7	85.4	39.1	36.9
Iron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	4.3			12400	29000	18200	17800
Iron	T	mg/Kg-dry	23	100	ECO Sed	20000	26.1			12400	29000	18200	17800
Lead	T	mg/Kg-dry	23	100	ECO Sed	35	78.3			27.7	146	47.9	44.2
Lead	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	400	0			27.7	146	47.9	44.2
Magnesium	T	mg/Kg-dry	23	100	No SLC					2470	3830	3080	3040
Manganese	T	mg/Kg-dry	23	100	ECO Sed	460	21.7			218	1030	408	362
Manganese	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3200	0			218	1030	408	362
Mercury	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	23	0	0.02	0.081	ND	ND		
Mercury	T	mg/Kg-dry	23	0	ECO Sed	0.17	0	0.02	0.081	ND	ND		
Molybdenum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			2.7	18.3	7.3	7
Nickel	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	1600	0			15.9	45.4	26.3	26.6
Nickel	T	mg/Kg-dry	23	100	ECO Sed	18	87			15.9	45.4	26.3	26.6
Potassium	T	mg/Kg-dry	23	100	No SLC					1340	2350	1720	1670
Selenium	T	mg/Kg-dry	23	30.4	ECO Sed	2	0	0.74	1.1	ND	1.4		0.45
Selenium	T	mg/Kg-dry	23	30.4	HH Soil (HQ=1)	390	0	0.74	1.1	ND	1.4		0.45
Silver	T	mg/Kg-dry	23	39.1	HH Soil (HQ=1)	390	0	0.21	0.31	ND	0.38		0.13
Silver	T	mg/Kg-dry	23	39.1	ECO Sed	1	0	0.21	0.31	ND	0.38		0.13
Sodium	T	mg/Kg-dry	23	52.2	No SLC			26.7	249	ND	196	101	82.5
Thallium	T	mg/Kg-dry	23	13	HH Soil (HQ=1)	5.5	0	0.093	0.13	ND	0.16		0.055
Vanadium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	78	0			7.9	19.1	12.3	12
Zinc	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			95	526	201	193
Zinc	T	mg/Kg-dry	23	100	ECO Sed	123	87			95	526	201	193

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-27
Sediment - Riffle Fall 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	23	100	No SLC					4.4	29	13.2	10.9
Chloride	T	mg/kg-Dry	23	52.2	No SLC			2.3	2.8	ND	5.3	2.4	2.7
Fluoride	T	mg/Kg-dry	23	95.7	HH Soil (HQ=1)	3700	0	0.27	0.27	ND	0.95	0.5	0.51
Nitrate	T	mg/kg-Dry	23	0	No SLC			2.3	2.8	ND	ND		
Organic Soils	T	%	23	100	No SLC					1.6	2.7	1.8	1.7
pH	T	SU	23	100	No SLC					6.3	7.9	7.4	7.4
Phosphorus	T	mg/Kg-dry	23	100	No SLC					227	1140	602	509
Sodium Absorption Ratio	T	ratio	23	100	No SLC					0.06	0.43	0.16	0.12
Solids, Percent	T	%	23	100	No SLC					72.1	89.9	76.4	75.4
Specific Conductance	T	umhos/cm	23	100	No SLC					57.2	216	103	100
Sulfate	T	mg/kg-Dry	23	100	No SLC					21.1	129	53.6	49.7
Total Kjeldahl Nitrogen	T	mg/Kg-dry	23	82.6	No SLC			23.5	31.4	ND	75.2	44.9	46.6
Total Organic Carbon	T	mg/Kg-dry	23	30.4	No SLC			112	139	ND	20200		67.5
Metals													
Aluminum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	76000	0			3550	5350	4400	4390
Aluminum	T	mg/Kg-dry	23	100	ECO Sed	25500	0			3550	5350	4400	4390
Antimony	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	31	0	0.52	0.66	ND	ND		
Antimony	T	mg/Kg-dry	23	0	ECO Sed	2	0	0.52	0.66	ND	ND		
Arsenic	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	0.39	100			2.3	5.7	3.6	3.5
Arsenic	T	mg/Kg-dry	23	100	ECO Sed	5.9	0			2.3	5.7	3.6	3.5
Barium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			55.7	257	117	108
Beryllium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	150	0			0.3	0.66	0.48	0.47
Boron	T	mg/Kg-dry	23	34.8	HH Soil (HQ=1)	5500	0	0.71	0.83	ND	4.4		0.38
Cadmium	T	mg/Kg-dry	23	60.9	HH Soil (HQ=1)	39	0	0.059	0.084	ND	0.54	0.18	0.11
Cadmium	T	mg/Kg-dry	23	60.9	ECO Sed	0.6	0	0.059	0.084	ND	0.54	0.18	0.11
Calcium	T	mg/Kg-dry	23	100	No SLC					1090	3790	1540	1390
Chromium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	210	0			6.1	12.4	8.5	8.3
Chromium	T	mg/Kg-dry	23	100	ECO Sed	37.3	0			6.1	12.4	8.5	8.3
Cobalt	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	900	0			3.5	8.3	5.6	5.6
Cobalt	T	mg/Kg-dry	23	100	ECO Sed	50	0			3.5	8.3	5.6	5.6
Copper	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	2900	0			17.4	46.1	27.1	27.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-27
Sediment - Riffle Fall 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	23	100	ECO Sed	35.7	4.3			17.4	46.1	27.1	27.4
Iron	T	mg/Kg-dry	23	100	ECO Sed	20000	4.3			9680	20100	14300	13800
Iron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			9680	20100	14300	13800
Lead	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	400	0			16.8	59.7	31.6	30.2
Lead	T	mg/Kg-dry	23	100	ECO Sed	35	30.4			16.8	59.7	31.6	30.2
Magnesium	T	mg/Kg-dry	23	100	No SLC					1860	3290	2580	2460
Manganese	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3200	0			150	447	306	329
Manganese	T	mg/Kg-dry	23	100	ECO Sed	460	0			150	447	306	329
Mercury	T	mg/Kg-dry	23	4.3	HH Soil (HQ=1)	23	0	0.0092	0.023	ND	0.01		0.01
Mercury	T	mg/Kg-dry	23	4.3	ECO Sed	0.17	0	0.0092	0.023	ND	0.01		0.01
Molybdenum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			2.4	28.4	6.3	4.5
Nickel	T	mg/Kg-dry	23	100	ECO Sed	18	60.9			11.3	31.2	20	20
Nickel	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	1600	0			11.3	31.2	20	20
Potassium	T	mg/Kg-dry	23	100	No SLC					864	1500	1180	1180
Selenium	T	mg/Kg-dry	23	56.5	ECO Sed	2	0	0.35	0.75	ND	0.71	0.39	0.38
Selenium	T	mg/Kg-dry	23	56.5	HH Soil (HQ=1)	390	0	0.35	0.75	ND	0.71	0.39	0.38
Silver	T	mg/Kg-dry	23	17.4	HH Soil (HQ=1)	390	0	0.15	0.21	ND	0.26		0.095
Silver	T	mg/Kg-dry	23	17.4	ECO Sed	1	0	0.15	0.21	ND	0.26		0.095
Sodium	T	mg/Kg-dry	23	91.3	No SLC			55.7	59.3	ND	293	139	132
Thallium	T	mg/Kg-dry	23	0	HH Soil (HQ=1)	5.5	0	0.1	0.13	ND	ND		
Vanadium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	78	0			5.9	11.4	8.5	8.4
Zinc	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			50.8	202	126	134
Zinc	T	mg/Kg-dry	23	100	ECO Sed	123	56.5			50.8	202	126	134

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-28
Sediment - Depositional Fall 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	23	100	No SLC					7.3	33.3	17.2	14.5
Chloride	T	mg/kg-Dry	23	43.5	No SLC			2.5	3.1	ND	5.2		1.5
Fluoride	T	mg/Kg-dry	23	95.7	HH Soil (HQ=1)	3700	0	0.28	0.28	ND	0.96	0.57	0.64
Nitrate	T	mg/kg-Dry	23	0	No SLC			2.5	3.2	ND	ND		
Organic Soils	T	%	23	100	No SLC					1.7	3.2	2.3	2.3
pH	T	SU	23	100	No SLC					5.5	7.7	7.2	7.3
Phosphorus	T	mg/Kg-dry	23	100	No SLC					215	2150	985	892
Sodium Absorption Ratio	T	ratio	23	100	No SLC					0.08	0.54	0.18	0.13
Solids, Percent	T	%	23	100	No SLC					63.9	80.8	71.3	70.6
Specific Conductance	T	umhos/cm	23	100	No SLC					82.2	241	144	132
Sulfate	T	mg/kg-Dry	23	100	No SLC					44	335	127	91.5
Total Kjeldahl Nitrogen	T	mg/Kg-dry	23	91.3	No SLC			26.6	31.7	ND	602	140	91.4
Total Organic Carbon	T	mg/Kg-dry	23	65.2	No SLC			124	145	ND	6540	1680	568
Metals													
Aluminum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	76000	0			3530	9500	6640	6440
Aluminum	T	mg/Kg-dry	23	100	ECO Sed	25500	0			3530	9500	6640	6440
Antimony	T	mg/Kg-dry	23	8.7	HH Soil (HQ=1)	31	0	0.54	0.78	ND	1.3		0.34
Antimony	T	mg/Kg-dry	23	8.7	ECO Sed	2	0	0.54	0.78	ND	1.3		0.34
Arsenic	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	0.39	100			2.7	8.3	6.2	6.6
Arsenic	T	mg/Kg-dry	23	100	ECO Sed	5.9	52.2			2.7	8.3	6.2	6.6
Barium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	5500	0			92.2	834	376	384
Beryllium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	150	0			0.3	1.4	0.88	0.78
Boron	T	mg/Kg-dry	23	26.1	HH Soil (HQ=1)	5500	0	0.74	0.93	ND	6.9		0.43
Cadmium	T	mg/Kg-dry	23	65.2	HH Soil (HQ=1)	39	0	0.081	0.1	ND	0.96	0.29	0.16
Cadmium	T	mg/Kg-dry	23	65.2	ECO Sed	0.6	33.3	0.081	0.1	ND	0.96	0.29	0.16
Calcium	T	mg/Kg-dry	23	100	No SLC					1080	2400	1790	1770
Chromium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	210	0			6.8	15.4	11.6	11.3
Chromium	T	mg/Kg-dry	23	100	ECO Sed	37.3	0			6.8	15.4	11.6	11.3
Cobalt	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	900	0			3.3	12	8.4	8.2
Cobalt	T	mg/Kg-dry	23	100	ECO Sed	50	0			3.3	12	8.4	8.2
Copper	T	mg/Kg-dry	23	100	ECO Sed	35.7	73.9			15.1	68.6	43.8	43

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-28
Sediment - Depositional Fall 2003
RI/FS Red River
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	2900	0			15.1	68.6	43.8	43
Iron	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	43.5			11300	30700	22100	22100
Iron	T	mg/Kg-dry	23	100	ECO Sed	20000	69.6			11300	30700	22100	22100
Lead	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	400	0			19.8	81.2	48.7	46.9
Lead	T	mg/Kg-dry	23	100	ECO Sed	35	78.3			19.8	81.2	48.7	46.9
Magnesium	T	mg/Kg-dry	23	100	No SLC					2010	4170	3140	3180
Manganese	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	3200	0			127	658	396	420
Manganese	T	mg/Kg-dry	23	100	ECO Sed	460	39.1			127	658	396	420
Mercury	T	mg/Kg-dry	23	21.7	ECO Sed	0.17	0	0.0097	0.024	ND	0.021		0.011
Mercury	T	mg/Kg-dry	23	21.7	HH Soil (HQ=1)	23	0	0.0097	0.024	ND	0.021		0.011
Molybdenum	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	390	0			1.9	14.8	8.6	8.7
Nickel	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	1600	0			9.9	46	27.7	25.6
Nickel	T	mg/Kg-dry	23	100	ECO Sed	18	78.3			9.9	46	27.7	25.6
Potassium	T	mg/Kg-dry	23	100	No SLC					1000	2500	1860	1890
Selenium	T	mg/Kg-dry	23	73.9	ECO Sed	2	0	0.33	1.3	ND	1.5	0.8	0.77
Selenium	T	mg/Kg-dry	23	73.9	HH Soil (HQ=1)	390	0	0.33	1.3	ND	1.5	0.8	0.77
Silver	T	mg/Kg-dry	23	39.1	HH Soil (HQ=1)	390	0	0.17	0.23	ND	0.33		0.11
Silver	T	mg/Kg-dry	23	39.1	ECO Sed	1	0	0.17	0.23	ND	0.33		0.11
Sodium	T	mg/Kg-dry	23	95.7	No SLC			58.1	58.1	ND	323	171	163
Thallium	T	mg/Kg-dry	23	17.4	HH Soil (HQ=1)	5.5	0	0.11	0.16	ND	0.17		0.065
Vanadium	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	78	0			5.8	17.5	11.8	12
Zinc	T	mg/Kg-dry	23	100	ECO Sed	123	78.3			64.1	360	206	192
Zinc	T	mg/Kg-dry	23	100	HH Soil (HQ=1)	23000	0			64.1	360	206	192

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-29
Sediment - Depositional Fall 2002
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Explosives													
2,4,6-Trinitrotoluene	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Cyclotetramethylenetetranitramine	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Cyclotrimethylenetrinitramine	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Pentaerythritol tetranitrate	T	ug/Kg-dry	1	0	No SLC			5000	5000	ND	ND		
PYX	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					9.8	16.6	13.6	14.3
Chloride	T	mg/kg-Dry	3	33.3	No SLC			3.4	4.8	ND	7.9		2.4
Fluoride	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3700	0			0.38	0.47	0.42	0.41
Nitrate	T	mg/kg-Dry	3	0	No SLC			3.4	6	ND	ND		
pH	T	SU	3	100	No SLC					6.2	6.8	6.5	6.6
Phosphorus	T	mg/Kg-dry	3	100	No SLC					82.2	2610	1580	2060
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.12	0.14	0.13	0.13
Solids, Percent	T	%	3	100	No SLC					33.8	60.1	45.4	42.4
Specific Conductance	T	umhos/cm	3	100	No SLC					177	207	194	197
Sulfate	T	mg/kg-Dry	3	100	No SLC					332	501	433	465
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					337	1680	957	854
Total Organic Carbon	T	mg/Kg-dry	3	100	No SLC					6090	18300	11300	9580
Metals													
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	0			8310	16600	13800	16500
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			8310	16600	13800	16500
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.2	0.42	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.2	0.42	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			8.1	11.5	9.5	8.8
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	100			8.1	11.5	9.5	8.8
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			557	710	639	649
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			0.56	1.5	1.1	1.2
Boron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			14	24.4	19.3	19.4
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			0.16	2.9	1.4	1.1
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	66.7			0.16	2.9	1.4	1.1
Calcium	T	mg/Kg-dry	3	100	No SLC					1700	3650	2890	3330

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-29
Sediment - Depositional Fall 2002
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			16.7	28.6	24.5	28.1
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			16.7	28.6	24.5	28.1
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			6.1	14.9	10.5	10.5
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			6.1	14.9	10.5	10.5
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			62.4	219	143	149
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			62.4	219	143	149
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	100			32100	52500	41700	40500
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			32100	52500	41700	40500
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			152	297	227	231
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			152	297	227	231
Magnesium	T	mg/Kg-dry	3	100	No SLC					4160	7340	6040	6630
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			307	432	379	398
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	0			307	432	379	398
Mercury	T	mg/Kg-dry	3	33.3	HH Soil (HQ=1)	23	0	0.026	0.042	ND	0.04		0.021
Mercury	T	mg/Kg-dry	3	33.3	ECO Sed	0.17	0	0.026	0.042	ND	0.04		0.021
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			14.9	25.1	18.9	16.8
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			14.1	47.7	30.6	30.1
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	66.7			14.1	47.7	30.6	30.1
Potassium	T	mg/Kg-dry	3	100	No SLC					2840	5230	3990	3910
Selenium	T	mg/Kg-dry	3	33.3	HH Soil (HQ=1)	390	0	2.3	3	ND	2		1.5
Selenium	T	mg/Kg-dry	3	33.3	ECO Sed	2	0	2.3	3	ND	2		1.5
Silver	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			0.94	2.3	1.8	2.1
Silver	T	mg/Kg-dry	3	100	ECO Sed	1	66.7			0.94	2.3	1.8	2.1
Sodium	T	mg/Kg-dry	3	100	No SLC					174	325	240	220
Thallium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5.5	0			0.3	0.53	0.44	0.49
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			18.2	30.9	26.3	29.9
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			118	486	300	297
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	66.7			118	486	300	297
Pesticides-PCBs													
a-Chlordane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Aldrin	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
alpha-Hexachlorocyclohexane	T	ug/Kg-dry	1	100	No SLC					2.2	2.2	2.2	2.2
Aroclor 1016	T	ug/Kg-dry	1	0	No SLC			78	78	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-29
Sediment - Depositional Fall 2002
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Aroclor 1221	T	ug/Kg-dry	1	0	No SLC			160	160	ND	ND		
Aroclor 1232	T	ug/Kg-dry	1	0	No SLC			78	78	ND	ND		
Aroclor 1242	T	ug/Kg-dry	1	0	No SLC			78	78	ND	ND		
Aroclor 1248	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.22	0	78	78	ND	ND		
Aroclor 1254	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.22	0	78	78	ND	ND		
Aroclor 1260	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.22	0	78	78	ND	ND		
beta-Hexachlorocyclohexane	T	ug/Kg-dry	1	100	ECO Sed	0.003	100			5.7	5.7	5.7	5.7
delta-Hexachlorocyclohexane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Dichlorodiphenyldichloroethane	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Dichlorodiphenyldichloroethylene	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Dichlorodiphenyltrichloroethane	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Dieldrin	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endosulfan I	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Endosulfan II	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endosulfan sulfate	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endrin	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endrin aldehyde	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endrin ketone	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
g-Chlordane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Heptachlor	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Heptachlor epoxide	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Lindane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Methoxychlor	T	ug/Kg-dry	1	0	No SLC			40	40	ND	ND		
Toxaphene	T	ug/Kg-dry	1	0	No SLC			400	400	ND	ND		
SEM and AVS													
Acid Volatile Sulfide	T	mg/Kg-dry	3	100	No SLC					19.8	746	351	286
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			0.35	1.8	1	0.89
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	66.7			0.35	1.8	1	0.89
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			37.4	98.1	67.1	65.8
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			37.4	98.1	67.1	65.8
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			83.1	136	108	105
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			83.1	136	108	105
Mercury	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23	0			0.0094	0.019	0.014	0.013

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-29
Sediment - Depositional Fall 2002
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Mercury	T	mg/Kg-dry	3	100	ECO Sed	0.17	0			0.0094	0.019	0.014	0.013
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	33.3			8.1	22.2	14.5	13.2
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			8.1	22.2	14.5	13.2
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			67.1	243	150	140
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	66.7			67.1	243	150	140
Semi-Volatile Organics													
1,1'-Biphenyl	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	3000	0	780	780	ND	ND		
2,4,5-Trichlorophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
2,4,6-Trichlorophenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,4-Dichlorophenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,4-Dimethylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,4-Dinitrophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
2,4-Dinitrotoluene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,6-Dinitrotoluene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	61	0	780	780	ND	ND		
2-Chloronaphthalene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2-Chlorophenol	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	64	0	780	780	ND	ND		
2-Methylnaphthalene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2-Methylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2-Nitroaniline	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
2-Nitrophenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
3,3-Dichlorobenzidine	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
3-Nitroaniline	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
4,6-Dinitro-2-methylphenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
4-Bromophenyl phenyl ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Chloro-3-methylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Chloroaniline	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Chlorophenyl phenyl ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Methylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Nitroaniline	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
4-Nitrophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
Acenaphthene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	3700	0	780	780	ND	ND		
Acenaphthylene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Anthracene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	22000	0	780	780	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-29
Sediment - Depositional Fall 2002
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Benzo(a)anthracene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.62	0	780	780	ND	ND		
Benzo(a)pyrene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.062	0	780	780	ND	ND		
Benzo(b)fluoranthene	T	ug/Kg-dry	1	100	HH Soil (HQ=1)	0.62	100			42	42	42	42
Benzo(g,h,i)perylene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Benzo(k)fluoranthene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	6.2	0	780	780	ND	ND		
Bis(2-chloroethoxy)methane	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Bis(2-chloroethyl)ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Carbazole	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	24	0	780	780	ND	ND		
Chrysene	T	ug/Kg-dry	1	100	HH Soil (HQ=1)	62	0			44	44	44	44
Dibenz(a,h)anthracene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.062	0	780	780	ND	ND		
Dibenzofuran	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	150	0	780	780	ND	ND		
Dichlorodiisopropyl ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Fluoranthene	T	ug/Kg-dry	1	100	HH Soil (HQ=1)	2300	0			74	74	74	74
Fluorene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	2600	0	780	780	ND	ND		
Hexachlorobenzene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Hexachlorobutadiene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Hexachlorocyclopentadiene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Hexachloroethane	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Indeno(1,2,3-cd)pyrene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.62	0	780	780	ND	ND		
Isophorone	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	510	0	780	780	ND	ND		
Naphthalene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	120	0	780	780	ND	ND		
Nitrobenzene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
N-Nitrosodi-n-propylamine	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.07	0	780	780	ND	ND		
N-Nitrosodiphenylamine	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	99	0	780	780	ND	ND		
Pentachlorophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
Phenanthrene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Phenol	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	18000	0	780	780	ND	ND		
Pyrene	T	ug/Kg-dry	1	100	HH Soil (HQ=1)	2300	0			69	69	69	69
Volatile Organics													
1,1,1-Trichloroethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	1400	0	14	14	ND	ND		
1,1,2,2-Tetrachloroethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,1,2-Trichloro-1,2,2-trifluoroethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,1,2-Trichloroethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.
 "HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)
 "Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater
 Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.
 Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-29
Sediment - Depositional Fall 2002
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
1,1-Dichloroethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	590	0	14	14	ND	ND		
1,1-Dichloroethene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	280	0	14	14	ND	ND		
1,2,4-Trichlorobenzene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,2-Dibromo-3-chloropropane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,2-Dichlorobenzene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,2-Dichloroethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,2-Dichloroethene (total)	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,2-Dichloropropane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,3-Dichlorobenzene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
1,4-Dichlorobenzene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
2-Butanone	T	ug/Kg-dry	1	100	ECO Sed	0.27	100			21	21	21	21
2-Butanone	T	ug/Kg-dry	1	100	HH Soil (HQ=1)	32000	0			21	21	21	21
2-Hexanone	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
4-Methyl-2-pentanone	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	5800	0	14	14	ND	ND		
Benzene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.66	0	14	14	ND	ND		
Bromodichloromethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Bromoform	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Bromomethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Carbon tetrachloride	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.24	0	14	14	ND	ND		
Chlorobenzene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	320	0	14	14	ND	ND		
Chloroethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Chloroform	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Chloromethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	1.2	0	14	14	ND	ND		
cis-1,2-Dichloroethene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
cis-1,3-Dichloropropene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Dibromochloromethane	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Dichlorodifluoromethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	94	0	14	14	ND	ND		
Ethylbenzene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	230	0	14	14	ND	ND		
Styrene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	1700	0	14	14	ND	ND		
Tetrachloroethene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.55	0	14	14	ND	ND		
Toluene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	520	0	14	14	ND	ND		
Total Xylene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	210	0	14	14	ND	ND		
trans-1,2-Dichloroethene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-29
Sediment - Depositional Fall 2002
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
trans-1,3-Dichloropropene	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		
Trichloroethene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.043	0	14	14	ND	ND		
Trichlorofluoromethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	390	0	14	14	ND	ND		
Vinyl chloride	T	ug/Kg-dry	1	0	No SLC			14	14	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-30
Sediment - Depositional Spring 2003
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					15.1	23	20.3	22.7
Chloride	T	mg/kg-Dry	3	0	No SLC			6.7	10.5	ND	ND		
Fluoride	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3700	0			0.37	0.68	0.54	0.57
Nitrate	T	mg/kg-Dry	3	0	No SLC			3.2	4.6	ND	ND		
Organic Soils	T	%	3	100	No SLC					4.1	6.5	5	4.5
pH	T	SU	3	100	No SLC					7.1	7.4	7.3	7.4
Phosphorus	T	mg/Kg-dry	3	100	No SLC					1520	4790	2610	1520
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.15	0.2	0.18	0.19
Solids, Percent	T	%	3	100	No SLC					44.2	63	54.6	56.5
Specific Conductance	T	umhos/cm	3	100	No SLC					157	265	225	252
Sulfate	T	mg/kg-Dry	3	100	No SLC					137	319	220	204
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					367	753	617	732
Total Organic Carbon	T	mg/Kg-dry	3	100	No SLC					6250	11100	8040	6780
Metals													
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			9570	17800	13000	11600
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	0			9570	17800	13000	11600
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.054	0.13	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.054	0.13	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			4.5	10.8	7.5	7.2
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	66.7			4.5	10.8	7.5	7.2
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			369	636	507	515
Beryllium	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	150	0	1	1	ND	1.7	1.3	1.6
Boron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			2.6	4.6	3.3	2.8
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			1.9	3.2	2.7	3
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	100			1.9	3.2	2.7	3
Calcium	T	mg/Kg-dry	3	100	No SLC					1830	2610	2200	2160
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			17.3	26.2	20.5	18
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			17.3	26.2	20.5	18
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			6.3	13.7	9.8	9.5
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			6.3	13.7	9.8	9.5
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			66.7	116	97.6	110

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-30
Sediment - Depositional Spring 2003
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			66.7	116	97.6	110
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	100			25100	44900	32200	26600
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			25100	44900	32200	26600
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			94.6	255	159	126
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			94.6	255	159	126
Magnesium	T	mg/Kg-dry	3	100	No SLC					3890	6210	4700	3990
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			302	355	324	316
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	0			302	355	324	316
Mercury	T	mg/Kg-dry	3	0	ECO Sed	0.17	0	0.025	0.036	ND	ND		
Mercury	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	23	0	0.025	0.036	ND	ND		
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			9.5	23.1	15.2	13
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	66.7			15	41.6	27.4	25.7
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			15	41.6	27.4	25.7
Potassium	T	mg/Kg-dry	3	100	No SLC					2890	5860	3970	3150
Selenium	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	390	0	2.1	2.9	ND	ND		
Selenium	T	mg/Kg-dry	3	0	ECO Sed	2	0	2.1	2.9	ND	ND		
Silver	T	mg/Kg-dry	3	100	ECO Sed	1	33.3			0.76	2.2	1.3	0.92
Silver	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			0.76	2.2	1.3	0.92
Sodium	T	mg/Kg-dry	3	100	No SLC					74.2	292	173	152
Thallium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5.5	0			0.2	0.38	0.26	0.21
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			17.8	27.4	22.2	21.3
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			135	338	233	226
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	100			135	338	233	226

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-31
Sediment - Depositional Summer 2003
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					12.6	16.1	14.1	13.7
Chloride	T	mg/kg-Dry	3	100	No SLC					4.4	7.1	5.8	5.8
Fluoride	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	3700	0	0.3	0.3	ND	0.68	0.49	0.64
Nitrate	T	mg/kg-Dry	3	33.3	No SLC			3	4	ND	2		2
Organic Soils	T	%	3	100	No SLC					3.2	8.1	5.8	6.1
pH	T	SU	3	100	No SLC					6.6	7.1	6.8	6.8
Phosphorus	T	mg/Kg-dry	3	100	No SLC					1210	2650	2170	2650
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.14	0.47	0.28	0.22
Solids, Percent	T	%	3	100	No SLC					35	67.6	50.7	49.5
Specific Conductance	T	umhos/cm	3	100	No SLC					249	304	277	279
Sulfate	T	mg/kg-Dry	3	100	No SLC					154	332	251	268
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					476	1890	967	536
Total Organic Carbon	T	mg/Kg-dry	3	100	No SLC					7210	21700	12800	9600
Metals													
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	0			7610	18700	13400	14000
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			7610	18700	13400	14000
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.7	1.4	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.7	1.4	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	66.7			5.7	12.2	9.1	9.5
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			5.7	12.2	9.1	9.5
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			460	802	617	588
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			0.68	1.9	1.2	1
Boron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			2.3	4.7	3.8	4.4
Cadmium	T	mg/Kg-dry	3	33.3	ECO Sed	0.6	100	0.044	0.059	ND	2.7		0.03
Cadmium	T	mg/Kg-dry	3	33.3	HH Soil (HQ=1)	39	0	0.044	0.059	ND	2.7		0.03
Calcium	T	mg/Kg-dry	3	100	No SLC					2200	4120	2940	2490
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			17.8	31.2	24.6	24.8
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			17.8	31.2	24.6	24.8
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			8.4	19.6	12.7	10.2
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			8.4	19.6	12.7	10.2
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			80.7	242	141	100

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-31
Sediment - Depositional Summer 2003
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			80.7	242	141	100
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			24700	49700	37800	39100
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	100			24700	49700	37800	39100
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			105	281	199	210
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			105	281	199	210
Magnesium	T	mg/Kg-dry	3	100	No SLC					4000	6860	5610	5960
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			297	399	355	369
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	0			297	399	355	369
Mercury	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	23	0	0.12	0.12	ND	0.091	0.081	0.091
Mercury	T	mg/Kg-dry	3	66.7	ECO Sed	0.17	0	0.12	0.12	ND	0.091	0.081	0.091
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			10.6	25.4	18	18
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			18.2	57.4	32.8	22.9
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	100			18.2	57.4	32.8	22.9
Potassium	T	mg/Kg-dry	3	100	No SLC					2200	5470	4020	4380
Selenium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			1.3	2.5	2.1	2.5
Selenium	T	mg/Kg-dry	3	100	ECO Sed	2	66.7			1.3	2.5	2.1	2.5
Silver	T	mg/Kg-dry	3	100	ECO Sed	1	66.7			0.4	2.1	1.4	1.8
Silver	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			0.4	2.1	1.4	1.8
Sodium	T	mg/Kg-dry	3	0	No SLC			56.3	309	ND	ND		
Thallium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5.5	0			0.16	0.5	0.37	0.46
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			19.2	32.7	25.6	24.8
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			140	559	294	183
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	100			140	559	294	183

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-32
Sediment - Depositional Fall 2003
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					12.3	26.2	18.4	16.7
Chloride	T	mg/kg-Dry	3	100	No SLC					4.3	5.5	4.8	4.6
Fluoride	T	mg/Kg-dry	3	33.3	HH Soil (HQ=1)	3700	0	0.16	0.25	ND	0.19		0.13
Nitrate	T	mg/kg-Dry	3	0	No SLC			3.1	5	ND	ND		
Organic Soils	T	%	3	100	No SLC					3.4	7.3	5.4	5.6
pH	T	SU	3	100	No SLC					6.7	7	6.8	6.7
Phosphorus	T	mg/Kg-dry	3	100	No SLC					1420	2350	1870	1830
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.11	0.13	0.12	0.11
Solids, Percent	T	%	3	100	No SLC					40.2	64.7	53.1	54.5
Specific Conductance	T	umhos/cm	3	100	No SLC					79	173	113	88
Sulfate	T	mg/kg-Dry	3	100	No SLC					178	818	502	511
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					198	1170	668	637
Total Organic Carbon	T	mg/Kg-dry	3	100	No SLC					2000	12500	7580	8230
Metals													
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	0			7850	15300	11300	10800
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			7850	15300	11300	10800
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.65	1.1	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.65	1.1	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			10.4	12.6	11.6	11.8
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	100			10.4	12.6	11.6	11.8
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			641	761	715	744
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			0.69	1.4	1	0.91
Boron	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	5500	0	0.96	1.4	ND	ND		
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			0.42	2.4	1.2	0.77
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	66.7			0.42	2.4	1.2	0.77
Calcium	T	mg/Kg-dry	3	100	No SLC					2280	3530	2820	2660
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			17.4	26.1	21.7	21.5
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			17.4	26.1	21.7	21.5
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			10.5	15.1	13.1	13.6
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			10.5	15.1	13.1	13.6
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			75.7	179	121	107

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-32
Sediment - Depositional Fall 2003
RI/FS Reference Upper Fawn Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			75.7	179	121	107
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			36900	51900	44200	43900
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	100			36900	51900	44200	43900
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			120	291	203	199
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			120	291	203	199
Magnesium	T	mg/Kg-dry	3	100	No SLC					4600	6590	5540	5420
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	66.7			406	534	469	467
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			406	534	469	467
Mercury	T	mg/Kg-dry	3	0	ECO Sed	0.17	0	0.022	0.035	ND	ND		
Mercury	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	23	0	0.022	0.035	ND	ND		
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			15.5	22	19.8	21.9
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	100			20.1	42.5	28.2	22.1
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			20.1	42.5	28.2	22.1
Potassium	T	mg/Kg-dry	3	100	No SLC					2470	4620	3570	3630
Selenium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			1.4	2.4	2	2.1
Selenium	T	mg/Kg-dry	3	100	ECO Sed	2	66.7			1.4	2.4	2	2.1
Silver	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			0.51	2.2	1.2	1
Silver	T	mg/Kg-dry	3	100	ECO Sed	1	33.3			0.51	2.2	1.2	1
Sodium	T	mg/Kg-dry	3	100	No SLC					240	443	351	370
Thallium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5.5	0			0.21	0.53	0.37	0.36
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			18.5	26.8	22.5	22.3
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	100			128	403	238	183
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			128	403	238	183

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-33
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Explosives													
2,4,6-Trinitrotoluene	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Cyclotetramethylenetetranitramine	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Cyclotrimethylenetrinitramine	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Pentaerythritol tetranitrate	T	ug/Kg-dry	1	0	No SLC			5000	5000	ND	ND		
PYX	T	ug/Kg-dry	1	0	No SLC			120	120	ND	ND		
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					6.8	15.6	12.5	15
Chloride	T	mg/kg-Dry	3	33.3	No SLC			3.8	4.8	ND	8.7		2.4
Fluoride	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3700	0			0.52	0.96	0.78	0.86
Nitrate	T	mg/kg-Dry	3	0	No SLC			3.8	7.2	ND	ND		
pH	T	SU	3	100	No SLC					5.8	6.3	6.1	6.1
Phosphorus	T	mg/Kg-dry	3	100	No SLC					2100	3760	2940	2950
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.13	0.15	0.14	0.14
Solids, Percent	T	%	3	100	No SLC					28.1	53.4	41.2	42
Specific Conductance	T	umhos/cm	3	100	No SLC					133	281	197	177
Sulfate	T	mg/kg-Dry	3	100	No SLC					476	954	686	628
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					432	1440	813	567
Total Organic Carbon	T	mg/Kg-dry	3	100	No SLC					5730	15800	10100	8840
Metals													
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			13300	29400	19100	14600
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	33.3			13300	29400	19100	14600
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.24	0.4	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.24	0.4	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	100			10.8	12.2	11.4	11.2
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			10.8	12.2	11.4	11.2
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			437	558	506	523
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			1.4	5.1	2.7	1.6
Boron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			15.8	21.7	19	19.6
Cadmium	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	39	0	0.038	0.038	ND	2.7	0.94	0.092
Cadmium	T	mg/Kg-dry	3	66.7	ECO Sed	0.6	50	0.038	0.038	ND	2.7	0.94	0.092
Calcium	T	mg/Kg-dry	3	100	No SLC					1410	2240	1810	1780

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

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T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-33
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			18.1	22.4	19.7	18.7
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			18.1	22.4	19.7	18.7
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			4.4	20.7	10.6	6.6
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			4.4	20.7	10.6	6.6
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			58.1	195	107	67.3
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			58.1	195	107	67.3
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	100			38700	48300	44900	47600
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			38700	48300	44900	47600
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			140	220	193	218
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			140	220	193	218
Magnesium	T	mg/Kg-dry	3	100	No SLC					4720	5640	5060	4810
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			269	661	417	320
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	33.3			269	661	417	320
Mercury	T	mg/Kg-dry	3	0	ECO Sed	0.17	0	0.027	0.057	ND	ND		
Mercury	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	23	0	0.027	0.057	ND	ND		
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			16.6	19.6	18.6	19.5
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			16.8	79.6	38.9	20.3
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	66.7			16.8	79.6	38.9	20.3
Potassium	T	mg/Kg-dry	3	100	No SLC					3880	6000	5140	5540
Selenium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			1.8	3.8	2.7	2.4
Selenium	T	mg/Kg-dry	3	100	ECO Sed	2	66.7			1.8	3.8	2.7	2.4
Silver	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			0.81	1.5	1.3	1.5
Silver	T	mg/Kg-dry	3	100	ECO Sed	1	66.7			0.81	1.5	1.3	1.5
Sodium	T	mg/Kg-dry	3	100	No SLC					333	499	442	493
Thallium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5.5	0			0.32	0.52	0.45	0.5
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			20.4	24	21.7	20.6
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			185	879	420	197
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	100			185	879	420	197
Pesticides-PCBs													
a-Chlordane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Aldrin	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
alpha-Hexachlorocyclohexane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Aroclor 1016	T	ug/Kg-dry	1	0	No SLC			78	78	ND	ND		

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"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

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Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

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A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-33
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Aroclor 1221	T	ug/Kg-dry	1	0	No SLC			160	160	ND	ND		
Aroclor 1232	T	ug/Kg-dry	1	0	No SLC			78	78	ND	ND		
Aroclor 1242	T	ug/Kg-dry	1	0	No SLC			78	78	ND	ND		
Aroclor 1248	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.22	0	78	78	ND	ND		
Aroclor 1254	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.22	0	78	78	ND	ND		
Aroclor 1260	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.22	0	78	78	ND	ND		
beta-Hexachlorocyclohexane	T	ug/Kg-dry	1	0	ECO Sed	0.003	0	4	4	ND	ND		
delta-Hexachlorocyclohexane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Dichlorodiphenyldichloroethane	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Dichlorodiphenyldichloroethylene	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Dichlorodiphenyltrichloroethane	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Dieldrin	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endosulfan I	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Endosulfan II	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endosulfan sulfate	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endrin	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endrin aldehyde	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
Endrin ketone	T	ug/Kg-dry	1	0	No SLC			7.8	7.8	ND	ND		
g-Chlordane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Heptachlor	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Heptachlor epoxide	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Lindane	T	ug/Kg-dry	1	0	No SLC			4	4	ND	ND		
Methoxychlor	T	ug/Kg-dry	1	0	No SLC			40	40	ND	ND		
Toxaphene	T	ug/Kg-dry	1	0	No SLC			400	400	ND	ND		
SEM and AVS													
Acid Volatile Sulfide	T	mg/Kg-dry	3	100	No SLC					27.8	95.5	52.6	34.6
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			0.31	1.6	0.77	0.39
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	33.3			0.31	1.6	0.77	0.39
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	33.3			33.6	83.4	50.5	34.6
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			33.6	83.4	50.5	34.6
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			58.1	80.6	73	80.2
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			58.1	80.6	73	80.2
Mercury	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23	0			0.016	0.034	0.022	0.016

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"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
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 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-33
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Mercury	T	mg/Kg-dry	3	100	ECO Sed	0.17	0			0.016	0.034	0.022	0.016
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			9.7	34.5	18.3	10.8
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	33.3			9.7	34.5	18.3	10.8
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			99	414	214	130
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	66.7			99	414	214	130
Semi-Volatile Organics													
1,1'-Biphenyl	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	3000	0	780	780	ND	ND		
2,4,5-Trichlorophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
2,4,6-Trichlorophenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,4-Dichlorophenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,4-Dimethylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,4-Dinitrophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
2,4-Dinitrotoluene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2,6-Dinitrotoluene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	61	0	780	780	ND	ND		
2-Chloronaphthalene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2-Chlorophenol	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	64	0	780	780	ND	ND		
2-Methylnaphthalene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2-Methylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
2-Nitroaniline	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
2-Nitrophenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
3,3-Dichlorobenzidine	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
3-Nitroaniline	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
4,6-Dinitro-2-methylphenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
4-Bromophenyl phenyl ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Chloro-3-methylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Chloroaniline	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Chlorophenyl phenyl ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Methylphenol	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
4-Nitroaniline	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
4-Nitrophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
Acenaphthene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	3700	0	780	780	ND	ND		
Acenaphthylene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Anthracene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	22000	0	780	780	ND	ND		

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T = Total Fraction

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Table 3-33
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Benzo(a)anthracene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.62	0	780	780	ND	ND		
Benzo(a)pyrene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.062	0	780	780	ND	ND		
Benzo(b)fluoranthene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.62	0	780	780	ND	ND		
Benzo(g,h,i)perylene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Benzo(k)fluoranthene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	6.2	0	780	780	ND	ND		
Bis(2-chloroethoxy)methane	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Bis(2-chloroethyl)ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Carbazole	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	24	0	780	780	ND	ND		
Chrysene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	62	0	780	780	ND	ND		
Dibenz(a,h)anthracene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.062	0	780	780	ND	ND		
Dibenzofuran	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	150	0	780	780	ND	ND		
Dichlorodiisopropyl ether	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Fluoranthene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	2300	0	780	780	ND	ND		
Fluorene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	2600	0	780	780	ND	ND		
Hexachlorobenzene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Hexachlorobutadiene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Hexachlorocyclopentadiene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Hexachloroethane	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Indeno(1,2,3-cd)pyrene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.62	0	780	780	ND	ND		
Isophorone	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	510	0	780	780	ND	ND		
Naphthalene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	120	0	780	780	ND	ND		
Nitrobenzene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
N-Nitrosodi-n-propylamine	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.07	0	780	780	ND	ND		
N-Nitrosodiphenylamine	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	99	0	780	780	ND	ND		
Pentachlorophenol	T	ug/Kg-dry	1	0	No SLC			2000	2000	ND	ND		
Phenanthrene	T	ug/Kg-dry	1	0	No SLC			780	780	ND	ND		
Phenol	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	18000	0	780	780	ND	ND		
Pyrene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	2300	0	780	780	ND	ND		
Volatile Organics													
1,1,1-Trichloroethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	1400	0	37	37	ND	ND		
1,1,2,2-Tetrachloroethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,1,2-Trichloro-1,2,2-trifluoroethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,1,2-Trichloroethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		

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Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-33
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
1,1-Dichloroethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	590	0	37	37	ND	ND		
1,1-Dichloroethene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	280	0	37	37	ND	ND		
1,2,4-Trichlorobenzene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,2-Dibromo-3-chloropropane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,2-Dichlorobenzene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,2-Dichloroethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,2-Dichloroethene (total)	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,2-Dichloropropane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,3-Dichlorobenzene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
1,4-Dichlorobenzene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
2-Butanone	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	32000	0	37	37	ND	ND		
2-Butanone	T	ug/Kg-dry	1	0	ECO Sed	0.27	0	37	37	ND	ND		
2-Hexanone	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
4-Methyl-2-pentanone	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	5800	0	37	37	ND	ND		
Benzene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.66	0	37	37	ND	ND		
Bromodichloromethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Bromoform	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Bromomethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Carbon tetrachloride	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.24	0	37	37	ND	ND		
Chlorobenzene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	320	0	37	37	ND	ND		
Chloroethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Chloroform	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Chloromethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	1.2	0	37	37	ND	ND		
cis-1,2-Dichloroethene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
cis-1,3-Dichloropropene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Dibromochloromethane	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Dichlorodifluoromethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	94	0	37	37	ND	ND		
Ethylbenzene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	230	0	37	37	ND	ND		
Styrene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	1700	0	37	37	ND	ND		
Tetrachloroethene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.55	0	37	37	ND	ND		
Toluene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	520	0	37	37	ND	ND		
Total Xylene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	210	0	37	37	ND	ND		
trans-1,2-Dichloroethene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-33
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
trans-1,3-Dichloropropene	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		
Trichloroethene	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	0.043	0	37	37	ND	ND		
Trichlorofluoromethane	T	ug/Kg-dry	1	0	HH Soil (HQ=1)	390	0	37	37	ND	ND		
Vinyl chloride	T	ug/Kg-dry	1	0	No SLC			37	37	ND	ND		

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-34
Sediment - Depositional Spring 2003
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					10.9	18.2	13.5	11.4
Chloride	T	mg/kg-Dry	3	0	No SLC			9.2	30.5	ND	ND		
Fluoride	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3700	0			1.3	3.7	2.2	1.6
Nitrate	T	mg/kg-Dry	3	0	No SLC			3.7	12.1	ND	ND		
Organic Soils	T	%	3	100	No SLC					6.5	13.1	9.2	8
pH	T	SU	3	100	No SLC					6.7	6.9	6.8	6.8
Phosphorus	T	mg/Kg-dry	3	100	No SLC					1780	3250	2570	2690
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.11	0.26	0.18	0.17
Solids, Percent	T	%	3	100	No SLC					16.6	54.5	36.4	38.1
Specific Conductance	T	umhos/cm	3	100	No SLC					348	388	373	384
Sulfate	T	mg/kg-Dry	3	100	No SLC					611	2930	1450	809
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					615	4050	1810	771
Total Organic Carbon	T	mg/Kg-dry	3	66.7	No SLC			14100	14100	ND	39600	17700	7050
Metals													
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	33.3			18800	70500	37600	23600
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			18800	70500	37600	23600
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.45	1.5	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.45	1.5	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	100			11.4	16.2	13	11.4
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			11.4	16.2	13	11.4
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			326	775	580	638
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			3.3	17.5	8.1	3.5
Boron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			2.9	7.5	5	4.7
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			2.2	16.9	7.2	2.5
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	100			2.2	16.9	7.2	2.5
Calcium	T	mg/Kg-dry	3	100	No SLC					2220	5430	3290	2230
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			22.7	26.4	24.1	23.1
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			22.7	26.4	24.1	23.1
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			11.4	123	50.1	15.9
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	33.3			11.4	123	50.1	15.9
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			118	612	287	132

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-34
Sediment - Depositional Spring 2003
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			118	612	287	132
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			31100	63500	45000	40300
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	100			31100	63500	45000	40300
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			101	282	167	118
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			101	282	167	118
Magnesium	T	mg/Kg-dry	3	100	No SLC					4980	6690	5630	5220
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	33.3			401	4080	1730	696
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	66.7			401	4080	1730	696
Mercury	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	23	0	0.031	0.094	ND	ND		
Mercury	T	mg/Kg-dry	3	0	ECO Sed	0.17	0	0.031	0.094	ND	ND		
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			17.7	27.3	23.1	24.3
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			38.3	378	153	42.7
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	100			38.3	378	153	42.7
Potassium	T	mg/Kg-dry	3	100	No SLC					3580	7700	5120	4090
Selenium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			2.7	12.2	6.3	3.9
Selenium	T	mg/Kg-dry	3	100	ECO Sed	2	100			2.7	12.2	6.3	3.9
Silver	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	390	0	0.46	0.46	ND	2	0.99	0.74
Silver	T	mg/Kg-dry	3	66.7	ECO Sed	1	50	0.46	0.46	ND	2	0.99	0.74
Sodium	T	mg/Kg-dry	3	66.7	No SLC			161	161	ND	454	231	158
Thallium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5.5	0			0.32	0.65	0.5	0.53
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			22.4	26.9	24.2	23.3
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	100			383	5250	2010	405
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			383	5250	2010	405

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-35
Sediment - Depositional Summer 2003
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					10.6	15.4	12.5	11.5
Chloride	T	mg/kg-Dry	3	100	No SLC					3.9	15	8.6	6.9
Fluoride	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3700	0			1.9	3.3	2.7	3
Nitrate	T	mg/kg-Dry	3	33.3	No SLC			3.1	5.4	ND	3.1		2.7
Organic Soils	T	%	3	100	No SLC					3.4	10.3	7.1	7.5
pH	T	SU	3	100	No SLC					6.7	7	6.9	6.9
Phosphorus	T	mg/Kg-dry	3	100	No SLC					1290	4110	2930	3390
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.13	0.29	0.2	0.17
Solids, Percent	T	%	3	100	No SLC					22.8	65.4	41.7	36.9
Specific Conductance	T	umhos/cm	3	100	No SLC					268	357	311	309
Sulfate	T	mg/kg-Dry	3	100	No SLC					47.9	357	201	197
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					382	1940	961	562
Total Organic Carbon	T	mg/Kg-dry	3	100	No SLC					6000	17200	10200	7410
Metals													
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	33.3			11800	44400	26100	22200
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			11800	44400	26100	22200
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	1.9	4.1	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	1.9	4.1	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			6.4	16.2	12.4	14.5
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	100			6.4	16.2	12.4	14.5
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			319	694	503	497
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			2.4	10.2	5.3	3.2
Boron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			2.1	6	4.6	5.6
Cadmium	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	39	0	0.081	0.081	ND	6.3	2.4	0.73
Cadmium	T	mg/Kg-dry	3	66.7	ECO Sed	0.6	100	0.081	0.081	ND	6.3	2.4	0.73
Calcium	T	mg/Kg-dry	3	100	No SLC					1870	3780	2720	2510
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			14.2	25.9	21.6	24.8
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			14.2	25.9	21.6	24.8
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			10.1	44.8	22.5	12.5
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			10.1	44.8	22.5	12.5
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			102	360	194	121

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-35
Sediment - Depositional Summer 2003
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			102	360	194	121
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	66.7			21600	61500	44600	50700
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			21600	61500	44600	50700
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			50	248	173	221
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			50	248	173	221
Magnesium	T	mg/Kg-dry	3	100	No SLC					3330	6600	5320	6040
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			354	1050	667	596
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	66.7			354	1050	667	596
Mercury	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23	0			0.04	0.24	0.12	0.092
Mercury	T	mg/Kg-dry	3	100	ECO Sed	0.17	33.3			0.04	0.24	0.12	0.092
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			9.7	23.2	18.6	22.8
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			31.3	167	78.6	37.6
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	100			31.3	167	78.6	37.6
Potassium	T	mg/Kg-dry	3	100	No SLC					2070	7260	5160	6150
Selenium	T	mg/Kg-dry	3	100	ECO Sed	2	66.7			1.3	5.3	3.2	2.9
Selenium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			1.3	5.3	3.2	2.9
Silver	T	mg/Kg-dry	3	66.7	ECO Sed	1	100	0.14	0.14	ND	1.3	0.82	1.1
Silver	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	390	0	0.14	0.14	ND	1.3	0.82	1.1
Sodium	T	mg/Kg-dry	3	0	No SLC			33.1	570	ND	ND		
Thallium	T	mg/Kg-dry	3	66.7	HH Soil (HQ=1)	5.5	0	0.15	0.15	ND	0.55	0.38	0.53
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			13.2	24.6	20.4	23.5
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			341	1810	844	380
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	100			341	1810	844	380

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-36
Sediment - Depositional Fall 2003
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					19.8	33.3	25.3	22.7
Chloride	T	mg/kg-Dry	3	100	No SLC					3.8	11.4	8.5	10.4
Fluoride	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3700	0			0.64	2.2	1.2	0.66
Nitrate	T	mg/kg-Dry	3	0	No SLC			3.4	7.7	ND	ND		
Organic Soils	T	%	3	100	No SLC					5.1	9.5	7.3	7.4
pH	T	SU	3	100	No SLC					6.6	6.7	6.7	6.7
Phosphorus	T	mg/Kg-dry	3	100	No SLC					1320	2570	2110	2440
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.13	0.17	0.15	0.15
Solids, Percent	T	%	3	100	No SLC					26	59.1	40.8	37.2
Specific Conductance	T	umhos/cm	3	100	No SLC					233	335	285	286
Sulfate	T	mg/kg-Dry	3	100	No SLC					389	761	619	706
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					558	1590	953	712
Total Organic Carbon	T	mg/Kg-dry	3	100	No SLC					6100	11200	8540	8320
Metals													
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			15000	37800	24900	21900
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	33.3			15000	37800	24900	21900
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.67	1.9	ND	ND		
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.67	1.9	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	100			10.5	15.9	13.8	15.1
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			10.5	15.9	13.8	15.1
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			485	656	560	538
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			2.5	7.8	4.7	3.7
Boron	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	5500	0	1	2	ND	ND		
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			1.5	5.2	2.7	1.5
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	100			1.5	5.2	2.7	1.5
Calcium	T	mg/Kg-dry	3	100	No SLC					2360	3180	2650	2400
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			19.4	23.5	21.6	21.9
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			19.4	23.5	21.6	21.9
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			10.6	30.5	18.9	15.5
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			10.6	30.5	18.9	15.5
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	100			118	291	183	141

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-36
Sediment - Depositional Fall 2003
RI/FS Surface Water Area 2 - Eagle Rock Lake
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			118	291	183	141
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	100			37200	57100	48400	51000
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	100			37200	57100	48400	51000
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			106	259	194	216
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	100			106	259	194	216
Magnesium	T	mg/Kg-dry	3	100	No SLC					4750	6000	5490	5720
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			361	588	484	503
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	66.7			361	588	484	503
Mercury	T	mg/Kg-dry	3	0	ECO Sed	0.17	0	0.028	0.057	ND	ND		
Mercury	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	23	0	0.028	0.057	ND	ND		
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			16.2	24.1	20.6	21.4
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	100			44.2	126	72.3	46.6
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			44.2	126	72.3	46.6
Potassium	T	mg/Kg-dry	3	100	No SLC					2880	5730	4590	5170
Selenium	T	mg/Kg-dry	3	100	ECO Sed	2	66.7			1.5	4.3	2.9	3
Selenium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			1.5	4.3	2.9	3
Silver	T	mg/Kg-dry	3	100	ECO Sed	1	33.3			0.38	1.3	0.75	0.58
Silver	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			0.38	1.3	0.75	0.58
Sodium	T	mg/Kg-dry	3	100	No SLC					321	737	589	710
Thallium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5.5	0			0.21	0.51	0.4	0.48
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			19.3	23.4	21.7	22.3
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	100			436	1370	790	564
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			436	1370	790	564

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-37
Sediment - Depositional Spring 2004
RI/FS Hunt's Pond
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	3	100	No SLC					6.7	9.3	7.7	7.2
Chloride	T	mg/Kg-dry	3	100	No SLC					5.1	7.4	6.4	6.6
Fluoride	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3700	0			1.2	2.2	1.7	1.6
Nitrate	T	mg/Kg-dry	3	33.3	No SLC			2.8	2.8	ND	3.4		1.4
Organic Soils	T	%	3	100	No SLC					1.3	2.3	1.8	1.9
pH	T	SU	3	100	No SLC					7.3	7.3	7.3	7.3
Phosphorus	T	mg/Kg-dry	3	100	No SLC					365	371	368	368
Sodium Absorption Ratio	T	ratio	3	100	No SLC					0.13	0.14	0.14	0.14
Solids, Percent	T	%	3	100	No SLC					70.8	73.8	72.1	71.8
Specific Conductance	T	umhos/cm	3	100	No SLC					123	167	141	133
Sulfate	T	mg/Kg-dry	3	100	No SLC					51.8	77	68.1	75.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	3	100	No SLC					355	800	518	400
Total Organic Carbon	T	mg/Kg-dry	3	66.7	No SLC			689	689	ND	11100	4970	3470
Metals													
Aluminum	T	mg/Kg-dry	3	100	ECO Sed	25500	0			5150	6930	5940	5730
Aluminum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	76000	0			5150	6930	5940	5730
Antimony	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.47	0.53	ND	ND		
Antimony	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	31	0	0.47	0.53	ND	ND		
Arsenic	T	mg/Kg-dry	3	100	ECO Sed	5.9	0			1.2	3.2	2.3	2.6
Arsenic	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	0.39	100			1.2	3.2	2.3	2.6
Barium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	5500	0			41	93	62.6	53.7
Beryllium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	150	0			0.49	0.63	0.56	0.57
Boron	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	5500	0	0.25	0.7	ND	ND		
Cadmium	T	mg/Kg-dry	3	100	ECO Sed	0.6	0			0.12	0.24	0.19	0.21
Cadmium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	39	0			0.12	0.24	0.19	0.21
Calcium	T	mg/Kg-dry	3	100	No SLC					1950	2300	2090	2030
Chromium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	210	0			12.7	15.8	14.4	14.8
Chromium	T	mg/Kg-dry	3	100	ECO Sed	37.3	0			12.7	15.8	14.4	14.8
Cobalt	T	mg/Kg-dry	3	100	ECO Sed	50	0			3.8	6.1	5	5.2
Cobalt	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	900	0			3.8	6.1	5	5.2
Copper	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	2900	0			14.3	23.4	18.2	17

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-37
Sediment - Depositional Spring 2004
RI/FS Hunt's Pond
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	3	100	ECO Sed	35.7	0			14.3	23.4	18.2	17
Iron	T	mg/Kg-dry	3	100	ECO Sed	20000	0			10900	14600	13200	14100
Iron	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			10900	14600	13200	14100
Lead	T	mg/Kg-dry	3	100	ECO Sed	35	0			16.8	27.7	21	18.4
Lead	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	400	0			16.8	27.7	21	18.4
Magnesium	T	mg/Kg-dry	3	100	No SLC					3640	4390	3970	3870
Manganese	T	mg/Kg-dry	3	100	ECO Sed	460	0			166	297	225	213
Manganese	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	3200	0			166	297	225	213
Mercury	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	23	0	0.019	0.023	ND	ND		
Mercury	T	mg/Kg-dry	3	0	ECO Sed	0.17	0	0.019	0.023	ND	ND		
Molybdenum	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	390	0			3.7	14.2	8	6.2
Nickel	T	mg/Kg-dry	3	100	ECO Sed	18	0			14.2	15.6	14.8	14.7
Nickel	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	1600	0			14.2	15.6	14.8	14.7
Potassium	T	mg/Kg-dry	3	100	No SLC					892	1430	1180	1210
Selenium	T	mg/Kg-dry	3	0	ECO Sed	2	0	0.83	0.93	ND	ND		
Selenium	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	390	0	0.83	0.93	ND	ND		
Silver	T	mg/Kg-dry	3	0	ECO Sed	1	0	0.12	0.14	ND	ND		
Silver	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	390	0	0.12	0.14	ND	ND		
Sodium	T	mg/Kg-dry	3	0	No SLC			76.8	103	ND	ND		
Thallium	T	mg/Kg-dry	3	0	HH Soil (HQ=1)	5.5	0	0.12	0.13	ND	ND		
Vanadium	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	78	0			13.9	23.2	17.1	14.3
Zinc	T	mg/Kg-dry	3	100	HH Soil (HQ=1)	23000	0			73.1	108	89	85.8
Zinc	T	mg/Kg-dry	3	100	ECO Sed	123	0			73.1	108	89	85.8

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-38
Sediment - Depositional Spring and Fall 2003
RI/FS Unique Habitats
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	7	100	No SLC					8.7	23.9	15.9	17.2
Chloride	T	mg/kg-Dry	7	71.4	No SLC			6.5	8.9	ND	5.8	4.7	5.2
Fluoride	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	3700	0	0.19	0.19	ND	5.3	1.4	0.53
Nitrate	T	mg/kg-Dry	7	0	No SLC			2.6	4.3	ND	ND		
Organic Soils	T	%	7	100	No SLC					1.6	6.8	4.7	5.5
pH	T	SU	7	100	No SLC					5.9	7.2	6.8	6.9
Phosphorus	T	mg/Kg-dry	7	100	No SLC					583	2030	1440	1610
Sodium Absorption Ratio	T	ratio	7	100	No SLC					0.1	0.37	0.2	0.14
Solids, Percent	T	%	7	100	No SLC					46.8	79.1	59.9	57
Specific Conductance	T	umhos/cm	7	100	No SLC					161	328	265	290
Sulfate	T	mg/kg-Dry	7	100	No SLC					82.9	507	338	342
Total Kjeldahl Nitrogen	T	mg/Kg-dry	7	100	No SLC					200	1060	516	580
Total Organic Carbon	T	mg/Kg-dry	7	100	No SLC					653	21000	11100	9740
Metals													
Aluminum	T	mg/Kg-dry	7	100	ECO Sed	25500	0			5950	23500	12100	11100
Aluminum	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	76000	0			5950	23500	12100	11100
Antimony	T	mg/Kg-dry	7	0	HH Soil (HQ=1)	31	0	0.41	0.77	ND	ND		
Antimony	T	mg/Kg-dry	7	0	ECO Sed	2	0	0.41	0.77	ND	ND		
Arsenic	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	0.39	100			2.8	13.7	8.5	9.8
Arsenic	T	mg/Kg-dry	7	100	ECO Sed	5.9	71.4			2.8	13.7	8.5	9.8
Barium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	5500	0			193	759	517	539
Beryllium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	150	0			0.5	4.6	1.6	1
Boron	T	mg/Kg-dry	7	42.9	HH Soil (HQ=1)	5500	0	0.78	0.99	ND	3.2		0.5
Cadmium	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	39	0	0.11	0.11	ND	2.5	1	0.62
Cadmium	T	mg/Kg-dry	7	85.7	ECO Sed	0.6	66.7	0.11	0.11	ND	2.5	1	0.62
Calcium	T	mg/Kg-dry	7	100	No SLC					1630	2910	2350	2460
Chromium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	210	0			12.1	20.6	17.6	19.3
Chromium	T	mg/Kg-dry	7	100	ECO Sed	37.3	0			12.1	20.6	17.6	19.3
Cobalt	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	900	0			5.5	19.5	11.1	10.1
Cobalt	T	mg/Kg-dry	7	100	ECO Sed	50	0			5.5	19.5	11.1	10.1
Copper	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	2900	0			28.3	188	78.1	70.6

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-38
Sediment - Depositional Spring and Fall 2003
RI/FS Unique Habitats
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	7	100	ECO Sed	35.7	85.7			28.3	188	78.1	70.6
Iron	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	71.4			14900	44400	31200	35300
Iron	T	mg/Kg-dry	7	100	ECO Sed	20000	85.7			14900	44400	31200	35300
Lead	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	400	0			27.7	129	91	98.2
Lead	T	mg/Kg-dry	7	100	ECO Sed	35	85.7			27.7	129	91	98.2
Magnesium	T	mg/Kg-dry	7	100	No SLC					3350	4990	4380	4630
Manganese	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	3200	0			353	1090	629	529
Manganese	T	mg/Kg-dry	7	100	ECO Sed	460	57.1			353	1090	629	529
Mercury	T	mg/Kg-dry	7	14.3	HH Soil (HQ=1)	23	0	0.019	0.035	ND	0.033		0.014
Mercury	T	mg/Kg-dry	7	14.3	ECO Sed	0.17	0	0.019	0.035	ND	0.033		0.014
Molybdenum	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	390	0			8.3	45.3	18.9	16.7
Nickel	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	1600	0			15.3	54.9	29.9	26.2
Nickel	T	mg/Kg-dry	7	100	ECO Sed	18	85.7			15.3	54.9	29.9	26.2
Potassium	T	mg/Kg-dry	7	100	No SLC					1200	4170	3040	3380
Selenium	T	mg/Kg-dry	7	85.7	ECO Sed	2	33.3	0.39	0.39	ND	2.4	1.5	1.7
Selenium	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	390	0	0.39	0.39	ND	2.4	1.5	1.7
Silver	T	mg/Kg-dry	7	42.9	HH Soil (HQ=1)	390	0	0.17	0.75	ND	0.8		0.36
Silver	T	mg/Kg-dry	7	42.9	ECO Sed	1	0	0.17	0.75	ND	0.8		0.36
Sodium	T	mg/Kg-dry	7	85.7	No SLC			58.3	58.3	ND	420	227	229
Thallium	T	mg/Kg-dry	7	85.7	HH Soil (HQ=1)	5.5	0	0.13	0.13	ND	0.31	0.22	0.23
Vanadium	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	78	0			12.1	21.6	18.1	18.9
Zinc	T	mg/Kg-dry	7	100	ECO Sed	123	85.7			84.3	591	232	167
Zinc	T	mg/Kg-dry	7	100	HH Soil (HQ=1)	23000	0			84.3	591	232	167

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-39
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 12-Tailings Impoundments
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	10	100	No SLC					5.1	23.3	9	7.5
Chloride	T	mg/kg-Dry	10	100	No SLC					4	19.2	8.8	7.9
Fluoride	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	3700	0			1.5	9.2	4.2	3.6
Nitrate	T	mg/kg-Dry	10	0	No SLC			2.3	3.5	ND	ND		
Organic Soils	T	%	10	100	No SLC					1.2	3.2	2.1	2
pH	T	SU	10	100	No SLC					6.8	7.8	7.4	7.4
Phosphorus	T	mg/Kg-dry	10	100	No SLC					21.1	1500	877	957
Sodium Absorption Ratio	T	ratio	10	100	No SLC					0.11	0.26	0.19	0.2
Solids, Percent	T	%	10	100	No SLC					58.7	89.9	67.5	63.5
Specific Conductance	T	umhos/cm	10	100	No SLC					448	1680	916	891
Sulfate	T	mg/kg-Dry	10	100	No SLC					222	2020	931	739
Total Kjeldahl Nitrogen	T	mg/Kg-dry	10	90	No SLC			27.4	27.4	ND	397	208	226
Total Organic Carbon	T	mg/Kg-dry	10	80	No SLC			112	131	ND	6650	2380	1680
Metals													
Aluminum	T	mg/Kg-dry	10	100	ECO Sed	25500	0			8460	19300	12100	11600
Aluminum	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	76000	0			8460	19300	12100	11600
Antimony	T	mg/Kg-dry	10	10	HH Soil (HQ=1)	31	0	0.18	0.27	ND	0.29		0.12
Antimony	T	mg/Kg-dry	10	10	ECO Sed	2	0	0.18	0.27	ND	0.29		0.12
Arsenic	T	mg/Kg-dry	10	100	ECO Sed	5.9	0			1.2	3.3	1.8	1.8
Arsenic	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	0.39	100			1.2	3.3	1.8	1.8
Barium	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	5500	0			74.6	156	107	108
Beryllium	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	150	0			1.3	4.7	2.6	2.5
Boron	T	mg/Kg-dry	10	10	HH Soil (HQ=1)	5500	0	0.48	1.1	ND	2.5		0.31
Cadmium	T	mg/Kg-dry	10	100	ECO Sed	0.6	90			0.39	4.7	1.5	1
Cadmium	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	39	0			0.39	4.7	1.5	1
Calcium	T	mg/Kg-dry	10	100	No SLC					9240	20300	15100	14300
Chromium	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	210	0			28.8	70.9	43.9	41.5
Chromium	T	mg/Kg-dry	10	100	ECO Sed	37.3	60			28.8	70.9	43.9	41.5
Cobalt	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	900	0			5.7	33.2	14.3	11.4
Cobalt	T	mg/Kg-dry	10	100	ECO Sed	50	0			5.7	33.2	14.3	11.4
Copper	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	2900	0			50.6	2100	335	154

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-39
Sediment - Depositional Fall 2002
RI/FS Surface Water Area 12-Tailings Impoundments
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	10	100	ECO Sed	35.7	100			50.6	2100	335	154
Iron	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	23000	10			10000	33300	16000	14500
Iron	T	mg/Kg-dry	10	100	ECO Sed	20000	10			10000	33300	16000	14500
Lead	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	400	0			20.6	357	74.5	42.3
Lead	T	mg/Kg-dry	10	100	ECO Sed	35	80			20.6	357	74.5	42.3
Magnesium	T	mg/Kg-dry	10	100	No SLC					6080	13600	8710	8210
Manganese	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	3200	10			488	4760	1960	1800
Manganese	T	mg/Kg-dry	10	100	ECO Sed	460	100			488	4760	1960	1800
Mercury	T	mg/Kg-dry	10	0	HH Soil (HQ=1)	23	0	0.018	0.027	ND	ND		
Mercury	T	mg/Kg-dry	10	0	ECO Sed	0.17	0	0.018	0.027	ND	ND		
Molybdenum	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	390	30			85.4	19400	2250	287
Nickel	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	1600	0			26.2	78.8	48.8	43.7
Nickel	T	mg/Kg-dry	10	100	ECO Sed	18	100			26.2	78.8	48.8	43.7
Potassium	T	mg/Kg-dry	10	100	No SLC					3950	7660	5260	5010
Selenium	T	mg/Kg-dry	10	10	ECO Sed	2	0	0.6	5.2	ND	0.76		0.75
Selenium	T	mg/Kg-dry	10	10	HH Soil (HQ=1)	390	0	0.6	5.2	ND	0.76		0.75
Silver	T	mg/Kg-dry	10	60	HH Soil (HQ=1)	390	0	0.52	0.75	ND	8.4	1.4	0.73
Silver	T	mg/Kg-dry	10	60	ECO Sed	1	33.3	0.52	0.75	ND	8.4	1.4	0.73
Sodium	T	mg/Kg-dry	10	10	No SLC			37	610	ND	65.7		65.1
Thallium	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	5.5	0			0.36	0.83	0.59	0.58
Vanadium	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	78	0			30	64.4	41.9	41.3
Zinc	T	mg/Kg-dry	10	100	HH Soil (HQ=1)	23000	0			96.8	569	269	214
Zinc	T	mg/Kg-dry	10	100	ECO Sed	123	90			96.8	569	269	214

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-40
Sediment - Riffle 2003
RI/FS Irrigation Ditch Return Flows
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	1	100	No SLC					6.5	6.5	6.5	6.5
Chloride	T	mg/kg-Dry	1	100	No SLC					13	13	13	13
Fluoride	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	3700	0			0.62	0.62	0.62	0.62
Nitrate	T	mg/kg-Dry	1	0	No SLC			3.2	3.2	ND	ND		
Organic Soils	T	%	1	100	No SLC					1.7	1.7	1.7	1.7
pH	T	SU	1	100	No SLC					6.9	6.9	6.9	6.9
Phosphorus	T	mg/Kg-dry	1	100	No SLC					503	503	503	503
Sodium Absorption Ratio	T	ratio	1	100	No SLC					0.27	0.27	0.27	0.27
Solids, Percent	T	%	1	100	No SLC					62.7	62.7	62.7	62.7
Specific Conductance	T	umhos/cm	1	100	No SLC					322	322	322	322
Sulfate	T	mg/kg-Dry	1	100	No SLC					18.4	18.4	18.4	18.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	1	100	No SLC					274	274	274	274
Total Organic Carbon	T	mg/Kg-dry	1	100	No SLC					4020	4020	4020	4020
Metals													
Aluminum	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	76000	0			5670	5670	5670	5670
Aluminum	T	mg/Kg-dry	1	100	ECO Sed	25500	0			5670	5670	5670	5670
Antimony	T	mg/Kg-dry	1	0	ECO Sed	2	0	0.77	0.77	ND	ND		
Antimony	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	31	0	0.77	0.77	ND	ND		
Arsenic	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	0.39	100			1.5	1.5	1.5	1.5
Arsenic	T	mg/Kg-dry	1	100	ECO Sed	5.9	0			1.5	1.5	1.5	1.5
Barium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	5500	0			106	106	106	106
Beryllium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	150	0			0.45	0.45	0.45	0.45
Boron	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	5500	0			3.1	3.1	3.1	3.1
Cadmium	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	39	0	0.067	0.067	ND	ND		
Cadmium	T	mg/Kg-dry	1	0	ECO Sed	0.6	0	0.067	0.067	ND	ND		
Calcium	T	mg/Kg-dry	1	100	No SLC					4140	4140	4140	4140
Chromium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	210	0			12.4	12.4	12.4	12.4
Chromium	T	mg/Kg-dry	1	100	ECO Sed	37.3	0			12.4	12.4	12.4	12.4
Cobalt	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	900	0			4.2	4.2	4.2	4.2
Cobalt	T	mg/Kg-dry	1	100	ECO Sed	50	0			4.2	4.2	4.2	4.2
Copper	T	mg/Kg-dry	1	100	ECO Sed	35.7	0			22.4	22.4	22.4	22.4

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
D = Filtered Fraction (0.45 micron filter)
A = Filtered Fraction (0.1 micron filter)
ND = Non-Detected Value

Table 3-40
Sediment - Riffle 2003
RI/FS Irrigation Ditch Return Flows
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	2900	0			22.4	22.4	22.4	22.4
Iron	T	mg/Kg-dry	1	100	ECO Sed	20000	0			12400	12400	12400	12400
Iron	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	23000	0			12400	12400	12400	12400
Lead	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	400	0			22.2	22.2	22.2	22.2
Lead	T	mg/Kg-dry	1	100	ECO Sed	35	0			22.2	22.2	22.2	22.2
Magnesium	T	mg/Kg-dry	1	100	No SLC					3410	3410	3410	3410
Manganese	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	3200	0			173	173	173	173
Manganese	T	mg/Kg-dry	1	100	ECO Sed	460	0			173	173	173	173
Mercury	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	23	0	0.026	0.026	ND	ND		
Mercury	T	mg/Kg-dry	1	0	ECO Sed	0.17	0	0.026	0.026	ND	ND		
Molybdenum	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	390	0			10.1	10.1	10.1	10.1
Nickel	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	1600	0			11.7	11.7	11.7	11.7
Nickel	T	mg/Kg-dry	1	100	ECO Sed	18	0			11.7	11.7	11.7	11.7
Potassium	T	mg/Kg-dry	1	100	No SLC					1480	1480	1480	1480
Selenium	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	390	0	0.46	0.46	ND	ND		
Selenium	T	mg/Kg-dry	1	0	ECO Sed	2	0	0.46	0.46	ND	ND		
Silver	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	390	0	0.21	0.21	ND	ND		
Silver	T	mg/Kg-dry	1	0	ECO Sed	1	0	0.21	0.21	ND	ND		
Sodium	T	mg/Kg-dry	1	100	No SLC					183	183	183	183
Thallium	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	5.5	0	0.15	0.15	ND	ND		
Vanadium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	78	0			12.6	12.6	12.6	12.6
Zinc	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	23000	0			60.5	60.5	60.5	60.5
Zinc	T	mg/Kg-dry	1	100	ECO Sed	123	0			60.5	60.5	60.5	60.5

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-41
Sediment - Depositional 2003
RI/FS Irrigation Ditch Return Flows
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	2	100	No SLC					11.1	13	12.1	12.1
Chloride	T	mg/kg-Dry	2	100	No SLC					6.6	8.1	7.4	7.4
Fluoride	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	3700	0			1.2	1.4	1.3	1.3
Nitrate	T	mg/kg-Dry	2	0	No SLC			2.8	2.9	ND	ND		
Organic Soils	T	%	2	100	No SLC					1.5	1.9	1.7	1.7
pH	T	SU	2	100	No SLC					7.3	7.4	7.4	7.4
Phosphorus	T	mg/Kg-dry	2	100	No SLC					98	288	193	193
Sodium Absorption Ratio	T	ratio	2	100	No SLC					0.34	0.35	0.34	0.34
Solids, Percent	T	%	2	100	No SLC					71.2	73.8	72.5	72.5
Specific Conductance	T	umhos/cm	2	100	No SLC					336	447	392	392
Sulfate	T	mg/kg-Dry	2	100	No SLC					14.7	55.7	35.2	35.2
Total Kjeldahl Nitrogen	T	mg/Kg-dry	2	100	No SLC					128	236	182	182
Total Organic Carbon	T	mg/Kg-dry	2	100	No SLC					927	6280	3600	3600
Metals													
Aluminum	T	mg/Kg-dry	2	100	ECO Sed	25500	0			4380	5680	5030	5030
Aluminum	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	76000	0			4380	5680	5030	5030
Antimony	T	mg/Kg-dry	2	0	ECO Sed	2	0	0.49	0.7	ND	ND		
Antimony	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	31	0	0.49	0.7	ND	ND		
Arsenic	T	mg/Kg-dry	2	100	ECO Sed	5.9	0			1.3	3.2	2.3	2.3
Arsenic	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	0.39	100			1.3	3.2	2.3	2.3
Barium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	5500	0			91.7	157	124	124
Beryllium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	150	0			0.44	0.6	0.52	0.52
Boron	T	mg/Kg-dry	2	50	HH Soil (HQ=1)	5500	0	0.69	0.69	ND	0.8		0.57
Cadmium	T	mg/Kg-dry	2	50	HH Soil (HQ=1)	39	0	0.2	0.2	ND	0.5		0.3
Cadmium	T	mg/Kg-dry	2	50	ECO Sed	0.6	0	0.2	0.2	ND	0.5		0.3
Calcium	T	mg/Kg-dry	2	100	No SLC					1660	2300	1980	1980
Chromium	T	mg/Kg-dry	2	100	ECO Sed	37.3	0			10.6	11.8	11.2	11.2
Chromium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	210	0			10.6	11.8	11.2	11.2
Cobalt	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	900	0			3.4	7.6	5.5	5.5
Cobalt	T	mg/Kg-dry	2	100	ECO Sed	50	0			3.4	7.6	5.5	5.5
Copper	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	2900	0			20.9	21.2	21.1	21.1

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-41
Sediment - Depositional 2003
RI/FS Irrigation Ditch Return Flows
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	2	100	ECO Sed	35.7	0			20.9	21.2	21.1	21.1
Iron	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	23000	0			13500	15100	14300	14300
Iron	T	mg/Kg-dry	2	100	ECO Sed	20000	0			13500	15100	14300	14300
Lead	T	mg/Kg-dry	2	100	ECO Sed	35	0			22.2	22.3	22.3	22.3
Lead	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	400	0			22.2	22.3	22.3	22.3
Magnesium	T	mg/Kg-dry	2	100	No SLC					2560	2630	2600	2600
Manganese	T	mg/Kg-dry	2	100	ECO Sed	460	0			121	422	272	272
Manganese	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	3200	0			121	422	272	272
Mercury	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	23	0	0.019	0.023	ND	ND		
Mercury	T	mg/Kg-dry	2	0	ECO Sed	0.17	0	0.019	0.023	ND	ND		
Molybdenum	T	mg/Kg-dry	2	50	HH Soil (HQ=1)	390	0	3.9	3.9	ND	9.5		5.7
Nickel	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	1600	0			10.2	36.1	23.1	23.1
Nickel	T	mg/Kg-dry	2	100	ECO Sed	18	50			10.2	36.1	23.1	23.1
Potassium	T	mg/Kg-dry	2	100	No SLC					1110	1170	1140	1140
Selenium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	390	0			0.57	0.74	0.66	0.66
Selenium	T	mg/Kg-dry	2	100	ECO Sed	2	0			0.57	0.74	0.66	0.66
Silver	T	mg/Kg-dry	2	50	ECO Sed	1	0	0.18	0.18	ND	0.18		0.14
Silver	T	mg/Kg-dry	2	50	HH Soil (HQ=1)	390	0	0.18	0.18	ND	0.18		0.14
Sodium	T	mg/Kg-dry	2	0	No SLC			262	318	ND	ND		
Thallium	T	mg/Kg-dry	2	0	HH Soil (HQ=1)	5.5	0	0.098	0.14	ND	ND		
Vanadium	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	78	0			12.9	15.6	14.3	14.3
Zinc	T	mg/Kg-dry	2	100	HH Soil (HQ=1)	23000	0			46.6	131	88.8	88.8
Zinc	T	mg/Kg-dry	2	100	ECO Sed	123	50			46.6	131	88.8	88.8

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

Table 3-42
Sediment - Depositional 2003 - 2004
RI/FS Irrigation Ditches
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	22	100	No SLC					6.4	50.1	20.5	15.8
Chloride	T	mg/kg-Dry	22	95.5	No SLC			3	3	ND	17.9	5.7	4.8
Fluoride	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	3700	0			0.51	2.8	1.3	0.94
Nitrate	T	mg/kg-Dry	22	59.1	No SLC			2.5	4.1	ND	12	3	1.6
Organic Soils	T	%	22	100	No SLC					1.5	36.7	6.2	3.9
pH	T	SU	22	100	No SLC					6.7	7.8	7.2	7.2
Phosphorus	T	mg/Kg-dry	22	100	No SLC					90.9	3140	1110	1050
Sodium Absorption Ratio	T	ratio	22	100	No SLC					0.07	0.27	0.14	0.13
Solids, Percent	T	%	22	100	No SLC					24.8	97.2	70	71.3
Specific Conductance	T	umhos/cm	22	100	No SLC					74.9	591	191	152
Sulfate	T	mg/kg-Dry	22	100	No SLC					3.1	301	93.6	62.4
Total Kjeldahl Nitrogen	T	mg/Kg-dry	22	95.5	No SLC			32.7	32.7	ND	15200	1660	462
Total Organic Carbon	T	mg/Kg-dry	22	95.5	No SLC			137	137	ND	256000	27300	7370
Metals													
Aluminum	T	mg/Kg-dry	22	100	ECO Sed	25500	0			5330	15900	10500	10600
Aluminum	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	76000	0			5330	15900	10500	10600
Antimony	T	mg/Kg-dry	22	9.1	ECO Sed	2	0	0.39	2.3	ND	1.2		0.32
Antimony	T	mg/Kg-dry	22	9.1	HH Soil (HQ=1)	31	0	0.39	2.3	ND	1.2		0.32
Arsenic	T	mg/Kg-dry	22	100	ECO Sed	5.9	45.5			2.1	10.8	5.7	5.6
Arsenic	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	0.39	100			2.1	10.8	5.7	5.6
Barium	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	5500	0			65.1	2060	447	244
Beryllium	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	150	0			0.54	3.4	1.5	1.4
Boron	T	mg/Kg-dry	22	77.3	HH Soil (HQ=1)	5500	0	0.25	5.5	ND	10.3	3.4	2.8
Cadmium	T	mg/Kg-dry	22	90.9	HH Soil (HQ=1)	39	0	0.038	0.092	ND	3	0.99	0.89
Cadmium	T	mg/Kg-dry	22	90.9	ECO Sed	0.6	65	0.038	0.092	ND	3	0.99	0.89
Calcium	T	mg/Kg-dry	22	100	No SLC					1610	13700	3980	2650
Chromium	T	mg/Kg-dry	22	100	ECO Sed	37.3	0			10	25.8	17.1	17.4
Chromium	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	210	0			10	25.8	17.1	17.4
Cobalt	T	mg/Kg-dry	22	100	ECO Sed	50	0			5.4	27.7	13.1	11.5
Cobalt	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	900	0			5.4	27.7	13.1	11.5
Copper	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	2900	0			27.6	135	63.7	55.5

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-42
Sediment - Depositional 2003 - 2004
RI/FS Irrigation Ditches
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	22	100	ECO Sed	35.7	72.7			27.6	135	63.7	55.5
Iron	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	23000	59.1			14200	40100	24500	24300
Iron	T	mg/Kg-dry	22	100	ECO Sed	20000	86.4			14200	40100	24500	24300
Lead	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	400	0			15.9	197	62.1	59
Lead	T	mg/Kg-dry	22	100	ECO Sed	35	63.6			15.9	197	62.1	59
Magnesium	T	mg/Kg-dry	22	100	No SLC					3080	6510	4010	3850
Manganese	T	mg/Kg-dry	22	100	ECO Sed	460	86.4			294	3220	922	768
Manganese	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	3200	4.5			294	3220	922	768
Mercury	T	mg/Kg-dry	22	27.3	ECO Sed	0.17	0	0.017	0.065	ND	0.16		0.012
Mercury	T	mg/Kg-dry	22	27.3	HH Soil (HQ=1)	23	0	0.017	0.065	ND	0.16		0.012
Molybdenum	T	mg/Kg-dry	22	95.5	HH Soil (HQ=1)	390	0	4.4	4.4	ND	75.3	16.1	11.4
Nickel	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	1600	0			14	88	39	36.9
Nickel	T	mg/Kg-dry	22	100	ECO Sed	18	90.9			14	88	39	36.9
Potassium	T	mg/Kg-dry	22	100	No SLC					1350	3570	2290	2290
Selenium	T	mg/Kg-dry	22	54.5	HH Soil (HQ=1)	390	0	0.38	2.3	ND	2.2	0.96	0.76
Selenium	T	mg/Kg-dry	22	54.5	ECO Sed	2	8.3	0.38	2.3	ND	2.2	0.96	0.76
Silver	T	mg/Kg-dry	22	63.6	HH Soil (HQ=1)	390	0	0.11	0.58	ND	1.1	0.33	0.3
Silver	T	mg/Kg-dry	22	63.6	ECO Sed	1	7.1	0.11	0.58	ND	1.1	0.33	0.3
Sodium	T	mg/Kg-dry	22	36.4	No SLC			58.2	289	ND	495		101
Thallium	T	mg/Kg-dry	22	59.1	HH Soil (HQ=1)	5.5	0	0.11	0.38	ND	0.24	0.14	0.15
Vanadium	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	78	0			9.7	33.9	20.5	18.1
Zinc	T	mg/Kg-dry	22	100	HH Soil (HQ=1)	23000	0			114	739	298	271
Zinc	T	mg/Kg-dry	22	100	ECO Sed	123	95.5			114	739	298	271

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.
 "HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)
 "Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater
 Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.
 Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-43
Sediment - Depositional Summer 2003
RI/FS Drainages Upstream of the Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Inorganics													
Cation-Exchange Capacity	T	meq/100g	1	100	No SLC					9.8	9.8	9.8	9.8
Chloride	T	mg/kg-Dry	1	100	No SLC					2.6	2.6	2.6	2.6
Fluoride	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	3700	0			0.99	0.99	0.99	0.99
Nitrate	T	mg/kg-Dry	1	0	No SLC			2.5	2.5	ND	ND		
Organic Soils	T	%	1	100	No SLC					2.6	2.6	2.6	2.6
pH	T	SU	1	100	No SLC					3.7	3.7	3.7	3.7
Phosphorus	T	mg/Kg-dry	1	100	No SLC					1250	1250	1250	1250
Sodium Absorption Ratio	T	ratio	1	100	No SLC					0.07	0.07	0.07	0.07
Solids, Percent	T	%	1	100	No SLC					80.1	80.1	80.1	80.1
Specific Conductance	T	umhos/cm	1	100	No SLC					1000	1000	1000	1000
Sulfate	T	mg/kg-Dry	1	100	No SLC					1170	1170	1170	1170
Total Kjeldahl Nitrogen	T	mg/Kg-dry	1	0	No SLC			27.2	27.2	ND	ND		
Total Organic Carbon	T	mg/Kg-dry	1	0	No SLC			125	125	ND	ND		
Metals													
Aluminum	T	mg/Kg-dry	1	100	ECO Sed	25500	0			6010	6010	6010	6010
Aluminum	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	76000	0			6010	6010	6010	6010
Antimony	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	31	0	0.61	0.61	ND	ND		
Antimony	T	mg/Kg-dry	1	0	ECO Sed	2	0	0.61	0.61	ND	ND		
Arsenic	T	mg/Kg-dry	1	100	ECO Sed	5.9	100			7.9	7.9	7.9	7.9
Arsenic	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	0.39	100			7.9	7.9	7.9	7.9
Barium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	5500	0			643	643	643	643
Beryllium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	150	0			0.54	0.54	0.54	0.54
Boron	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	5500	0			2.1	2.1	2.1	2.1
Cadmium	T	mg/Kg-dry	1	0	ECO Sed	0.6	0	0.034	0.034	ND	ND		
Cadmium	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	39	0	0.034	0.034	ND	ND		
Calcium	T	mg/Kg-dry	1	100	No SLC					1440	1440	1440	1440
Chromium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	210	0			13.3	13.3	13.3	13.3
Chromium	T	mg/Kg-dry	1	100	ECO Sed	37.3	0			13.3	13.3	13.3	13.3
Cobalt	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	900	0			9.1	9.1	9.1	9.1
Cobalt	T	mg/Kg-dry	1	100	ECO Sed	50	0			9.1	9.1	9.1	9.1
Copper	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	2900	0			19.3	19.3	19.3	19.3

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBSLs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBSLs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

T = Total Fraction
 D = Filtered Fraction (0.45 micron filter)
 A = Filtered Fraction (0.1 micron filter)
 ND = Non-Detected Value

Table 3-43
Sediment - Depositional Summer 2003
RI/FS Drainages Upstream of the Mine Site
Summary of Results

Analyte	Sample Fraction	Units	Total Number of Samples	Percent Detects (%)	SLC	SLC Value	Percent Above SLC	Min RL for ND	Max RL for ND	Min Value	Max Value	Mean Value	Median Value
Copper	T	mg/Kg-dry	1	100	ECO Sed	35.7	0			19.3	19.3	19.3	19.3
Iron	T	mg/Kg-dry	1	100	ECO Sed	20000	100			29500	29500	29500	29500
Iron	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	23000	100			29500	29500	29500	29500
Lead	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	400	0			24.2	24.2	24.2	24.2
Lead	T	mg/Kg-dry	1	100	ECO Sed	35	0			24.2	24.2	24.2	24.2
Magnesium	T	mg/Kg-dry	1	100	No SLC					2090	2090	2090	2090
Manganese	T	mg/Kg-dry	1	100	ECO Sed	460	0			246	246	246	246
Manganese	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	3200	0			246	246	246	246
Mercury	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	23	0	0.06	0.06	ND	ND		
Mercury	T	mg/Kg-dry	1	0	ECO Sed	0.17	0	0.06	0.06	ND	ND		
Molybdenum	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	390	0			2.7	2.7	2.7	2.7
Nickel	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	1600	0			17.8	17.8	17.8	17.8
Nickel	T	mg/Kg-dry	1	100	ECO Sed	18	0			17.8	17.8	17.8	17.8
Potassium	T	mg/Kg-dry	1	100	No SLC					2490	2490	2490	2490
Selenium	T	mg/Kg-dry	1	100	ECO Sed	2	0			0.83	0.83	0.83	0.83
Selenium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	390	0			0.83	0.83	0.83	0.83
Silver	T	mg/Kg-dry	1	0	ECO Sed	1	0	0.1	0.1	ND	ND		
Silver	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	390	0	0.1	0.1	ND	ND		
Sodium	T	mg/Kg-dry	1	0	No SLC			86.9	86.9	ND	ND		
Thallium	T	mg/Kg-dry	1	0	HH Soil (HQ=1)	5.5	0	0.12	0.12	ND	ND		
Vanadium	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	78	0			9.5	9.5	9.5	9.5
Zinc	T	mg/Kg-dry	1	100	ECO Sed	123	0			47	47	47	47
Zinc	T	mg/Kg-dry	1	100	HH Soil (HQ=1)	23000	0			47	47	47	47

"No SLC" indicates that there is not a Screening Level Criterion for this medium specified for the RI/FS.

"HH Soil (HQ=1)" EPA Region 6 RBLSs Human Health Residential Soil (HQ=1)

"Eco Sed" EPA Region 6 Tier 1-3 RBLSs Ecological Sediment Freshwater

Median Value determined using 1/2 the Reporting Limit value for Non-Detects if greater than 50% of the values were detected.

Mean Value calculated using 1/2 the Reporting Limit for Non-Detects if greater than 50% of the values were detected.

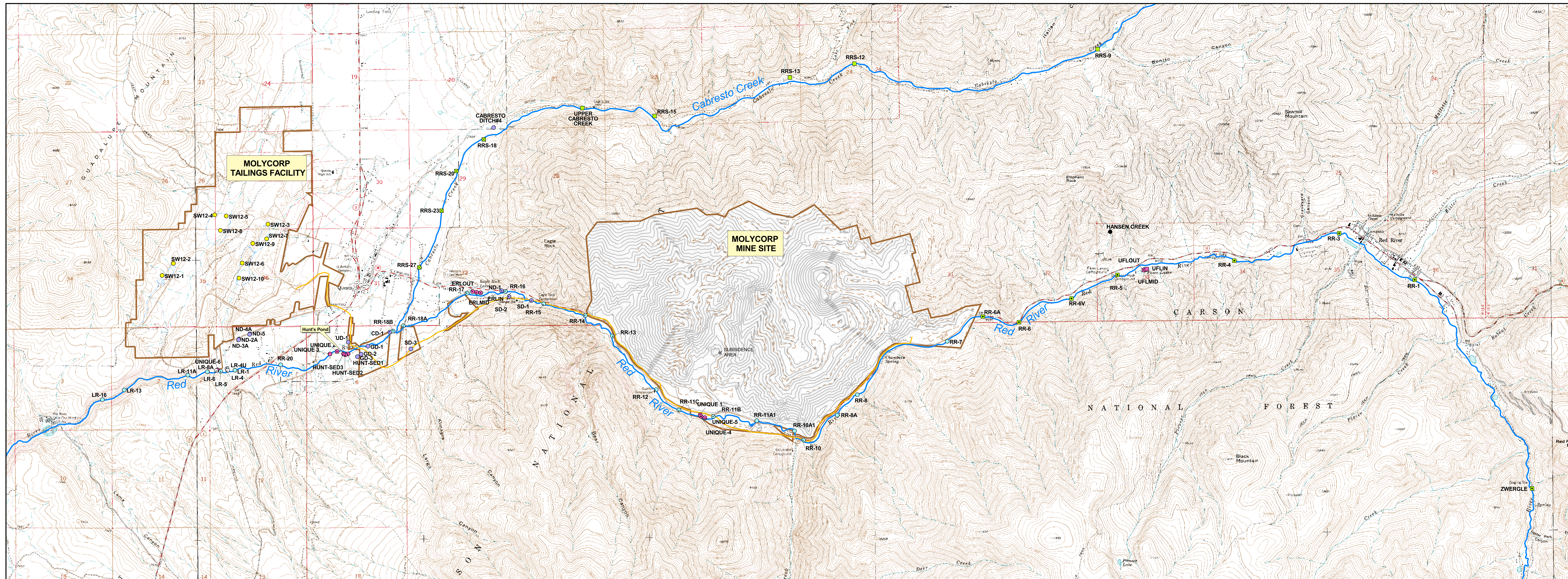
T = Total Fraction

D = Filtered Fraction (0.45 micron filter)

A = Filtered Fraction (0.1 micron filter)

ND = Non-Detected Value

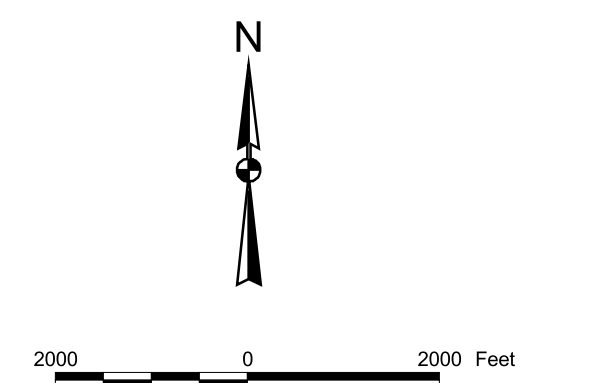
SECTION 3
SEDIMENT
FIGURES



- Sediment Sampling Location**
- Red River
 - Lakes and Ponds
 - Tailings Impoundments
 - Drainages Upstream of Mine
 - Irrigation Ditches
 - Irrigation Ditch Return Flows
 - Reference Red River Above Mine Site
 - Reference Upper Cabresto Creek
 - Reference Lower Cabresto Creek
 - Reference Upper Fawn Lake
- Sewage Lagoon
 Tailings Pipeline
 Paved Road
 Unpaved Road
- River or Creek
 Tailings Pond
- Property Lines**
 Easement
 Mine Boundary

NOTES

1. Base topography taken from USGS 7.5-minute quadrangles for Questa, New Mexico (1963) and Red River, New Mexico (1963).
2. Mine Site topography provided by Molycorp-Questa Mine (quest_sp.dwg, 2001).



URS
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 8181 East Tufts Avenue
 Denver, CO 80237-2637
 (303) 694-2770

APPLICATION
ArcView GIS
 FILE NAME
sed_techmemo.apr
 DRAWN BY
Denver/GIS
 DATE
3/21/2005

MOLYCORP - QUESTA MINE RI/FS
SEDIMENT SAMPLING LOCATIONS

PROJECT
22236244
FIGURE 3-1
*Preliminary Site
 Characterization Report*



Surveyed Sample Locations
 ● Sediment

Hunt's Pond Features
 ⋯ Area of 2000 Excavation
 ⋯ Area of 2003 Excavation



20 0 20 Feet
 Scale 1:480 or 1" = 40'

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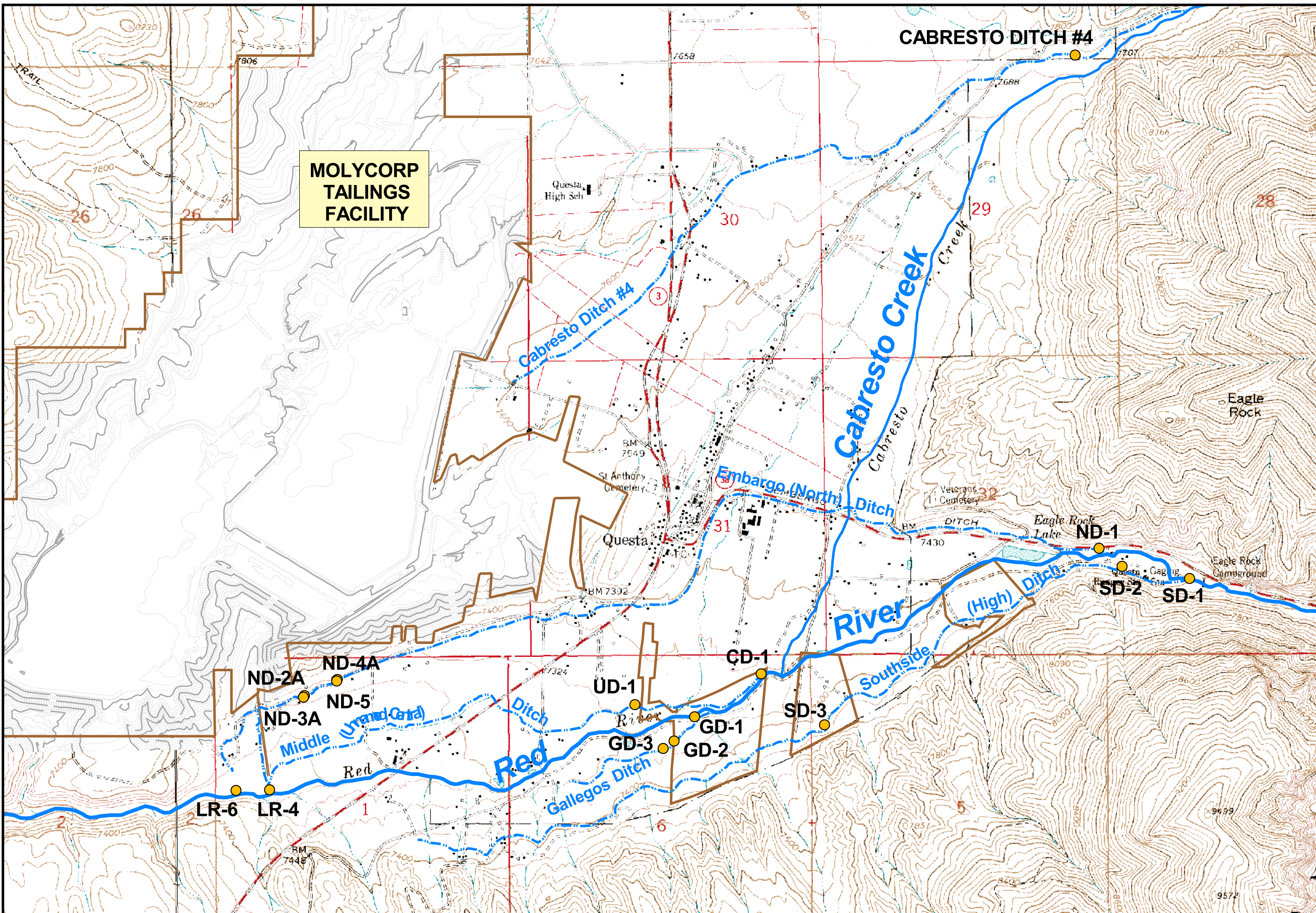
APPLICATION
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 FILE NAME
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 DRAWN BY
 GCK-Denver
 DATE
 1/31/05

MOLYCORP - QUESTA MINE RI/FS

SEDIMENT SAMPLE LOCATIONS AT HUNT'S POND

PROJECT 22236244

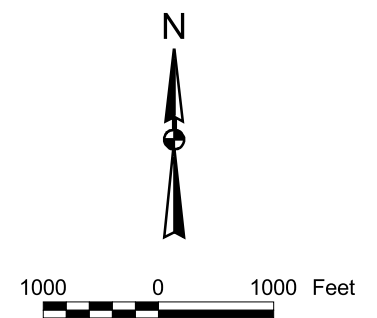
FIGURE 3-2
*Preliminary Site
 Characterization Report*



- Ditch Sediment Sample Location
- Ditch
- River
- Creek
- Easement
- Property Boundary

NOTES

1. Base topography taken from USGS 7.5-minute quadrangles for Guadalupe Mountain, New Mexico (1963) and Questa, New Mexico (1963).
2. Tailings Area topography provided by MolyCorp- Questa Mine (tail_all.dwg, 2001).
3. North American Datum 1983 State Plane, New Mexico Central (feet)



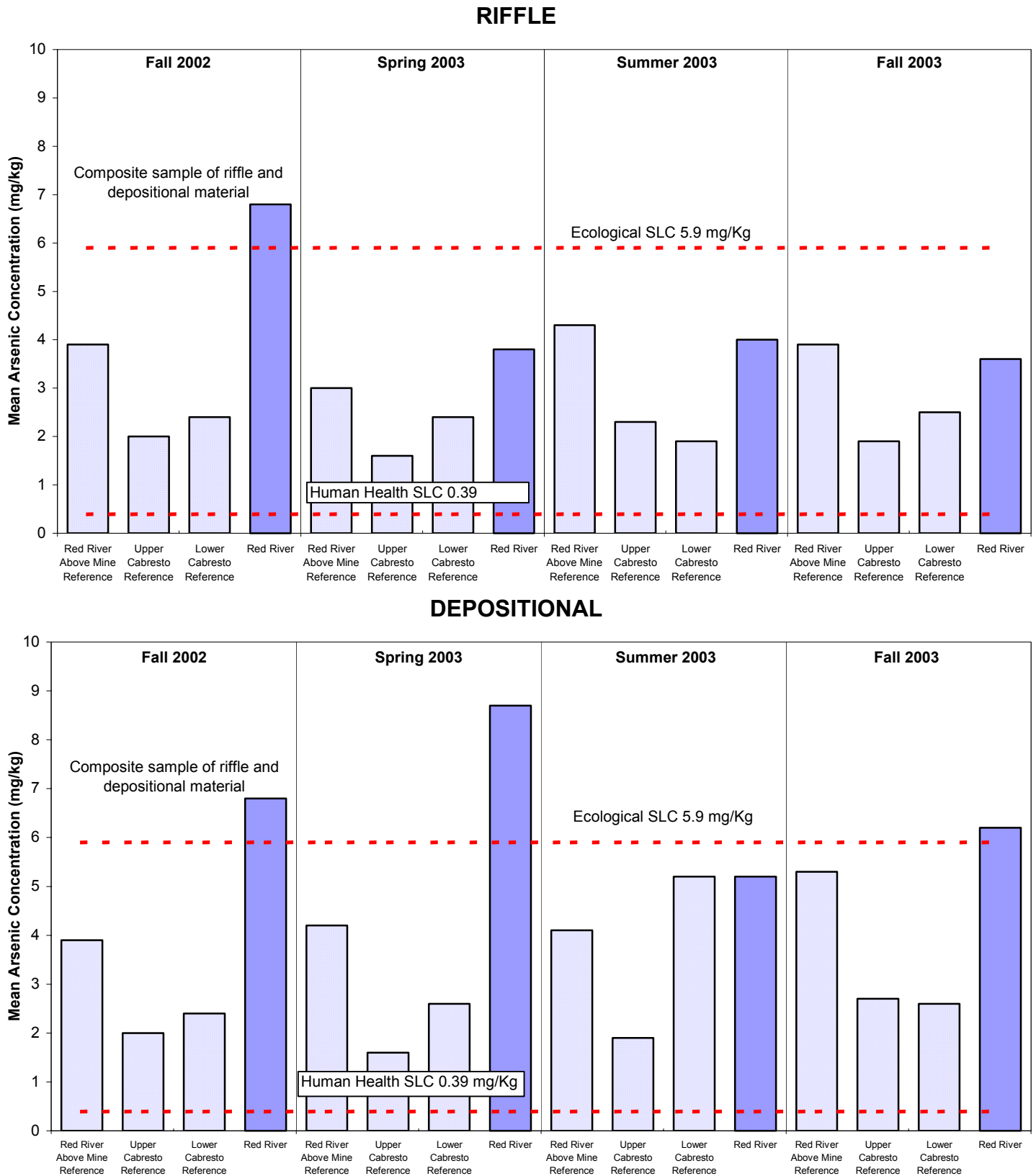
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 (303) 694-2770

APPLICATION: ArcView GIS
 FILE NAME: sed_techmemo.apr
 DRAWN BY: GCK
 DATE: 3/7/05

MOLYCORP - QUESTA MINE RI/FS
 Location of Irrigation Ditch and
 Return Flow Sediment Samples

PROJECT: 22236244
Figure 3-3
 Preliminary Site
 Characterization Report

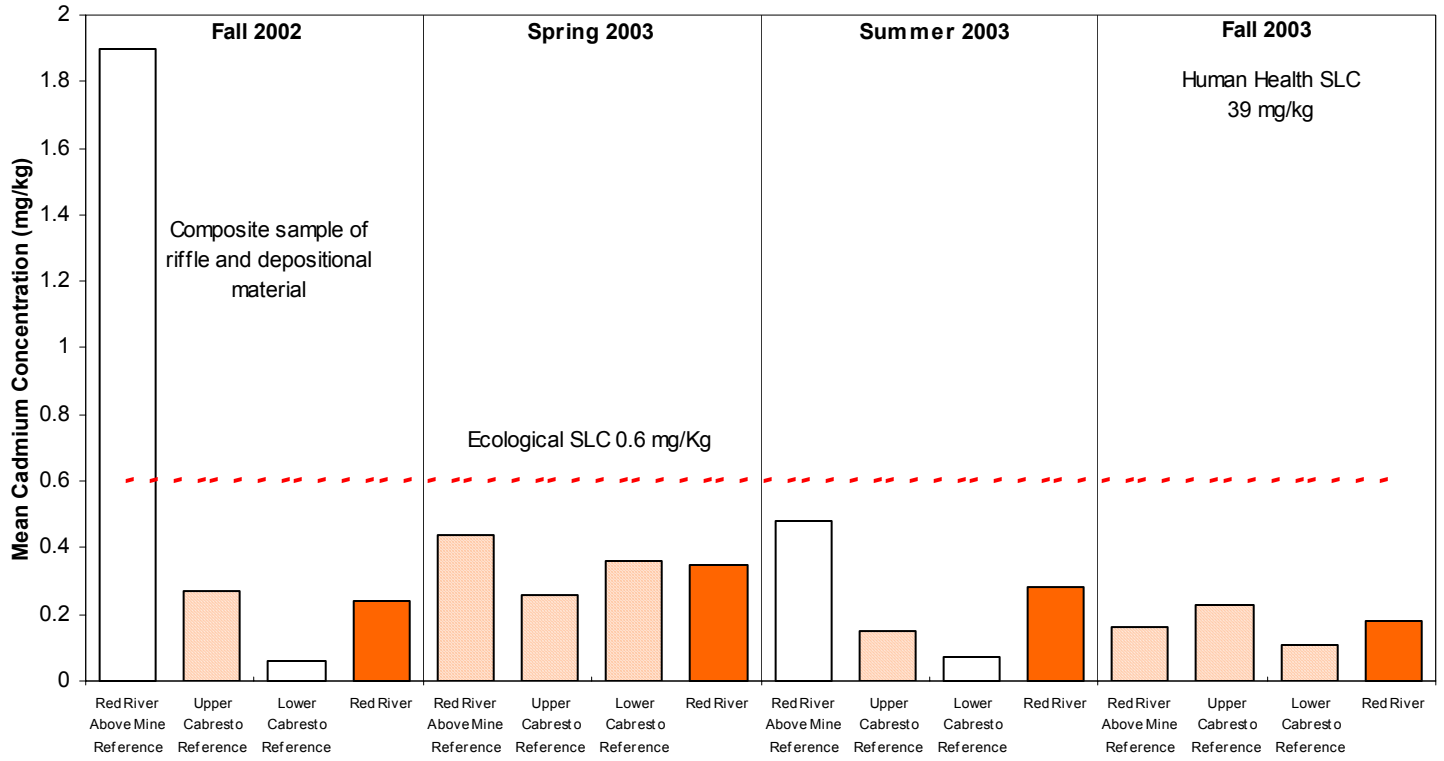
**Figure 3-4
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – ARSENIC**



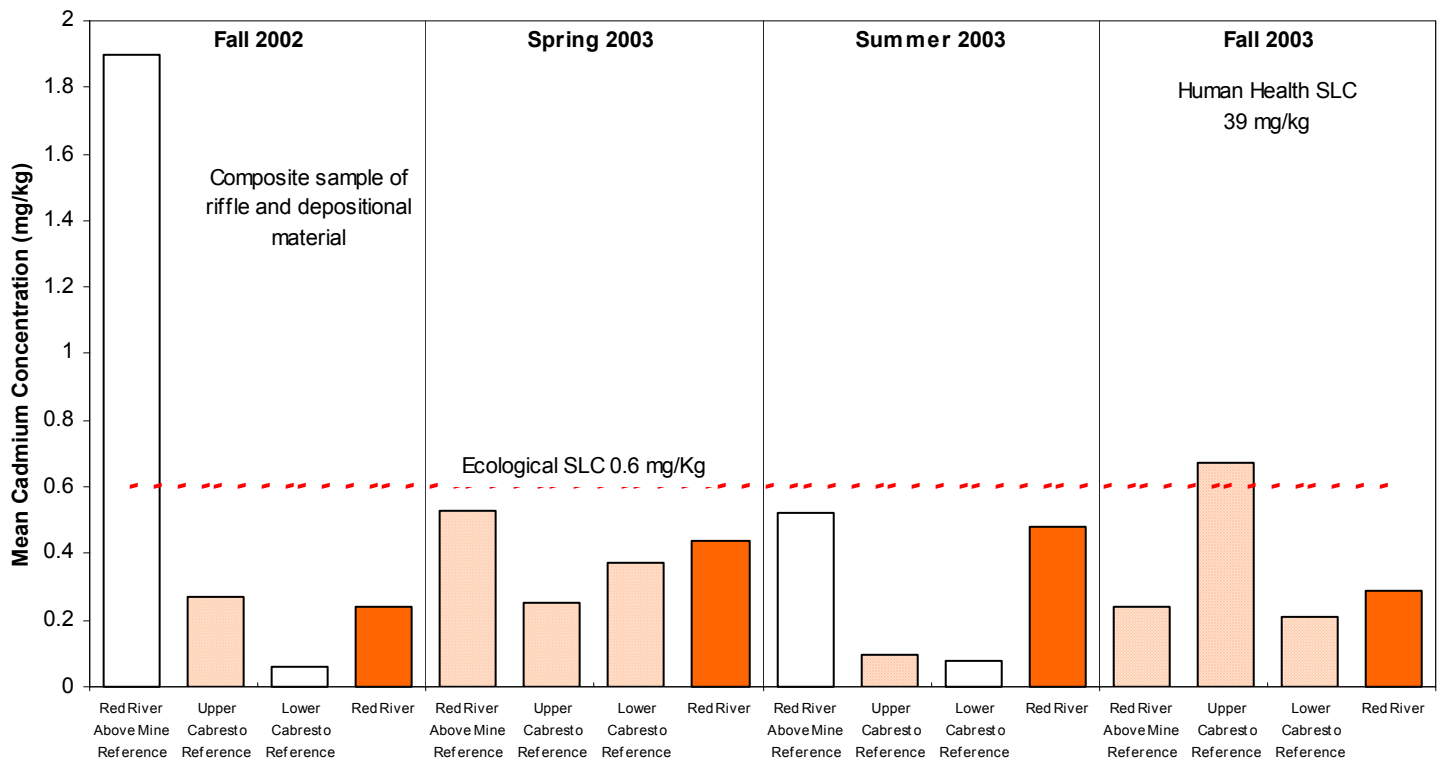
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 3-5
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – CADMIUM**

RIFFLE



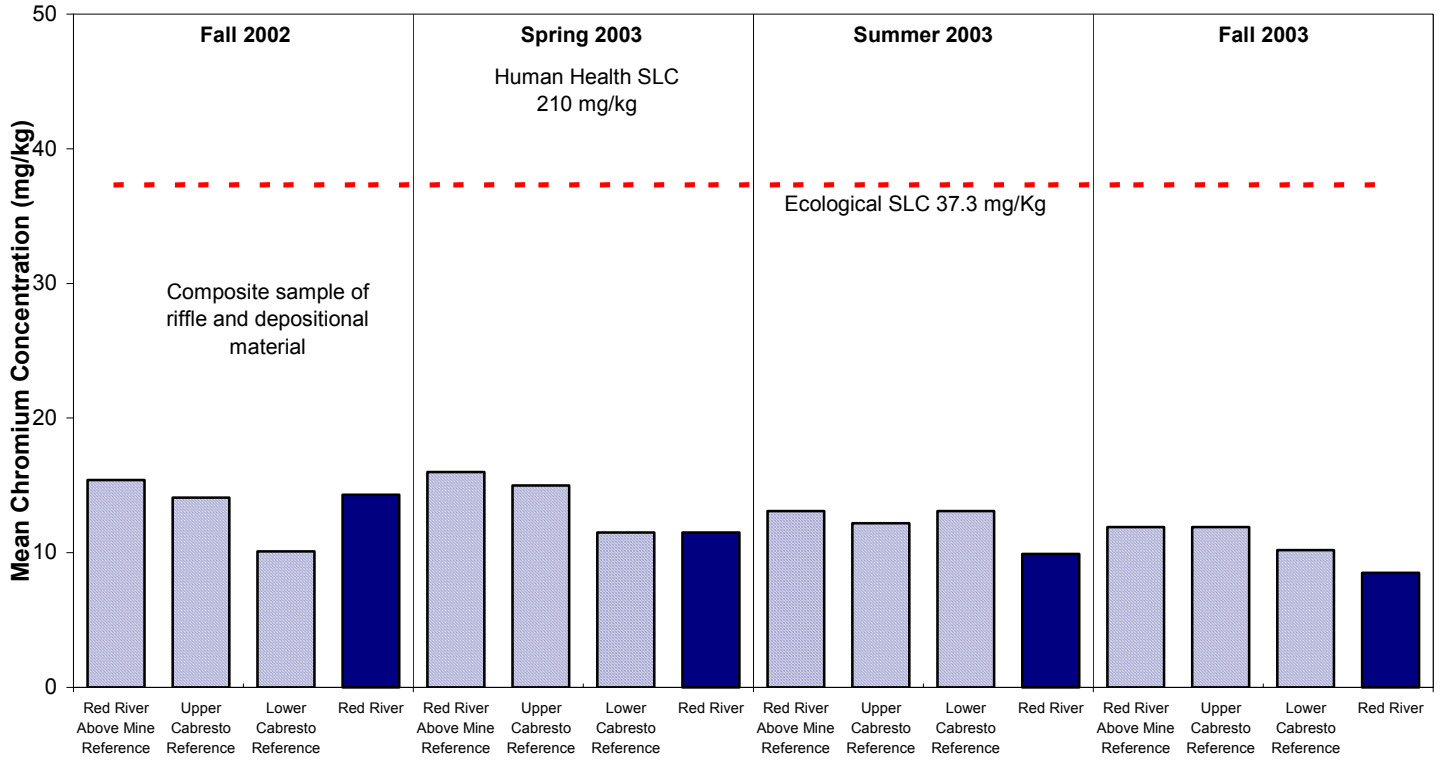
DEPOSITIONAL



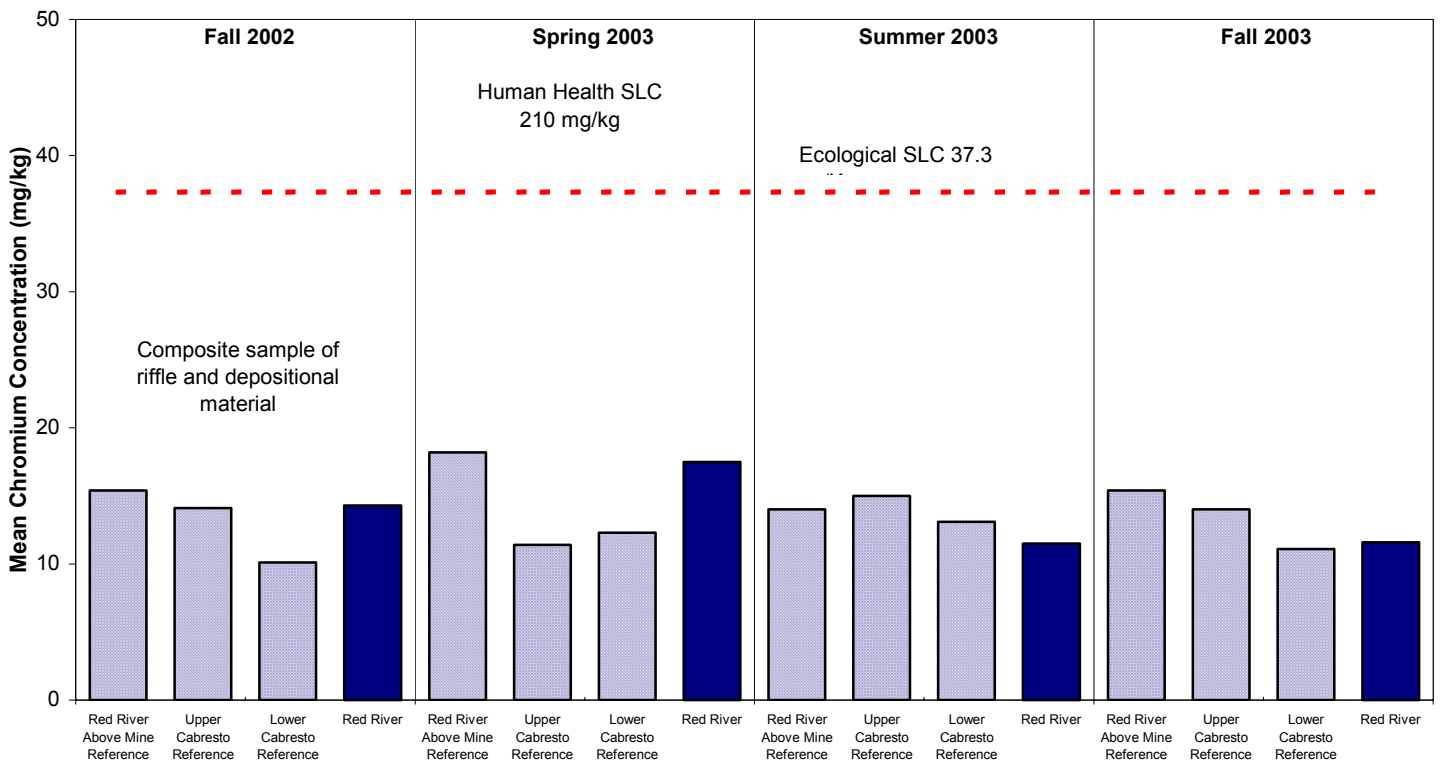
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 3-6
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – CHROMIUM**

RIFFLE



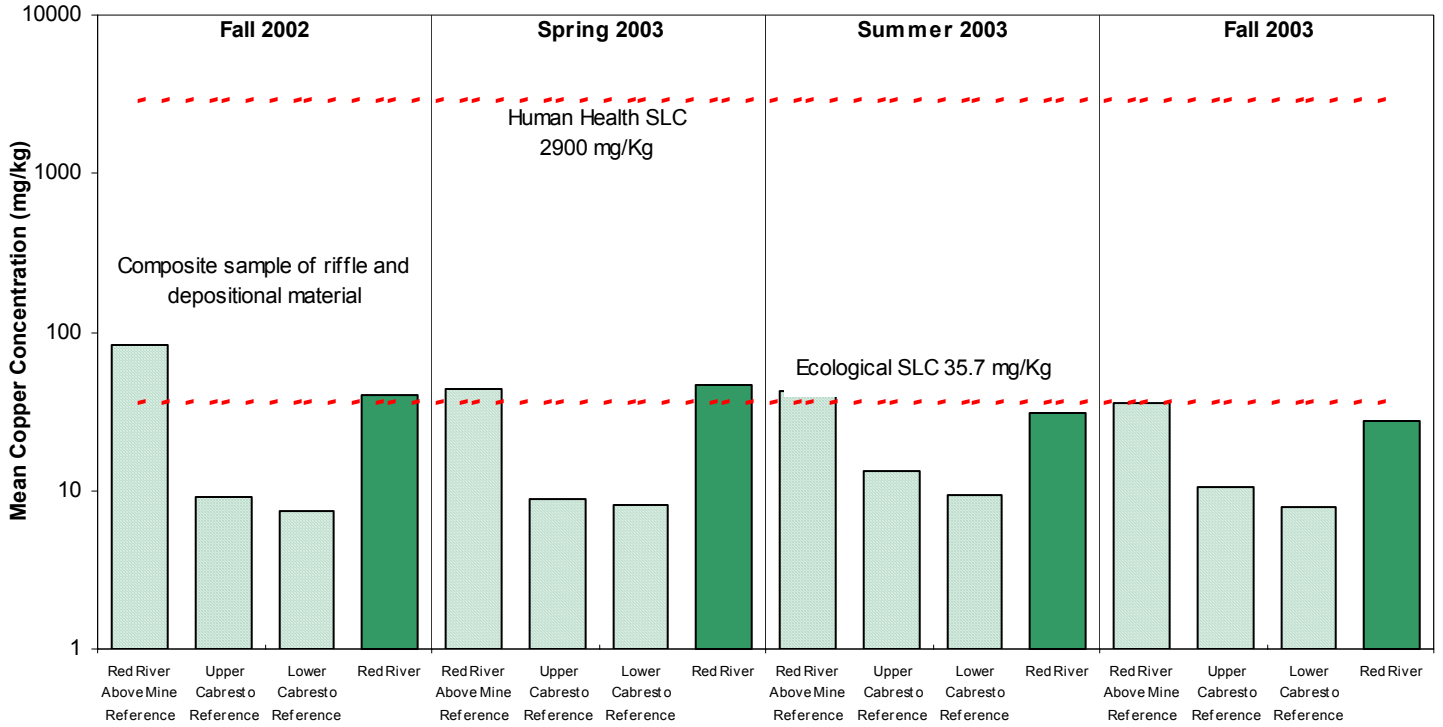
DEPOSITIONAL



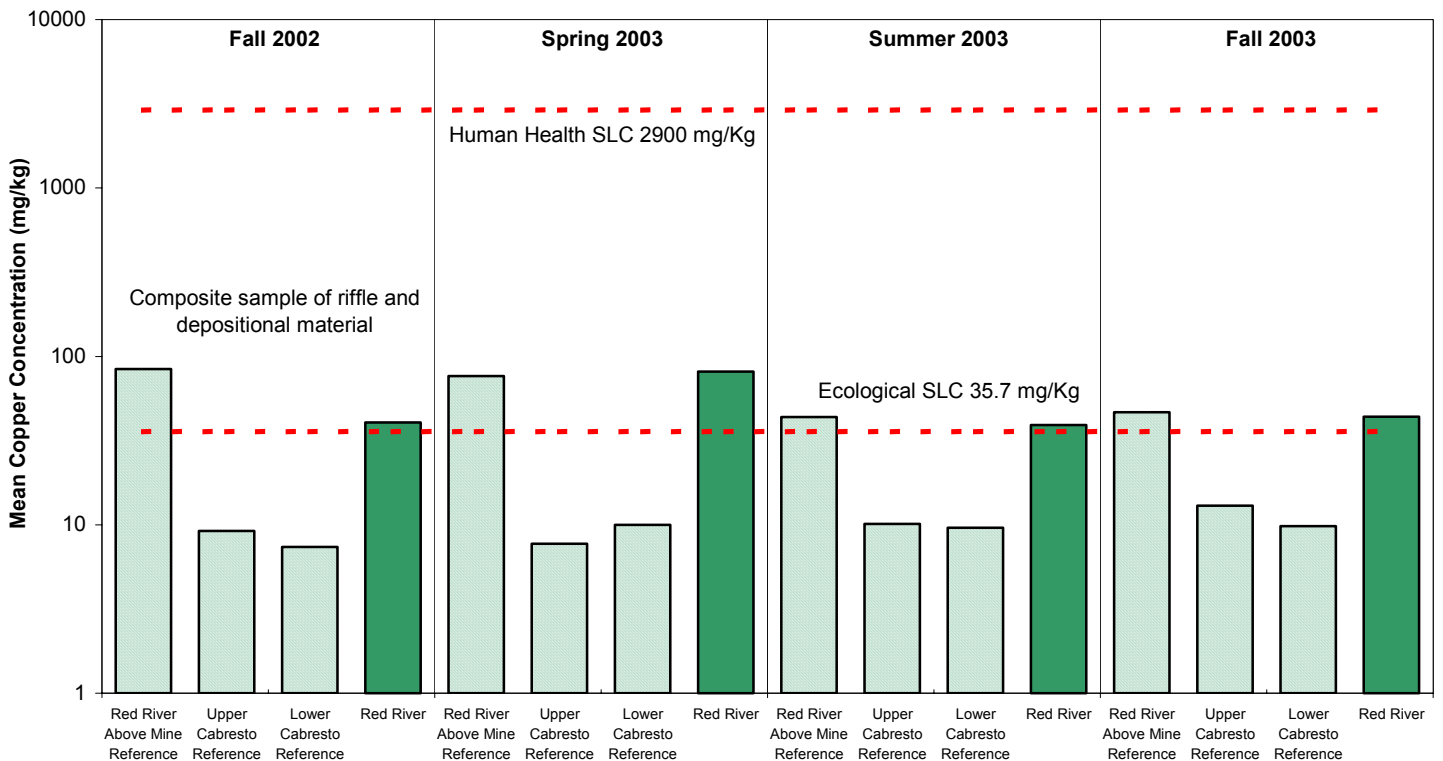
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 3-7
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – COPPER**

RIFFLE



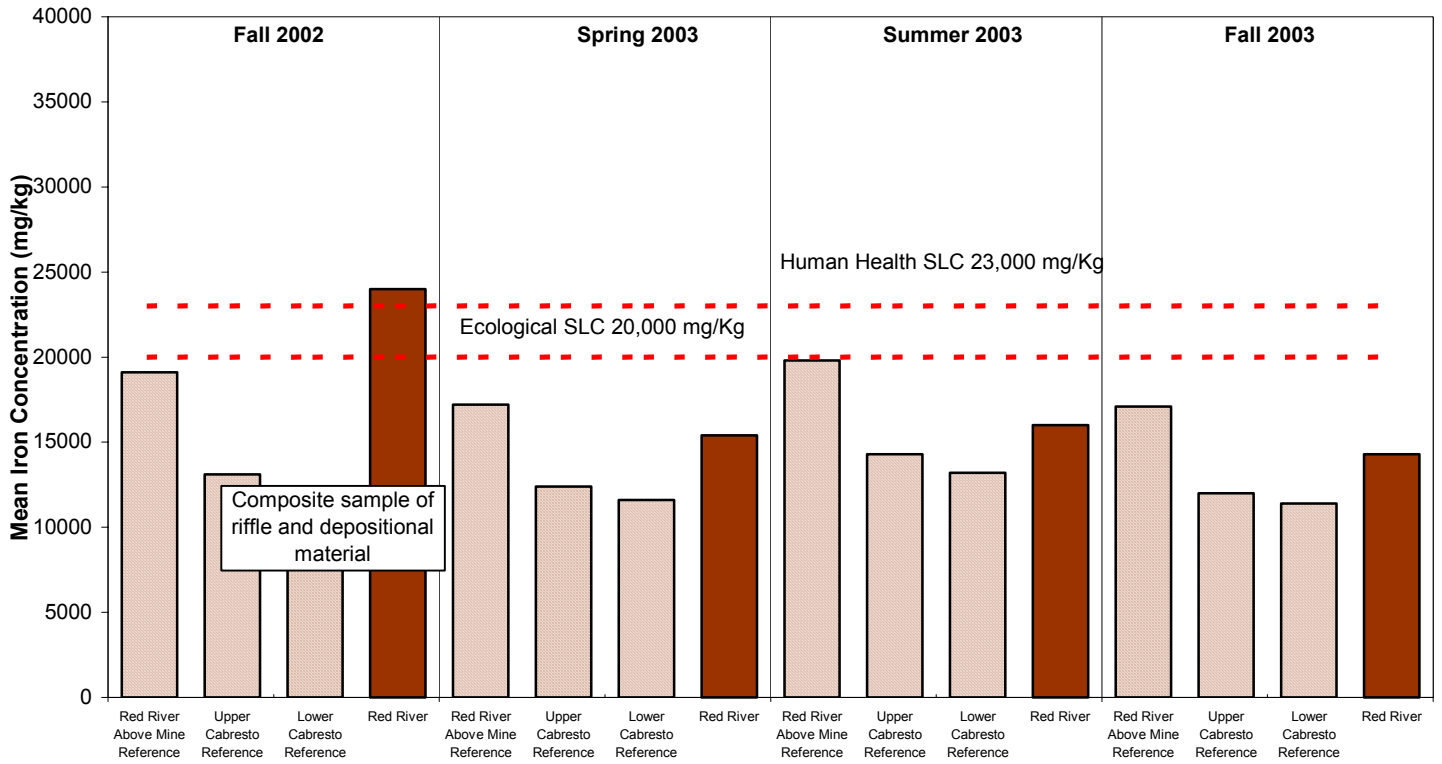
DEPOSITIONAL



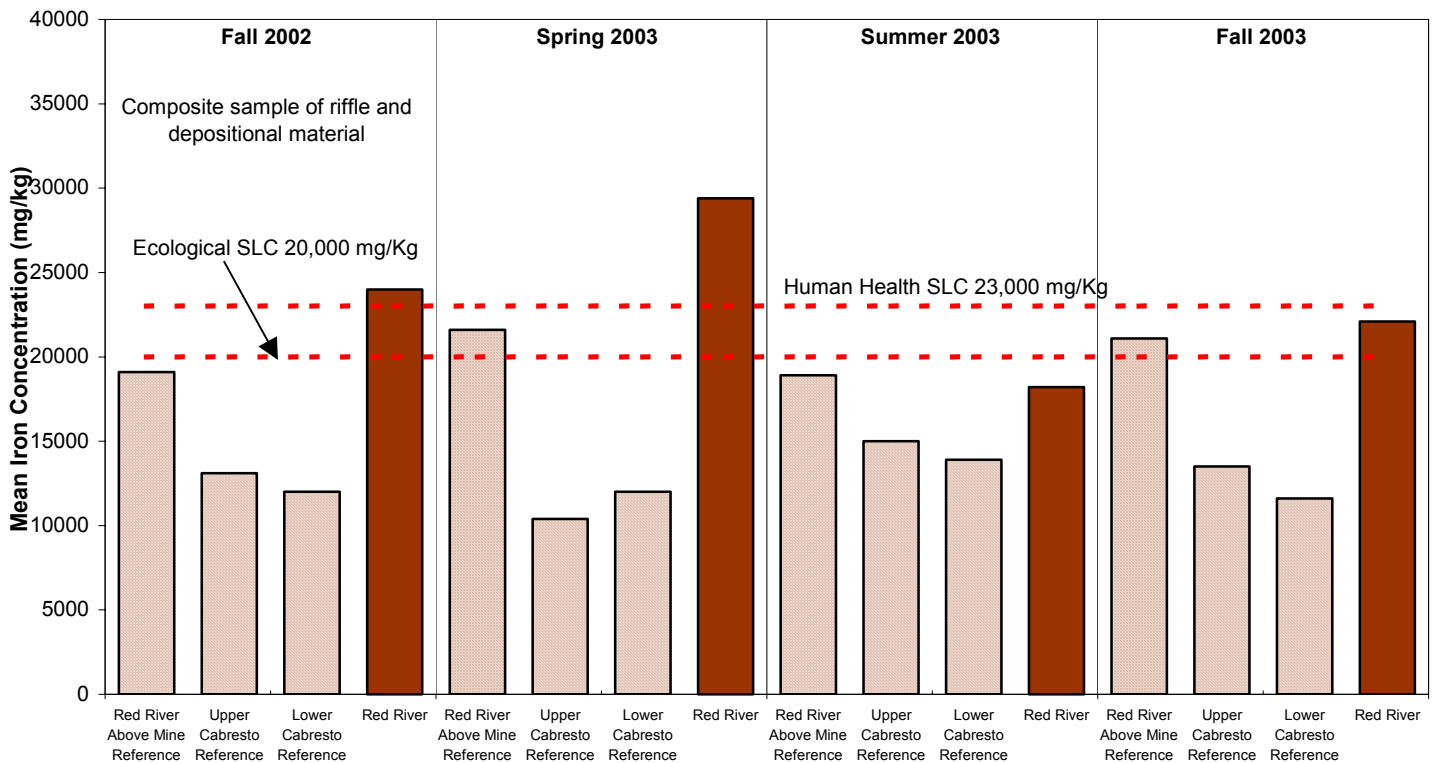
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 3-8
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – IRON**

RIFFLE



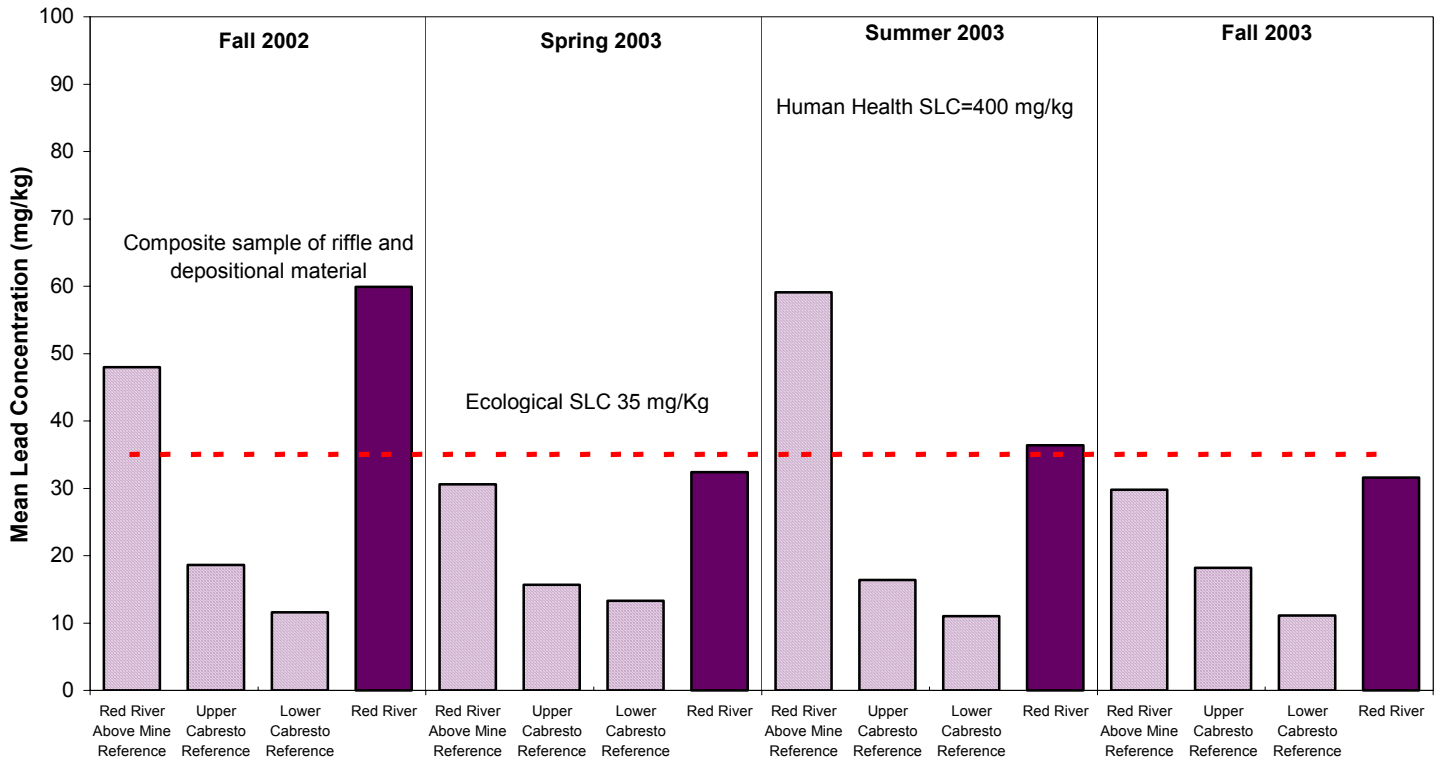
DEPOSITIONAL



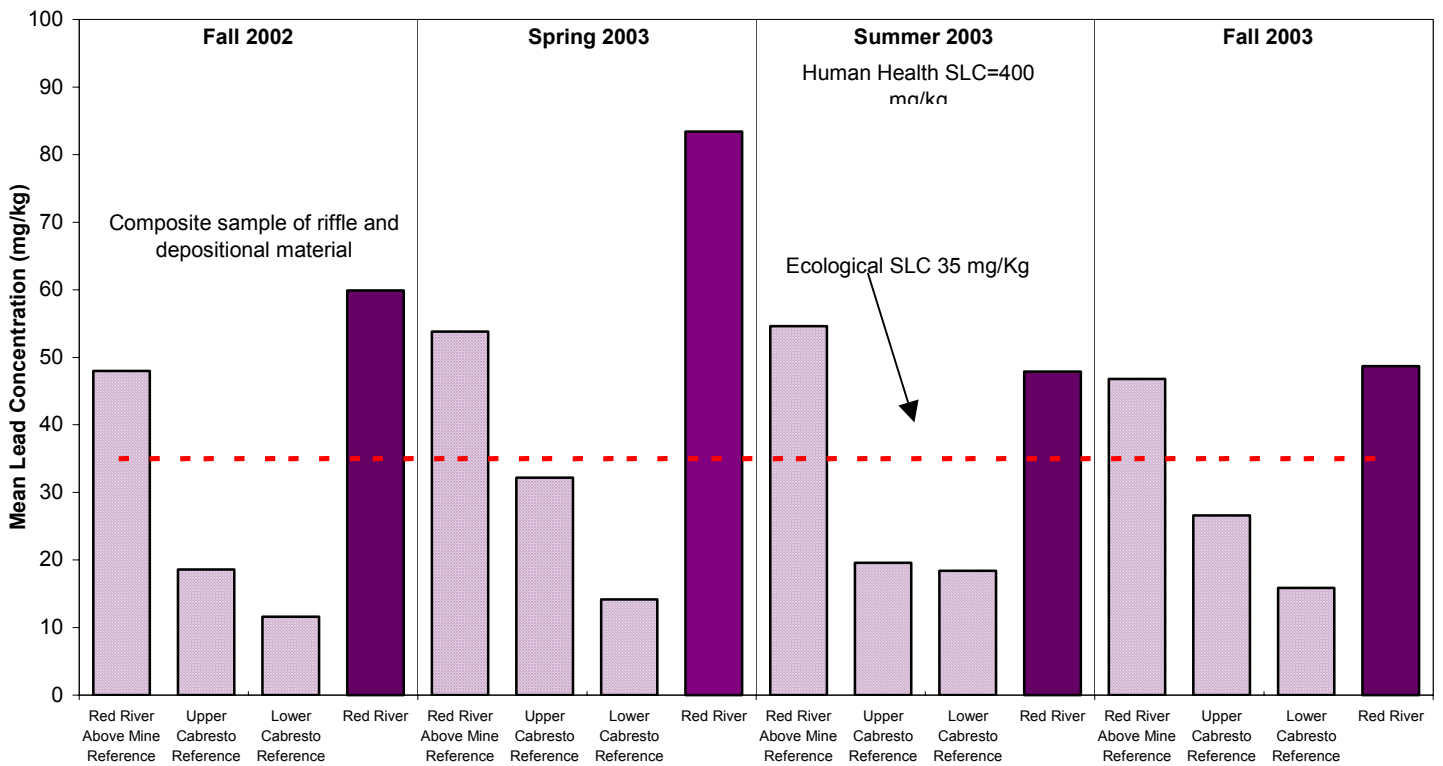
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 3-9
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – LEAD**

RIFFLE



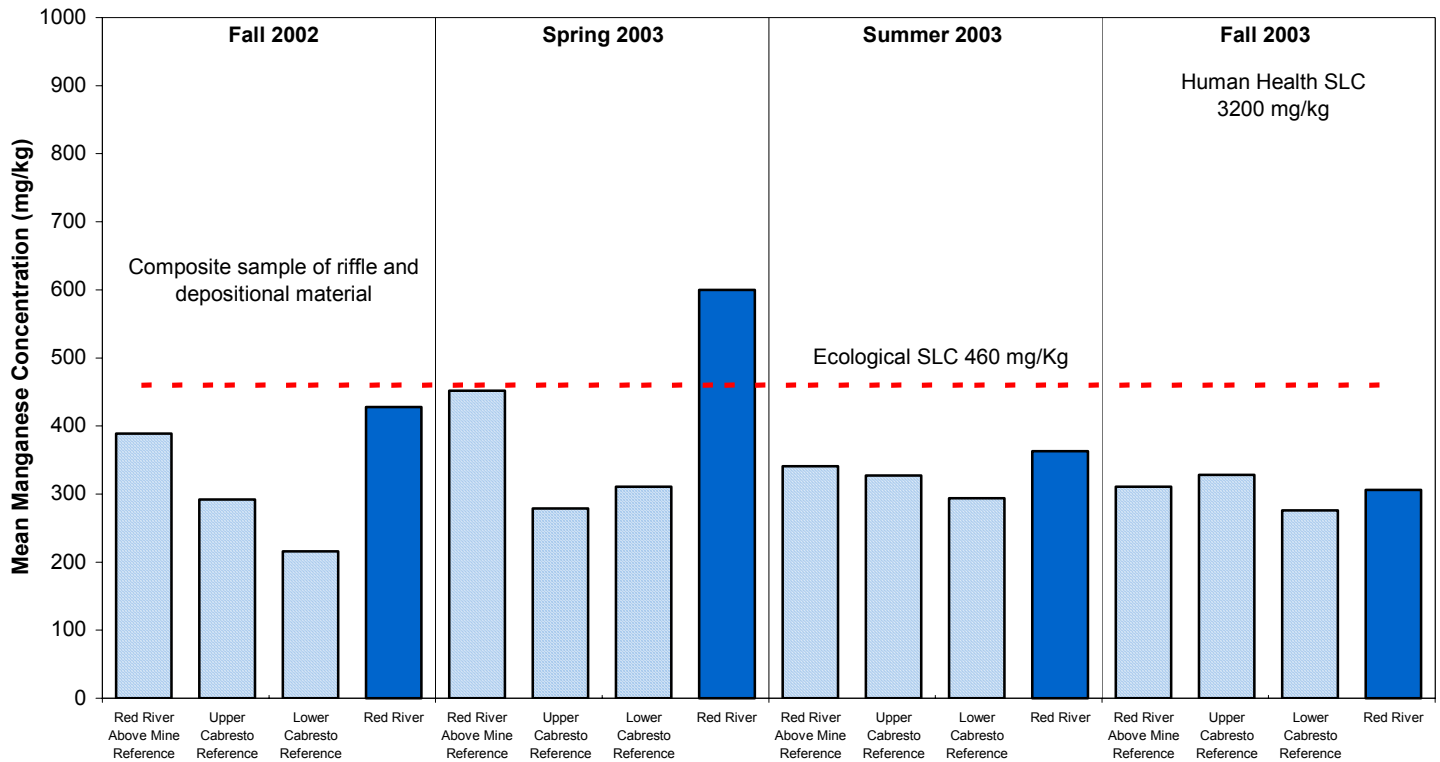
DEPOSITIONAL



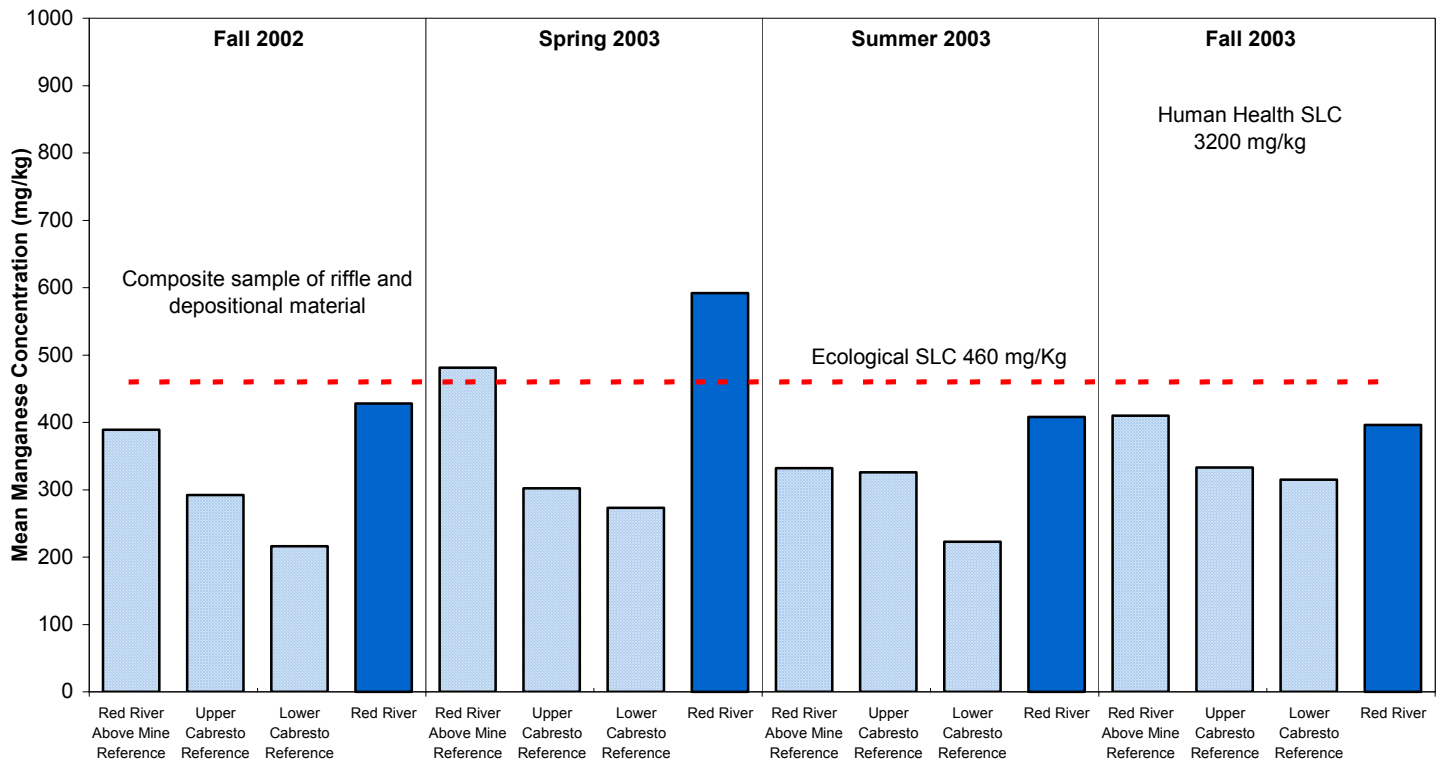
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

Figure 3-10
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – MANGANESE

RIFFLE



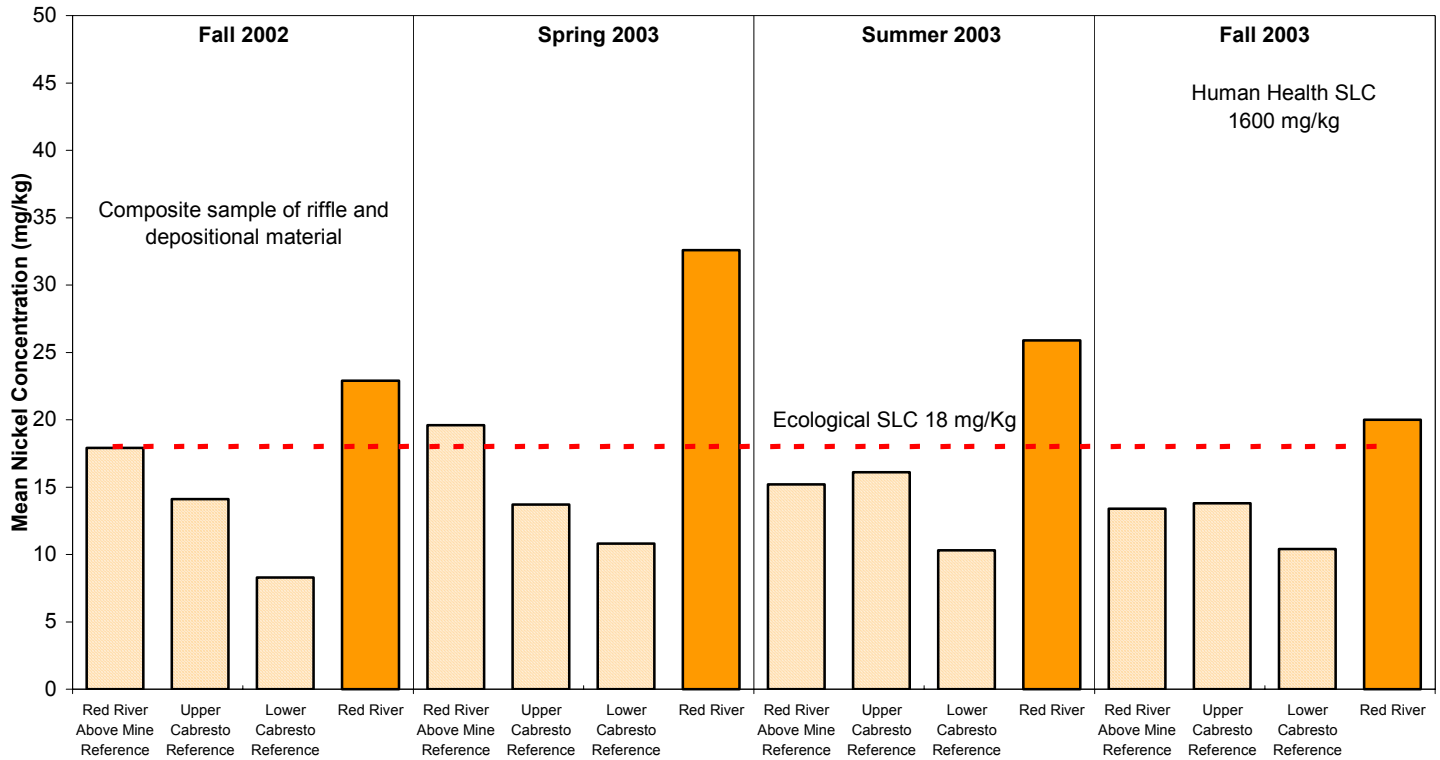
DEPOSITIONAL



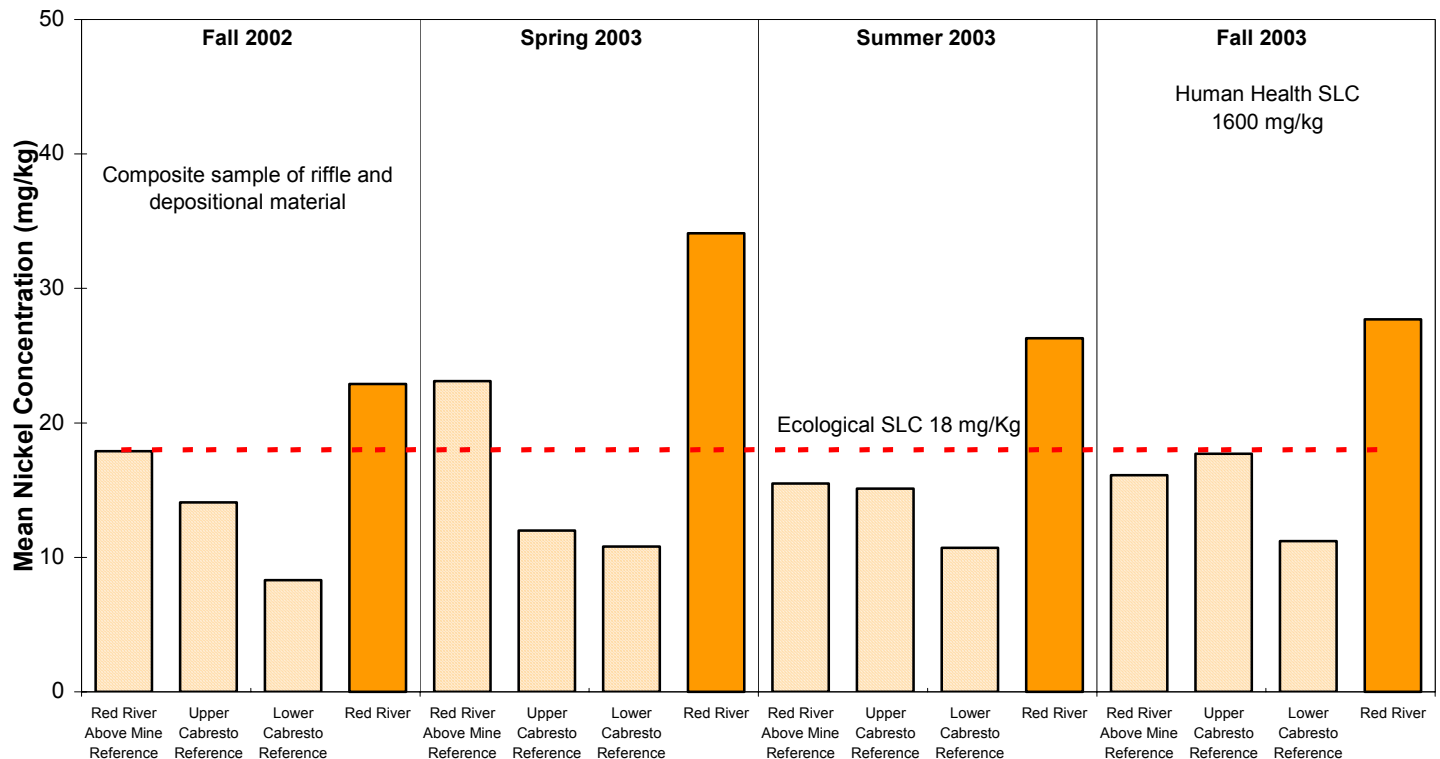
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

Figure 3-11
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – NICKEL

RIFFLE



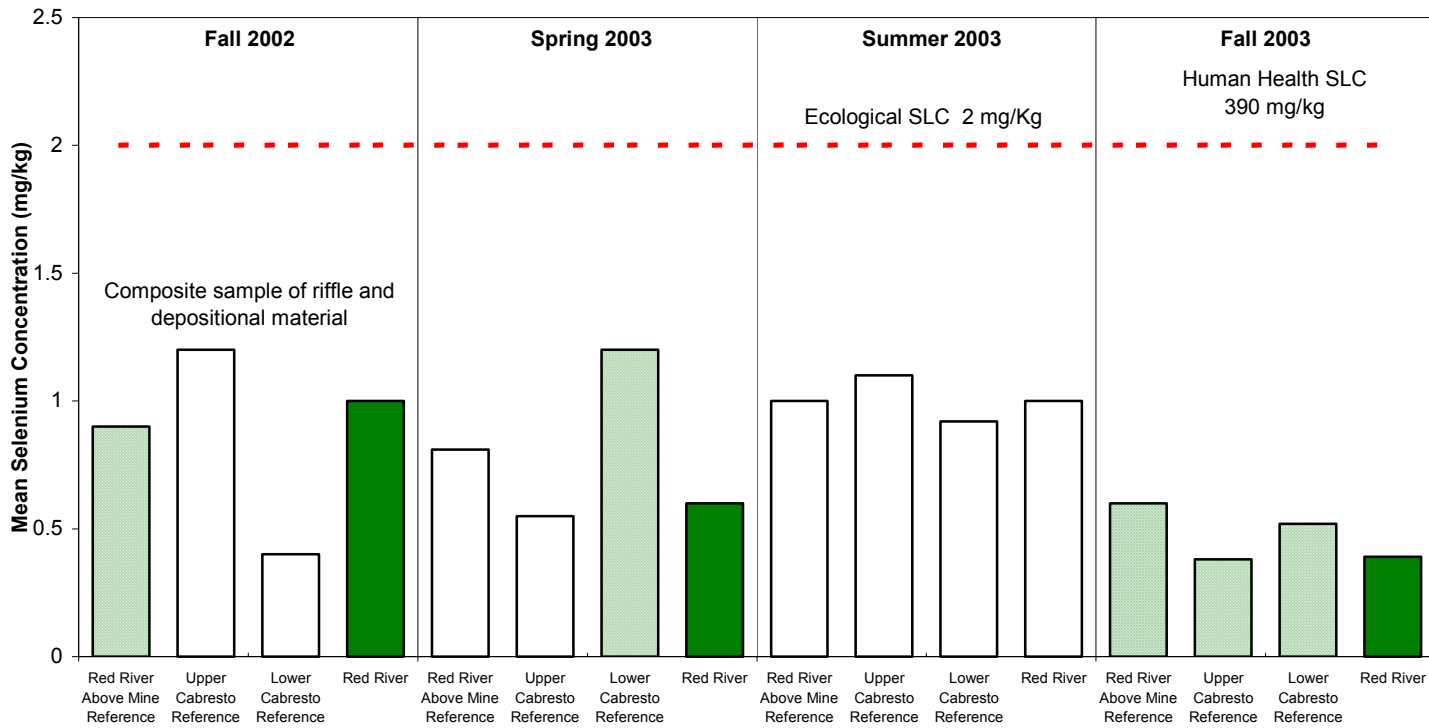
DEPOSITIONAL



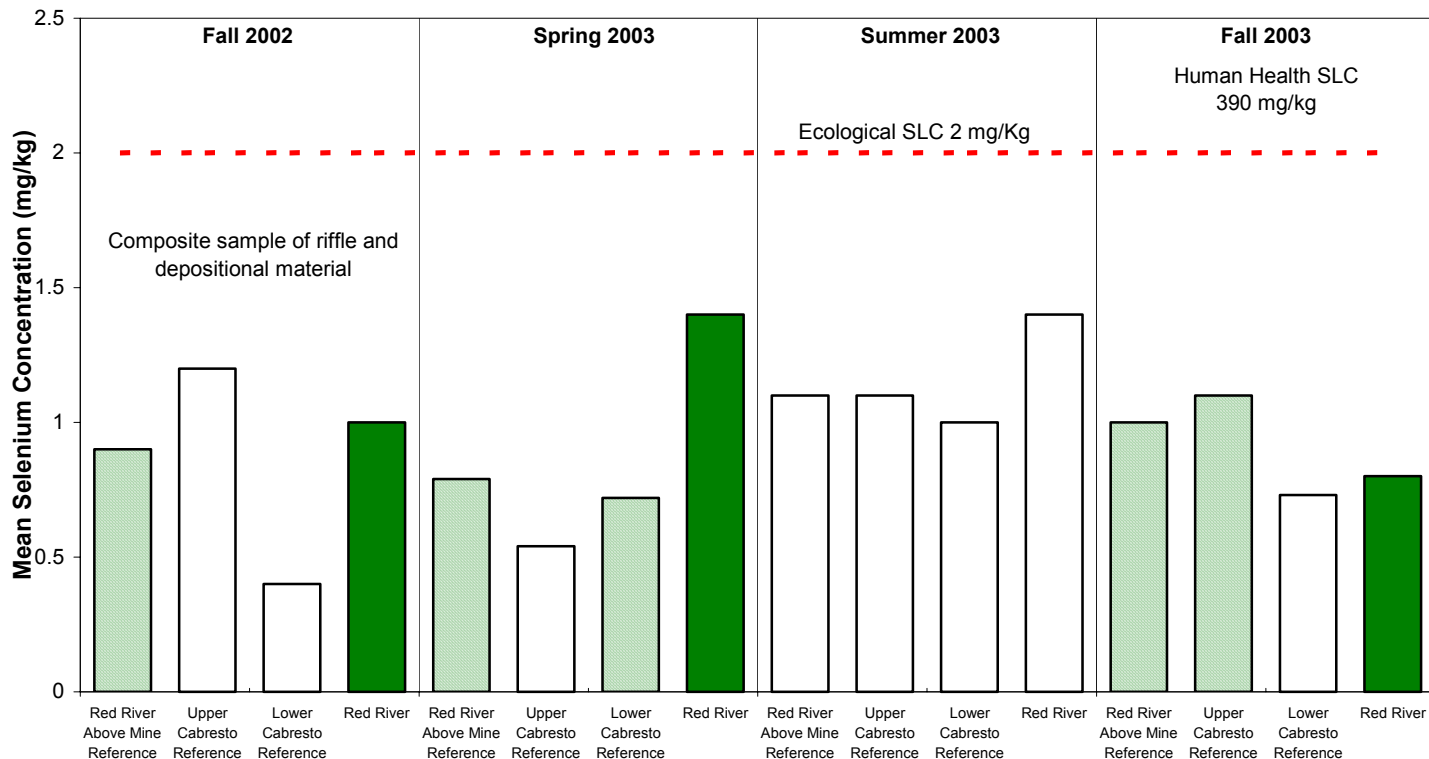
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 3-12
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – SELENIUM**

RIFFLE



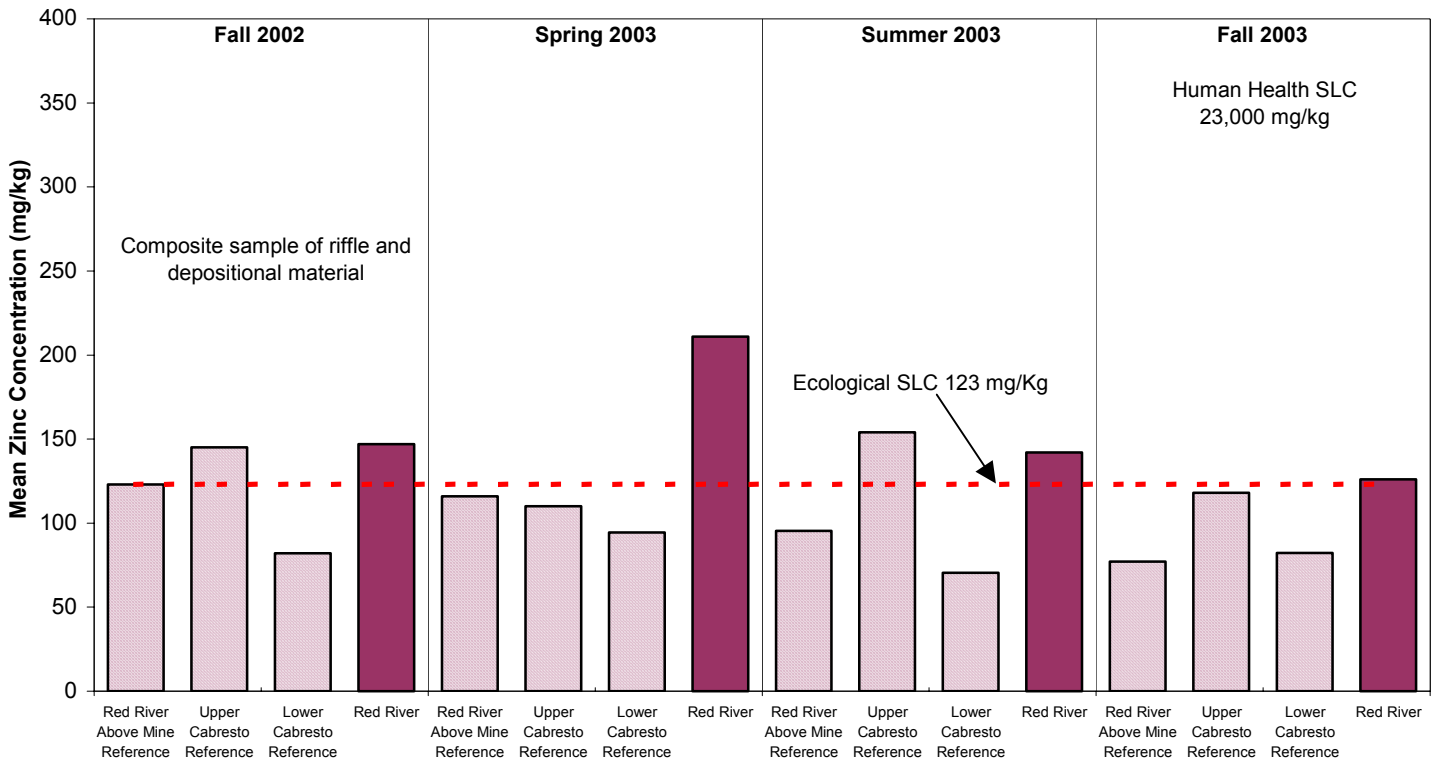
DEPOSITIONAL



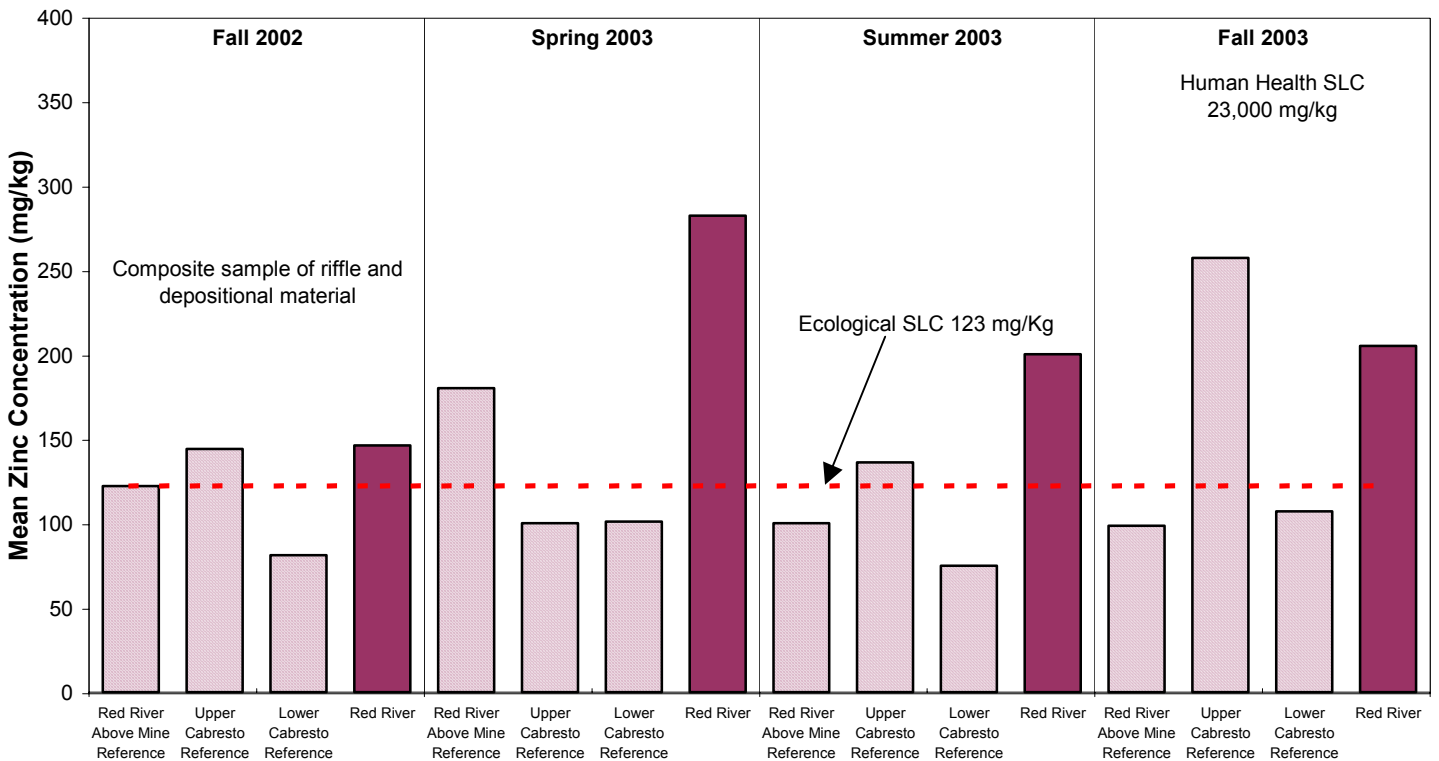
Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

**Figure 3-13
Comparison of Mean Metal Concentrations in Riffle and
Depositional Sediments in the Red River and Reference Areas – ZINC**

RIFFLE



DEPOSITIONAL



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

Figure 3-14
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – ARSENIC

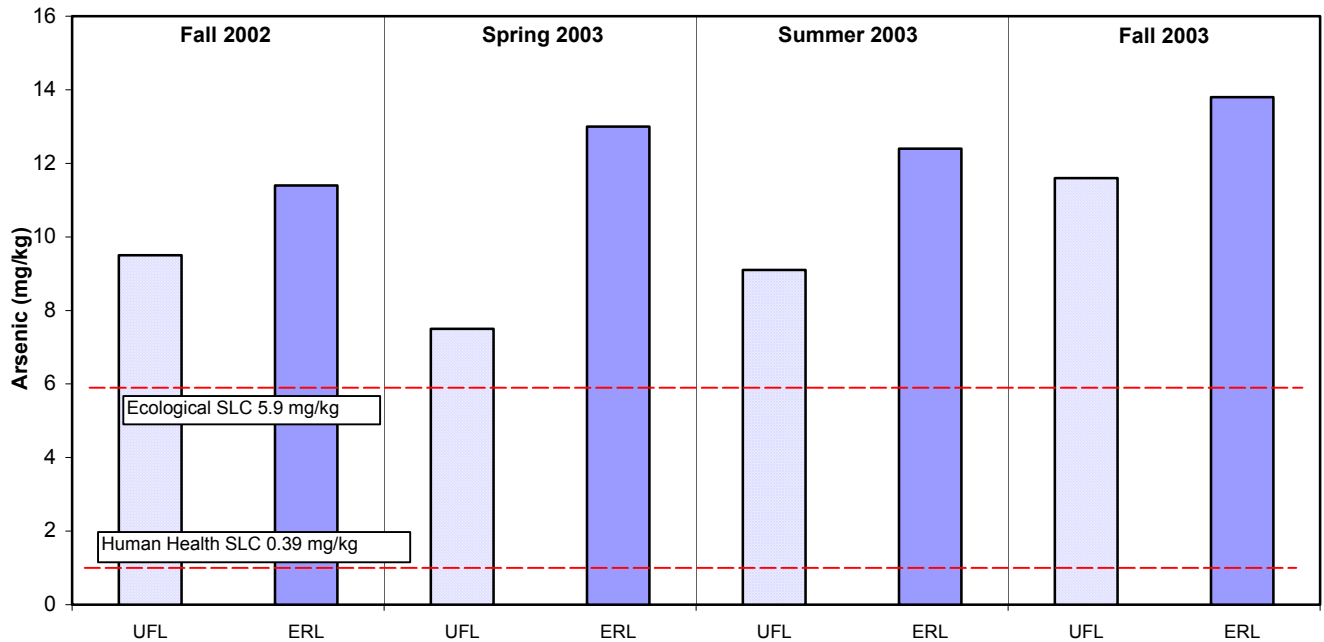
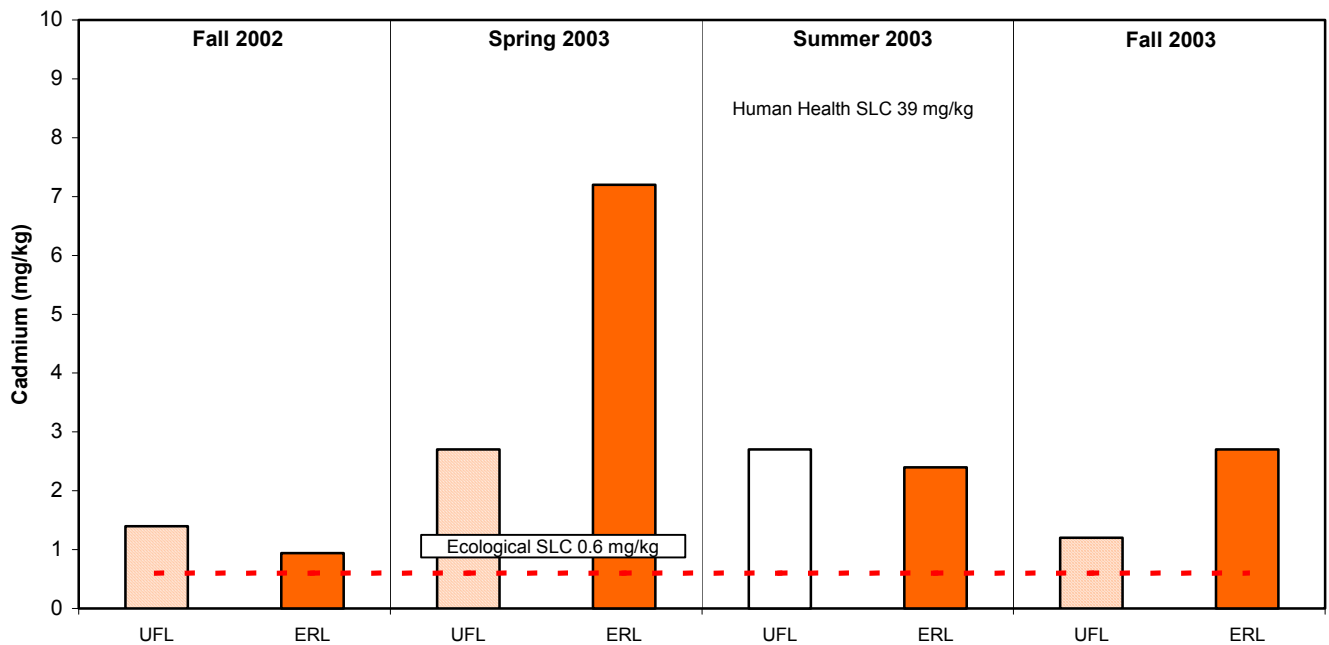


Figure 3-15
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – CADMIUM



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

UFL= Upper Fawn Lake
 ERL= Eagle Rock Lake

Figure 3-16
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – COBALT

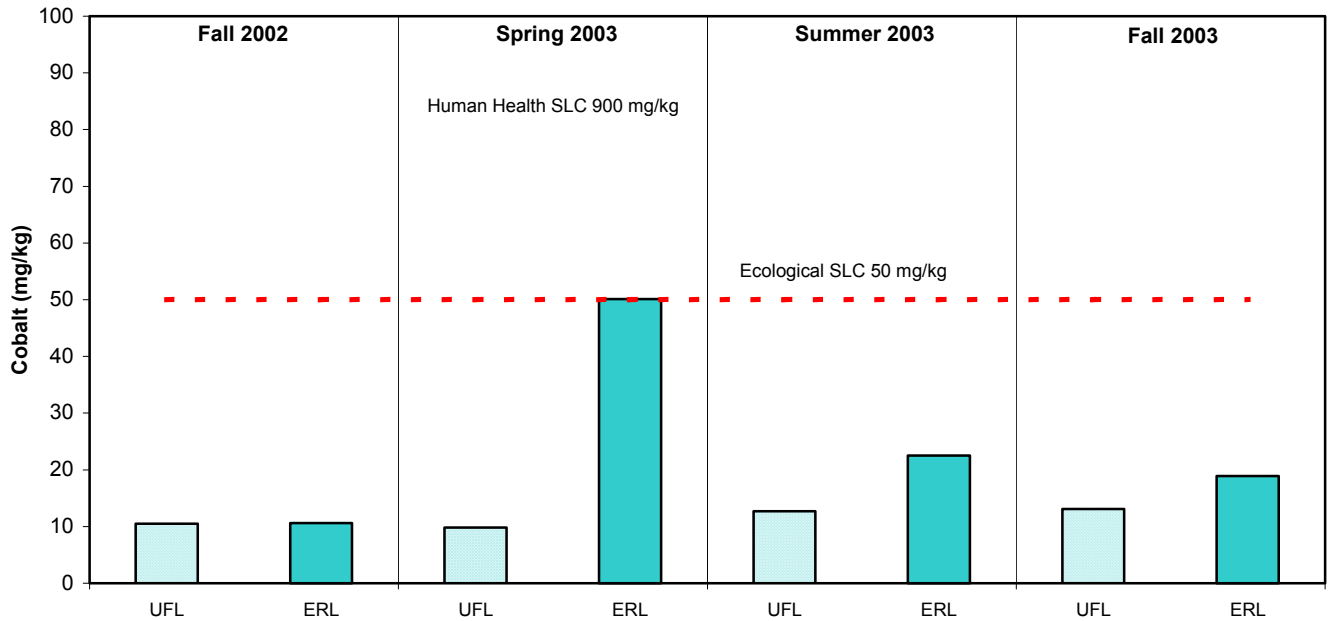
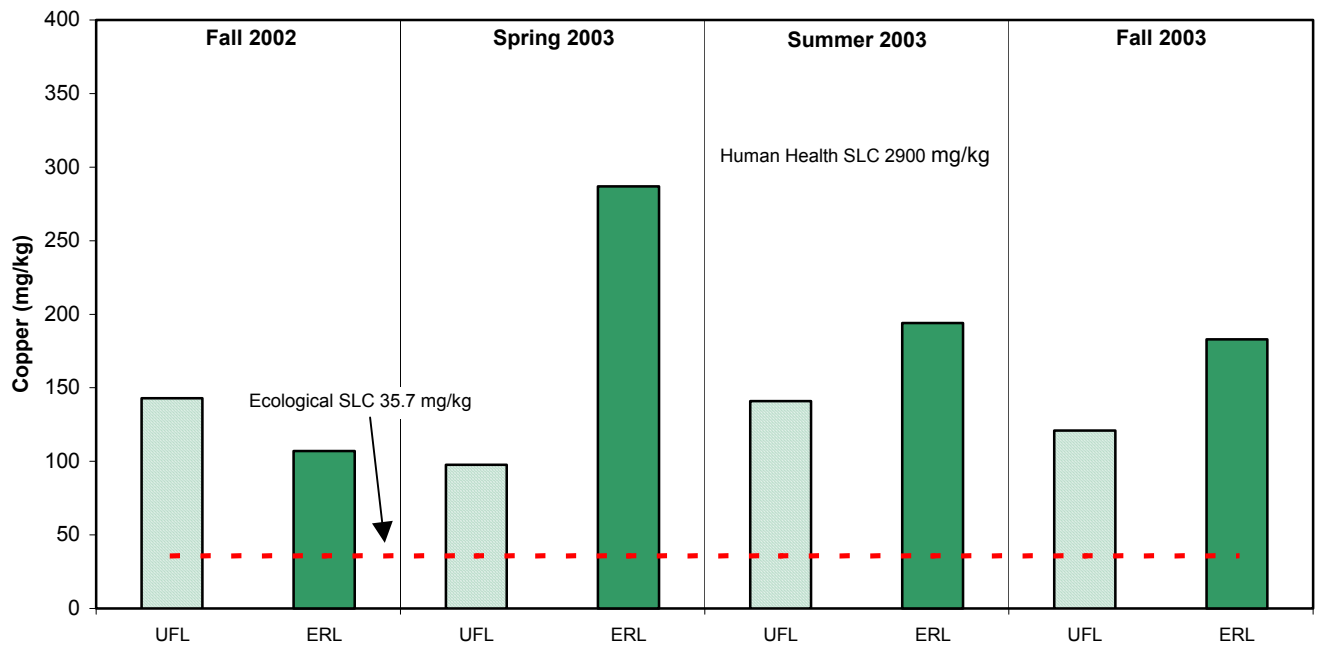


Figure 3-17
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – COPPER



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

UFL= Upper Fawn Lake
 ERL= Eagle Rock Lake

Figure 3-18
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – IRON

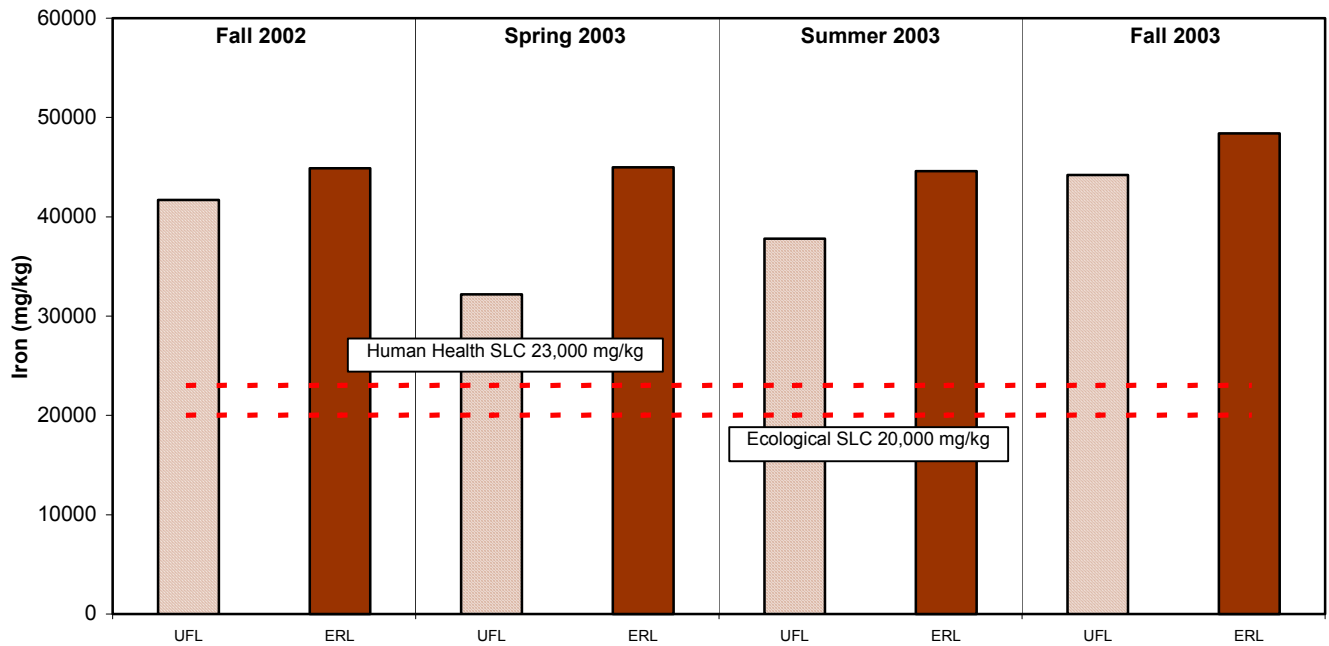
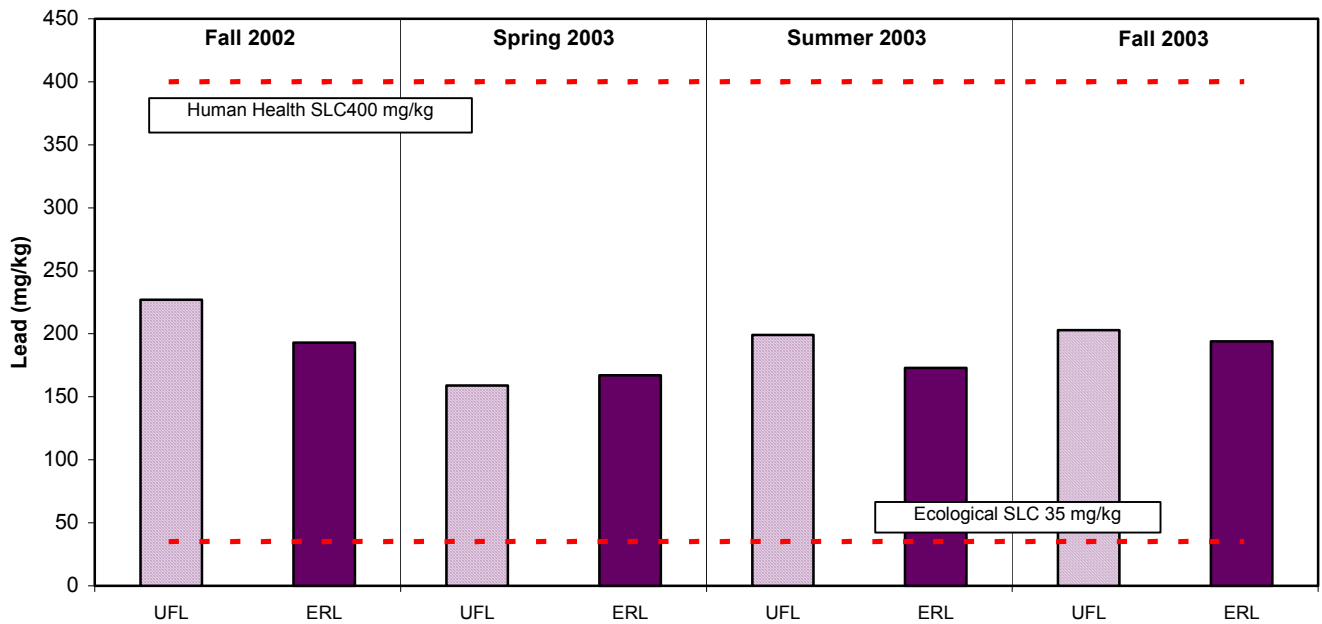


Figure 3-19
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – LEAD



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

UFL= Upper Fawn Lake
 ERL= Eagle Rock Lake

Figure 3-20
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – MANGANESE

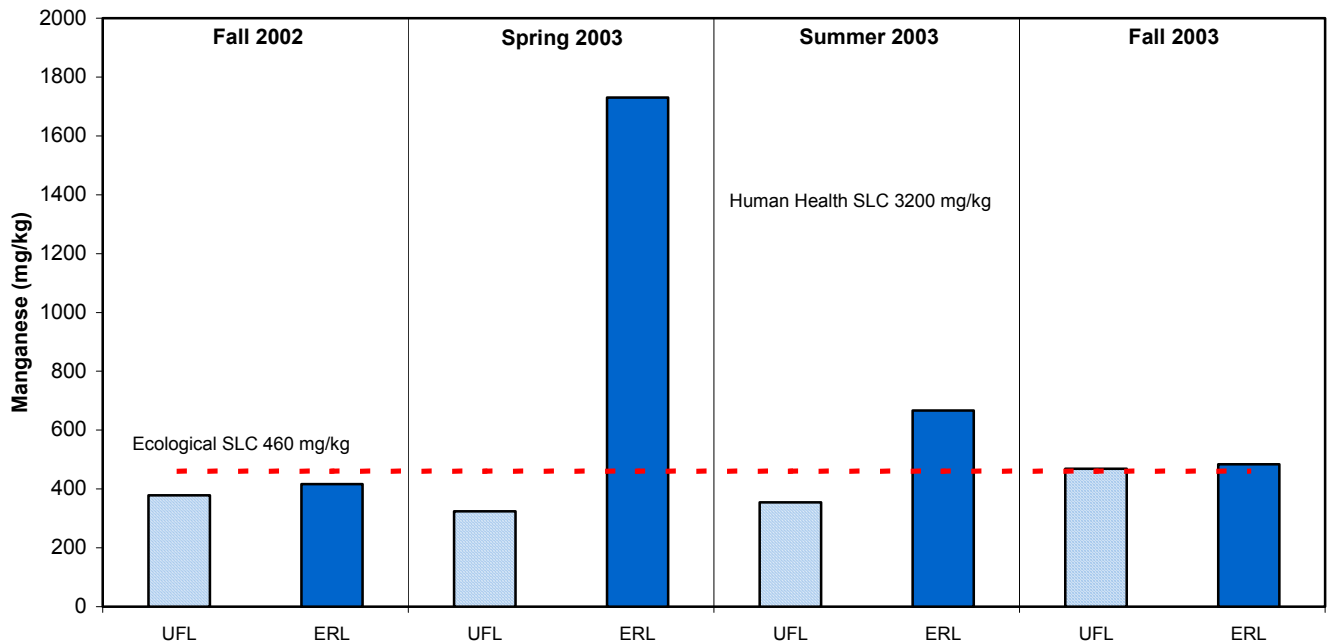
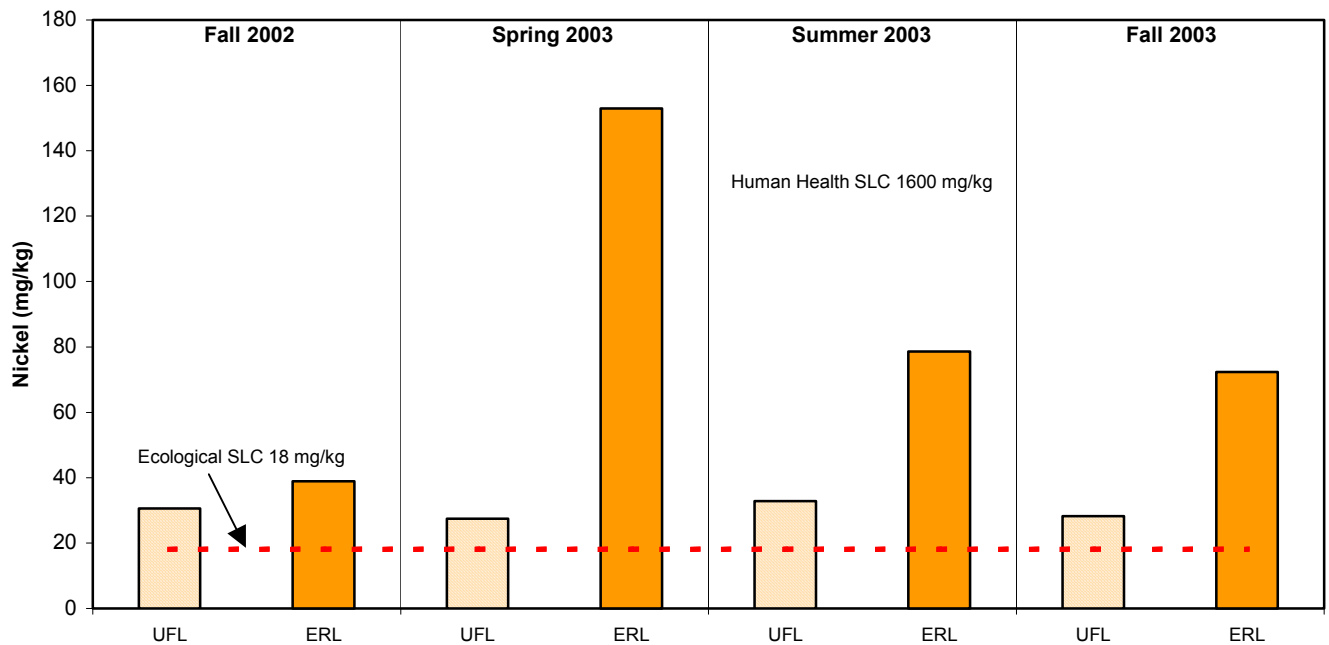


Figure 3-21
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – NICKEL



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

UFL= Upper Fawn Lake
 ERL= Eagle Rock Lake

Figure 3-22
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – SELENIUM

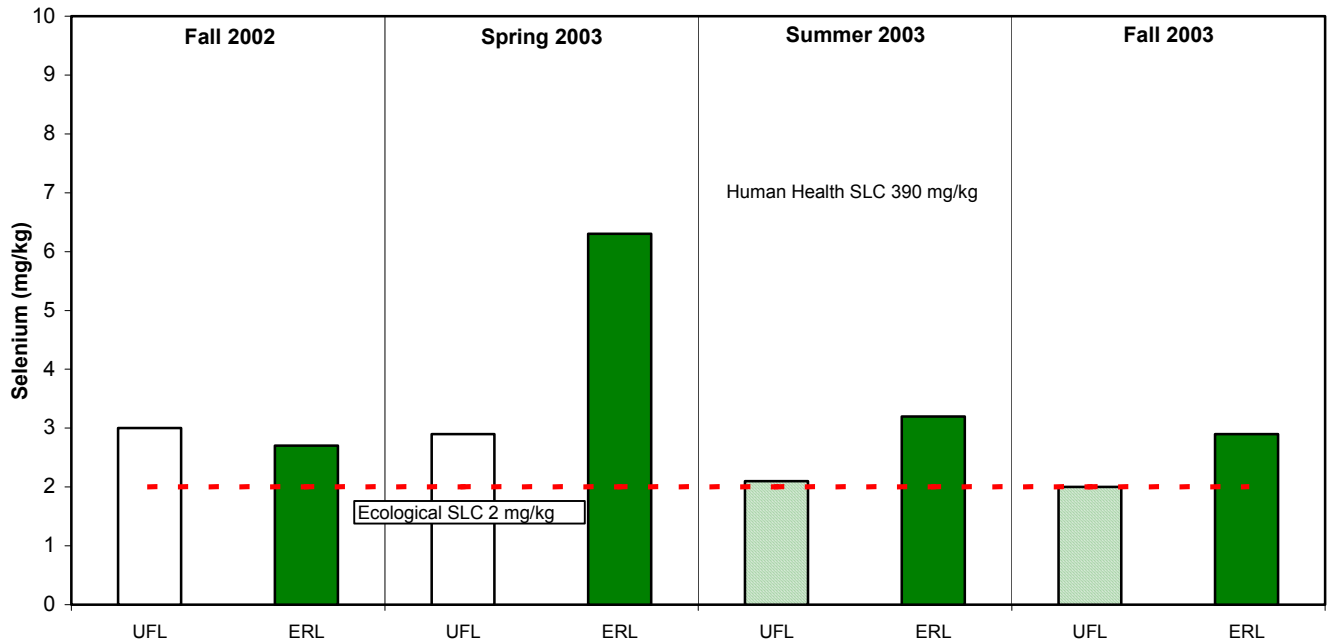
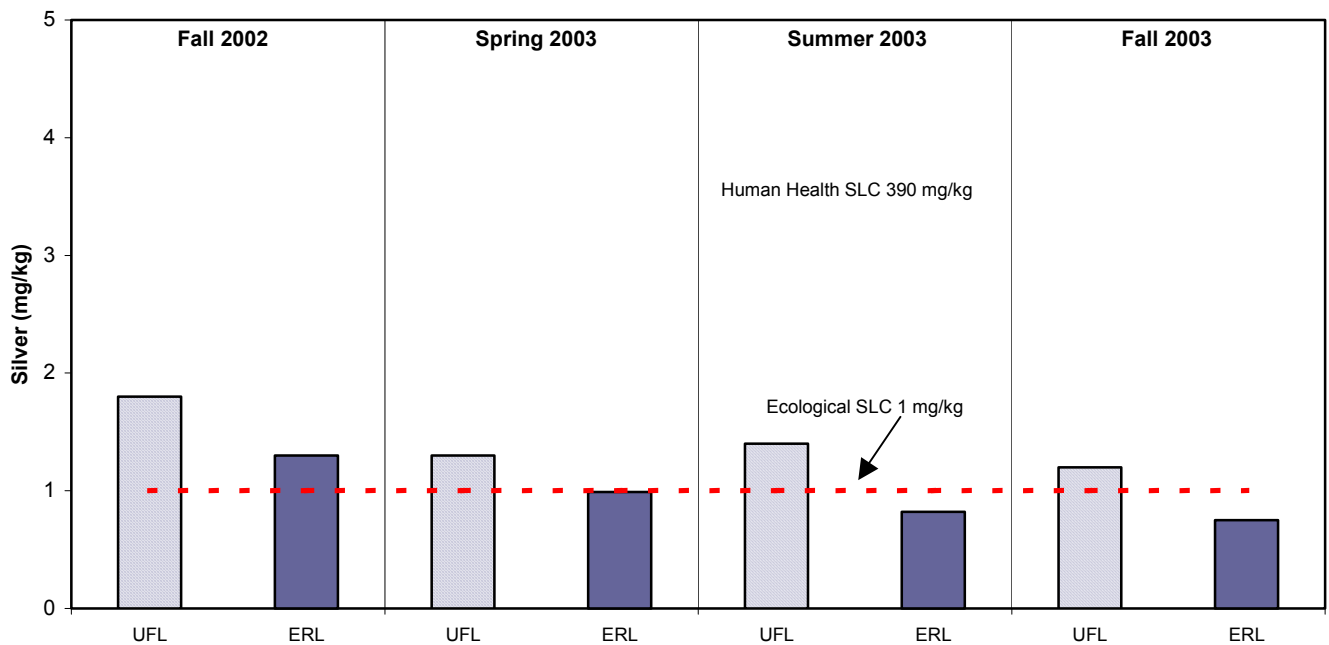


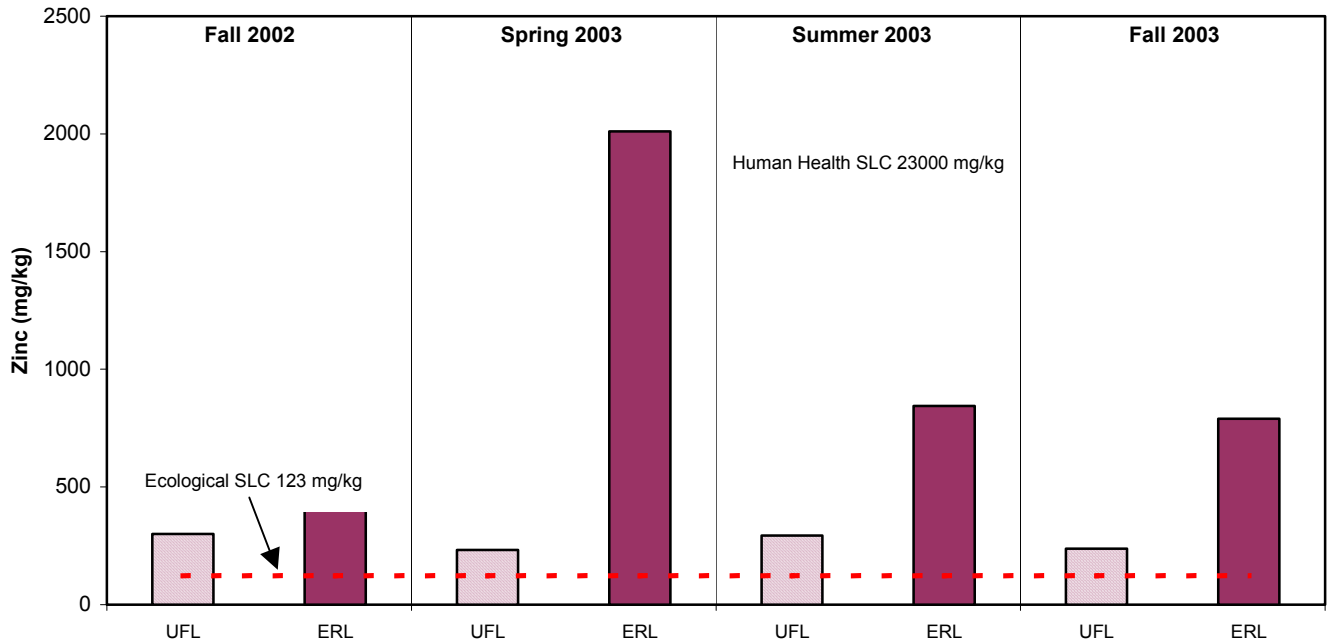
Figure 3-23
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – SILVER



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

UFL= Upper Fawn Lake
 ERL= Eagle Rock Lake

Figure 3-24
Comparison of Mean Metal Concentrations in Upper Fawn Lake and
Eagle Rock Lake Sediments – ZINC



Note: A white bar indicates that 50% or more of the values were not detected, and a mean was not calculated. In these cases, the maximum detected value or the maximum reporting limit, whichever was greater, was plotted.

UFL= Upper Fawn Lake
 ERL= Eagle Rock Lake

APPENDIX A-3
SEDIMENT
VALIDATED ANALYTICAL RESULTS

Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-1	LR-11A	LR-13	LR-16	LR-16	LR-5
	Sample Date		9/30/2002	9/27/2002	9/26/2002	9/26/2002	10/8/2002	9/30/2002
	Sample ID		LR-1-T01N-SED	LR-11A-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-5-T01N-SED
Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR	
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<5.6	38.	3.	25.2	-	33.7
Chloride	mg/kg-Dry	T	<40.2	<42.6	2.1	4.7	-	<44.
Fluoride	mg/Kg-dry	T	0.39	0.36	0.3	0.29	-	0.53
Nitrate	mg/kg-Dry	T	<3.3	<3.5	0.55	<0.36	-	<8.8
Phosphorus	mg/Kg-dry	T	1240.	1450.	16.2	356.	-	1550.
Sulfate	mg/kg-Dry	T	1520.	1180.	<129.	<176.	-	304.
Total Kjeldahl Nitrogen	mg/Kg-dry	T	421.	642.	60.7	501.	-	658.
Total Organic Carbon	mg/Kg-dry	T	6880.	7220.	<129.	14200.	-	6620.
Laboratory Parameters								
pH	SU	T	5.9	6.6	6.4	6.6	-	6.2
Solids, Percent	%	T	62.3	58.7	82.7	56.9	53.4	56.9
Specific Conductance	umhos/cm	T	288.	328.	129.	235.	-	247.
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	13.8	17.6	3.2	9.5	-	14.8
Sodium Absorption Ratio	ratio	T	0.25	0.28	0.17	0.55	-	0.45
Metals								
Aluminum	mg/Kg-dry	T	10300.	11100.	4500.	8620.	-	10900.
Antimony	mg/Kg-dry	T	0.09	0.08	<0.04	0.07	-	0.1
Arsenic	mg/Kg-dry	T	9.5	10.2	2.7	7.	-	9.6
Barium	mg/Kg-dry	T	495.	475.	49.6	383.	-	473.
Beryllium	mg/Kg-dry	T	1.	1.3	0.49	1.1	-	1.1
Boron	mg/Kg-dry	T	1.2	1.3	0.64	1.5	-	<1.7
Cadmium	mg/Kg-dry	T	0.24	0.64	0.4	0.79	-	0.33
Calcium	mg/Kg-dry	T	1780.	2620.	1150.	3120.	-	2330.
Chromium	mg/Kg-dry	T	18.1	20.7	11.5	16.2	-	20.2
Cobalt	mg/Kg-dry	T	8.9	15.2	11.8	13.6	-	9.6
Copper	mg/Kg-dry	T	59.7	68.6	31.8	52.9	-	60.2
Iron	mg/Kg-dry	T	34700.	36200.	11000.	27200.	-	32500.
Lead	mg/Kg-dry	T	101.	118.	20.6	76.9	-	87.9
Magnesium	mg/Kg-dry	T	4450.	5150.	3030.	4110.	-	4780.
Manganese	mg/Kg-dry	T	479.	869.	737.	788.	-	444.
Mercury	mg/Kg-dry	T	<0.024	<0.026	<0.019	<0.029	-	<0.029
Molybdenum	mg/Kg-dry	T	14.2	25.	9.6	16.7	-	28.7

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-1	LR-11A	LR-13	LR-16	LR-16	LR-5
	Sample Date	Sample ID	9/30/2002	9/27/2002	9/26/2002	9/26/2002	10/8/2002	9/30/2002
	Exposure Area		LR-1-T01N-SED	LR-11A-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-5-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Nickel	mg/Kg-dry	T	23.3	37.8	29.	35.5	-	27.8
Potassium	mg/Kg-dry	T	2920. J	3480. J	924. J	2600. J	-	2910. J
Selenium	mg/Kg-dry	T	1.4 J	1.5 J	0.33 J	1.1 J	-	1.6 J
Silver	mg/Kg-dry	T	0.49	0.71	<0.16	0.35	-	0.52
Sodium	mg/Kg-dry	T	285.	285.	79.7	231.	-	301.
Thallium	mg/Kg-dry	T	0.19	0.21	0.08	0.17	-	0.22
Vanadium	mg/Kg-dry	T	19.5	21.8	12.5	19.7	-	21.8 J
Zinc	mg/Kg-dry	T	162.	289.	188.	277.	-	203. J
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,1,2-Trichloroethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,1-Dichloroethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,1-Dichloroethene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,2,4-Trichlorobenzene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,2-Dichlorobenzene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,2-Dichloroethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,2-Dichloroethene (total)	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,2-Dichloropropane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,3-Dichlorobenzene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
1,4-Dichlorobenzene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
2-Butanone	mg/kg-Dry	T	0.008 J	-	-	-	<0.016	-
2-Hexanone	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
4-Methyl-2-pentanone	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Acetone	mg/kg-Dry	T	0.066	-	-	-	0.022	-
Benzene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Bromodichloromethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Bromoform	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Bromomethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Carbon disulfide	mg/kg-Dry	T	0.002 J	-	-	-	<0.016	-
Carbon tetrachloride	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Chlorobenzene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-

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T = Total Fraction

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-1	LR-11A	LR-13	LR-16	LR-16	LR-5
	Sample Date	Sample ID	9/30/2002	9/27/2002	9/26/2002	9/26/2002	10/8/2002	9/30/2002
	Exposure Area		LR-1-T01N-SED	LR-11A-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-5-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Chloroethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Chloroform	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Chloromethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
cis-1,2-Dichloroethene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
cis-1,3-Dichloropropene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Dibromochloromethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Dichlorodifluoromethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Ethylbenzene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Methylene chloride	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Styrene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Tetrachloroethene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Toluene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Total Xylene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
trans-1,2-Dichloroethene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
trans-1,3-Dichloropropene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Trichloroethene	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Trichlorofluoromethane	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Vinyl chloride	mg/kg-Dry	T	<0.014	-	-	-	<0.016	-
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2,4,5-Trichlorophenol	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
2,4,6-Trichlorophenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2,4-Dichlorophenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2,4-Dimethylphenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2,4-Dinitrophenol	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
2,4-Dinitrotoluene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2,6-Dinitrotoluene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2-Chloronaphthalene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2-Chlorophenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2-Methylnaphthalene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2-Methylphenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
2-Nitroaniline	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
2-Nitrophenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
3,3-Dichlorobenzidine	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-1	LR-11A	LR-13	LR-16	LR-16	LR-5
	Sample Date	Sample ID	9/30/2002	9/27/2002	9/26/2002	9/26/2002	10/8/2002	9/30/2002
	Exposure Area		LR-1-T01N-SED	LR-11A-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-5-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
3-Nitroaniline	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
4-Bromophenyl phenyl ether	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
4-Chloro-3-methylphenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
4-Chloroaniline	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
4-Methylphenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
4-Nitroaniline	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
4-Nitrophenol	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
Acenaphthene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Acenaphthylene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Anthracene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Benzaldehyde	mg/kg-Dry	T	0.092	-	-	0.075	-	-
Benzo(a)anthracene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Benzo(a)pyrene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Benzo(b)fluoranthene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Benzo(g,h,i)perylene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Benzo(k)fluoranthene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Bis(2-chloroethyl)ether	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Butyl benzyl phthalate	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Carbazole	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Chrysene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Dibenz(a,h)anthracene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Dibenzofuran	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Dichlorodiisopropyl ether	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Diethylphthalate	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Dimethylphthalate	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Di-n-Butyl phthalate	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Di-n-Octyl phthalate	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Fluoranthene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Fluorene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Hexachlorobenzene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-1	LR-11A	LR-13	LR-16	LR-16	LR-5
	Sample Date	Sample ID	9/30/2002	9/27/2002	9/26/2002	9/26/2002	10/8/2002	9/30/2002
	Exposure Area		LR-1-T01N-SED	LR-11A-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-5-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Hexachlorobutadiene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Hexachlorocyclopentadiene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Hexachloroethane	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Isophorone	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Naphthalene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Nitrobenzene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
N-Nitrosodiphenylamine	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Pentachlorophenol	mg/kg-Dry	T	<1.3	-	-	<1.4	-	-
Phenanthrene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Phenol	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Pyrene	mg/kg-Dry	T	<0.53	-	-	<0.58	-	-
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	<0.12	-	-	<0.12	-	-
2,6-Pyridinediamine,	mg/kg-Dry	T	<0.12	-	-	<0.12	-	-
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	<0.12	-	-	<0.12	-	-
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	<0.12	-	-	<0.12	-	-
Pentaerythritol tetranitrate	mg/kg-Dry	T	<5.	-	-	<5.	-	-
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	<0.0027	<0.0029	-	<0.003	-	-
Aldrin	mg/kg-Dry	T	<0.0027	<0.0029	-	<0.003	-	-
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0027	<0.0029	-	<0.003	-	-
Aroclor 1016	mg/kg-Dry	T	<0.053	-	-	<0.058	-	-
Aroclor 1221	mg/kg-Dry	T	<0.11	-	-	<0.12	-	-
Aroclor 1232	mg/kg-Dry	T	<0.053	-	-	<0.058	-	-
Aroclor 1242	mg/kg-Dry	T	<0.053	-	-	<0.058	-	-
Aroclor 1248	mg/kg-Dry	T	<0.053	-	-	<0.058	-	-
Aroclor 1254	mg/kg-Dry	T	<0.053	-	-	<0.058	-	-
Aroclor 1260	mg/kg-Dry	T	<0.053	-	-	<0.058	-	-
beta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0027	<0.0029	-	<0.003	-	-
delta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0027	<0.0029	-	<0.003	-	-
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	<0.0053	<0.0056	-	<0.0058	-	-
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	<0.0053	<0.0056	-	<0.0058	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-1	LR-11A	LR-13	LR-16	LR-16	LR-5
	Sample Date	Sample ID	9/30/2002	9/27/2002	9/26/2002	9/26/2002	10/8/2002	9/30/2002
	Exposure Area		LR-1-T01N-SED	LR-11A-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-5-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	<0.0053 J	<0.0056 J	-	<0.0058 J	-	-
Dieldrin	mg/kg-Dry	T	<0.0053 :	<0.0056 J	-	<0.0058 :	-	-
Endosulfan I	mg/kg-Dry	T	<0.0027 :	<0.0029 J	-	<0.003 :	-	-
Endosulfan II	mg/kg-Dry	T	<0.0053 :	<0.0056 J	-	<0.0058 :	-	-
Endosulfan sulfate	mg/kg-Dry	T	<0.0053 :	<0.0056 J	-	<0.0058 :	-	-
Endrin	mg/kg-Dry	T	<0.0053 :	<0.0056 J	-	<0.0058 :	-	-
Endrin aldehyde	mg/kg-Dry	T	<0.0053 :	<0.0056 J	-	<0.0058 :	-	-
Endrin ketone	mg/kg-Dry	T	<0.0053 :	<0.0056 J	-	<0.0058 :	-	-
g-Chlordane	mg/kg-Dry	T	<0.0027 :	<0.0029 J	-	<0.003 :	-	-
Heptachlor	mg/kg-Dry	T	<0.0027 :	<0.0029 J	-	<0.003 :	-	-
Heptachlor epoxide	mg/kg-Dry	T	<0.0027 :	<0.0029 J	-	<0.003 :	-	-
Lindane	mg/kg-Dry	T	<0.0027 :	<0.0029 J	-	<0.003 :	-	-
Methoxychlor	mg/kg-Dry	T	<0.027 :	<0.029 J	-	<0.03 :	-	-
Toxaphene	mg/kg-Dry	T	<0.27 :	<0.29 J	-	<0.3 :	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Units	Exposure Area Fraction	LR-8A	LR-8A	RR-1	RR-10	RR-10A1	RR-11A1
			9/27/2002 LR-8A-T01N-SED	10/8/2002 LR-8A-T01N-SED	10/4/2002 RR-1-T01N-SED	10/3/2002 RR-10-T01N-SED	10/3/2002 RR-10A1-T01N-SED	10/3/2002 RR-11A1-T01N-SEDR E SWR
General Chemistry								
Ammonia	mg/Kg-dry	T	49.9	-	20.6	<26.	7.8	-
Chloride	mg/kg-Dry	T	<42.	-	<34.8	<32.5	<33.	-
Fluoride	mg/Kg-dry	T	0.44	-	-	0.35	0.19	-
Nitrate	mg/kg-Dry	T	<3.4	-	<1.4	<2.6	<2.7	-
Phosphorus	mg/Kg-dry	T	1660.	-	34.6	548.	14.7	-
Sulfate	mg/kg-Dry	T	257.	-	<1.4	42.4	43.1	-
Total Kjeldahl Nitrogen	mg/Kg-dry	T	570.	-	515.	42.7	38.8	-
Total Organic Carbon	mg/Kg-dry	T	10200.	-	1670.	1020.	<132.	-
Laboratory Parameters								
pH	SU	T	6.6	-	6.8	6.8	6.7	-
Solids, Percent	%	T	59.6	45.3	71.9	77.1	75.9	-
Specific Conductance	umhos/cm	T	484.	-	148.	75.4	85.3	-
Geotechnical								
Organic Soils	%	T	-	-	1.68	2.22	2.3	-
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	14.7	-	7.8	6.6	7.1	-
Sodium Absorption Ratio	ratio	T	0.71	-	0.09	0.1	0.12	-
Metals								
Aluminum	mg/Kg-dry	T	9210.	-	7650.	4270.	5330.	-
Antimony	mg/Kg-dry	T	0.08	-	<0.23	<0.19	<0.21	-
Arsenic	mg/Kg-dry	T	8.9	-	2.3	4.	6.	-
Barium	mg/Kg-dry	T	466.	-	82.2	140.	263.	-
Beryllium	mg/Kg-dry	T	1.	-	0.4	0.35	0.43	-
Boron	mg/Kg-dry	T	1.5	-	<0.52	<1.4	<1.9	-
Cadmium	mg/Kg-dry	T	0.26	-	<0.031	<0.03	0.068	-
Calcium	mg/Kg-dry	T	3060.	-	3620.	1160.	1440.	-
Chromium	mg/Kg-dry	T	16.8	-	18.	9.3	12.3	-
Cobalt	mg/Kg-dry	T	7.8	-	6.4	4.8	7.4	-
Copper	mg/Kg-dry	T	56.6	-	43.1	18.8	24.7	-
Iron	mg/Kg-dry	T	31700.	-	19300.	15000.	20400.	-
Lead	mg/Kg-dry	T	96.3	-	54.9	25.7	42.4	-
Magnesium	mg/Kg-dry	T	4150.	-	4900.	2520.	3080.	-
Manganese	mg/Kg-dry	T	348.	-	409.	199.	273.	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-8A	LR-8A	RR-1	RR-10	RR-10A1	RR-11A1
	Sample Date		9/27/2002	10/8/2002	10/4/2002	10/3/2002	10/3/2002	10/3/2002
	Sample ID		LR-8A-T01N-SED	LR-8A-T01N-SED	RR-1-T01N-SED	RR-10-T01N-SED	RR-10A1-T01N-SED	RR-11A1-T01N-SEDR E
Exposure Area	SWR		SWR		RURR	SWR		SWR
	Units	Fraction						
Mercury	mg/Kg-dry	T	<0.025 J	-	<0.021	<0.021	<0.019	-
Molybdenum	mg/Kg-dry	T	30.8	-	5.5	3.	5.8	-
Nickel	mg/Kg-dry	T	22.	-	11.6	14.8	16.2	-
Potassium	mg/Kg-dry	T	3000. J	-	1440. J	1320. J	1790. J	-
Selenium	mg/Kg-dry	T	1.3 J	-	0.42	0.63	0.84	-
Silver	mg/Kg-dry	T	0.49	-	<0.15	<0.14	0.18	-
Sodium	mg/Kg-dry	T	347.	-	68.5	94.2	131.	-
Thallium	mg/Kg-dry	T	0.19	-	<0.12	<0.095	<0.1	-
Vanadium	mg/Kg-dry	T	18.	-	26.6	9.2	11.7	-
Zinc	mg/Kg-dry	T	173.	-	102.	64.4	74.3	-
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,1,2-Trichloroethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,1-Dichloroethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,1-Dichloroethene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,2,4-Trichlorobenzene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,2-Dichlorobenzene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,2-Dichloroethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,2-Dichloroethene (total)	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,2-Dichloropropane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,3-Dichlorobenzene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
1,4-Dichlorobenzene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
2-Butanone	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
2-Hexanone	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
4-Methyl-2-pentanone	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Acetone	mg/kg-Dry	T	-	0.068	-	-	-	<0.009 J
Benzene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Bromodichloromethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Bromoform	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Bromomethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Carbon disulfide	mg/kg-Dry	T	-	0.006 J	-	-	-	<0.009 J

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-8A	LR-8A	RR-1	RR-10	RR-10A1	RR-11A1
	Sample Date	Sample ID	9/27/2002	10/8/2002	10/4/2002	10/3/2002	10/3/2002	10/3/2002
	Exposure Area		LR-8A-T01N-SED	LR-8A-T01N-SED	RR-1-T01N-SED	RR-10-T01N-SED	RR-10A1-T01N-SED	RR-11A1-T01N-SEDR E SWR
Units	Fraction	SWR	SWR	RURR	SWR	SWR	SWR	
Carbon tetrachloride	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Chlorobenzene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Chloroethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Chloroform	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Chloromethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
cis-1,2-Dichloroethene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
cis-1,3-Dichloropropene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Dibromochloromethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Dichlorodifluoromethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Ethylbenzene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Methylene chloride	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Styrene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Tetrachloroethene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Toluene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Total Xylene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
trans-1,2-Dichloroethene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
trans-1,3-Dichloropropene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Trichloroethene	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Trichlorofluoromethane	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Vinyl chloride	mg/kg-Dry	T	-	<0.021	-	-	-	<0.009 J
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	<0.55	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg-Dry	T	<1.4	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
2,4-Dichlorophenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
2,4-Dimethylphenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
2,4-Dinitrophenol	mg/kg-Dry	T	<1.4	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg-Dry	T	<0.55	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg-Dry	T	<0.55	-	-	-	-	-
2-Chloronaphthalene	mg/kg-Dry	T	<0.55 J	-	-	-	-	-
2-Chlorophenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
2-Methylnaphthalene	mg/kg-Dry	T	<0.55	-	-	-	-	-
2-Methylphenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
2-Nitroaniline	mg/kg-Dry	T	<1.4	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-8A	LR-8A	RR-1	RR-10	RR-10A1	RR-11A1
	Sample Date		9/27/2002	10/8/2002	10/4/2002	10/3/2002	10/3/2002	10/3/2002
	Sample ID		LR-8A-T01N-SED	LR-8A-T01N-SED	RR-1-T01N-SED	RR-10-T01N-SED	RR-10A1-T01N-SED	RR-11A1-T01N-SEDR E SWR
Exposure Area	Units	Fraction	SWR	SWR	RURR	SWR	SWR	SWR
			2-Nitrophenol	mg/kg-Dry	T	<0.55	-	-
3,3-Dichlorobenzidine	mg/kg-Dry	T	<0.55	-	-	-	-	-
3-Nitroaniline	mg/kg-Dry	T	<1.4	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	<1.4	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/kg-Dry	T	<0.55	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
4-Chloroaniline	mg/kg-Dry	T	<0.55	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	<0.55	-	-	-	-	-
4-Methylphenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
4-Nitroaniline	mg/kg-Dry	T	<1.4	-	-	-	-	-
4-Nitrophenol	mg/kg-Dry	T	<1.4	-	-	-	-	-
Acenaphthene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Acenaphthylene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Anthracene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Benzaldehyde	mg/kg-Dry	T	0.14	J	-	-	-	-
Benzo(a)anthracene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Benzo(a)pyrene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Benzo(g,h,i)perylene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	<0.55	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg-Dry	T	<0.55	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	0.036	J	-	-	-	-
Butyl benzyl phthalate	mg/kg-Dry	T	<0.55	-	-	-	-	-
Carbazole	mg/kg-Dry	T	<0.55	-	-	-	-	-
Chrysene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Dibenzofuran	mg/kg-Dry	T	<0.55	-	-	-	-	-
Dichlorodiisopropyl ether	mg/kg-Dry	T	<0.55	-	-	-	-	-
Diethylphthalate	mg/kg-Dry	T	<0.55	-	-	-	-	-
Dimethylphthalate	mg/kg-Dry	T	<0.55	-	-	-	-	-
Di-n-Butyl phthalate	mg/kg-Dry	T	<0.55	-	-	-	-	-
Di-n-Octyl phthalate	mg/kg-Dry	T	<0.55	-	-	-	-	-
Fluoranthene	mg/kg-Dry	T	<0.55	J	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-8A	LR-8A	RR-1	RR-10	RR-10A1	RR-11A1
	Sample Date	Sample ID	9/27/2002	10/8/2002	10/4/2002	10/3/2002	10/3/2002	10/3/2002
	Exposure Area		LR-8A-T01N-SED	LR-8A-T01N-SED	RR-1-T01N-SED	RR-10-T01N-SED	RR-10A1-T01N-SED	RR-11A1-T01N-SEDR E SWR
Units	Fraction	SWR	SWR	RURR	SWR	SWR	SWR	
Fluorene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Hexachlorobenzene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Hexachlorobutadiene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Hexachlorocyclopentadiene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Hexachloroethane	mg/kg-Dry	T	<0.55	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Isophorone	mg/kg-Dry	T	<0.55	-	-	-	-	-
Naphthalene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Nitrobenzene	mg/kg-Dry	T	<0.55	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	<0.55	-	-	-	-	-
N-Nitrosodiphenylamine	mg/kg-Dry	T	<0.55	-	-	-	-	-
Pentachlorophenol	mg/kg-Dry	T	<1.4	-	-	-	-	-
Phenanthrene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Phenol	mg/kg-Dry	T	<0.55	-	-	-	-	-
Pyrene	mg/kg-Dry	T	<0.55	-	-	-	-	-
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	<0.12	-	-	-	-	-
2,6-Pyridinediamine,	mg/kg-Dry	T	<0.12	-	-	-	-	-
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	<0.12	-	-	-	-	-
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	<0.12	-	-	-	-	-
Pentaerythritol tetranitrate	mg/kg-Dry	T	<5.	-	-	-	-	-
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	<0.0028	-	-	-	-	-
Aldrin	mg/kg-Dry	T	<0.0028	-	-	-	-	-
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0028	-	-	-	-	-
Aroclor 1016	mg/kg-Dry	T	<0.055	-	-	-	-	-
Aroclor 1221	mg/kg-Dry	T	<0.11	-	-	-	-	-
Aroclor 1232	mg/kg-Dry	T	<0.055	-	-	-	-	-
Aroclor 1242	mg/kg-Dry	T	<0.055	-	-	-	-	-
Aroclor 1248	mg/kg-Dry	T	<0.055	-	-	-	-	-
Aroclor 1254	mg/kg-Dry	T	<0.055	-	-	-	-	-
Aroclor 1260	mg/kg-Dry	T	<0.055	-	-	-	-	-
beta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0028	-	-	-	-	-
delta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0028	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		LR-8A	LR-8A	RR-1	RR-10	RR-10A1	RR-11A1
	Sample Date	Sample ID	9/27/2002	10/8/2002	10/4/2002	10/3/2002	10/3/2002	10/3/2002
	Exposure Area	Fraction	LR-8A-T01N-SED	LR-8A-T01N-SED	RR-1-T01N-SED	RR-10-T01N-SED	RR-10A1-T01N-SED	RR-11A1-T01N-SEDR E SWR
Units		SWR	SWR	RURR	SWR	SWR	SWR	
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	<0.0055	-	-	-	-	-
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	<0.0055	-	-	-	-	-
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	0.015	-	-	-	-	-
Dieldrin	mg/kg-Dry	T	<0.0055	-	-	-	-	-
Endosulfan I	mg/kg-Dry	T	<0.0028	-	-	-	-	-
Endosulfan II	mg/kg-Dry	T	<0.0055	-	-	-	-	-
Endosulfan sulfate	mg/kg-Dry	T	<0.0055	-	-	-	-	-
Endrin	mg/kg-Dry	T	<0.0055	-	-	-	-	-
Endrin aldehyde	mg/kg-Dry	T	<0.0055	-	-	-	-	-
Endrin ketone	mg/kg-Dry	T	<0.0055	-	-	-	-	-
g-Chlordane	mg/kg-Dry	T	<0.0028	-	-	-	-	-
Heptachlor	mg/kg-Dry	T	<0.0028	-	-	-	-	-
Heptachlor epoxide	mg/kg-Dry	T	<0.0028	-	-	-	-	-
Lindane	mg/kg-Dry	T	<0.0028	-	-	-	-	-
Methoxychlor	mg/kg-Dry	T	<0.028	-	-	-	-	-
Toxaphene	mg/kg-Dry	T	<0.28	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11C	RR-12	RR-13	RR-14
	Sample Date		10/3/2002	10/3/2002	10/1/2002	10/3/2002	10/1/2002	10/1/2002
	Sample ID		RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-14-T01N-SED
Exposure Area			SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	7.3 :	<20.3 :	9.1 :	8.9 :	11.3 :	5.3 :
Chloride	mg/kg-Dry	T	<32.9 :	<33.1 :	<32.1 :	<31.3 :	<32.3 :	<32.1 :
Fluoride	mg/Kg-dry	T	0.27 J	0.32 J	0.36 J	0.35 J	0.13 J	0.39 J
Nitrate	mg/kg-Dry	T	<2.7 J	<2.7 J	<2.6 J	<2.6 J	<2.6 J	<2.6 J
Phosphorus	mg/Kg-dry	T	708. J	22.1 J	569. J	479. J	902. J	843. J
Sulfate	mg/kg-Dry	T	58.6 :	56.5 :	58. :	51.9 :	150. :	58.6 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	80. J	53.1 J	41.1 J	61.1 J	75.6 J	63.6 J
Total Organic Carbon	mg/Kg-dry	T	538. J	721. J	2900. J	208. J	2550. J	3340. J
Laboratory Parameters								
pH	SU	T	6.9 :	6.4 :	6.4 :	7.1 :	4.6 :	6.1 :
Solids, Percent	%	T	76.1 :	75.7 :	78.1 :	79.9 :	77.6 :	78. :
Specific Conductance	umhos/cm	T	89.1 :	114. :	110. :	73.8 :	280. :	106. :
Geotechnical								
Organic Soils	%	T	2.27 :	2.34 :	1.85 :	2.25 :	2.67 :	2.16 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	9.2 :	6.4 :	6.6 :	7.1 :	8.8 :	8.1 :
Sodium Absorption Ratio	ratio	T	0.12 :	0.11 :	0.14 :	0.11 :	0.13 :	0.12 :
Metals								
Aluminum	mg/Kg-dry	T	5340. :	4930. :	6160. :	6270. :	8280. :	8000. :
Antimony	mg/Kg-dry	T	<0.21 J	<0.22 J	<0.2 J	<0.2 J	<0.2 J	<0.2 J
Arsenic	mg/Kg-dry	T	7.2 :	5.9 :	4.9 :	5.8 :	6.9 :	6.3 :
Barium	mg/Kg-dry	T	465. :	288. :	199. :	229. :	346. :	258. :
Beryllium	mg/Kg-dry	T	0.46 :	0.45 :	0.68 :	0.72 :	0.69 :	0.87 :
Boron	mg/Kg-dry	T	<1.5 :	<2.2 :	<0.39 J	<1.6 :	<0.4 J	<0.4 J
Cadmium	mg/Kg-dry	T	<0.032 :	<0.03 :	0.27 :	0.18 :	<0.024 :	0.25 :
Calcium	mg/Kg-dry	T	1580. :	1370. :	1340. :	1660. :	1030. :	1430. :
Chromium	mg/Kg-dry	T	12.4 :	11.4 :	12.6 :	12.4 :	15.3 :	14. :
Cobalt	mg/Kg-dry	T	5.9 :	5.9 :	7.3 :	7.2 :	5.5 :	7.3 :
Copper	mg/Kg-dry	T	27.9 :	27.6 :	35.8 :	34.7 :	48.1 :	42.8 :
Iron	mg/Kg-dry	T	24700. :	21100. :	19300. :	21200. :	24100. :	22100. :
Lead	mg/Kg-dry	T	59.5 :	55.6 :	33.8 :	40.7 :	51.8 :	50.9 :
Magnesium	mg/Kg-dry	T	3000. :	3010. :	3050. :	3190. :	3540. :	3440. :
Manganese	mg/Kg-dry	T	268. :	234. :	391. :	347. :	266. :	435. :

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11C	RR-12	RR-13	RR-14
	Sample Date		10/3/2002	10/3/2002	10/1/2002	10/3/2002	10/1/2002	10/1/2002
	Sample ID		RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-14-T01N-SED
Exposure Area			SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.02	<0.022	<0.019	<0.021	<0.021	<0.019
Molybdenum	mg/Kg-dry	T	8.	5.6	5.7	5.3	8.2	7.4
Nickel	mg/Kg-dry	T	15.6	17.2	24.	24.1	17.9	24.
Potassium	mg/Kg-dry	T	1940. J	1650. J	1550. J	1670. J	1990. J	1960. J
Selenium	mg/Kg-dry	T	1.1	0.73	0.74	1.	0.98	1.4
Silver	mg/Kg-dry	T	0.22	0.19	0.16	0.18	0.24	0.22
Sodium	mg/Kg-dry	T	150.	140.	<130.	166.	<159.	<150.
Thallium	mg/Kg-dry	T	0.11	<0.11	<0.1	<0.099	0.12	0.11
Vanadium	mg/Kg-dry	T	12.6	11.	13.3	13.	15.5	15.4
Zinc	mg/Kg-dry	T	74.4	85.5	137.	149.	95.2	149.
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,1,2-Trichloroethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,1-Dichloroethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,1-Dichloroethene	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,2,4-Trichlorobenzene	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,2-Dichlorobenzene	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,2-Dichloroethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,2-Dichloroethene (total)	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,2-Dichloropropane	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,3-Dichlorobenzene	mg/kg-Dry	T	-	-	-	<0.007	-	-
1,4-Dichlorobenzene	mg/kg-Dry	T	-	-	-	<0.007	-	-
2-Butanone	mg/kg-Dry	T	-	-	-	<0.007	-	-
2-Hexanone	mg/kg-Dry	T	-	-	-	<0.007	-	-
4-Methyl-2-pentanone	mg/kg-Dry	T	-	-	-	<0.007	-	-
Acetone	mg/kg-Dry	T	-	-	-	<0.007	-	-
Benzene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Bromodichloromethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
Bromoform	mg/kg-Dry	T	-	-	-	<0.007	-	-
Bromomethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
Carbon disulfide	mg/kg-Dry	T	-	-	-	<0.007	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11C	RR-12	RR-13	RR-14
	Sample Date		10/3/2002	10/3/2002	10/1/2002	10/3/2002	10/1/2002	10/1/2002
	Sample ID		RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-14-T01N-SED
Exposure Area			SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Carbon tetrachloride	mg/kg-Dry	T	-	-	-	<0.007	-	-
Chlorobenzene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Chloroethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
Chloroform	mg/kg-Dry	T	-	-	-	<0.007	-	-
Chloromethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
cis-1,2-Dichloroethene	mg/kg-Dry	T	-	-	-	<0.007	-	-
cis-1,3-Dichloropropene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Dibromochloromethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
Dichlorodifluoromethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
Ethylbenzene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Methylene chloride	mg/kg-Dry	T	-	-	-	<0.007	-	-
Styrene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Tetrachloroethene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Toluene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Total Xylene	mg/kg-Dry	T	-	-	-	<0.007	-	-
trans-1,2-Dichloroethene	mg/kg-Dry	T	-	-	-	<0.007	-	-
trans-1,3-Dichloropropene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Trichloroethene	mg/kg-Dry	T	-	-	-	<0.007	-	-
Trichlorofluoromethane	mg/kg-Dry	T	-	-	-	<0.007	-	-
Vinyl chloride	mg/kg-Dry	T	-	-	-	<0.007	-	-
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2,4,5-Trichlorophenol	mg/kg-Dry	T	<1.1	-	-	<1.	-	-
2,4,6-Trichlorophenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2,4-Dichlorophenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2,4-Dimethylphenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2,4-Dinitrophenol	mg/kg-Dry	T	<1.1	-	-	<1.	-	-
2,4-Dinitrotoluene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2,6-Dinitrotoluene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2-Chloronaphthalene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2-Chlorophenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2-Methylnaphthalene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2-Methylphenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
2-Nitroaniline	mg/kg-Dry	T	<1.1	-	-	<1.	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11C	RR-12	RR-13	RR-14
	Sample Date		10/3/2002	10/3/2002	10/1/2002	10/3/2002	10/1/2002	10/1/2002
	Sample ID		RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-14-T01N-SED
Exposure Area	SWR		SWR	SWR	SWR	SWR	SWR	SWR
	Units	Fraction						
2-Nitrophenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
3,3-Dichlorobenzidine	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
3-Nitroaniline	mg/kg-Dry	T	<1.1	-	-	<1.	-	-
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	<1.1	-	-	<1.	-	-
4-Bromophenyl phenyl ether	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
4-Chloro-3-methylphenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
4-Chloroaniline	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
4-Methylphenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
4-Nitroaniline	mg/kg-Dry	T	<1.1	-	-	<1.	-	-
4-Nitrophenol	mg/kg-Dry	T	<1.1 J	-	-	<1. J	-	-
Acenaphthene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Acenaphthylene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Anthracene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Benzaldehyde	mg/kg-Dry	T	<0.43 J	-	-	<0.41 J	-	-
Benzo(a)anthracene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Benzo(a)pyrene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Benzo(b)fluoranthene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Benzo(g,h,i)perylene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Benzo(k)fluoranthene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Bis(2-chloroethyl)ether	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Butyl benzyl phthalate	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Carbazole	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Chrysene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Dibenz(a,h)anthracene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Dibenzofuran	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Dichlorodiisopropyl ether	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Diethylphthalate	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Dimethylphthalate	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Di-n-Butyl phthalate	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Di-n-Octyl phthalate	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Fluoranthene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11C	RR-12	RR-13	RR-14
	Sample Date		10/3/2002	10/3/2002	10/1/2002	10/3/2002	10/1/2002	10/1/2002
	Sample ID		RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-14-T01N-SED
Exposure Area	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Fluorene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Hexachlorobenzene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Hexachlorobutadiene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Hexachlorocyclopentadiene	mg/kg-Dry	T	<0.43	J	-	<0.41	J	-
Hexachloroethane	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Isophorone	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Naphthalene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Nitrobenzene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
N-Nitrosodiphenylamine	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Pentachlorophenol	mg/kg-Dry	T	<1.1	J	-	<1.	J	-
Phenanthrene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Phenol	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Pyrene	mg/kg-Dry	T	<0.43	-	-	<0.41	-	-
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	<0.12	-	-	<0.12	-	-
2,6-Pyridinediamine,	mg/kg-Dry	T	<0.12	J	-	<0.12	J	-
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	<0.12	-	-	<0.12	-	-
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	<0.12	-	-	<0.12	-	-
Pentaerythritol tetranitrate	mg/kg-Dry	T	<5.	-	-	<5.	-	-
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
Aldrin	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
Aroclor 1016	mg/kg-Dry	T	<0.043	-	-	<0.041	-	-
Aroclor 1221	mg/kg-Dry	T	<0.088	-	-	<0.084	-	-
Aroclor 1232	mg/kg-Dry	T	<0.043	-	-	<0.041	-	-
Aroclor 1242	mg/kg-Dry	T	<0.043	-	-	<0.041	-	-
Aroclor 1248	mg/kg-Dry	T	<0.043	-	-	<0.041	-	-
Aroclor 1254	mg/kg-Dry	T	<0.043	-	-	<0.041	-	-
Aroclor 1260	mg/kg-Dry	T	<0.043	-	-	<0.041	-	-
beta-Hexachlorocyclohexane	mg/kg-Dry	T	0.0018	J	-	<0.0021	-	-
delta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11C	RR-12	RR-13	RR-14
	Sample Date	Sample ID	10/3/2002	10/3/2002	10/1/2002	10/3/2002	10/1/2002	10/1/2002
	Exposure Area	Fraction	RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-14-T01N-SED
Units		SWR	SWR	SWR	SWR	SWR	SWR	
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Dieldrin	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Endosulfan I	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
Endosulfan II	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Endosulfan sulfate	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Endrin	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Endrin aldehyde	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
Endrin ketone	mg/kg-Dry	T	<0.0043	-	-	<0.0041	-	-
g-Chlordane	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
Heptachlor	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
Heptachlor epoxide	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
Lindane	mg/kg-Dry	T	<0.0022	-	-	<0.0021	-	-
Methoxychlor	mg/kg-Dry	T	<0.022	-	-	<0.021	-	-
Toxaphene	mg/kg-Dry	T	<0.22	-	-	<0.21	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-17	RR-18A	RR-18B	RR-20
	Sample Date	Sample ID	10/1/2002	10/1/2002	10/1/2002	10/1/2002	9/30/2002	9/30/2002
	Exposure Area		RR-15-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-20-T01N-SED
Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR	
General Chemistry								
Ammonia	mg/Kg-dry	T	13.8	28.3	<5.2	27.4	46.4	33.8
Chloride	mg/kg-Dry	T	<32.6	<32.2	<31.9	<33.3	<36.7	<38.2
Fluoride	mg/Kg-dry	T	0.41	0.37	0.37	0.51	0.37	0.37
Nitrate	mg/kg-Dry	T	<1.4	<2.6	<1.3	<1.4	<3.	<3.1
Phosphorus	mg/Kg-dry	T	767.	66.	967.	1060.	1020.	1090.
Sulfate	mg/kg-Dry	T	<131.	47.6	<128.	<134.	30.4	37.4
Total Kjeldahl Nitrogen	mg/Kg-dry	T	72.	80.9	119.	93.4	248.	378.
Total Organic Carbon	mg/Kg-dry	T	3600.	2840.	3920.	3260.	2170.	2850.
Laboratory Parameters								
pH	SU	T	6.4	6.6	5.8	6.4	6.4	6.2
Solids, Percent	%	T	76.9	77.8	78.5	75.1	68.3	65.6
Specific Conductance	umhos/cm	T	74.4	81.4	85.3	92.3	191.	184.
Geotechnical								
Organic Soils	%	T	2.22	2.21	2.67	2.35	-	-
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	8.3	16.	10.6	9.3	13.8	14.4
Sodium Absorption Ratio	ratio	T	0.13	0.13	0.14	0.13	0.14	0.15
Metals								
Aluminum	mg/Kg-dry	T	7500.	7490.	8380.	8750.	9350.	9680.
Antimony	mg/Kg-dry	T	<0.21	<0.21	<0.21	<0.22	0.06	0.07
Arsenic	mg/Kg-dry	T	5.1	6.4	7.7	8.1	7.9	9.
Barium	mg/Kg-dry	T	344.	348.	522.	432.	494.	522.
Beryllium	mg/Kg-dry	T	0.83	0.9	0.84	0.93	1.	1.
Boron	mg/Kg-dry	T	<0.43	<0.41	<0.43	<0.43	<1.	1.4
Cadmium	mg/Kg-dry	T	0.23	0.42	0.21	0.36	0.47	0.25
Calcium	mg/Kg-dry	T	1530.	1580.	1470.	1730.	1820.	1910.
Chromium	mg/Kg-dry	T	13.7	15.1	17.	16.8	16.9	17.4
Cobalt	mg/Kg-dry	T	7.6	9.8	7.6	9.6	12.1	9.2
Copper	mg/Kg-dry	T	43.6	48.1	41.8	45.9	53.4	50.9
Iron	mg/Kg-dry	T	21200.	23300.	27300.	28700.	28900.	32100.
Lead	mg/Kg-dry	T	42.1	62.5	68.8	64.5	90.4	93.4
Magnesium	mg/Kg-dry	T	3500.	3490.	3820.	3940.	4130.	4410.
Manganese	mg/Kg-dry	T	401.	497.	428.	561.	795.	520.

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-17	RR-18A	RR-18B	RR-20
	Sample Date	Sample ID	10/1/2002	10/1/2002	10/1/2002	10/1/2002	9/30/2002	9/30/2002
	Exposure Area		RR-15-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-20-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Mercury	mg/Kg-dry	T	<0.019	<0.021	<0.021	<0.021	<0.024	<0.025
Molybdenum	mg/Kg-dry	T	7.3	9.2	10.5	11.	12.3	13.7
Nickel	mg/Kg-dry	T	22.7	27.2	22.5	26.5	33.4	27.1
Potassium	mg/Kg-dry	T	1910. J	1930. J	2440. J	2420. J	2620. J	2820. J
Selenium	mg/Kg-dry	T	1.2	1.3	1.3	1.6	0.99	1.3
Silver	mg/Kg-dry	T	0.2	0.27	0.27	0.29	0.39	0.33
Sodium	mg/Kg-dry	T	<144.	<166.	<225.	<223.	257.	290.
Thallium	mg/Kg-dry	T	0.11	0.12	0.14	0.15	0.13	0.17
Vanadium	mg/Kg-dry	T	15.9	15.5	17.8	18.	18.2	19.2
Zinc	mg/Kg-dry	T	149.	191.	150.	182.	222.	193.
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,1,2-Trichloroethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,1-Dichloroethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,1-Dichloroethene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,2,4-Trichlorobenzene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,2-Dichlorobenzene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,2-Dichloroethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,2-Dichloroethene (total)	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,2-Dichloropropane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,3-Dichlorobenzene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
1,4-Dichlorobenzene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
2-Butanone	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
2-Hexanone	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
4-Methyl-2-pentanone	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Acetone	mg/kg-Dry	T	0.003	-	-	-	-	0.01
Benzene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Bromodichloromethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Bromoform	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Bromomethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Carbon disulfide	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-17	RR-18A	RR-18B	RR-20
	Sample Date	Sample ID	10/1/2002	10/1/2002	10/1/2002	10/1/2002	9/30/2002	9/30/2002
	Exposure Area		RR-15-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-20-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Carbon tetrachloride	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Chlorobenzene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Chloroethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Chloroform	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Chloromethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
cis-1,2-Dichloroethene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
cis-1,3-Dichloropropene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Dibromochloromethane	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Dichlorodifluoromethane	mg/kg-Dry	T	<0.009	J	-	-	-	<0.013
Ethylbenzene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Methylene chloride	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Styrene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Tetrachloroethene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Toluene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Total Xylene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
trans-1,2-Dichloroethene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
trans-1,3-Dichloropropene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Trichloroethene	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Trichlorofluoromethane	mg/kg-Dry	T	<0.009	J	-	-	-	<0.013
Vinyl chloride	mg/kg-Dry	T	<0.009	-	-	-	-	<0.013
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2,4,5-Trichlorophenol	mg/kg-Dry	T	<1.1	-	-	-	-	<1.2
2,4,6-Trichlorophenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2,4-Dichlorophenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2,4-Dimethylphenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2,4-Dinitrophenol	mg/kg-Dry	T	<1.1	J	-	-	-	<1.2
2,4-Dinitrotoluene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2,6-Dinitrotoluene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2-Chloronaphthalene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2-Chlorophenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2-Methylnaphthalene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2-Methylphenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
2-Nitroaniline	mg/kg-Dry	T	<1.1	-	-	-	-	<1.2

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-17	RR-18A	RR-18B	RR-20
	Sample Date	Sample ID	10/1/2002	10/1/2002	10/1/2002	10/1/2002	9/30/2002	9/30/2002
	Exposure Area		RR-15-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-20-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
2-Nitrophenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
3,3-Dichlorobenzidine	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
3-Nitroaniline	mg/kg-Dry	T	<1.1	-	-	-	-	<1.2
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	<1.1	-	-	-	-	<1.2
4-Bromophenyl phenyl ether	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
4-Chloro-3-methylphenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
4-Chloroaniline	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
4-Methylphenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
4-Nitroaniline	mg/kg-Dry	T	<1.1	-	-	-	-	<1.2
4-Nitrophenol	mg/kg-Dry	T	<1.1	-	-	-	-	<1.2
Acenaphthene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Acenaphthylene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Anthracene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Benzaldehyde	mg/kg-Dry	T	<0.43	J	-	-	-	0.04
Benzo(a)anthracene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Benzo(a)pyrene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Benzo(b)fluoranthene	mg/kg-Dry	T	<0.43	J	-	-	-	<0.5
Benzo(g,h,i)perylene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Benzo(k)fluoranthene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Bis(2-chloroethyl)ether	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Butyl benzyl phthalate	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Carbazole	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Chrysene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Dibenz(a,h)anthracene	mg/kg-Dry	T	<0.43	J	-	-	-	<0.5
Dibenzofuran	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Dichlorodiisopropyl ether	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Diethylphthalate	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Dimethylphthalate	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Di-n-Butyl phthalate	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Di-n-Octyl phthalate	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Fluoranthene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-17	RR-18A	RR-18B	RR-20
	Sample Date	Sample ID	10/1/2002	10/1/2002	10/1/2002	10/1/2002	9/30/2002	9/30/2002
	Exposure Area		RR-15-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-20-T01N-SED
	Units	Fraction	SWR	SWR	SWR	SWR	SWR	SWR
Fluorene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Hexachlorobenzene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Hexachlorobutadiene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Hexachlorocyclopentadiene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Hexachloroethane	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	<0.43	J	-	-	-	<0.5
Isophorone	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Naphthalene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Nitrobenzene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
N-Nitrosodiphenylamine	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Pentachlorophenol	mg/kg-Dry	T	<1.1	J	-	-	-	<1.2
Phenanthrene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Phenol	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Pyrene	mg/kg-Dry	T	<0.43	-	-	-	-	<0.5
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	<0.12	-	-	-	-	<0.12
2,6-Pyridinediamine,	mg/kg-Dry	T	<0.12	J	-	-	-	<0.12
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	<0.12	-	-	-	-	<0.12
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	<0.12	-	-	-	-	<0.12
Pentaerythritol tetranitrate	mg/kg-Dry	T	<5.	-	-	-	-	<5.
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
Aldrin	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
Aroclor 1016	mg/kg-Dry	T	<0.043	-	-	-	-	<0.05
Aroclor 1221	mg/kg-Dry	T	<0.087	-	-	-	-	<0.1
Aroclor 1232	mg/kg-Dry	T	<0.043	-	-	-	-	<0.05
Aroclor 1242	mg/kg-Dry	T	<0.043	-	-	-	-	<0.05
Aroclor 1248	mg/kg-Dry	T	<0.043	-	-	-	-	<0.05
Aroclor 1254	mg/kg-Dry	T	<0.043	-	-	-	-	<0.05
Aroclor 1260	mg/kg-Dry	T	<0.043	-	-	-	-	<0.05
beta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
delta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-17	RR-18A	RR-18B	RR-20
	Sample Date	Sample ID	10/1/2002	10/1/2002	10/1/2002	10/1/2002	9/30/2002	9/30/2002
	Exposure Area	Fraction	RR-15-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-20-T01N-SED
Units		SWR	SWR	SWR	SWR	SWR	SWR	
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Dieldrin	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Endosulfan I	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
Endosulfan II	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Endosulfan sulfate	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Endrin	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Endrin aldehyde	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
Endrin ketone	mg/kg-Dry	T	<0.0043	-	-	-	-	<0.005
g-Chlordane	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
Heptachlor	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
Heptachlor epoxide	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
Lindane	mg/kg-Dry	T	<0.0022	-	-	-	-	<0.0026
Methoxychlor	mg/kg-Dry	T	<0.022	-	-	-	-	<0.026
Toxaphene	mg/kg-Dry	T	<0.22	-	-	-	-	<0.26

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-3	RR-4	RR-5	RR-6	RR-6A	RR-7
	Sample Date	Sample ID	10/3/2002	10/4/2002	10/3/2002	10/4/2002	10/4/2002	10/4/2002
	Exposure Area		RR-3-T01N-SED	RR-4-T01N-SED	RR-5-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-7-T01N-SED
Units	Fraction	RURR	RURR	RURR	RURR	RURR	RURR	SWR
General Chemistry								
Ammonia	mg/Kg-dry	T	131. :	<5.5 :	9.3 :	7.9 J	<4.4 :	<5.4 :
Chloride	mg/kg-Dry	T	<58.7 :	<14. J	<33.4 :	<12.8 J	<12.8 J	<32.3 :
Fluoride	mg/Kg-dry	T	0.42 J	0.27 J	0.17 J	0.32 J	0.37 J	0.4 J
Nitrate	mg/kg-Dry	T	<4.7 J	<2.8 J	<2.7 J	<2.6 J	<2.6 J	<1.3 J
Phosphorus	mg/Kg-dry	T	1560. J	113. J	630. J	53.3 J	375. J	333. J
Sulfate	mg/kg-Dry	T	<58.7 :	26.1 J	60.8 :	27.8 J	46.5 J	39.2 J
Total Kjeldahl Nitrogen	mg/Kg-dry	T	1440. J	54.1 J	79.3 J	51. J	38.9 J	34.2 J
Total Organic Carbon	mg/Kg-dry	T	31200. J	<140. J	724. J	557. J	<128. J	<129. J
Laboratory Parameters								
pH	SU	T	6.7 :	7. :	7. :	6.9 :	6.9 :	8. :
Solids, Percent	%	T	42.6 :	71.8 :	75. :	78.5 :	78.5 :	77.6 :
Specific Conductance	umhos/cm	T	144. :	92.3 :	77. :	133. :	121. :	112. :
Geotechnical								
Organic Soils	%	T	7.85 :	1.99 :	2.35 :	2.31 :	2.1 :	1.83 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	17.1 :	4.1 :	7.8 :	9.7 :	6.6 :	6. :
Sodium Absorption Ratio	ratio	T	0.14 :	<0.12 :	0.13 :	<0.1 :	0.11 :	0.11 :
Metals								
Aluminum	mg/Kg-dry	T	14300. :	2610. :	4650. :	4640. :	4790. :	4420. :
Antimony	mg/Kg-dry	T	<0.38 J	<0.21 J	<0.21 J	<0.19 J	<0.2 J	<0.18 J
Arsenic	mg/Kg-dry	T	3. :	4.6 :	5.1 :	5.2 :	5.2 :	4.2 :
Barium	mg/Kg-dry	T	123. :	363. :	380. :	427. :	280. :	128. :
Beryllium	mg/Kg-dry	T	2. :	0.24 :	0.32 :	0.42 :	0.39 :	0.36 :
Boron	mg/Kg-dry	T	<2.5 :	<0.5 :	<1.7 :	<0.51 :	<0.48 :	<0.48 :
Cadmium	mg/Kg-dry	T	1.9 :	0.081 :	0.057 :	<0.031 :	<0.029 :	<0.029 :
Calcium	mg/Kg-dry	T	3010. :	889. :	1680. :	1360. :	1420. :	1400. :
Chromium	mg/Kg-dry	T	20.2 :	3.9 :	11.9 :	11.3 J	10.3 :	8.2 :
Cobalt	mg/Kg-dry	T	23.7 :	2.8 :	4. :	5.1 :	4.5 :	3.2 :
Copper	mg/Kg-dry	T	417. :	20. :	37.7 :	24. :	21.2 :	16.5 :
Iron	mg/Kg-dry	T	21300. :	13100. :	21500. :	18100. :	18600. :	14900. :
Lead	mg/Kg-dry	T	46. :	52.9 :	94.3 :	42.2 J	36.1 :	28.3 :
Magnesium	mg/Kg-dry	T	4220. :	1090. :	3150. :	2330. :	2650. :	2420. :
Manganese	mg/Kg-dry	T	915. :	162. :	238. :	220. :	176. :	130. :

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-3	RR-4	RR-5	RR-6	RR-6A	RR-7
	Sample Date	Sample ID	10/3/2002	10/4/2002	10/3/2002	10/4/2002	10/4/2002	10/4/2002
	Exposure Area		RR-3-T01N-SED	RR-4-T01N-SED	RR-5-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-7-T01N-SED
	Units	Fraction	RURR	RURR	RURR	RURR	RURR	SWR
Mercury	mg/Kg-dry	T	<0.038	<0.023	<0.02	<0.02	<0.02	<0.021
Molybdenum	mg/Kg-dry	T	10.7	4.	11.5	3.8	4.5	2.4
Nickel	mg/Kg-dry	T	41.5	8.	10.8	13.7	12.8	10.4
Potassium	mg/Kg-dry	T	1560.	1660.	1760.	1730.	1810.	1600.
Selenium	mg/Kg-dry	T	2.	0.73	1.6	0.87	0.49	0.37
Silver	mg/Kg-dry	T	0.3	<0.14	0.56	<0.14	0.17	<0.14
Sodium	mg/Kg-dry	T	<102.	75.7	131.	118.	131.	104.
Thallium	mg/Kg-dry	T	<0.19	0.13	0.15	<0.093	<0.1	<0.09
Vanadium	mg/Kg-dry	T	27.1	6.3	12.5	10.	10.3	8.5
Zinc	mg/Kg-dry	T	433.	53.8	78.1	69.7	65.6	50.
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,1,2-Trichloroethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,1-Dichloroethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,1-Dichloroethene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,2,4-Trichlorobenzene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,2-Dichlorobenzene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,2-Dichloroethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,2-Dichloroethene (total)	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,2-Dichloropropane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,3-Dichlorobenzene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
1,4-Dichlorobenzene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
2-Butanone	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
2-Hexanone	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
4-Methyl-2-pentanone	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Acetone	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Benzene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Bromodichloromethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Bromoform	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Bromomethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Carbon disulfide	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-3	RR-4	RR-5	RR-6	RR-6A	RR-7
	Sample Date	Sample ID	10/3/2002	10/4/2002	10/3/2002	10/4/2002	10/4/2002	10/4/2002
	Exposure Area		RR-3-T01N-SED	RR-4-T01N-SED	RR-5-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-7-T01N-SED
Units	Fraction	RURR	RURR	RURR	RURR	RURR	RURR	SWR
Carbon tetrachloride	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Chlorobenzene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Chloroethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Chloroform	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Chloromethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
cis-1,2-Dichloroethene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
cis-1,3-Dichloropropene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Dibromochloromethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Dichlorodifluoromethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Ethylbenzene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Methylene chloride	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Styrene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Tetrachloroethene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Toluene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Total Xylene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
trans-1,2-Dichloroethene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
trans-1,3-Dichloropropene	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Trichloroethene	mg/kg-Dry	T	-	<0.01	0.0008	<0.047	<0.013	<0.014
Trichlorofluoromethane	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Vinyl chloride	mg/kg-Dry	T	-	<0.01	<0.006	<0.047	<0.013	<0.014
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2,4,5-Trichlorophenol	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1
2,4,6-Trichlorophenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2,4-Dichlorophenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2,4-Dimethylphenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2,4-Dinitrophenol	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1
2,4-Dinitrotoluene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2,6-Dinitrotoluene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2-Chloronaphthalene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2-Chlorophenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2-Methylnaphthalene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2-Methylphenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
2-Nitroaniline	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-3	RR-4	RR-5	RR-6	RR-6A	RR-7	
	Sample Date	Sample ID	10/3/2002	10/4/2002	10/3/2002	10/4/2002	10/4/2002	10/4/2002	
	Exposure Area		RR-3-T01N-SED	RR-4-T01N-SED	RR-5-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-7-T01N-SED	
	Units	Fraction	RURR	RURR	RURR	RURR	RURR	SWR	
2-Nitrophenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	J
3,3-Dichlorobenzidine	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
3-Nitroaniline	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1	:
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1	:
4-Bromophenyl phenyl ether	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
4-Chloro-3-methylphenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
4-Chloroaniline	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
4-Methylphenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
4-Nitroaniline	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1	:
4-Nitrophenol	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1	:
Acenaphthene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Acenaphthylene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Anthracene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Benzaldehyde	mg/kg-Dry	T	-	<0.46	<0.44	<1.2	<0.42	<0.42	J
Benzo(a)anthracene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Benzo(a)pyrene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Benzo(b)fluoranthene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Benzo(g,h,i)perylene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Benzo(k)fluoranthene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Bis(2-chloroethyl)ether	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	0.036	<0.42	J
Butyl benzyl phthalate	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Carbazole	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Chrysene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Dibenz(a,h)anthracene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Dibenzofuran	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Dichlorodiisopropyl ether	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Diethylphthalate	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Dimethylphthalate	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Di-n-Butyl phthalate	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Di-n-Octyl phthalate	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:
Fluoranthene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42	:

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-3	RR-4	RR-5	RR-6	RR-6A	RR-7
	Sample Date	Sample ID	10/3/2002	10/4/2002	10/3/2002	10/4/2002	10/4/2002	10/4/2002
	Exposure Area		RR-3-T01N-SED	RR-4-T01N-SED	RR-5-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-7-T01N-SED
	Units	Fraction	RURR	RURR	RURR	RURR	RURR	SWR
Fluorene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Hexachlorobenzene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Hexachlorobutadiene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Hexachlorocyclopentadiene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Hexachloroethane	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Isophorone	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Naphthalene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Nitrobenzene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
N-Nitrosodiphenylamine	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Pentachlorophenol	mg/kg-Dry	T	-	<1.2	<1.1	<1.1	<1.1	<1.1
Phenanthrene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Phenol	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Pyrene	mg/kg-Dry	T	-	<0.46	<0.44	<0.42	<0.42	<0.42
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	-	<0.12	<0.12	<0.12	<0.12	<0.12
2,6-Pyridinediamine,	mg/kg-Dry	T	-	<0.12	<0.12	<0.12	<0.12	<0.12
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	-	<0.12	<0.12	<0.12	<0.12	<0.12
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	-	<0.12	<0.12	<0.12	<0.12	<0.12
Pentaerythritol tetranitrate	mg/kg-Dry	T	-	<5.	<5.	<5.	<5.	<5.
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	-	<0.0024	<0.0023	<0.0022	<0.0022	<0.0022
Aldrin	mg/kg-Dry	T	-	<0.0024	<0.0023	<0.0022	<0.0022	<0.0022
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	-	<0.0024	<0.0023	<0.0022	<0.0022	<0.0022
Aroclor 1016	mg/kg-Dry	T	-	<0.046	<0.044	<0.042	<0.042	<0.042
Aroclor 1221	mg/kg-Dry	T	-	<0.093	<0.089	<0.086	<0.086	<0.086
Aroclor 1232	mg/kg-Dry	T	-	<0.046	<0.044	<0.042	<0.042	<0.042
Aroclor 1242	mg/kg-Dry	T	-	<0.046	<0.044	<0.042	<0.042	<0.042
Aroclor 1248	mg/kg-Dry	T	-	<0.046	<0.044	<0.042	<0.042	<0.042
Aroclor 1254	mg/kg-Dry	T	-	<0.046	<0.044	<0.042	<0.042	<0.042
Aroclor 1260	mg/kg-Dry	T	-	<0.046	<0.044	<0.042	<0.042	<0.042
beta-Hexachlorocyclohexane	mg/kg-Dry	T	-	<0.0024	<0.0023	<0.0022	<0.0022	<0.0022
delta-Hexachlorocyclohexane	mg/kg-Dry	T	-	<0.0024	<0.0023	<0.0022	<0.0022	<0.0022

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-3	RR-4	RR-5	RR-6	RR-6A	RR-7
	Sample Date	Sample ID	10/3/2002	10/4/2002	10/3/2002	10/4/2002	10/4/2002	10/4/2002
	Exposure Area		RR-3-T01N-SED	RR-4-T01N-SED	RR-5-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-7-T01N-SED
Units	Fraction	RURR	RURR	RURR	RURR	RURR	RURR	SWR
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	-	<0.0046 J	<0.0044 :	<0.0042 :	<0.0042 J	<0.0042 J
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	-	<0.0046 J	<0.0044 :	<0.0042 J	<0.0042 J	<0.0042 J
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	-	<0.0046 J	<0.0044 J	<0.0042 J	<0.0042 J	<0.0042 J
Dieldrin	mg/kg-Dry	T	-	<0.0046 J	<0.0044 :	<0.0042 J	<0.0042 J	<0.0042 J
Endosulfan I	mg/kg-Dry	T	-	<0.0024 J	<0.0023 :	<0.0022 J	<0.0022 J	<0.0022 J
Endosulfan II	mg/kg-Dry	T	-	<0.0046 J	<0.0044 :	<0.0042 J	<0.0042 J	<0.0042 J
Endosulfan sulfate	mg/kg-Dry	T	-	<0.0046 :	<0.0044 :	<0.0042 :	<0.0042 :	<0.0042 :
Endrin	mg/kg-Dry	T	-	<0.0046 :	<0.0044 :	<0.0042 J	<0.0042 :	<0.0042 :
Endrin aldehyde	mg/kg-Dry	T	-	<0.0046 :	<0.0044 :	<0.0042 :	<0.0042 :	<0.0042 :
Endrin ketone	mg/kg-Dry	T	-	<0.0046 :	<0.0044 :	<0.0042 :	<0.0042 :	<0.0042 :
g-Chlordane	mg/kg-Dry	T	-	<0.0024 J	<0.0023 :	<0.0022 J	<0.0022 J	<0.0022 J
Heptachlor	mg/kg-Dry	T	-	<0.0024 :	<0.0023 :	<0.0022 :	<0.0022 :	<0.0022 :
Heptachlor epoxide	mg/kg-Dry	T	-	<0.0024 J	<0.0023 :	<0.0022 J	<0.0022 J	<0.0022 J
Lindane	mg/kg-Dry	T	-	<0.0024 :	<0.0023 :	<0.0022 :	<0.0022 :	<0.0022 :
Methoxychlor	mg/kg-Dry	T	-	<0.024 :	<0.023 :	<0.022 :	<0.022 :	<0.022 :
Toxaphene	mg/kg-Dry	T	-	<0.24 :	<0.23 :	<0.22 :	<0.22 :	<0.22 :

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RRS-12	RRS-13	RRS-15	RRS-18
	Sample Date	Sample ID	10/4/2002	10/4/2002	10/7/2002	10/6/2002	10/6/2002	10/6/2002
	Exposure Area		RR-8-T01N-SED	RR-8A-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED
Units	Fraction	SWR	SWR	RUCCR	RUCCR	RUCCR	RLCCR	
General Chemistry								
Ammonia	mg/Kg-dry	T	<4.9	19.8	65.8	22.9	33.4	95.8
Chloride	mg/kg-Dry	T	<12.8	<12.6	<3.1	<1.3	<2.5	<2.6
Fluoride	mg/Kg-dry	T	0.4	0.37	0.6	0.67	1.	0.18
Nitrate	mg/kg-Dry	T	<2.6	<2.6	<3.1	<1.3	<2.5	<2.6
Phosphorus	mg/Kg-dry	T	24.	188.	939.	431.	298.	317.
Sulfate	mg/kg-Dry	T	31.3	31.6	166.	14.8	72.3	<31.6
Total Kjeldahl Nitrogen	mg/Kg-dry	T	45.5	43.7	304.	245.	247.	130.
Total Organic Carbon	mg/Kg-dry	T	<128.	<126.	9150.	3120.	874.	4080.
Laboratory Parameters								
pH	SU	T	6.8	6.7	6.6	7.2	7.1	7.2
Solids, Percent	%	T	78.6	79.9	66.	78.1	80.7	79.2
Specific Conductance	umhos/cm	T	106.	109.	161.	145.	239.	109.
Geotechnical								
Organic Soils	%	T	2.	2.12	-	1.7	1.54	1.68
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	6.4	6.4	7.6	5.1	4.5	5.8
Sodium Absorption Ratio	ratio	T	<0.13	0.13	0.13	0.1	0.1	0.15
Metals								
Aluminum	mg/Kg-dry	T	4910.	5010.	6930.	4910.	4950.	4390.
Antimony	mg/Kg-dry	T	<0.2	<0.19	<0.18	<0.2	<0.17	<0.21
Arsenic	mg/Kg-dry	T	4.9	7.5	2.6	1.8	1.9	2.2
Barium	mg/Kg-dry	T	217.	200.	60.8	31.4	29.4	27.2
Beryllium	mg/Kg-dry	T	0.39	0.41	1.8	0.71	0.61	0.49
Boron	mg/Kg-dry	T	<0.47	<0.49	6.6	<0.47	<0.48	4.3
Cadmium	mg/Kg-dry	T	<0.028	<0.029	0.55	0.28	0.24	<0.028
Calcium	mg/Kg-dry	T	1260.	1340.	1990.	2020.	1940.	1570.
Chromium	mg/Kg-dry	T	9.9	10.5	9.1	14.	12.8	10.1
Cobalt	mg/Kg-dry	T	4.6	5.1	4.7	4.4	4.4	3.5
Copper	mg/Kg-dry	T	20.6	21.7	9.6	7.5	9.1	6.2
Iron	mg/Kg-dry	T	16600.	18100.	13000.	12200.	12500.	10600.
Lead	mg/Kg-dry	T	31.7	35.1	27.9	15.4	14.6	10.8
Magnesium	mg/Kg-dry	T	2640.	2670.	2310.	3030.	3050.	2510.
Manganese	mg/Kg-dry	T	209.	217.	273.	341.	223.	201.

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RRS-12	RRS-13	RRS-15	RRS-18
	Sample Date	Sample ID	10/4/2002	10/4/2002	10/7/2002	10/6/2002	10/6/2002	10/6/2002
	Exposure Area		RR-8-T01N-SED	RR-8A-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED
	Units	Fraction	SWR	SWR	RUCCR	RUCCR	RUCCR	RLCCR
Mercury	mg/Kg-dry	T	<0.02	<0.018	<0.025 J	<0.021	<0.019	<0.018
Molybdenum	mg/Kg-dry	T	3.2	4.4	2.1	0.88	1.8	1.6
Nickel	mg/Kg-dry	T	13.1	14.2	14.9	13.6	11.5	8.1
Potassium	mg/Kg-dry	T	1650. J	1760. J	1560. J	940. J	1030. J	1070. J
Selenium	mg/Kg-dry	T	0.49	0.45	<0.66	<1.2 J	<1.1 J	<0.23 J
Silver	mg/Kg-dry	T	<0.13	<0.14	<0.13	<0.56	<0.57	<0.13
Sodium	mg/Kg-dry	T	101.	128.	<50.4	<104.	<107.	<50.8
Thallium	mg/Kg-dry	T	<0.1	<0.097	0.097	<0.098	<0.086	<0.1
Vanadium	mg/Kg-dry	T	9.7	10.6	13.	19.7	16.7	11.9
Zinc	mg/Kg-dry	T	58.2	62.6	272.	132.	114.	77.3
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,1,2-Trichloroethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,1-Dichloroethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,1-Dichloroethene	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,2-Dichloroethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,2-Dichloroethene (total)	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,2-Dichloropropane	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg-Dry	T	<0.017	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg-Dry	T	<0.017	-	-	-	-	-
2-Butanone	mg/kg-Dry	T	<0.017	-	-	-	-	-
2-Hexanone	mg/kg-Dry	T	<0.017	-	-	-	-	-
4-Methyl-2-pentanone	mg/kg-Dry	T	<0.017	-	-	-	-	-
Acetone	mg/kg-Dry	T	<0.017	-	-	-	-	-
Benzene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Bromodichloromethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
Bromoform	mg/kg-Dry	T	<0.017	-	-	-	-	-
Bromomethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
Carbon disulfide	mg/kg-Dry	T	<0.017	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RRS-12	RRS-13	RRS-15	RRS-18
	Sample Date	Sample ID	10/4/2002	10/4/2002	10/7/2002	10/6/2002	10/6/2002	10/6/2002
	Exposure Area		RR-8-T01N-SED	RR-8A-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED
	Units	Fraction	SWR	SWR	RUCCR	RUCCR	RUCCR	RLCCR
Carbon tetrachloride	mg/kg-Dry	T	<0.017	-	-	-	-	-
Chlorobenzene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Chloroethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
Chloroform	mg/kg-Dry	T	<0.017	-	-	-	-	-
Chloromethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
cis-1,2-Dichloroethene	mg/kg-Dry	T	<0.017	-	-	-	-	-
cis-1,3-Dichloropropene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Dibromochloromethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
Dichlorodifluoromethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
Ethylbenzene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Methylene chloride	mg/kg-Dry	T	<0.017	-	-	-	-	-
Styrene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Tetrachloroethene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Toluene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Total Xylene	mg/kg-Dry	T	<0.017	-	-	-	-	-
trans-1,2-Dichloroethene	mg/kg-Dry	T	<0.017	-	-	-	-	-
trans-1,3-Dichloropropene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Trichloroethene	mg/kg-Dry	T	<0.017	-	-	-	-	-
Trichlorofluoromethane	mg/kg-Dry	T	<0.017	-	-	-	-	-
Vinyl chloride	mg/kg-Dry	T	<0.017	-	-	-	-	-
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	<0.42	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg-Dry	T	<1.	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
2,4-Dichlorophenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
2,4-Dimethylphenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
2,4-Dinitrophenol	mg/kg-Dry	T	<1.	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg-Dry	T	<0.42	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg-Dry	T	<0.42	-	-	-	-	-
2-Chloronaphthalene	mg/kg-Dry	T	<0.42	-	-	-	-	-
2-Chlorophenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
2-Methylnaphthalene	mg/kg-Dry	T	<0.42	-	-	-	-	-
2-Methylphenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
2-Nitroaniline	mg/kg-Dry	T	<1.	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RRS-12	RRS-13	RRS-15	RRS-18
	Sample Date	Sample ID	10/4/2002	10/4/2002	10/7/2002	10/6/2002	10/6/2002	10/6/2002
	Exposure Area		RR-8-T01N-SED	RR-8A-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED
	Units	Fraction	SWR	SWR	RUCCR	RUCCR	RUCCR	RLCCR
2-Nitrophenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
3,3-Dichlorobenzidine	mg/kg-Dry	T	<0.42	-	-	-	-	-
3-Nitroaniline	mg/kg-Dry	T	<1.	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	<1.	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/kg-Dry	T	<0.42	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
4-Chloroaniline	mg/kg-Dry	T	<0.42	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	<0.42	-	-	-	-	-
4-Methylphenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
4-Nitroaniline	mg/kg-Dry	T	<1.	-	-	-	-	-
4-Nitrophenol	mg/kg-Dry	T	<1.	-	-	-	-	-
Acenaphthene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Acenaphthylene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Anthracene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Benzaldehyde	mg/kg-Dry	T	<0.42	J	-	-	-	-
Benzo(a)anthracene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Benzo(a)pyrene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Benzo(g,h,i)perylene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	<0.42	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg-Dry	T	<0.42	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	<0.42	-	-	-	-	-
Butyl benzyl phthalate	mg/kg-Dry	T	<0.42	-	-	-	-	-
Carbazole	mg/kg-Dry	T	<0.42	-	-	-	-	-
Chrysene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg-Dry	T	<0.42	J	-	-	-	-
Dibenzofuran	mg/kg-Dry	T	<0.42	-	-	-	-	-
Dichlorodiisopropyl ether	mg/kg-Dry	T	<0.42	-	-	-	-	-
Diethylphthalate	mg/kg-Dry	T	<0.42	-	-	-	-	-
Dimethylphthalate	mg/kg-Dry	T	<0.42	-	-	-	-	-
Di-n-Butyl phthalate	mg/kg-Dry	T	<0.42	-	-	-	-	-
Di-n-Octyl phthalate	mg/kg-Dry	T	<0.42	-	-	-	-	-
Fluoranthene	mg/kg-Dry	T	<0.42	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RRS-12	RRS-13	RRS-15	RRS-18
	Sample Date		10/4/2002	10/4/2002	10/7/2002	10/6/2002	10/6/2002	10/6/2002
	Sample ID		RR-8-T01N-SED	RR-8A-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED
Exposure Area	Units	Fraction	SWR	SWR	RUCCR	RUCCR	RUCCR	RLCCR
			Fluorene	mg/kg-Dry	T	<0.42	-	-
Hexachlorobenzene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Hexachlorobutadiene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Hexachlorocyclopentadiene	mg/kg-Dry	T	<0.42	J	-	-	-	-
Hexachloroethane	mg/kg-Dry	T	<0.42	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Isophorone	mg/kg-Dry	T	<0.42	-	-	-	-	-
Naphthalene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Nitrobenzene	mg/kg-Dry	T	<0.42	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	<0.42	-	-	-	-	-
N-Nitrosodiphenylamine	mg/kg-Dry	T	<0.42	-	-	-	-	-
Pentachlorophenol	mg/kg-Dry	T	<1.	J	-	-	-	-
Phenanthrene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Phenol	mg/kg-Dry	T	<0.42	-	-	-	-	-
Pyrene	mg/kg-Dry	T	<0.42	-	-	-	-	-
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	<0.12	-	-	-	-	-
2,6-Pyridinediamine,	mg/kg-Dry	T	<0.12	J	-	-	-	-
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	<0.12	-	-	-	-	-
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	<0.12	-	-	-	-	-
Pentaerythritol tetranitrate	mg/kg-Dry	T	<5.	-	-	-	-	-
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	<0.0022	J	-	-	-	-
Aldrin	mg/kg-Dry	T	<0.0022	J	-	-	-	-
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	-	-	-
Aroclor 1016	mg/kg-Dry	T	<0.042	-	-	-	-	-
Aroclor 1221	mg/kg-Dry	T	<0.085	-	-	-	-	-
Aroclor 1232	mg/kg-Dry	T	<0.042	-	-	-	-	-
Aroclor 1242	mg/kg-Dry	T	<0.042	-	-	-	-	-
Aroclor 1248	mg/kg-Dry	T	<0.042	-	-	-	-	-
Aroclor 1254	mg/kg-Dry	T	<0.042	-	-	-	-	-
Aroclor 1260	mg/kg-Dry	T	<0.042	-	-	-	-	-
beta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	-	-	-
delta-Hexachlorocyclohexane	mg/kg-Dry	T	<0.0022	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RRS-12	RRS-13	RRS-15	RRS-18
	Sample Date	Sample ID	10/4/2002	10/4/2002	10/7/2002	10/6/2002	10/6/2002	10/6/2002
	Exposure Area	Fraction	RR-8-T01N-SED	RR-8A-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED
Units		SWR	SWR	RUCCR	RUCCR	RUCCR	RUCCR	RLCCR
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	<0.0042 J	-	-	-	-	-
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	<0.0042 J	-	-	-	-	-
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	<0.0042 J	-	-	-	-	-
Dieldrin	mg/kg-Dry	T	<0.0042 J	-	-	-	-	-
Endosulfan I	mg/kg-Dry	T	<0.0022 J	-	-	-	-	-
Endosulfan II	mg/kg-Dry	T	<0.0042 J	-	-	-	-	-
Endosulfan sulfate	mg/kg-Dry	T	<0.0042 :	-	-	-	-	-
Endrin	mg/kg-Dry	T	<0.0042 :	-	-	-	-	-
Endrin aldehyde	mg/kg-Dry	T	<0.0042 :	-	-	-	-	-
Endrin ketone	mg/kg-Dry	T	<0.0042 :	-	-	-	-	-
g-Chlordane	mg/kg-Dry	T	<0.0022 J	-	-	-	-	-
Heptachlor	mg/kg-Dry	T	<0.0022 :	-	-	-	-	-
Heptachlor epoxide	mg/kg-Dry	T	<0.0022 J	-	-	-	-	-
Lindane	mg/kg-Dry	T	<0.0022 :	-	-	-	-	-
Methoxychlor	mg/kg-Dry	T	<0.022 :	-	-	-	-	-
Toxaphene	mg/kg-Dry	T	<0.22 :	-	-	-	-	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-27	RRS-9	Zwergle	----
	Sample Date		10/6/2002	10/6/2002	10/6/2002	10/7/2002	10/7/2002	
	Sample ID		RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-9-T01N-SED	ZWERGEL-T01N-SED	
Exposure Area		RLCCR	RLCCR	RLCCR	RUCCR	RURR		
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	43.7	26.5	26.4	14.9	28.1	-
Chloride	mg/kg-Dry	T	<2.7	<2.6	<2.5	<2.8	<2.8	-
Fluoride	mg/Kg-dry	T	0.2	0.26	0.23	0.18	0.14	-
Nitrate	mg/kg-Dry	T	<2.7	<2.6	<2.5	<2.8	<2.8	-
Phosphorus	mg/Kg-dry	T	290.	303.	314.	941.	1450.	-
Sulfate	mg/kg-Dry	T	71.3	<32.1	35.7	11.6	129.	-
Total Kjeldahl Nitrogen	mg/Kg-dry	T	316.	431.	110.	236.	376.	-
Total Organic Carbon	mg/Kg-dry	T	2420.	10900.	2280.	1250.	5950.	-
Laboratory Parameters								
pH	SU	T	7.3	6.9	7.1	6.5	7.	-
Solids, Percent	%	T	74.2	78.	81.8	72.	73.9	-
Specific Conductance	umhos/cm	T	179.	104.	88.4	63.	137.	-
Geotechnical								
Organic Soils	%	T	1.95	2.37	1.17	-	-	-
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	7.1	7.5	6.	5.3	13.4	-
Sodium Absorption Ratio	ratio	T	0.11	0.15	0.13	0.15	0.1	-
Metals								
Aluminum	mg/Kg-dry	T	4790.	5280.	4090.	7280.	10900.	-
Antimony	mg/Kg-dry	T	<0.21	<0.21	<0.18	<0.16	<0.16	-
Arsenic	mg/Kg-dry	T	1.6	2.7	2.9	1.6	1.6	-
Barium	mg/Kg-dry	T	26.	26.6	22.4	47.2	120.	-
Beryllium	mg/Kg-dry	T	0.66	0.71	0.41	0.45	0.55	-
Boron	mg/Kg-dry	T	4.4	5.4	5.1	6.4	9.8	-
Cadmium	mg/Kg-dry	T	0.06	<0.03	<0.031	<0.027	<0.025	-
Calcium	mg/Kg-dry	T	1770.	2070.	1340.	2400.	6210.	-
Chromium	mg/Kg-dry	T	8.3	12.	9.9	20.5	32.2	-
Cobalt	mg/Kg-dry	T	3.2	4.4	3.8	7.2	11.9	-
Copper	mg/Kg-dry	T	6.9	7.8	8.7	10.4	25.3	-
Iron	mg/Kg-dry	T	11200.	13300.	12700.	14500.	21700.	-
Lead	mg/Kg-dry	T	13.9	12.5	9.3	16.6	9.8	-
Magnesium	mg/Kg-dry	T	2240.	2980.	2660.	4380.	5990.	-
Manganese	mg/Kg-dry	T	210.	239.	214.	331.	602.	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-27	RRS-9	Zwergle	----
	Sample Date		10/6/2002	10/6/2002	10/6/2002	10/7/2002	10/7/2002	
	Sample ID		RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-9-T01N-SED	ZWERGEL-T01N-SED	
Exposure Area		RLCCR	RLCCR	RLCCR	RUCCR	RURR		
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.021	<0.02	<0.02	<0.023	<0.022	-
Molybdenum	mg/Kg-dry	T	1.3	0.98	0.87	0.56	0.8	-
Nickel	mg/Kg-dry	T	7.1	10.	8.1	16.4	26.8	-
Potassium	mg/Kg-dry	T	1230.	1180.	1010.	893.	1470.	-
Selenium	mg/Kg-dry	T	<0.31	0.4	<0.28	<0.17	<0.35	-
Silver	mg/Kg-dry	T	<0.15	<0.14	<0.14	<0.13	<0.12	-
Sodium	mg/Kg-dry	T	<58.6	<53.6	<54.9	<48.6	<45.6	-
Thallium	mg/Kg-dry	T	<0.11	<0.1	<0.089	<0.079	<0.08	-
Vanadium	mg/Kg-dry	T	11.1	14.7	13.3	20.9	45.9	-
Zinc	mg/Kg-dry	T	98.	96.6	56.1	60.9	59.	-
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,1,2-Trichloroethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,1-Dichloroethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,1-Dichloroethene	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,2,4-Trichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,2-Dichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,2-Dichloroethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,2-Dichloroethene (total)	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,2-Dichloropropane	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,3-Dichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.013	-
1,4-Dichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.013	-
2-Butanone	mg/kg-Dry	T	-	-	-	-	0.016	-
2-Hexanone	mg/kg-Dry	T	-	-	-	-	<0.013	-
4-Methyl-2-pentanone	mg/kg-Dry	T	-	-	-	-	<0.013	-
Acetone	mg/kg-Dry	T	-	-	-	-	0.07	-
Benzene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Bromodichloromethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
Bromoform	mg/kg-Dry	T	-	-	-	-	<0.013	-
Bromomethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
Carbon disulfide	mg/kg-Dry	T	-	-	-	-	0.004	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-27	RRS-9	Zwergle	----
	Sample Date		10/6/2002	10/6/2002	10/6/2002	10/7/2002	10/7/2002	
	Sample ID		RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-9-T01N-SED	ZWERGEL-T01N-SED	
Exposure Area		RLCCR	RLCCR	RLCCR	RUCCR	RURR		
Units	Fraction							
Carbon tetrachloride	mg/kg-Dry	T	-	-	-	-	<0.013	-
Chlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Chloroethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
Chloroform	mg/kg-Dry	T	-	-	-	-	<0.013	-
Chloromethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
cis-1,2-Dichloroethene	mg/kg-Dry	T	-	-	-	-	<0.013	-
cis-1,3-Dichloropropene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Dibromochloromethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
Dichlorodifluoromethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
Ethylbenzene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Methylene chloride	mg/kg-Dry	T	-	-	-	-	<0.013	-
Styrene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Tetrachloroethene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Toluene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Total Xylene	mg/kg-Dry	T	-	-	-	-	<0.013	-
trans-1,2-Dichloroethene	mg/kg-Dry	T	-	-	-	-	<0.013	-
trans-1,3-Dichloropropene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Trichloroethene	mg/kg-Dry	T	-	-	-	-	<0.013	-
Trichlorofluoromethane	mg/kg-Dry	T	-	-	-	-	<0.013	-
Vinyl chloride	mg/kg-Dry	T	-	-	-	-	<0.013	-
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	-	-	-	-	<0.44	-
2,4,5-Trichlorophenol	mg/kg-Dry	T	-	-	-	-	<1.1	-
2,4,6-Trichlorophenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
2,4-Dichlorophenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
2,4-Dimethylphenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
2,4-Dinitrophenol	mg/kg-Dry	T	-	-	-	-	<1.1	J
2,4-Dinitrotoluene	mg/kg-Dry	T	-	-	-	-	<0.44	-
2,6-Dinitrotoluene	mg/kg-Dry	T	-	-	-	-	<0.44	-
2-Chloronaphthalene	mg/kg-Dry	T	-	-	-	-	<0.44	-
2-Chlorophenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
2-Methylnaphthalene	mg/kg-Dry	T	-	-	-	-	<0.44	-
2-Methylphenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
2-Nitroaniline	mg/kg-Dry	T	-	-	-	-	<1.1	-

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3a.rpt

Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-27	RRS-9	Zwergle	----
	Sample Date		10/6/2002	10/6/2002	10/6/2002	10/7/2002	10/7/2002	
	Sample ID		RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-9-T01N-SED	ZWERGEL-T01N-SED	
Exposure Area		RLCCR	RLCCR	RLCCR	RUCCR	RURR		
Units	Fraction							
2-Nitrophenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
3,3-Dichlorobenzidine	mg/kg-Dry	T	-	-	-	-	<0.44	-
3-Nitroaniline	mg/kg-Dry	T	-	-	-	-	<1.1	-
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	-	-	-	-	<1.1	-
4-Bromophenyl phenyl ether	mg/kg-Dry	T	-	-	-	-	<0.44	-
4-Chloro-3-methylphenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
4-Chloroaniline	mg/kg-Dry	T	-	-	-	-	<0.44	-
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	-	-	-	-	<0.44	-
4-Methylphenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
4-Nitroaniline	mg/kg-Dry	T	-	-	-	-	<1.1	-
4-Nitrophenol	mg/kg-Dry	T	-	-	-	-	<1.1	-
Acenaphthene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Acenaphthylene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Anthracene	mg/kg-Dry	T	-	-	-	-	<0.44	J
Benzaldehyde	mg/kg-Dry	T	-	-	-	-	<0.44	J
Benzo(a)anthracene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Benzo(a)pyrene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Benzo(b)fluoranthene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Benzo(g,h,i)perylene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Benzo(k)fluoranthene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	-	-	-	-	<0.44	-
Bis(2-chloroethyl)ether	mg/kg-Dry	T	-	-	-	-	<0.44	-
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	-	-	-	-	<0.44	-
Butyl benzyl phthalate	mg/kg-Dry	T	-	-	-	-	<0.44	-
Carbazole	mg/kg-Dry	T	-	-	-	-	<0.44	-
Chrysene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Dibenz(a,h)anthracene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Dibenzofuran	mg/kg-Dry	T	-	-	-	-	<0.44	-
Dichlorodiisopropyl ether	mg/kg-Dry	T	-	-	-	-	<0.44	-
Diethylphthalate	mg/kg-Dry	T	-	-	-	-	<0.44	-
Dimethylphthalate	mg/kg-Dry	T	-	-	-	-	<0.44	-
Di-n-Butyl phthalate	mg/kg-Dry	T	-	-	-	-	<0.44	-
Di-n-Octyl phthalate	mg/kg-Dry	T	-	-	-	-	<0.44	-
Fluoranthene	mg/kg-Dry	T	-	-	-	-	<0.44	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-27	RRS-9	Zwergle	----
	Sample Date		10/6/2002	10/6/2002	10/6/2002	10/7/2002	10/7/2002	
	Sample ID		RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-9-T01N-SED	ZWERGEL-T01N-SED	
Exposure Area		RLCCR	RLCCR	RLCCR	RUCCR	RURR		
Units	Fraction							
Fluorene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Hexachlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Hexachlorobutadiene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Hexachlorocyclopentadiene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Hexachloroethane	mg/kg-Dry	T	-	-	-	-	<0.44	-
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Isophorone	mg/kg-Dry	T	-	-	-	-	<0.44	-
Naphthalene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Nitrobenzene	mg/kg-Dry	T	-	-	-	-	<0.44	-
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	-	-	-	-	<0.44	-
N-Nitrosodiphenylamine	mg/kg-Dry	T	-	-	-	-	<0.44	-
Pentachlorophenol	mg/kg-Dry	T	-	-	-	-	<1.1	-
Phenanthrene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Phenol	mg/kg-Dry	T	-	-	-	-	<0.44	-
Pyrene	mg/kg-Dry	T	-	-	-	-	<0.44	-
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	-	-	-	-	<0.12	-
2,6-Pyridinediamine,	mg/kg-Dry	T	-	-	-	-	<0.12	-
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	-	-	-	-	<0.12	-
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	-	-	-	-	<0.12	-
Pentaerythritol tetranitrate	mg/kg-Dry	T	-	-	-	-	<5.	-
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	-	-	-	-	<0.0023	-
Aldrin	mg/kg-Dry	T	-	-	-	-	<0.0023	-
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	-	-	-	-	<0.0023	-
Aroclor 1016	mg/kg-Dry	T	-	-	-	-	<0.044	-
Aroclor 1221	mg/kg-Dry	T	-	-	-	-	<0.09	-
Aroclor 1232	mg/kg-Dry	T	-	-	-	-	<0.044	-
Aroclor 1242	mg/kg-Dry	T	-	-	-	-	<0.044	-
Aroclor 1248	mg/kg-Dry	T	-	-	-	-	<0.044	-
Aroclor 1254	mg/kg-Dry	T	-	-	-	-	<0.044	-
Aroclor 1260	mg/kg-Dry	T	-	-	-	-	<0.044	-
beta-Hexachlorocyclohexane	mg/kg-Dry	T	-	-	-	-	<0.0023	-
delta-Hexachlorocyclohexane	mg/kg-Dry	T	-	-	-	-	<0.0023	-

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Appendix A-3a
Sediment Composite
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-27	RRS-9	Zwergle	----
	Sample Date	Sample ID	10/6/2002	10/6/2002	10/6/2002	10/7/2002	10/7/2002	
	Exposure Area	Fraction	RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-9-T01N-SED	ZWERGEL-T01N-SED	
Units		RLCCR	RLCCR	RLCCR	RUCCR	RURR		
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Dieldrin	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Endosulfan I	mg/kg-Dry	T	-	-	-	-	<0.0023	-
Endosulfan II	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Endosulfan sulfate	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Endrin	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Endrin aldehyde	mg/kg-Dry	T	-	-	-	-	<0.0044	-
Endrin ketone	mg/kg-Dry	T	-	-	-	-	<0.0044	-
g-Chlordane	mg/kg-Dry	T	-	-	-	-	<0.0023	-
Heptachlor	mg/kg-Dry	T	-	-	-	-	<0.0023	-
Heptachlor epoxide	mg/kg-Dry	T	-	-	-	-	<0.0023	-
Lindane	mg/kg-Dry	T	-	-	-	-	<0.0023	-
Methoxychlor	mg/kg-Dry	T	-	-	-	-	<0.023	-
Toxaphene	mg/kg-Dry	T	-	-	-	-	<0.23	-

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		Cabresto Ditch #4	Cabresto Ditch #4	CD-1	CD-1	CD-1	CD-1		
	Sample Date		7/16/2003	9/22/2003	3/19/2003	3/19/2003	7/15/2003	9/21/2003		
	Sample ID		CABD4-T02N-SED	CABD4-T02N-SED	CD-1-T02N-SED	CD-1-T01N-SED	CD-1-T02N-SED	CD-1-T02N-SED		
	Exposure Area		ID	ID	ID	ID	ID	ID		
Units	Fraction									
General Chemistry										
Ammonia	mg/Kg-dry	T	759. J	793. J	71.3 J	28.4 J	27.6 J	18.8 J		
Chloride	mg/kg-Dry	T	4.7 :	12.6 :	9. :	5.7 :	3.6 :	3.7 :		
Fluoride	mg/Kg-dry	T	0.96 :	0.93 J	2.6 J	2.8 J	2.5 :	0.7 J		
Nitrate	mg/kg-Dry	T	0.78 J	11.3 J	<4.1 J	<3.2 J	1.1 J	<3.1 J		
Phosphorus	mg/Kg-dry	T	1290. J	1720. J	3140. J	2330. J	957. J	2430. J		
Sulfate	mg/kg-Dry	T	3.1 :	258. :	301. :	227. :	60.3 :	191. :		
Total Kjeldahl Nitrogen	mg/Kg-dry	T	9030. J	15200. :	906. :	764. :	268. J	226. :		
Total Organic Carbon	mg/Kg-dry	T	148500. :	256200. J	13400. J	14900. J	4180. :	5860. J		
Laboratory Parameters										
pH	SU	T	7.2 J	7.1 J	6.7 J	6.7 J	7. J	7.1 J		
Solids, Percent	%	T	28.5 :	24.8 :	49. :	63.8 :	75. :	65.7 :		
Specific Conductance	umhos/cm	T	591. J	455. J	209. J	175. J	149. J	154. J		
Geotechnical										
Organic Soils	%	T	14.9 J	36.7 J	6.8 :	6.1 :	2.9 J	3.9 J		
Physical Properties										
Cation-Exchange Capacity	meq/100g	T	25.6 :	31.6 :	29.7 :	26.3 :	9.7 :	14.8 :		
Sodium Absorption Ratio	ratio	T	0.1 :	0.09 :	0.17 :	0.13 :	0.13 :	0.16 :		
Metals										
Aluminum	mg/Kg-dry	T	12300. :	8820. :	15900. J	13800. J	10000. :	10200. :		
Antimony	mg/Kg-dry	T	<1.7 J	<1.9 J	<0.51 J	<0.39 J	<1.5 J	<0.64 J		
Arsenic	mg/Kg-dry	T	5. J	2.1 :	7.5 :	5.5 :	6.2 J	9. :		
Barium	mg/Kg-dry	T	138. J	103. :	506. J	379. J	1210. J	785. :		
Beryllium	mg/Kg-dry	T	1.8 :	1.1 :	3.4 :	2.9 :	1.6 :	1.7 :		
Boron	mg/Kg-dry	T	10.3 :	9.1 :	3.4 :	2.8 :	2.4 J	7.3 J		
Cadmium	mg/Kg-dry	T	<0.092 :	0.48 J	3. :	2.1 :	1.1 J	1. J		
Calcium	mg/Kg-dry	T	13700. :	12900. :	2510. J	2100. J	2000. :	2370. :		
Chromium	mg/Kg-dry	T	25.8 :	12.6 :	13.5 J	13.6 J	17.3 :	15. :		
Cobalt	mg/Kg-dry	T	10. :	5.4 :	27.7 :	18.8 :	18.9 :	12.9 :		
Copper	mg/Kg-dry	T	28.4 :	27.6 :	135. J	124. J	86.8 :	73.1 :		
Iron	mg/Kg-dry	T	26100. :	14400. :	25200. J	20600. J	26500. :	31200. :		
Lead	mg/Kg-dry	T	33.7 :	25.3 :	77.7 J	56.5 J	74.2 :	78.5 :		
Magnesium	mg/Kg-dry	T	6510. :	3840. :	3260. J	3230. J	3370. :	3770. :		
Manganese	mg/Kg-dry	T	887. :	543. J	3220. J	715. J	1110. :	647. J		

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		Cabresto Ditch #4	Cabresto Ditch #4	CD-1	CD-1	CD-1	CD-1
	Sample Date	Sample ID	7/16/2003	9/22/2003	3/19/2003	3/19/2003	7/15/2003	9/21/2003
	Exposure Area	Units	CABD4-T02N-SED	CABD4-T02N-SED	CD-1-T02N-SED	CD-1-T01N-SED	CD-1-T02N-SED	CD-1-T02N-SED
	Fraction	ID	ID	ID	ID	ID	ID	ID
Mercury	mg/Kg-dry	T	0.08	<0.065	<0.031 J	<0.026 J	0.033	<0.022
Molybdenum	mg/Kg-dry	T	3.	2.7	14.2	12.6	23.3	10.9
Nickel	mg/Kg-dry	T	24.1	14.	88. J	64.6 J	60.6	45.7
Potassium	mg/Kg-dry	T	3570. J	2370.	2330. J	1730. J	2320. J	2710.
Selenium	mg/Kg-dry	T	<2.3 J	<1.4	2.2 J	1.6 J	<0.91 J	1.5
Silver	mg/Kg-dry	T	<0.28 J	<0.58	<0.28	0.26	0.31 J	0.33
Sodium	mg/Kg-dry	T	<289.	317.	<197.	<113.	<59.7	274.
Thallium	mg/Kg-dry	T	<0.29	<0.38	0.22	0.18	<0.11	0.17
Vanadium	mg/Kg-dry	T	31.6	15.6	15.1	16.1	20.1	15.3
Zinc	mg/Kg-dry	T	253. J	179.	739. J	570. J	429. J	391.
SEM and AVS								
Cadmium	mg/Kg-dry	T	<0.092	0.48 J	3.	2.1	1.1 J	1. J
Copper	mg/Kg-dry	T	28.4	27.6	135. J	124. J	86.8	73.1
Lead	mg/Kg-dry	T	33.7	25.3	77.7 J	56.5 J	74.2	78.5
Mercury	mg/Kg-dry	T	0.08	<0.065	<0.031 J	<0.026 J	0.033	<0.022
Nickel	mg/Kg-dry	T	24.1	14.	88. J	64.6 J	60.6	45.7
Zinc	mg/Kg-dry	T	253. J	179.	739. J	570. J	429. J	391.

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ERLIN	ERLIN	ERLIN	ERLIN	ERLMID	ERLMID
	Sample Date		10/7/2002	3/21/2003	7/16/2003	9/25/2003	10/7/2002	3/21/2003
	Sample ID		ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLMID-T01N-SED	ERLMID-T01N-SED
	Exposure Area		SW2	SW2	SW2	SW2	SW2	SW2
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	84.3 :	52.9 :	48.9 J	75. J	50.1 J	87.1 J
Chloride	mg/kg-Dry	T	<3.8 J	<9.2 J	3.9 :	3.8 :	<4.8 J	<9.8 J
Fluoride	mg/Kg-dry	T	0.96 J	1.6 J	1.9 :	0.64 J	0.52 J	1.3 J
Nitrate	mg/kg-Dry	T	<3.8 J	<3.7 J	<3.1 J	<3.4 J	<4.8 J	<5.3 J
Phosphorus	mg/Kg-dry	T	2100. J	1780. :	1290. J	1320. J	2950. J	3250. J
Sulfate	mg/kg-Dry	T	954. J	611. J	47.9 :	389. :	476. J	809. J
Total Kjeldahl Nitrogen	mg/Kg-dry	T	567. J	771. J	382. J	558. :	432. J	615. J
Total Organic Carbon	mg/Kg-dry	T	8840. J	<14100. J	7410. :	8320. J	5730. J	6510. J
Laboratory Parameters								
pH	SU	T	6.3 :	6.8 J	6.9 J	6.7 J	5.8 :	6.7 J
Solids, Percent	%	T	53.4 :	54.5 :	65.4 :	59.1 :	42. :	38.1 :
Specific Conductance	umhos/cm	T	281. :	388. J	357. J	335. J	177. :	384. J
Geotechnical								
Organic Soils	%	T	-	6.5 :	3.4 J	5.1 :	-	8. :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	15.6 :	18.2 :	11.5 :	19.8 :	6.8 :	11.4 :
Sodium Absorption Ratio	ratio	T	0.15 :	0.26 :	0.17 :	0.15 :	0.13 :	0.17 :
Metals								
Aluminum	mg/Kg-dry	T	13300. J	18800. J	11800. :	15000. :	14600. :	23600. J
Antimony	mg/Kg-dry	T	<0.24 J	<0.45 J	<1.9 J	<0.67 J	<0.31 J	<0.65 J
Arsenic	mg/Kg-dry	T	10.8 :	11.4 :	6.4 J	10.5 :	12.2 :	16.2 :
Barium	mg/Kg-dry	T	558. :	638. J	319. J	538. :	523. :	775. J
Beryllium	mg/Kg-dry	T	1.6 :	3.3 J	2.4 :	2.5 :	1.4 :	3.5 :
Boron	mg/Kg-dry	T	15.8 J	2.9 J	2.1 J	<1. :	19.6 J	4.7 J
Cadmium	mg/Kg-dry	T	0.31 J	2.2 J	0.73 J	1.5 J	0.39 J	2.5 J
Calcium	mg/Kg-dry	T	1780. :	2220. :	1870. :	2360. :	1410. :	2230. J
Chromium	mg/Kg-dry	T	18.7 :	23.1 J	14.2 :	19.4 :	18.1 :	26.4 J
Cobalt	mg/Kg-dry	T	6.6 :	15.9 :	12.5 :	15.5 :	4.4 :	11.4 :
Copper	mg/Kg-dry	T	33.6 J	132. J	102. :	118. :	34.6 J	118. J
Iron	mg/Kg-dry	T	38700. J	40300. J	21600. :	37200. :	47600. :	63500. J
Lead	mg/Kg-dry	T	58.1 J	118. J	50. :	106. :	80.2 J	282. J
Magnesium	mg/Kg-dry	T	4720. J	5220. J	3330. :	4750. :	4810. :	6690. J
Manganese	mg/Kg-dry	T	320. J	696. J	596. :	588. J	269. :	401. J

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R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ERLIN	ERLIN	ERLIN	ERLIN	ERLMID	ERLMID
	Sample Date		10/7/2002	3/21/2003	7/16/2003	9/25/2003	10/7/2002	3/21/2003
	Sample ID		ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLMID-T01N-SED	ERLMID-T01N-SED
	Exposure Area		SW2	SW2	SW2	SW2	SW2	SW2
Units	Fraction							
Mercury	mg/Kg-dry	T	0.016 :	<0.031 :	0.04 :	<0.028 :	0.016 :	<0.041 :
Molybdenum	mg/Kg-dry	T	16.6 :	17.7 J :	9.7 :	16.2 :	19.6 :	27.3 :
Nickel	mg/Kg-dry	T	9.7 J :	42.7 J :	37.6 :	46.6 :	10.8 J :	38.3 J :
Potassium	mg/Kg-dry	T	3880. J :	4090. J :	2070. J :	2880. :	5540. J :	7700. J :
Selenium	mg/Kg-dry	T	1.8 :	2.7 J :	1.3 J :	1.5 :	2.4 :	3.9 J :
Silver	mg/Kg-dry	T	0.81 :	0.74 :	<0.14 J :	0.38 :	1.5 :	2. :
Sodium	mg/Kg-dry	T	333. :	158. J :	<33.1 :	321. :	493. :	454. :
Thallium	mg/Kg-dry	T	0.32 :	0.32 :	<0.15 :	0.21 :	0.52 :	0.65 :
Vanadium	mg/Kg-dry	T	20.4 :	22.4 :	13.2 :	19.3 :	20.6 :	26.9 :
Zinc	mg/Kg-dry	T	99. J :	383. J :	380. J :	436. :	130. J :	405. J :
Volatile Organics								
1,1,1-Trichloroethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,1,2-Trichloroethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,1-Dichloroethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,1-Dichloroethene	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,2,4-Trichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,2-Dichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,2-Dichloroethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,2-Dichloroethene (total)	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,2-Dichloropropane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,3-Dichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
1,4-Dichlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
2-Butanone	mg/kg-Dry	T	-	-	-	-	<0.037 J :	-
2-Hexanone	mg/kg-Dry	T	-	-	-	-	<0.037 J :	-
4-Methyl-2-pentanone	mg/kg-Dry	T	-	-	-	-	<0.037 J :	-
Acetone	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
Benzene	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
Bromodichloromethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
Bromoform	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
Bromomethane	mg/kg-Dry	T	-	-	-	-	<0.037 :	-
Carbon disulfide	mg/kg-Dry	T	-	-	-	-	0.003 J :	-

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ERLIN	ERLIN	ERLIN	ERLIN	ERLMID	ERLMID
	Sample Date		10/7/2002	3/21/2003	7/16/2003	9/25/2003	10/7/2002	3/21/2003
	Sample ID		ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLMID-T01N-SED	ERLMID-T01N-SED
	Exposure Area		SW2	SW2	SW2	SW2	SW2	SW2
Units	Fraction							
Carbon tetrachloride	mg/kg-Dry	T	-	-	-	-	<0.037	-
Chlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Chloroethane	mg/kg-Dry	T	-	-	-	-	<0.037	J
Chloroform	mg/kg-Dry	T	-	-	-	-	<0.037	-
Chloromethane	mg/kg-Dry	T	-	-	-	-	<0.037	-
cis-1,2-Dichloroethene	mg/kg-Dry	T	-	-	-	-	<0.037	-
cis-1,3-Dichloropropene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Dibromochloromethane	mg/kg-Dry	T	-	-	-	-	<0.037	-
Dichlorodifluoromethane	mg/kg-Dry	T	-	-	-	-	<0.037	J
Ethylbenzene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Methylene chloride	mg/kg-Dry	T	-	-	-	-	<0.037	-
Styrene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Tetrachloroethene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Toluene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Total Xylene	mg/kg-Dry	T	-	-	-	-	<0.037	-
trans-1,2-Dichloroethene	mg/kg-Dry	T	-	-	-	-	<0.037	-
trans-1,3-Dichloropropene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Trichloroethene	mg/kg-Dry	T	-	-	-	-	<0.037	-
Trichlorofluoromethane	mg/kg-Dry	T	-	-	-	-	<0.037	J
Vinyl chloride	mg/kg-Dry	T	-	-	-	-	<0.037	J
Semi-Volatile Organics								
1,1'-Biphenyl	mg/kg-Dry	T	-	-	-	-	<0.78	-
2,4,5-Trichlorophenol	mg/kg-Dry	T	-	-	-	-	<2.	-
2,4,6-Trichlorophenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
2,4-Dichlorophenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
2,4-Dimethylphenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
2,4-Dinitrophenol	mg/kg-Dry	T	-	-	-	-	<2.	J
2,4-Dinitrotoluene	mg/kg-Dry	T	-	-	-	-	<0.78	-
2,6-Dinitrotoluene	mg/kg-Dry	T	-	-	-	-	<0.78	-
2-Chloronaphthalene	mg/kg-Dry	T	-	-	-	-	<0.78	-
2-Chlorophenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
2-Methylnaphthalene	mg/kg-Dry	T	-	-	-	-	<0.78	-
2-Methylphenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
2-Nitroaniline	mg/kg-Dry	T	-	-	-	-	<2.	-

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ERLIN	ERLIN	ERLIN	ERLIN	ERLMID	ERLMID
	Sample Date		10/7/2002	3/21/2003	7/16/2003	9/25/2003	10/7/2002	3/21/2003
	Sample ID		ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLMID-T01N-SED	ERLMID-T01N-SED
	Exposure Area		SW2	SW2	SW2	SW2	SW2	SW2
Units	Fraction							
2-Nitrophenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
3,3-Dichlorobenzidine	mg/kg-Dry	T	-	-	-	-	<0.78	-
3-Nitroaniline	mg/kg-Dry	T	-	-	-	-	<2.	-
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	-	-	-	-	<2.	-
4-Bromophenyl phenyl ether	mg/kg-Dry	T	-	-	-	-	<0.78	-
4-Chloro-3-methylphenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
4-Chloroaniline	mg/kg-Dry	T	-	-	-	-	<0.78	-
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	-	-	-	-	<0.78	-
4-Methylphenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
4-Nitroaniline	mg/kg-Dry	T	-	-	-	-	<2.	-
4-Nitrophenol	mg/kg-Dry	T	-	-	-	-	<2.	-
Acenaphthene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Acenaphthylene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Anthracene	mg/kg-Dry	T	-	-	-	-	<0.78	J
Benzaldehyde	mg/kg-Dry	T	-	-	-	-	<1.8	J
Benzo(a)anthracene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Benzo(a)pyrene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Benzo(b)fluoranthene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Benzo(g,h,i)perylene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Benzo(k)fluoranthene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	-	-	-	-	<0.78	-
Bis(2-chloroethyl)ether	mg/kg-Dry	T	-	-	-	-	<0.78	-
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	-	-	-	-	<0.78	-
Butyl benzyl phthalate	mg/kg-Dry	T	-	-	-	-	<0.78	-
Carbazole	mg/kg-Dry	T	-	-	-	-	<0.78	-
Chrysene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Dibenz(a,h)anthracene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Dibenzofuran	mg/kg-Dry	T	-	-	-	-	<0.78	-
Dichlorodiisopropyl ether	mg/kg-Dry	T	-	-	-	-	<0.78	-
Diethylphthalate	mg/kg-Dry	T	-	-	-	-	<0.78	-
Dimethylphthalate	mg/kg-Dry	T	-	-	-	-	<0.78	-
Di-n-Butyl phthalate	mg/kg-Dry	T	-	-	-	-	<0.78	-
Di-n-Octyl phthalate	mg/kg-Dry	T	-	-	-	-	<0.78	-
Fluoranthene	mg/kg-Dry	T	-	-	-	-	<0.78	-

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ERLIN	ERLIN	ERLIN	ERLIN	ERLMID	ERLMID
	Sample Date		10/7/2002	3/21/2003	7/16/2003	9/25/2003	10/7/2002	3/21/2003
	Sample ID		ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLMID-T01N-SED	ERLMID-T01N-SED
	Exposure Area		SW2	SW2	SW2	SW2	SW2	SW2
Units	Fraction							
Fluorene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Hexachlorobenzene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Hexachlorobutadiene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Hexachlorocyclopentadiene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Hexachloroethane	mg/kg-Dry	T	-	-	-	-	<0.78	-
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Isophorone	mg/kg-Dry	T	-	-	-	-	<0.78	-
Naphthalene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Nitrobenzene	mg/kg-Dry	T	-	-	-	-	<0.78	-
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	-	-	-	-	<0.78	-
N-Nitrosodiphenylamine	mg/kg-Dry	T	-	-	-	-	<0.78	-
Pentachlorophenol	mg/kg-Dry	T	-	-	-	-	<2.	-
Phenanthrene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Phenol	mg/kg-Dry	T	-	-	-	-	<0.78	-
Pyrene	mg/kg-Dry	T	-	-	-	-	<0.78	-
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	-	-	-	-	<0.12	-
2,6-Pyridinediamine,	mg/kg-Dry	T	-	-	-	-	<0.12	-
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	-	-	-	-	<0.12	-
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	-	-	-	-	<0.12	-
Pentaerythritol tetranitrate	mg/kg-Dry	T	-	-	-	-	<5.	-
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	-	-	-	-	<0.004	-
Aldrin	mg/kg-Dry	T	-	-	-	-	<0.004	-
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	-	-	-	-	<0.004	-
Aroclor 1016	mg/kg-Dry	T	-	-	-	-	<0.078	-
Aroclor 1221	mg/kg-Dry	T	-	-	-	-	<0.16	-
Aroclor 1232	mg/kg-Dry	T	-	-	-	-	<0.078	-
Aroclor 1242	mg/kg-Dry	T	-	-	-	-	<0.078	-
Aroclor 1248	mg/kg-Dry	T	-	-	-	-	<0.078	-
Aroclor 1254	mg/kg-Dry	T	-	-	-	-	<0.078	-
Aroclor 1260	mg/kg-Dry	T	-	-	-	-	<0.078	-
beta-Hexachlorocyclohexane	mg/kg-Dry	T	-	-	-	-	<0.004	-
delta-Hexachlorocyclohexane	mg/kg-Dry	T	-	-	-	-	<0.004	-

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	ERLIN	ERLIN	ERLIN	ERLIN	ERLMID	ERLMID
			10/7/2002	3/21/2003	7/16/2003	9/25/2003	10/7/2002	3/21/2003
			ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLIN-T01N-SED	ERLMID-T01N-SED	ERLMID-T01N-SED
			SW2	SW2	SW2	SW2	SW2	SW2
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Dieldrin	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Endosulfan I	mg/kg-Dry	T	-	-	-	-	<0.004	-
Endosulfan II	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Endosulfan sulfate	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Endrin	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Endrin aldehyde	mg/kg-Dry	T	-	-	-	-	<0.0078	-
Endrin ketone	mg/kg-Dry	T	-	-	-	-	<0.0078	-
g-Chlordane	mg/kg-Dry	T	-	-	-	-	<0.004	-
Heptachlor	mg/kg-Dry	T	-	-	-	-	<0.004	-
Heptachlor epoxide	mg/kg-Dry	T	-	-	-	-	<0.004	-
Lindane	mg/kg-Dry	T	-	-	-	-	<0.004	-
Methoxychlor	mg/kg-Dry	T	-	-	-	-	<0.04	-
Toxaphene	mg/kg-Dry	T	-	-	-	-	<0.4	-
SEM and AVS								
Acid Volatile Sulfide	mg/Kg-dry	T	27.8 J	-	-	-	34.6	-
Cadmium	mg/Kg-dry	T	0.31 J	2.2 J	0.73 J	1.5 J	0.39 J	2.5 J
Copper	mg/Kg-dry	T	33.6 J	132. J	102. :	118. :	34.6 J	118. J
Lead	mg/Kg-dry	T	58.1 J	118. J	50. :	106. :	80.2 J	282. J
Mercury	mg/Kg-dry	T	0.016 :	<0.031 :	0.04 :	<0.028 :	0.016 :	<0.041 :
Nickel	mg/Kg-dry	T	9.7 J	42.7 J	37.6 :	46.6 :	10.8 J	38.3 J
Zinc	mg/Kg-dry	T	99. J	383. J	380. J	436. :	130. J	405. J

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ERLMID	ERLMID	ERLOUT	ERLOUT	ERLOUT	ERLOUT
	Sample Date		7/16/2003	9/25/2003	10/7/2002	3/21/2003	7/16/2003	9/25/2003
	Sample ID		ERLMID-T01N-SED	ERLMID-T01N-SED	ERLOUT-T01N-SED	ERLOUT-T01N-SED	ERLOUT-T01N-SED	ERLOUT-T01N-SED
	Exposure Area		SW2	SW2	SW2	SW2	SW2	SW2
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	93.3 J	93.8 J	91.7 J	707. J	266. J	119. J
Chloride	mg/kg-Dry	T	6.9 :	10.4 :	8.7 J	<30.5 J	15. :	11.4 :
Fluoride	mg/Kg-dry	T	3.3 :	2.2 J	0.86 J	3.7 J	3. :	0.66 J
Nitrate	mg/kg-Dry	T	<5.4 J	<5.4 J	<7.2 J	<12.1 J	3.1 J	<7.7 J
Phosphorus	mg/Kg-dry	T	3390. J	2570. J	3760. J	2690. J	4110. J	2440. J
Sulfate	mg/kg-Dry	T	197. :	706. :	628. J	2930. J	357. :	761. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	562. J	712. :	1440. J	4050. J	1940. J	1590. :
Total Organic Carbon	mg/Kg-dry	T	6000. :	6100. J	15800. J	39600. J	17200. :	11200. J
Laboratory Parameters								
pH	SU	T	6.7 J	6.6 J	6.1 :	6.9 J	7. J	6.7 J
Solids, Percent	%	T	36.9 :	37.2 :	28.1 :	16.6 :	22.8 :	26. :
Specific Conductance	umhos/cm	T	309. J	286. J	133. :	348. J	268. J	233. J
Geotechnical								
Organic Soils	%	T	7.5 J	7.4 :	-	13.1 :	10.3 J	9.5 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	15.4 :	33.3 :	15. :	10.9 :	10.6 :	22.7 :
Sodium Absorption Ratio	ratio	T	0.29 :	0.17 :	0.14 :	0.11 :	0.13 :	0.13 :
Metals								
Aluminum	mg/Kg-dry	T	22200. :	21900. :	29400. :	70500. J	44400. :	37800. :
Antimony	mg/Kg-dry	T	<4.1 J	<1.3 J	<0.4 J	<1.5 J	<3.7 J	<1.9 J
Arsenic	mg/Kg-dry	T	16.2 J	15.9 :	11.2 :	11.4 :	14.5 J	15.1 :
Barium	mg/Kg-dry	T	694. J	656. :	437. :	326. J	497. J	485. :
Beryllium	mg/Kg-dry	T	3.2 :	3.7 :	5.1 :	17.5 :	10.2 :	7.8 :
Boron	mg/Kg-dry	T	5.6 J	<1.7 :	21.7 :	7.5 :	6. :	<2. J
Cadmium	mg/Kg-dry	T	<0.081 :	1.5 J	1.6 J	16.9 :	6.3 :	5.2 J
Calcium	mg/Kg-dry	T	2510. :	2400. :	2240. :	5430. J	3780. :	3180. :
Chromium	mg/Kg-dry	T	25.9 :	21.9 :	22.4 :	22.7 J	24.8 :	23.5 :
Cobalt	mg/Kg-dry	T	10.1 :	10.6 :	20.7 :	123. :	44.8 :	30.5 :
Copper	mg/Kg-dry	T	121. :	141. :	83.4 J	612. J	360. :	291. :
Iron	mg/Kg-dry	T	61500. :	57100. :	48300. :	31100. J	50700. :	51000. :
Lead	mg/Kg-dry	T	248. :	259. :	80.6 J	101. J	221. :	216. :
Magnesium	mg/Kg-dry	T	6600. :	5720. :	5640. :	4980. J	6040. :	6000. :
Manganese	mg/Kg-dry	T	354. :	361. J	661. :	4080. J	1050. :	503. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ERLMID	ERLMID	ERLOUT	ERLOUT	ERLOUT	ERLOUT
	Sample Date	Sample ID	7/16/2003	9/25/2003	10/7/2002	3/21/2003	7/16/2003	9/25/2003
	Exposure Area		ERLMID-T01N-SED	ERLMID-T01N-SED	ERLOUT-T01N-SED	ERLOUT-T01N-SED	ERLOUT-T01N-SED	ERLOUT-T01N-SED
	Units	Fraction	SW2	SW2	SW2	SW2	SW2	SW2
Mercury	mg/Kg-dry	T	0.092 :	<0.041 :	0.034 :	<0.094 :	0.24 :	<0.057 :
Molybdenum	mg/Kg-dry	T	23.2 :	24.1 :	19.5 :	24.3 :	22.8 :	21.4 :
Nickel	mg/Kg-dry	T	31.3 :	44.2 :	34.5 J	378. J	167. :	126. :
Potassium	mg/Kg-dry	T	7260. J	5730. :	6000. J	3580. J	6150. J	5170. :
Selenium	mg/Kg-dry	T	2.9 J	3. :	3.8 :	12.2 J	5.3 J	4.3 :
Silver	mg/Kg-dry	T	1.3 J	1.3 :	1.5 :	<0.46 :	1.1 J	0.58 :
Sodium	mg/Kg-dry	T	<570. :	710. :	499. :	<161. J	<90.5 :	737. :
Thallium	mg/Kg-dry	T	0.55 :	0.48 :	0.5 :	0.53 :	0.53 :	0.51 :
Vanadium	mg/Kg-dry	T	24.6 :	22.3 :	24. :	23.3 :	23.5 :	23.4 :
Zinc	mg/Kg-dry	T	341. J	564. :	414. J	5250. J	1810. J	1370. :
SEM and AVS								
Acid Volatile Sulfide	mg/Kg-dry	T	-	-	95.5 :	-	-	-
Cadmium	mg/Kg-dry	T	<0.081 :	1.5 J	1.6 J	16.9 :	6.3 :	5.2 J
Copper	mg/Kg-dry	T	121. :	141. :	83.4 J	612. J	360. :	291. :
Lead	mg/Kg-dry	T	248. :	259. :	80.6 J	101. J	221. :	216. :
Mercury	mg/Kg-dry	T	0.092 :	<0.041 :	0.034 :	<0.094 :	0.24 :	<0.057 :
Nickel	mg/Kg-dry	T	31.3 :	44.2 :	34.5 J	378. J	167. :	126. :
Zinc	mg/Kg-dry	T	341. J	564. :	414. J	5250. J	1810. J	1370. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	Hansen Creek	LR-1	LR-1	LR-1	LR-11A	LR-11A
			7/17/2003 HANSENCREEK-T02 N-SED AMS	3/18/2003 LR-1-T02N-SED SWR	7/13/2003 LR-1-T02N-SED SWR	9/21/2003 LR-1-T02N-SED SWR	3/18/2003 LR-11A-T02N-SED SWR	7/13/2003 LR-11A-T02N-SED SWR
General Chemistry								
Ammonia	mg/Kg-dry	T	<9.6 J	178. J	13.4 J	40.2 J	88.7 J	15.5 J
Chloride	mg/kg-Dry	T	2.6 :	18.5 :	3.6 :	4.1 :	8.3 :	3.5 :
Fluoride	mg/Kg-dry	T	0.99 :	1.1 J	0.45 :	0.68 J	0.72 J	1. :
Nitrate	mg/kg-Dry	T	<2.5 J	<6.1 J	1.3 J	<3. J	<4.9 J	1.6 J
Phosphorus	mg/Kg-dry	T	1250. J	4450. J	511. J	1470. J	6060. J	860. J
Sulfate	mg/kg-Dry	T	1170. :	372. :	36.7 :	335. :	396. :	93.7 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	<27.2 J	1270. :	52.8 J	602. :	725. :	175. J
Total Organic Carbon	mg/Kg-dry	T	<125. :	12800. J	<129. :	6150. J	9970. J	1080. :
Laboratory Parameters								
pH	SU	T	3.7 J	6.7 :	7. J	6.8 J	7. J	7.1 J
Solids, Percent	%	T	80.1 :	33.1 :	77.7 :	67.5 :	41.4 :	75.1 :
Specific Conductance	umhos/cm	T	1000. J	221. J	108. J	241. J	275. J	229. J
Geotechnical								
Organic Soils	%	T	2.6 J	6.8 :	1.7 J	2.3 J	6.5 :	2.3 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	9.8 :	21.2 :	7. :	14.5 :	8.8 :	10.5 :
Sodium Absorption Ratio	ratio	T	0.07 :	0.43 :	0.3 :	0.27 :	0.37 :	0.18 :
Metals								
Aluminum	mg/Kg-dry	T	<6010. J	20800. J	6110. :	8780. :	17200. J	7250. :
Antimony	mg/Kg-dry	T	<0.61 J	<0.71 J	<0.5 J	<0.72 J	<0.64 J	<0.49 J
Arsenic	mg/Kg-dry	T	7.9 J	11.9 :	5.4 J	6.6 :	16.2 :	6.8 J
Barium	mg/Kg-dry	T	643. J	650. J	785. J	384. :	771. J	356. J
Beryllium	mg/Kg-dry	T	0.54 :	3.6 :	0.72 :	1.4 :	2.2 :	0.95 :
Boron	mg/Kg-dry	T	2.1 J	4.1 :	1. J	5.8 J	4.7 J	2.5 :
Cadmium	mg/Kg-dry	T	<0.034 :	<0.12 :	0.34 :	0.79 J	<0.11 J	0.64 :
Calcium	mg/Kg-dry	T	1440. :	3040. J	1810. :	1840. :	3340. J	1680. :
Chromium	mg/Kg-dry	T	13.3 :	23.2 J	13.7 :	13. :	30.3 J	13.2 :
Cobalt	mg/Kg-dry	T	9.1 :	15.1 :	7.6 :	11.8 :	13.3 :	8.7 :
Copper	mg/Kg-dry	T	19.3 :	122. J	37.3 :	64.8 :	84. J	43.8 :
Iron	mg/Kg-dry	T	29500. :	39400. J	21800. :	23800. :	52900. J	19600. :
Lead	mg/Kg-dry	T	24.2 :	123. J	46.1 :	61.4 :	200. J	44.8 :
Magnesium	mg/Kg-dry	T	2090. :	5340. J	3200. :	3250. :	7110. J	3230. :
Manganese	mg/Kg-dry	T	246. :	546. J	369. :	658. J	534. J	465. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	Hansen Creek	LR-1	LR-1	LR-1	LR-11A	LR-11A
			7/17/2003 HANSENCREEK-T02 N-SED AMS	3/18/2003 LR-1-T02N-SED SWR	7/13/2003 LR-1-T02N-SED SWR	9/21/2003 LR-1-T02N-SED SWR	3/18/2003 LR-11A-T02N-SED SWR	7/13/2003 LR-11A-T02N-SED SWR
Mercury	mg/Kg-dry	T	<0.06	<0.05 J	<0.034	<0.024	<0.035	<0.02
Molybdenum	mg/Kg-dry	T	2.7	17.9	7.1	10.5	36.3	11.3
Nickel	mg/Kg-dry	T	17.8	37.7 J	25.	38.1	32.9 J	29.3
Potassium	mg/Kg-dry	T	2490. J	4070. J	1660. J	2000.	5920. J	1830. J
Selenium	mg/Kg-dry	T	0.83 J	1.5 J	<0.8 J	0.77	<1.1 J	0.63 J
Silver	mg/Kg-dry	T	<0.1 J	0.41	<0.21	0.3	1.1	0.29
Sodium	mg/Kg-dry	T	<86.9 J	139.	172.	201.	444.	<165.
Thallium	mg/Kg-dry	T	<0.12	0.32	<0.1	<0.14	0.39	<0.11
Vanadium	mg/Kg-dry	T	9.5	22.9	16.6	12.3	29.6	13.7
Zinc	mg/Kg-dry	T	47. J	383. J	172. J	317.	230. J	235. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	<0.034	<0.12	0.34	0.79 J	<0.11 J	0.64
Copper	mg/Kg-dry	T	19.3	122. J	37.3	64.8	84. J	43.8
Lead	mg/Kg-dry	T	24.2	123. J	46.1	61.4	200. J	44.8
Mercury	mg/Kg-dry	T	<0.06	<0.05 J	<0.034	<0.024	<0.035	<0.02
Nickel	mg/Kg-dry	T	17.8	37.7 J	25.	38.1	32.9 J	29.3
Zinc	mg/Kg-dry	T	47. J	383. J	172. J	317.	230. J	235. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		LR-11A	LR-13	LR-13	LR-13	LR-16	LR-16
	Sample Date		9/21/2003	3/18/2003	7/14/2003	9/21/2003	3/18/2003	7/14/2003
	Sample ID		LR-11A-T02N-SED	LR-13-T02N-SED	LR-13-T02N-SED	LR-13-T02N-SED	LR-16-T02N-SED	LR-16-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<9.8 J	51.1 J	18.9 J	14.7 J	66.8 J	60.9 J
Chloride	mg/kg-Dry	T	2.8 :	6.7 :	4.1 :	2.8 :	8. :	<394. :
Fluoride	mg/Kg-dry	T	0.62 J	2.3 J	0.85 :	0.5 J	0.45 J	1.4 :
Nitrate	mg/kg-Dry	T	<2.8 J	<3.9 J	1.3 J	<2.5 J	<3.8 J	<31.5 J
Phosphorus	mg/Kg-dry	T	543. J	3460. J	572. J	379. J	3810. J	942. J
Sulfate	mg/kg-Dry	T	112. :	242. :	59.7 :	44. :	314. :	176. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	91.4 :	226. :	116. J	49.6 :	761. :	1000. J
Total Organic Carbon	mg/Kg-dry	T	2170. J	<195. J	786. J	<124. J	8330. J	3340. :
Laboratory Parameters								
pH	SU	T	7.3 J	6.8 J	7.3 J	7.5 J	7. J	7.2 J
Solids, Percent	%	T	73.2 :	51.5 :	74.9 :	80.8 :	53.3 :	63.5 :
Specific Conductance	umhos/cm	T	136. J	226. J	137. J	115. J	255. J	593. J
Geotechnical								
Organic Soils	%	T	1.8 J	4.9 :	1.9 J	1.7 J	6.5 :	1.9 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	26.9 :	8.8 :	10.5 :	14.8 :	13.2 :	12.6 :
Sodium Absorption Ratio	ratio	T	0.2 :	0.23 :	0.43 :	0.42 :	0.31 :	0.5 :
Metals								
Aluminum	mg/Kg-dry	T	5500. :	11100. J	7050. :	4210. :	12000. J	10200. :
Antimony	mg/Kg-dry	T	<0.64 J	<0.52 J	<0.63 J	<0.55 J	<0.47 J	<0.67 J
Arsenic	mg/Kg-dry	T	4.8 :	7.6 :	4.7 J	2.7 :	9.6 :	8.7 J
Barium	mg/Kg-dry	T	162. :	455. J	218. J	92.2 :	508. J	635. J
Beryllium	mg/Kg-dry	T	0.68 :	1.9 :	0.85 :	0.5 :	1.8 :	2. :
Boron	mg/Kg-dry	T	<0.82 :	2.3 :	2. :	<0.74 :	8.9 :	3.5 J
Cadmium	mg/Kg-dry	T	<0.09 J	0.15 :	0.55 :	<0.081 J	0.15 :	1.9 :
Calcium	mg/Kg-dry	T	1570. :	2210. J	1660. :	1310. :	3040. J	2440. :
Chromium	mg/Kg-dry	T	10.5 :	20.1 J	11.7 :	8.1 :	19.4 J	15.5 :
Cobalt	mg/Kg-dry	T	7.4 :	16.7 :	9.9 :	6.7 :	13.8 :	13.8 :
Copper	mg/Kg-dry	T	38. :	68.1 J	39.9 :	24.4 :	70.6 J	85.4 :
Iron	mg/Kg-dry	T	18400. :	26800. J	17500. :	11300. :	30500. J	29000. :
Lead	mg/Kg-dry	T	57.3 :	74.5 J	44.2 :	27.4 :	103. J	80.6 :
Magnesium	mg/Kg-dry	T	3210. :	4310. J	3460. :	2430. :	4620. J	3620. :
Manganese	mg/Kg-dry	T	420. J	988. J	525. :	435. J	490. J	583. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		LR-11A	LR-13	LR-13	LR-13	LR-16	LR-16
	Sample Date		9/21/2003	3/18/2003	7/14/2003	9/21/2003	3/18/2003	7/14/2003
	Sample ID		LR-11A-T02N-SED	LR-13-T02N-SED	LR-13-T02N-SED	LR-13-T02N-SED	LR-16-T02N-SED	LR-16-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.011	<0.032	<0.022	<0.0097	<0.028	<0.024
Molybdenum	mg/Kg-dry	T	8.6	32.	9.4	4.7	21.7	16.3
Nickel	mg/Kg-dry	T	25.6	42.3	33.2	23.7	34.9	45.4
Potassium	mg/Kg-dry	T	1400.	2980.	1670.	1000.	3270.	2350.
Selenium	mg/Kg-dry	T	0.81	1.1	<1.	<0.33	2.7	1.4
Silver	mg/Kg-dry	T	<0.19	<0.17	<0.27	<0.17	0.45	<0.31
Sodium	mg/Kg-dry	T	112.	<107.	<59.	<58.1	<185.	<249.
Thallium	mg/Kg-dry	T	<0.13	0.2	<0.13	<0.11	0.28	0.16
Vanadium	mg/Kg-dry	T	11.1	19.7	13.4	8.5	19.8	19.1
Zinc	mg/Kg-dry	T	192.	337.	246.	162.	294.	526.
SEM and AVS								
Cadmium	mg/Kg-dry	T	<0.09	0.15	0.55	<0.081	0.15	1.9
Copper	mg/Kg-dry	T	38.	68.1	39.9	24.4	70.6	85.4
Lead	mg/Kg-dry	T	57.3	74.5	44.2	27.4	103.	80.6
Mercury	mg/Kg-dry	T	<0.011	<0.032	<0.022	<0.0097	<0.028	<0.024
Nickel	mg/Kg-dry	T	25.6	42.3	33.2	23.7	34.9	45.4
Zinc	mg/Kg-dry	T	192.	337.	246.	162.	294.	526.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		LR-16	LR-4	LR-5	LR-5	LR-5	LR-6
	Sample Date		9/21/2003	11/5/2003	3/18/2003	7/13/2003	9/21/2003	11/5/2003
	Sample ID		LR-16-T02N-SED	LR-4-T01N-SED	LR-5-T02N-SED	LR-5-T02N-SED	LR-5-T02N-SED	LR-6-T01N-SED
	Exposure Area		SWR	IDR	SWR	SWR	SWR	IDR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<9.6 J	38.6 J	70. J	26.1 J	40.5 J	40.6 J
Chloride	mg/kg-Dry	T	5.2 :	6.6 :	8.1 :	<337. :	3.2 :	8.1 :
Fluoride	mg/Kg-dry	T	0.77 J	1.4 :	0.55 J	0.94 :	0.96 J	1.2 :
Nitrate	mg/kg-Dry	T	<2.8 J	<2.9 J	<4.1 J	<27. J	<3.2 J	<2.8 J
Phosphorus	mg/Kg-dry	T	601. J	98. :	3380. J	374. J	800. J	288. :
Sulfate	mg/kg-Dry	T	64.6 :	55.7 :	235. :	86.2 :	323. :	14.7 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	76.8 :	236. J	823. :	136. J	202. :	128. J
Total Organic Carbon	mg/Kg-dry	T	568. J	6280. :	11500. J	<135. J	2620. J	927. :
Laboratory Parameters								
pH	SU	T	7.2 J	7.4 J	6.8 J	6.9 J	6.9 J	7.3 J
Solids, Percent	%	T	71.7 :	71.2 :	49.1 :	74.1 :	63.9 :	73.8 :
Specific Conductance	umhos/cm	T	110. J	336. J	302. J	177. J	157. J	447. J
Geotechnical								
Organic Soils	%	T	2.1 J	1.9 J	6.6 :	1.7 J	2.7 J	1.5 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	7.4 :	13. :	11.8 :	7.1 :	15.6 :	11.1 :
Sodium Absorption Ratio	ratio	T	0.54 :	0.34 :	0.53 :	0.21 :	0.18 :	0.35 :
Metals								
Aluminum	mg/Kg-dry	T	5930. :	5680. :	11500. J	6470. :	9500. :	4380. :
Antimony	mg/Kg-dry	T	<0.59 J	<0.7 J	<0.48 J	0.53 J	<0.78 J	<0.49 J
Arsenic	mg/Kg-dry	T	4.7 :	3.2 J	10. :	3.6 J	7.4 :	1.3 J
Barium	mg/Kg-dry	T	180. :	157. :	579. J	269. J	440. :	91.7 :
Beryllium	mg/Kg-dry	T	0.78 :	0.6 :	1.6 :	0.73 :	1.4 :	0.44 :
Boron	mg/Kg-dry	T	<0.83 :	0.8 :	3. J	2. :	<0.93 J	<0.69 :
Cadmium	mg/Kg-dry	T	<0.09 J	0.5 :	<0.078 J	0.27 :	<0.1 J	<0.2 :
Calcium	mg/Kg-dry	T	1530. :	2300. J	2540. J	1540. :	2160. :	1660. J
Chromium	mg/Kg-dry	T	11.2 :	11.8 :	20.2 J	11.5 :	15.4 :	10.6 :
Cobalt	mg/Kg-dry	T	9.4 :	7.6 :	8.2 :	6.6 :	12. :	3.4 :
Copper	mg/Kg-dry	T	36.5 :	21.2 J	65.5 J	33.3 :	68.6 :	20.9 J
Iron	mg/Kg-dry	T	19200. :	15100. :	32300. J	15100. :	29200. :	13500. :
Lead	mg/Kg-dry	T	44. :	22.2 :	106. J	36.6 :	64.1 :	22.3 :
Magnesium	mg/Kg-dry	T	3190. :	2630. :	4490. J	3210. :	4170. :	2560. :
Manganese	mg/Kg-dry	T	517. J	422. :	195. J	316. :	465. J	121. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		LR-16	LR-4	LR-5	LR-5	LR-5	LR-6
	Sample Date		9/21/2003	11/5/2003	3/18/2003	7/13/2003	9/21/2003	11/5/2003
	Sample ID		LR-16-T02N-SED	LR-4-T01N-SED	LR-5-T02N-SED	LR-5-T02N-SED	LR-5-T02N-SED	LR-6-T01N-SED
	Exposure Area		SWR	IDR	SWR	SWR	SWR	IDR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.01 :	<0.019 :	<0.034 :	<0.021 :	0.015 :	<0.023 :
Molybdenum	mg/Kg-dry	T	9.4 :	<3.9 J	15.2 :	5.2 :	14.4 :	9.5 J
Nickel	mg/Kg-dry	T	32.5 :	36.1 :	23.4 J	24.5 :	36.1 :	10.2 :
Potassium	mg/Kg-dry	T	1590. :	1110. :	3260. J	1600. J	2020. :	1170. :
Selenium	mg/Kg-dry	T	0.96 :	0.74 :	1.9 J	0.61 J	0.66 :	0.57 :
Silver	mg/Kg-dry	T	0.25 :	<0.18 :	0.54 :	<0.23 :	0.33 :	0.18 :
Sodium	mg/Kg-dry	T	70.8 :	<262. :	<183. :	<121. :	104. :	<318. :
Thallium	mg/Kg-dry	T	<0.12 :	<0.14 :	0.25 :	<0.12 :	<0.16 :	<0.098 :
Vanadium	mg/Kg-dry	T	12.2 :	15.6 J	20.1 :	12. :	17.5 :	12.9 J
Zinc	mg/Kg-dry	T	248. :	131. :	173. J	171. J	318. :	46.6 :
SEM and AVS								
Cadmium	mg/Kg-dry	T	<0.09 J	0.5 :	<0.078 J	0.27 :	<0.1 J	<0.2 :
Copper	mg/Kg-dry	T	36.5 :	21.2 J	65.5 J	33.3 :	68.6 :	20.9 J
Lead	mg/Kg-dry	T	44. :	22.2 :	106. J	36.6 :	64.1 :	22.3 :
Mercury	mg/Kg-dry	T	<0.01 :	<0.019 :	<0.034 :	<0.021 :	0.015 :	<0.023 :
Nickel	mg/Kg-dry	T	32.5 :	36.1 :	23.4 J	24.5 :	36.1 :	10.2 :
Zinc	mg/Kg-dry	T	248. :	131. :	173. J	171. J	318. :	46.6 :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		LR-8A	LR-8A	LR-8A	ND-1	ND-1	ND-1
	Sample Date		3/18/2003	7/13/2003	9/21/2003	7/15/2003	7/15/2003	9/21/2003
	Sample ID		LR-8A-T02N-SED	LR-8A-T02N-SED	LR-8A-T02N-SED	ND-1-T02N-SED	ND-1-T01N-SED	ND-1-T02N-SED
	Exposure Area		SWR	SWR	SWR	ID	ID	ID
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	68.5 J	10.6 J	17.8 J	40.6 J	<11.4 J	22.3 J
Chloride	mg/kg-Dry	T	<10.7 :	<326. :	<2.7 :	3.1 :	3.6 :	<3. :
Fluoride	mg/Kg-dry	T	0.9 J	0.9 :	0.82 J	2.1 :	1.3 :	0.76 J
Nitrate	mg/kg-Dry	T	<4. J	<26. J	<2.7 J	1.1 J	1.1 J	<3. J
Phosphorus	mg/Kg-dry	T	2490. J	497. J	590. J	748. J	444. J	1110. J
Sulfate	mg/kg-Dry	T	1030. J	103. :	202. :	51.3 :	72.2 :	59.5 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	827. :	64.2 J	94.5 :	315. J	<32.7 J	175. :
Total Organic Carbon	mg/Kg-dry	T	13700. J	<131. :	2000. J	5330. :	<137. :	1430. J
Laboratory Parameters								
pH	SU	T	6.8 J	7. J	7.2 J	7.2 J	7.4 J	7.2 J
Solids, Percent	%	T	50.2 :	76.8 :	75. :	71.2 :	73.4 :	67.6 :
Specific Conductance	umhos/cm	T	370. J	237. J	224. J	164. J	84.5 J	106. J
Geotechnical								
Organic Soils	%	T	6.4 :	2.2 J	1.8 J	3.4 J	1.7 J	2.1 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	26. J	5. :	12.2 :	13.1 :	6.4 :	7.6 :
Sodium Absorption Ratio	ratio	T	0.58 :	0.28 :	0.42 :	0.14 :	0.13 :	0.11 :
Metals								
Aluminum	mg/Kg-dry	T	12600. J	6170. :	6080. :	10800. :	6060. :	6510. :
Antimony	mg/Kg-dry	T	<0.47 J	0.49 J	<0.57 J	<2.3 J	<1.6 J	<0.64 J
Arsenic	mg/Kg-dry	T	11.4 :	4.5 J	4.6 :	9.1 J	4.6 J	5. :
Barium	mg/Kg-dry	T	549. J	248. J	174. :	742. J	177. J	448. :
Beryllium	mg/Kg-dry	T	1.6 :	0.69 :	0.68 :	1.5 :	0.68 :	0.9 :
Boron	mg/Kg-dry	T	3.3 :	2.2 :	<0.81 :	2.8 J	1.4 :	4.9 :
Cadmium	mg/Kg-dry	T	1.4 J	0.23 :	<0.088 J	0.21 J	<0.038 :	0.85 J
Calcium	mg/Kg-dry	T	3180. J	1560. :	1710. :	2220. :	1610. :	1720. :
Chromium	mg/Kg-dry	T	19.3 J	13.5 :	14.4 :	17.6 :	12.3 :	10.9 :
Cobalt	mg/Kg-dry	T	8.1 :	6.5 :	6.1 :	14. :	6.9 :	11.7 :
Copper	mg/Kg-dry	T	83.3 J	35.9 :	40.7 :	72.4 :	29.2 :	48.2 :
Iron	mg/Kg-dry	T	41600. J	17800. :	20800. :	31500. :	16800. :	21000. :
Lead	mg/Kg-dry	T	113. J	39.1 :	31.7 :	91.3 :	29.6 :	38.5 :
Magnesium	mg/Kg-dry	T	4520. J	3270. :	3530. :	4070. :	3570. :	3120. :
Manganese	mg/Kg-dry	T	280. J	362. :	236. J	894. :	294. :	657. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		LR-8A	LR-8A	LR-8A	ND-1	ND-1	ND-1
	Sample Date		3/18/2003	7/13/2003	9/21/2003	7/15/2003	7/15/2003	9/21/2003
	Sample ID		LR-8A-T02N-SED	LR-8A-T02N-SED	LR-8A-T02N-SED	ND-1-T02N-SED	ND-1-T01N-SED	ND-1-T02N-SED
	Exposure Area		SWR	SWR	SWR	ID	ID	ID
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.033 :	<0.02 :	<0.01 :	0.054 :	0.031 :	<0.025 :
Molybdenum	mg/Kg-dry	T	37.4 :	8.6 :	13.2 :	17.1 :	10.6 :	7.2 :
Nickel	mg/Kg-dry	T	24.5 J	22.8 :	22.5 :	39. :	24.8 :	41.9 :
Potassium	mg/Kg-dry	T	3290. J	1720. J	1360. :	3140. J	1850. J	1720. :
Selenium	mg/Kg-dry	T	2.7 J	0.71 J	0.45 :	<1.1 J	<1. J	0.66 :
Silver	mg/Kg-dry	T	0.57 :	<0.23 :	0.28 :	0.38 J	<0.11 J	<0.21 :
Sodium	mg/Kg-dry	T	312. :	<153. :	135. :	<188. :	<79.2 :	167. :
Thallium	mg/Kg-dry	T	0.32 :	<0.097 :	<0.11 :	<0.13 :	<0.13 :	<0.13 :
Vanadium	mg/Kg-dry	T	21.2 :	12.7 :	13.8 :	17.4 :	11.9 :	11.4 :
Zinc	mg/Kg-dry	T	226. J	152. J	162. :	269. J	138. J	273. :
SEM and AVS								
Cadmium	mg/Kg-dry	T	1.4 J	0.23 :	<0.088 J	0.21 J	<0.038 :	0.85 J
Copper	mg/Kg-dry	T	83.3 J	35.9 :	40.7 :	72.4 :	29.2 :	48.2 :
Lead	mg/Kg-dry	T	113. J	39.1 :	31.7 :	91.3 :	29.6 :	38.5 :
Mercury	mg/Kg-dry	T	<0.033 :	<0.02 :	<0.01 :	0.054 :	0.031 :	<0.025 :
Nickel	mg/Kg-dry	T	24.5 J	22.8 :	22.5 :	39. :	24.8 :	41.9 :
Zinc	mg/Kg-dry	T	226. J	152. J	162. :	269. J	138. J	273. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ND-1	ND-2A	ND-3A	ND-4A	ND-5	RR-1
	Sample Date		9/21/2003	11/5/2003	11/5/2003	11/5/2003	11/5/2003	3/19/2003
	Sample ID		ND-1-T01N-SED	ND-2-T01N-SED	ND-3-T01N-SED	ND-4-T01N-SED	ND-5-T01N-SED	RR-1-T02N-SED
	Exposure Area		ID	ID	ID	ID	ID	RURR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	18.7 J	45.6 J	47.4 J	31.5 J	103. J	34. J
Chloride	mg/kg-Dry	T	4.4 :	3.1 :	4.3 :	5.7 :	17.9 :	<4.4 J
Fluoride	mg/Kg-dry	T	0.61 J	0.79 :	0.77 :	0.95 :	0.82 :	-
Nitrate	mg/kg-Dry	T	<2.8 J	<2.8 J	3.2 J	3.6 J	12. J	<2.7 J
Phosphorus	mg/Kg-dry	T	1200. J	90.9 J	151. :	137. :	340. J	657. J
Sulfate	mg/kg-Dry	T	52.3 :	31.7 J	18.5 :	31.5 :	64.4 :	20.2 J
Total Kjeldahl Nitrogen	mg/Kg-dry	T	50.2 :	390. J	524. J	281. J	1330. J	416. J
Total Organic Carbon	mg/Kg-dry	T	822. J	5730. :	4390. :	548. :	20700. :	5880. J
Laboratory Parameters								
pH	SU	T	7.3 J	6.9 J	7.8 J	7.8 J	7.4 J	7.1 J
Solids, Percent	%	T	71.5 :	72.2 :	95. :	71.4 :	87.3 :	75. :
Specific Conductance	umhos/cm	T	87.8 J	116. J	305. J	99.9 J	324. J	141. J
Geotechnical								
Organic Soils	%	T	1.8 J	1.6 J	3. J	1.5 J	5. J	2.7 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	6.4 :	15.2 :	26.3 :	14. :	27.2 :	17.6 :
Sodium Absorption Ratio	ratio	T	0.12 :	0.21 :	0.13 :	0.21 :	0.27 :	0.11 :
Metals								
Aluminum	mg/Kg-dry	T	5330. :	7760. :	12700. :	10300. :	12800. :	9950. J
Antimony	mg/Kg-dry	T	<0.63 J	<0.63 J	<0.48 J	<0.58 J	<0.47 J	<0.31 J
Arsenic	mg/Kg-dry	T	4. :	2.2 J	2.8 J	2.2 J	2.7 J	2.6 :
Barium	mg/Kg-dry	T	184. :	65.1 :	136. :	71.8 :	128. :	113. J
Beryllium	mg/Kg-dry	T	0.54 :	0.64 :	0.86 :	0.78 :	0.87 :	0.71 :
Boron	mg/Kg-dry	T	3.4 :	<5.5 :	2.5 :	1.6 :	3. :	2.5 J
Cadmium	mg/Kg-dry	T	0.37 J	0.88 :	0.44 :	0.29 :	0.5 :	0.76 J
Calcium	mg/Kg-dry	T	1640. :	3230. J	6540. J	3790. J	5610. J	3970. J
Chromium	mg/Kg-dry	T	10. :	19.9 J	24.2 :	22.1 :	21.1 :	23.1 J
Cobalt	mg/Kg-dry	T	6.3 :	18.9 J	10.1 :	11.1 :	9.4 :	10.4 :
Copper	mg/Kg-dry	T	28.7 :	37.1 J	38.4 J	29.6 J	34.8 J	56.2 J
Iron	mg/Kg-dry	T	14200. :	22400. J	23100. :	21700. :	20300. :	28500. J
Lead	mg/Kg-dry	T	26.7 :	15.9 J	28.3 :	21.8 :	27.4 :	50.5 J
Magnesium	mg/Kg-dry	T	3080. :	3540. J	5150. :	4430. :	4910. :	6210. J
Manganese	mg/Kg-dry	T	338. J	1040. J	757. :	517. :	632. :	366. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		ND-1	ND-2A	ND-3A	ND-4A	ND-5	RR-1
	Sample Date		9/21/2003	11/5/2003	11/5/2003	11/5/2003	11/5/2003	3/19/2003
	Sample ID		ND-1-T01N-SED	ND-2-T01N-SED	ND-3-T01N-SED	ND-4-T01N-SED	ND-5-T01N-SED	RR-1-T02N-SED
	Exposure Area		ID	ID	ID	ID	ID	RURR
	Units	Fraction						
Mercury	mg/Kg-dry	T	<0.023	<0.022	<0.017	<0.023	<0.019	<0.022
Molybdenum	mg/Kg-dry	T	3.8	3.9 J	7.2 J	<4.4 J	10.1 J	6.4
Nickel	mg/Kg-dry	T	26.1	40.4 J	26.5	22.8	27.8	15.4 J
Potassium	mg/Kg-dry	T	1430.	1350.	2050.	1650.	2260.	1760. J
Selenium	mg/Kg-dry	T	<0.38	<0.38	0.77	0.8	0.76	0.65 J
Silver	mg/Kg-dry	T	<0.2	<0.21	0.39	0.3	0.35	0.44
Sodium	mg/Kg-dry	T	154.	<58.2	466.	489.	495.	305.
Thallium	mg/Kg-dry	T	<0.13	0.13	0.14	<0.12	0.13	0.14
Vanadium	mg/Kg-dry	T	9.7	33.9 J	33.7 J	32.2 J	32. J	34.
Zinc	mg/Kg-dry	T	153.	203. J	129.	135.	114.	97.8 J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.37 J	0.88	0.44	0.29	0.5	0.76 J
Copper	mg/Kg-dry	T	28.7	37.1 J	38.4 J	29.6 J	34.8 J	56.2 J
Lead	mg/Kg-dry	T	26.7	15.9 J	28.3	21.8	27.4	50.5 J
Mercury	mg/Kg-dry	T	<0.023	<0.022	<0.017	<0.023	<0.019	<0.022
Nickel	mg/Kg-dry	T	26.1	40.4 J	26.5	22.8	27.8	15.4 J
Zinc	mg/Kg-dry	T	153.	203. J	129.	135.	114.	97.8 J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-1	RR-1	RR-10	RR-10	RR-10	RR-10A1
	Sample Date		7/14/2003	9/22/2003	3/19/2003	7/13/2003	9/22/2003	3/19/2003
	Sample ID		RR-1-T02N-SED	RR-1-T02N-SED	RR-10-T02N-SED	RR-10-T02N-SED	RR-10-T02N-SED	RR-10A1-T02N-SED
	Exposure Area		RURR	RURR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	50.9 J	65.9 J	29.1 J	6.5 J	<10.5 :	129. J
Chloride	mg/kg-Dry	T	3.1 :	<4. :	4.3 :	2.8 :	<2.8 :	<5. :
Fluoride	mg/Kg-dry	T	<0.3 :	<0.2 :	0.53 J	<0.26 :	0.25 J	0.53 J
Nitrate	mg/kg-Dry	T	<2.9 J	<4. J	<3. J	1.5 J	<2.8 J	<3. J
Phosphorus	mg/Kg-dry	T	715. J	1610. J	1890. J	1090. J	1300. J	1370. J
Sulfate	mg/kg-Dry	T	41.2 :	195. :	76.4 :	30.1 :	73.2 :	66.4 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	451. J	372. :	170. J	61.5 J	41.9 :	200. :
Total Organic Carbon	mg/Kg-dry	T	10800. :	23300. J	426. J	<127. :	<137. J	2440. J
Laboratory Parameters								
pH	SU	T	7.1 J	7.2 J	7.1 J	7.4 J	7.4 J	7.1 J
Solids, Percent	%	T	68.2 :	50.9 :	68.1 :	78.9 :	73.3 :	67.3 :
Specific Conductance	umhos/cm	T	125. J	158. J	136. J	83.8 J	127. J	137. J
Geotechnical								
Organic Soils	%	T	2.6 J	4.3 J	2.3 :	1.8 J	1.9 J	3.1 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	15.7 :	15.3 :	17.5 :	6.5 :	16.2 :	11.6 :
Sodium Absorption Ratio	ratio	T	0.1 :	0.08 :	0.2 :	0.12 :	0.1 :	0.16 :
Metals								
Aluminum	mg/Kg-dry	T	5160. :	12100. :	8360. J	4940. :	4630. :	8220. J
Antimony	mg/Kg-dry	T	<1.3 J	<0.84 J	<0.37 J	<0.59 J	<0.64 J	<0.34 J
Arsenic	mg/Kg-dry	T	<1.9 J	3.2 :	6.9 :	6.9 J	5. :	8.2 :
Barium	mg/Kg-dry	T	219. J	156. :	375. J	272. J	444. J	642. J
Beryllium	mg/Kg-dry	T	0.43 :	0.75 :	1.2 :	0.44 :	0.44 :	1. :
Boron	mg/Kg-dry	T	1.7 :	1.7 :	2.3 :	1.3 :	<0.86 :	2. :
Cadmium	mg/Kg-dry	T	<0.042 :	0.28 J	1.1 :	0.24 :	0.11 :	1.4 J
Calcium	mg/Kg-dry	T	2850. :	5530. :	1850. J	2010. :	1570. :	2120. J
Chromium	mg/Kg-dry	T	12. :	25.4 :	11.8 J	9.5 :	8.4 :	14.7 J
Cobalt	mg/Kg-dry	T	4.4 :	10. :	13.7 :	14.6 :	5.5 :	14.2 :
Copper	mg/Kg-dry	T	32.5 :	30.3 :	63.9 J	27.6 :	23. :	59.8 J
Iron	mg/Kg-dry	T	13000. :	22100. :	21400. J	15800. :	16800. :	26300. J
Lead	mg/Kg-dry	T	41.2 :	42.8 :	51.2 J	30.2 :	32.2 :	61.3 J
Magnesium	mg/Kg-dry	T	2940. :	6660. :	3050. J	2560. :	2380. :	3450. J
Manganese	mg/Kg-dry	T	256. :	419. J	638. J	1030. :	202. J	697. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-1	RR-1	RR-10	RR-10	RR-10	RR-10	RR-10A1
	Sample Date		7/14/2003	9/22/2003	3/19/2003	7/13/2003	9/22/2003	3/19/2003	
	Sample ID		RR-1-T02N-SED	RR-1-T02N-SED	RR-10-T02N-SED	RR-10-T02N-SED	RR-10-T02N-SED	RR-10A1-T02N-SED	
	Exposure Area		RURR	RURR	SWR	SWR	SWR	SWR	
Units	Fraction								
Mercury	mg/Kg-dry	T	0.042	<0.029	<0.023	J	<0.02	<0.021	<0.025
Molybdenum	mg/Kg-dry	T	3.7	3.6	9.		3.4	4.	10.4
Nickel	mg/Kg-dry	T	6.9	17.4	33.4	J	26.6	12.9	35.6
Potassium	mg/Kg-dry	T	1260.	1830.	1920.	J	1600.	1710.	2060.
Selenium	mg/Kg-dry	T	<0.12	1.1	0.98	J	<0.94	<1.1	1.7
Silver	mg/Kg-dry	T	<0.13	<0.31	0.26		0.17	<0.22	0.3
Sodium	mg/Kg-dry	T	<209.	279.	<160.		77.2	168.	147.
Thallium	mg/Kg-dry	T	<0.014	<0.17	<0.12		<0.12	<0.12	0.14
Vanadium	mg/Kg-dry	T	15.6	32.9	11.9		9.3	8.7	14.9
Zinc	mg/Kg-dry	T	48.8	122.	267.	J	125.	71.9	248.
SEM and AVS									
Cadmium	mg/Kg-dry	T	<0.042	0.28	1.1	J	0.24	0.11	1.4
Copper	mg/Kg-dry	T	32.5	30.3	63.9	J	27.6	23.	59.8
Lead	mg/Kg-dry	T	41.2	42.8	51.2	J	30.2	32.2	61.3
Mercury	mg/Kg-dry	T	0.042	<0.029	<0.023	J	<0.02	<0.021	<0.025
Nickel	mg/Kg-dry	T	6.9	17.4	33.4	J	26.6	12.9	35.6
Zinc	mg/Kg-dry	T	48.8	122.	267.	J	125.	71.9	248.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-10A1	RR-10A1	RR-11A1	RR-11A1	RR-11A1	RR-11B
	Sample Date		7/13/2003	9/22/2003	3/19/2003	7/13/2003	9/22/2003	3/19/2003
	Sample ID		RR-10A1-T02N-SED	RR-10A1-T02N-SED	RR-11A1-T02N-SED	RR-11A1-T02N-SED	RR-11A1-T02N-SED	RR-11B-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	74. J	28.7 J	25.9 J	20.2 J	32.2 J	93.1 J
Chloride	mg/kg-Dry	T	<362. :	<2.9 :	<4.6 J	3.3 :	<2.9 :	<6. :
Fluoride	mg/Kg-dry	T	0.3 :	0.31 J	0.59 J	<0.3 :	0.33 J	9.2 J
Nitrate	mg/kg-Dry	T	<28.9 J	<2.9 J	3.2 J	1.2 J	<2.9 J	<3.3 J
Phosphorus	mg/Kg-dry	T	533. J	215. J	1250. J	410. J	436. J	1650. J
Sulfate	mg/kg-Dry	T	123. :	93.4 :	106. J	39.9 :	82. :	410. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	101. J	117. :	213. J	144. J	83.7 :	346. :
Total Organic Carbon	mg/Kg-dry	T	<145. J	4260. J	<159. J	162. :	<145. J	11500. J
Laboratory Parameters								
pH	SU	T	7.2 J	7.4 J	7.3 J	7.4 J	7.3 J	6.3 J
Solids, Percent	%	T	69.1 :	69. :	63. :	68.5 :	69.2 :	60.9 :
Specific Conductance	umhos/cm	T	320. J	164. J	189. J	95.8 J	160. J	271. J
Geotechnical								
Organic Soils	%	T	1.8 J	2.6 J	3. :	2. J	2.4 J	3.5 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	6.1 :	33.3 :	15.3 :	7.6 :	30.7 :	13.6 :
Sodium Absorption Ratio	ratio	T	0.12 :	0.13 :	0.15 :	0.12 :	0.15 :	0.14 :
Metals								
Aluminum	mg/Kg-dry	T	5050. :	6210. :	11300. J	6490. :	6380. :	8970. J
Antimony	mg/Kg-dry	T	<0.54 J	<0.7 J	<0.37 J	<0.58 J	<0.69 J	<0.41 J
Arsenic	mg/Kg-dry	T	4.3 J	7.4 :	7.6 :	6.4 J	8. :	9.1 :
Barium	mg/Kg-dry	T	282. J	559. :	613. J	696. J	834. :	855. J
Beryllium	mg/Kg-dry	T	0.46 :	0.62 :	1.6 :	0.68 :	0.65 :	1.2 :
Boron	mg/Kg-dry	T	2. :	<0.84 :	2.2 J	1. :	<0.86 :	1.9 :
Cadmium	mg/Kg-dry	T	0.16 :	0.18 J	2. J	0.51 :	0.19 J	0.96 J
Calcium	mg/Kg-dry	T	1770. :	2080. :	2320. J	1840. :	2220. :	1840. J
Chromium	mg/Kg-dry	T	10.4 :	11.2 :	15.4 J	13.7 :	11.9 :	16.1 J
Cobalt	mg/Kg-dry	T	4.9 :	7.3 :	18.4 :	7.2 :	8.7 :	9.3 :
Copper	mg/Kg-dry	T	26.6 :	36.3 :	82.9 J	37.9 :	38.1 :	60.6 J
Iron	mg/Kg-dry	T	16800. :	25000. :	26100. J	21800. :	27400. :	31600. J
Lead	mg/Kg-dry	T	36.7 :	55.3 :	65.1 J	53.5 :	58. :	75.4 J
Magnesium	mg/Kg-dry	T	3190. :	2960. :	3640. J	3470. :	3040. :	3700. J
Manganese	mg/Kg-dry	T	272. :	290. J	954. J	390. :	358. J	367. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-10A1	RR-10A1	RR-11A1	RR-11A1	RR-11A1	RR-11B
	Sample Date		7/13/2003	9/22/2003	3/19/2003	7/13/2003	9/22/2003	3/19/2003
	Sample ID		RR-10A1-T02N-SED	RR-10A1-T02N-SED	RR-11A1-T02N-SED	RR-11A1-T02N-SED	RR-11A1-T02N-SED	RR-11B-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.024 :	<0.023 :	<0.026 :	<0.056 :	<0.024 :	<0.027 :
Molybdenum	mg/Kg-dry	T	4.1 :	14.8 :	13.5 :	7.6 :	8.7 :	13.6 :
Nickel	mg/Kg-dry	T	16.7 :	17.6 :	40.3 J	22.5 :	20.2 :	28. J
Potassium	mg/Kg-dry	T	1600. J	2240. :	2530. J	2030. J	2320. :	2460. J
Selenium	mg/Kg-dry	T	0.68 J	<0.93 :	0.88 J	<0.93 J	<1.3 :	2.3 J
Silver	mg/Kg-dry	T	<0.25 :	<0.21 :	0.44 J	<0.26 :	<0.22 :	0.27 :
Sodium	mg/Kg-dry	T	<125. :	209. :	53.5 J	175. :	232. :	170. :
Thallium	mg/Kg-dry	T	<0.11 :	<0.14 :	0.16 :	<0.12 :	<0.14 :	0.19 :
Vanadium	mg/Kg-dry	T	10.3 :	11.7 :	15.2 :	14.8 :	12.5 :	16.8 :
Zinc	mg/Kg-dry	T	101. J	102. :	312. J	161. J	110. :	222. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.16 :	0.18 J	2. J	0.51 :	0.19 J	0.96 J
Copper	mg/Kg-dry	T	26.6 :	36.3 :	82.9 J	37.9 :	38.1 :	60.6 J
Lead	mg/Kg-dry	T	36.7 :	55.3 :	65.1 J	53.5 :	58. :	75.4 J
Mercury	mg/Kg-dry	T	<0.024 :	<0.023 :	<0.026 :	<0.056 :	<0.024 :	<0.027 :
Nickel	mg/Kg-dry	T	16.7 :	17.6 :	40.3 J	22.5 :	20.2 :	28. J
Zinc	mg/Kg-dry	T	101. J	102. :	312. J	161. J	110. :	222. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-11B	RR-11B	RR-11C	RR-11C	RR-11C	RR-12
	Sample Date		7/13/2003	9/21/2003	3/19/2003	7/13/2003	9/21/2003	3/18/2003
	Sample ID		RR-11B-T02N-SED	RR-11B-T02N-SED	RR-11C-T02N-SED	RR-11C-T02N-SED	RR-11C-T02N-SED	RR-12-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	17.7 J	36.3 J	18.2 J	28.3 J	21.2 J	28.1 J
Chloride	mg/kg-Dry	T	3.6 :	<2.9 :	<2.8 :	5.1 :	<2.9 :	3.4 :
Fluoride	mg/Kg-dry	T	0.78 :	0.58 J	1. J	1.7 :	0.65 J	0.77 J
Nitrate	mg/kg-Dry	T	1.3 J	<2.9 J	<2.8 J	<2.8 J	<2.9 J	<2.8 J
Phosphorus	mg/Kg-dry	T	375. J	1420. J	1690. J	1040. J	1930. J	1960. J
Sulfate	mg/kg-Dry	T	36.1 :	91.5 :	105. :	326. :	87.4 :	86. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	69.5 J	57.8 :	126. :	86.3 J	83.3 :	171. :
Total Organic Carbon	mg/Kg-dry	T	<141. :	<142. J	1180. J	<139. :	525. J	<140. J
Laboratory Parameters								
pH	SU	T	7.3 J	7.3 J	6.6 J	4.9 J	7.4 J	6.7 J
Solids, Percent	%	T	71.4 :	70.6 :	73.7 :	72.4 :	69.5 :	71.7 :
Specific Conductance	umhos/cm	T	91.8 J	97.7 J	153. J	443. J	128. J	168. J
Geotechnical								
Organic Soils	%	T	1.8 J	2.1 J	2.9 :	2.3 J	2.4 J	2.9 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	6.6 :	10.6 :	12.1 :	9. :	15.8 :	12.9 :
Sodium Absorption Ratio	ratio	T	0.11 :	0.1 :	0.16 :	0.13 :	0.11 :	0.13 :
Metals								
Aluminum	mg/Kg-dry	T	5770. :	6440. :	7330. J	6820. :	7150. :	8590. J
Antimony	mg/Kg-dry	T	<0.54 J	<0.67 J	<0.34 J	<0.56 J	<0.71 J	<0.34 J
Arsenic	mg/Kg-dry	T	5.7 J	7.2 :	8.8 :	5.7 J	8. :	6.3 :
Barium	mg/Kg-dry	T	501. J	396. :	625. J	681. J	506. :	410. J
Beryllium	mg/Kg-dry	T	0.89 :	0.65 :	0.75 :	0.66 :	0.82 :	1.6 :
Boron	mg/Kg-dry	T	0.7 :	6.2 :	1.8 :	1.8 :	6.8 J	1.6 :
Cadmium	mg/Kg-dry	T	0.43 :	0.17 J	0.79 J	<0.04 :	0.32 J	0.27 :
Calcium	mg/Kg-dry	T	1350. :	1930. :	1740. J	1050. :	2170. :	1680. J
Chromium	mg/Kg-dry	T	12. :	12.3 :	15.8 J	13.2 :	12.8 :	15.4 J
Cobalt	mg/Kg-dry	T	6. :	7.4 :	6.3 :	6.3 :	9.1 :	11. :
Copper	mg/Kg-dry	T	35.2 :	32.1 :	40.1 J	50.9 :	43. :	54.7 J
Iron	mg/Kg-dry	T	19700. :	23700. :	28700. J	21300. :	26700. :	21300. J
Lead	mg/Kg-dry	T	46.5 :	41.8 :	68.7 J	54.8 :	53.9 :	48.4 J
Magnesium	mg/Kg-dry	T	2980. :	3370. :	3650. J	3400. :	3580. :	3370. J
Manganese	mg/Kg-dry	T	294. :	337. J	256. J	218. :	404. J	498. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-11B	RR-11B	RR-11C	RR-11C	RR-11C	RR-12
	Sample Date		7/13/2003	9/21/2003	3/19/2003	7/13/2003	9/21/2003	3/18/2003
	Sample ID		RR-11B-T02N-SED	RR-11B-T02N-SED	RR-11C-T02N-SED	RR-11C-T02N-SED	RR-11C-T02N-SED	RR-12-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.04 :	<0.024 :	<0.021 :	<0.021 :	<0.022 :	<0.022 :
Molybdenum	mg/Kg-dry	T	7.2 :	4.9 :	9.8 :	7.3 :	7.8 :	8.1 :
Nickel	mg/Kg-dry	T	23.9 :	20.8 :	19.1 J	20. :	28. :	41.4 J
Potassium	mg/Kg-dry	T	1830. J	2140. :	2200. J	1910. J	2360. :	2110. J
Selenium	mg/Kg-dry	T	<0.87 J	0.69 :	1.8 J	<0.89 J	1.5 :	1.1 J
Silver	mg/Kg-dry	T	<0.25 :	<0.21 :	0.28 :	0.13 :	<0.21 :	0.16 :
Sodium	mg/Kg-dry	T	175. :	163. :	166. :	122. :	215. :	<38.4 :
Thallium	mg/Kg-dry	T	<0.11 :	<0.13 :	0.17 :	0.12 :	0.15 :	0.12 :
Vanadium	mg/Kg-dry	T	12.6 :	11.4 :	16.2 :	12.8 :	13.1 :	14.7 :
Zinc	mg/Kg-dry	T	193. J	125. :	127. J	117. J	196. :	321. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.43 :	0.17 J	0.79 J	<0.04 :	0.32 J	0.27 :
Copper	mg/Kg-dry	T	35.2 :	32.1 :	40.1 J	50.9 :	43. :	54.7 J
Lead	mg/Kg-dry	T	46.5 :	41.8 :	68.7 J	54.8 :	53.9 :	48.4 J
Mercury	mg/Kg-dry	T	<0.04 :	<0.024 :	<0.021 :	<0.021 :	<0.022 :	<0.022 :
Nickel	mg/Kg-dry	T	23.9 :	20.8 :	19.1 J	20. :	28. :	41.4 J
Zinc	mg/Kg-dry	T	193. J	125. :	127. J	117. J	196. :	321. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-12	RR-12	RR-13	RR-13	RR-13	RR-14
	Sample Date		7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003
	Sample ID		RR-12-T02N-SED	RR-12-T02N-SED	RR-13-T02N-SED	RR-13-T02N-SED	RR-13-T02N-SED	RR-14-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<10.7 J	22. J	46.9 J	28.1 J	49.6 J	84.9 J
Chloride	mg/kg-Dry	T	3.1 :	4.8 :	6.2 :	3. :	3.7 :	7.8 :
Fluoride	mg/Kg-dry	T	0.7 :	0.72 J	2.1 J	<0.25 :	0.64 J	2.4 J
Nitrate	mg/kg-Dry	T	1.2 J	<3.1 J	<3.2 J	1.6 J	<3.1 J	<3.3 J
Phosphorus	mg/Kg-dry	T	792. J	1340. J	2140. J	552. J	1620. J	2540. J
Sulfate	mg/kg-Dry	T	44.8 :	214. :	163. :	59.7 :	132. :	702. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	68.3 J	143. :	368. :	91.7 J	246. :	575. :
Total Organic Carbon	mg/Kg-dry	T	<135. :	1740. J	3340. J	669. :	4430. J	10600. J
Laboratory Parameters								
pH	SU	T	7.5 J	5.5 J	6.7 J	7.4 J	7. J	6. J
Solids, Percent	%	T	74.6 :	66.5 :	64.1 :	80.2 :	65.1 :	61. :
Specific Conductance	umhos/cm	T	96.6 J	183. J	184. J	106. J	137. J	366. J
Geotechnical								
Organic Soils	%	T	1.8 J	2.3 J	3.7 :	1.9 J	2.7 J	4.6 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	5.9 :	9.8 :	17.5 :	8.4 :	7.3 :	18.1 :
Sodium Absorption Ratio	ratio	T	0.12 :	0.15 :	0.15 :	0.14 :	0.14 :	0.13 :
Metals								
Aluminum	mg/Kg-dry	T	4760. :	7120. :	12500. J	5020. :	8860. :	15800. J
Antimony	mg/Kg-dry	T	<0.55 J	<0.75 J	<0.37 J	<0.47 J	<0.76 J	<0.39 J
Arsenic	mg/Kg-dry	T	3.8 J	5.9 :	7.3 :	3.6 J	8.3 :	7.7 :
Barium	mg/Kg-dry	T	270. J	423. :	557. J	186. J	666. :	490. J
Beryllium	mg/Kg-dry	T	0.68 :	0.78 :	2.3 :	0.9 :	1.4 :	3.1 :
Boron	mg/Kg-dry	T	1.3 :	5.4 :	1.8 :	1. :	6.9 J	2.2 :
Cadmium	mg/Kg-dry	T	0.38 :	0.26 J	0.33 :	0.56 :	0.74 J	0.088 :
Calcium	mg/Kg-dry	T	1410. :	1500. :	1860. J	1250. :	2200. :	1500. J
Chromium	mg/Kg-dry	T	8.9 :	11.3 :	15.8 J	8.7 :	14.1 :	17.4 J
Cobalt	mg/Kg-dry	T	6.4 :	8.2 :	13.7 :	7.4 :	10.8 :	13.6 :
Copper	mg/Kg-dry	T	29.2 :	47.3 :	105. J	36.9 :	64.3 :	140. J
Iron	mg/Kg-dry	T	15000. :	21500. :	25200. J	12400. :	28100. :	27100. J
Lead	mg/Kg-dry	T	33.1 :	53.5 :	60.4 J	33.9 :	81.2 :	69.6 J
Magnesium	mg/Kg-dry	T	2740. :	3490. :	3510. J	2470. :	3700. :	3580. J
Manganese	mg/Kg-dry	T	296. :	347. J	667. J	967. :	482. J	671. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-12	RR-12	RR-13	RR-13	RR-13	RR-14
	Sample Date		7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003
	Sample ID		RR-12-T02N-SED	RR-12-T02N-SED	RR-13-T02N-SED	RR-13-T02N-SED	RR-13-T02N-SED	RR-14-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.022	<0.022	<0.026	<0.02	<0.024	<0.027
Molybdenum	mg/Kg-dry	T	5.3	9.1	12.8	4.8	11.1	12.9
Nickel	mg/Kg-dry	T	27.1	24.5	47.1 J	32.6	42.9	37.1 J
Potassium	mg/Kg-dry	T	1500. J	1980.	2460. J	1340. J	2350.	2690. J
Selenium	mg/Kg-dry	T	<0.89 J	0.76	2.3 J	<0.75 J	0.97	1.3 J
Silver	mg/Kg-dry	T	0.18	<0.21	0.13	0.22	0.25	0.2
Sodium	mg/Kg-dry	T	<28.2	150.	<45.4	<26.7	217.	<72.9
Thallium	mg/Kg-dry	T	<0.11	<0.15	0.15	<0.094	<0.15	0.19
Vanadium	mg/Kg-dry	T	9.5	11.5	15.8	7.9	14.1	17.
Zinc	mg/Kg-dry	T	214. J	165.	381. J	247. J	342.	305. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.38	0.26 J	0.33	0.56	0.74 J	0.088
Copper	mg/Kg-dry	T	29.2	47.3	105. J	36.9	64.3	140. J
Lead	mg/Kg-dry	T	33.1	53.5	60.4 J	33.9	81.2	69.6 J
Mercury	mg/Kg-dry	T	<0.022	<0.022	<0.026	<0.02	<0.024	<0.027
Nickel	mg/Kg-dry	T	27.1	24.5	47.1 J	32.6	42.9	37.1 J
Zinc	mg/Kg-dry	T	214. J	165.	381. J	247. J	342.	305. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-14	RR-14	RR-15	RR-15	RR-15	RR-15	RR-16
	Sample Date		7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003	
	Sample ID		RR-14-T02N-SED	RR-14-T02N-SED	RR-15-T02N-SED	RR-15-T02N-SED	RR-15-T02N-SED	RR-15-T02N-SED	RR-16-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction								
General Chemistry									
Ammonia	mg/Kg-dry	T	11.2 J	13.4 J	27.9 J	13.2 J	39.9	23. J	
Chloride	mg/kg-Dry	T	2.8 :	3.7 :	7.4 :	2.9 :	<3.1 :	7.2 :	
Fluoride	mg/Kg-dry	T	<0.26 :	<0.28 :	4.5 J	0.66 :	0.76 J	2. J	
Nitrate	mg/kg-Dry	T	1.1 J	<2.8 J	<3.5 J	1.8 J	<3.1 J	<3.2 J	
Phosphorus	mg/Kg-dry	T	501. J	838. J	2560. J	605. J	1150. :	2440. J	
Sulfate	mg/kg-Dry	T	187. :	269. :	331. :	49. :	127. :	232. :	
Total Kjeldahl Nitrogen	mg/Kg-dry	T	68.4 J	85.6 :	496. :	91.1 J	284. :	295. :	
Total Organic Carbon	mg/Kg-dry	T	151. :	<136. J	7080. J	<127. :	4850. J	<158. J	
Laboratory Parameters									
pH	SU	T	6.4 J	5.5 J	6.4 J	7.4 J	7.2 J	6.6 J	
Solids, Percent	%	T	79.3 :	73.7 :	57.3 :	79.3 :	66. :	63.5 :	
Specific Conductance	umhos/cm	T	190. J	223. J	208. J	90.9 J	138. J	193. J	
Geotechnical									
Organic Soils	%	T	1.9 J	2.9 J	5.6 :	2.2 J	3.2 J	4.2 :	
Physical Properties									
Cation-Exchange Capacity	meq/100g	T	6.8 :	13.3 :	21.2 :	9.7 :	28.4 :	19.3 :	
Sodium Absorption Ratio	ratio	T	0.1 :	0.11 :	0.12 :	0.09 :	0.14 :	0.13 :	
Metals									
Aluminum	mg/Kg-dry	T	5690. :	6890. :	18100. J	5980. :	9320. :	13800. J	
Antimony	mg/Kg-dry	T	<0.53 J	<0.62 J	<0.44 J	<0.46 J	<0.74 J	<0.43 J	
Arsenic	mg/Kg-dry	T	3.5 J	7.1 :	7.2 :	4.5 J	8.2 :	8.1 :	
Barium	mg/Kg-dry	T	155. J	273. :	541. J	530. J	472. :	614. J	
Beryllium	mg/Kg-dry	T	0.79 :	1.2 :	3.8 :	0.86 :	1.4 :	2.8 :	
Boron	mg/Kg-dry	T	0.54 :	<0.81 :	1.9 :	0.71 :	<0.89 J	2.1 J	
Cadmium	mg/Kg-dry	T	0.3 :	<0.089 J	0.18 :	0.5 :	<0.097 J	0.26 J	
Calcium	mg/Kg-dry	T	1010. :	1080. :	1980. J	1380. :	2400. :	1930. J	
Chromium	mg/Kg-dry	T	8.3 :	10.1 :	17.1 J	10.9 :	13.8 :	17.5 J	
Cobalt	mg/Kg-dry	T	5.1 :	7. :	16.4 :	6.3 :	11.2 :	17.1 :	
Copper	mg/Kg-dry	T	34.8 :	50.7 :	168. J	35.7 :	65.8 :	134. J	
Iron	mg/Kg-dry	T	13000. :	22100. :	26400. J	17300. :	30700. :	28100. J	
Lead	mg/Kg-dry	T	28.3 :	45.3 :	72.6 J	38.1 :	69. :	69.2 J	
Magnesium	mg/Kg-dry	T	2570. :	2820. :	3570. J	2830. :	3840. :	3720. J	
Manganese	mg/Kg-dry	T	258. :	276. J	815. J	307. :	533. J	875. J	

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-14	RR-14	RR-15	RR-15	RR-15	RR-16
	Sample Date		7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003
	Sample ID		RR-14-T02N-SED	RR-14-T02N-SED	RR-15-T02N-SED	RR-15-T02N-SED	RR-15-T02N-SED	RR-16-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.031 :	0.017 :	<0.029 :	<0.022 :	0.02 :	<0.025 :
Molybdenum	mg/Kg-dry	T	2.7 :	7.6 :	13.4 :	5.4 :	10.9 :	12.9 :
Nickel	mg/Kg-dry	T	22.3 :	22.3 :	43.4 J	27.8 :	35. J	45. J
Potassium	mg/Kg-dry	T	1390. J	1720. :	2690. J	1650. J	2500. :	2640. J
Selenium	mg/Kg-dry	T	<0.84 J	0.73 :	1.4 J	<0.74 J	1.1 :	1. J
Silver	mg/Kg-dry	T	<0.22 :	0.24 :	0.22 :	<0.22 :	0.24 :	<0.13 :
Sodium	mg/Kg-dry	T	129. :	105. :	<54.4 :	147. :	98.2 :	<46.2 :
Thallium	mg/Kg-dry	T	<0.11 :	<0.12 :	0.19 :	<0.093 :	<0.15 :	0.16 :
Vanadium	mg/Kg-dry	T	8.6 :	11.1 :	16.9 :	11.3 :	15.1 :	17. :
Zinc	mg/Kg-dry	T	155. J	172. :	439. J	226. J	301. J	434. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.3 :	<0.089 J	0.18 :	0.5 :	<0.097 J	0.26 J
Copper	mg/Kg-dry	T	34.8 :	50.7 :	168. J	35.7 :	65.8 :	134. J
Lead	mg/Kg-dry	T	28.3 :	45.3 :	72.6 J	38.1 :	69. :	69.2 J
Mercury	mg/Kg-dry	T	<0.031 :	0.017 :	<0.029 :	<0.022 :	0.02 :	<0.025 :
Nickel	mg/Kg-dry	T	22.3 :	22.3 :	43.4 J	27.8 :	35. J	45. J
Zinc	mg/Kg-dry	T	155. J	172. :	439. J	226. J	301. J	434. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-16	RR-16	RR-17	RR-17	RR-17	RR-18A
	Sample Date		7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/22/2003	3/18/2003
	Sample ID		RR-16-T02N-SED	RR-16-T02N-SED	RR-17-T02N-SED	RR-17-T02N-SED	RR-17-T02N-SED	RR-18A-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	18.1 J	11.6 J	130. J	16.3 J	13.7 J	30.9 J
Chloride	mg/kg-Dry	T	3.7 :	<2.5 :	<6.2 :	4.4 :	<2.9 :	<5.9 :
Fluoride	mg/Kg-dry	T	0.99 :	0.68 J	3.9 J	1. :	0.74 J	3.1 J
Nitrate	mg/kg-Dry	T	1.1 J	<2.5 J	<3.5 J	1.5 J	<2.9 J	3.4 J
Phosphorus	mg/Kg-dry	T	986. J	578. J	2960. J	550. J	892. J	2820. J
Sulfate	mg/kg-Dry	T	71.9 :	68.9 :	276. :	57.4 :	71.4 :	226. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	76.1 J	128. :	410. :	85.2 J	151. :	216. :
Total Organic Carbon	mg/Kg-dry	T	<132. :	987. J	6910. J	<134. :	269. J	2880. J
Laboratory Parameters								
pH	SU	T	7.5 J	7.5 J	6.5 :	7.5 J	7.5 J	6.5 :
Solids, Percent	%	T	76. :	80. :	58.4 :	75.1 :	70.1 :	66.7 :
Specific Conductance	umhos/cm	T	119. J	115. J	195. J	111. J	125. J	212. J
Geotechnical								
Organic Soils	%	T	2. J	2.5 J	5.2 :	1.9 J	2.5 J	3.8 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	10.7 :	21.9 :	21.1 :	7.4 :	9.6 :	17.7 :
Sodium Absorption Ratio	ratio	T	0.12 :	0.12 :	0.13 :	0.11 :	0.11 :	0.14 :
Metals								
Aluminum	mg/Kg-dry	T	7400. :	6720. :	14900. J	6300. :	7090. :	11100. J
Antimony	mg/Kg-dry	T	<0.49 J	<0.6 J	<0.46 J	<0.5 J	<0.68 J	<0.36 J
Arsenic	mg/Kg-dry	T	6.7 J	5.6 :	8.2 :	5.4 J	5.8 :	8.6 :
Barium	mg/Kg-dry	T	464. J	352. :	535. J	378. J	326. :	464. J
Beryllium	mg/Kg-dry	T	1. J	0.99 :	2.7 :	0.98 :	1.1 :	1.8 :
Boron	mg/Kg-dry	T	1.9 :	<0.77 :	2.3 :	0.65 :	<0.77 :	1.9 J
Cadmium	mg/Kg-dry	T	0.51 :	<0.084 J	<0.07 :	0.63 :	0.78 J	<0.065 J
Calcium	mg/Kg-dry	T	1650. :	1630. :	1960. J	1520. :	1600. :	1790. J
Chromium	mg/Kg-dry	T	13.4 :	11.3 :	17. J	11. :	11.9 :	17.2 J
Cobalt	mg/Kg-dry	T	8.6 :	9.5 :	15.1 :	7.2 :	10.4 :	11.6 :
Copper	mg/Kg-dry	T	44.1 :	46.3 :	96.2 J	38.5 :	48.5 :	63.1 J
Iron	mg/Kg-dry	T	21100. :	22600. :	27400. J	18300. :	20400. :	28300. J
Lead	mg/Kg-dry	T	48.5 :	46.9 :	73.3 J	54.4 :	46.5 :	70.8 J
Magnesium	mg/Kg-dry	T	3280. :	3080. :	3930. J	2890. :	3140. :	4070. J
Manganese	mg/Kg-dry	T	362. :	468. J	818. J	368. :	585. J	643. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-16	RR-16	RR-17	RR-17	RR-17	RR-18A
	Sample Date		7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/22/2003	3/18/2003
	Sample ID		RR-16-T02N-SED	RR-16-T02N-SED	RR-17-T02N-SED	RR-17-T02N-SED	RR-17-T02N-SED	RR-18A-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.02	0.0096	<0.026 J	<0.036	<0.023	<0.023
Molybdenum	mg/Kg-dry	T	8.1	11.4	12.	6.1	7.4	11.
Nickel	mg/Kg-dry	T	33.	38.1	42.3 J	32.1	42.4	29.2 J
Potassium	mg/Kg-dry	T	2040. J	1890.	3040. J	1790. J	1680.	2720. J
Selenium	mg/Kg-dry	T	1.1 J	0.91	1.7 J	<0.81 J	1.5	0.95 J
Silver	mg/Kg-dry	T	0.16	0.25	0.21	<0.26	<0.2	0.22
Sodium	mg/Kg-dry	T	74.3	97.7	53.	175.	277.	114.
Thallium	mg/Kg-dry	T	0.14	<0.12	0.2	<0.1	0.16	0.17
Vanadium	mg/Kg-dry	T	13.7 J	12.2	17.1	12.9	12.	16.5
Zinc	mg/Kg-dry	T	252. J	287.	375. J	247. J	289.	253. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.51	<0.084 J	<0.07	0.63	0.78 J	<0.065 J
Copper	mg/Kg-dry	T	44.1	46.3	96.2 J	38.5	48.5	63.1 J
Lead	mg/Kg-dry	T	48.5	46.9	73.3 J	54.4	46.5	70.8 J
Mercury	mg/Kg-dry	T	<0.02	0.0096	<0.026 J	<0.036	<0.023	<0.023
Nickel	mg/Kg-dry	T	33.	38.1	42.3 J	32.1	42.4	29.2 J
Zinc	mg/Kg-dry	T	252. J	287.	375. J	247. J	289.	253. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-18A	RR-18A	RR-18B	RR-18B	RR-18B	RR-20
	Sample Date		7/13/2003	9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/18/2003
	Sample ID		RR-18A-T02N-SED	RR-18A-T02N-SED	RR-18B-T02N-SED	RR-18B-T02N-SED	RR-18B-T02N-SED	RR-20-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	10.3 J	10.7 J	36. J	20.6 J	16.8 J	36.3 :
Chloride	mg/kg-Dry	T	2.9 :	<2.8 :	<5.2 :	3. :	<2.9 :	<9.8 :
Fluoride	mg/Kg-dry	T	0.83 :	0.76 J	4.1 J	1. :	0.52 J	0.51 J
Nitrate	mg/kg-Dry	T	1.7 J	<2.8 J	<3.3 J	1.8 J	<2.9 J	<3.5 J
Phosphorus	mg/Kg-dry	T	301. J	2150. J	2850. J	811. J	991. J	3500. :
Sulfate	mg/kg-Dry	T	38.4 :	64.3 :	160. :	59.9 :	87.6 :	387. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	66. J	90.3 :	472. :	85.2 J	276. :	459. :
Total Organic Carbon	mg/Kg-dry	T	<125. :	674. J	7710. J	703. :	341. J	18600. J
Laboratory Parameters								
pH	SU	T	7.5 J	7.5 J	6.6 :	7.4 J	7.6 J	6.3 :
Solids, Percent	%	T	80.6 :	73.1 :	61.6 :	75.3 :	69. :	57.3 :
Specific Conductance	umhos/cm	T	0. J	118. J	204. J	114. J	82.2 J	250. J
Geotechnical								
Organic Soils	%	T	1.8 J	2. J	5.8 :	1.8 J	3. J	6.1 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	7.6 :	11.6 :	18.4 :	8.3 :	13.5 :	12.9 J
Sodium Absorption Ratio	ratio	T	0.11 :	0.1 :	0.16 :	0.1 :	0.11 :	0.33 :
Metals								
Aluminum	mg/Kg-dry	T	5630. :	5970. :	15200. J	5550. :	8290. :	15400. J
Antimony	mg/Kg-dry	T	<0.51 J	<0.54 J	<0.39 J	<0.55 J	1.3 J	<0.39 J
Arsenic	mg/Kg-dry	T	4.8 J	5.4 :	8.9 :	4.6 J	7.8 :	12.7 J
Barium	mg/Kg-dry	T	311. J	213. :	487. J	319. J	527. :	600. J
Beryllium	mg/Kg-dry	T	0.75 :	0.85 :	2.6 :	0.8 :	1.3 :	1.8 :
Boron	mg/Kg-dry	T	0.53 :	<0.74 :	2.3 J	1.5 :	<0.9 :	3.3 J
Cadmium	mg/Kg-dry	T	0.54 :	0.58 J	<0.072 J	0.51 :	0.96 J	<0.079 J
Calcium	mg/Kg-dry	T	1380. :	1770. :	2170. J	1370. :	2130. :	2230. :
Chromium	mg/Kg-dry	T	9.9 :	10.7 :	18.2 J	10.2 :	14.8 :	24.4 J
Cobalt	mg/Kg-dry	T	6.3 :	8.2 :	13.7 :	7.9 :	11.6 :	10.7 :
Copper	mg/Kg-dry	T	33.4 :	48.4 :	95.1 J	40.8 :	58.2 :	63.7 :
Iron	mg/Kg-dry	T	15600. :	17600. :	30500. J	16600. :	26900. :	42600. J
Lead	mg/Kg-dry	T	38.3 :	35.3 :	103. J	37.8 :	61.9 :	136. J
Magnesium	mg/Kg-dry	T	3040. :	2960. :	4310. J	2800. :	3680. :	5900. J
Manganese	mg/Kg-dry	T	364. :	441. J	714. J	353. :	595. J	393. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-18A	RR-18A	RR-18B	RR-18B	RR-18B	RR-20
	Sample Date		7/13/2003	9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/18/2003
	Sample ID		RR-18A-T02N-SED	RR-18A-T02N-SED	RR-18B-T02N-SED	RR-18B-T02N-SED	RR-18B-T02N-SED	RR-20-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.081	<0.023	<0.026	<0.02	<0.021	<0.029
Molybdenum	mg/Kg-dry	T	8.5	8.6	14.7	5.5	9.5	17.5
Nickel	mg/Kg-dry	T	28.3	35.3	39.4	30.3	46.	27.7
Potassium	mg/Kg-dry	T	1610.	1400.	3480.	1730.	2140.	4330.
Selenium	mg/Kg-dry	T	<0.81	0.86	0.74	<0.89	1.4	1.5
Silver	mg/Kg-dry	T	<0.23	<0.19	0.47	0.17	0.26	0.79
Sodium	mg/Kg-dry	T	141.	236.	<50.6	<29.1	323.	270.
Thallium	mg/Kg-dry	T	<0.1	0.12	0.27	<0.11	0.17	0.32
Vanadium	mg/Kg-dry	T	11.3	11.1	18.6	10.3	14.6	24.3
Zinc	mg/Kg-dry	T	222.	251.	379.	245.	360.	205.
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.54	0.58	<0.072	0.51	0.96	<0.079
Copper	mg/Kg-dry	T	33.4	48.4	95.1	40.8	58.2	63.7
Lead	mg/Kg-dry	T	38.3	35.3	103.	37.8	61.9	136.
Mercury	mg/Kg-dry	T	<0.081	<0.023	<0.026	<0.02	<0.021	<0.029
Nickel	mg/Kg-dry	T	28.3	35.3	39.4	30.3	46.	27.7
Zinc	mg/Kg-dry	T	222.	251.	379.	245.	360.	205.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-20	RR-20	RR-3	RR-3	RR-3	RR-4
	Sample Date		7/14/2003	9/21/2003	3/19/2003	7/14/2003	9/22/2003	3/18/2003
	Sample ID		RR-20-T02N-SED	RR-20-T02N-SED	RR-3-T02N-SED	RR-3-T02N-SED	RR-3-T02N-SED	RR-4-T02N-SED
	Exposure Area		SWR	SWR	RURR	RURR	RURR	RURR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	24.4 J	31.8 J	40.1 J	46.8 J	58.9 J	43.9 J
Chloride	mg/kg-Dry	T	3.5 :	4.7 :	<7. J	<350. :	5.5 :	254. :
Fluoride	mg/Kg-dry	T	1.1 :	0.89 J	0.67 J	0.57 J	0.29 J	0.31 J
Nitrate	mg/kg-Dry	T	0.96 J	<2.9 J	<3. J	<28. J	<3. J	<2.8 J
Phosphorus	mg/Kg-dry	T	635. J	1810. J	992. J	649. J	1660. J	1040. J
Sulfate	mg/kg-Dry	T	124. :	129. :	81.9 J	36.3 :	64.2 :	44.5 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	240. J	264. :	429. J	463. J	494. J	310. :
Total Organic Carbon	mg/Kg-dry	T	7010. :	6540. J	8100. J	21700. :	8190. J	5760. J
Laboratory Parameters								
pH	SU	T	6.9 J	7. J	6.9 J	7. J	7.1 J	6.9 :
Solids, Percent	%	T	73.6 :	70.6 :	68.8 :	71.5 :	68.2 :	72.1 :
Specific Conductance	umhos/cm	T	140. J	132. J	145. J	152. J	141. J	111. J
Geotechnical								
Organic Soils	%	T	1.8 J	2.5 J	2.8 :	1.9 J	3.5 J	2.5 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	10.7 :	13.7 :	17.4 :	8.5 :	14.8 :	11.8 :
Sodium Absorption Ratio	ratio	T	0.15 :	0.17 :	0.12 :	0.1 :	0.12 :	0.17 :
Metals								
Aluminum	mg/Kg-dry	T	8100. :	8500. :	11800. J	9620. :	8620. :	4800. J
Antimony	mg/Kg-dry	T	<0.67 J	<0.67 J	<0.36 J	0.5 J	<0.72 J	<0.34 J
Arsenic	mg/Kg-dry	T	5.6 J	6.8 :	2.9 :	2.8 J	3.3 :	4. :
Barium	mg/Kg-dry	T	566. J	489. :	114. J	102. J	125. :	727. J
Beryllium	mg/Kg-dry	T	1. :	1.4 :	1.4 :	0.72 :	0.75 :	0.91 :
Boron	mg/Kg-dry	T	2.5 :	6.5 :	2.1 J	2.9 J	<0.83 :	<0.96 :
Cadmium	mg/Kg-dry	T	0.39 :	0.95 J	1.5 J	0.52 :	0.66 J	<0.091 :
Calcium	mg/Kg-dry	T	1830. :	1880. :	2480. J	3490. :	2710. :	1060. J
Chromium	mg/Kg-dry	T	15.4 :	12.9 :	22.2 J	19.7 :	19.2 :	5.3 J
Cobalt	mg/Kg-dry	T	9.1 :	11. :	14. :	10.1 :	10.6 :	7.9 :
Copper	mg/Kg-dry	T	49.6 :	66.6 :	201. J	112. :	128. :	68.1 J
Iron	mg/Kg-dry	T	22500. :	27100. :	24000. J	22200. :	19100. :	12700. J
Lead	mg/Kg-dry	T	50.2 :	61. :	50.9 J	45.4 J	35.4 :	42.2 J
Magnesium	mg/Kg-dry	T	3830. :	3180. :	5150. J	5330. :	4510. :	1270. J
Manganese	mg/Kg-dry	T	427. :	515. J	562. J	508. :	689. J	402. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-20	RR-20	RR-3	RR-3	RR-3	RR-4
	Sample Date		7/14/2003	9/21/2003	3/19/2003	7/14/2003	9/22/2003	3/18/2003
	Sample ID		RR-20-T02N-SED	RR-20-T02N-SED	RR-3-T02N-SED	RR-3-T02N-SED	RR-3-T02N-SED	RR-4-T02N-SED
	Exposure Area		SWR	SWR	RURR	RURR	RURR	RURR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.022	0.021	<0.023	<0.024	<0.021	<0.022
Molybdenum	mg/Kg-dry	T	18.3	11.2	8.2	6.6	6.1	5.7
Nickel	mg/Kg-dry	T	30.	36.5	28. J	20.5 J	21.6	16.9 J
Potassium	mg/Kg-dry	T	1890. J	2370.	1750. J	1560. J	1220.	1740. J
Selenium	mg/Kg-dry	T	<1.1 J	0.84	1.1 J	0.71 J	1.	0.58 J
Silver	mg/Kg-dry	T	0.38	<0.23	0.34 J	<0.23	0.21	<0.11
Sodium	mg/Kg-dry	T	<61.8 J	253.	194.	<102.	226.	<40.3
Thallium	mg/Kg-dry	T	<0.13	<0.13	0.15	0.14	<0.14	0.14
Vanadium	mg/Kg-dry	T	18.1	12.8	30.3	31.	23.5	7.7
Zinc	mg/Kg-dry	T	224. J	310.	281. J	180. J	200.	160. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.39	0.95 J	1.5 J	0.52	0.66 J	<0.091
Copper	mg/Kg-dry	T	49.6	66.6	201. J	112.	128.	68.1 J
Lead	mg/Kg-dry	T	50.2	61.	50.9 J	45.4 J	35.4	42.2 J
Mercury	mg/Kg-dry	T	<0.022	0.021	<0.023	<0.024	<0.021	<0.022
Nickel	mg/Kg-dry	T	30.	36.5	28. J	20.5 J	21.6	16.9 J
Zinc	mg/Kg-dry	T	224. J	310.	281. J	180. J	200.	160. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-4	RR-4	RR-5	RR-5	RR-5	RR-6
	Sample Date		7/14/2003	9/22/2003	3/18/2003	7/16/2003	9/22/2003	3/19/2003
	Sample ID		RR-4-T02N-SED	RR-4-T02N-SED	RR-5-T02N-SED	RR-5-T02N-SED	RR-5-T02N-SED	RR-6-T02N-SED
	Exposure Area		RURR	RURR	RURR	RURR	RURR	RURR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	18.2 J	11.5 J	56.9 J	16.9 J	13.7 J	22.2 J
Chloride	mg/kg-Dry	T	2.7 :	<2.8 :	<8.8 :	2.9 :	<2.7 :	4.2 :
Fluoride	mg/Kg-dry	T	<0.26 :	0.18 J	0.33 J	0.34 :	0.21 J	0.58 J
Nitrate	mg/kg-Dry	T	<2.5 J	<2.8 J	<3.1 J	0.82 J	<2.7 J	<3. J
Phosphorus	mg/Kg-dry	T	453. J	756. J	2140. J	691. J	-	2210. J
Sulfate	mg/kg-Dry	T	17.2 :	43.2 :	74.9 :	48.9 :	52.6 :	78.3 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	68.4 J	76.7 :	282. :	112. J	108. :	131. J
Total Organic Carbon	mg/Kg-dry	T	<127. :	<138. J	8940. J	2050. :	1310. J	4140. J
Laboratory Parameters								
pH	SU	T	7.5 J	7.5 J	6.6 :	6.8 J	7.4 J	7. J
Solids, Percent	%	T	79.2 :	72.5 :	66. :	77.9 :	76.9 :	67. :
Specific Conductance	umhos/cm	T	34.1 J	118. J	167. J	208. J	167. J	138. J
Geotechnical								
Organic Soils	%	T	1.8 J	2.3 J	3.1 :	2. J	2.3 J	3.1 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	5.7 :	8.6 :	12.9 :	7.6 :	17.8 :	20.2 :
Sodium Absorption Ratio	ratio	T	0.08 :	0.09 :	0.22 :	0.14 :	0.12 :	0.16 :
Metals								
Aluminum	mg/Kg-dry	T	3400. :	4480. :	7890. J	4800. :	5220. :	6760. J
Antimony	mg/Kg-dry	T	<1.1 J	<0.64 J	<0.36 J	<1.4 J	<0.74 J	<0.35 J
Arsenic	mg/Kg-dry	T	3.7 J	5.9 :	5.8 :	4.4 J	5.4 :	6.5 :
Barium	mg/Kg-dry	T	519. J	510. :	515. J	187. J	534. :	550. J
Beryllium	mg/Kg-dry	T	0.39 :	0.48 :	1. :	0.44 :	0.42 :	0.79 :
Boron	mg/Kg-dry	T	1.2 :	<0.76 :	2.1 :	1.4 :	<0.71 :	2.6 :
Cadmium	mg/Kg-dry	T	<0.035 :	0.26 J	0.084 :	<0.036 :	0.12 :	0.72 :
Calcium	mg/Kg-dry	T	1120. :	1990. :	1810. J	1390. :	1660. :	1720. J
Chromium	mg/Kg-dry	T	5.9 :	7.6 :	14.8 J	10.4 :	11.3 :	11.7 J
Cobalt	mg/Kg-dry	T	3.9 :	6.8 :	9.9 :	5.1 :	6.7 :	8.4 :
Copper	mg/Kg-dry	T	27.5 :	34.3 :	77.2 J	38.5 :	47.7 J	46.9 J
Iron	mg/Kg-dry	T	12100. :	19200. :	22100. J	15900. :	21800. :	21300. J
Lead	mg/Kg-dry	T	35.8 :	46. :	92.5 J	62.5 :	77.4 :	65.1 J
Magnesium	mg/Kg-dry	T	1600. :	2300. :	3450. J	2820. :	3180. :	3160. J
Manganese	mg/Kg-dry	T	187. :	287. J	534. J	204. :	299. J	407. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-4	RR-4	RR-5	RR-5	RR-5	RR-6
	Sample Date	Sample ID	7/14/2003	9/22/2003	3/18/2003	7/16/2003	9/22/2003	3/19/2003
	Exposure Area	Sample ID	RR-4-T02N-SED	RR-4-T02N-SED	RR-5-T02N-SED	RR-5-T02N-SED	RR-5-T02N-SED	RR-6-T02N-SED
	Units	Fraction	RURR	RURR	RURR	RURR	RURR	RURR
Mercury	mg/Kg-dry	T	<0.019	<0.023	<0.025 J	0.022	<0.019	<0.023 J
Molybdenum	mg/Kg-dry	T	3.8	9.9	9.9	10.	9.3	8.1
Nickel	mg/Kg-dry	T	10.1	14.5	23. J	11.8	12.9	21.6 J
Potassium	mg/Kg-dry	T	1550. J	1830.	2280. J	1760. J	1780.	1950. J
Selenium	mg/Kg-dry	T	<0.89 J	0.49	1.2 J	<0.93 J	1.7	0.68 J
Silver	mg/Kg-dry	T	<0.11 J	<0.19	0.47	0.18 J	0.39	0.25
Sodium	mg/Kg-dry	T	<72.8	204.	<45.6	<96.9	181.	<134.
Thallium	mg/Kg-dry	T	<0.11	0.18	0.17	<0.12	0.15	0.12
Vanadium	mg/Kg-dry	T	7.7	9.7	15.2	10.9	12.	12.3
Zinc	mg/Kg-dry	T	72.1 J	76.5	245. J	85.4 J	83.7	170. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	<0.035	0.26 J	0.084	<0.036	0.12	0.72
Copper	mg/Kg-dry	T	27.5	34.3	77.2 J	38.5	47.7 J	46.9 J
Lead	mg/Kg-dry	T	35.8	46.	92.5 J	62.5	77.4	65.1 J
Mercury	mg/Kg-dry	T	<0.019	<0.023	<0.025 J	0.022	<0.019	<0.023 J
Nickel	mg/Kg-dry	T	10.1	14.5	23. J	11.8	12.9	21.6 J
Zinc	mg/Kg-dry	T	72.1 J	76.5	245. J	85.4 J	83.7	170. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-6	RR-6	RR-6A	RR-6A	RR-6A	RR-6V
	Sample Date		7/14/2003	9/22/2003	3/18/2003	7/13/2003	9/22/2003	7/14/2003
	Sample ID		RR-6-T02N-SED	RR-6-T02N-SED	RR-6A-T02N-SED	RR-6A-T02N-SED	RR-6A-T02N-SED	RR-6V-T02N-SED
	Exposure Area		RURR	RURR	RURR	RURR	RURR	RURR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	66.9 J	21.1 J	84.2 J	18.8 J	10.3 J	16.3 J
Chloride	mg/kg-Dry	T	3.6 :	<2.8 :	<5.1 :	2.6 :	<2.9 :	2.8 :
Fluoride	mg/Kg-dry	T	0.3 :	0.3 J	0.67 J	<0.25 :	0.31 J	<0.26 :
Nitrate	mg/kg-Dry	T	1.1 J	<2.8 J	<3. J	1.6 J	<2.9 J	<2.5 J
Phosphorus	mg/Kg-dry	T	711. J	594. J	1840. J	569. J	1790. J	936. J
Sulfate	mg/kg-Dry	T	71.7 :	83.6 :	79.9 :	31.7 :	112. :	49.2 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	190. J	73.3 :	320. :	70.4 J	88.8 :	106. J
Total Organic Carbon	mg/Kg-dry	T	785. :	1720. J	2130. J	209. :	<144. J	528. :
Laboratory Parameters								
pH	SU	T	7.2 J	7.4 J	6.8 :	7.5 J	7.4 J	7.1 J
Solids, Percent	%	T	69.7 :	73.5 :	67.1 :	80.9 :	69.8 :	79.5 :
Specific Conductance	umhos/cm	T	178. J	143. J	144. J	85.4 J	120. J	91.3 J
Geotechnical								
Organic Soils	%	T	3.6 J	2.1 J	3.4 :	1.6 J	2.3 J	1.9 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	9.5 :	31.2 :	15.5 :	6.9 :	13. :	7. :
Sodium Absorption Ratio	ratio	T	0.2 :	0.1 :	0.15 :	0.1 :	0.1 :	0.13 :
Metals								
Aluminum	mg/Kg-dry	T	7020. :	4330. :	9190. J	4770. :	6340. :	4600. :
Antimony	mg/Kg-dry	T	<0.7 J	<0.67 J	<0.4 J	<0.55 J	<0.71 J	<1.4 J
Arsenic	mg/Kg-dry	T	8.4 J	5. :	5.5 :	6.6 J	8.4 :	4.5 J
Barium	mg/Kg-dry	T	1300. J	208. :	452. J	959. J	491. :	670. J
Beryllium	mg/Kg-dry	T	0.61 :	0.36 :	1.4 :	0.52 :	0.58 :	0.41 :
Boron	mg/Kg-dry	T	2.9 :	<0.74 :	1.7 :	1.6 :	<0.82 J	1.5 :
Cadmium	mg/Kg-dry	T	0.13 :	<0.059 J	<0.068 :	0.1 :	0.25 J	0.22 :
Calcium	mg/Kg-dry	T	2140. :	1390. :	1670. J	1600. :	2110. :	1480. :
Chromium	mg/Kg-dry	T	15.3 :	8.5 :	12.8 J	13.7 :	13.4 :	10.2 :
Cobalt	mg/Kg-dry	T	7.2 :	3.5 :	14.4 :	8.3 :	8.3 :	5.6 :
Copper	mg/Kg-dry	T	43.2 :	18.9 :	55.7 J	46.8 :	45. :	34. :
Iron	mg/Kg-dry	T	27200. :	15700. :	20000. J	21900. :	27600. :	17100. :
Lead	mg/Kg-dry	T	74.6 :	26.4 :	62.7 J	113. :	67.9 :	55.9 :
Magnesium	mg/Kg-dry	T	3950. :	2460. :	2950. J	2750. :	3530. :	2810. :
Manganese	mg/Kg-dry	T	323. :	135. J	676. J	305. :	425. J	303. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-6	RR-6	RR-6A	RR-6A	RR-6A	RR-6V
	Sample Date		7/14/2003	9/22/2003	3/18/2003	7/13/2003	9/22/2003	7/14/2003
	Sample ID		RR-6-T02N-SED	RR-6-T02N-SED	RR-6A-T02N-SED	RR-6A-T02N-SED	RR-6A-T02N-SED	RR-6V-T02N-SED
	Exposure Area		RURR	RURR	RURR	RURR	RURR	RURR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.023	<0.02	<0.025 J	<0.02	<0.023	0.06
Molybdenum	mg/Kg-dry	T	7.3	2.4	10.8	4.7	7.7	8.6
Nickel	mg/Kg-dry	T	20.6	10.	30.7 J	21.1	18.	13.3
Potassium	mg/Kg-dry	T	2290. J	1480.	2280. J	1550. J	2050.	1610. J
Selenium	mg/Kg-dry	T	<1.1 J	<0.59	0.92 J	<0.88 J	1.5	<0.9 J
Silver	mg/Kg-dry	T	0.43	<0.19	0.25 J	0.2	<0.21 J	0.14 J
Sodium	mg/Kg-dry	T	<64. J	177.	<47.7	96.5	253.	<83.2
Thallium	mg/Kg-dry	T	<0.14	<0.13	0.13	<0.11	0.17	<0.11
Vanadium	mg/Kg-dry	T	15.6	7.5	13.	12.2	13.4	10.3
Zinc	mg/Kg-dry	T	121. J	57.6	240. J	124. J	94.2	116. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.13	<0.059 J	<0.068	0.1	0.25 J	0.22
Copper	mg/Kg-dry	T	43.2	18.9	55.7 J	46.8	45.	34.
Lead	mg/Kg-dry	T	74.6	26.4	62.7 J	113.	67.9	55.9
Mercury	mg/Kg-dry	T	<0.023	<0.02	<0.025 J	<0.02	<0.023	0.06
Nickel	mg/Kg-dry	T	20.6	10.	30.7 J	21.1	18.	13.3
Zinc	mg/Kg-dry	T	121. J	57.6	240. J	124. J	94.2	116. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-6V	RR-7	RR-7	RR-7	RR-7	RR-8	RR-8
	Sample Date		9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/19/2003	7/13/2003	
	Sample ID		RR-6V-T02N-SED	RR-7-T02N-SED	RR-7-T02N-SED	RR-7-T02N-SED	RR-8-T02N-SED	RR-8-T02N-SED	
	Exposure Area		RURR	SWR	SWR	SWR	SWR	SWR	
Units	Fraction								
General Chemistry									
Ammonia	mg/Kg-dry	T	10.4 J	151. J	16.8 J	12.3 J	19.9 J	13.2 J	
Chloride	mg/kg-Dry	T	<2.6 :	<3.9 :	3. :	<2.8 :	4.9 :	3.2 :	
Fluoride	mg/Kg-dry	T	0.19 J	0.63 J	<0.26 :	0.25 J	0.58 J	<0.28 :	
Nitrate	mg/kg-Dry	T	<2.6 J	<2.9 J	2.2 J	<2.8 J	<3.1 J	1.4 J	
Phosphorus	mg/Kg-dry	T	1920. J	1740. J	451. J	959. J	2370. J	479. J	
Sulfate	mg/kg-Dry	T	71. :	68.3 :	99.6 :	109. :	82.8 :	41.1 :	
Total Kjeldahl Nitrogen	mg/Kg-dry	T	87.8 :	575. :	53.9 J	30.1 :	234. J	124. J	
Total Organic Carbon	mg/Kg-dry	T	<129. J	10300. J	3600. :	<138. J	1710. J	<139. :	
Laboratory Parameters									
pH	SU	T	7.6 J	7. :	7.2 J	7.2 J	6.9 J	7.4 J	
Solids, Percent	%	T	77.7 :	70.3 :	79.2 :	72.9 :	65.6 :	72.2 :	
Specific Conductance	umhos/cm	T	106. J	139. J	116. J	123. J	166. J	81.5 J	
Geotechnical									
Organic Soils	%	T	2. J	2.6 :	1.9 J	2.1 J	2.9 :	1.8 J	
Physical Properties									
Cation-Exchange Capacity	meq/100g	T	10. :	11.2 :	6.2 :	7.4 :	19.1 :	5.3 :	
Sodium Absorption Ratio	ratio	T	0.1 :	0.22 :	0.17 :	0.11 :	0.2 :	0.15 :	
Metals									
Aluminum	mg/Kg-dry	T	5580. :	9130. J	4800. :	5080. :	7350. J	5140. :	
Antimony	mg/Kg-dry	T	<0.59 J	<0.37 J	<0.51 J	1.2 J	<0.38 J	<0.56 J	
Arsenic	mg/Kg-dry	T	8.7 :	4.8 :	5.1 J	7. :	8. :	5.7 J	
Barium	mg/Kg-dry	T	288. :	383. J	518. J	361. :	809. J	658. J	
Beryllium	mg/Kg-dry	T	0.47 :	1.6 :	0.48 :	0.48 :	0.81 :	0.53 :	
Boron	mg/Kg-dry	T	<0.72 J	1.3 :	0.85 :	<0.86 :	2.8 J	0.86 :	
Cadmium	mg/Kg-dry	T	0.32 J	<0.053 :	0.75 :	0.12 J	0.78 J	0.42 :	
Calcium	mg/Kg-dry	T	1920. :	1580. J	1510. :	1990. :	1880. J	1550. :	
Chromium	mg/Kg-dry	T	12. :	10.2 J	10.4 :	10.1 :	13.8 J	10.8 :	
Cobalt	mg/Kg-dry	T	8.5 :	14.1 :	6. :	5.5 :	9.3 :	7.2 :	
Copper	mg/Kg-dry	T	51.6 :	62.9 J	44.6 :	28.4 :	46.2 J	35.3 :	
Iron	mg/Kg-dry	T	23400. :	17000. J	17900. :	21700. :	27100. J	19500. :	
Lead	mg/Kg-dry	T	68. :	50.1 J	146. :	46.6 :	85. J	52.1 :	
Magnesium	mg/Kg-dry	T	3520. :	2380. J	3000. :	2850. :	3370. J	2850. :	
Manganese	mg/Kg-dry	T	368. J	716. J	314. :	212. J	444. J	306. :	

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-6V	RR-7	RR-7	RR-7	RR-8	RR-8		
	Sample Date		9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/19/2003	7/13/2003		
	Sample ID		RR-6V-T02N-SED	RR-7-T02N-SED	RR-7-T02N-SED	RR-7-T02N-SED	RR-8-T02N-SED	RR-8-T02N-SED		
	Exposure Area		RURR	SWR	SWR	SWR	SWR	SWR		
Units	Fraction									
Mercury	mg/Kg-dry	T	<0.021	<0.022	J	<0.062	<0.022	<0.024	J	<0.041
Molybdenum	mg/Kg-dry	T	9.9	9.8	:	5.7	4.3	8.7	:	7.
Nickel	mg/Kg-dry	T	16.4	27.5	J	16.6	13.8	23.6	J	19.6
Potassium	mg/Kg-dry	T	1660.	1820.	J	1550.	1760.	2320.	J	1810.
Selenium	mg/Kg-dry	T	1.5	<0.61	J	<0.81	0.82	1.1	J	<0.9
Silver	mg/Kg-dry	T	0.33	0.25	:	0.29	<0.22	<0.21	:	<0.25
Sodium	mg/Kg-dry	T	231.	<37.6	:	178.	244.	<189.	:	196.
Thallium	mg/Kg-dry	T	0.15	<0.12	:	<0.1	<0.13	<0.13	:	<0.11
Vanadium	mg/Kg-dry	T	12.4	10.2	:	11.1	9.8	14.2	:	11.4
Zinc	mg/Kg-dry	T	101.	258.	J	162.	66.	172.	J	138.
SEM and AVS										
Cadmium	mg/Kg-dry	T	0.32	<0.053	:	0.75	0.12	0.78	J	0.42
Copper	mg/Kg-dry	T	51.6	62.9	J	44.6	28.4	46.2	J	35.3
Lead	mg/Kg-dry	T	68.	50.1	J	146.	46.6	85.	J	52.1
Mercury	mg/Kg-dry	T	<0.021	<0.022	J	<0.062	<0.022	<0.024	J	<0.041
Nickel	mg/Kg-dry	T	16.4	27.5	J	16.6	13.8	23.6	J	19.6
Zinc	mg/Kg-dry	T	101.	258.	J	162.	66.	172.	J	138.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RR-8A	RR-8A	RRS-12	RRS-12
	Sample Date		9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/19/2003	7/14/2003
	Sample ID		RR-8-T02N-SED	RR-8A-T02N-SED	RR-8A-T02N-SED	RR-8A-T02N-SED	RRS-12-T02N-SED	RRS-12-T02N-SED
	Exposure Area		SWR	SWR	SWR	SWR	RUCCR	RUCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<10.1 J	40.3 J	24.5 J	16.9 J	9.6 J	57. J
Chloride	mg/kg-Dry	T	2.7 :	<3.4 :	3.2 :	<2.8 :	<2.5 :	2.5 :
Fluoride	mg/Kg-dry	T	0.24 J	0.5 J	0.34 :	0.28 J	0.48 J	0.33 :
Nitrate	mg/kg-Dry	T	<2.7 J	<2.6 J	2.1 J	<2.8 J	<2.5 J	0.89 J
Phosphorus	mg/Kg-dry	T	246. J	2010. J	846. J	386. J	631. J	327. J
Sulfate	mg/kg-Dry	T	58.6 :	59.1 :	136. :	79.9 :	15.7 :	47.2 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	<26.6 :	208. :	263. J	<31.7 :	167. :	202. J
Total Organic Carbon	mg/Kg-dry	T	<132. J	2000. J	683. J	<139. J	<125. J	2380. :
Laboratory Parameters								
pH	SU	T	7.7 J	6.9 :	7.2 J	7.6 J	6.9 J	6.9 J
Solids, Percent	%	T	75.9 :	79.3 :	77. :	72.2 :	80.5 :	80.7 :
Specific Conductance	umhos/cm	T	126. J	120. J	522. J	145. J	37. J	97.4 J
Geotechnical								
Organic Soils	%	T	1.8 J	2.5 :	2.2 J	1.9 J	1.3 :	1.8 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	31.1 :	13.3 :	9.5 :	30.8 :	15.7 :	9.5 :
Sodium Absorption Ratio	ratio	T	0.12 :	0.18 :	0.22 :	0.08 :	0.13 :	0.19 :
Metals								
Aluminum	mg/Kg-dry	T	3530. :	8570. J	4570. :	4450. :	4690. J	5750. :
Antimony	mg/Kg-dry	T	<0.59 J	<0.34 J	<0.44 J	<0.61 J	<0.29 J	<0.56 J
Arsenic	mg/Kg-dry	T	3.7 :	5.2 :	2.9 J	4.7 :	1.7 :	1.7 J
Barium	mg/Kg-dry	T	136. :	395. J	334. J	237. :	36.4 J	44.4 J
Beryllium	mg/Kg-dry	T	0.3 :	0.99 :	0.38 :	0.4 :	0.8 :	0.96 :
Boron	mg/Kg-dry	T	<0.76 :	1.4 :	1.8 J	<0.75 :	1.3 :	1.6 :
Cadmium	mg/Kg-dry	T	0.16 J	<0.05 :	0.2 :	0.064 J	0.28 :	0.17 :
Calcium	mg/Kg-dry	T	1330. :	1610. J	1300. :	1580. :	1390. J	1620. :
Chromium	mg/Kg-dry	T	6.8 :	12.3 J	9.8 :	9.3 :	7.9 J	9.9 :
Cobalt	mg/Kg-dry	T	3.3 :	10.4 :	4.9 :	5. :	3.9 :	5. :
Copper	mg/Kg-dry	T	15.1 :	40.6 J	23.7 :	22.2 :	6.9 J	7.6 :
Iron	mg/Kg-dry	T	11900. :	18000. J	13300. :	16200. :	9260. J	12300. :
Lead	mg/Kg-dry	T	19.8 :	38.3 J	27.7 :	26.7 :	17.6 J	13.8 :
Magnesium	mg/Kg-dry	T	2010. :	2990. J	2860. :	2380. :	2390. J	3110. :
Manganese	mg/Kg-dry	T	127. J	410. J	247. :	211. J	255. J	292. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8A	RR-8A	RR-8A	RRS-12	RRS-12		
	Sample Date		9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/19/2003	7/14/2003		
	Sample ID		RR-8-T02N-SED	RR-8A-T02N-SED	RR-8A-T02N-SED	RR-8A-T02N-SED	RRS-12-T02N-SED	RRS-12-T02N-SED		
	Exposure Area		SWR	SWR	SWR	SWR	RUCCR	RUCCR		
Units	Fraction									
Mercury	mg/Kg-dry	T	<0.022	<0.021	J	<0.022	<0.021	<0.02	J	<0.019
Molybdenum	mg/Kg-dry	T	1.9	5.8		3.3	4.9	1.		0.89
Nickel	mg/Kg-dry	T	9.9	27.4	J	15.9	12.8	11.	J	13.5
Potassium	mg/Kg-dry	T	1280.	1920.	J	1430.	1510.	1020.	J	1060.
Selenium	mg/Kg-dry	T	<0.67	0.75	J	0.65	<1.1	<0.48	J	<0.9
Silver	mg/Kg-dry	T	<0.19	<0.1		<0.21	<0.19	<0.17		<0.25
Sodium	mg/Kg-dry	T	160.	49.		<112.	136.	<49.7		<53.7
Thallium	mg/Kg-dry	T	<0.12	0.12		<0.093	<0.12	<0.096		<0.11
Vanadium	mg/Kg-dry	T	5.8	12.3		8.9	8.7	10.4		15.1
Zinc	mg/Kg-dry	T	138.	174.	J	95.	64.1	152.	J	176.
SEM and AVS										
Cadmium	mg/Kg-dry	T	0.16	<0.05	J	0.2	0.064	0.28		0.17
Copper	mg/Kg-dry	T	15.1	40.6	J	23.7	22.2	6.9	J	7.6
Lead	mg/Kg-dry	T	19.8	38.3	J	27.7	26.7	17.6	J	13.8
Mercury	mg/Kg-dry	T	<0.022	<0.021	J	<0.022	<0.021	<0.02	J	<0.019
Nickel	mg/Kg-dry	T	9.9	27.4	J	15.9	12.8	11.	J	13.5
Zinc	mg/Kg-dry	T	138.	174.	J	95.	64.1	152.	J	176.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-12	RRS-13	RRS-13	RRS-13	RRS-15	RRS-15
	Sample Date		9/23/2003	3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003
	Sample ID		RRS-12-T02N-SED	RRS-13-T02N-SED	RRS-13-T02N-SED	RRS-13-T02N-SED	RRS-15-T02N-SED	RRS-15-T02N-SED
	Exposure Area		RUCCR	RUCCR	RUCCR	RUCCR	RUCCR	RUCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	138. J	16.3 J	68.7 J	78.1 J	16.1 J	34.2 J
Chloride	mg/kg-Dry	T	6.3 :	<2.7 :	3.6 :	<3.9 :	<2.6 :	2.5 :
Fluoride	mg/Kg-dry	T	0.82 J	0.21 J	<0.3 :	0.44 J	0.13 J	<0.27 :
Nitrate	mg/kg-Dry	T	<4.2 J	<2.7 J	1.3 J	<3.9 J	<2.6 J	0.96 J
Phosphorus	mg/Kg-dry	T	1570. J	914. J	460. J	1340. J	766. J	636. J
Sulfate	mg/kg-Dry	T	1640. :	13.4 :	39.8 :	33.9 :	9.1 :	33.9 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	2220. :	164. :	302. J	1570. :	170. :	455. J
Total Organic Carbon	mg/Kg-dry	T	36100. J	<135. J	2060. :	22900. J	<128. J	1680. :
Laboratory Parameters								
pH	SU	T	6.9 J	6.8 J	7. J	6.9 J	6.9 J	7. J
Solids, Percent	%	T	48.2 :	74.6 :	67. :	52.5 :	78.5 :	75.3 :
Specific Conductance	umhos/cm	T	170. J	61.5 J	118. J	131. J	65.7 J	60.8 J
Geotechnical								
Organic Soils	%	T	13.5 J	1.4 :	1.9 J	4.8 J	1.2 :	1.8 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	25.1 :	13.6 :	8.5 :	22.4 :	15.2 :	6.1 :
Sodium Absorption Ratio	ratio	T	0.13 :	0.12 :	0.18 :	0.11 :	0.11 :	0.12 :
Metals								
Aluminum	mg/Kg-dry	T	9350. :	4350. J	7770. :	7970. :	5590. J	7010. :
Antimony	mg/Kg-dry	T	<0.95 J	<0.32 J	<0.71 J	<0.86 J	<0.32 J	<0.59 J
Arsenic	mg/Kg-dry	T	3.8 J	1.3 :	2.5 J	3.1 J	1.9 :	<1.9 J
Barium	mg/Kg-dry	T	89.1 :	22.8 J	50.6 J	62.6 :	32.4 J	41. J
Beryllium	mg/Kg-dry	T	4.1 :	0.55 :	1.1 :	2.1 :	0.59 :	0.95 :
Boron	mg/Kg-dry	T	2.4 :	1.1 :	2.1 :	2. :	1.7 :	1.6 :
Cadmium	mg/Kg-dry	T	1.7 J	0.24 :	0.16 :	0.75 J	0.32 :	<0.04 :
Calcium	mg/Kg-dry	T	3460. :	1740. J	2750. :	3280. :	1800. J	1980. :
Chromium	mg/Kg-dry	T	8.8 :	10.3 J	19.1 :	12.4 :	12.3 J	14.8 :
Cobalt	mg/Kg-dry	T	5.4 :	4.3 :	6.6 :	6. :	5.4 :	5.9 :
Copper	mg/Kg-dry	T	15.2 :	8.3 J	11.5 :	14.6 :	8. J	9.3 :
Iron	mg/Kg-dry	T	12300. :	8280. J	18000. :	14000. :	11400. J	13700. :
Lead	mg/Kg-dry	T	36.3 :	110. J	22.6 :	41.7 :	14.3 J	15.9 :
Magnesium	mg/Kg-dry	T	1890. :	2880. J	4270. :	3080. :	3570. J	3980. :
Manganese	mg/Kg-dry	T	399. J	397. J	386. :	346. J	311. J	228. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-12	RRS-13	RRS-13	RRS-13	RRS-15	RRS-15
	Sample Date		9/23/2003	3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003
	Sample ID		RRS-12-T02N-SED	RRS-13-T02N-SED	RRS-13-T02N-SED	RRS-13-T02N-SED	RRS-15-T02N-SED	RRS-15-T02N-SED
	Exposure Area		RUCCR	RUCCR	RUCCR	RUCCR	RUCCR	RUCCR
Units	Fraction							
Mercury	mg/Kg-dry	T	0.041	<0.02 J	<0.022	<0.028	<0.021 J	0.027
Molybdenum	mg/Kg-dry	T	1.7	0.61	1.2	1.6	0.56	0.93
Nickel	mg/Kg-dry	T	23.	12.2 J	17.	19.	12.3 J	15.
Potassium	mg/Kg-dry	T	1410.	863. J	1440. J	1300.	1070. J	1460. J
Selenium	mg/Kg-dry	T	2.6	<0.54 J	<1.1 J	1.3	<0.53 J	<1.1 J
Silver	mg/Kg-dry	T	<0.3	<0.19	<0.31	<0.25	<0.17	<0.12 J
Sodium	mg/Kg-dry	T	257.	<57.3	<65.9 J	163.	<50.6	<188.
Thallium	mg/Kg-dry	T	<0.19	<0.11	<0.14	<0.17	<0.11	<0.13
Vanadium	mg/Kg-dry	T	9.8	10.7	25.8	14.8	14.3	16.1
Zinc	mg/Kg-dry	T	557.	107. J	188. J	313.	129. J	154. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	1.7 J	0.24	0.16	0.75 J	0.32	<0.04
Copper	mg/Kg-dry	T	15.2	8.3 J	11.5	14.6	8. J	9.3
Lead	mg/Kg-dry	T	36.3	110. J	22.6	41.7	14.3 J	15.9
Mercury	mg/Kg-dry	T	0.041	<0.02 J	<0.022	<0.028	<0.021 J	0.027
Nickel	mg/Kg-dry	T	23.	12.2 J	17.	19.	12.3 J	15.
Zinc	mg/Kg-dry	T	557.	107. J	188. J	313.	129. J	154. J

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R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-15	RRS-18	RRS-18	RRS-20	RRS-20	RRS-20
	Sample Date		9/23/2003	3/19/2003	9/23/2003	3/19/2003	7/14/2003	9/23/2003
	Sample ID		RRS-15-T02N-SED	RRS-18-T02N-SED	RRS-18-T02N-SED	RRS-20-T02N-SED	RRS-20-T02N-SED	RRS-20-T02N-SED
	Exposure Area		RUCCR	RLCCR	RLCCR	RLCCR	RLCCR	RLCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	101. J	19.8 J	48. J	99.1 J	49.6 J	143. J
Chloride	mg/kg-Dry	T	<3.2 :	<2.9 :	<2.8 :	<3. :	2.9 :	<2.9 :
Fluoride	mg/Kg-dry	T	0.3 J	0.16 J	0.42 J	0.24 J	<0.27 :	0.32 J
Nitrate	mg/kg-Dry	T	<3.2 J	<2.9 J	<2.8 J	<3. J	1. J	<2.9 J
Phosphorus	mg/Kg-dry	T	881. J	545. J	890. J	553. J	500. J	406. J
Sulfate	mg/kg-Dry	T	151. :	13.1 :	25.3 :	17.6 :	46.1 :	38.6 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	1300. :	478. :	763. :	503. :	265. J	1010. :
Total Organic Carbon	mg/Kg-dry	T	22100. J	15700. J	24700. J	9320. J	1950. :	14900. J
Laboratory Parameters								
pH	SU	T	7. J	7.2 J	7.5 J	7. J	6.7 J	7.5 J
Solids, Percent	%	T	63.3 :	70.6 :	71.9 :	67.2 :	74.3 :	71.2 :
Specific Conductance	umhos/cm	T	151. J	93.4 J	159. J	73.3 J	56.5 J	112. J
Geotechnical								
Organic Soils	%	T	6.4 J	3.3 :	5.9 J	2.6 :	1.7 J	5. J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	24.4 :	9.6 :	22. :	14.6 :	6.5 :	19.5 :
Sodium Absorption Ratio	ratio	T	0.1 :	0.11 :	0.09 :	0.1 :	0.13 :	0.09 :
Metals								
Aluminum	mg/Kg-dry	T	7600. :	6140. J	5450. :	5580. J	5150. :	5720. :
Antimony	mg/Kg-dry	T	<0.68 J	<0.33 J	<0.59 J	<0.37 J	<1.1 J	<0.68 J
Arsenic	mg/Kg-dry	T	2.8 :	3.3 :	3.7 J	3.1 :	2.7 J	3.2 :
Barium	mg/Kg-dry	T	52. :	48.6 J	51. :	39.3 J	37.7 J	46.8 :
Beryllium	mg/Kg-dry	T	1.3 :	0.76 :	0.92 :	0.74 :	0.78 :	0.88 :
Boron	mg/Kg-dry	T	1.6 :	1.3 :	1.4 :	1.3 :	1.6 :	1.3 :
Cadmium	mg/Kg-dry	T	0.47 J	0.42 :	0.3 J	0.38 :	<0.039 :	0.26 J
Calcium	mg/Kg-dry	T	3200. :	2520. J	2780. :	2130. J	1660. :	2660. :
Chromium	mg/Kg-dry	T	14.1 :	12.7 J	9.3 :	13.8 J	11.9 :	12.5 :
Cobalt	mg/Kg-dry	T	5.8 :	4.5 :	4.4 :	4.5 :	4.3 :	4.8 :
Copper	mg/Kg-dry	T	11.9 :	10.1 J	9.1 :	13.1 J	7.7 :	9.6 :
Iron	mg/Kg-dry	T	13300. :	12900. J	12200. :	12800. J	13900. :	12400. :
Lead	mg/Kg-dry	T	25.5 :	16.1 J	18.2 :	14.8 J	13.6 :	18.7 :
Magnesium	mg/Kg-dry	T	3720. :	3090. J	2790. :	2960. J	2850. :	3050. :
Manganese	mg/Kg-dry	T	284. J	270. J	461. J	330. J	132. :	443. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-15	RRS-18	RRS-18	RRS-20	RRS-20	RRS-20
	Sample Date		9/23/2003	3/19/2003	9/23/2003	3/19/2003	7/14/2003	9/23/2003
	Sample ID		RRS-15-T02N-SED	RRS-18-T02N-SED	RRS-18-T02N-SED	RRS-20-T02N-SED	RRS-20-T02N-SED	RRS-20-T02N-SED
	Exposure Area		RUCCR	RLCCR	RLCCR	RLCCR	RLCCR	RLCCR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.024	<0.023	<0.023	<0.024	0.033	<0.021
Molybdenum	mg/Kg-dry	T	1.	0.93	1.8	1.3	1.2	1.5
Nickel	mg/Kg-dry	T	15.5	11.1 J	11.2	11.	10.7	12.3
Potassium	mg/Kg-dry	T	1280.	1370. J	1170.	1170. J	1660. J	1180.
Selenium	mg/Kg-dry	T	1.	0.63 J	0.61	1.1 J	<1. J	0.73
Silver	mg/Kg-dry	T	<0.22	<0.18	<0.21	<0.21	<0.12 J	<0.19
Sodium	mg/Kg-dry	T	141.	<55.	121.	<62.	<274.	130.
Thallium	mg/Kg-dry	T	<0.14	<0.11	<0.12	<0.12	<0.13	<0.14
Vanadium	mg/Kg-dry	T	15.	14.2	11.	13.5	11.4	11.3
Zinc	mg/Kg-dry	T	224.	119. J	138.	122. J	95.7 J	148.
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.47 J	0.42	0.3 J	0.38	<0.039	0.26 J
Copper	mg/Kg-dry	T	11.9	10.1 J	9.1	13.1 J	7.7	9.6
Lead	mg/Kg-dry	T	25.5	16.1 J	18.2	14.8 J	13.6	18.7
Mercury	mg/Kg-dry	T	<0.024	<0.023	<0.023	<0.024	0.033	<0.021
Nickel	mg/Kg-dry	T	15.5	11.1 J	11.2	11. J	10.7	12.3
Zinc	mg/Kg-dry	T	224.	119. J	138.	122. J	95.7 J	148.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-23	RRS-23	RRS-23	RRS-27	RRS-27	RRS-27
	Sample Date		3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003	9/22/2003
	Sample ID		RRS-23-T02N-SED	RRS-23-T02N-SED	RRS-23-T02N-SED	RRS-27-T02N-SED	RRS-27-T02N-SED	RRS-27-T02N-SED
	Exposure Area		RLCCR	RLCCR	RLCCR	RLCCR	RLCCR	RLCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	101. J	53.2 J	42.7 J	18.5 J	72.9 J	140. J
Chloride	mg/kg-Dry	T	<3. :	3.3 :	3.9 :	<2.8 :	4.2 :	<3.5 :
Fluoride	mg/Kg-dry	T	0.3 J	0.3 :	0.34 J	0.28 J	0.32 :	0.53 J
Nitrate	mg/kg-Dry	T	<3. J	0.98 J	<2.5 J	<2.8 J	1.1 J	<3.5 J
Phosphorus	mg/Kg-dry	T	611. J	280. J	480. J	527. J	576. J	245. J
Sulfate	mg/kg-Dry	T	22.8 :	16.6 :	21.4 :	19.5 :	19.6 :	84.1 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	574. :	80.3 J	695. :	264. :	62.4 J	772. :
Total Organic Carbon	mg/Kg-dry	T	10900. J	1100. :	20300. J	15400. J	<139. :	52200. J
Laboratory Parameters								
pH	SU	T	7. J	7.1 J	7.2 J	6.8 J	7. J	7. J
Solids, Percent	%	T	66.9 :	76.3 :	81.8 :	14.3 :	72.1 :	58.3 :
Specific Conductance	umhos/cm	T	89. J	66.7 J	59.8 J	79.9 J	47.5 J	141. J
Geotechnical								
Organic Soils	%	T	4. :	1.1 J	1.6 J	2.1 :	10.1 J	6.5 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	10.6 :	7.4 :	13.2 :	7.2 :	4.8 :	24. :
Sodium Absorption Ratio	ratio	T	0.09 :	0.2 :	0.12 :	0.11 :	0.14 :	0.1 :
Metals								
Aluminum	mg/Kg-dry	T	5590. J	4780. :	4210. :	4750. J	5470. :	7080. :
Antimony	mg/Kg-dry	T	<0.38 J	<0.65 J	<0.61 J	<0.34 J	<0.63 J	<0.84 J
Arsenic	mg/Kg-dry	T	2.4 :	10.2 J	1.5 J	1.7 :	2.6 J	2.1 :
Barium	mg/Kg-dry	T	35.1 J	27.9 J	31.7 :	33.8 J	33.2 J	60.4 :
Beryllium	mg/Kg-dry	T	0.7 :	0.5 :	0.48 :	0.5 :	0.63 :	0.71 :
Boron	mg/Kg-dry	T	1.8 :	1.4 :	0.82 :	1.2 :	1.6 :	<1. :
Cadmium	mg/Kg-dry	T	0.39 :	<0.077 :	0.064 J	0.3 :	<0.079 :	0.23 J
Calcium	mg/Kg-dry	T	2680. J	1440. :	1650. :	2030. J	1790. :	3100. :
Chromium	mg/Kg-dry	T	11.6 J	12.7 :	9.7 :	11.1 J	14.8 :	13. :
Cobalt	mg/Kg-dry	T	4.1 :	4.8 :	2.9 :	4.7 :	4.3 :	6.6 :
Copper	mg/Kg-dry	T	8.9 J	9.4 :	7.5 :	7.9 J	11.8 :	13. :
Iron	mg/Kg-dry	T	11500. J	13600. :	9300. :	10600. J	14200. :	12500. :
Lead	mg/Kg-dry	T	14.2 J	30.9 :	10.8 :	11.6 J	10.7 :	15.7 :
Magnesium	mg/Kg-dry	T	3020. J	3170. :	2400. :	3010. J	3370. :	3800. :
Manganese	mg/Kg-dry	T	236. J	251. :	107. J	257. J	285. :	248. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-23	RRS-23	RRS-23	RRS-27	RRS-27	RRS-27
	Sample Date		3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003	9/22/2003
	Sample ID		RRS-23-T02N-SED	RRS-23-T02N-SED	RRS-23-T02N-SED	RRS-27-T02N-SED	RRS-27-T02N-SED	RRS-27-T02N-SED
	Exposure Area		RLCCR	RLCCR	RLCCR	RLCCR	RLCCR	RLCCR
	Units	Fraction						
Mercury	mg/Kg-dry	T	<0.025 :	<0.022 :	<0.018 :	<0.022 :	<0.02 :	<0.025 :
Molybdenum	mg/Kg-dry	T	1.3 :	1.6 :	0.58 :	1.1 :	0.97 :	1.6 :
Nickel	mg/Kg-dry	T	10.9 J	10.6 :	7.3 :	10.1 J	10.8 :	13.8 :
Potassium	mg/Kg-dry	T	1240. J	1250. J	827. :	867. J	1420. J	1680. :
Selenium	mg/Kg-dry	T	<0.64 J	<1. J	<0.36 :	0.82 J	<1. J	<0.5 :
Silver	mg/Kg-dry	T	<0.21 :	<0.28 :	<0.19 :	<0.18 :	<0.29 :	<0.26 :
Sodium	mg/Kg-dry	T	<63.9 :	<60.7 J	123. :	<54.2 :	<61.9 J	117. :
Thallium	mg/Kg-dry	T	<0.13 :	<0.13 :	<0.12 :	<0.11 :	<0.13 :	<0.17 :
Vanadium	mg/Kg-dry	T	12.8 :	11.6 :	11.3 :	12.6 :	15. :	15.5 :
Zinc	mg/Kg-dry	T	98.4 J	53.9 J	60.3 :	67.6 J	77.8 J	85.1 :
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.39 :	<0.077 :	0.064 J	0.3 :	<0.079 :	0.23 J
Copper	mg/Kg-dry	T	8.9 J	9.4 :	7.5 :	7.9 J	11.8 :	13. :
Lead	mg/Kg-dry	T	14.2 J	30.9 :	10.8 :	11.6 J	10.7 :	15.7 :
Mercury	mg/Kg-dry	T	<0.025 :	<0.022 :	<0.018 :	<0.022 :	<0.02 :	<0.025 :
Nickel	mg/Kg-dry	T	10.9 J	10.6 :	7.3 :	10.1 J	10.8 :	13.8 :
Zinc	mg/Kg-dry	T	98.4 J	53.9 J	60.3 :	67.6 J	77.8 J	85.1 :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-9	RRS-9	RRS-9	SD-1	SD-1	SW12-1	
	Sample Date		3/19/2003	7/14/2003	9/23/2003	7/15/2003	9/21/2003	10/8/2002	
	Sample ID		RRS-9-T02N-SED	RRS-9-T02N-SED	RRS-9-T02N-SED	SD-1-T01N-SED	SD-1-T01N-SED	SW12-1-T01N-SED	
	Exposure Area		RUCCR	RUCCR	RUCCR	ID	ID	SW12	
Units	Fraction								
General Chemistry									
Ammonia	mg/Kg-dry	T	12.8 J	26.6 J	15.7 J	17.1 J	28.8 J	74.1 :	
Chloride	mg/kg-Dry	T	<2.8 :	2.4 :	19.7 :	3.4 :	4.6 :	9.2 J	
Fluoride	mg/Kg-dry	T	<0.14 J	0.25 :	<0.14 :	2.6 :	0.89 J	2.4 J	
Nitrate	mg/kg-Dry	T	<2.8 J	1.5 J	<2.7 J	1.2 J	<3.1 J	<3.1 J	
Phosphorus	mg/Kg-dry	T	998. J	524. J	1030. J	657. J	1670. J	805. J	
Sulfate	mg/kg-Dry	T	10.2 :	29.4 :	43.8 :	86.1 :	218. :	804. J	
Total Kjeldahl Nitrogen	mg/Kg-dry	T	134. :	255. J	237. :	241. J	284. :	352. J	
Total Organic Carbon	mg/Kg-dry	T	1820. J	3200. :	955. J	1790. :	7190. J	6650. J	
Laboratory Parameters									
pH	SU	T	6.7 J	7. J	7.5 J	7.2 J	7.1 J	6.8 :	
Solids, Percent	%	T	73.7 :	79.9 :	74.9 :	69.2 :	64.9 :	65.6 :	
Specific Conductance	umhos/cm	T	51.4 J	93.8 J	80.6 J	138. J	143. J	616. :	
Geotechnical									
Organic Soils	%	T	1.4 :	2. J	1.8 J	2.8 J	3.9 J	2.02 :	
Physical Properties									
Cation-Exchange Capacity	meq/100g	T	15.7 :	10.2 :	18.3 :	6.7 :	14. :	6.7 :	
Sodium Absorption Ratio	ratio	T	0.14 :	0.25 :	0.15 :	0.1 :	0.15 :	0.12 :	
Metals									
Aluminum	mg/Kg-dry	T	6970. J	9400. :	9630. :	8760. :	11300. :	11300. :	
Antimony	mg/Kg-dry	T	<0.32 J	<0.58 J	<0.62 J	<1.7 J	<0.66 J	<0.24 J	
Arsenic	mg/Kg-dry	T	2.1 :	2.9 J	2.3 J	8.3 J	10.8 :	2.3 :	
Barium	mg/Kg-dry	T	46.6 J	75.5 J	65.7 :	985. J	2060. :	77.5 :	
Beryllium	mg/Kg-dry	T	0.48 :	0.6 :	0.65 :	1.4 :	1.7 :	1.6 :	
Boron	mg/Kg-dry	T	1.8 :	2.1 :	0.88 :	2.6 J	8.9 J	<1.1 :	
Cadmium	mg/Kg-dry	T	0.24 :	0.084 :	0.26 J	0.18 J	0.98 J	0.39 :	
Calcium	mg/Kg-dry	T	2380. J	2750. :	2640. :	1940. :	2790. :	10800. :	
Chromium	mg/Kg-dry	T	17.3 J	20.2 :	24.3 :	16. :	17.6 :	33.1 :	
Cobalt	mg/Kg-dry	T	7.3 :	10.3 :	10.2 :	11.3 :	15.2 :	10.2 :	
Copper	mg/Kg-dry	T	10.6 J	14.4 :	15.4 :	58.6 :	83.8 :	50.6 :	
Iron	mg/Kg-dry	T	14700. J	18100. :	16100. :	28300. :	40100. :	13400. :	
Lead	mg/Kg-dry	T	10.7 J	25.7 :	15.3 :	72.8 :	115. :	20.6 :	
Magnesium	mg/Kg-dry	T	4770. J	5420. :	5930. :	3650. :	4110. :	7120. :	
Manganese	mg/Kg-dry	T	376. J	499. :	428. J	486. :	779. J	790. :	

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		RRS-9	RRS-9	RRS-9	SD-1	SD-1	SW12-1
	Sample Date		3/19/2003	7/14/2003	9/23/2003	7/15/2003	9/21/2003	10/8/2002
	Sample ID		RRS-9-T02N-SED	RRS-9-T02N-SED	RRS-9-T02N-SED	SD-1-T01N-SED	SD-1-T01N-SED	SW12-1-T01N-SED
	Exposure Area		RUCCR	RUCCR	RUCCR	ID	ID	SW12
	Units	Fraction						
Mercury	mg/Kg-dry	T	<0.023 J	<0.02 :	<0.021 :	0.16 :	<0.022 :	<0.024 :
Molybdenum	mg/Kg-dry	T	0.53 :	2.1 :	1.3 :	12. :	21.1 :	102. :
Nickel	mg/Kg-dry	T	16.9 J	20.7 :	22.3 :	34.8 :	54.2 :	38.2 :
Potassium	mg/Kg-dry	T	883. J	1260. J	909. :	2570. J	3170. :	4180. J
Selenium	mg/Kg-dry	T	<0.53 J	<0.94 J	0.42 :	<1.1 J	1.8 :	<1.4 :
Silver	mg/Kg-dry	T	<0.18 :	<0.25 :	<0.18 :	0.21 J	0.93 :	<0.52 :
Sodium	mg/Kg-dry	T	<55.2 :	<54.8 J	136. :	<111. J	323. :	<70.5 :
Thallium	mg/Kg-dry	T	<0.11 :	<0.12 :	<0.12 :	0.16 :	0.19 :	0.36 :
Vanadium	mg/Kg-dry	T	18.2 :	25. :	21.5 :	15.7 :	17.5 :	30. :
Zinc	mg/Kg-dry	T	60.4 J	79.7 J	90.5 :	304. J	394. :	200. :
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.24 :	0.084 :	0.26 J	0.18 J	0.98 J	0.39 :
Copper	mg/Kg-dry	T	10.6 J	14.4 :	15.4 :	58.6 :	83.8 :	50.6 :
Lead	mg/Kg-dry	T	10.7 J	25.7 :	15.3 :	72.8 :	115. :	20.6 :
Mercury	mg/Kg-dry	T	<0.023 J	<0.02 :	<0.021 :	0.16 :	<0.022 :	<0.024 :
Nickel	mg/Kg-dry	T	16.9 J	20.7 :	22.3 :	34.8 :	54.2 :	38.2 :
Zinc	mg/Kg-dry	T	60.4 J	79.7 J	90.5 :	304. J	394. :	200. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	SW12-10	SW12-2	SW12-3	SW12-4	SW12-5	SW12-6
			10/6/2002	10/8/2002	10/8/2002	10/6/2002	10/6/2002	10/6/2002
			SW12-10-T01N-SED	SW12-2-T01N-SED	SW12-3-T01N-SED	SW12-4-T01N-SED	SW12-5-T01N-SED	SW12-6-T01N-SED
			SW12	SW12	SW12	SW12	SW12	SW12
General Chemistry								
Ammonia	mg/Kg-dry	T	59.1 :	58.2 :	20. :	43.6 :	46.6 :	45.4 :
Chloride	mg/kg-Dry	T	6.1 :	7.7 J	4. J	9.9 J	10.7 J	8.2 J
Fluoride	mg/Kg-dry	T	3.9 J	3.1 J	6.3 J	3. J	3.6 J	5.2 J
Nitrate	mg/kg-Dry	T	<2.7 J	<2.9 J	<2.8 J	<3.5 J	<3.5 J	<3.3 J
Phosphorus	mg/Kg-dry	T	1090. J	716. J	340. J	1500. J	864. J	1050. J
Sulfate	mg/kg-Dry	T	280. J	1620. J	1060. J	1390. J	650. J	587. J
Total Kjeldahl Nitrogen	mg/Kg-dry	T	<27.4 J	262. J	148. J	107. J	271. J	190. J
Total Organic Carbon	mg/Kg-dry	T	<131. J	2940. J	1020. J	211. J	3770. J	2330. J
Laboratory Parameters								
pH	SU	T	7.3 :	7.2 :	7.1 :	7.7 :	7.8 :	7.7 :
Solids, Percent	%	T	76.8 :	70.6 :	72.5 :	58.7 :	58.7 :	61.4 :
Specific Conductance	umhos/cm	T	464. :	913. :	1260. :	868. :	983. :	861. :
Geotechnical								
Organic Soils	%	T	1.18 :	1.57 :	1.89 :	1.9 :	1.8 :	2.05 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	5.8 :	8.2 :	9.1 :	10.1 :	6.8 :	6.6 :
Sodium Absorption Ratio	ratio	T	0.2 :	0.11 :	0.15 :	0.22 :	0.23 :	0.21 :
Metals								
Aluminum	mg/Kg-dry	T	10100. :	8990. :	14200. :	13000. :	11900. :	14200. :
Antimony	mg/Kg-dry	T	<0.2 J	<0.22 J	<0.21 J	<0.27 J	<0.25 J	<0.25 J
Arsenic	mg/Kg-dry	T	1.2 :	1.2 :	1.9 :	1.5 :	2.3 :	1.7 :
Barium	mg/Kg-dry	T	95.2 :	97. :	118. :	122. :	118. :	126. :
Beryllium	mg/Kg-dry	T	1.4 :	1.3 :	3.4 :	2.1 :	3.6 :	2.9 :
Boron	mg/Kg-dry	T	<0.48 :	<0.52 :	<0.48 :	<0.63 :	<0.63 :	<0.58 :
Cadmium	mg/Kg-dry	T	0.6 :	0.65 :	0.68 :	1.4 :	2.8 :	1.1 :
Calcium	mg/Kg-dry	T	14000. :	17400. :	19900. :	14100. :	13800. :	17200. :
Chromium	mg/Kg-dry	T	44.3 :	35. :	50.4 :	39. :	36.1 :	57.1 :
Cobalt	mg/Kg-dry	T	5.7 :	9.8 :	18.2 :	8.6 :	16.4 :	12.6 :
Copper	mg/Kg-dry	T	128. :	208. :	154. :	153. :	189. :	180. :
Iron	mg/Kg-dry	T	12200. :	13600. :	15900. :	14100. :	14900. :	15600. :
Lead	mg/Kg-dry	T	32.1 :	47.6 :	41.1 :	60.4 :	63. :	39.5 :
Magnesium	mg/Kg-dry	T	8180. :	6950. :	10500. :	9050. :	8240. :	10500. :
Manganese	mg/Kg-dry	T	488. :	604. :	2830. :	1170. :	2430. :	2800. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		SW12-10	SW12-2	SW12-3	SW12-4	SW12-5	SW12-6
	Sample Date		10/6/2002	10/8/2002	10/8/2002	10/6/2002	10/6/2002	10/6/2002
	Sample ID		SW12-10-T01N-SED	SW12-2-T01N-SED	SW12-3-T01N-SED	SW12-4-T01N-SED	SW12-5-T01N-SED	SW12-6-T01N-SED
	Exposure Area		SW12	SW12	SW12	SW12	SW12	SW12
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.019	<0.022	<0.022	<0.025	<0.025	<0.023
Molybdenum	mg/Kg-dry	T	85.4	616.	183.	288.	857.	366.
Nickel	mg/Kg-dry	T	26.2	32.3	53.4	38.3	64.	49.1
Potassium	mg/Kg-dry	T	5090.	4460.	6100.	5630.	4930.	6410.
Selenium	mg/Kg-dry	T	<0.6	<1.6	<1.5	<0.84	<1.9	<1.5
Silver	mg/Kg-dry	T	<0.57	<0.72	<0.75	0.85	1.2	0.91
Sodium	mg/Kg-dry	T	<107.	<62.6	65.7	<140.	<140.	<129.
Thallium	mg/Kg-dry	T	0.53	0.48	0.59	0.71	0.57	0.71
Vanadium	mg/Kg-dry	T	40.7	33.8	45.5	46.1	41.9	52.3
Zinc	mg/Kg-dry	T	96.8	150.	210.	227.	491.	217.
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.6	0.65	0.68	1.4	2.8	1.1
Copper	mg/Kg-dry	T	128.	208.	154.	153.	189.	180.
Lead	mg/Kg-dry	T	32.1	47.6	41.1	60.4	63.	39.5
Mercury	mg/Kg-dry	T	<0.019	<0.022	<0.022	<0.025	<0.025	<0.023
Nickel	mg/Kg-dry	T	26.2	32.3	53.4	38.3	64.	49.1
Zinc	mg/Kg-dry	T	96.8	150.	210.	227.	491.	217.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		SW12-7	SW12-8	SW12-9	UFLIN	UFLIN	UFLIN
	Sample Date		10/6/2002	10/2/2002	10/6/2002	10/8/2002	4/9/2003	7/17/2003
	Sample ID		SW12-7-T01N-SED	SW12-8-T01N-SED	SW12-9-T01N-SED	UFLIN-T01N-SED	UFLIN-T01N-SED	UFLIN-T01N-SED
	Exposure Area		SW12	SW12	SW12	UFL	UFL	UFL
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	36.5 :	34.5 :	90.7 :	53.3 :	28.1 J	57. J
Chloride	mg/kg-Dry	T	6.5 J	6.1 :	19.2 :	<3.4 J	<6.9 :	4.4 :
Fluoride	mg/Kg-dry	T	9.2 J	1.5 J	3.7 J	0.38 J	0.37 J	<0.3 :
Nitrate	mg/kg-Dry	T	<3.4 J	<2.3 J	<3.3 J	<3.4 J	<3.2 J	<3. J
Phosphorus	mg/Kg-dry	T	1100. J	21.1 J	1280. J	2060. J	1520. J	1210. J
Sulfate	mg/kg-Dry	T	2020. J	222. :	674. J	332. J	204. :	154. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	262. J	81.1 J	397. J	337. J	367. J	476. J
Total Organic Carbon	mg/Kg-dry	T	959. J	<112. J	5810. J	6090. J	6250. J	9600. :
Laboratory Parameters								
pH	SU	T	7.6 :	7.2 :	7.5 :	6.2 :	7.4 J	6.8 J
Solids, Percent	%	T	59.3 :	89.9 :	61.4 :	60.1 :	63. :	67.6 :
Specific Conductance	umhos/cm	T	1680. :	448. :	1070. :	197. :	157. J	249. J
Geotechnical								
Organic Soils	%	T	3.2 :	2.42 :	3.21 :	-	4.1 :	3.2 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	8.5 :	23.3 :	5.1 :	16.6 :	23. :	12.6 :
Sodium Absorption Ratio	ratio	T	0.19 :	0.26 :	0.23 :	0.12 :	0.19 :	0.14 :
Metals								
Aluminum	mg/Kg-dry	T	19300. :	9900. :	8460. :	8310. :	9570. J	7610. :
Antimony	mg/Kg-dry	T	<0.24 J	<0.18 J	0.29 J	<0.2 J	<0.13 J	<0.7 J
Arsenic	mg/Kg-dry	T	1.8 :	1.2 :	3.3 :	8.1 :	7.2 J	5.7 J
Barium	mg/Kg-dry	T	156. :	85.6 :	74.6 :	649. :	515. J	460. J
Beryllium	mg/Kg-dry	T	4.7 :	1.9 :	3.5 :	0.56 :	<1. :	0.68 :
Boron	mg/Kg-dry	T	<0.64 :	2.5 :	<0.65 J	14. J	2.8 J	2.3 :
Cadmium	mg/Kg-dry	T	1.4 :	0.93 :	4.7 :	0.35 J	1.9 J	<0.044 :
Calcium	mg/Kg-dry	T	20300. :	9240. :	14500. :	1700. :	1830. J	2200. :
Chromium	mg/Kg-dry	T	70.9 :	28.8 :	43.9 :	16.7 :	17.3 J	17.8 :
Cobalt	mg/Kg-dry	T	21.7 :	6.6 :	33.2 :	6.1 :	6.3 :	8.4 :
Copper	mg/Kg-dry	T	89. :	101. :	2100. :	37.4 J	66.7 J	80.7 :
Iron	mg/Kg-dry	T	17300. :	10000. :	33300. :	32100. :	26600. J	24700. :
Lead	mg/Kg-dry	T	40.3 :	43.6 :	357. :	83.1 J	126. J	105. :
Magnesium	mg/Kg-dry	T	13600. :	6870. :	6080. :	4160. :	3890. J	4000. :
Manganese	mg/Kg-dry	T	4760. :	1070. :	2650. :	307. :	302. J	297. :

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R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		SW12-7	SW12-8	SW12-9	UFLIN	UFLIN	UFLIN
	Sample Date		10/6/2002	10/2/2002	10/6/2002	10/8/2002	4/9/2003	7/17/2003
	Sample ID		SW12-7-T01N-SED	SW12-8-T01N-SED	SW12-9-T01N-SED	UFLIN-T01N-SED	UFLIN-T01N-SED	UFLIN-T01N-SED
	Exposure Area		SW12	SW12	SW12	UFL	UFL	UFL
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.027 :	<0.018 :	<0.027 :	0.0094 :	<0.025 :	0.091 :
Molybdenum	mg/Kg-dry	T	276. :	285. :	19400. :	14.9 :	13. :	10.6 :
Nickel	mg/Kg-dry	T	78.8 :	29.5 :	78.6 :	8.1 J	15. J	18.2 :
Potassium	mg/Kg-dry	T	7660. J	4160. J	3950. J	2840. J	3150. J	2200. J
Selenium	mg/Kg-dry	T	<0.94 J	0.76 :	<5.2 J	2. :	<2.1 J	1.3 J
Silver	mg/Kg-dry	T	1. :	0.6 :	8.4 :	0.94 :	0.92 :	0.4 J
Sodium	mg/Kg-dry	T	<141. :	<37. :	<610. :	174. :	152. :	<111. :
Thallium	mg/Kg-dry	T	0.83 :	0.49 :	0.68 :	0.3 :	0.2 :	0.16 :
Vanadium	mg/Kg-dry	T	64.4 :	33.2 :	31. :	18.2 :	17.8 :	19.2 :
Zinc	mg/Kg-dry	T	346. :	188. :	569. :	67.1 J	135. J	140. J
SEM and AVS								
Acid Volatile Sulfide	mg/Kg-dry	T	-	-	-	19.8 :	-	-
Cadmium	mg/Kg-dry	T	1.4 :	0.93 :	4.7 :	0.35 J	1.9 J	<0.044 :
Copper	mg/Kg-dry	T	89. :	101. :	2100. :	37.4 J	66.7 J	80.7 :
Lead	mg/Kg-dry	T	40.3 :	43.6 :	357. :	83.1 J	126. J	105. :
Mercury	mg/Kg-dry	T	<0.027 :	<0.018 :	<0.027 :	0.0094 :	<0.025 :	0.091 :
Nickel	mg/Kg-dry	T	78.8 :	29.5 :	78.6 :	8.1 J	15. J	18.2 :
Zinc	mg/Kg-dry	T	346. :	188. :	569. :	67.1 J	135. J	140. J

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R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UFLIN	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID
	Sample Date		9/25/2003	10/8/2002	4/9/2003	7/17/2003	9/25/2003	10/8/2002	
	Sample ID		UFLIN-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED
	Exposure Area		UFL	UFL	UFL	UFL	UFL	UFL	UFL
Units	Fraction								
General Chemistry									
Ammonia	mg/Kg-dry	T	15.7 J	<47.2 :	58.8 J	92.8 J	59.8 J	111. :	
Chloride	mg/kg-Dry	T	4.6 :	<4.8 J	<10.5 :	5.8 :	4.3 :	7.9 J	
Fluoride	mg/Kg-dry	T	<0.16 :	0.47 J	0.57 J	0.64 J	0.19 J	0.41 J	
Nitrate	mg/kg-Dry	T	<3.1 J	<4.8 J	<4.6 J	<4. J	<3.7 J	<6. J	
Phosphorus	mg/Kg-dry	T	1420. J	82.2 J	4790. J	2650. J	1830. J	2610. J	
Sulfate	mg/kg-Dry	T	178. :	465. J	319. :	268. :	511. :	501. J	
Total Kjeldahl Nitrogen	mg/Kg-dry	T	198. :	854. J	753. J	536. J	637. :	1680. J	
Total Organic Carbon	mg/Kg-dry	T	2000. J	9580. J	6780. J	7210. J	8230. J	18300. J	
Laboratory Parameters									
pH	SU	T	6.7 J	6.6 :	7.4 J	6.6 J	6.7 J	6.8 :	
Solids, Percent	%	T	64.7 :	42.4 :	44.2 :	49.5 :	54.5 :	33.8 :	
Specific Conductance	umhos/cm	T	79. J	207. :	265. J	304. J	173. J	177. :	
Geotechnical									
Organic Soils	%	T	3.4 :	-	6.5 :	6.1 J	5.6 :	-	
Physical Properties									
Cation-Exchange Capacity	meq/100g	T	12.3 :	14.3 :	15.1 :	13.7 :	16.7 :	9.8 :	
Sodium Absorption Ratio	ratio	T	0.11 :	0.13 :	0.2 :	0.47 :	0.13 :	0.14 :	
Metals									
Aluminum	mg/Kg-dry	T	7850. :	16600. :	17800. J	14000. :	10800. :	16500. :	
Antimony	mg/Kg-dry	T	<0.65 J	<0.29 J	<0.12 J	<0.91 J	<0.77 J	<0.42 J	
Arsenic	mg/Kg-dry	T	10.4 :	11.5 :	10.8 J	12.2 J	11.8 :	8.8 :	
Barium	mg/Kg-dry	T	641. :	710. :	636. J	802. J	761. :	557. :	
Beryllium	mg/Kg-dry	T	0.69 :	1.2 :	1.7 :	1. :	0.91 :	1.5 :	
Boron	mg/Kg-dry	T	<0.96 :	24.4 J	4.6 J	4.4 J	<1. :	19.4 J	
Cadmium	mg/Kg-dry	T	0.42 J	1.1 :	3.2 J	<0.059 :	0.77 J	1.8 J	
Calcium	mg/Kg-dry	T	2280. :	3330. :	2610. J	2490. :	2660. :	3650. :	
Chromium	mg/Kg-dry	T	17.4 :	28.6 :	26.2 J	24.8 :	21.5 :	28.1 :	
Cobalt	mg/Kg-dry	T	15.1 :	10.5 :	9.5 :	10.2 :	10.5 :	14.9 :	
Copper	mg/Kg-dry	T	75.7 :	149. :	116. J	100. :	107. :	98.1 J	
Iron	mg/Kg-dry	T	36900. :	52500. :	44900. J	49700. :	43900. :	40500. :	
Lead	mg/Kg-dry	T	120. :	297. :	255. J	281. :	199. :	105. J	
Magnesium	mg/Kg-dry	T	4600. :	7340. :	6210. J	5960. :	5420. :	6630. :	
Manganese	mg/Kg-dry	T	534. J	432. :	355. J	369. :	406. J	398. :	

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T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UFLIN	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID	
	Sample Date		9/25/2003	10/8/2002	4/9/2003	7/17/2003	9/25/2003	10/8/2002		
	Sample ID		UFLIN-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	
	Exposure Area		UFL	UFL	UFL	UFL	UFL	UFL	UFL	
Units	Fraction									
Mercury	mg/Kg-dry	T	<0.022	0.04	J	<0.036	0.091		<0.03	0.013
Molybdenum	mg/Kg-dry	T	15.5	25.1		23.1	25.4		21.9	16.8
Nickel	mg/Kg-dry	T	20.1	30.1		25.7	22.9		22.1	22.2
Potassium	mg/Kg-dry	T	2470.	5230.	J	5860.	5470.	J	3630.	3910.
Selenium	mg/Kg-dry	T	1.4	<2.3		<2.9	2.5	J	2.4	<3.
Silver	mg/Kg-dry	T	0.51	2.3		2.2	2.1	J	1.	2.1
Sodium	mg/Kg-dry	T	240.	325.		292.	<309.	J	370.	220.
Thallium	mg/Kg-dry	T	0.21	0.49		0.38	0.46		0.36	0.53
Vanadium	mg/Kg-dry	T	18.5	30.9		27.4	24.8		22.3	29.9
Zinc	mg/Kg-dry	T	128.	297.		226.	183.	J	183.	243.
Volatile Organics										
1,1,1-Trichloroethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,1,2,2-Tetrachloroethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,1,2-Trichloroethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,1-Dichloroethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,1-Dichloroethene	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,2,4-Trichlorobenzene	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,2-Dibromo-3-chloropropane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,2-Dichlorobenzene	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,2-Dichloroethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,2-Dichloroethene (total)	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,2-Dichloropropane	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,3-Dichlorobenzene	mg/kg-Dry	T	-	<0.014		-	-		-	-
1,4-Dichlorobenzene	mg/kg-Dry	T	-	<0.014		-	-		-	-
2-Butanone	mg/kg-Dry	T	-	0.021		-	-		-	-
2-Hexanone	mg/kg-Dry	T	-	<0.014		-	-		-	-
4-Methyl-2-pentanone	mg/kg-Dry	T	-	<0.014		-	-		-	-
Acetone	mg/kg-Dry	T	-	0.068		-	-		-	-
Benzene	mg/kg-Dry	T	-	<0.014		-	-		-	-
Bromodichloromethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
Bromoform	mg/kg-Dry	T	-	<0.014		-	-		-	-
Bromomethane	mg/kg-Dry	T	-	<0.014		-	-		-	-
Carbon disulfide	mg/kg-Dry	T	-	0.002	J	-	-		-	-

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UFLIN	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID
	Sample Date		9/25/2003	10/8/2002	4/9/2003	7/17/2003	9/25/2003	10/8/2002	
	Sample ID		UFLIN-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED
	Exposure Area		UFL	UFL	UFL	UFL	UFL	UFL	UFL
Units	Fraction								
Carbon tetrachloride	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Chlorobenzene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Chloroethane	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Chloroform	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Chloromethane	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
cis-1,2-Dichloroethene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
cis-1,3-Dichloropropene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Dibromochloromethane	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Dichlorodifluoromethane	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Ethylbenzene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Methylene chloride	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Styrene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Tetrachloroethene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Toluene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Total Xylene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
trans-1,2-Dichloroethene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
trans-1,3-Dichloropropene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Trichloroethene	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Trichlorofluoromethane	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Vinyl chloride	mg/kg-Dry	T	-	<0.014	-	-	-	-	-
Semi-Volatile Organics									
1,1'-Biphenyl	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg-Dry	T	-	<2.	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2,4-Dichlorophenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2,4-Dimethylphenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2,4-Dinitrophenol	mg/kg-Dry	T	-	<2.	J	-	-	-	-
2,4-Dinitrotoluene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2-Chloronaphthalene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2-Chlorophenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2-Methylnaphthalene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2-Methylphenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
2-Nitroaniline	mg/kg-Dry	T	-	<2.	-	-	-	-	-

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T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UFLIN	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID
	Sample Date		9/25/2003	10/8/2002	4/9/2003	7/17/2003	9/25/2003	10/8/2002	
	Sample ID		UFLIN-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED
	Exposure Area		UFL	UFL	UFL	UFL	UFL	UFL	UFL
Units	Fraction								
2-Nitrophenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
3,3-Dichlorobenzidine	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
3-Nitroaniline	mg/kg-Dry	T	-	<2.	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/kg-Dry	T	-	<2.	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
4-Chloroaniline	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
4-Methylphenol	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
4-Nitroaniline	mg/kg-Dry	T	-	<2.	-	-	-	-	-
4-Nitrophenol	mg/kg-Dry	T	-	<2.	-	-	-	-	-
Acenaphthene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Acenaphthylene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Anthracene	mg/kg-Dry	T	-	<0.78	J	-	-	-	-
Benzaldehyde	mg/kg-Dry	T	-	<1.5	J	-	-	-	-
Benzo(a)anthracene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Benzo(a)pyrene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg-Dry	T	-	0.042	J	-	-	-	-
Benzo(g,h,i)perylene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	mg/kg-Dry	T	-	0.31	J	-	-	-	-
Butyl benzyl phthalate	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Carbazole	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Chrysene	mg/kg-Dry	T	-	0.044	J	-	-	-	-
Dibenz(a,h)anthracene	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Dibenzofuran	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Dichlorodiisopropyl ether	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Diethylphthalate	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Dimethylphthalate	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Di-n-Butyl phthalate	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Di-n-Octyl phthalate	mg/kg-Dry	T	-	<0.78	-	-	-	-	-
Fluoranthene	mg/kg-Dry	T	-	0.074	J	-	-	-	-

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UFLIN	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID
	Sample Date		9/25/2003	10/8/2002	4/9/2003	7/17/2003	9/25/2003	10/8/2002
	Sample ID		UFLIN-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED
	Exposure Area		UFL	UFL	UFL	UFL	UFL	UFL
Units	Fraction							
Fluorene	mg/kg-Dry	T	-	<0.78	-	-	-	-
Hexachlorobenzene	mg/kg-Dry	T	-	<0.78	-	-	-	-
Hexachlorobutadiene	mg/kg-Dry	T	-	<0.78	-	-	-	-
Hexachlorocyclopentadiene	mg/kg-Dry	T	-	<0.78	-	-	-	-
Hexachloroethane	mg/kg-Dry	T	-	<0.78	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg-Dry	T	-	<0.78	-	-	-	-
Isophorone	mg/kg-Dry	T	-	<0.78	-	-	-	-
Naphthalene	mg/kg-Dry	T	-	<0.78	-	-	-	-
Nitrobenzene	mg/kg-Dry	T	-	<0.78	-	-	-	-
N-Nitrosodi-n-propylamine	mg/kg-Dry	T	-	<0.78	-	-	-	-
N-Nitrosodiphenylamine	mg/kg-Dry	T	-	<0.78	-	-	-	-
Pentachlorophenol	mg/kg-Dry	T	-	<2.	J	-	-	-
Phenanthrene	mg/kg-Dry	T	-	<0.78	-	-	-	-
Phenol	mg/kg-Dry	T	-	<0.78	-	-	-	-
Pyrene	mg/kg-Dry	T	-	0.069	J	-	-	-
Explosives								
2,4,6-Trinitrotoluene	mg/kg-Dry	T	-	<0.12	-	-	-	-
2,6-Pyridinediamine,	mg/kg-Dry	T	-	<0.12	-	-	-	-
Cyclotetramethylenetetranitramine	mg/kg-Dry	T	-	<0.12	-	-	-	-
Cyclotrimethylenetrinitramine	mg/kg-Dry	T	-	<0.12	-	-	-	-
Pentaerythritol tetranitrate	mg/kg-Dry	T	-	<5.	-	-	-	-
Pesticides-PCBs								
a-Chlordane	mg/kg-Dry	T	-	<0.004	-	-	-	-
Aldrin	mg/kg-Dry	T	-	<0.004	-	-	-	-
alpha-Hexachlorocyclohexane	mg/kg-Dry	T	-	0.0022	J	-	-	-
Aroclor 1016	mg/kg-Dry	T	-	<0.078	-	-	-	-
Aroclor 1221	mg/kg-Dry	T	-	<0.16	-	-	-	-
Aroclor 1232	mg/kg-Dry	T	-	<0.078	-	-	-	-
Aroclor 1242	mg/kg-Dry	T	-	<0.078	-	-	-	-
Aroclor 1248	mg/kg-Dry	T	-	<0.078	-	-	-	-
Aroclor 1254	mg/kg-Dry	T	-	<0.078	-	-	-	-
Aroclor 1260	mg/kg-Dry	T	-	<0.078	-	-	-	-
beta-Hexachlorocyclohexane	mg/kg-Dry	T	-	0.0057	-	-	-	-
delta-Hexachlorocyclohexane	mg/kg-Dry	T	-	<0.004	-	-	-	-

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	UFLIN	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID	UFLMID	
			9/25/2003	10/8/2002	4/9/2003	7/17/2003	9/25/2003	10/8/2002		
			UFLIN-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED	UFLMID-T01N-SED		
			UFL	UFL	UFL	UFL	UFL	UFL		
Dichlorodiphenyldichloroethane	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
Dichlorodiphenyldichloroethylene	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
Dichlorodiphenyltrichloroethane	mg/kg-Dry	T	-	<0.0078	J	-	-	-	-	
Dieldrin	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
Endosulfan I	mg/kg-Dry	T	-	<0.004	-	-	-	-	-	
Endosulfan II	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
Endosulfan sulfate	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
Endrin	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
Endrin aldehyde	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
Endrin ketone	mg/kg-Dry	T	-	<0.0078	-	-	-	-	-	
g-Chlordane	mg/kg-Dry	T	-	<0.004	-	-	-	-	-	
Heptachlor	mg/kg-Dry	T	-	<0.004	-	-	-	-	-	
Heptachlor epoxide	mg/kg-Dry	T	-	<0.004	-	-	-	-	-	
Lindane	mg/kg-Dry	T	-	<0.004	-	-	-	-	-	
Methoxychlor	mg/kg-Dry	T	-	<0.04	-	-	-	-	-	
Toxaphene	mg/kg-Dry	T	-	<0.4	-	-	-	-	-	
SEM and AVS										
Acid Volatile Sulfide	mg/Kg-dry	T	-	286.	-	-	-	-	-	746. :
Cadmium	mg/Kg-dry	T	0.42 J	1.1 :	3.2 J	<0.059 :	0.77 J	1.8 J		
Copper	mg/Kg-dry	T	75.7 :	149. :	116. J	100. :	107. :	98.1 J		
Lead	mg/Kg-dry	T	120. :	297. :	255. J	281. :	199. :	105. J		
Mercury	mg/Kg-dry	T	<0.022 :	0.04 J	<0.036 :	0.091 :	<0.03 :	0.013 :		
Nickel	mg/Kg-dry	T	20.1 :	30.1 :	25.7 J	22.9 :	22.1 :	22.2 J		
Zinc	mg/Kg-dry	T	128. :	297. :	226. J	183. J	183. :	243. J		

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R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UFLOUT	UFLOUT	UFLOUT	UNIQUE 1	UNIQUE 2	UNIQUE 3
	Sample Date		4/9/2003	7/17/2003	9/25/2003	3/20/2003	3/23/2003	3/23/2003
	Sample ID		UFLOUT-T01N-SED	UFLOUT-T01N-SED	UFLOUT-T01N-SED	UNIQUE1-T01N-SED	UNIQUE2-T02N-SED	UNIQUE3-T02N-SED
	Exposure Area		UFL	UFL	UFL	Unique	Unique	Unique
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	23.3 J	258. J	144. J	101. J	137. J	103. J
Chloride	mg/kg-Dry	T	<6.7 :	7.1 :	5.5 :	5.2 :	<8.9 J	<6.5 J
Fluoride	mg/Kg-dry	T	0.68 J	0.68 :	<0.25 :	0.53 J	5.3 J	2. J
Nitrate	mg/kg-Dry	T	<3.6 J	2. J	<5. J	<3.6 J	<4.3 J	<3.9 J
Phosphorus	mg/Kg-dry	T	1520. J	2650. J	2350. J	1890. J	1610. J	2030. J
Sulfate	mg/kg-Dry	T	137. :	332. :	818. :	283. :	504. J	507. J
Total Kjeldahl Nitrogen	mg/Kg-dry	T	732. J	1890. J	1170. :	259. J	1060. J	667. J
Total Organic Carbon	mg/Kg-dry	T	11100. J	21700. :	12500. J	7390. J	17500. J	9740. J
Laboratory Parameters								
pH	SU	T	7.1 J	7.1 J	7. J	6.8 J	6.9 J	6.9 J
Solids, Percent	%	T	56.5 :	35. :	40.2 :	57. :	46.8 :	52. :
Specific Conductance	umhos/cm	T	252. J	279. J	88. J	314. J	264. J	296. J
Geotechnical								
Organic Soils	%	T	4.5 :	8.1 J	7.3 :	6.1 :	6.8 :	6.2 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	22.7 :	16.1 :	26.2 :	18.3 :	23.9 :	15.5 :
Sodium Absorption Ratio	ratio	T	0.15 :	0.22 :	0.11 :	0.31 :	0.12 :	0.22 :
Metals								
Aluminum	mg/Kg-dry	T	11600. J	18700. :	15300. :	11900. J	23500. J	15900. J
Antimony	mg/Kg-dry	T	<0.054 J	<1.4 J	<1.1 J	<0.41 J	<0.5 J	<0.45 J
Arsenic	mg/Kg-dry	T	4.5 J	9.5 J	12.6 :	9.8 :	7. :	9.8 :
Barium	mg/Kg-dry	T	369. J	588. J	744. :	516. J	539. J	615. J
Beryllium	mg/Kg-dry	T	1.6 :	1.9 :	1.4 :	1.2 :	4.6 :	2.3 :
Boron	mg/Kg-dry	T	2.6 :	4.7 J	<1.4 :	3.2 J	1.4 :	2.4 J
Cadmium	mg/Kg-dry	T	3. :	2.7 J	2.4 J	1.3 J	2.5 :	1.7 J
Calcium	mg/Kg-dry	T	2160. J	4120. :	3530. :	1930. J	2910. J	2500. J
Chromium	mg/Kg-dry	T	18. J	31.2 :	26.1 :	19.6 J	20.1 J	20.6 J
Cobalt	mg/Kg-dry	T	13.7 :	19.6 :	13.6 :	9.6 :	19.5 :	10.1 :
Copper	mg/Kg-dry	T	110. J	242. :	179. :	52.9 J	188. J	91.4 J
Iron	mg/Kg-dry	T	25100. J	39100. :	51900. :	35400. J	30900. J	36700. J
Lead	mg/Kg-dry	T	94.6 J	210. :	291. :	129. J	89.3 J	127. J
Magnesium	mg/Kg-dry	T	3990. J	6860. :	6590. :	4980. J	4630. J	4990. J
Manganese	mg/Kg-dry	T	316. J	399. :	467. J	428. J	1090. J	353. J

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T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UFLOUT	UFLOUT	UFLOUT	UNIQUE 1	UNIQUE 2	UNIQUE 3
	Sample Date		4/9/2003	7/17/2003	9/25/2003	3/20/2003	3/23/2003	3/23/2003
	Sample ID		UFLOUT-T01N-SED	UFLOUT-T01N-SED	UFLOUT-T01N-SED	UNIQUE1-T01N-SED	UNIQUE2-T02N-SED	UNIQUE3-T02N-SED
	Exposure Area		UFL	UFL	UFL	Unique	Unique	Unique
	Units	Fraction						
Mercury	mg/Kg-dry	T	<0.028 :	<0.12 :	<0.035 :	<0.029 :	<0.035 :	0.033 :
Molybdenum	mg/Kg-dry	T	9.5 :	18. :	22. :	13.7 :	17.9 :	16.9 :
Nickel	mg/Kg-dry	T	41.6 J	57.4 :	42.5 :	24.4 J	54.9 J	30.6 J
Potassium	mg/Kg-dry	T	2890. J	4380. J	4620. :	4080. J	3380. J	4170. J
Selenium	mg/Kg-dry	T	<2.2 J	2.5 J	2.1 :	1.8 J	2.4 J	2.2 J
Silver	mg/Kg-dry	T	0.76 :	1.8 :	2.2 :	0.8 :	<0.17 :	<0.75 :
Sodium	mg/Kg-dry	T	74.2 :	<56.3 :	443. :	264. :	<58.3 J	199. J
Thallium	mg/Kg-dry	T	0.21 :	0.5 :	0.53 :	0.31 :	0.23 :	0.31 :
Vanadium	mg/Kg-dry	T	21.3 :	32.7 :	26.8 :	18.9 :	21.6 :	20.6 :
Zinc	mg/Kg-dry	T	338. J	559. J	403. :	140. J	591. J	272. J
SEM and AVS								
Cadmium	mg/Kg-dry	T	3. :	2.7 J	2.4 J	1.3 J	2.5 :	1.7 J
Copper	mg/Kg-dry	T	110. J	242. :	179. :	52.9 J	188. J	91.4 J
Lead	mg/Kg-dry	T	94.6 J	210. :	291. :	129. J	89.3 J	127. J
Mercury	mg/Kg-dry	T	<0.028 :	<0.12 :	<0.035 :	<0.029 :	<0.035 :	0.033 :
Nickel	mg/Kg-dry	T	41.6 J	57.4 :	42.5 :	24.4 J	54.9 J	30.6 J
Zinc	mg/Kg-dry	T	338. J	559. J	403. :	140. J	591. J	272. J

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T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UNIQUE 3	UNIQUE 4	UNIQUE 5	UNIQUE 6	UPPER CABRESTO C	UPPER CABRESTO C
	Sample Date		9/26/2003	9/26/2003	9/26/2003	9/26/2003	3/19/2003	7/14/2003
	Sample ID		UNIQUE3-T01N-SED	UNIQUE4-T01N-SED	UNIQUE5-T01N-SED	UNIQUE6-T01N-SED	UCC-T02N-SED	UPPERCABRESTO-T
	Exposure Area		Unique	Unique	Unique	Unique	RUCCR	02N-SED RUCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	19.6 J	64.6 J	78.7 J	21.8 J	13.8 J	18.8 J
Chloride	mg/kg-Dry	T	3.1 :	5.3 :	5.8 :	5.5 :	<2.7 :	<353. :
Fluoride	mg/Kg-dry	T	0.37 J	0.22 J	<0.19 :	1. J	0.21 J	<0.29 :
Nitrate	mg/kg-Dry	T	<2.6 J	<3.3 J	<3.7 J	<3. J	<2.7 J	<28.2 J
Phosphorus	mg/Kg-dry	T	752. J	1490. J	1720. J	583. J	486. J	223. J
Sulfate	mg/kg-Dry	T	82.9 :	472. :	342. :	177. :	21.5 :	28.2 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	200. :	580. :	643. :	206. :	111. :	708. J
Total Organic Carbon	mg/Kg-dry	T	7740. J	21000. J	13700. J	653. J	<131. J	<142. :
Laboratory Parameters								
pH	SU	T	6.9 J	6.7 J	5.9 J	7.2 J	6.5 J	7.3 J
Solids, Percent	%	T	79.1 :	60.7 :	55.2 :	68.8 :	76.5 :	70.9 :
Specific Conductance	umhos/cm	T	161. J	290. J	199. J	328. J	49.8 J	88.9 J
Geotechnical								
Organic Soils	%	T	2.3 :	4.7 :	5.5 :	1.6 :	1. :	1.7 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	10.4 :	17.4 :	17.2 :	8.7 :	<13. :	3.9 :
Sodium Absorption Ratio	ratio	T	0.1 :	0.14 :	0.14 :	0.37 :	0.12 :	<0.07 :
Metals								
Aluminum	mg/Kg-dry	T	6760. :	9780. :	11100. :	5950. :	3940. J	5990. :
Antimony	mg/Kg-dry	T	<0.62 J	<0.7 J	<0.77 J	<0.65 J	<0.3 J	0.62 J
Arsenic	mg/Kg-dry	T	5.9 :	10.8 :	13.7 :	2.8 J	0.86 :	1.3 J
Barium	mg/Kg-dry	T	283. :	711. :	759. :	193. :	17.1 J	31. J
Beryllium	mg/Kg-dry	T	0.89 :	0.98 :	1. :	0.5 :	0.34 :	0.49 :
Boron	mg/Kg-dry	T	<0.78 :	<0.96 :	<0.99 :	<0.81 J	1.3 :	1.6 :
Cadmium	mg/Kg-dry	T	0.49 J	0.62 J	0.45 J	<0.11 J	0.15 :	<0.073 :
Calcium	mg/Kg-dry	T	1630. :	2760. :	2460. :	2280. :	1050. J	1540. :
Chromium	mg/Kg-dry	T	12.1 :	17.4 :	19.3 :	14.4 :	9.3 J	11. :
Cobalt	mg/Kg-dry	T	9. :	12.2 :	12.1 :	5.5 :	3. :	4.2 :
Copper	mg/Kg-dry	T	43.7 :	72. :	70.6 :	28.3 :	4.5 J	7.9 :
Iron	mg/Kg-dry	T	20700. :	35300. :	44400. :	14900. :	8300. J	13000. :
Lead	mg/Kg-dry	T	45.7 :	98.2 :	120. :	27.7 :	8.3 J	20. :
Magnesium	mg/Kg-dry	T	3350. :	4340. :	4760. :	3620. :	2890. J	3780. :
Manganese	mg/Kg-dry	T	433. J	529. J	530. J	1040. J	169. J	227. :

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R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Site ID		UNIQUE 3	UNIQUE 4	UNIQUE 5	UNIQUE 6	UPPER CABRESTO C	UPPER CABRESTO C
	Sample Date		9/26/2003	9/26/2003	9/26/2003	9/26/2003	3/19/2003	7/14/2003
	Sample ID		UNIQUE3-T01N-SED	UNIQUE4-T01N-SED	UNIQUE5-T01N-SED	UNIQUE6-T01N-SED	UCC-T02N-SED	UPPERCABRESTO-T
	Exposure Area		Unique	Unique	Unique	Unique	RUCCR	02N-SED RUCCR
	Units	Fraction						
Mercury	mg/Kg-dry	T	<0.019	<0.024	<0.029	<0.021	<0.021	<0.022
Molybdenum	mg/Kg-dry	T	8.3	13.6	16.7	45.3	0.21	0.48
Nickel	mg/Kg-dry	T	32.2	26.2	25.6	15.3	7.5	9.2
Potassium	mg/Kg-dry	T	1700.	3030.	3750.	1200.	699.	1270.
Selenium	mg/Kg-dry	T	0.97	1.4	1.7	<0.39	<0.5	<0.38
Silver	mg/Kg-dry	T	<0.2	0.36	0.56	<0.21	<0.18	<0.27
Sodium	mg/Kg-dry	T	229.	294.	420.	155.	<54.5	<62.8
Thallium	mg/Kg-dry	T	0.13	0.22	0.25	<0.13	<0.1	<0.13
Vanadium	mg/Kg-dry	T	12.1	18.3	19.4	15.9	9.	13.5
Zinc	mg/Kg-dry	T	225.	167.	146.	84.3	58.1	86.4
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.49	0.62	0.45	<0.11	0.15	<0.073
Copper	mg/Kg-dry	T	43.7	72.	70.6	28.3	4.5	7.9
Lead	mg/Kg-dry	T	45.7	98.2	120.	27.7	8.3	20.
Mercury	mg/Kg-dry	T	<0.019	<0.024	<0.029	<0.021	<0.021	<0.022
Nickel	mg/Kg-dry	T	32.2	26.2	25.6	15.3	7.5	9.2
Zinc	mg/Kg-dry	T	225.	167.	146.	84.3	58.1	86.4

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	UPPER CABRESTO C	Zwergle	Zwergle	Zwergle	----	----
			9/23/2003 UPPERCABRESTO-T 02N-SED RUCCR	3/19/2003 ZWERGEL-T02N-SE D RURR	7/14/2003 ZWERGEL-T02N-SE D RURR	9/24/2003 ZWERGEL-T02N-SE D RURR		
General Chemistry								
Ammonia	mg/Kg-dry	T	44.2 J	124. J	51.9 J	16. J	-	-
Chloride	mg/kg-Dry	T	<2.6 :	<7.9 J	2.9 :	<2.8 :	-	-
Fluoride	mg/Kg-dry	T	0.18 J	-	<0.28 :	<0.14 :	-	-
Nitrate	mg/kg-Dry	T	<2.6 J	<3.8 J	1.6 J	<2.8 J	-	-
Phosphorus	mg/Kg-dry	T	626. J	1530. :	601. J	1050. J	-	-
Sulfate	mg/kg-Dry	T	13.8 :	48.7 J	11.2 :	14.9 :	-	-
Total Kjeldahl Nitrogen	mg/Kg-dry	T	697. :	1500. J	276. J	252. :	-	-
Total Organic Carbon	mg/Kg-dry	T	8090. J	14700. J	2600. :	8390. J	-	-
Laboratory Parameters								
pH	SU	T	7.3 J	7.1 J	7.7 J	7.5 J	-	-
Solids, Percent	%	T	79.1 :	52.9 :	72.3 :	73. :	-	-
Specific Conductance	umhos/cm	T	81. J	245. J	85.2 J	71.2 J	-	-
Geotechnical								
Organic Soils	%	T	1.7 J	5.5 :	1.4 J	1.7 J	-	-
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	17.8 :	28.1 :	10.6 :	10.7 :	-	-
Sodium Absorption Ratio	ratio	T	0.1 :	0.09 :	0.1 :	<0.06 :	-	-
Metals								
Aluminum	mg/Kg-dry	T	6120. :	15100. J	9980. :	9200. :	-	-
Antimony	mg/Kg-dry	T	<0.58 J	<0.46 J	<0.68 J	<0.67 J	-	-
Arsenic	mg/Kg-dry	T	1.4 J	2.2 :	1.5 J	2.5 J	-	-
Barium	mg/Kg-dry	T	26.7 :	179. J	97.2 J	133. :	-	-
Beryllium	mg/Kg-dry	T	0.61 :	1.1 :	0.46 :	0.57 :	-	-
Boron	mg/Kg-dry	T	0.87 :	3.4 :	2.9 :	<0.79 J	-	-
Cadmium	mg/Kg-dry	T	0.19 J	0.58 :	<0.078 :	<0.063 J	-	-
Calcium	mg/Kg-dry	T	1450. :	6640. J	4330. :	4540. :	-	-
Chromium	mg/Kg-dry	T	10.5 :	37.3 J	24.9 :	25.6 :	-	-
Cobalt	mg/Kg-dry	T	4.2 :	12.4 :	10. :	10.6 :	-	-
Copper	mg/Kg-dry	T	7.7 :	29.5 J	15.4 :	17.2 :	-	-
Iron	mg/Kg-dry	T	11700. :	22400. J	21900. :	19800. :	-	-
Lead	mg/Kg-dry	T	14.4 :	12.8 J	8. :	10.5 :	-	-
Magnesium	mg/Kg-dry	T	3900. :	7070. J	5960. :	5810. :	-	-
Manganese	mg/Kg-dry	T	207. J	422. J	570. :	657. J	-	-

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3b
Sediment Depositional
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	UPPER CABRESTO C	Zwergle	Zwergle	Zwergle	----	----
			9/23/2003 UPPERCABRESTO-T 02N-SED RUCCR	3/19/2003 ZWERGEL-T02N-SE D RURR	7/14/2003 ZWERGEL-T02N-SE D RURR	9/24/2003 ZWERGEL-T02N-SE D RURR		
Mercury	mg/Kg-dry	T	<0.019 :	<0.03 :	<0.022 :	<0.022 :	-	-
Molybdenum	mg/Kg-dry	T	0.49 :	1.2 :	0.62 :	<0.77 :	-	-
Nickel	mg/Kg-dry	T	8.9 :	26.4 J	19.3 :	18.3 :	-	-
Potassium	mg/Kg-dry	T	1100. :	2280. J	1320. J	1110. :	-	-
Selenium	mg/Kg-dry	T	0.4 :	<0.76 :	<1.1 J	0.74 :	-	-
Silver	mg/Kg-dry	T	0.21 J	2.5 J	<0.29 :	<0.2 :	-	-
Sodium	mg/Kg-dry	T	124. :	523. :	<61.7 :	145. :	-	-
Thallium	mg/Kg-dry	T	<0.12 :	<0.15 :	<0.14 :	<0.13 :	-	-
Vanadium	mg/Kg-dry	T	11.3 :	44.1 J	41.4 :	31.9 :	-	-
Zinc	mg/Kg-dry	T	105. :	73.3 J	57.4 J	60.4 :	-	-
SEM and AVS								
Cadmium	mg/Kg-dry	T	0.19 J	0.58 :	<0.078 :	<0.063 J	-	-
Copper	mg/Kg-dry	T	7.7 :	29.5 J	15.4 :	17.2 :	-	-
Lead	mg/Kg-dry	T	14.4 :	12.8 J	8. :	10.5 :	-	-
Mercury	mg/Kg-dry	T	<0.019 :	<0.03 :	<0.022 :	<0.022 :	-	-
Nickel	mg/Kg-dry	T	8.9 :	26.4 J	19.3 :	18.3 :	-	-
Zinc	mg/Kg-dry	T	105. :	73.3 J	57.4 J	60.4 :	-	-

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3b.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		LR-1	LR-1	LR-1	LR-11A	LR-11A	LR-11A
	Sample Date		3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/21/2003
	Sample ID		LR-1-T01N-SED	LR-1-T01N-SED	LR-1-T01N-SED	LR-11A-T01N-SED	LR-11A-T01N-SED	LR-11A-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	34.1 J	11.7 J	18.7 J	37.4 J	10.9 J	10.1 J
Chloride	mg/kg-Dry	T	<2.6 :	3.2 :	3.1 :	3.8 :	3.9 :	2.7 :
Fluoride	mg/Kg-dry	T	0.95 J	0.25 :	0.7 J	1.3 J	0.83 :	0.55 J
Nitrate	mg/kg-Dry	T	<2.5 J	1.1 J	<2.8 J	<2.8 J	1.4 J	<2.7 J
Phosphorus	mg/Kg-dry	T	276. J	408. J	592. J	1100. J	526. J	509. J
Sulfate	mg/kg-Dry	T	47.6 :	32.8 :	46.5 :	116. :	52.4 :	48.9 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	81.9 :	40. J	51.6 :	190. :	41.5 J	60.9 :
Total Organic Carbon	mg/Kg-dry	T	270. J	<121. :	1040. J	2650. J	1370. :	<134. J
Laboratory Parameters								
pH	SU	T	7.1 :	7.2 J	7.1 J	7. J	7.3 J	7.5 J
Solids, Percent	%	T	82.4 :	82.7 :	73. :	72. :	75.7 :	75.1 :
Specific Conductance	umhos/cm	T	76.5 J	105. J	86.5 J	197. J	171. J	98.4 J
Geotechnical								
Organic Soils	%	T	1.4 :	1.6 J	1.6 J	3.4 :	1.5 J	1.6 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	5.4 :	5.5 :	5.6 :	8.5 :	5.6 :	22. :
Sodium Absorption Ratio	ratio	T	0.16 :	0.18 :	0.2 :	0.29 :	0.17 :	0.19 :
Metals								
Aluminum	mg/Kg-dry	T	6260. J	4460. :	4310. :	6230. J	4830. :	4520. :
Antimony	mg/Kg-dry	T	<0.3 J	<0.5 J	<0.6 J	<0.33 J	<0.47 J	<0.59 J
Arsenic	mg/Kg-dry	T	2.2 :	2.9 J	2.3 :	2.4 :	2.9 J	2.5 :
Barium	mg/Kg-dry	T	83.9 J	168. J	101. :	141. J	182. J	55.7 :
Beryllium	mg/Kg-dry	T	0.89 :	0.54 :	0.5 :	1.2 :	0.58 :	0.43 :
Boron	mg/Kg-dry	T	<0.92 :	0.59 :	2.9 :	1.7 :	1.8 :	<0.73 :
Cadmium	mg/Kg-dry	T	<0.055 :	0.22 :	0.35 J	0.43 :	0.37 :	<0.08 J
Calcium	mg/Kg-dry	T	1290. J	1420. :	1310. :	1350. J	1390. :	1360. :
Chromium	mg/Kg-dry	T	11.3 J	9.3 :	8.5 :	10.4 J	10.2 :	9.5 :
Cobalt	mg/Kg-dry	T	10. :	5.1 :	6.9 :	12.5 :	6.3 :	5.8 :
Copper	mg/Kg-dry	T	36.9 J	22.7 :	30.4 :	47.1 J	27.7 :	22.3 :
Iron	mg/Kg-dry	T	13800. J	13600. :	11800. :	14000. J	13400. :	9910. :
Lead	mg/Kg-dry	T	21.1 J	22.9 :	37. :	27.5 :	20.6 :	16.8 :
Magnesium	mg/Kg-dry	T	3080. J	2520. :	2360. :	2540. J	2480. :	3110. :
Manganese	mg/Kg-dry	T	710. J	294. :	439. J	967. J	397. :	364. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		LR-1	LR-1	LR-1	LR-11A	LR-11A	LR-11A
	Sample Date		3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003	9/21/2003
	Sample ID		LR-1-T01N-SED	LR-1-T01N-SED	LR-1-T01N-SED	LR-11A-T01N-SED	LR-11A-T01N-SED	LR-11A-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.02 J	<0.024 :	<0.023 :	<0.023 :	<0.02 :	<0.0095 :
Molybdenum	mg/Kg-dry	T	6.4 :	4.8 :	7.2 :	15.7 :	8.8 :	3.3 :
Nickel	mg/Kg-dry	T	29.8 J	18.2 :	22.4 :	35.9 J	22.6 :	20.4 :
Potassium	mg/Kg-dry	T	1240. J	1320. J	1120. :	1370. J	1330. J	864. :
Selenium	mg/Kg-dry	T	<0.5 J	<0.79 J	<0.36 :	1.2 :	0.52 J	<0.35 :
Silver	mg/Kg-dry	T	<0.11 :	<0.21 :	<0.2 :	<0.13 :	<0.22 :	<0.17 :
Sodium	mg/Kg-dry	T	46.7 :	134. :	98.9 :	<44.4 :	<151. :	62. :
Thallium	mg/Kg-dry	T	<0.1 :	<0.099 :	<0.12 :	<0.11 :	<0.099 :	<0.12 :
Vanadium	mg/Kg-dry	T	14.4 :	10.4 :	9.2 :	12.5 :	11.5 :	8.1 :
Zinc	mg/Kg-dry	T	188. J	112. J	134. :	259. J	156. J	138. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		LR-13	LR-13	LR-13	LR-16	LR-16	LR-16
	Sample Date		3/18/2003	7/14/2003	9/21/2003	3/18/2003	7/14/2003	9/21/2003
	Sample ID		LR-13-T01N-SED	LR-13-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	11.8 J	12.9 J	10. J	116. J	22.1 J	14.3 J
Chloride	mg/kg-Dry	T	2.8 :	3.6 :	2.9 :	3.8 :	<329. :	<2.7 :
Fluoride	mg/Kg-dry	T	1.2 J	0.49 :	0.51 J	0.67 J	0.82 :	0.56 J
Nitrate	mg/kg-Dry	T	<2.7 J	1.3 J	<2.6 J	<2.8 J	<26.3 J	<2.7 J
Phosphorus	mg/Kg-dry	T	747. J	456. J	402. J	798. J	237. J	433. J
Sulfate	mg/kg-Dry	T	71.2 :	49.6 :	49.7 :	69.4 :	48.4 :	48.9 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	95.2 :	32.6 J	51. :	110. :	<137.1 J	46.6 :
Total Organic Carbon	mg/Kg-dry	T	<135. J	393. :	835. J	<139. J	923. :	<133. J
Laboratory Parameters								
pH	SU	T	7. J	7.6 J	7.6 J	7.2 J	7.7 J	7.9 J
Solids, Percent	%	T	74.1 :	81.2 :	77. :	72.1 :	76.1 :	75.6 :
Specific Conductance	umhos/cm	T	116. J	92.7 J	103. J	142. J	152. J	96.3 J
Geotechnical								
Organic Soils	%	T	1.5 :	1.4 J	2.7 J	1.6 :	1.7 J	1.6 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	7.2 :	5.9 :	11.8 :	6.5 :	4.3 :	10.9 :
Sodium Absorption Ratio	ratio	T	0.17 :	0.35 :	0.26 :	0.3 :	0.28 :	0.33 :
Metals								
Aluminum	mg/Kg-dry	T	5080. J	5360. :	4390. :	4580. J	5360. :	4280. :
Antimony	mg/Kg-dry	T	<0.34 J	<0.62 J	<0.58 J	<0.34 J	0.63 J	<0.64 J
Arsenic	mg/Kg-dry	T	1.6 :	3.1 J	4.1 :	2.2 :	3.6 J	3.5 :
Barium	mg/Kg-dry	T	67. J	154. J	108. :	78.5 J	292. J	78.1 :
Beryllium	mg/Kg-dry	T	0.84 :	0.68 :	0.57 :	0.87 :	0.63 :	0.52 :
Boron	mg/Kg-dry	T	<1. :	1.7 :	<0.71 :	1. :	2.2 :	<0.72 :
Cadmium	mg/Kg-dry	T	0.35 :	0.41 :	<0.078 J	0.43 :	0.32 :	<0.079 J
Calcium	mg/Kg-dry	T	1250. J	1560. :	1350. :	1470. J	1680. :	1180. :
Chromium	mg/Kg-dry	T	9.8 J	15.4 :	8.4 :	10.4 J	10.8 :	7.9 :
Cobalt	mg/Kg-dry	T	12.9 :	8.5 :	6.7 :	12.9 :	8. :	7.4 :
Copper	mg/Kg-dry	T	39.3 J	31.6 :	29.3 :	37.6 J	37. :	27.4 :
Iron	mg/Kg-dry	T	10000. J	17400. :	17300. :	12000. J	18500. :	13500. :
Lead	mg/Kg-dry	T	16. J	33.3 :	27.8 :	48.8 J	27.6 :	23.1 :
Magnesium	mg/Kg-dry	T	2650. J	3230. :	2570. :	2210. J	2960. :	2450. :
Manganese	mg/Kg-dry	T	998. J	523. :	410. J	882. J	529. :	444. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		LR-13	LR-13	LR-13	LR-16	LR-16	LR-16
	Sample Date		3/18/2003	7/14/2003	9/21/2003	3/18/2003	7/14/2003	9/21/2003
	Sample ID		LR-13-T01N-SED	LR-13-T01N-SED	LR-13-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED	LR-16-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.022 :	<0.019 :	<0.0094 :	<0.023 :	<0.021 :	0.01 :
Molybdenum	mg/Kg-dry	T	16.2 :	7.8 :	6.7 :	8.6 :	9.9 :	4.6 :
Nickel	mg/Kg-dry	T	34.5 J	27.7 :	23. :	30.5 J	24.4 :	23.7 :
Potassium	mg/Kg-dry	T	1010. J	1430. J	1270. :	1010. J	1520. J	904. :
Selenium	mg/Kg-dry	T	0.67 :	<0.99 J	0.69 :	0.97 J	0.47 J	<0.38 :
Silver	mg/Kg-dry	T	<0.12 :	<0.25 :	0.26 :	<0.11 :	<0.25 :	<0.17 :
Sodium	mg/Kg-dry	T	<42.8 :	<53.9 J	293. :	<39.4 :	<172. :	111. :
Thallium	mg/Kg-dry	T	<0.11 :	<0.12 :	<0.12 :	<0.11 :	<0.098 :	<0.13 :
Vanadium	mg/Kg-dry	T	10.8 :	15.6 :	9.3 :	13.4 :	14.6 :	10.1 :
Zinc	mg/Kg-dry	T	218. J	187. J	163. :	222. J	171. J	159. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	LR-5	LR-5	LR-5	LR-6	LR-8A	LR-8A
			3/18/2003 LR-5-T01N-SED SWR	7/13/2003 LR-5-T01N-SED SWR	9/21/2003 LR-5-T01N-SED SWR	9/21/2003 RD-1-T01N-SED IDR	3/18/2003 LR-8A-T01N-SED SWR	7/13/2003 LR-8A-T01N-SED SWR
General Chemistry								
Ammonia	mg/Kg-dry	T	32.9 J	16. J	12.7 J	154. J	16.8 J	11.3 J
Chloride	mg/kg-Dry	T	4.2 :	<325. :	<2.6 :	13. :	<5.9 J	<320. :
Fluoride	mg/Kg-dry	T	1.5 J	0.92 :	0.72 J	0.62 J	1.4 J	0.85 :
Nitrate	mg/kg-Dry	T	<3. J	<26. J	<2.6 J	<3.2 J	<2.7 J	<25.6 J
Phosphorus	mg/Kg-dry	T	1230. J	433. J	389. J	503. J	480. J	363. J
Sulfate	mg/kg-Dry	T	96.1 :	42. :	53.1 :	18.4 :	143. J	57.7 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	125. :	48.2 J	49.3 :	274. :	161. :	42.5 J
Total Organic Carbon	mg/Kg-dry	T	314. J	1330. :	642. J	4020. J	1950. J	466. :
Laboratory Parameters								
pH	SU	T	7.1 J	7.1 J	7. J	6.9 J	6.9 J	7.2 J
Solids, Percent	%	T	66.7 :	77. :	78.7 :	62.7 :	74.5 :	78.1 :
Specific Conductance	umhos/cm	T	118. J	155. J	108. J	322. J	162. J	173. J
Geotechnical								
Organic Soils	%	T	1.5 :	1.5 J	1.8 J	1.7 J	2.2 :	1.5 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	5.6 :	5.1 :	11.8 :	6.5 :	5.1 :	5.5 :
Sodium Absorption Ratio	ratio	T	0.17 :	0.2 :	0.36 :	0.27 :	0.17 :	0.26 :
Metals								
Aluminum	mg/Kg-dry	T	7110. J	5110. :	4420. :	5670. :	6270. :	5330. :
Antimony	mg/Kg-dry	T	<0.35 J	<0.45 J	<0.62 J	<0.77 J	<0.34 J	<0.49 J
Arsenic	mg/Kg-dry	T	3. :	2.8 J	3.3 :	1.5 :	2.6 :	4.1 J
Barium	mg/Kg-dry	T	252. J	223. J	67.6 :	106. :	132. :	210. J
Beryllium	mg/Kg-dry	T	1.4 :	0.53 :	0.47 :	0.45 :	0.82 :	0.65 :
Boron	mg/Kg-dry	T	1.3 :	1.7 :	<0.77 :	3.1 :	1.4 :	2.4 :
Cadmium	mg/Kg-dry	T	<0.067 :	0.19 :	<0.084 J	<0.067 J	0.69 :	0.24 :
Calcium	mg/Kg-dry	T	1390. J	1260. :	1300. :	4140. :	1410. J	1320. :
Chromium	mg/Kg-dry	T	11.8 J	9.3 :	9.4 :	12.4 :	13.8 :	10.9 :
Cobalt	mg/Kg-dry	T	9.6 :	5.7 :	6.4 :	4.2 :	8.2 :	6.3 :
Copper	mg/Kg-dry	T	59. J	23.7 :	26.2 :	22.4 :	37.9 :	32.3 :
Iron	mg/Kg-dry	T	13800. J	13000. :	13300. :	12400. :	14300. J	18900. :
Lead	mg/Kg-dry	T	36.4 J	18.3 :	19.2 :	22.2 :	63. J	42.6 :
Magnesium	mg/Kg-dry	T	2340. J	2820. :	2730. :	3410. :	3260. :	2660. :
Manganese	mg/Kg-dry	T	460. J	314. :	336. J	173. J	350. :	352. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		LR-5	LR-5	LR-5	LR-6	LR-8A	LR-8A
	Sample Date		3/18/2003	7/13/2003	9/21/2003	9/21/2003	3/18/2003	7/13/2003
	Sample ID		LR-5-T01N-SED	LR-5-T01N-SED	LR-5-T01N-SED	RD-1-T01N-SED	LR-8A-T01N-SED	LR-8A-T01N-SED
	Exposure Area		SWR	SWR	SWR	IDR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.024	<0.021	<0.01	<0.026	<0.021	<0.02
Molybdenum	mg/Kg-dry	T	7.5	4.	11.6	10.1	9.2	9.6
Nickel	mg/Kg-dry	T	25. J	19.8	20.	11.7	28.3	22.4
Potassium	mg/Kg-dry	T	1540. J	1400. J	1070.	1480.	1360.	1540. J
Selenium	mg/Kg-dry	T	<0.58 J	0.64 J	0.53	<0.46	1.5 J	0.73 J
Silver	mg/Kg-dry	T	<0.13	<0.21	<0.18	<0.21	<0.2	<0.23
Sodium	mg/Kg-dry	T	<57.3	<110.	113.	183.	74.	<150.
Thallium	mg/Kg-dry	T	0.13	0.1	<0.12	<0.15	<0.11	<0.093
Vanadium	mg/Kg-dry	T	13.1	10.9	9.2	12.6	13.8	14.
Zinc	mg/Kg-dry	T	216. J	119. J	128.	60.5	210. J	159. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		LR-8A	RR-1	RR-1	RR-1	RR-1	RR-10	RR-10	
	Sample Date		9/21/2003	3/19/2003	7/14/2003	9/22/2003	3/19/2003	7/13/2003		
	Sample ID		LR-8A-T01N-SED	RR-1-T01N-SED	RR-1-T01N-SED	RR-1-T01N-SED	RR-1-T01N-SED	RR-10-T01N-SED		
	Exposure Area		SWR	RURR	RURR	RURR	SWR	SWR		
Units	Fraction									
General Chemistry										
Ammonia	mg/Kg-dry	T	14.7 J	48.4 J	13.5 J	13.4 J	10.4 J	<7.2 J		
Chloride	mg/kg-Dry	T	3.7 :	<4. J	2.9 :	6.2 :	3.7 :	3.1 :		
Fluoride	mg/Kg-dry	T	0.61 J	-	<0.26 :	<0.14 :	0.42 J	<0.27 :		
Nitrate	mg/kg-Dry	T	<2.7 J	<2.9 J	<2.5 J	<2.8 J	<2.9 J	1. J		
Phosphorus	mg/Kg-dry	T	335. J	751. J	965. J	587. J	947. J	409. J		
Sulfate	mg/kg-Dry	T	129. :	7.8 J	16.6 :	13.1 :	48.6 :	27.5 :		
Total Kjeldahl Nitrogen	mg/Kg-dry	T	49.7 :	759. J	158. J	145. :	32.3 J	59.6 J		
Total Organic Carbon	mg/Kg-dry	T	<133. J	2100. J	1450. :	<138. J	872. J	<133. :		
Laboratory Parameters										
pH	SU	T	7.2 J	7.2 J	7.3 J	7.5 J	7.2 J	7.5 J		
Solids, Percent	%	T	75.2 :	69.8 :	79.2 :	72.5 :	71.4 :	75.2 :		
Specific Conductance	umhos/cm	T	216. J	204. J	100. J	99. J	90.3 J	81.2 J		
Geotechnical										
Organic Soils	%	T	1.6 J	1.6 :	1.5 J	1.4 J	1.7 :	1.7 J		
Physical Properties										
Cation-Exchange Capacity	meq/100g	T	14.3 J	13.8 :	7.6 :	12.4 :	<13. :	4.9 :		
Sodium Absorption Ratio	ratio	T	0.43 :	0.09 :	0.08 :	0.08 :	0.16 :	0.13 :		
Metals										
Aluminum	mg/Kg-dry	T	3630. :	8040. J	6280. :	5150. :	4660. J	4320. :		
Antimony	mg/Kg-dry	T	<0.65 J	<0.33 J	<0.89 J	<0.67 J	<0.32 J	<0.54 J		
Arsenic	mg/Kg-dry	T	2.6 :	2.2 :	3.8 J	2. :	5. :	3.2 J		
Barium	mg/Kg-dry	T	63.1 :	77.4 J	73.6 J	88.3 :	172. J	240. J		
Beryllium	mg/Kg-dry	T	0.41 :	0.64 :	0.45 :	0.38 :	0.46 :	0.38 :		
Boron	mg/Kg-dry	T	<0.76 :	1.9 :	1.8 J	<0.77 :	1.8 :	1.2 :		
Cadmium	mg/Kg-dry	T	<0.083 J	0.66 :	<0.036 :	0.095 J	0.49 :	0.086 :		
Calcium	mg/Kg-dry	T	1090. :	3490. J	2430. :	3130. :	1360. J	1480. :		
Chromium	mg/Kg-dry	T	6.1 :	18. J	15.7 :	12.7 :	9. J	8.4 :		
Cobalt	mg/Kg-dry	T	5. :	8.7 :	6.4 :	5.1 :	7.9 :	6.6 :		
Copper	mg/Kg-dry	T	20.6 :	20.2 J	41.4 :	28.6 :	25.3 J	25.4 :		
Iron	mg/Kg-dry	T	9680. :	21100. J	18100. :	15200. :	16600. J	15700. :		
Lead	mg/Kg-dry	T	20.6 :	27. J	33.5 :	25.4 :	30.5 J	34.4 :		
Magnesium	mg/Kg-dry	T	2070. :	5390. J	4170. :	3500. :	2680. J	2790. :		
Manganese	mg/Kg-dry	T	288. J	529. J	355. :	386. J	282. J	302. :		

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		LR-8A	RR-1	RR-1	RR-1	RR-10	RR-10
	Sample Date		9/21/2003	3/19/2003	7/14/2003	9/22/2003	3/19/2003	7/13/2003
	Sample ID		LR-8A-T01N-SED	RR-1-T01N-SED	RR-1-T01N-SED	RR-1-T01N-SED	RR-10-T01N-SED	RR-10-T01N-SED
	Exposure Area		SWR	RURR	RURR	RURR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.0095 :	<0.024 :	0.037 :	<0.022 :	<0.022 J	<0.02 :
Molybdenum	mg/Kg-dry	T	5.5 :	1.6 :	2.8 :	4.5 :	2.9 :	3.2 :
Nickel	mg/Kg-dry	T	16.9 :	14. J	11. :	8.6 :	24.8 J	17.9 :
Potassium	mg/Kg-dry	T	870. :	1300. J	1380. J	1020. :	1470. J	1560. J
Selenium	mg/Kg-dry	T	0.44 :	<0.56 J	<1. J	<0.4 :	<0.54 J	<0.86 J
Silver	mg/Kg-dry	T	<0.18 :	0.16 :	0.11 J	0.33 :	<0.18 :	<0.11 :
Sodium	mg/Kg-dry	T	81. :	262. :	<236. :	184. :	<106. :	101. :
Thallium	mg/Kg-dry	T	<0.13 :	<0.11 :	<0.13 :	<0.13 :	<0.11 :	<0.11 :
Vanadium	mg/Kg-dry	T	6.5 :	28.5 :	21.7 :	16.8 :	9.3 :	8.6 :
Zinc	mg/Kg-dry	T	113. :	87.5 J	71.3 J	46.3 :	134. J	92.6 J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-10	RR-10A1	RR-10A1	RR-10A1	RR-11A1	RR-11A1
	Sample Date		9/22/2003	3/19/2003	7/13/2003	9/22/2003	3/19/2003	7/13/2003
	Sample ID		RR-10-T01N-SED	RR-10A1-T01N-SED	RR-10A1-T01N-SED	RR-10A1-T01N-SED	RR-11A1-T01N-SED	RR-11A1-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	31. J	10.7 J	25.2 J	28.7 J	10.7 J	8.7 J
Chloride	mg/kg-Dry	T	<2.8 :	<4. :	<328. :	5.3 :	<3.4 J	2.8 :
Fluoride	mg/Kg-dry	T	0.24 J	0.39 J	<0.27 :	0.22 J	0.39 J	<0.25 :
Nitrate	mg/kg-Dry	T	<2.8 J	<2.8 J	<26.2 J	<2.8 J	<2.8 J	1.2 J
Phosphorus	mg/Kg-dry	T	953. J	470. J	396. J	433. J	468. :	368. J
Sulfate	mg/kg-Dry	T	50.8 :	38.6 :	26.8 :	69.6 :	36.5 J	22. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	<27.5 :	31.5 :	35.2 J	<27.6 :	41.1 J	35.7 J
Total Organic Carbon	mg/Kg-dry	T	<139. J	<140. J	<132. J	<136. J	<140. J	<123. :
Laboratory Parameters								
pH	SU	T	7.4 J	7.2 J	7.4 J	7.4 J	7.2 J	7.5 J
Solids, Percent	%	T	72.1 :	71.8 :	76.3 :	73.8 :	71.5 :	81.4 :
Specific Conductance	umhos/cm	T	119. J	72.6 J	117. J	120. J	85.1 J	72.5 J
Geotechnical								
Organic Soils	%	T	1.6 J	1.9 :	1.6 J	1.6 J	1.9 :	1.7 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	12.1 :	6.3 :	5.6 :	28.4 :	7.7 :	4.9 :
Sodium Absorption Ratio	ratio	T	0.15 :	0.16 :	0.09 :	0.14 :	0.16 :	0.12 :
Metals								
Aluminum	mg/Kg-dry	T	3550. :	4800. J	5340. :	3790. :	5360. J	4030. :
Antimony	mg/Kg-dry	T	<0.66 J	<0.38 J	0.48 J	<0.66 J	<0.33 J	<0.47 J
Arsenic	mg/Kg-dry	T	3.4 :	3.8 :	4.7 J	4.1 :	5.2 J	3.3 J
Barium	mg/Kg-dry	T	76.1 :	137. J	400. J	121. :	137. J	188. J
Beryllium	mg/Kg-dry	T	0.3 :	0.42 :	0.44 :	0.3 :	0.54 :	0.45 :
Boron	mg/Kg-dry	T	<0.75 :	1.1 :	2.5 :	<0.73 :	<0.96 :	0.58 :
Cadmium	mg/Kg-dry	T	<0.059 :	0.56 :	0.14 :	0.069 J	0.68 :	0.29 :
Calcium	mg/Kg-dry	T	1210. :	1480. J	1540. :	1230. :	1330. J	1150. :
Chromium	mg/Kg-dry	T	7.2 :	10.4 J	10.1 :	7.5 :	12.3 J	7.7 :
Cobalt	mg/Kg-dry	T	3.5 :	7.9 :	6.1 :	4. :	8.5 :	4.4 :
Copper	mg/Kg-dry	T	18.1 :	22.6 J	28.1 :	22.9 :	26. J	27.3 :
Iron	mg/Kg-dry	T	12400. :	13700. J	22700. :	11500. :	13700. J	14300. :
Lead	mg/Kg-dry	T	31.5 J	23.1 J	45.7 :	49.5 :	35.6 J	40. :
Magnesium	mg/Kg-dry	T	1860. :	3110. J	3090. :	2100. :	3140. J	2500. :
Manganese	mg/Kg-dry	T	150. J	281. J	263. :	183. J	328. J	488. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-10	RR-10A1	RR-10A1	RR-10A1	RR-11A1	RR-11A1
	Sample Date		9/22/2003	3/19/2003	7/13/2003	9/22/2003	3/19/2003	7/13/2003
	Sample ID		RR-10-T01N-SED	RR-10A1-T01N-SED	RR-10A1-T01N-SED	RR-10A1-T01N-SED	RR-11A1-T01N-SED	RR-11A1-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.022	<0.023	<0.022	<0.022	<0.023	<0.072
Molybdenum	mg/Kg-dry	T	2.4	2.4	4.1	3.1	2.2	2.9
Nickel	mg/Kg-dry	T	11.3	25.2 J	19.5	14.8	26.5 J	16.4
Potassium	mg/Kg-dry	T	1120.	1180. J	2190. J	1260.	1400. J	1270. J
Selenium	mg/Kg-dry	T	<0.4	<0.63 J	0.75 J	<0.6	0.58	<0.75 J
Silver	mg/Kg-dry	T	<0.19	<0.2	<0.22	<0.19	<0.11	<0.2
Sodium	mg/Kg-dry	T	127.	78.9	<247.	155.	<40.4	146.
Thallium	mg/Kg-dry	T	<0.13	<0.13	0.11	<0.13	<0.11	<0.094
Vanadium	mg/Kg-dry	T	5.9	9.1	11.3	6.8	8.7	7.8
Zinc	mg/Kg-dry	T	51.6	138. J	98.1 J	50.8	131. J	104. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11B	RR-11B	RR-11C	RR-11C
	Sample Date		9/22/2003	3/19/2003	7/13/2003	9/21/2003	3/19/2003	7/13/2003
	Sample ID		RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11B-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-11C-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	25.7 J	58.5 J	15.1 J	13.7 J	118. J	16.5 J
Chloride	mg/kg-Dry	T	<2.7 :	<2.6 :	3.2 :	4.1 :	<3.5 :	2.3 :
Fluoride	mg/Kg-dry	T	0.26 J	4.1 J	0.85 :	0.95 J	1.5 J	0.25 :
Nitrate	mg/kg-Dry	T	<2.7 J	3.4 J	1.2 J	<2.8 J	<2.8 J	1.1 J
Phosphorus	mg/Kg-dry	T	254. J	1000. J	496. J	860. J	602. J	592. J
Sulfate	mg/kg-Dry	T	36.7 :	83.7 :	35. :	42.4 :	64.1 :	34. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	59.9 :	44.9 :	32.1 J	47. :	47.6 :	28. J
Total Organic Carbon	mg/Kg-dry	T	1170. J	<126. J	<133. :	<137. J	761. J	<125. :
Laboratory Parameters								
pH	SU	T	7.3 J	6.8 J	7.2 J	7.3 J	6.7 J	7.3 J
Solids, Percent	%	T	76.4 :	79.4 :	75.5 :	73.3 :	72. :	80.4 :
Specific Conductance	umhos/cm	T	116. J	128. J	81.8 J	76.4 J	110. J	80.9 J
Geotechnical								
Organic Soils	%	T	1.9 J	2. :	1.6 J	1.6 J	1.9 :	1.6 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	29. :	6.9 :	5.1 :	8.5 :	7. :	4.5 :
Sodium Absorption Ratio	ratio	T	0.07 :	0.12 :	0.09 :	0.11 :	0.14 :	0.09 :
Metals								
Aluminum	mg/Kg-dry	T	4400. :	5260. J	5430. :	3760. :	6150. J	3550. :
Antimony	mg/Kg-dry	T	<0.59 J	<0.32 J	<0.54 J	<0.65 J	<0.37 J	<0.47 J
Arsenic	mg/Kg-dry	T	4.2 :	4.7 :	4.5 J	2.4 :	5.9 :	3.6 J
Barium	mg/Kg-dry	T	181. :	276. J	278. J	90.5 :	269. J	238. J
Beryllium	mg/Kg-dry	T	0.41 :	0.68 :	0.56 :	0.39 :	0.8 :	0.34 :
Boron	mg/Kg-dry	T	<0.78 :	1.2 :	0.62 :	3.9 :	1.2 :	1. :
Cadmium	mg/Kg-dry	T	0.24 J	0.52 :	0.24 :	0.16 J	0.71 :	0.16 :
Calcium	mg/Kg-dry	T	1600. :	1210. J	2040. :	1290. :	1350. J	1080. :
Chromium	mg/Kg-dry	T	7.9 :	11.6 J	11.3 :	6.3 :	11. J	8.7 :
Cobalt	mg/Kg-dry	T	5.6 :	7.6 :	4.9 :	4.1 :	7.9 :	4.1 :
Copper	mg/Kg-dry	T	26.4 :	28. J	22.7 :	30.3 :	40.8 J	19.9 :
Iron	mg/Kg-dry	T	15000. :	14900. J	16500. :	13200. :	19800. J	11300. :
Lead	mg/Kg-dry	T	32.4 :	30.7 J	34.3 :	30.5 :	37.1 J	34.1 :
Magnesium	mg/Kg-dry	T	2540. :	3050. J	2800. :	2370. :	2870. J	2360. :
Manganese	mg/Kg-dry	T	329. J	320. J	236. :	202. J	311. J	199. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-11A1	RR-11B	RR-11B	RR-11B	RR-11C	RR-11C
	Sample Date		9/22/2003	3/19/2003	7/13/2003	9/21/2003	3/19/2003	7/13/2003
	Sample ID		RR-11A1-T01N-SED	RR-11B-T01N-SED	RR-11B-T01N-SED	RR-11B-T01N-SED	RR-11C-T01N-SED	RR-11C-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.022 :	<0.021 :	<0.038 :	<0.021 :	<0.022 :	<0.019 :
Molybdenum	mg/Kg-dry	T	4.3 :	3.7 :	3.1 :	3.5 :	8. :	2.9 :
Nickel	mg/Kg-dry	T	16.8 :	27.4 J	16.5 :	15.6 :	27. J	14. :
Potassium	mg/Kg-dry	T	1240. :	1210. J	1580. J	1220. :	1660. J	1240. J
Selenium	mg/Kg-dry	T	<0.67 :	0.84 J	<0.87 J	0.42 :	0.88 J	<0.76 J
Silver	mg/Kg-dry	T	<0.2 :	<0.18 :	<0.24 :	0.2 :	<0.19 :	<0.11 :
Sodium	mg/Kg-dry	T	177. :	74.6 :	150. :	158. :	118. :	56.3 :
Thallium	mg/Kg-dry	T	<0.12 :	<0.11 :	<0.11 :	<0.13 :	<0.12 :	<0.095 :
Vanadium	mg/Kg-dry	T	8.3 :	10.5 :	10.7 :	9.6 :	11.9 :	7.1 :
Zinc	mg/Kg-dry	T	103. :	154. J	107. J	94.5 :	181. J	84.4 J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-11C	RR-12	RR-12	RR-12	RR-13	RR-13
	Sample Date		9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003
	Sample ID		RR-11C-T01N-SED	RR-12-T01N-SED	RR-12-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-13-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	19. J	34.8 J	21.9 J	11.9 J	27.9 J	27.9 J
Chloride	mg/kg-Dry	T	2.8 :	3.4 :	2.7 :	<2.7 :	4.2 :	3.4 :
Fluoride	mg/Kg-dry	T	0.47 J	0.67 J	0.36 :	<0.27 :	0.79 J	0.59 :
Nitrate	mg/kg-Dry	T	<2.7 J	<2.9 J	1.4 J	<2.7 J	<2.7 J	1.2 J
Phosphorus	mg/Kg-dry	T	711. J	1550. J	567. J	1110. J	1550. J	482. J
Sulfate	mg/kg-Dry	T	49.7 :	75.3 :	30.1 :	63.5 :	201. :	41.3 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	44.4 :	77.4 :	31.9 J	44.9 :	85.9 :	28.9 J
Total Organic Carbon	mg/Kg-dry	T	20200. J	<141. J	<123. :	2740. J	<135. J	<133. :
Laboratory Parameters								
pH	SU	T	7.3 J	6.5 J	7.5 J	6.3 J	6.2 J	7.2 J
Solids, Percent	%	T	74.5 :	71.4 :	81.8 :	75.4 :	74.6 :	75.5 :
Specific Conductance	umhos/cm	T	81.9 J	128. J	82.6 J	100. J	233. J	80.3 J
Geotechnical								
Organic Soils	%	T	1.7 J	2.5 :	1.6 J	1.8 J	2.6 :	1.6 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	4.6 :	9.9 :	5.8 :	6.1 :	9.2 :	4.6 :
Sodium Absorption Ratio	ratio	T	0.11 :	0.13 :	0.12 :	0.12 :	0.12 :	0.09 :
Metals								
Aluminum	mg/Kg-dry	T	4880. :	7790. :	4100. :	4210. :	12100. J	4550. :
Antimony	mg/Kg-dry	T	<0.65 J	<0.31 J	<0.53 J	<0.59 J	<0.3 J	<0.56 J
Arsenic	mg/Kg-dry	T	3.1 :	5.2 :	3.7 J	4.4 :	4.2 :	4.6 J
Barium	mg/Kg-dry	T	197. :	240. :	583. J	166. :	177. J	166. J
Beryllium	mg/Kg-dry	T	0.56 :	1.4 :	0.49 :	0.46 :	1.6 :	0.5 :
Boron	mg/Kg-dry	T	4.4 :	1.6 :	1.2 :	4.2 :	1.1 :	1.2 :
Cadmium	mg/Kg-dry	T	0.43 J	0.29 :	0.22 :	0.17 J	<0.052 :	0.24 :
Calcium	mg/Kg-dry	T	1470. :	1830. :	1240. :	1100. :	1080. J	1600. :
Chromium	mg/Kg-dry	T	10.1 :	14.7 :	9. :	7.7 :	13.4 J	8.1 :
Cobalt	mg/Kg-dry	T	5.5 :	11.4 :	4.9 :	5.6 :	7.3 :	5.1 :
Copper	mg/Kg-dry	T	30.6 :	49.4 :	29.4 :	26. :	75.8 J	28.5 :
Iron	mg/Kg-dry	T	17200. :	19100. :	15900. :	16200. :	16800. J	14100. :
Lead	mg/Kg-dry	T	30.2 :	33.4 :	25.4 :	31. :	28.9 J	25. :
Magnesium	mg/Kg-dry	T	3050. :	3490. :	2590. :	2460. :	3240. J	2640. :
Manganese	mg/Kg-dry	T	346. J	490. :	224. :	239. J	292. J	264. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-11C	RR-12	RR-12	RR-12	RR-13	RR-13
	Sample Date		9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003
	Sample ID		RR-11C-T01N-SED	RR-12-T01N-SED	RR-12-T01N-SED	RR-12-T01N-SED	RR-13-T01N-SED	RR-13-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.019	<0.021	<0.018	<0.019	<0.022	<0.019
Molybdenum	mg/Kg-dry	T	4.9	6.7	34.6	10.	5.	4.1
Nickel	mg/Kg-dry	T	24.4	43.2	19.6	18.9	33.2	21.2
Potassium	mg/Kg-dry	T	1310.	1840. J	1260. J	1180.	1580. J	1390. J
Selenium	mg/Kg-dry	T	0.45	1.2 J	<0.84 J	<0.35	<0.5 J	<0.89 J
Silver	mg/Kg-dry	T	0.21	<0.12	<0.11	<0.21	<0.1	<0.12
Sodium	mg/Kg-dry	T	132.	<42.1	43.1	167.	<36.3	67.7
Thallium	mg/Kg-dry	T	<0.13	0.11	<0.11	<0.12	<0.1	<0.11
Vanadium	mg/Kg-dry	T	9.3	15.	8.6	8.2	13.5	9.2
Zinc	mg/Kg-dry	T	163.	323. J	149. J	114.	202. J	154. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-13	RR-14	RR-14	RR-14	RR-15	RR-15
	Sample Date		9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003
	Sample ID		RR-13-T01N-SED	RR-14-T01N-SED	RR-14-T01N-SED	RR-14-T01N-SED	RR-15-T01N-SED	RR-15-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	18.1 J	34.1 J	13.1 J	13.4 J	18. J	14.1 J
Chloride	mg/kg-Dry	T	<2.7 :	4.4 :	3.9 :	<2.3 :	3.1 :	3.5 :
Fluoride	mg/Kg-dry	T	0.44 J	2.3 J	<0.28 :	0.57 J	1.6 J	0.86 :
Nitrate	mg/kg-Dry	T	<2.7 J	<2.8 J	1.3 J	<2.3 J	<2.7 J	1.4 J
Phosphorus	mg/Kg-dry	T	1140. J	1420. J	383. J	427. J	1220. J	423. J
Sulfate	mg/kg-Dry	T	62.6 :	124. :	87.3 :	21.1 :	89.6 :	52.7 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	64.9 :	180. :	58.7 J	40.4 :	99.7 :	86.2 J
Total Organic Carbon	mg/Kg-dry	T	<133. J	8570. J	738. :	<112. J	<132. J	9660. :
Laboratory Parameters								
pH	SU	T	6.9 J	6.7 J	5.4 J	7.3 J	6.5 J	7.3 J
Solids, Percent	%	T	75.4 :	72.7 :	73.5 :	89.9 :	76. :	75.7 :
Specific Conductance	umhos/cm	T	87.9 J	165. J	122. J	57.2 J	165. J	100. J
Geotechnical								
Organic Soils	%	T	1.7 J	2.5 :	1.6 J	1.7 J	2.1 :	1.8 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	6.5 :	15.2 :	6.7 :	5.2 :	9.4 :	7.1 :
Sodium Absorption Ratio	ratio	T	0.11 :	0.12 :	0.13 :	0.11 :	0.13 :	0.11 :
Metals								
Aluminum	mg/Kg-dry	T	5280. :	9900. J	5920. :	4720. :	8020. J	5660. :
Antimony	mg/Kg-dry	T	<0.63 J	<0.33 J	<0.55 J	<0.55 J	<0.34 J	<0.48 J
Arsenic	mg/Kg-dry	T	5.2 :	5. :	7. J	2.6 :	4.1 :	4.3 J
Barium	mg/Kg-dry	T	257. :	354. J	246. J	71.2 :	243. J	139. J
Beryllium	mg/Kg-dry	T	0.59 :	1.6 :	0.86 :	0.4 :	1.5 :	0.89 :
Boron	mg/Kg-dry	T	4.2 :	1.3 :	0.66 :	3.1 :	1.4 :	0.66 :
Cadmium	mg/Kg-dry	T	0.26 J	0.11 :	0.21 :	0.18 J	0.29 :	0.52 :
Calcium	mg/Kg-dry	T	1410. :	1680. J	922. :	1860. :	1380. J	1280. :
Chromium	mg/Kg-dry	T	9.6 :	12.4 J	9.9 :	8.8 :	12.8 J	8.6 :
Cobalt	mg/Kg-dry	T	5.9 :	12.4 :	5.4 :	5.2 :	13. :	6.1 :
Copper	mg/Kg-dry	T	33.6 :	75.9 J	33.8 :	22. :	71.5 J	37.5 :
Iron	mg/Kg-dry	T	16800. :	19500. J	15800. :	13800. :	17800. J	16300. :
Lead	mg/Kg-dry	T	41. :	42.5 J	36.2 :	24.1 :	36.5 J	31.3 :
Magnesium	mg/Kg-dry	T	2870. :	3150. J	2830. :	3290. :	2910. J	2580. :
Manganese	mg/Kg-dry	T	349. J	610. J	300. :	285. J	801. J	292. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-13	RR-14	RR-14	RR-14	RR-15	RR-15
	Sample Date		9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003
	Sample ID		RR-13-T01N-SED	RR-14-T01N-SED	RR-14-T01N-SED	RR-14-T01N-SED	RR-15-T01N-SED	RR-15-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.02	<0.022	<0.03	<0.016	<0.02	<0.025
Molybdenum	mg/Kg-dry	T	28.4	9.	8.2	5.1	10.4	4.4
Nickel	mg/Kg-dry	T	23.9	39.3	21.4	18.9	39.2	25.5
Potassium	mg/Kg-dry	T	1500.	1870. J	1650. J	1340.	1750. J	1440. J
Selenium	mg/Kg-dry	T	0.44	0.73 J	<0.88 J	0.37	0.58 J	<0.76 J
Silver	mg/Kg-dry	T	<0.21	<0.11	<0.27	<0.15	<0.1	<0.23
Sodium	mg/Kg-dry	T	132.	<39.4	172.	97.	<36.2	156.
Thallium	mg/Kg-dry	T	<0.13	0.11	<0.11	<0.11	0.12	<0.095
Vanadium	mg/Kg-dry	T	10.1	14.8	10.3	10.1	14.2	11.
Zinc	mg/Kg-dry	T	148.	259. J	140. J	106.	276. J	215. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemoAppendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-16	RR-16	RR-17	RR-17
	Sample Date		9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003
	Sample ID		RR-15-T01N-SED	RR-16-T01N-SED	RR-16-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-17-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<9.3	26.7	11.3	<8.2	38.8	11.4
Chloride	mg/kg-Dry	T	2.9	8.	3.3	3.1	<3.3	2.7
Fluoride	mg/Kg-dry	T	0.44	1.6	0.86	0.51	1.5	0.86
Nitrate	mg/kg-Dry	T	<2.6	<2.8	1.3	<2.5	<2.7	1.9
Phosphorus	mg/Kg-dry	T	227.	1610.	492.	347.	836.	514.
Sulfate	mg/kg-Dry	T	62.5	111.	44.7	45.3	74.8	36.6
Total Kjeldahl Nitrogen	mg/Kg-dry	T	40.9	258.	45.9	54.4	36.	67.3
Total Organic Carbon	mg/Kg-dry	T	<127.	<138.	268.	<124.	<131.	<122.
Laboratory Parameters								
pH	SU	T	7.5	6.7	7.5	7.6	6.6	7.4
Solids, Percent	%	T	79.9	72.6	74.7	81.2	76.9	82.2
Specific Conductance	umhos/cm	T	85.9	156.	104.	88.5	103.	99.6
Geotechnical								
Organic Soils	%	T	1.7	3.7	1.6	2.	1.7	1.8
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	19.3	12.4	6.4	21.6	9.6	7.
Sodium Absorption Ratio	ratio	T	0.13	0.12	0.12	0.12	0.13	0.09
Metals								
Aluminum	mg/Kg-dry	T	4300.	8450.	5200.	4820.	6570.	4890.
Antimony	mg/Kg-dry	T	<0.61	<0.32	<0.52	<0.61	<0.35	<0.45
Arsenic	mg/Kg-dry	T	2.9	4.4	4.3	3.5	2.6	3.6
Barium	mg/Kg-dry	T	87.4	442.	243.	138.	167.	134.
Beryllium	mg/Kg-dry	T	0.59	1.8	0.69	0.64	1.1	0.78
Boron	mg/Kg-dry	T	<0.76	1.4	1.4	<0.71	1.	0.49
Cadmium	mg/Kg-dry	T	<0.083	1.2	0.42	<0.078	<0.05	0.44
Calcium	mg/Kg-dry	T	1660.	1570.	1350.	1630.	1260.	1120.
Chromium	mg/Kg-dry	T	6.7	13.1	9.6	7.8	13.1	7.7
Cobalt	mg/Kg-dry	T	4.4	24.	7.9	7.2	10.7	5.2
Copper	mg/Kg-dry	T	30.2	82.5	33.9	30.8	45.6	27.5
Iron	mg/Kg-dry	T	15300.	19000.	14900.	15100.	16700.	11100.
Lead	mg/Kg-dry	T	25.6	42.3	35.4	29.9	25.5	24.4
Magnesium	mg/Kg-dry	T	2280.	2960.	2490.	2430.	3140.	2270.
Manganese	mg/Kg-dry	T	244.	1560.	330.	367.	736.	273.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-15	RR-16	RR-16	RR-16	RR-17	RR-17
	Sample Date		9/21/2003	3/18/2003	7/13/2003	9/21/2003	3/18/2003	7/13/2003
	Sample ID		RR-15-T01N-SED	RR-16-T01N-SED	RR-16-T01N-SED	RR-16-T01N-SED	RR-17-T01N-SED	RR-17-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.01 :	<0.023 :	<0.021 :	<0.0092 :	<0.022 J	<0.04 :
Molybdenum	mg/Kg-dry	T	4.3 :	12.3 :	5.3 :	4.2 :	26.7 :	3.3 :
Nickel	mg/Kg-dry	T	17.8 :	63.5 J	28. :	26.3 :	36.4 J	25.4 :
Potassium	mg/Kg-dry	T	1140. :	1850. J	1640. J	1180. :	1420. J	1360. J
Selenium	mg/Kg-dry	T	0.62 :	0.87 J	<0.83 J	0.48 :	<0.58 J	<0.73 J
Silver	mg/Kg-dry	T	0.21 :	<0.13 :	0.14 :	<0.17 :	0.11 :	<0.21 :
Sodium	mg/Kg-dry	T	<59.3 :	<44.5 :	63.3 :	<55.7 :	56.9 :	118. :
Thallium	mg/Kg-dry	T	<0.12 :	0.12 :	<0.1 :	<0.12 :	0.13 :	<0.091 :
Vanadium	mg/Kg-dry	T	8.4 :	14. :	10. :	8.2 :	13.9 :	8.6 :
Zinc	mg/Kg-dry	T	134. :	462. J	207. J	186. :	222. J	199. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-17	RR-18A	RR-18A	RR-18A	RR-18B	RR-18B
	Sample Date		9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/18/2003	7/13/2003
	Sample ID		RR-17-T01N-SED	RR-18A-T01N-SED	RR-18A-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-18B-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	8.9 J	10.2 J	13.2 J	11.8 J	14.5 J	22. J
Chloride	mg/kg-Dry	T	<2.8 :	<2.6 :	3.1 :	2.9 :	<3. :	3.1 :
Fluoride	mg/Kg-dry	T	0.69 J	1.1 J	0.8 :	0.7 J	1.1 J	0.8 :
Nitrate	mg/kg-Dry	T	<2.8 J	<2.6 J	1.8 J	<2.8 J	3.5 J	1. J
Phosphorus	mg/Kg-dry	T	1120. J	909. J	335. J	527. J	544. J	462. J
Sulfate	mg/kg-Dry	T	55.9 :	63.5 :	41.8 :	21.5 :	58.7 :	37.4 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	75.2 :	44.4 :	54.8 J	44.4 :	48.2 :	54.4 J
Total Organic Carbon	mg/Kg-dry	T	<137. J	637. J	263. :	398. J	<133. J	<128. :
Laboratory Parameters								
pH	SU	T	7.5 J	6.6 :	7.5 J	7.6 J	6.5 :	7.6 J
Solids, Percent	%	T	73.5 :	79.9 :	78.6 :	72.6 :	75.4 :	78.2 :
Specific Conductance	umhos/cm	T	108. J	104. J	95.6 J	102. J	97.6 J	111. J
Geotechnical								
Organic Soils	%	T	2.1 J	1.4 :	1.6 J	2.1 J	1.6 :	1.5 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	6.6 :	7.5 :	4.6 :	5.9 :	5.7 :	5.6 :
Sodium Absorption Ratio	ratio	T	0.1 :	0.13 :	0.1 :	0.12 :	0.14 :	0.13 :
Metals								
Aluminum	mg/Kg-dry	T	5000. :	6990. J	5000. :	5350. :	6100. J	5270. :
Antimony	mg/Kg-dry	T	<0.66 J	<0.3 J	<0.53 J	<0.66 J	<0.31 J	<0.46 J
Arsenic	mg/Kg-dry	T	3.4 :	2.8 :	3.6 J	5.7 :	2.4 :	4.1 J
Barium	mg/Kg-dry	T	110. :	109. J	127. J	94.1 :	143. J	429. J
Beryllium	mg/Kg-dry	T	0.66 :	1.2 :	0.62 :	0.63 :	1. :	0.74 :
Boron	mg/Kg-dry	T	<0.77 :	1. :	<0.52 :	<0.76 :	1.2 :	1.6 :
Cadmium	mg/Kg-dry	T	0.46 J	0.55 :	0.41 :	0.49 J	<0.056 :	0.53 :
Calcium	mg/Kg-dry	T	1390. :	1270. J	1210. :	1700. :	1220. J	1270. :
Chromium	mg/Kg-dry	T	8.4 :	12.3 J	10.6 :	12.4 :	12.4 J	12.4 :
Cobalt	mg/Kg-dry	T	6.1 :	15.3 :	6. :	8.3 :	12.3 :	7.7 :
Copper	mg/Kg-dry	T	29. :	124. J	29.6 :	46.1 :	45.7 J	36.5 :
Iron	mg/Kg-dry	T	13700. :	13300. J	14200. :	20100. :	17500. J	13700. :
Lead	mg/Kg-dry	T	36.2 :	23.9 J	83. :	59.7 :	20.3 J	50.6 :
Magnesium	mg/Kg-dry	T	2890. :	3460. J	2990. :	3280. :	2970. J	2970. :
Manganese	mg/Kg-dry	T	302. J	1130. J	327. :	447. J	747. J	397. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-17	RR-18A	RR-18A	RR-18A	RR-18B	RR-18B
	Sample Date		9/22/2003	3/18/2003	7/13/2003	9/22/2003	3/18/2003	7/13/2003
	Sample ID		RR-17-T01N-SED	RR-18A-T01N-SED	RR-18A-T01N-SED	RR-18A-T01N-SED	RR-18B-T01N-SED	RR-18B-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.023	<0.02	<0.024	<0.021	<0.02	<0.019
Molybdenum	mg/Kg-dry	T	3.4	7.2	8.1	5.2	7.7	4.9
Nickel	mg/Kg-dry	T	24.3	48.3	26.5	31.2	36.6	135.
Potassium	mg/Kg-dry	T	1140.	1230. J	1660. J	1130.	1330. J	1520. J
Selenium	mg/Kg-dry	T	0.49	<0.5 J	<0.84 J	0.71	<0.51 J	<0.74 J
Silver	mg/Kg-dry	T	<0.19	<0.1	<0.24	<0.19	<0.11	<0.11
Sodium	mg/Kg-dry	T	208.	<35.2	202.	191.	<39.2	53.9
Thallium	mg/Kg-dry	T	<0.13	0.1	<0.11	<0.13	<0.1	<0.092
Vanadium	mg/Kg-dry	T	8.5	14.7	10.7	11.4	11.8	10.
Zinc	mg/Kg-dry	T	172.	284. J	185. J	202.	221. J	222. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-18B	RR-20	RR-20	RR-20	RR-3	RR-3
	Sample Date	Sample ID	9/22/2003	3/18/2003	7/14/2003	9/21/2003	3/19/2003	7/14/2003
	Exposure Area		RR-18B-T01N-SED	RR-20-T01N-SED	RR-20-T01N-SED	RR-20-T01N-SED	RR-3-T01N-SED	RR-3-T01N-SED
Units	Fraction	SWR	SWR	SWR	SWR	RURR	RURR	
General Chemistry								
Ammonia	mg/Kg-dry	T	12.2 J	11.3 J	102. J	36.8 J	23. J	26.4 J
Chloride	mg/kg-Dry	T	<2.7 :	<4.9 :	3.7 :	3.5 :	<3.1 J	<344. :
Fluoride	mg/Kg-dry	T	0.65 J	0.98 J	1.1 :	0.88 J	0.38 J	0.37 :
Nitrate	mg/kg-Dry	T	<2.7 J	<2.4 J	0.98 J	<2.6 J	<3.1 J	<27.5 J
Phosphorus	mg/Kg-dry	T	640. J	753. J	648. J	901. J	891. J	680. J
Sulfate	mg/kg-Dry	T	53. :	64.2 :	144. :	42.1 :	25.3 J	22.4 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	73.4 :	65.4 :	71.1 J	32.3 :	186. J	199. J
Total Organic Carbon	mg/Kg-dry	T	<133. J	1720. J	<128. :	<130. J	1230. J	1550. J
Laboratory Parameters								
pH	SU	T	7.5 J	6.9 :	6.9 J	7.2 J	7.3 J	7.2 J
Solids, Percent	%	T	75.7 :	84.6 :	78.4 :	77.1 :	66.6 :	72.7 :
Specific Conductance	umhos/cm	T	111. J	93.3 J	135. J	82.4 J	85.3 J	126. J
Geotechnical								
Organic Soils	%	T	1.8 J	1.8 :	2.5 J	1.8 J	1.6 :	1.7 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	7. :	7.3 :	9. :	4.4 :	11.5 :	6.8 :
Sodium Absorption Ratio	ratio	T	0.1 :	0.11 :	0.17 :	0.13 :	0.13 :	0.08 :
Metals								
Aluminum	mg/Kg-dry	T	4840. :	6350. :	6570. :	4800. :	10500. J	8140. :
Antimony	mg/Kg-dry	T	<0.52 J	<0.28 J	<0.64 J	<0.55 J	<0.34 J	<0.58 J
Arsenic	mg/Kg-dry	T	3.7 :	2.3 :	4.8 J	4.2 :	2.8 :	2.4 J
Barium	mg/Kg-dry	T	116. :	115. :	292. J	152. :	144. J	211. J
Beryllium	mg/Kg-dry	T	0.62 :	1. :	0.74 :	0.56 :	1.1 :	0.63 :
Boron	mg/Kg-dry	T	<0.8 :	1. :	2.5 :	3.6 :	2.3 J	2.4 :
Cadmium	mg/Kg-dry	T	0.54 J	0.072 :	0.16 :	0.32 J	1.5 J	0.48 :
Calcium	mg/Kg-dry	T	1340. :	1460. :	1520. :	1410. :	2570. J	2290. :
Chromium	mg/Kg-dry	T	10.4 :	10.8 :	12.2 :	11.1 :	20.9 J	17.9 :
Cobalt	mg/Kg-dry	T	7.3 :	11.5 :	7.3 :	7.1 :	16.2 :	10.1 :
Copper	mg/Kg-dry	T	28.9 :	37.3 :	48.2 :	31.4 :	133. J	97.5 J
Iron	mg/Kg-dry	T	13000. :	12200. :	25100. :	14800. :	26400. J	19100. :
Lead	mg/Kg-dry	T	40.3 :	40.6 J	50.7 :	24.9 :	42.2 J	42.7 :
Magnesium	mg/Kg-dry	T	2830. :	2710. :	3370. :	2810. :	5440. J	4480. :
Manganese	mg/Kg-dry	T	409. J	792. :	357. :	405. J	781. J	557. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-18B	RR-20	RR-20	RR-20	RR-3	RR-3
	Sample Date		9/22/2003	3/18/2003	7/14/2003	9/21/2003	3/19/2003	7/14/2003
	Sample ID		RR-18B-T01N-SED	RR-20-T01N-SED	RR-20-T01N-SED	RR-20-T01N-SED	RR-3-T01N-SED	RR-3-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	RURR	RURR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.022	<0.019	<0.021	<0.022	<0.024	<0.021
Molybdenum	mg/Kg-dry	T	4.5	8.3	7.6	13.5	7.4	7.3
Nickel	mg/Kg-dry	T	30.2	33.6	24.2	24.3	30.1	20.1
Potassium	mg/Kg-dry	T	1100.	1240.	1540.	1400.	1710.	1410.
Selenium	mg/Kg-dry	T	0.65	<0.46	<1.	0.37	0.66	0.49
Silver	mg/Kg-dry	T	<0.2	<0.09	<0.28	<0.19	0.53	<0.27
Sodium	mg/Kg-dry	T	241.	43.9	<59.1	110.	221.	<117.
Thallium	mg/Kg-dry	T	<0.1	0.13	<0.13	<0.11	0.13	<0.12
Vanadium	mg/Kg-dry	T	8.4	13.4	17.1	9.2	32.5	25.7
Zinc	mg/Kg-dry	T	201.	212.	165.	152.	233.	189.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	RR-3	RR-4	RR-4	RR-4	RR-5	RR-5
			9/22/2003 RR-3-T01N-SED RURR	3/18/2003 RR-4-T01N-SED RURR	7/14/2003 RR-4-T01N-SED RURR	9/22/2003 RR-4-T01N-SED RURR	3/18/2003 RR-5-T01N-SED RURR	7/16/2003 RR-5-T01N-SED RURR
General Chemistry								
Ammonia	mg/Kg-dry	T	12.5 J	54.9 J	11.3 J	12.8 J	39.7 J	<10.5 J
Chloride	mg/kg-Dry	T	<2.5 :	<4.9 :	3. :	<2.9 :	<5.2 :	2.5 :
Fluoride	mg/Kg-dry	T	0.16 J	0.27 J	<0.27 :	0.14 J	0.19 J	0.36 :
Nitrate	mg/kg-Dry	T	<2.5 J	3.2 J	<2.7 J	<2.9 J	2.9 J	1.6 J
Phosphorus	mg/Kg-dry	T	1170. J	865. J	624. J	854. J	1090. J	408. J
Sulfate	mg/kg-Dry	T	27.6 :	31.4 :	<133. :	31.6 :	40.8 :	25.8 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	99.5 J	120. :	70.1 J	141. :	34.8 :	50.4 J
Total Organic Carbon	mg/Kg-dry	T	772. J	<129. J	201. :	<142. J	<136. J	<136. :
Laboratory Parameters								
pH	SU	T	7.5 J	7. :	7.5 J	7.4 J	6.4 :	7.1 J
Solids, Percent	%	T	81. :	77.8 :	75.3 :	70.5 :	74. :	73.6 :
Specific Conductance	umhos/cm	T	88.1 J	89.3 J	85.6 J	88.1 J	93.1 J	127. J
Geotechnical								
Organic Soils	%	T	2.5 J	2. :	1.8 J	2.1 J	1.9 :	1.7 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	7.9 :	8.1 :	5.7 :	6.2 :	9.9 :	5. :
Sodium Absorption Ratio	ratio	T	0.1 :	0.16 :	0.1 :	0.1 :	0.17 :	0.12 :
Metals								
Aluminum	mg/Kg-dry	T	6620. :	4620. J	4820. :	3730. :	4330. J	5330. :
Antimony	mg/Kg-dry	T	<0.56 J	<0.33 J	<1.5 J	<0.69 J	<0.35 J	<1.7 J
Arsenic	mg/Kg-dry	T	2.2 :	2.9 :	4.9 J	3.5 :	3.3 :	3.8 J
Barium	mg/Kg-dry	T	81.3 :	301. J	298. J	206. :	164. J	482. J
Beryllium	mg/Kg-dry	T	0.58 :	0.86 :	0.44 :	0.37 :	0.52 :	0.48 :
Boron	mg/Kg-dry	T	<0.69 :	1.1 :	1.7 :	<0.87 :	1.2 :	1.5 :
Cadmium	mg/Kg-dry	T	0.45 J	<0.15 :	<0.04 :	0.18 J	<0.053 :	<0.041 :
Calcium	mg/Kg-dry	T	1840. :	967. J	1370. :	1980. :	991. J	1640. :
Chromium	mg/Kg-dry	T	19.7 :	5.1 J	8.8 :	5.3 :	8.2 J	10.4 :
Cobalt	mg/Kg-dry	T	9.7 :	6.8 :	5.2 :	4. :	5.1 :	5.1 :
Copper	mg/Kg-dry	T	86.7 :	64.6 J	48.5 :	19.7 :	24.9 J	38.4 :
Iron	mg/Kg-dry	T	17300. :	9660. J	19000. :	13000. :	11700. J	16800. :
Lead	mg/Kg-dry	T	29.2 :	31.8 J	38.2 :	23.1 :	44.2 J	215. :
Magnesium	mg/Kg-dry	T	3980. :	1330. J	2730. :	2000. :	2250. J	3140. :
Manganese	mg/Kg-dry	T	534. J	376. J	252. :	174. J	256. J	300. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	RR-3	RR-4	RR-4	RR-4	RR-5	RR-5
			9/22/2003 RR-3-T01N-SED RURR	3/18/2003 RR-4-T01N-SED RURR	7/14/2003 RR-4-T01N-SED RURR	9/22/2003 RR-4-T01N-SED RURR	3/18/2003 RR-5-T01N-SED RURR	7/16/2003 RR-5-T01N-SED RURR
Mercury	mg/Kg-dry	T	<0.021	<0.021	0.033	<0.024	<0.022	0.026
Molybdenum	mg/Kg-dry	T	3.5	5.3	8.2	2.	6.2	9.9
Nickel	mg/Kg-dry	T	20.3	14.9	12.	11.9	14.2	13.1
Potassium	mg/Kg-dry	T	878.	1520.	1660.	1440.	1330.	1830.
Selenium	mg/Kg-dry	T	0.67	<0.54	<0.99	0.63	<0.58	<1.
Silver	mg/Kg-dry	T	<0.18	<0.11	<0.12	<0.22	0.21	0.32
Sodium	mg/Kg-dry	T	166.	<37.7	<116.	218.	<37.2	<98.
Thallium	mg/Kg-dry	T	<0.11	0.13	<0.12	<0.14	<0.12	<0.13
Vanadium	mg/Kg-dry	T	19.9	6.5	11.4	7.1	8.2	13.1
Zinc	mg/Kg-dry	T	160.	152.	99.	68.4	119.	95.4

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-5	RR-6	RR-6	RR-6	RR-6A	RR-6A
	Sample Date		9/22/2003	3/19/2003	7/14/2003	9/22/2003	3/18/2003	7/13/2003
	Sample ID		RR-5-T01N-SED	RR-6-T01N-SED	RR-6-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-6A-T01N-SED
	Exposure Area		RURR	RURR	RURR	RURR	RURR	RURR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<9. :	9.1 J	67.1 J	17.9 J	39.5 J	20. J
Chloride	mg/kg-Dry	T	<2.7 :	3.3 :	4.2 :	<2.8 :	<4.1 :	2.7 :
Fluoride	mg/Kg-dry	T	0.19 J	0.56 J	<0.28 :	<0.14 :	0.45 J	<0.27 :
Nitrate	mg/kg-Dry	T	<2.7 J	<2.9 J	1.4 J	<2.8 J	<2.7 J	1.1 J
Phosphorus	mg/Kg-dry	T	868. J	1210. J	691. J	270. J	705. J	959. J
Sulfate	mg/kg-Dry	T	41.6 J	55.5 :	42.4 :	58.7 :	46.1 :	34. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	35.9 :	54.6 J	76.4 J	<25.9 :	33.9 :	50.7 J
Total Organic Carbon	mg/Kg-dry	T	710. J	<143. J	2880. :	<136. J	<134. J	<134. :
Laboratory Parameters								
pH	SU	T	7.4 J	6.9 J	7.3 J	7.5 J	7. :	7.4 J
Solids, Percent	%	T	74.5 :	70. :	71.5 :	73.6 :	74.9 :	74.9 :
Specific Conductance	umhos/cm	T	134. J	102. J	93.7 J	67.6 J	90.1 J	80.1 J
Geotechnical								
Organic Soils	%	T	1.9 J	1.9 :	9. J	1.8 J	2. :	1.7 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	17.1 :	14. :	8.7 :	27.9 :	7.2 :	5.7 :
Sodium Absorption Ratio	ratio	T	0.09 :	0.16 :	0.14 :	0.09 :	0.16 :	0.11 :
Metals								
Aluminum	mg/Kg-dry	T	4250. :	4650. J	4950. :	4080. :	6630. J	3730. :
Antimony	mg/Kg-dry	T	<0.66 J	<0.36 J	<0.62 J	<0.63 J	<0.33 J	<0.55 J
Arsenic	mg/Kg-dry	T	4.1 :	3.9 :	4.2 J	5.6 :	4.3 :	8.2 J
Barium	mg/Kg-dry	T	250. :	163. J	286. J	148. :	325. J	1200. J
Beryllium	mg/Kg-dry	T	0.34 :	0.51 :	0.42 :	0.42 :	0.62 :	0.36 :
Boron	mg/Kg-dry	T	<0.72 :	1.5 :	1.8 J	<0.76 :	1.4 :	2. :
Cadmium	mg/Kg-dry	T	0.13 J	0.31 :	0.11 J	<0.06 J	<0.057 :	<0.04 :
Calcium	mg/Kg-dry	T	1380. :	1180. J	1500. :	1280. :	1720. J	1310. :
Chromium	mg/Kg-dry	T	8.7 :	8.4 J	9.4 :	7.6 :	12.6 J	8.5 :
Cobalt	mg/Kg-dry	T	3.7 :	6. :	4.8 :	4.1 :	4.9 :	8.7 :
Copper	mg/Kg-dry	T	49.2 :	21.2 J	31.7 :	21. :	18.4 J	27.2 :
Iron	mg/Kg-dry	T	15400. :	12700. J	16200. :	17000. :	17700. J	22800. :
Lead	mg/Kg-dry	T	53.1 :	28.3 J	53.5 :	30.9 :	31.9 J	36.5 :
Magnesium	mg/Kg-dry	T	2920. :	2710. J	3230. :	2140. :	2940. J	2200. :
Manganese	mg/Kg-dry	T	212. J	243. J	249. :	151. J	166. J	248. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-5	RR-6	RR-6	RR-6	RR-6A	RR-6A
	Sample Date		9/22/2003	3/19/2003	7/14/2003	9/22/2003	3/18/2003	7/13/2003
	Sample ID		RR-5-T01N-SED	RR-6-T01N-SED	RR-6-T01N-SED	RR-6-T01N-SED	RR-6A-T01N-SED	RR-6A-T01N-SED
	Exposure Area		RURR	RURR	RURR	RURR	RURR	RURR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.02	<0.021	<0.022	<0.02	<0.021	<0.02
Molybdenum	mg/Kg-dry	T	7.2	2.6	3.6	2.6	1.9	3.6
Nickel	mg/Kg-dry	T	11.2	16.6	14.1	12.6	14.7	20.1
Potassium	mg/Kg-dry	T	1380.	1210.	1600.	1550.	2030.	1590.
Selenium	mg/Kg-dry	T	1.1	0.81	<0.99	<0.38	0.75	<0.88
Silver	mg/Kg-dry	T	0.26	<0.2	0.37	<0.19	<0.11	0.17
Sodium	mg/Kg-dry	T	145.	<106.	<64.2	120.	127.	98.2
Thallium	mg/Kg-dry	T	0.14	<0.12	<0.12	<0.13	<0.11	<0.11
Vanadium	mg/Kg-dry	T	8.6	7.7	9.9	8.7	11.7	8.6
Zinc	mg/Kg-dry	T	77.3	105.	82.5	62.7	57.5	100.

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-6A	RR-6V	RR-6V	RR-7	RR-7	RR-7
	Sample Date		9/22/2003	7/14/2003	9/22/2003	3/18/2003	7/13/2003	9/22/2003
	Sample ID		RR-6A-T01N-SED	RR-6V-T01N-SED	RR-6V-T01N-SED	RR-7-T01N-SED	RR-7-T01N-SED	RR-7-T01N-SED
	Exposure Area		RURR	RURR	RURR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<10.9 J	11.3 J	11.7 J	55.8 J	15.5 J	9.8 J
Chloride	mg/kg-Dry	T	<2.8 :	3.1 :	<2.5 :	<3.7 :	2.7 :	<2.6 :
Fluoride	mg/Kg-dry	T	0.19 J	<0.27 :	0.14 J	0.49 J	<0.26 :	0.17 J
Nitrate	mg/kg-Dry	T	<2.8 J	<2.7 J	<2.5 J	<2.8 J	1.3 J	<2.6 J
Phosphorus	mg/Kg-dry	T	611. J	483. J	1240. J	674. J	369. J	731. J
Sulfate	mg/kg-Dry	T	93.9 :	30.6 :	36.7 :	49. :	23.8 :	81.4 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	30.9 :	35.5 J	32.2 :	26.3 :	33.2 J	45.7 :
Total Organic Carbon	mg/Kg-dry	T	<137. J	<134. :	<125. J	189. J	<129. :	<129. J
Laboratory Parameters								
pH	SU	T	7.3 J	6.9 J	7.4 J	6.9 :	7.4 J	7.5 J
Solids, Percent	%	T	73.3 :	74.7 :	80.6 :	73.7 :	78. :	77.8 :
Specific Conductance	umhos/cm	T	114. J	70.4 J	90.7 J	90.1 J	71.7 J	96.6 J
Geotechnical								
Organic Soils	%	T	1.8 J	1.6 J	1.2 J	1.9 :	1.7 J	1.8 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	6. :	4.7 :	5.5 :	12. :	3.4 :	7.3 :
Sodium Absorption Ratio	ratio	T	0.1 :	0.09 :	0.1 :	0.15 :	0.1 :	0.1 :
Metals								
Aluminum	mg/Kg-dry	T	3890. :	3880. :	4170. :	5830. J	3910. :	4130. :
Antimony	mg/Kg-dry	T	<0.61 J	<1.6 J	<0.58 J	<0.33 J	<0.52 J	<0.61 J
Arsenic	mg/Kg-dry	T	5.9 :	4.8 J	5.1 :	6.1 :	4.2 J	4.1 :
Barium	mg/Kg-dry	T	62.9 :	369. J	147. :	295. J	140. J	143. :
Beryllium	mg/Kg-dry	T	0.39 :	0.36 :	0.39 :	0.67 :	0.38 :	0.37 :
Boron	mg/Kg-dry	T	<0.7 :	1.8 :	<0.59 J	1.3 :	0.88 :	1.1 :
Cadmium	mg/Kg-dry	T	0.13 J	<0.04 :	0.23 J	<0.057 :	0.13 :	0.11 J
Calcium	mg/Kg-dry	T	1650. :	1480. :	1500. :	1290. J	1240. :	3790. :
Chromium	mg/Kg-dry	T	7.7 :	9.2 :	8.5 :	9.4 J	9.8 :	8.1 :
Cobalt	mg/Kg-dry	T	3.2 :	4.5 :	4.3 :	6.5 :	5.2 :	3.5 :
Copper	mg/Kg-dry	T	21.6 :	38.7 :	40.6 :	23.6 J	31.3 :	17.4 :
Iron	mg/Kg-dry	T	17500. :	20700. :	18800. :	16700. J	17400. :	15600. :
Lead	mg/Kg-dry	T	16.7 :	43.9 :	50.5 :	25.9 J	25.6 :	29. :
Magnesium	mg/Kg-dry	T	2530. :	2270. :	2940. :	2630. J	2620. :	2260. :
Manganese	mg/Kg-dry	T	128. J	197. :	246. J	214. J	211. :	155. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-6A	RR-6V	RR-6V	RR-7	RR-7	RR-7
	Units	Fraction	9/22/2003 RR-6A-T01N-SED RURR	7/14/2003 RR-6V-T01N-SED RURR	9/22/2003 RR-6V-T01N-SED RURR	3/18/2003 RR-7-T01N-SED SWR	7/13/2003 RR-7-T01N-SED SWR	9/22/2003 RR-7-T01N-SED SWR
Mercury	mg/Kg-dry	T	<0.022	0.14	<0.02	<0.022	<0.14	<0.02
Molybdenum	mg/Kg-dry	T	6.4	5.4	5.3	2.3	5.6	2.5
Nickel	mg/Kg-dry	T	11.6	11.5	12.9	18.1	13.7	11.3
Potassium	mg/Kg-dry	T	1000.	1660.	1210.	1770.	1360.	1290.
Selenium	mg/Kg-dry	T	0.49	<0.97	1.3	0.92	<0.83	<0.36
Silver	mg/Kg-dry	T	<0.18	0.2	0.18	<0.11	<0.24	<0.21
Sodium	mg/Kg-dry	T	187.	<120.	163.	<39.8	167.	199.
Thallium	mg/Kg-dry	T	<0.12	<0.12	<0.12	<0.11	<0.1	<0.12
Vanadium	mg/Kg-dry	T	11.7	8.5	9.4	10.4	7.9	7.6
Zinc	mg/Kg-dry	T	60.6	63.4	77.	106.	77.	55.2

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R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8	RR-8	RR-8A	RR-8A	RR-8A
	Sample Date		3/19/2003	7/13/2003	9/22/2003	3/18/2003	7/13/2003	9/22/2003
	Sample ID		RR-8-T01N-SED	RR-8-T01N-SED	RR-8-T01N-SED	RR-8A-T01N-SED	RR-8A-T01N-SED	RR-8A-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	<12. J	8.6 J	<12.3 J	62. J	16.9 J	12.5 J
Chloride	mg/kg-Dry	T	3.1 :	2.8 :	3.4 :	<3.6 :	<346. :	<2.6 :
Fluoride	mg/Kg-dry	T	0.45 J	<0.25 :	0.24 J	0.39 J	<0.28 :	0.24 J
Nitrate	mg/kg-Dry	T	<2.9 J	1.9 J	<2.7 J	<2.6 J	<27.7 J	<2.6 J
Phosphorus	mg/Kg-dry	T	883. J	381. J	371. J	845. J	566. J	439. J
Sulfate	mg/kg-Dry	T	48.9 :	30.1 :	57.6 :	46. :	36.1 :	40.7 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	40.6 J	37.5 J	<31.4 :	<30.4 :	39.4 J	<23.5 :
Total Organic Carbon	mg/Kg-dry	T	546. J	<124. :	<135. J	<127. J	<139. :	<127. J
Laboratory Parameters								
pH	SU	T	7.1 J	7.5 J	7.8 J	6.8 :	7.8 J	7.7 J
Solids, Percent	%	T	69.6 :	81. :	74.2 :	78.9 :	72.3 :	79.3 :
Specific Conductance	umhos/cm	T	96.4 J	80.6 J	121. J	88. J	133. J	108. J
Geotechnical								
Organic Soils	%	T	1.8 :	1.7 J	1.7 J	1.9 :	1.5 J	1.7 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	<13. :	6.3 :	27. :	9.9 :	2.9 :	27.3 :
Sodium Absorption Ratio	ratio	T	0.13 :	0.13 :	0.07 :	0.16 :	0.09 :	0.06 :
Metals								
Aluminum	mg/Kg-dry	T	4940. J	3750. :	4050. :	5240. J	4710. :	3850. :
Antimony	mg/Kg-dry	T	<0.33 J	<0.5 J	<0.64 J	<0.31 J	<0.47 J	<0.56 J
Arsenic	mg/Kg-dry	T	4.8 :	4.2 J	5.1 :	3.8 :	5.1 J	2.9 :
Barium	mg/Kg-dry	T	179. J	305. J	115. :	200. J	332. J	103. :
Beryllium	mg/Kg-dry	T	0.5 :	0.36 :	0.33 :	0.56 :	0.38 :	0.3 :
Boron	mg/Kg-dry	T	1.8 :	0.63 :	<0.83 :	1.3 :	2.7 :	<0.76 :
Cadmium	mg/Kg-dry	T	0.48 :	0.28 :	<0.066 J	<0.048 :	0.18 J	0.065 J
Calcium	mg/Kg-dry	T	1260. J	1150. :	1630. :	1210. J	1830. :	2050. :
Chromium	mg/Kg-dry	T	8.4 J	7.8 :	8.3 :	9.1 J	8.9 :	7.7 :
Cobalt	mg/Kg-dry	T	7.9 :	26.9 :	4. :	6.7 :	4.4 :	3.5 :
Copper	mg/Kg-dry	T	23.5 J	44.3 :	22.6 :	19.6 J	29.2 :	19.7 :
Iron	mg/Kg-dry	T	15500. J	14600. :	15200. :	13400. J	19300. :	13600. :
Lead	mg/Kg-dry	T	28.1 J	48.9 :	42.3 :	26.6 J	46.7 :	24.7 :
Magnesium	mg/Kg-dry	T	2800. J	2270. :	2350. :	2410. J	2770. :	2320. :
Manganese	mg/Kg-dry	T	307. J	1240. :	156. J	226. J	237. :	197. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RR-8	RR-8	RR-8	RR-8A	RR-8A	RR-8A
	Sample Date		3/19/2003	7/13/2003	9/22/2003	3/18/2003	7/13/2003	9/22/2003
	Sample ID		RR-8-T01N-SED	RR-8-T01N-SED	RR-8-T01N-SED	RR-8A-T01N-SED	RR-8A-T01N-SED	RR-8A-T01N-SED
	Exposure Area		SWR	SWR	SWR	SWR	SWR	SWR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.023 J	<0.027 :	<0.021 :	<0.019 J	<0.028 :	<0.021 :
Molybdenum	mg/Kg-dry	T	2.4 :	6.5 :	2.7 :	3. :	5.2 :	3.5 :
Nickel	mg/Kg-dry	T	23.7 J	20.1 :	12.4 :	19.3 J	14.7 :	11.9 :
Potassium	mg/Kg-dry	T	1600. J	1550. J	1290. :	1570. J	1710. J	1220. :
Selenium	mg/Kg-dry	T	<0.55 J	<0.8 J	<0.75 :	<0.51 J	0.74 J	<0.56 :
Silver	mg/Kg-dry	T	<0.21 :	<0.21 :	<0.21 :	<0.097 :	<0.22 :	<0.19 :
Sodium	mg/Kg-dry	T	<128. :	121. :	146. :	92.9 :	<125. :	148. :
Thallium	mg/Kg-dry	T	<0.11 :	<0.1 :	<0.13 :	<0.1 :	<0.12 :	<0.11 :
Vanadium	mg/Kg-dry	T	9.5 :	8.3 :	7.2 :	8.9 :	10.2 :	6.9 :
Zinc	mg/Kg-dry	T	139. J	76.7 J	64.1 :	97.7 J	87.9 J	64.7 :

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T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-12	RRS-12	RRS-12	RRS-13	RRS-13	RRS-13
	Sample Date		3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003	9/23/2003
	Sample ID		RRS-12-T01N-SED	RRS-12-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-13-T01N-SED	RRS-13-T01N-SED
	Exposure Area		RUCCR	RUCCR	RUCCR	RUCCR	RUCCR	RUCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	7.8 J	18.9 J	11.4 J	13.6 J	40.4 J	17. J
Chloride	mg/kg-Dry	T	<2.7 :	2.7 :	<2.5 :	<2.7 :	2.7 :	3.7 :
Fluoride	mg/Kg-dry	T	0.36 J	0.3 :	0.33 J	0.2 J	<0.25 :	0.17 J
Nitrate	mg/kg-Dry	T	<2.7 J	1.1 J	<2.5 J	<2.7 J	1.4 J	<2.5 J
Phosphorus	mg/Kg-dry	T	876. J	332. J	588. J	863. J	438. J	742. J
Sulfate	mg/kg-Dry	T	30.9 :	31.2 :	16.4 :	16. :	10.1 :	23.7 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	85.3 :	138. J	121. :	75.1 :	102. J	129. :
Total Organic Carbon	mg/Kg-dry	T	<133. J	2200. :	1290. J	<133. J	1920. :	846. J
Laboratory Parameters								
pH	SU	T	6.8 J	7.2 J	7.4 J	6.7 J	7.2 J	7.3 J
Solids, Percent	%	T	75.2 :	81.4 :	80.3 :	75.6 :	83. :	81. :
Specific Conductance	umhos/cm	T	53. J	83.9 J	68.3 J	42.1 J	78.8 J	69.2 J
Geotechnical								
Organic Soils	%	T	1.3 :	1.6 J	1.4 J	1.1 :	1.3 J	1.3 J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	<13. :	8.9 :	15.5 :	<13. :	7.7 :	16.2 :
Sodium Absorption Ratio	ratio	T	0.13 :	0.18 :	0.14 :	0.1 :	0.15 :	0.12 :
Metals								
Aluminum	mg/Kg-dry	T	5060. J	6180. :	4980. :	4850. J	6220. :	4990. :
Antimony	mg/Kg-dry	T	<0.33 J	<0.61 J	<0.59 J	<0.31 J	<0.59 J	<0.62 J
Arsenic	mg/Kg-dry	T	1.7 :	2.1 J	2.1 :	1.2 :	2.2 J	2.3 J
Barium	mg/Kg-dry	T	35. J	50.3 J	31.9 :	22.1 J	44.2 J	26.7 :
Beryllium	mg/Kg-dry	T	0.91 :	1.1 :	0.82 :	0.56 :	0.93 :	0.67 :
Boron	mg/Kg-dry	T	1.6 :	2.1 :	<0.75 :	1.3 :	1.8 :	1.1 :
Cadmium	mg/Kg-dry	T	0.36 :	0.22 :	0.3 J	0.25 :	0.14 :	0.18 J
Calcium	mg/Kg-dry	T	1560. J	1660. :	1520. :	1880. J	2180. :	1800. :
Chromium	mg/Kg-dry	T	9.2 J	11.2 :	9.3 :	17.2 J	14.1 :	13. :
Cobalt	mg/Kg-dry	T	4.9 :	5.9 :	4.9 :	4.8 :	5.3 :	4.9 :
Copper	mg/Kg-dry	T	7.9 J	8.7 :	9.4 :	8.1 J	8.7 :	12.9 :
Iron	mg/Kg-dry	T	11200. J	13200. :	11900. :	9650. J	14400. :	11300. :
Lead	mg/Kg-dry	T	15.5 J	16.3 :	14.7 :	12.7 J	16.4 :	23.1 :
Magnesium	mg/Kg-dry	T	2590. J	3120. :	2730. :	3560. J	3720. :	3270. :
Manganese	mg/Kg-dry	T	313. J	326. :	366. J	273. J	335. :	253. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-12	RRS-12	RRS-12	RRS-13	RRS-13	RRS-13
	Sample Date		3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003	9/23/2003
	Sample ID		RRS-12-T01N-SED	RRS-12-T01N-SED	RRS-12-T01N-SED	RRS-13-T01N-SED	RRS-13-T01N-SED	RRS-13-T01N-SED
	Exposure Area		RUCCR	RUCCR	RUCCR	RUCCR	RUCCR	RUCCR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.022 J	<0.021 :	<0.019 :	<0.021 J	<0.018 :	<0.018 J
Molybdenum	mg/Kg-dry	T	0.74 :	1.2 :	0.77 :	0.24 :	1.1 :	0.95 :
Nickel	mg/Kg-dry	T	13.5 J	15.1 :	13.7 :	14.4 J	15.2 :	13.7 :
Potassium	mg/Kg-dry	T	1070. J	1250. J	685. :	725. J	1290. J	699. :
Selenium	mg/Kg-dry	T	<0.55 J	<0.98 J	<0.36 :	<0.52 J	<0.94 J	0.45 :
Silver	mg/Kg-dry	T	<0.18 :	<0.24 :	<0.19 :	<0.18 :	<0.24 :	<0.19 :
Sodium	mg/Kg-dry	T	<54.5 :	<53.1 :	139. :	<55.1 :	<50.8 J	116. :
Thallium	mg/Kg-dry	T	<0.11 :	<0.12 :	<0.12 :	<0.1 :	<0.12 :	<0.12 :
Vanadium	mg/Kg-dry	T	12.6 :	15.6 :	11. :	13.1 :	18.1 :	12.7 :
Zinc	mg/Kg-dry	T	199. J	211. J	175. :	105. J	154. J	124. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

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Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-15	RRS-15	RRS-15	RRS-18	RRS-18	RRS-20
	Sample Date		3/19/2003	7/14/2003	9/23/2003	3/19/2003	9/23/2003	3/19/2003
	Sample ID		RRS-15-T01N-SED	RRS-15-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED	RRS-18-T01N-SED	RRS-20-T01N-SED
	Exposure Area		RUCCR	RUCCR	RUCCR	RLCCR	RLCCR	RLCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	11.5 J	34.1 J	76.4 J	16.8 J	68.6 J	28.9 J
Chloride	mg/kg-Dry	T	<2.7 :	2.6 :	2.6 :	<3.1 :	<2.6 :	<2.9 :
Fluoride	mg/Kg-dry	T	0.18 J	<0.28 :	0.16 J	0.17 J	0.3 J	0.24 J
Nitrate	mg/kg-Dry	T	<2.7 J	3.3 J	<2.5 J	<2.9 J	<2.6 J	<2.9 J
Phosphorus	mg/Kg-dry	T	870. J	490. J	457. J	441. J	461. J	489. J
Sulfate	mg/kg-Dry	T	13.2 :	129. :	18.4 :	15.8 :	10. :	16.5 :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	109. :	160. J	192. :	305. :	299. :	315. :
Total Organic Carbon	mg/Kg-dry	T	<131. J	1670. :	13200. J	4320. J	24200. J	7100. J
Laboratory Parameters								
pH	SU	T	6.7 J	7.2 J	7.2 J	7.1 J	7.5 J	7.1 J
Solids, Percent	%	T	76.4 :	73.6 :	80.5 :	69.8 :	79.5 :	69.7 :
Specific Conductance	umhos/cm	T	54.3 J	62. J	84.2 J	63.2 J	132. J	50.8 J
Geotechnical								
Organic Soils	%	T	1.2 :	1.5 J	2. J	1.7 :	3.2 J	1.8 :
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	13.2 :	7.3 :	16.1 :	10.5 :	21.4 :	7.2 :
Sodium Absorption Ratio	ratio	T	0.12 :	0.12 :	0.09 :	0.1 :	0.09 :	0.1 :
Metals								
Aluminum	mg/Kg-dry	T	5170. J	5580. :	5520. :	4710. J	4290. :	5100. J
Antimony	mg/Kg-dry	T	<0.32 J	<1.2 J	<0.53 J	<0.34 J	<0.63 J	<0.35 J
Arsenic	mg/Kg-dry	T	1.4 :	2.2 J	1.5 J	2.6 :	2.2 J	2.2 :
Barium	mg/Kg-dry	T	26.8 J	30.8 J	27.7 :	53. J	28.4 :	31. J
Beryllium	mg/Kg-dry	T	0.53 :	0.72 :	0.57 :	0.62 :	0.56 :	0.62 :
Boron	mg/Kg-dry	T	1.6 :	1.3 :	0.87 :	<1. :	0.87 :	1.3 :
Cadmium	mg/Kg-dry	T	0.2 :	<0.04 :	0.12 J	0.34 :	0.14 J	0.35 :
Calcium	mg/Kg-dry	T	1550. J	1920. :	3740. :	2330. J	1530. :	1570. J
Chromium	mg/Kg-dry	T	11.8 J	11.7 :	11.5 :	11.2 J	8.7 :	9.6 J
Cobalt	mg/Kg-dry	T	4.4 :	5.7 :	4.7 :	3.7 :	3.4 :	3.8 :
Copper	mg/Kg-dry	T	6.9 J	8.4 :	7.1 :	8. J	7.8 :	7. J
Iron	mg/Kg-dry	T	11300. J	12400. :	10700. :	10800. J	9740. :	11600. J
Lead	mg/Kg-dry	T	17. J	11.4 :	11.2 :	13.8 J	10.5 :	13.9 J
Magnesium	mg/Kg-dry	T	3180. J	3360. :	3250. :	2580. J	2510. :	2530. J
Manganese	mg/Kg-dry	T	217. J	248. :	227. J	317. J	226. J	225. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-15	RRS-15	RRS-15	RRS-18	RRS-18	RRS-20
	Sample Date	Sample ID	3/19/2003	7/14/2003	9/23/2003	3/19/2003	9/23/2003	3/19/2003
	Exposure Area	Sample ID	RRS-15-T01N-SED	RRS-15-T01N-SED	RRS-15-T01N-SED	RRS-18-T01N-SED	RRS-18-T01N-SED	RRS-20-T01N-SED
Units	Fraction	RUCCR	RUCCR	RUCCR	RLCCR	RLCCR	RLCCR	
Mercury	mg/Kg-dry	T	<0.019 J	0.071 :	<0.018 :	<0.022 :	<0.018 :	<0.024 :
Molybdenum	mg/Kg-dry	T	0.71 :	1.1 :	0.57 :	1.4 :	0.81 :	1.2 :
Nickel	mg/Kg-dry	T	10.3 J	12.8 :	12.2 :	10.2 J	9.2 :	8.8 J
Potassium	mg/Kg-dry	T	1210. J	1190. J	806. :	1200. J	792. :	1090. J
Selenium	mg/Kg-dry	T	<0.54 J	<1.1 J	<0.32 :	<0.57 J	0.62 :	2.4 J
Silver	mg/Kg-dry	T	<0.18 :	<0.12 J	<0.18 :	<0.21 :	<0.19 :	<0.22 :
Sodium	mg/Kg-dry	T	<53.7 :	<216. :	104. :	<63.3 :	140. :	<66.9 :
Thallium	mg/Kg-dry	T	<0.11 :	<0.13 :	<0.11 :	<0.11 :	<0.13 :	<0.12 :
Vanadium	mg/Kg-dry	T	14.3 :	15.3 :	12.4 :	10.7 :	9.2 :	10.9 :
Zinc	mg/Kg-dry	T	99.9 J	115. J	117. :	98.1 J	78.3 :	99.2 J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-23	RRS-23	RRS-27	RRS-27
	Sample Date		9/23/2003	3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003
	Sample ID		RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-23-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-27-T01N-SED
	Exposure Area		RLCCR	RLCCR	RLCCR	RLCCR	RLCCR	RLCCR
Units	Fraction							
General Chemistry								
Ammonia	mg/Kg-dry	T	36.9 J	21.8 J	53.1 J	12.9 J	14.6 J	56.1 J
Chloride	mg/kg-Dry	T	<2.7 :	<2.9 :	3.3 :	<2.6 :	<3.1 :	4.2 :
Fluoride	mg/Kg-dry	T	0.14 J	0.2 J	0.29 J	0.37 J	0.27 J	<0.25 :
Nitrate	mg/kg-Dry	T	<2.7 J	<2.9 J	1.1 J	<2.6 J	5.8 J	1. J
Phosphorus	mg/Kg-dry	T	747. J	421. J	325. J	570. J	384. J	287. J
Sulfate	mg/kg-Dry	T	16. :	16.6 :	18.8 :	13.1 :	15.1 :	18. :
Total Kjeldahl Nitrogen	mg/Kg-dry	T	290. J	411. :	185. J	135. :	182. :	59.4 J
Total Organic Carbon	mg/Kg-dry	T	7310. J	5810. J	<135. :	1140. J	1320. J	766. :
Laboratory Parameters								
pH	SU	T	7.5 J	7.2 J	7.1 J	7.3 J	6.8 J	7.2 J
Solids, Percent	%	T	76.5 :	69.5 :	74.6 :	79.5 :	69.7 :	80.8 :
Specific Conductance	umhos/cm	T	82.8 J	59.7 J	64.8 J	61.3 J	50.7 J	64.3 J
Geotechnical								
Organic Soils	%	T	2.1 J	2. :	1.2 J	1.2 J	1.1 :	1. J
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	19. :	5.7 :	6.2 :	13.8 :	4.3 :	6.8 :
Sodium Absorption Ratio	ratio	T	0.08 :	0.1 :	0.22 :	0.11 :	0.1 :	0.2 :
Metals								
Aluminum	mg/Kg-dry	T	4490. :	6120. J	6180. :	5830. :	5430. J	4210. :
Antimony	mg/Kg-dry	T	<0.61 J	<0.37 J	<0.58 J	<0.57 J	<0.37 J	<0.56 J
Arsenic	mg/Kg-dry	T	3.1 J	2.9 :	2.6 J	2.6 J	2. :	1.3 J
Barium	mg/Kg-dry	T	28.3 :	38.4 J	39.2 J	34. :	28.6 J	22.7 J
Beryllium	mg/Kg-dry	T	0.71 :	0.75 :	0.6 :	0.63 :	0.53 :	0.39 :
Boron	mg/Kg-dry	T	0.99 :	1.6 :	1.5 :	0.95 :	<0.92 :	1.2 :
Cadmium	mg/Kg-dry	T	0.14 J	0.43 :	<0.074 :	0.13 J	0.3 :	<0.07 :
Calcium	mg/Kg-dry	T	1800. :	2380. J	1770. :	1720. :	1880. J	1220. :
Chromium	mg/Kg-dry	T	9. :	14. J	13.4 :	11. :	11.2 J	12.9 :
Cobalt	mg/Kg-dry	T	3.6 :	4.7 :	5.5 :	5.4 :	4.8 :	3.6 :
Copper	mg/Kg-dry	T	6.7 :	9.7 J	10.4 :	9.6 :	7.9 J	8.6 :
Iron	mg/Kg-dry	T	10400. :	12500. J	14400. :	13400. :	11400. J	11900. :
Lead	mg/Kg-dry	T	14. :	15.4 J	14.6 :	11.9 :	10.2 J	7.4 :
Magnesium	mg/Kg-dry	T	2500. :	3390. J	3750. :	3550. :	3540. J	2750. :
Manganese	mg/Kg-dry	T	268. J	409. J	392. :	316. J	293. J	196. :

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-20	RRS-23	RRS-23	RRS-23	RRS-27	RRS-27
	Sample Date		9/23/2003	3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003
	Sample ID		RRS-20-T01N-SED	RRS-23-T01N-SED	RRS-23-T01N-SED	RRS-23-T01N-SED	RRS-27-T01N-SED	RRS-27-T01N-SED
	Exposure Area		RLCCR	RLCCR	RLCCR	RLCCR	RLCCR	RLCCR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.019	<0.024	<0.022	<0.019	<0.023	<0.021
Molybdenum	mg/Kg-dry	T	1.5	1.3	0.65	1.2	1.1	0.39
Nickel	mg/Kg-dry	T	9.1	12.7	12.1	11.5	11.3	8.4
Potassium	mg/Kg-dry	T	933.	1280.	1390.	1130.	1000.	990.
Selenium	mg/Kg-dry	T	0.71	1.	<0.92	0.54	0.97	<0.89
Silver	mg/Kg-dry	T	<0.2	<0.2	<0.27	<0.18	<0.19	<0.26
Sodium	mg/Kg-dry	T	202.	<60.5	<58.1	132.	59.2	<55.2
Thallium	mg/Kg-dry	T	<0.12	<0.12	<0.12	<0.11	<0.12	<0.11
Vanadium	mg/Kg-dry	T	8.8	14.1	16.	12.7	12.8	12.5
Zinc	mg/Kg-dry	T	123.	110.	93.2	73.2	70.8	47.9

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-27	RRS-9	RRS-9	RRS-9	RRS-9	UPPER CABRESTO C	UPPER CABRESTO C
	Sample Date		9/22/2003	3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003	
	Sample ID		RRS-27-T01N-SED	RRS-9-T01N-SED	RRS-9-T01N-SED	RRS-9-T01N-SED	UCC-T01N-SED	UPPERCABRESTO-T01N-SED	
	Exposure Area		RLCCR	RUCCR	RUCCR	RUCCR	RUCCR	RUCCR	
Units	Fraction								
General Chemistry									
Ammonia	mg/Kg-dry	T	28.6 J	9.4 J	27.3 J	16.7 J	10.4 J	26.9 J	
Chloride	mg/kg-Dry	T	3.5 :	<2.8 :	2.5 :	<2.7 :	4.6 :	<338. :	
Fluoride	mg/Kg-dry	T	0.38 J	0.15 J	0.35 :	<0.14 :	0.17 J	0.28 :	
Nitrate	mg/kg-Dry	T	<2.7 J	<2.8 J	1.8 J	<2.7 J	<2.7 J	<27. J	
Phosphorus	mg/Kg-dry	T	584. J	1050. J	527. J	805. J	728. J	230. J	
Sulfate	mg/kg-Dry	T	22.6 :	8.9 :	11.4 :	8.1 :	15.4 :	14.2 :	
Total Kjeldahl Nitrogen	mg/Kg-dry	T	67.3 :	108. :	165. J	193. :	86.9 :	777. J	
Total Organic Carbon	mg/Kg-dry	T	<131. J	246. J	1180. :	<208. J	<132. J	8960. :	
Laboratory Parameters									
pH	SU	T	7.5 J	6.9 J	7.1 J	7.4 J	6.3 J	6.9 J	
Solids, Percent	%	T	76.6 :	72.2 :	80. :	76.6 :	75.9 :	74. :	
Specific Conductance	umhos/cm	T	54.6 J	41.8 J	74.3 J	96.9 J	43.4 J	76. J	
Geotechnical									
Organic Soils	%	T	1. J	1.3 :	1.5 J	1.6 J	1. :	1.8 J	
Physical Properties									
Cation-Exchange Capacity	meq/100g	T	14.8 :	14.4 :	9.6 :	16.2 :	<13. :	6.7 :	
Sodium Absorption Ratio	ratio	T	0.15 :	0.15 :	0.22 :	0.14 :	0.12 :	0.08 :	
Metals									
Aluminum	mg/Kg-dry	T	5310. :	7750. J	5420. :	8740. :	5000. :	7180. :	
Antimony	mg/Kg-dry	T	<0.78 J	<0.32 J	<0.61 J	<0.59 J	<0.31 J	<0.47 J	
Arsenic	mg/Kg-dry	T	2. :	2.4 :	3.5 J	2.7 J	1.1 :	1.3 J	
Barium	mg/Kg-dry	T	40.9 :	59.7 J	203. J	58.1 :	22. J	33.8 J	
Beryllium	mg/Kg-dry	T	0.42 :	0.52 :	0.66 :	0.68 :	0.4 :	0.69 :	
Boron	mg/Kg-dry	T	<0.79 :	2.3 :	1.8 :	0.84 :	1.8 :	2. :	
Cadmium	mg/Kg-dry	T	<0.063 J	0.3 :	0.29 :	0.39 J	0.21 :	0.093 :	
Calcium	mg/Kg-dry	T	1460. :	2690. J	1540. :	2340. :	1180. J	1940. :	
Chromium	mg/Kg-dry	T	12. :	20.9 J	11.7 :	18. :	15.9 :	12.3 :	
Cobalt	mg/Kg-dry	T	5.3 :	9.1 :	8.7 :	11.2 :	5.1 :	4.9 :	
Copper	mg/Kg-dry	T	7.4 :	11.9 J	31.2 :	16.9 :	9.4 J	8.9 :	
Iron	mg/Kg-dry	T	12200. :	18600. J	18100. :	16600. :	11000. :	13600. :	
Lead	mg/Kg-dry	T	8.1 :	18.6 J	22.9 :	21.7 :	14.8 J	15.1 :	
Magnesium	mg/Kg-dry	T	3620. :	5270. J	3140. :	5140. :	3680. :	4300. :	
Manganese	mg/Kg-dry	T	292. J	389. J	494. :	570. J	204. :	231. :	

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Site ID		RRS-27	RRS-9	RRS-9	RRS-9	UPPER CABRESTO C	UPPER CABRESTO C
	Sample Date		9/22/2003	3/19/2003	7/14/2003	9/23/2003	3/19/2003	7/14/2003
	Sample ID		RRS-27-T01N-SED	RRS-9-T01N-SED	RRS-9-T01N-SED	RRS-9-T01N-SED	UCC-T01N-SED	UPPERCABRESTO-T01N-SED
	Exposure Area		RLCCR	RUCCR	RUCCR	RUCCR	RUCCR	RUCCR
Units	Fraction							
Mercury	mg/Kg-dry	T	<0.019	<0.023 J	<0.021	<0.02	<0.02 J	<0.022
Molybdenum	mg/Kg-dry	T	2.6	5.9	12.1	1.5	0.43	0.69
Nickel	mg/Kg-dry	T	11.9	20.3 J	26.8	20.9	10.1 J	10.6
Potassium	mg/Kg-dry	T	859.	1080. J	1540. J	775.	988. J	1450. J
Selenium	mg/Kg-dry	T	<0.4	<0.54 J	<0.97 J	0.76	<0.51 J	<0.33 J
Silver	mg/Kg-dry	T	<0.2	<0.18	<0.27	<0.19	<0.18	<0.22
Sodium	mg/Kg-dry	T	137.	<56.2	<57.4 J	133.	<54.	<67.7
Thallium	mg/Kg-dry	T	<0.12	<0.11	<0.12	<0.12	<0.1	<0.11
Vanadium	mg/Kg-dry	T	11.4	21.5	15.	17.8	11.3	15.8
Zinc	mg/Kg-dry	T	54.3	66.8 J	181. J	96.	78.1	110. J

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	UPPER CABRESTO C	Zwergle	Zwergle	Zwergle	----	----
			9/23/2003 UPPERCABRESTO- T01N-SED RUCCR	3/19/2003 ZWERGEL-T01N-S ED RURR	7/14/2003 ZWERGEL-T01N-S ED RURR	9/24/2003 ZWERGEL-T01N-SE D RURR		
General Chemistry								
Ammonia	mg/Kg-dry	T	36.6 J	17.6 :	71. J	<13.5 J	-	-
Chloride	mg/kg-Dry	T	2.8 :	<3.2 J	2.7 :	<2.9 :	-	-
Fluoride	mg/Kg-dry	T	<0.13 :	<0.15 J	<0.28 :	<0.15 :	-	-
Nitrate	mg/kg-Dry	T	<2.6 J	<2.9 J	1.5 J	<2.9 J	-	-
Phosphorus	mg/Kg-dry	T	446. J	1420. J	607. J	919. J	-	-
Sulfate	mg/kg-Dry	T	12.1 :	7.7 J	12.4 :	11.8 :	-	-
Total Kjeldahl Nitrogen	mg/Kg-dry	T	108. :	126. J	197. J	166. :	-	-
Total Organic Carbon	mg/Kg-dry	T	1680. J	<145. J	1850. :	3570. J	-	-
Laboratory Parameters								
pH	SU	T	7.3 J	7.2 J	7.5 J	7.6 :	-	-
Solids, Percent	%	T	77.9 :	69.1 :	72.2 :	70.8 :	-	-
Specific Conductance	umhos/cm	T	59.5 J	130. J	74.2 J	95.9 J	-	-
Geotechnical								
Organic Soils	%	T	1.1 J	1.5 :	2. J	1.4 J	-	-
Physical Properties								
Cation-Exchange Capacity	meq/100g	T	14. :	15.8 :	9.1 :	7.6 J	-	-
Sodium Absorption Ratio	ratio	T	0.09 :	0.09 :	0.12 :	<0.08 :	-	-
Metals								
Aluminum	mg/Kg-dry	T	4280. :	11700. J	10300. :	9190. :	-	-
Antimony	mg/Kg-dry	T	<0.55 J	<0.35 J	<0.65 J	<0.71 J	-	-
Arsenic	mg/Kg-dry	T	1.1 J	1.8 :	2.3 J	2.5 J	-	-
Barium	mg/Kg-dry	T	21.9 :	131. J	105. J	451. :	-	-
Beryllium	mg/Kg-dry	T	0.45 :	0.87 :	0.53 :	0.54 :	-	-
Boron	mg/Kg-dry	T	<0.68 :	1.9 :	3. :	<0.82 J	-	-
Cadmium	mg/Kg-dry	T	0.16 J	0.49 :	<0.08 :	<0.065 J	-	-
Calcium	mg/Kg-dry	T	1170. :	6420. J	4590. :	4170. J	-	-
Chromium	mg/Kg-dry	T	7.7 :	38.6 J	25.1 :	24.9 :	-	-
Cobalt	mg/Kg-dry	T	3.6 :	14.9 :	10.8 :	10.9 :	-	-
Copper	mg/Kg-dry	T	6.4 :	20.7 J	17.5 :	18.2 :	-	-
Iron	mg/Kg-dry	T	9610. :	20900. J	25900. :	22800. J	-	-
Lead	mg/Kg-dry	T	20.3 :	8.8 J	9.2 :	9.4 J	-	-
Magnesium	mg/Kg-dry	T	2730. :	7130. J	6270. :	5870. :	-	-
Manganese	mg/Kg-dry	T	226. J	810. J	573. :	655. J	-	-

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

Appendix A-3c
Sediment Riffle
Validated Analytical Results

Parameter	Units	Site ID Sample Date Sample ID Exposure Area Fraction	UPPER CABRESTO C	Zwergle	Zwergle	Zwergle	----	----
			9/23/2003 UPPERCABRESTO- T01N-SED RUCCR	3/19/2003 ZWERGEL-T01N-S ED RURR	7/14/2003 ZWERGEL-T01N-S ED RURR	9/24/2003 ZWERGEL-T01N-SE D RURR		
Mercury	mg/Kg-dry	T	<0.02 :	<0.024 :	<0.02 :	<0.024 :	-	-
Molybdenum	mg/Kg-dry	T	0.98 :	<0.26 :	<0.23 :	<0.53 :	-	-
Nickel	mg/Kg-dry	T	8.3 :	32.7 J	19.3 :	17.7 J	-	-
Potassium	mg/Kg-dry	T	789. :	1480. J	1550. J	1090. :	-	-
Selenium	mg/Kg-dry	T	0.37 :	<0.58 :	<1. J	<0.42 :	-	-
Silver	mg/Kg-dry	T	<0.17 :	<0.11 :	<0.29 :	<0.21 :	-	-
Sodium	mg/Kg-dry	T	130. :	396. :	<63. J	119. :	-	-
Thallium	mg/Kg-dry	T	<0.11 :	<0.12 :	<0.13 :	<0.14 :	-	-
Vanadium	mg/Kg-dry	T	9.4 :	43. J	48.7 :	37.4 :	-	-
Zinc	mg/Kg-dry	T	77.7 :	58.3 J	62.2 J	65.3 J	-	-

J = Qualified as estimated during data validation

R = Qualified as rejected value from data validation and results are considered unusable for any purpose

T = Total Fraction

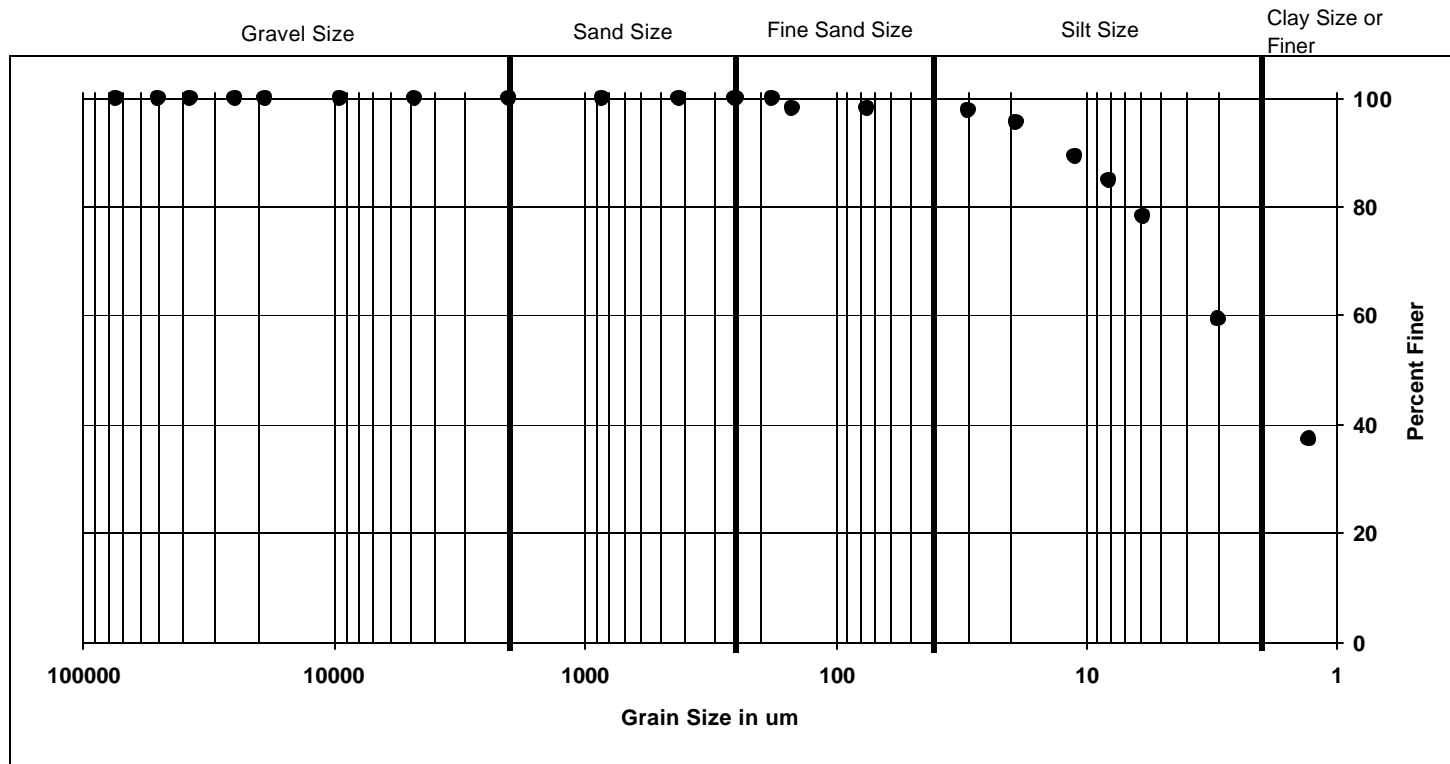
R:\Projects\22236252_Database_Management\Task_01\7.0_Project_Working_files\TechMemo\Appendix\ZZZ-TechMemoII-Section 3 Sediment\appendix a-3c.rpt

APPENDIX B-3
SEDIMENT
PARTICLE SIZE DISTRIBUTION

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: ERLMID-T01N-SED

Date Received: 10/9/2002

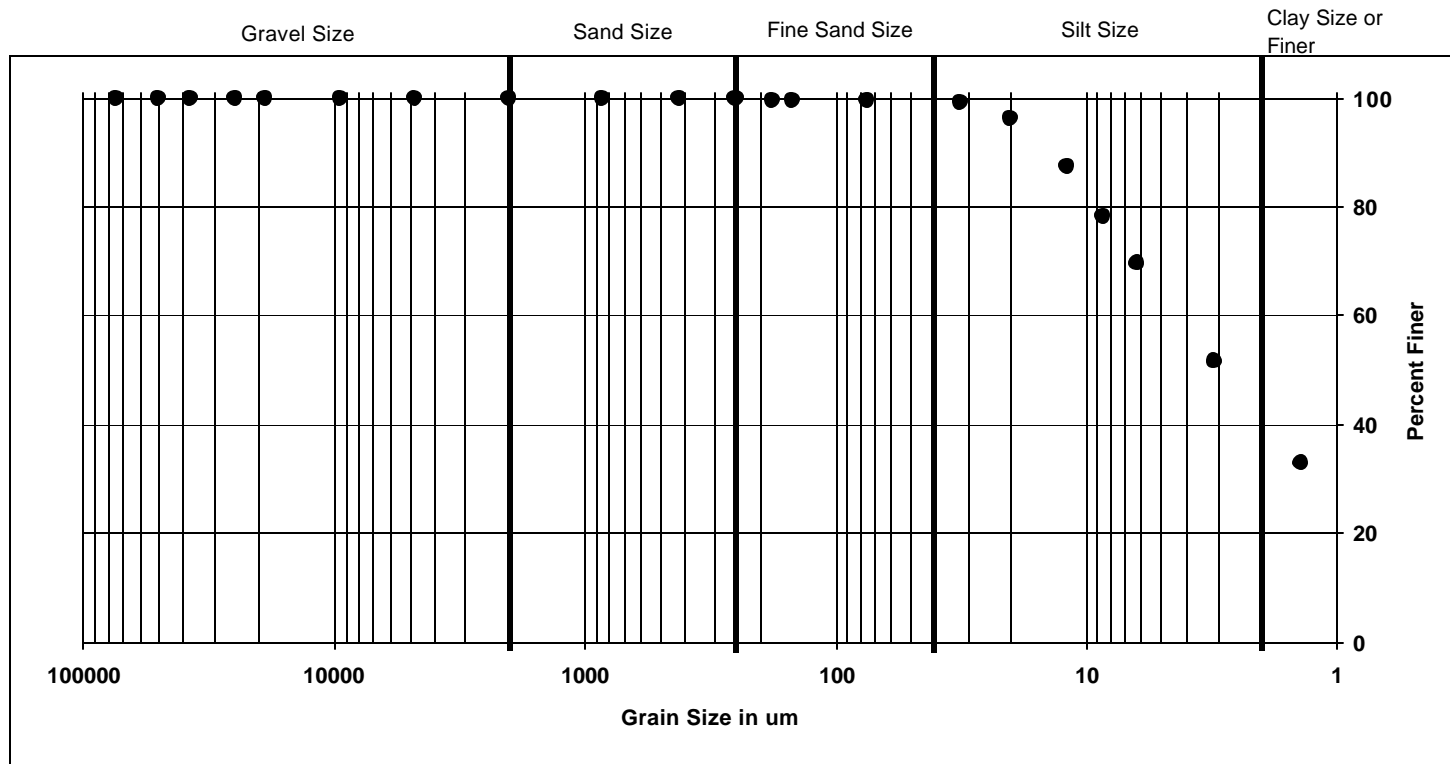


ERLMID-T01N-SED		
10/9/2002		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		0
Fine Sand Size		2.2
Silt Size		51.5
Clay Size or Finer		46.3

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: ERLMID-T01N-SED

Date Received: 11/5/2003

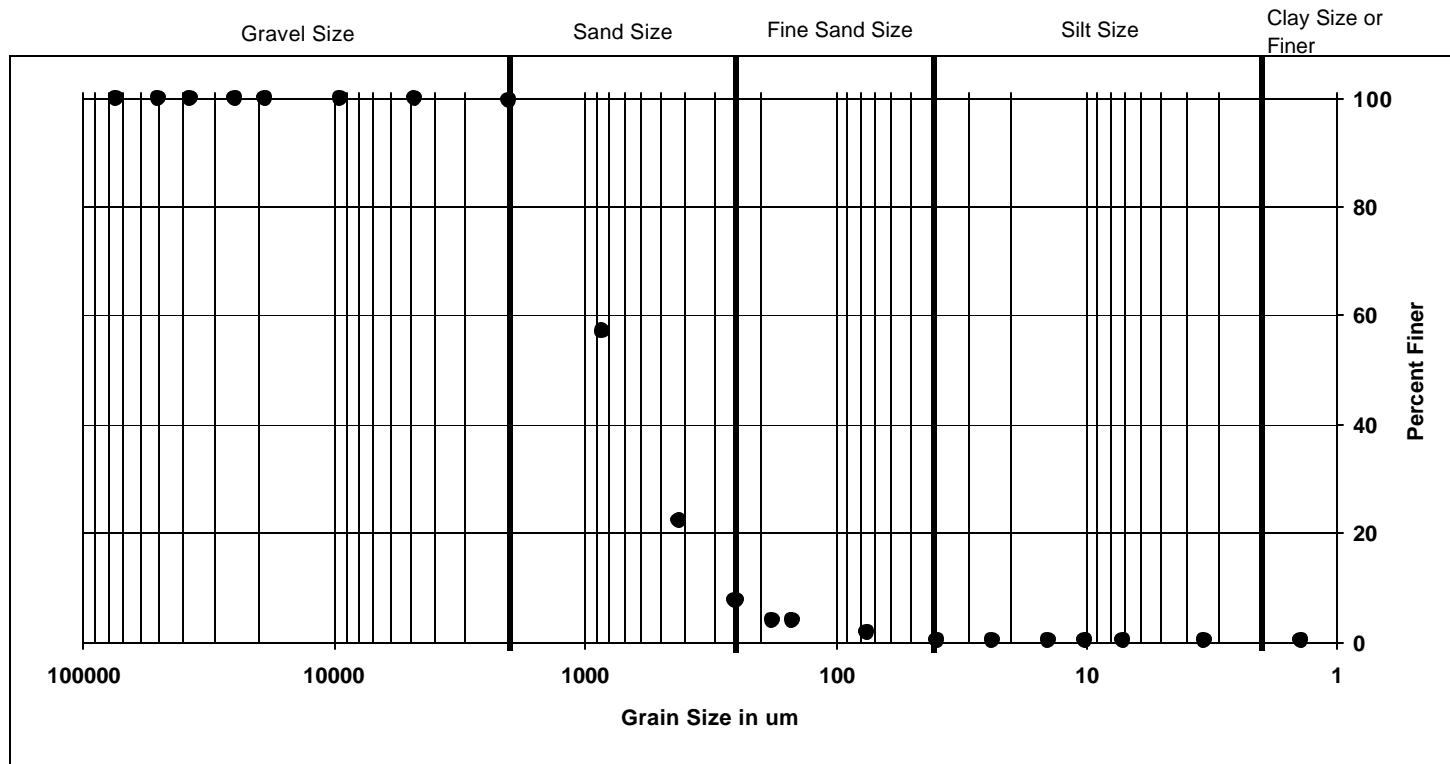


ERLMID-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		0.2000000000000003
Fine Sand Size		0.3999999999999991
Silt Size		60
Clay Size or Finer		39.4

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-1-T01N-SED

Date Received: 11/5/2003

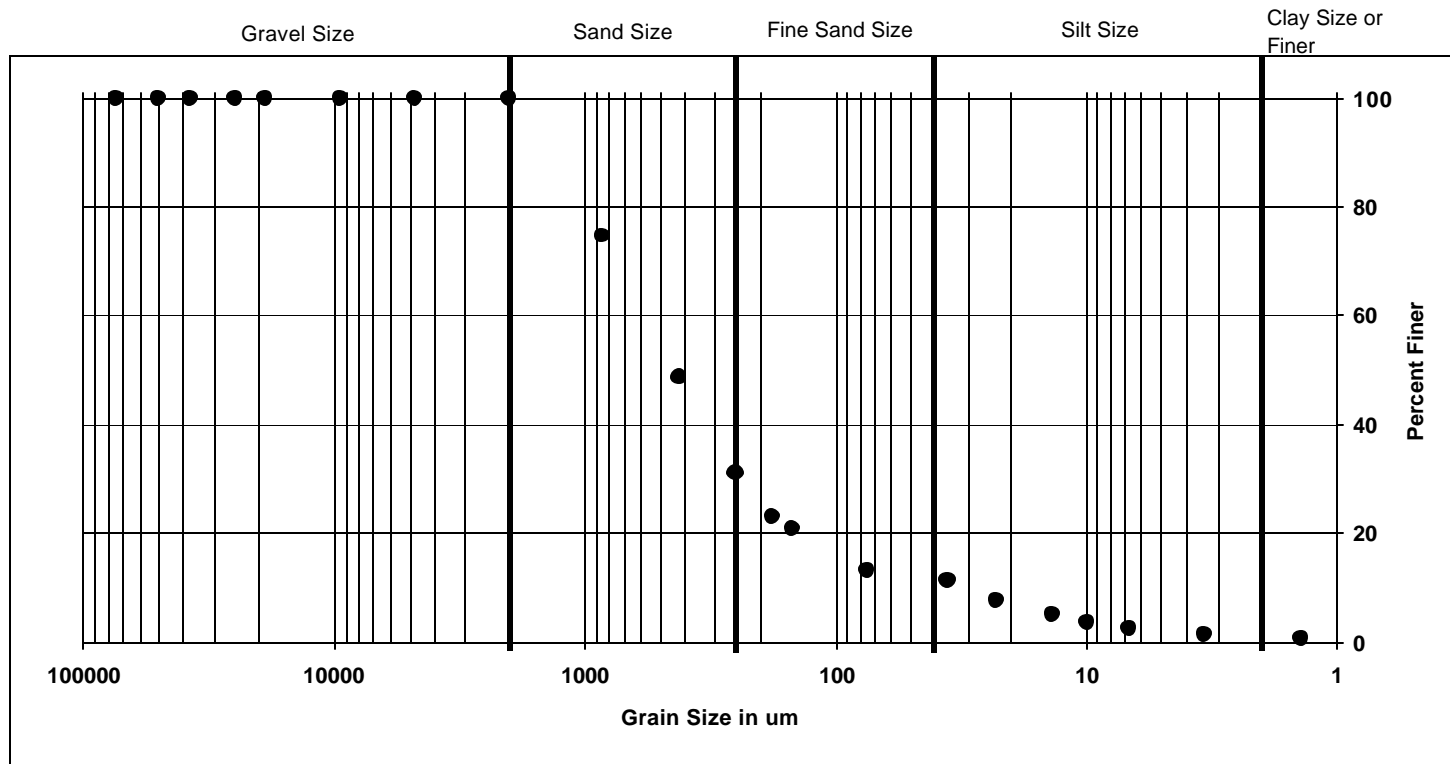


LR-1-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		91.7
Fine Sand Size		6.84
Silt Size		0.56
Clay Size or Finer		0.3

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-1-T02N-SED

Date Received: 11/5/2003

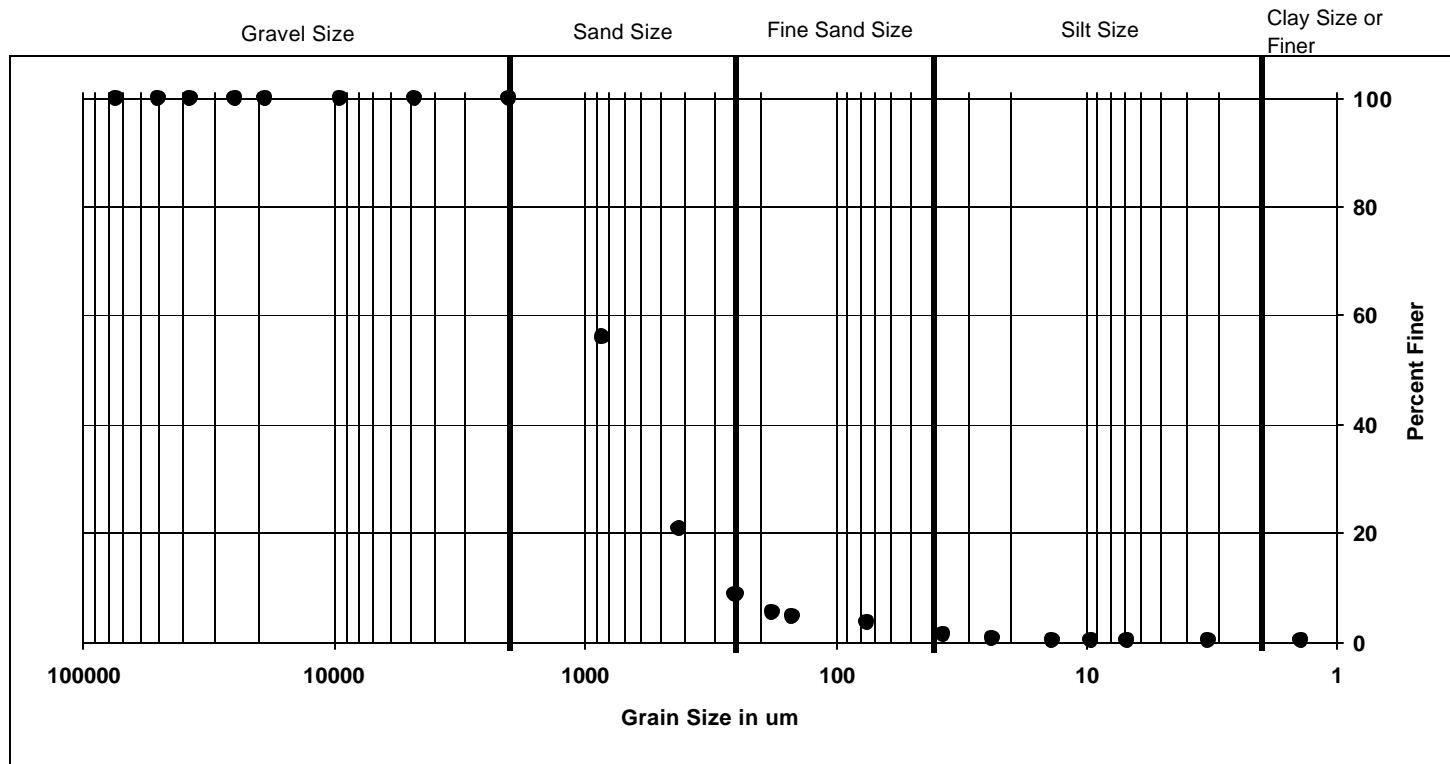


LR-1-T02N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	68.9
	Fine Sand Size	19.2
	Silt Size	10.8
	Clay Size or Finer	1.1

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-13-T01N-SED

Date Received: 11/5/2003

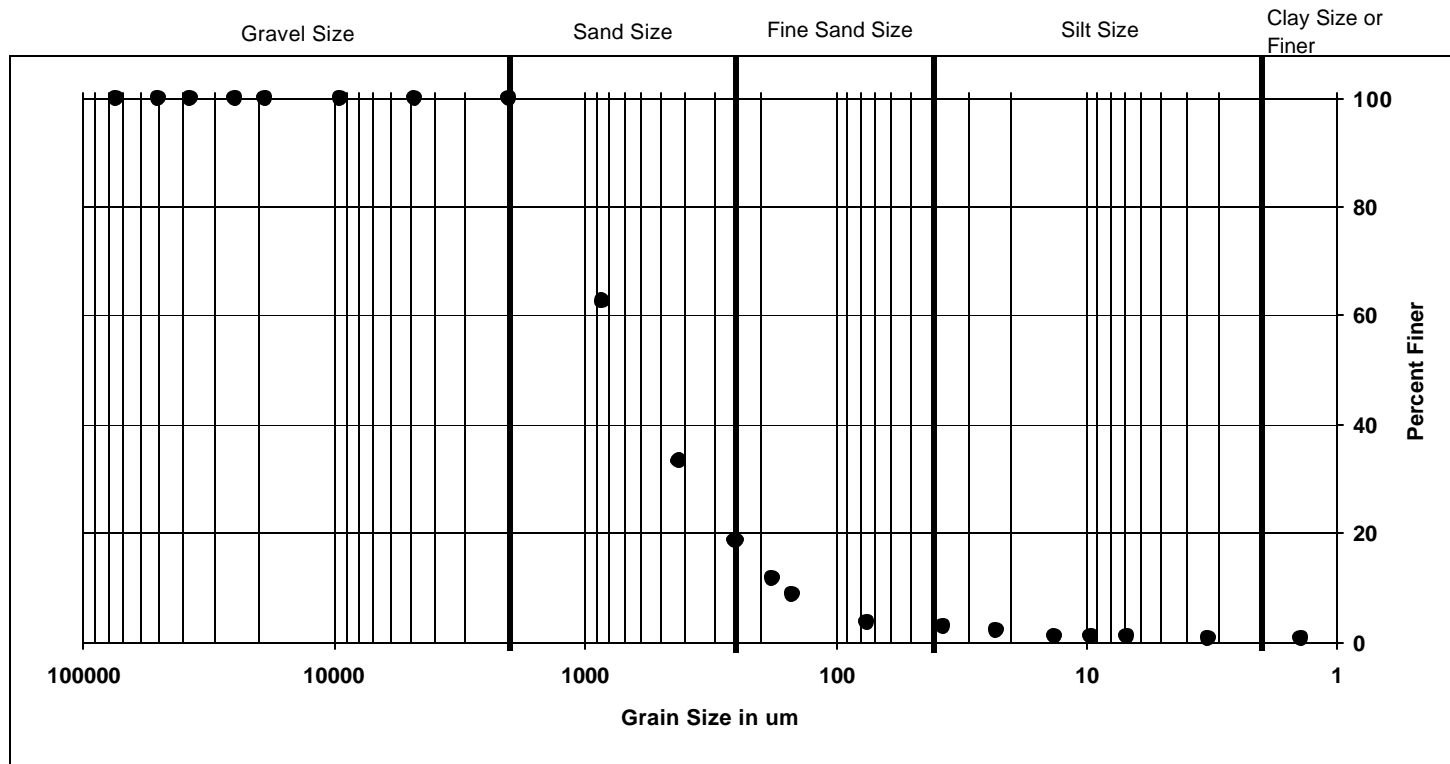


LR-13-T01N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	91.2
	Fine Sand Size	6.5
	Silt Size	1.8
	Clay Size or Finer	0.4

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-13-T02N-SED

Date Received: 11/5/2003

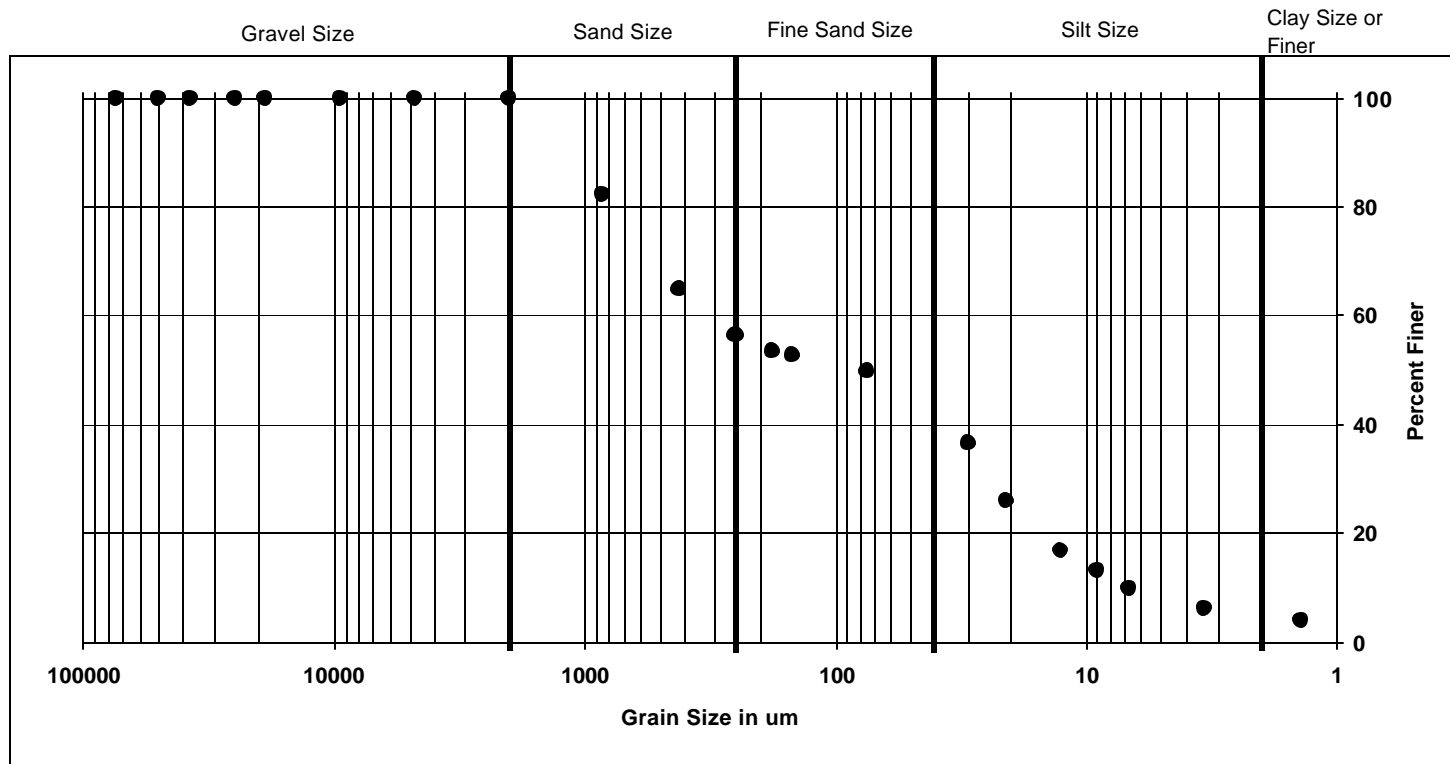


LR-13-T02N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	81.4
	Fine Sand Size	15.4
	Silt Size	2.6
	Clay Size or Finer	0.6

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-16-T01N-SED

Date Received: 9/28/2002

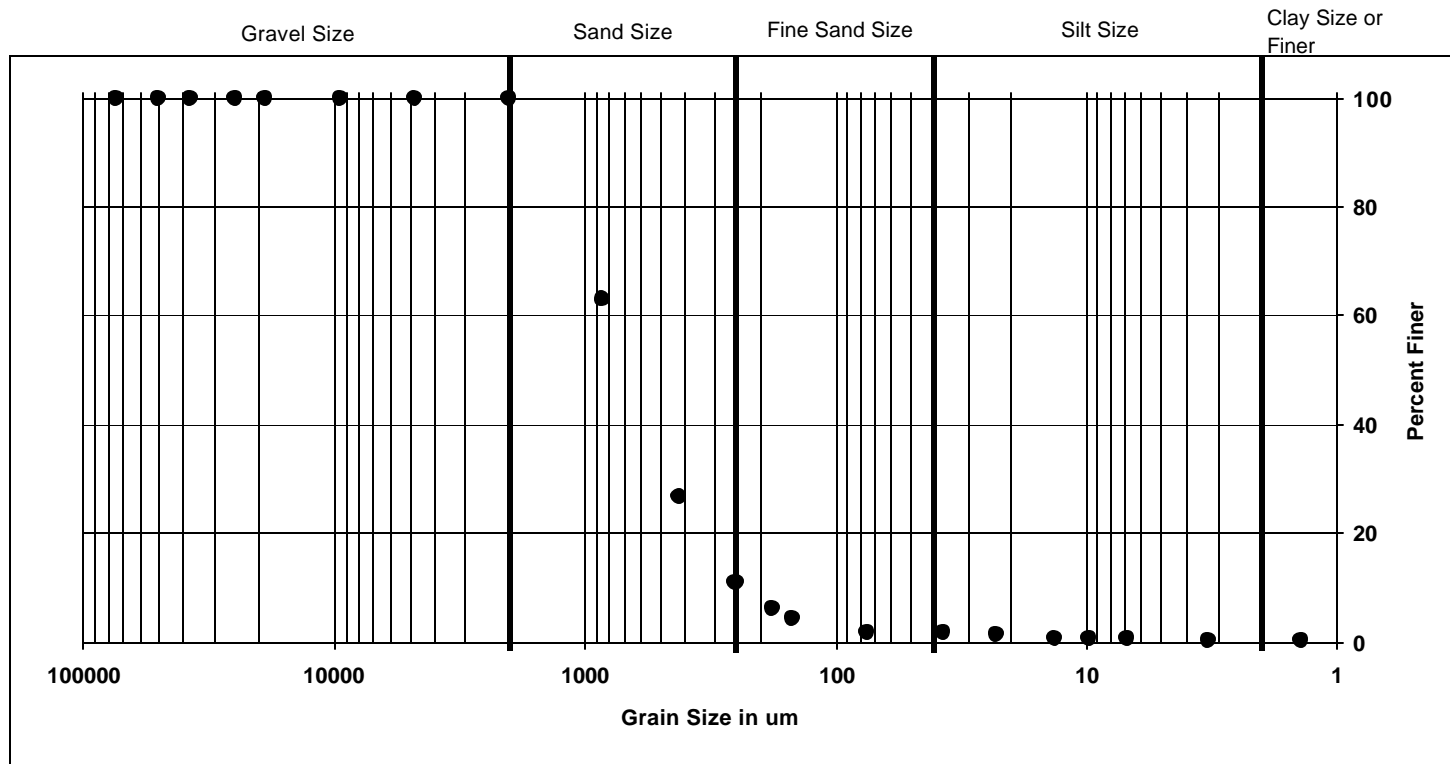


LR-16-T01N-SED		
9/28/2002		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		43.4
Fine Sand Size		14.1
Silt Size		37.5
Clay Size or Finer		4.8

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-16-T01N-SED

Date Received: 11/5/2003

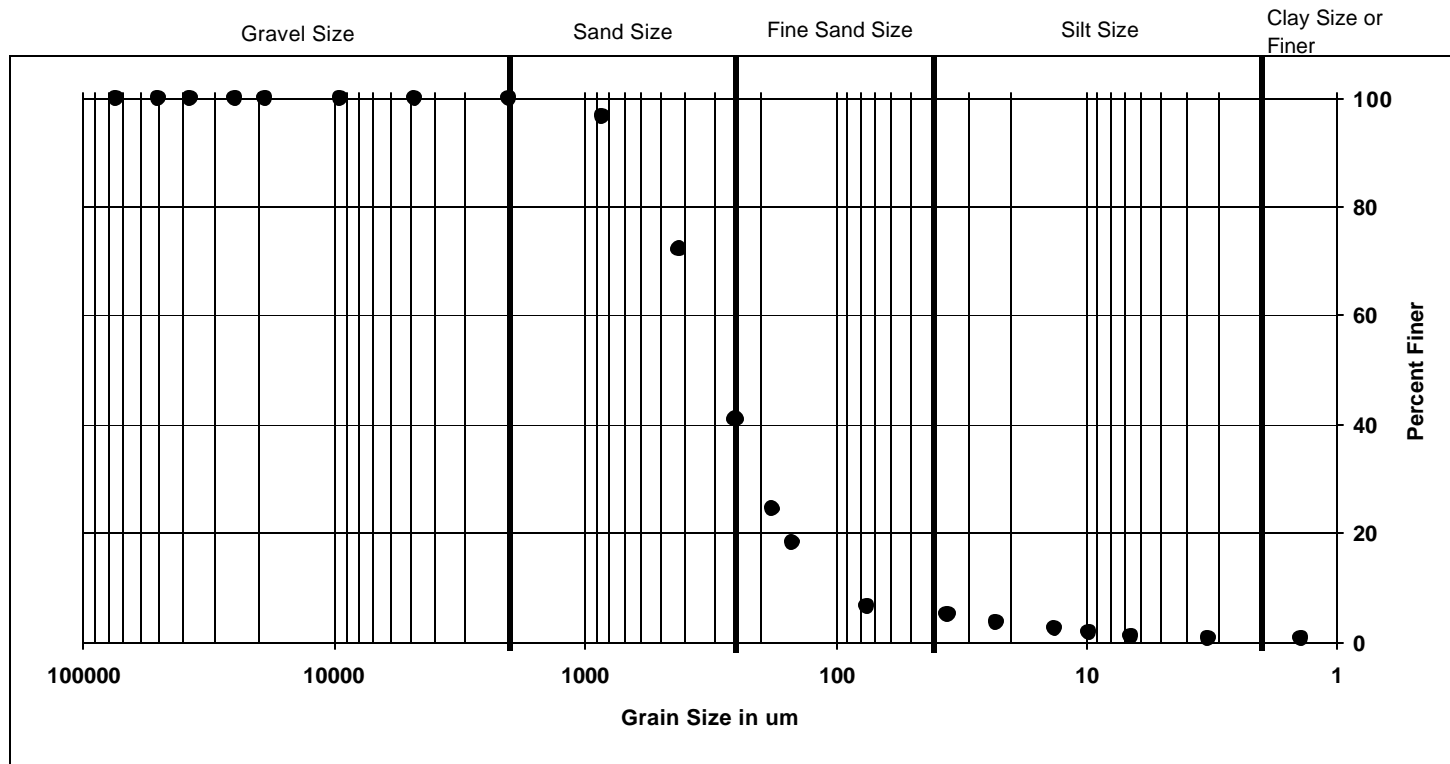


LR-16-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		88.8
Fine Sand Size		9.2
Silt Size		1.4
Clay Size or Finer		0.4

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-16-T02N-SED

Date Received: 11/5/2003

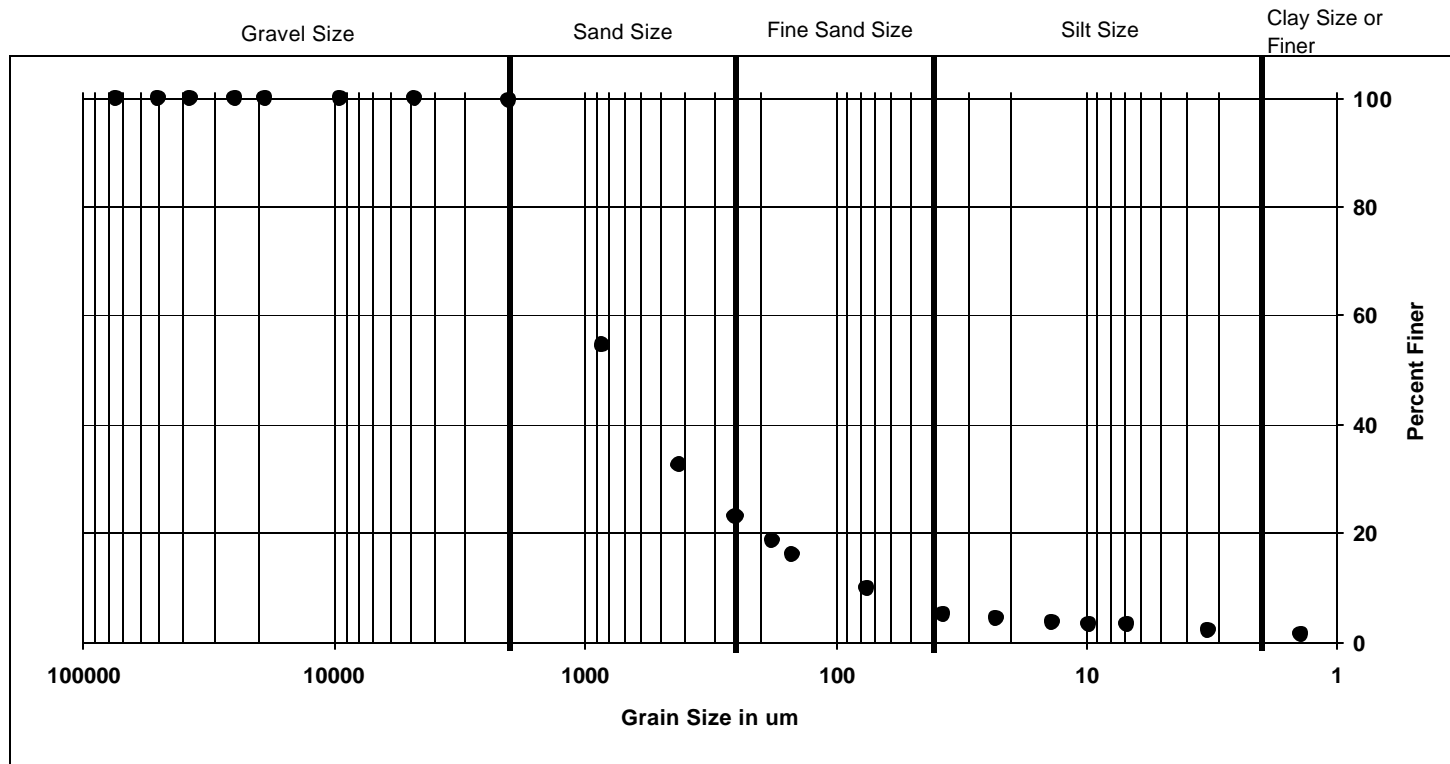


LR-16-T02N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		59.1
Fine Sand Size		35.2
Silt Size		5.1
Clay Size or Finer		0.6

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-4-T01N-SED

Date Received: 11/7/2003

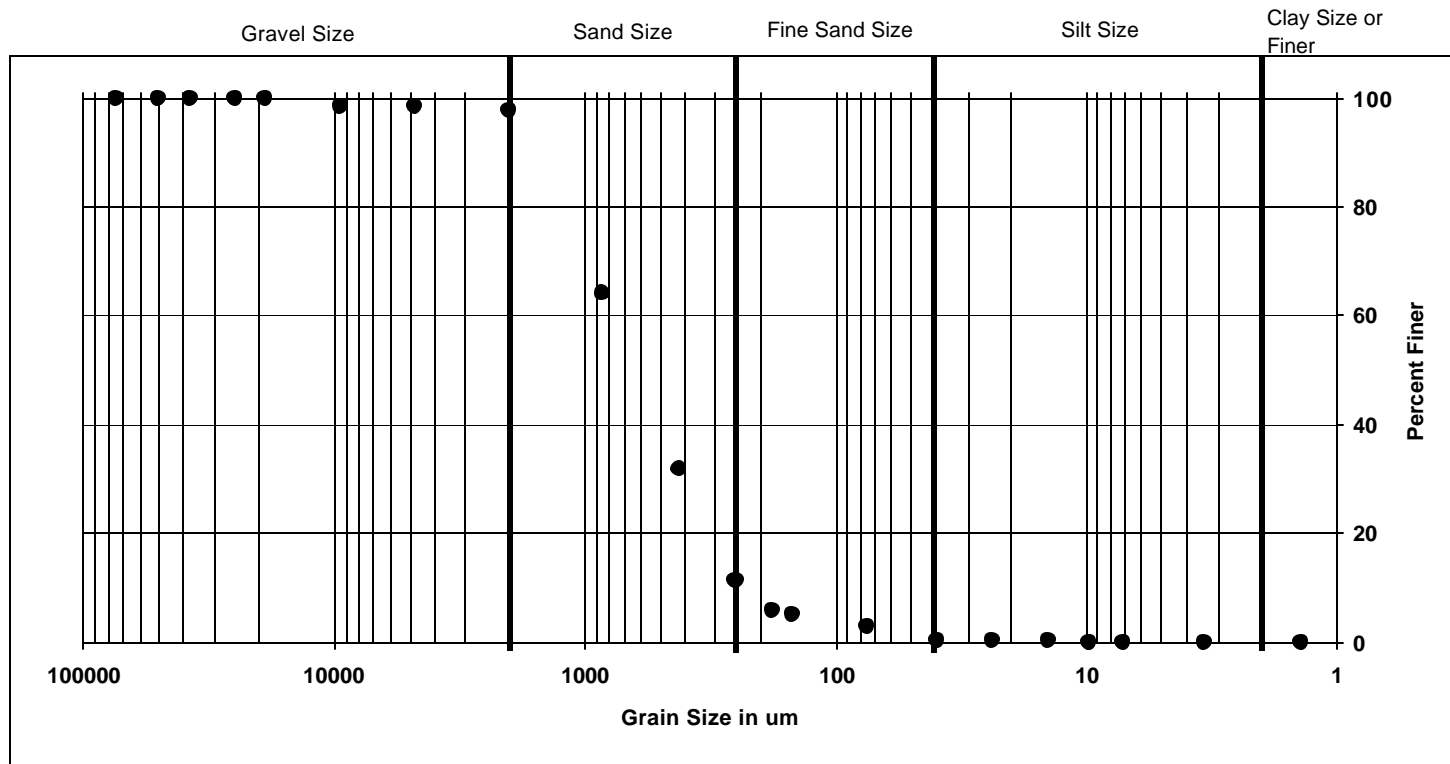


LR-4-T01N-SED		
11/7/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		76.4
Fine Sand Size		16.3
Silt Size		5.1
Clay Size or Finer		1.8

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-5-T01N-SED

Date Received: 11/5/2003

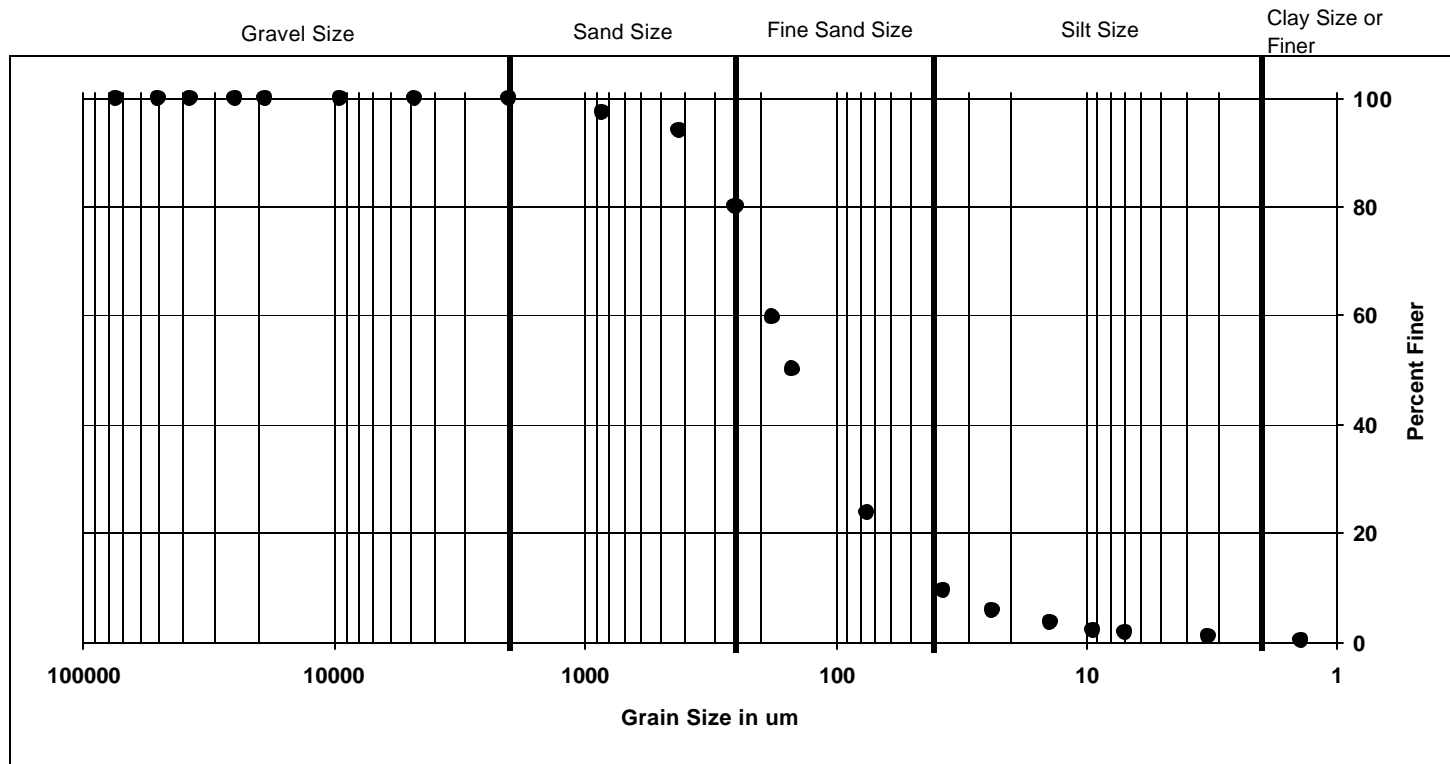


LR-5-T01N-SED		
11/5/2003		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	86.3	
Fine Sand Size	10.2	
Silt Size	1.2	
Clay Size or Finer	0	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-5-T02N-SED

Date Received: 11/5/2003

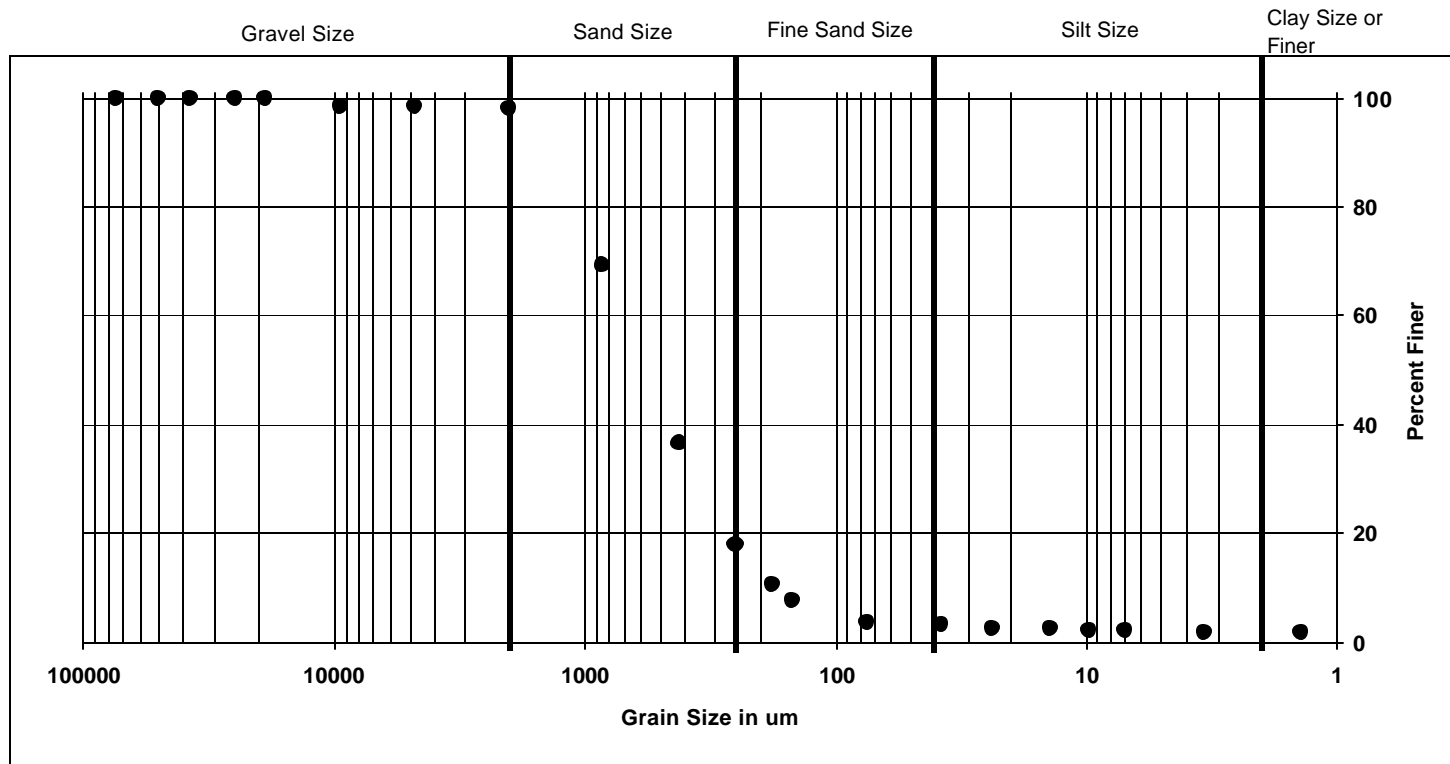


LR-5-T02N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		19.7
Fine Sand Size		65.8
Silt Size		13.88
Clay Size or Finer		0.62

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: LR-6-T01N-SED

Date Received: 11/7/2003

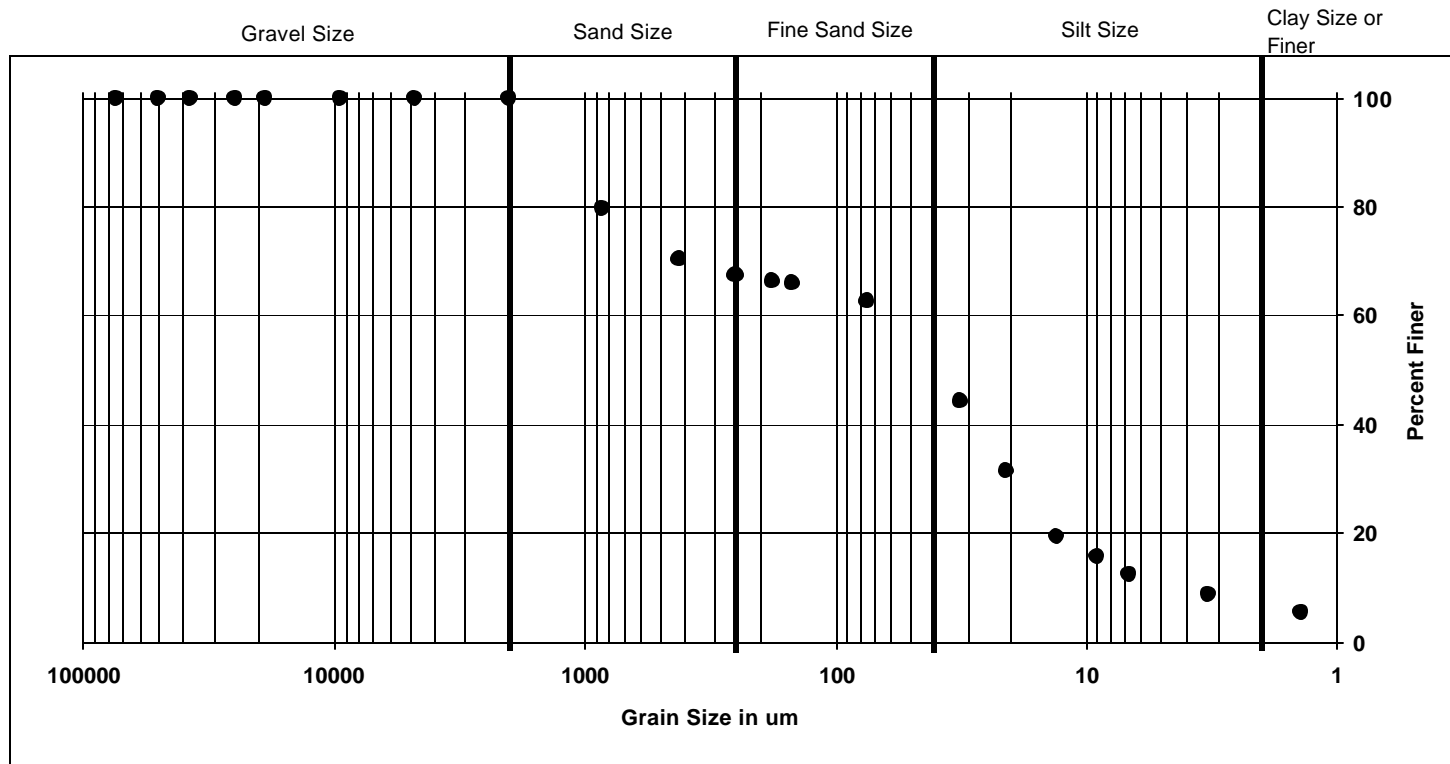


LR-6-T01N-SED		
11/7/2003		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	80.2	
Fine Sand Size	14.4	
Silt Size	1.6	
Clay Size or Finer	1.8	

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: LR-8A-T01D-SED

Date Received: 10/1/2002

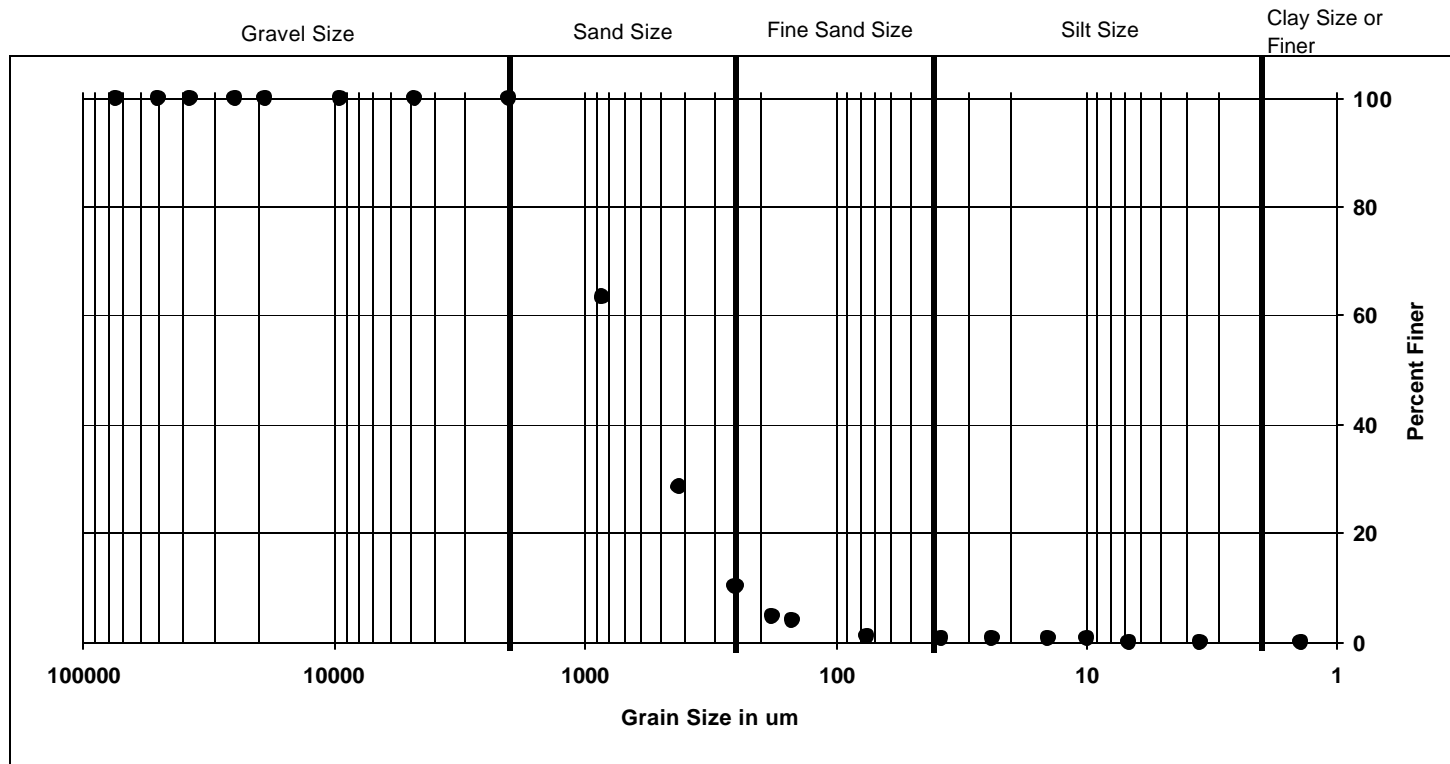


LR-8A-T01D-SED		Percent of <2MM Sample sent to Lab (%)
10/1/2002	Description	
	Sand Size	32.6
	Fine Sand Size	15.5
	Silt Size	45.5
	Clay Size or Finer	6.4

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: LR-8A-T01D-SED

Date Received: 11/5/2003

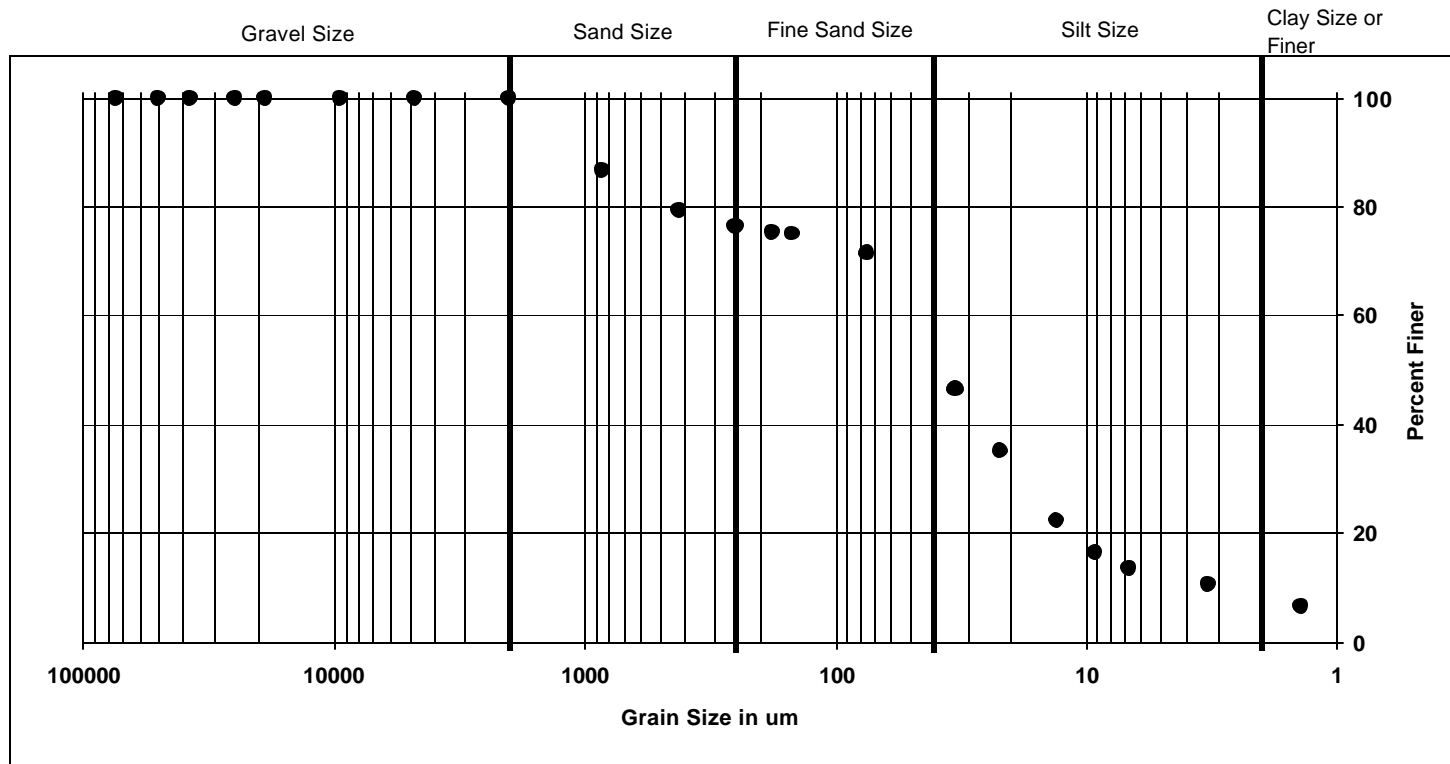


LR-8A-T01D-SED	Percent of <2MM Sample sent to Lab (%)	
11/5/2003	Description	
	Sand Size	89.6
	Fine Sand Size	9.67
	Silt Size	0.701
	Clay Size or Finer	0.029

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-8A-T01N-SED

Date Received: 10/1/2002



LR-8A-T01N-SED		
10/1/2002		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		23.4
Fine Sand Size		20
Silt Size		48.8
Clay Size or Finer		7.8

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: LR-8A-T01N-SED

Date Received: 11/5/2003

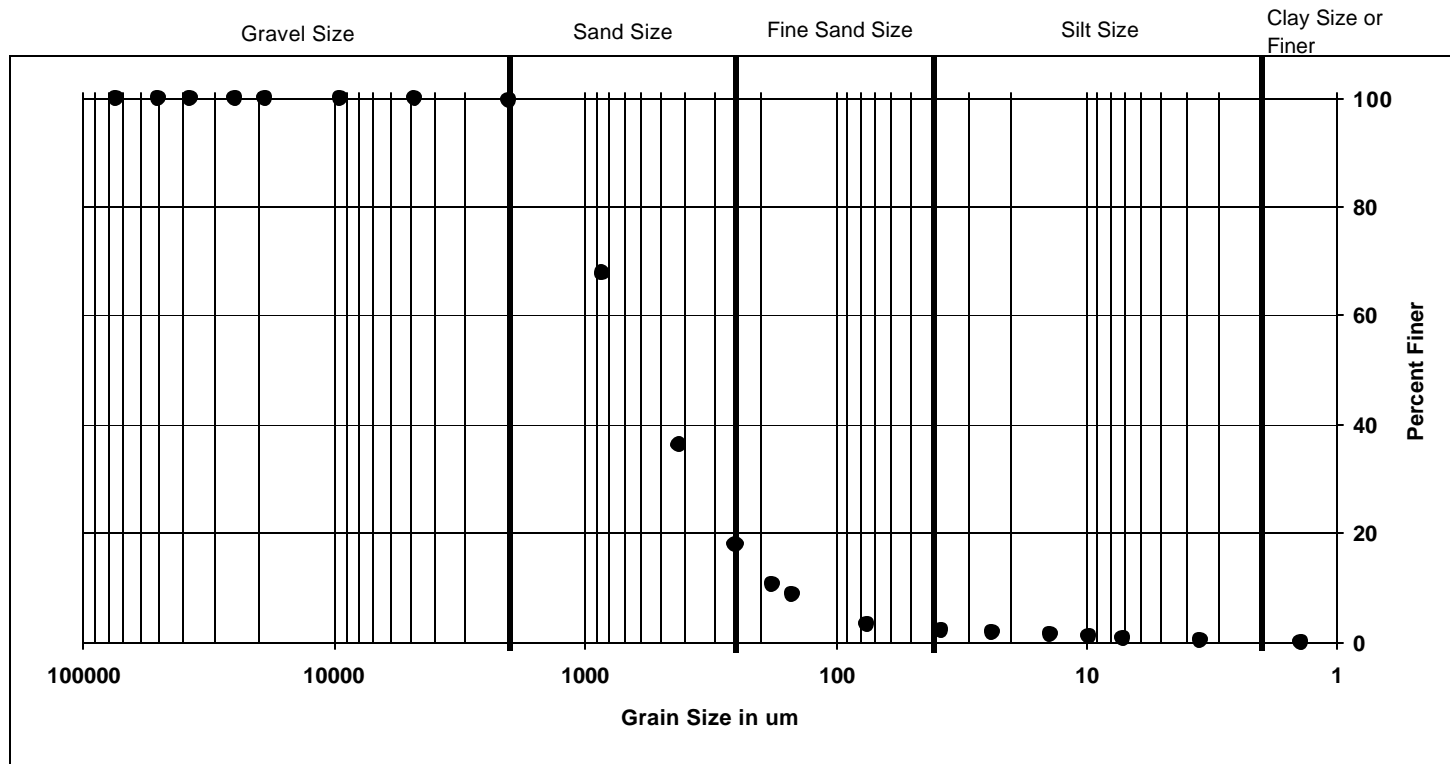


LR-8A-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		90.5
Fine Sand Size		8.78
Silt Size		0.52
Clay Size or Finer		0

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-8A-T02D-SED

Date Received: 11/5/2003

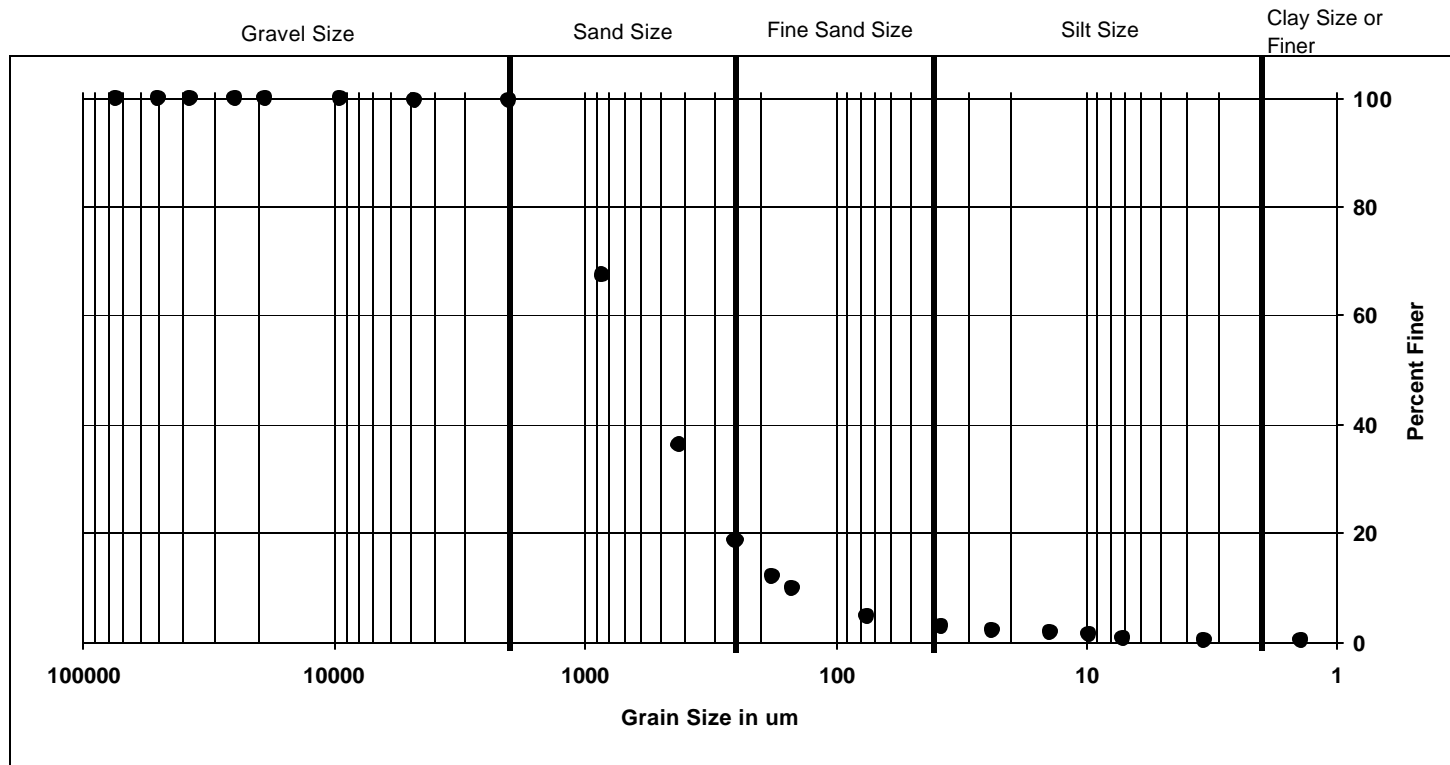


LR-8A-T02D-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	81.9
	Fine Sand Size	15.2
	Silt Size	2.543
	Clay Size or Finer	0.057

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: LR-8A-T02N-SED

Date Received: 11/5/2003

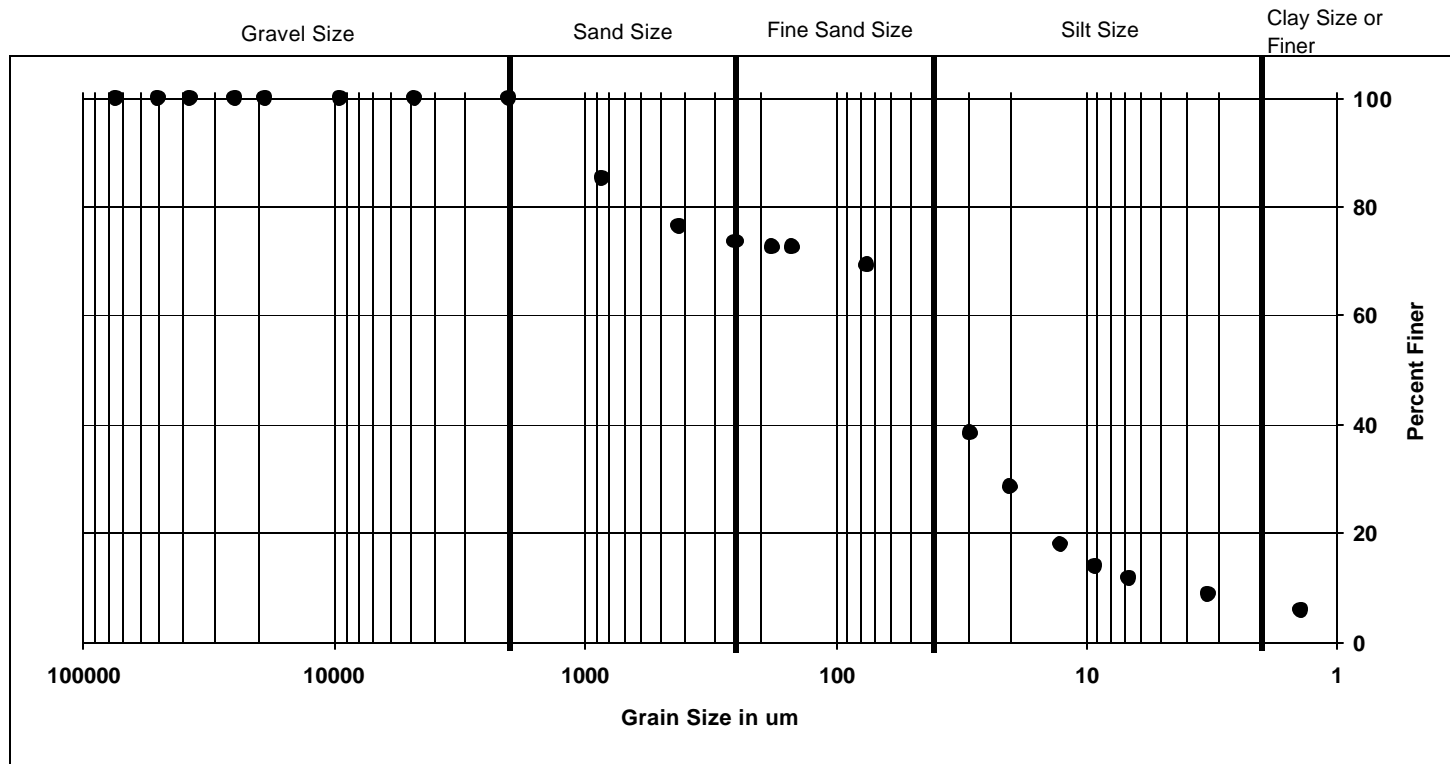


LR-8A-T02N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	80.7
	Fine Sand Size	15.4
	Silt Size	3.1
	Clay Size or Finer	0.3

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: LR1-T01N-SED

Date Received: 10/2/2002

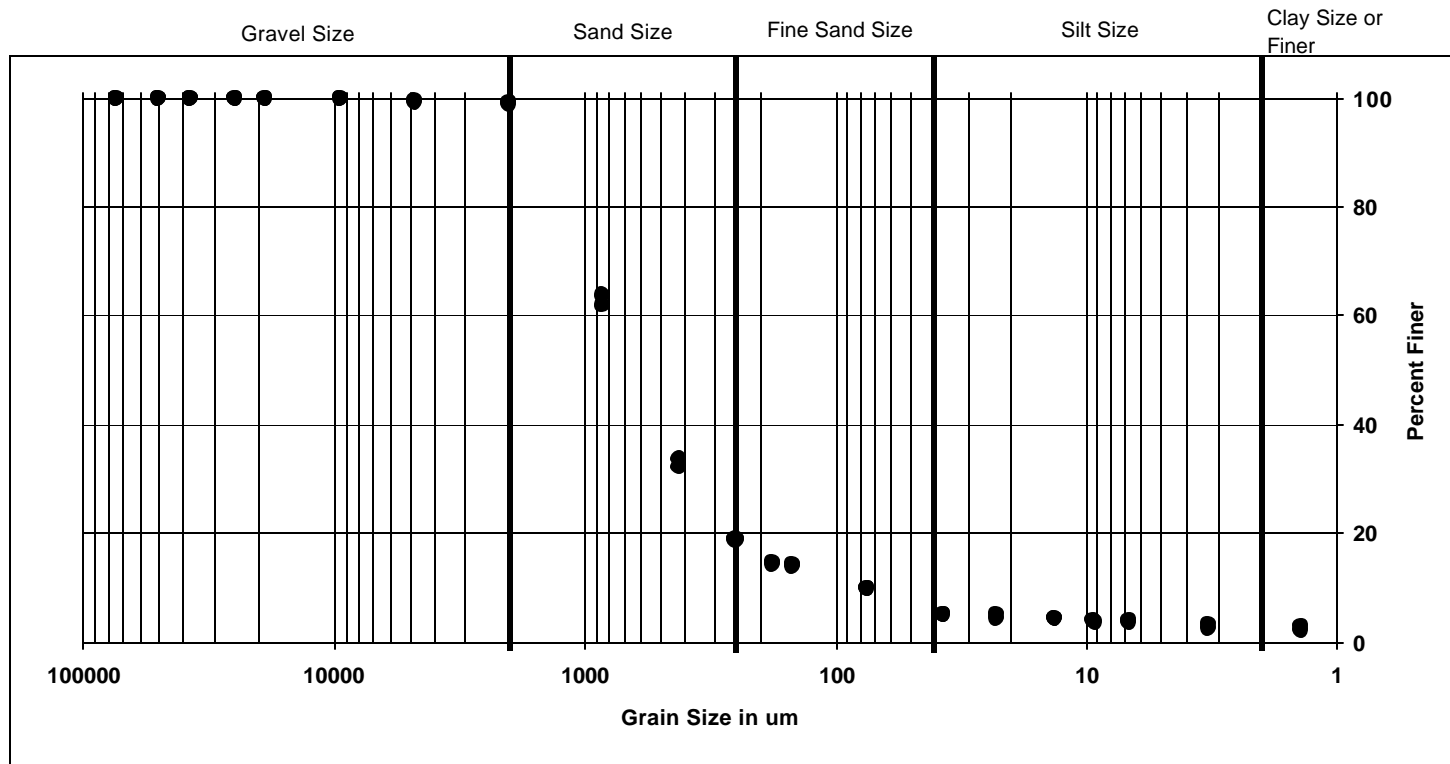


LR1-T01N-SED		
10/2/2002		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		26.5
Fine Sand Size		21
Silt Size		45.8
Clay Size or Finer		6.7

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: ND-2-T01N-SED

Date Received: 11/7/2003

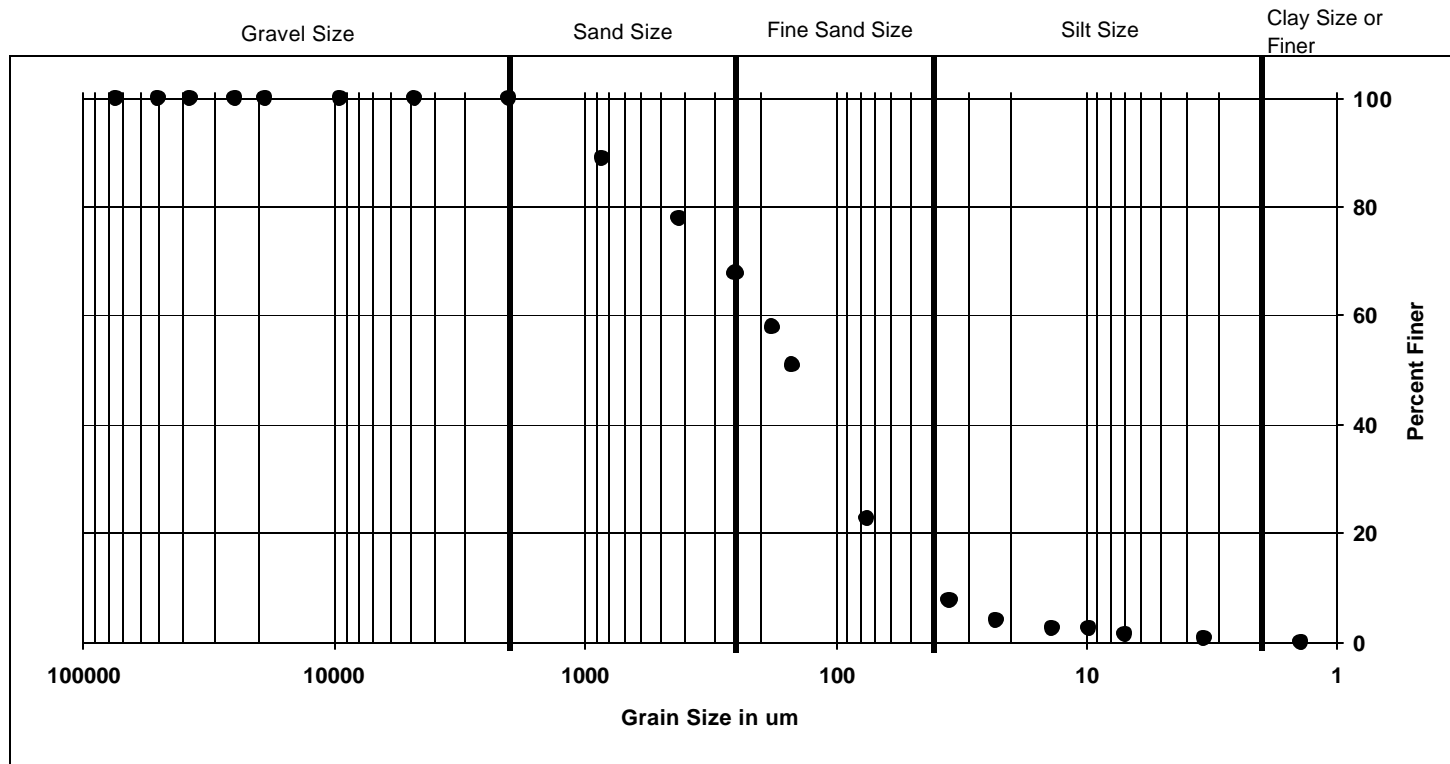


ND-2-T01N-SED		
11/7/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		80.1
Fine Sand Size		12.4
Silt Size		4
Clay Size or Finer		2.7

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-11A1-T01N-SED

Date Received: 10/5/2002

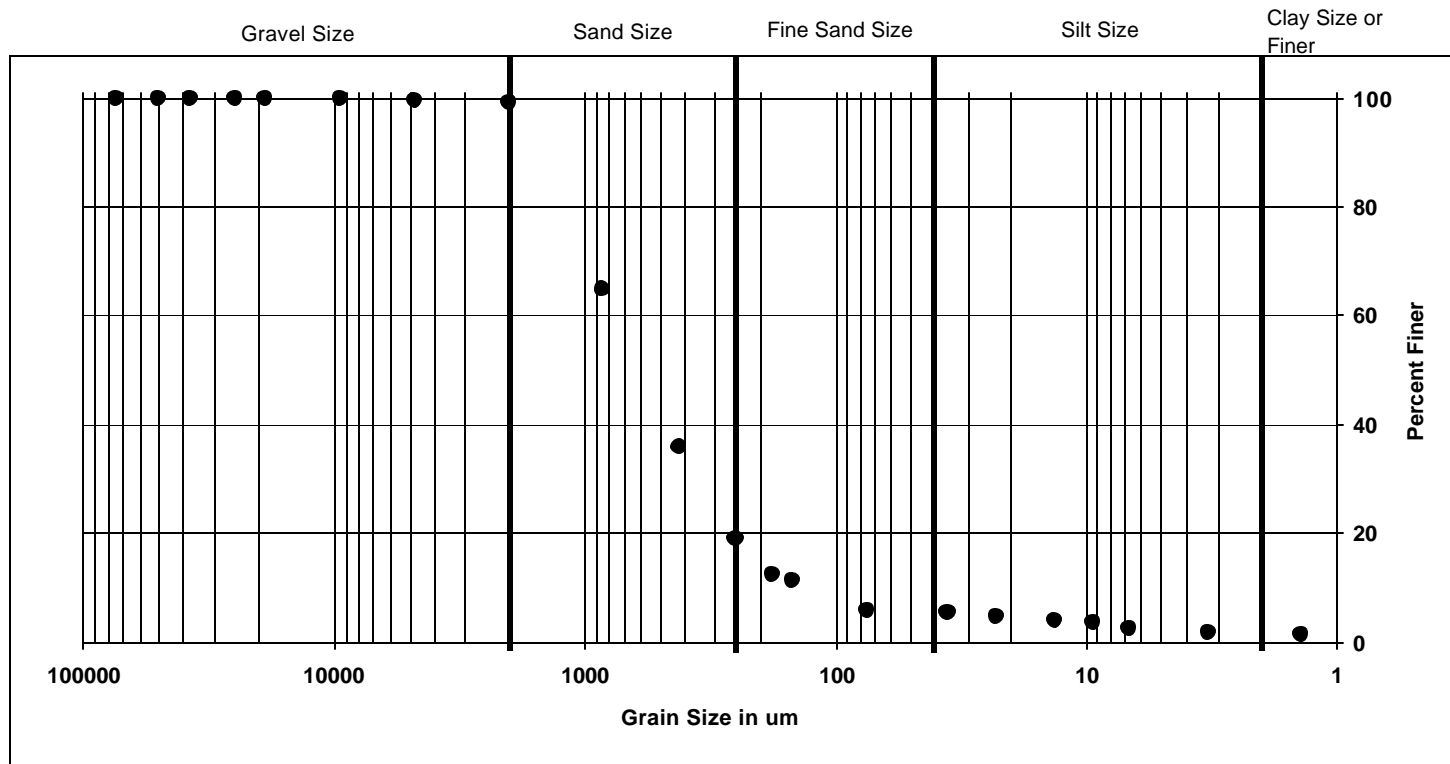


RR-11A1-T01N-SED		
10/5/2002		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		32.2
Fine Sand Size		54.5
Silt Size		13.05
Clay Size or Finer		0.25

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: RR-11A1-T01N-SED

Date Received: 11/5/2003

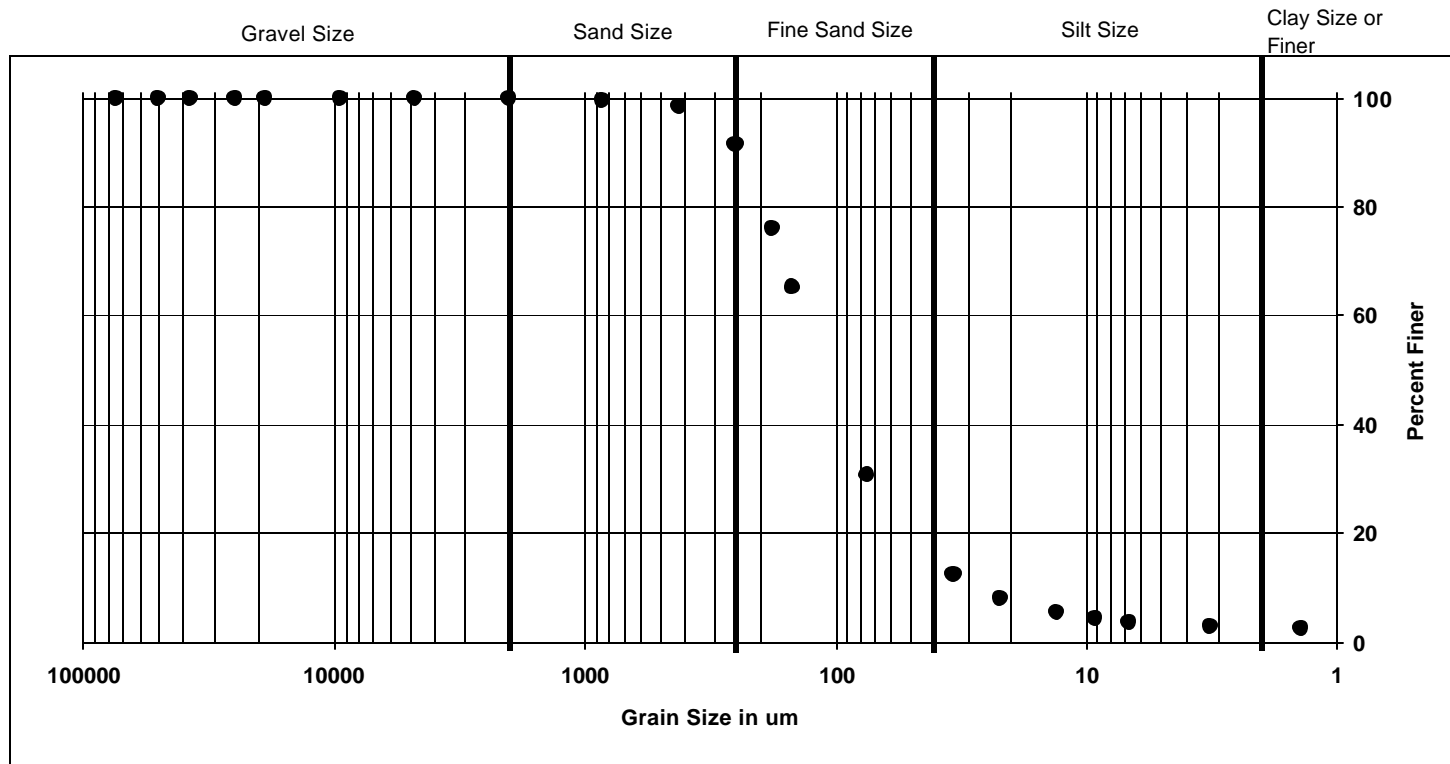


RR-11A1-T01N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	80.1
	Fine Sand Size	13.5
	Silt Size	3.8
	Clay Size or Finer	1.7

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-11A1-T02N-SED

Date Received: 11/5/2003

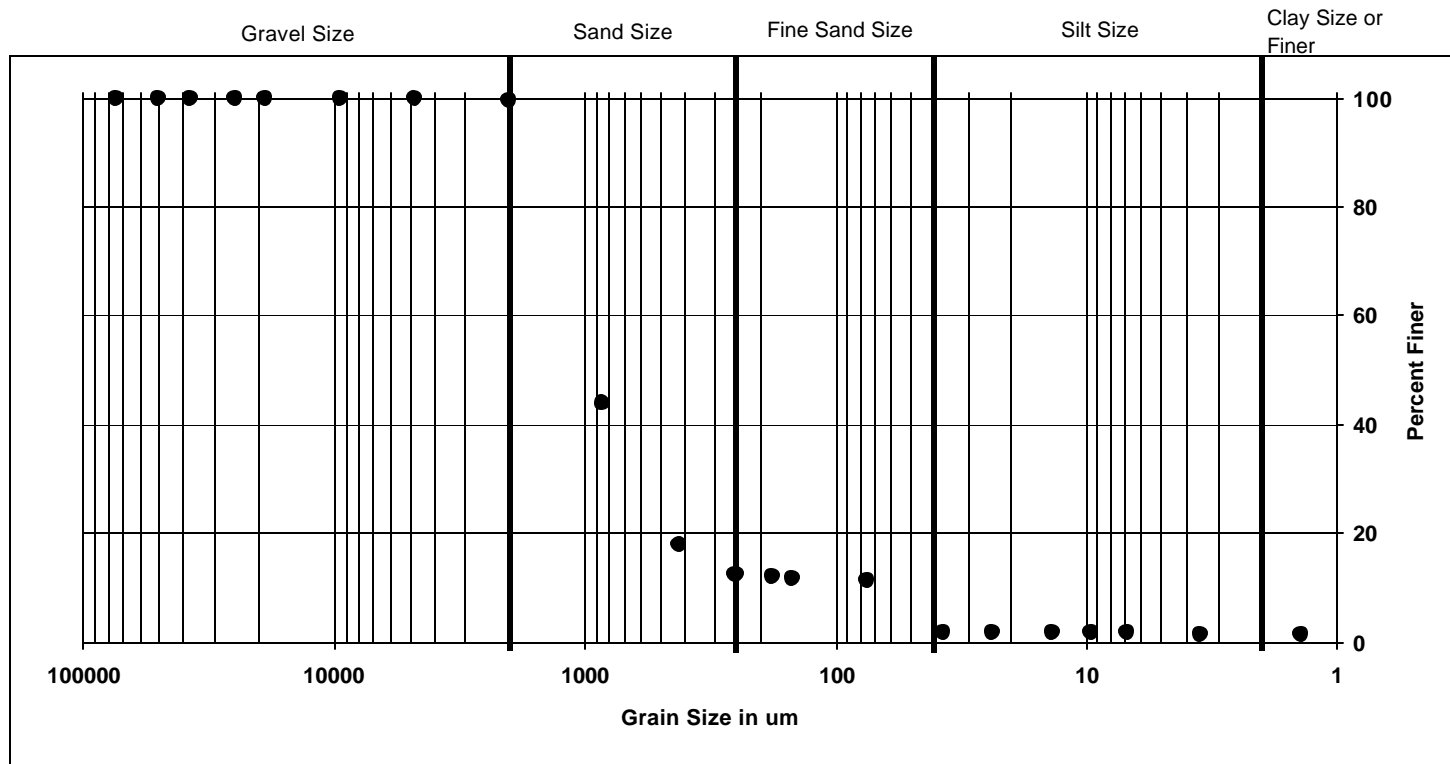


RR-11A1-T02N-SED	Percent of <2MM Sample sent to Lab (%)	
11/5/2003	Description	
	Sand Size	8.40000000000001
	Fine Sand Size	72
	Silt Size	16.8
	Clay Size or Finer	2.8

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-11B2-T04D-SED

Date Received: 10/2/2004

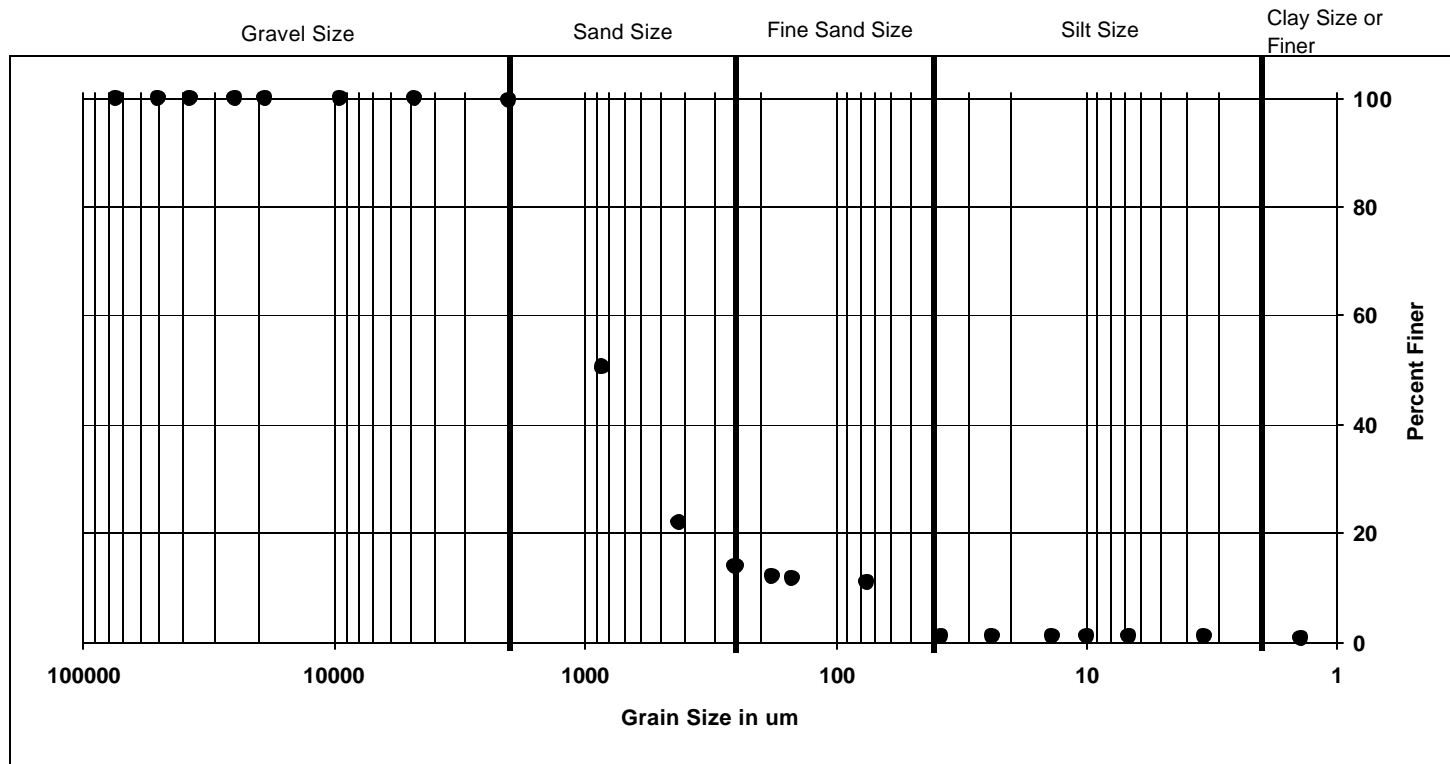


RR-11B2-T04D-SED	Percent of <2MM Sample sent to Lab (%)	
10/2/2004	Description	
	Sand Size	87.3
	Fine Sand Size	7.4
	Silt Size	3.4
	Clay Size or Finer	1.6

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-11B2-T04N-SED

Date Received: 10/2/2004

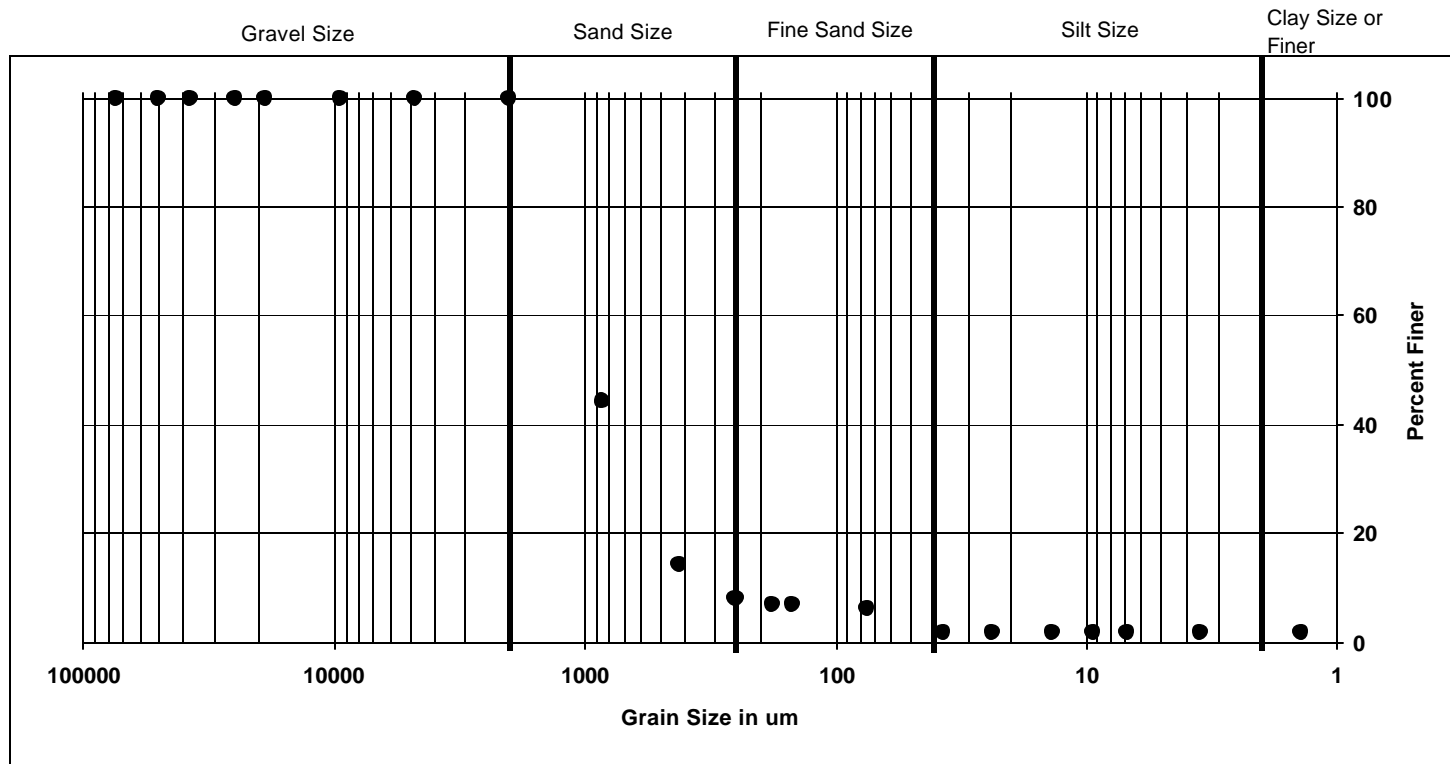


RR-11B2-T04N-SED		
10/2/2004		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	85.6	
Fine Sand Size	9.7	
Silt Size	3.37	
Clay Size or Finer	0.93	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-11B3-T04N-SED

Date Received: 10/2/2004



RR-11B3-T04N-SED		
10/2/2004		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		91.6
Fine Sand Size		4.8
Silt Size		1.7
Clay Size or Finer		1.7

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-12-T01N-SED

Date Received: 10/5/2002

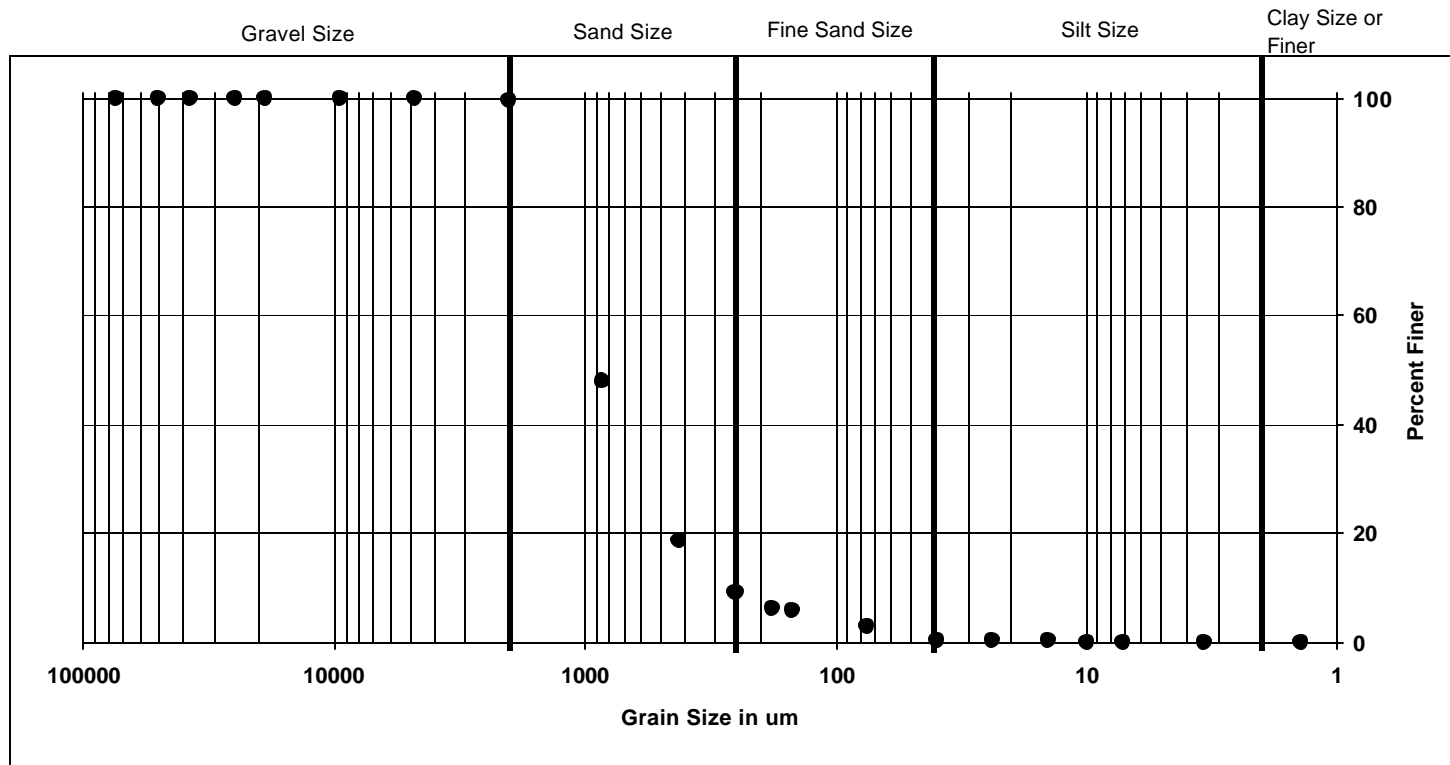


RR-12-T01N-SED 10/5/2002	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	55.8
	Fine Sand Size	39.7
	Silt Size	4.37
	Clay Size or Finer	0.13

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-12-T01N-SED

Date Received: 11/5/2003

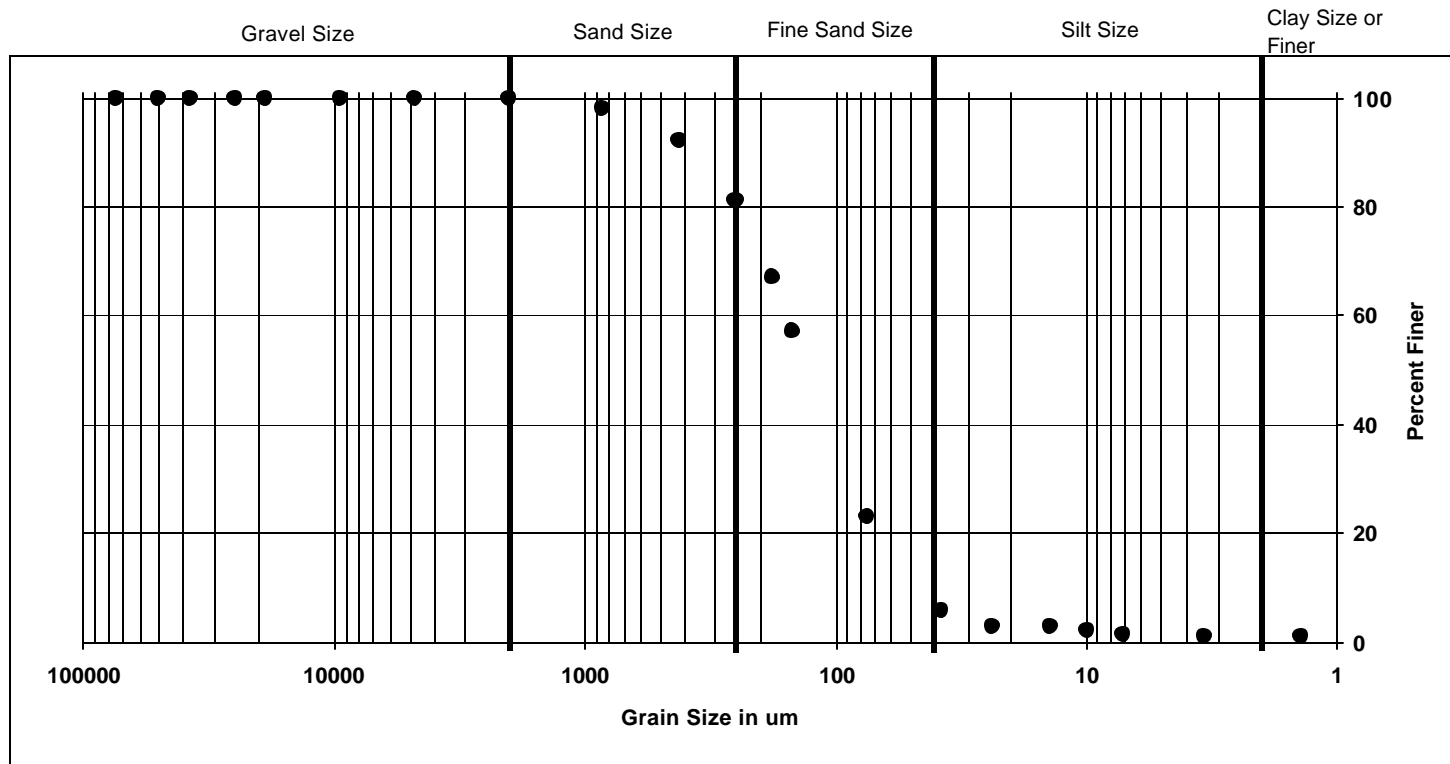


RR-12-T01N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	90.5
	Fine Sand Size	7.8
	Silt Size	1.3
	Clay Size or Finer	0

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-12-T02N-SED

Date Received: 11/5/2003

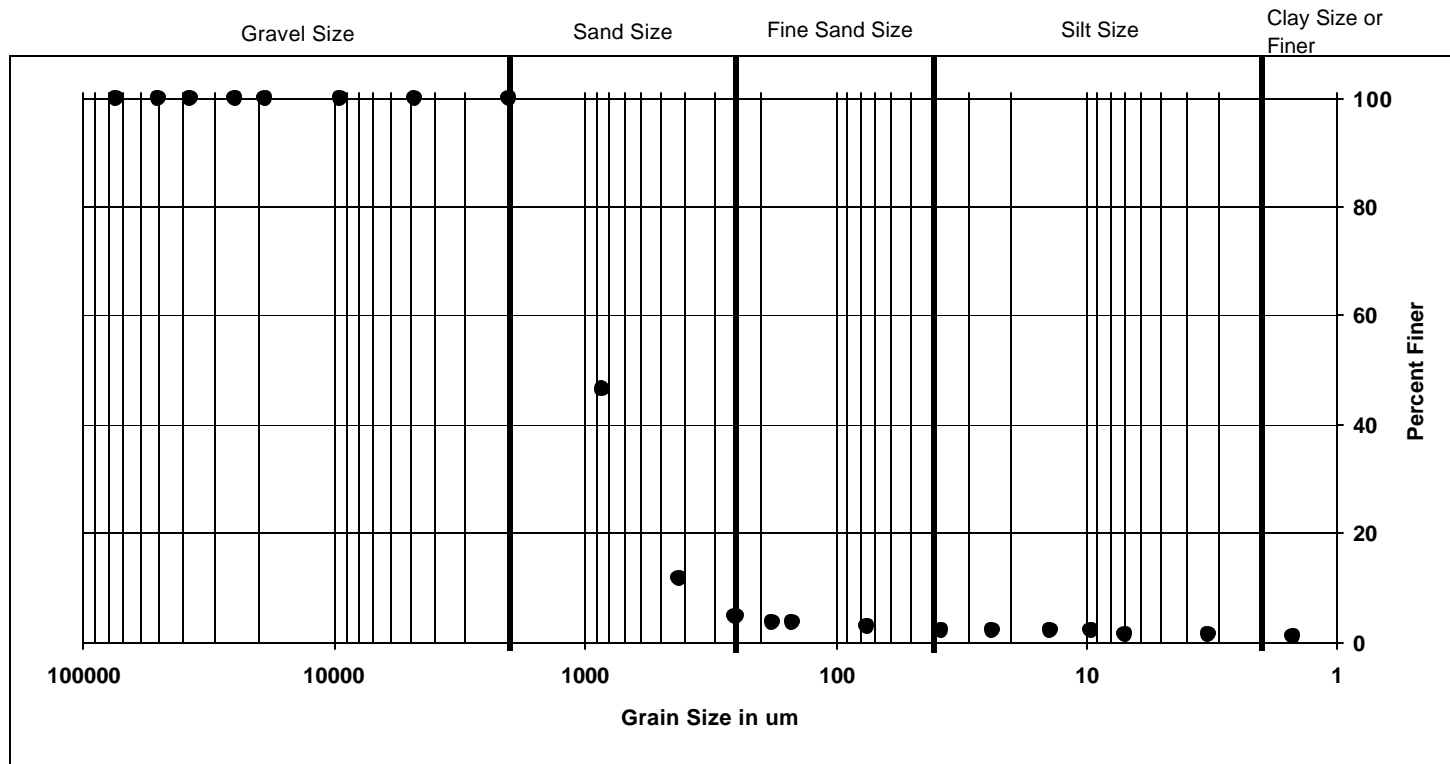


RR-12-T02N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		18.7
Fine Sand Size		69.8
Silt Size		10.3
Clay Size or Finer		1.2

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-13A-T04N-SED

Date Received: 10/2/2004

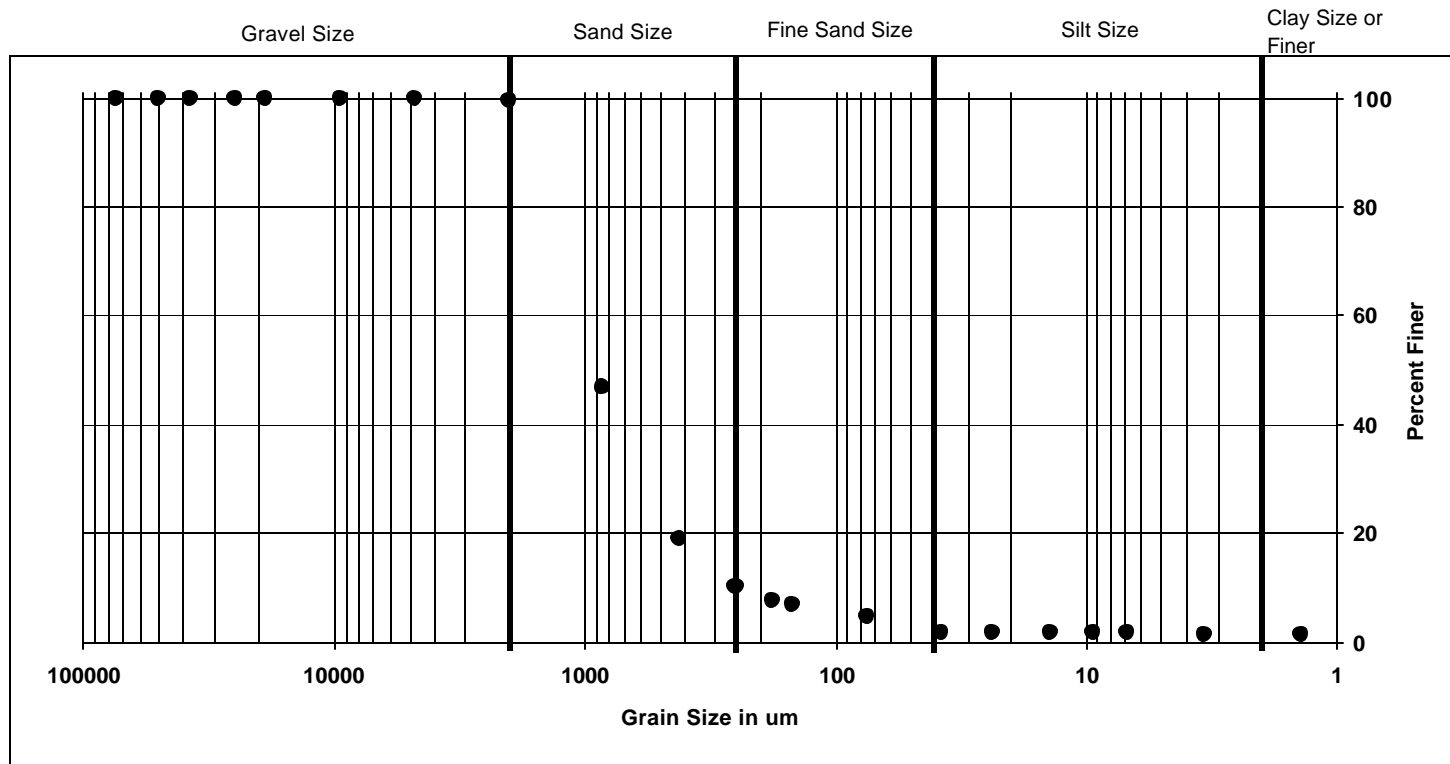


RR-13A-T04N-SED		Percent of <2MM Sample sent to Lab (%)	
10/2/2004		Description	
		Sand Size	95.4
		Fine Sand Size	2.1
		Silt Size	1.3
		Clay Size or Finer	1.2

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: RR-13B-T04N-SED

Date Received: 10/2/2004

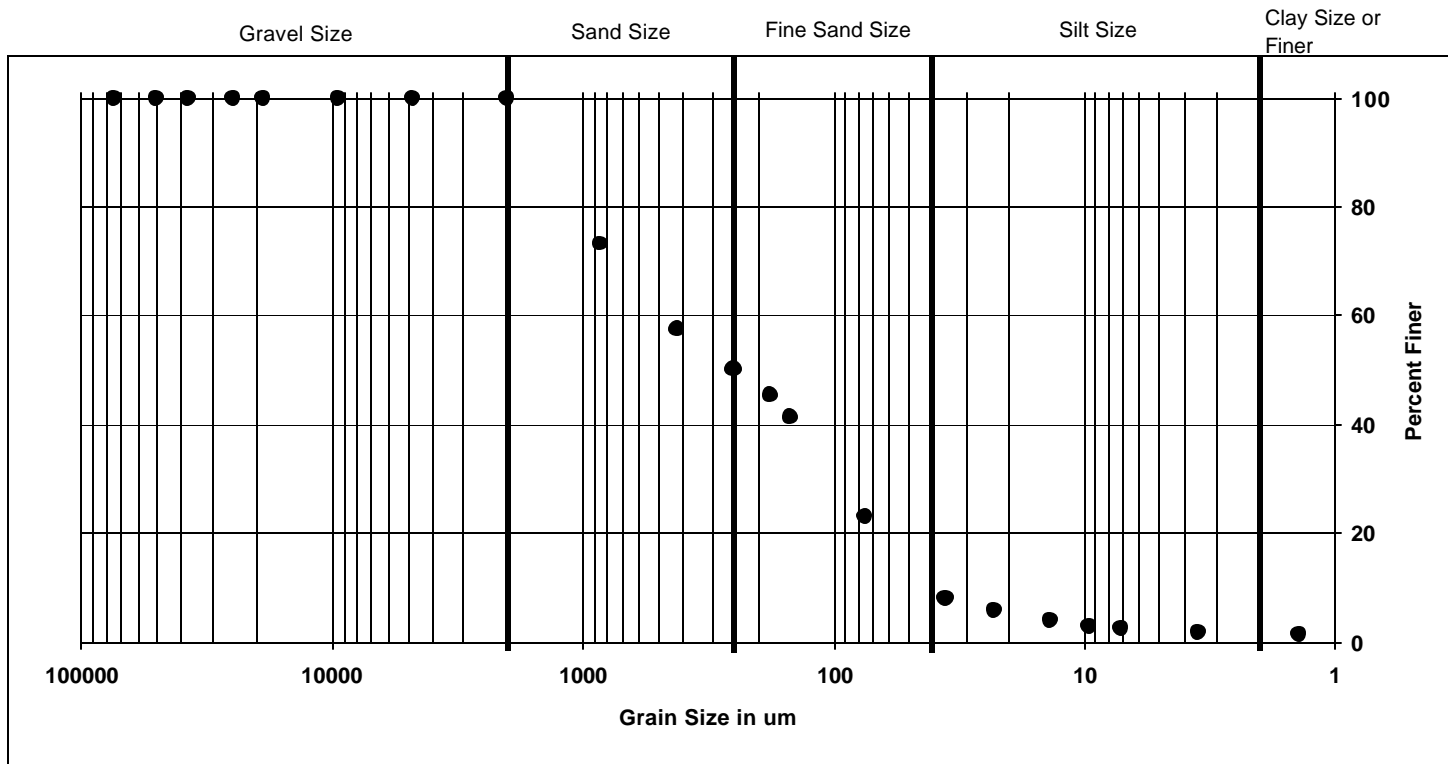


RR-13B-T04N-SED	Percent of <2MM Sample sent to Lab (%)	
10/2/2004	Description	
	Sand Size	89.5
	Fine Sand Size	7.4
	Silt Size	1.3
	Clay Size or Finer	1.5

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-15-T01N-SED

Date Received: 10/3/2002

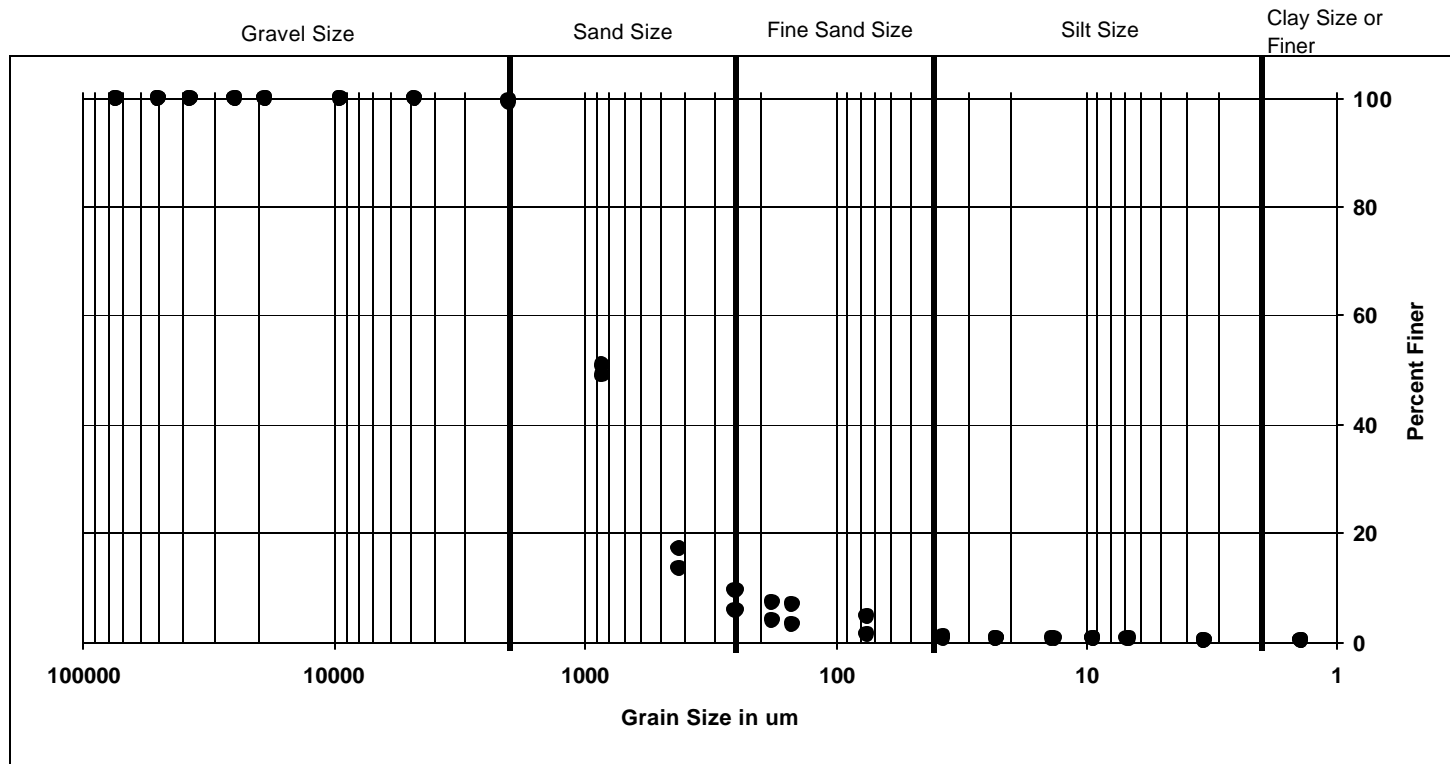


RR-15-T01N-SED		
10/3/2002		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	49.8	
Fine Sand Size	36.7	
Silt Size	12	
Clay Size or Finer	1.5	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-15-T01N-SED

Date Received: 11/5/2003

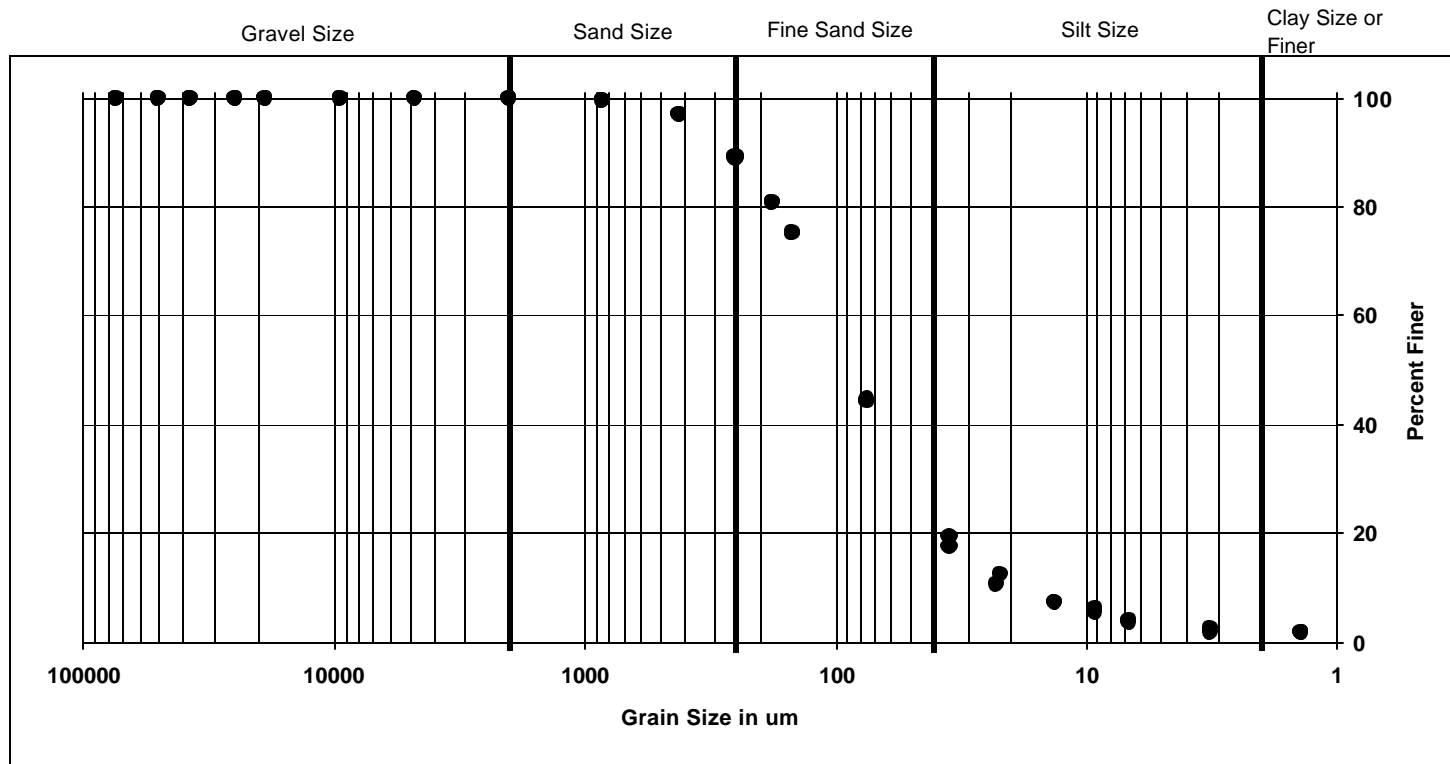


RR-15-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		93.4
Fine Sand Size		4.6
Silt Size		0.9
Clay Size or Finer		0.4

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-15-T02N-SED

Date Received: 11/5/2003

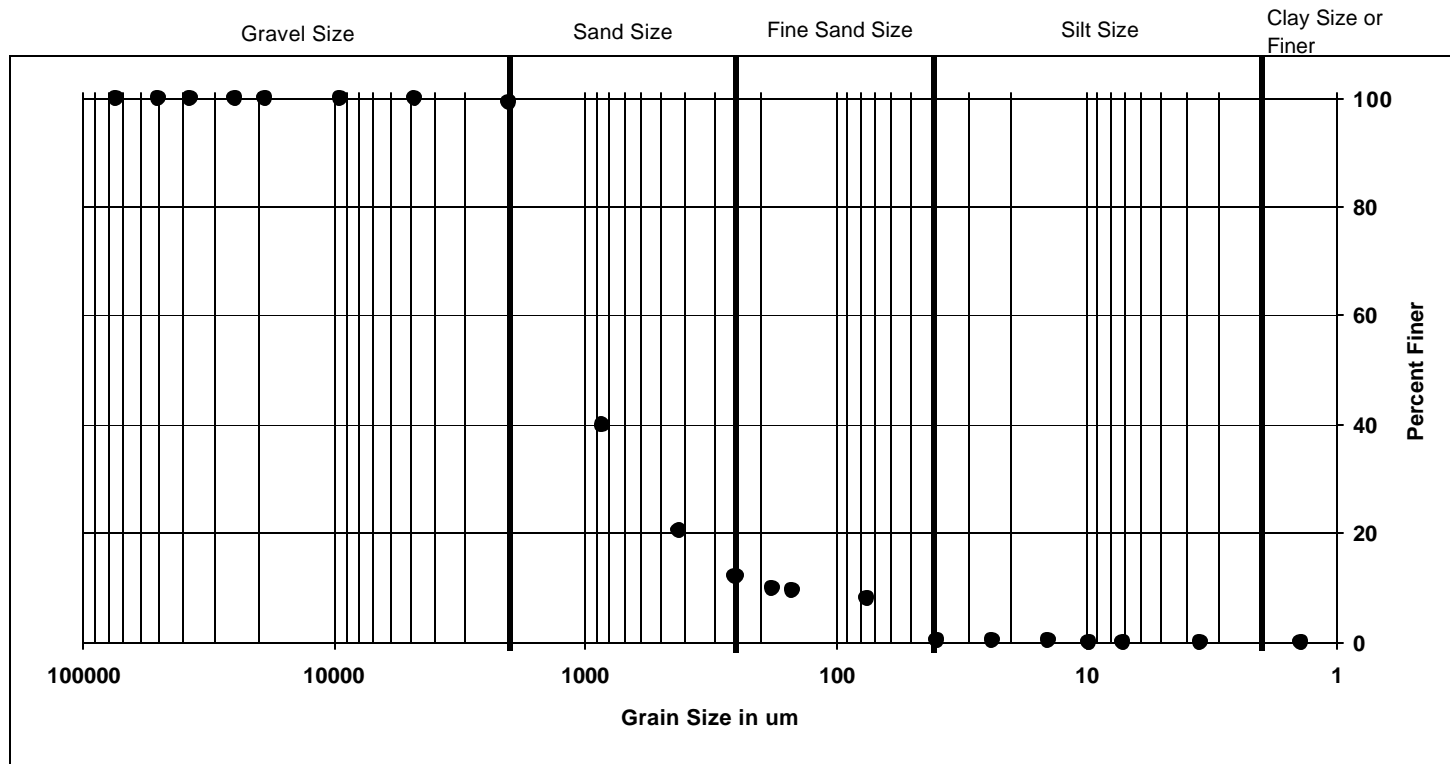


RR-15-T02N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	10.7
	Fine Sand Size	60.6
	Silt Size	26.8
	Clay Size or Finer	1.9

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: RR-20-T01N-SED

Date Received: 11/5/2003

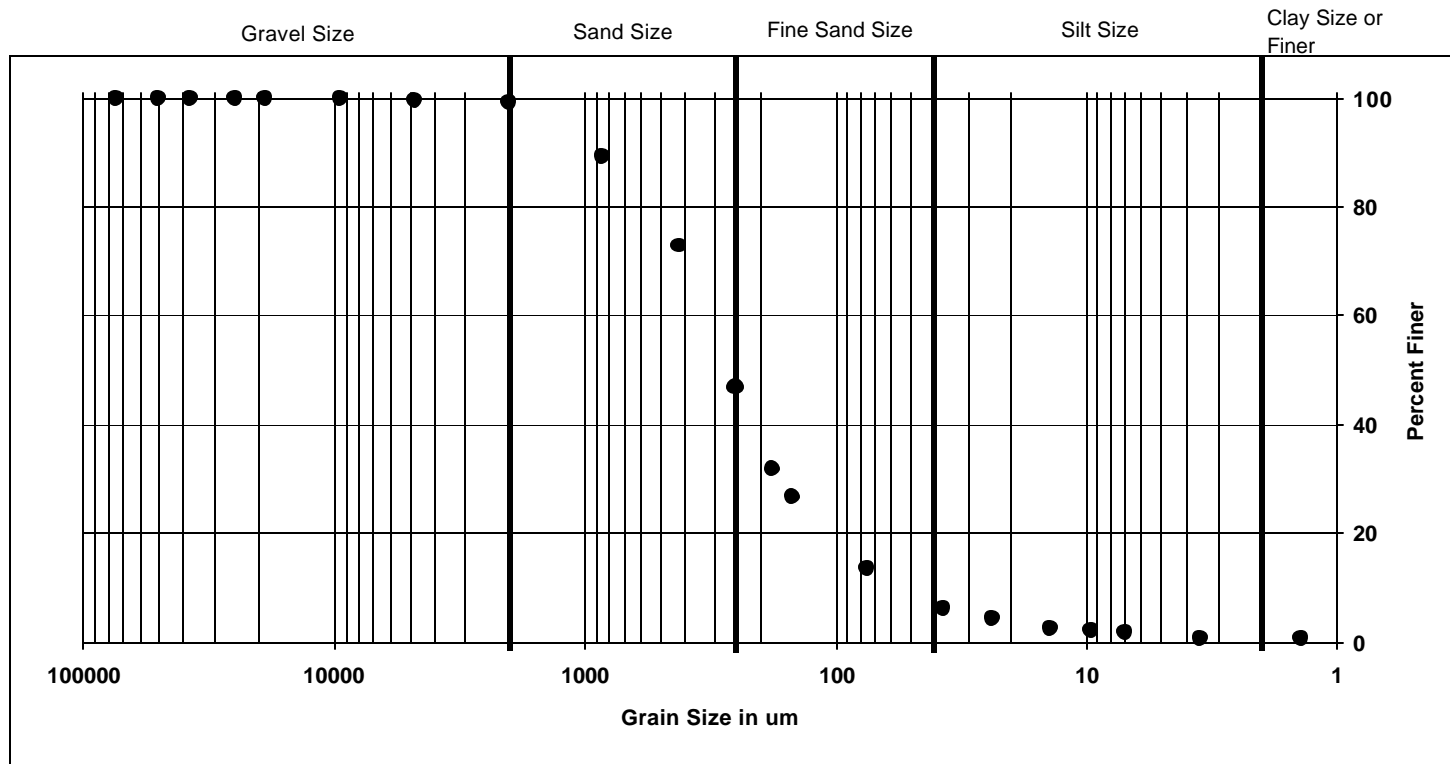


RR-20-T01N-SED		Percent of <2MM Sample sent to Lab (%)
11/5/2003	Description	
	Sand Size	87
	Fine Sand Size	9.6
	Silt Size	2.6
	Clay Size or Finer	0

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-20-T02N-SED

Date Received: 11/5/2003

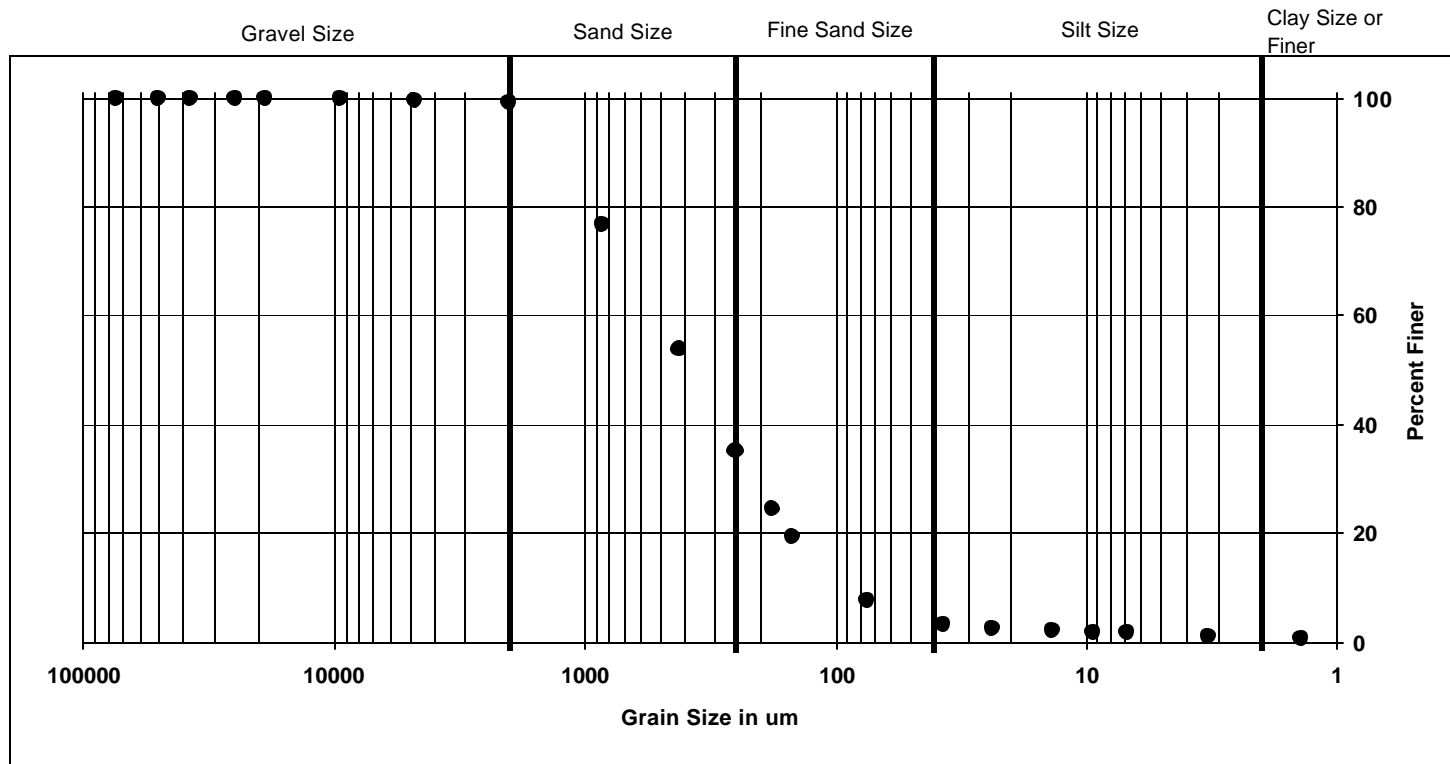


RR-20-T02N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	52.3
	Fine Sand Size	38.3
	Silt Size	7.8
	Clay Size or Finer	0.9

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: RR-4-T01N-SED

Date Received: 10/8/2002

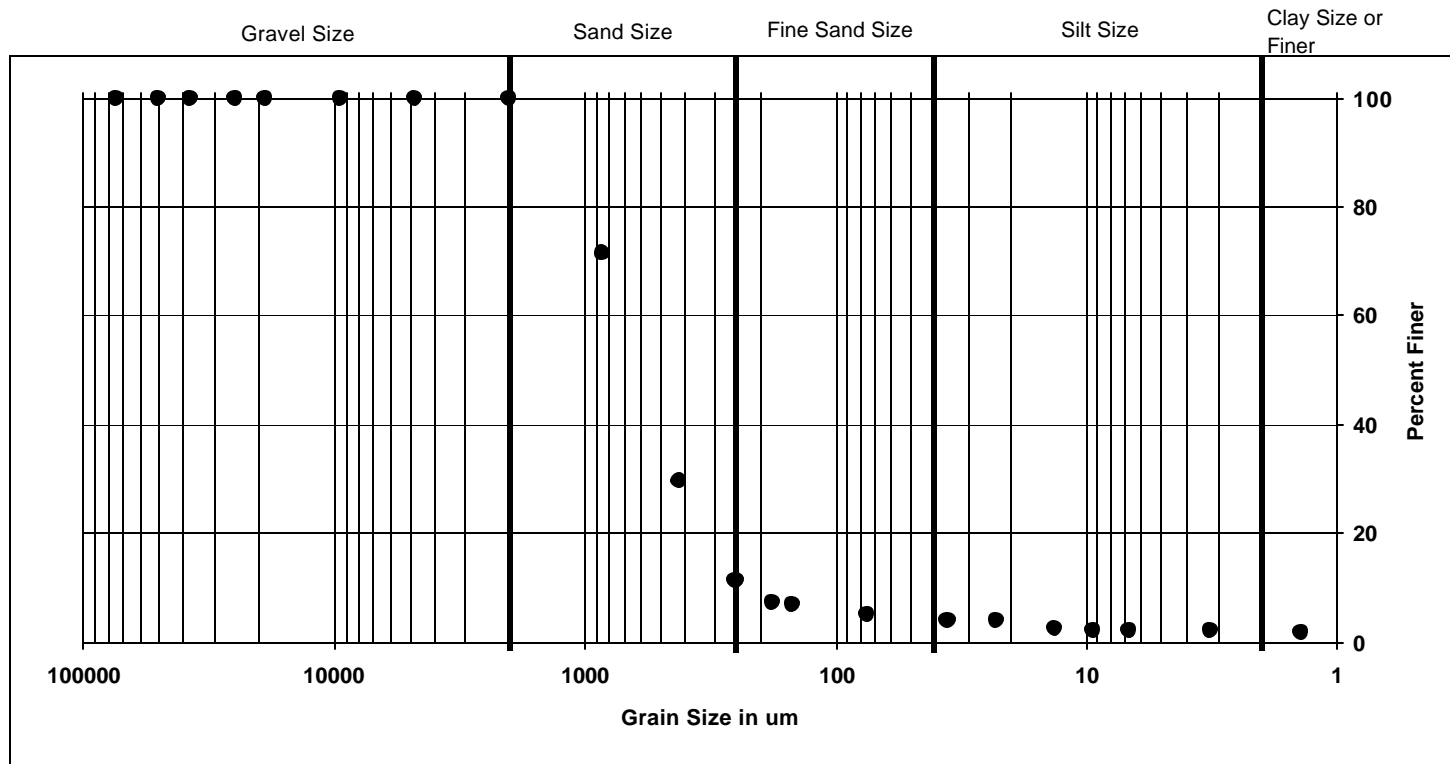


RR-4-T01N-SED		
10/8/2002		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	64.1	
Fine Sand Size	30.3	
Silt Size	4.17	
Clay Size or Finer	0.73	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-4-T01N-SED

Date Received: 11/5/2003



RR-4-T01N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	88.7
	Fine Sand Size	6.7
	Silt Size	2.6
	Clay Size or Finer	1.9

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-4-T02N-SED

Date Received: 11/5/2003

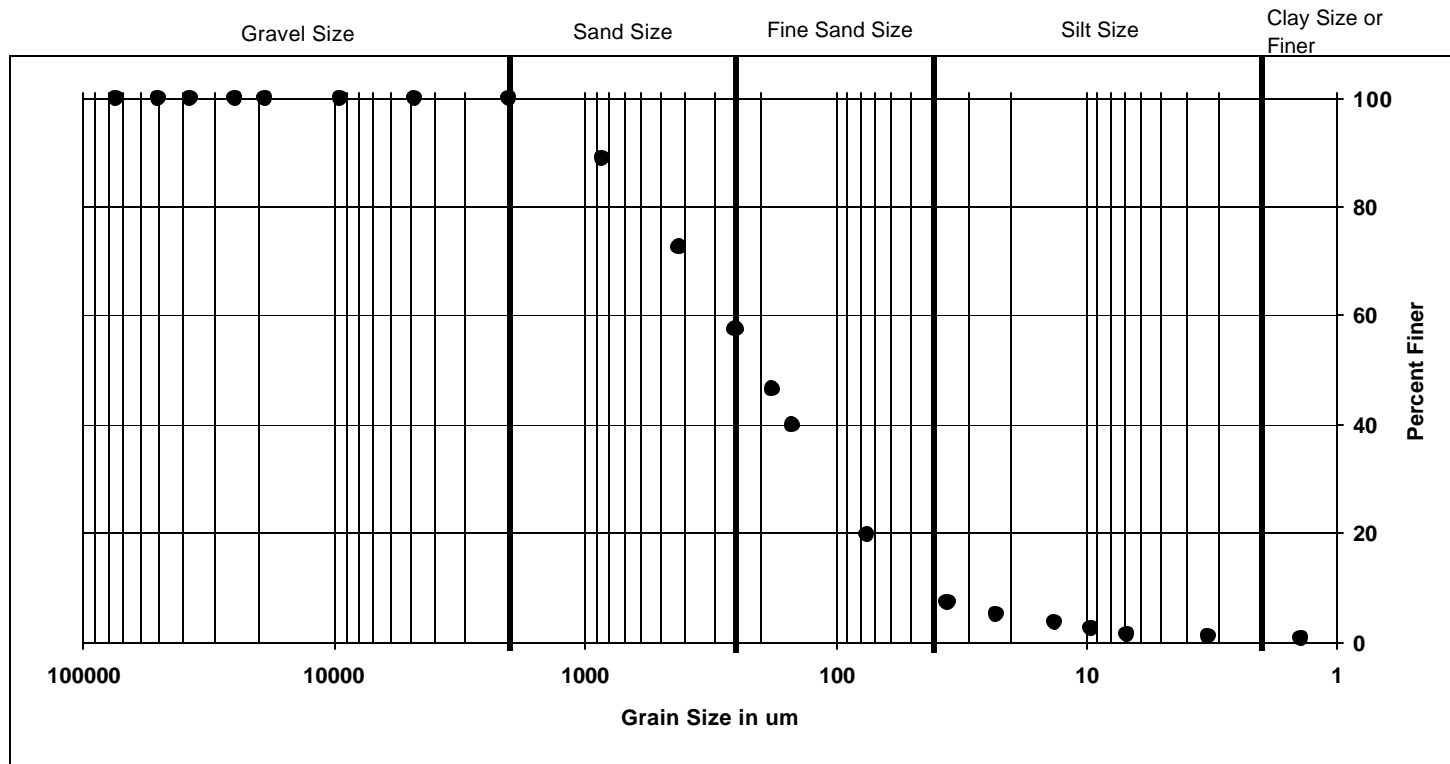


RR-4-T02N-SED		
11/5/2003		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	48.2	
Fine Sand Size	44	
Silt Size	4.6	
Clay Size or Finer	3	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-5-T01N-SED

Date Received: 10/5/2002



RR-5-T01N-SED		
10/5/2002		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		42.6
Fine Sand Size		45.5
Silt Size		10.94
Clay Size or Finer		0.86

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-5-T01N-SED

Date Received: 11/5/2003

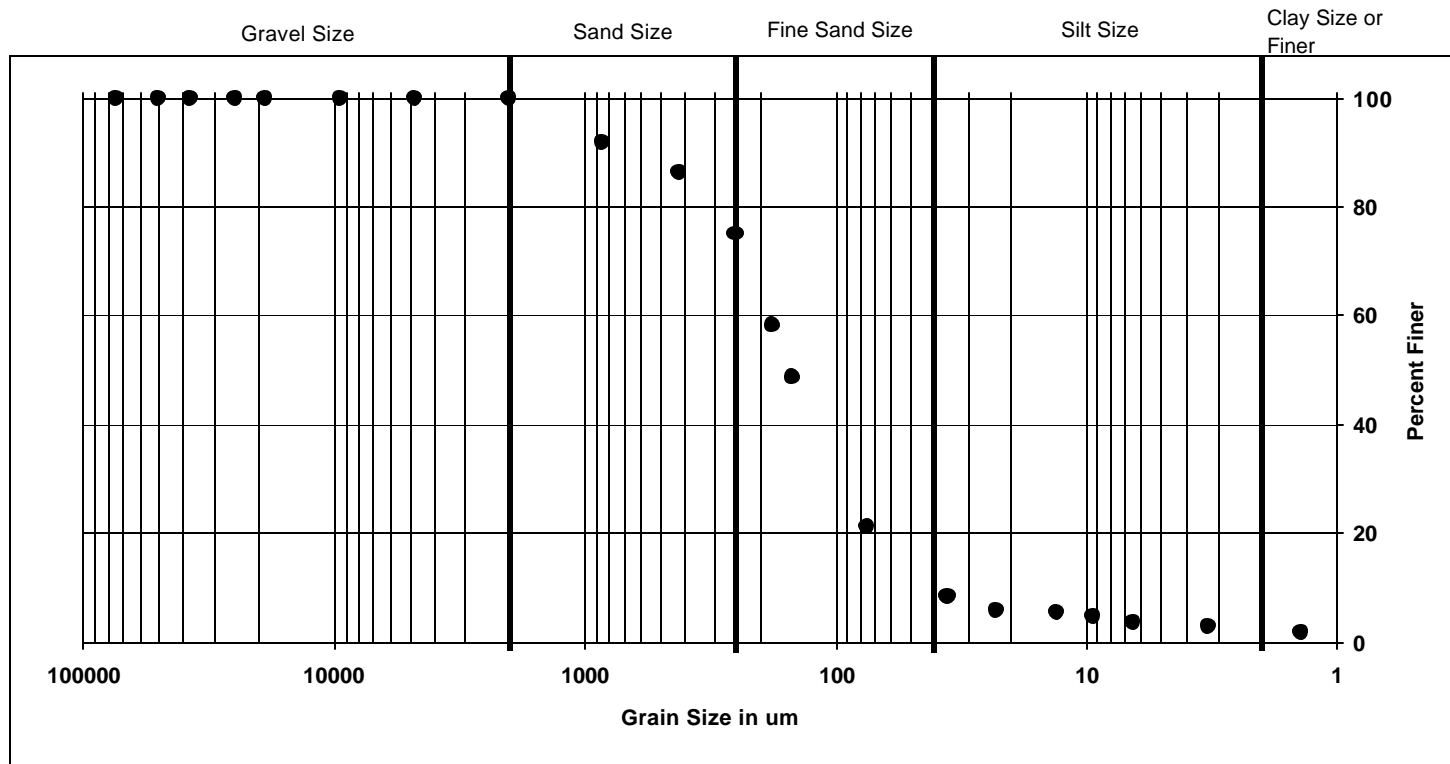


RR-5-T01N-SED		
11/5/2003		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	80.9	
Fine Sand Size	16	
Silt Size	1	
Clay Size or Finer	1.8	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-5-T02N-SED

Date Received: 11/5/2003

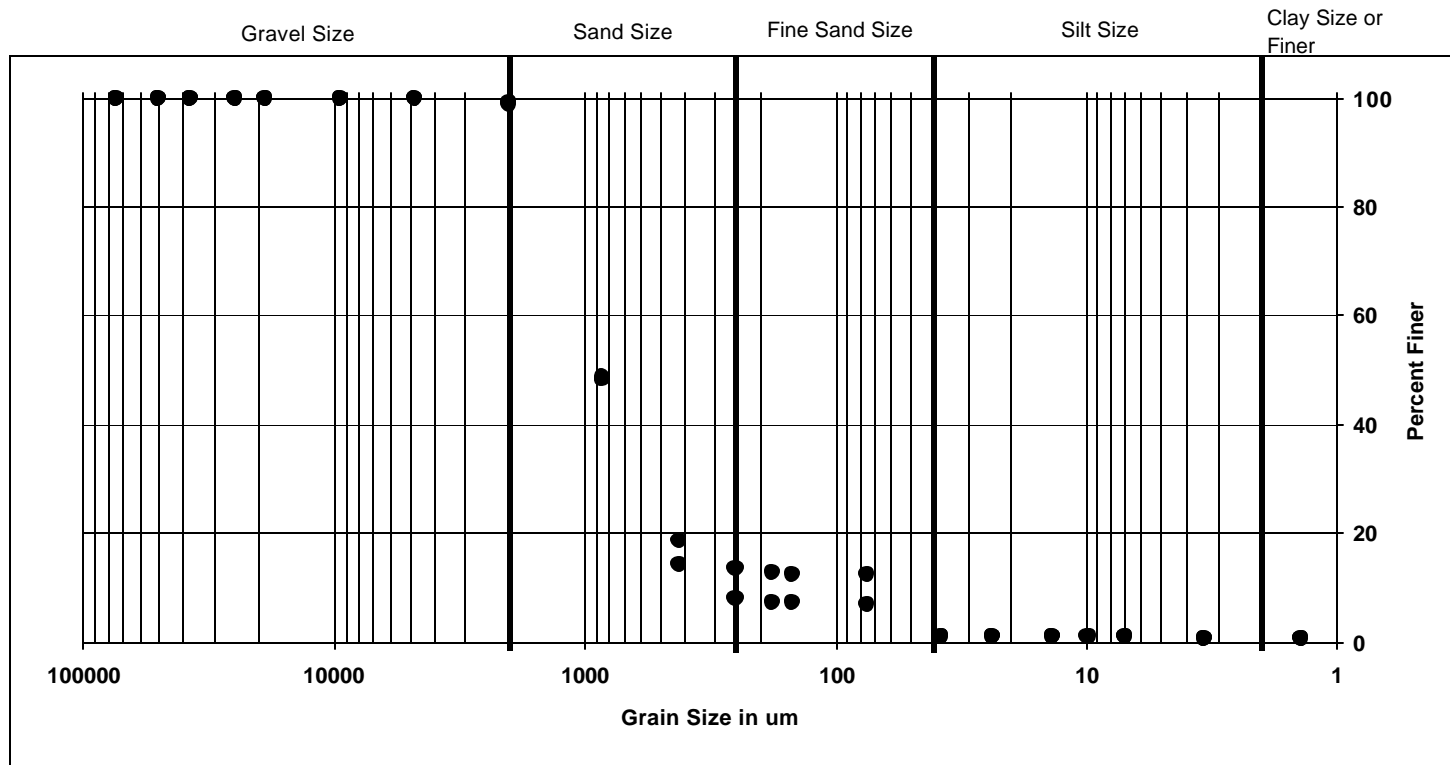


RR-5-T02N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		25.1
Fine Sand Size		61.9
Silt Size		10.9
Clay Size or Finer		2.1

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-5BB-T04N-SED

Date Received: 10/2/2004

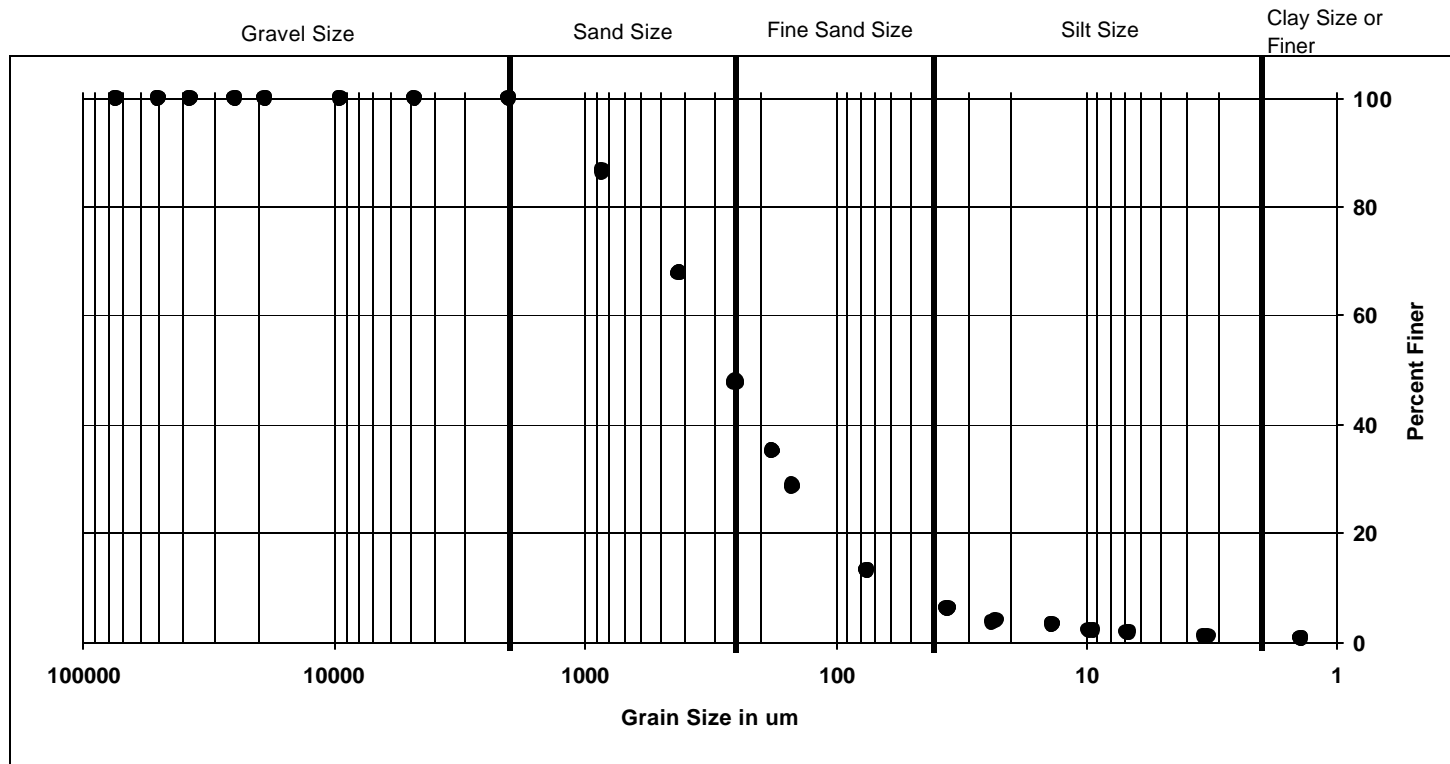


RR-5BB-T04N-SED 10/2/2004	Description	Percent of < 2MM Sample sent to Lab (%)
	Sand Size	85.4
	Fine Sand Size	10.3
	Silt Size	2.2
	Clay Size or Finer	0.9

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-6-T01N-SED

Date Received: 10/8/2002

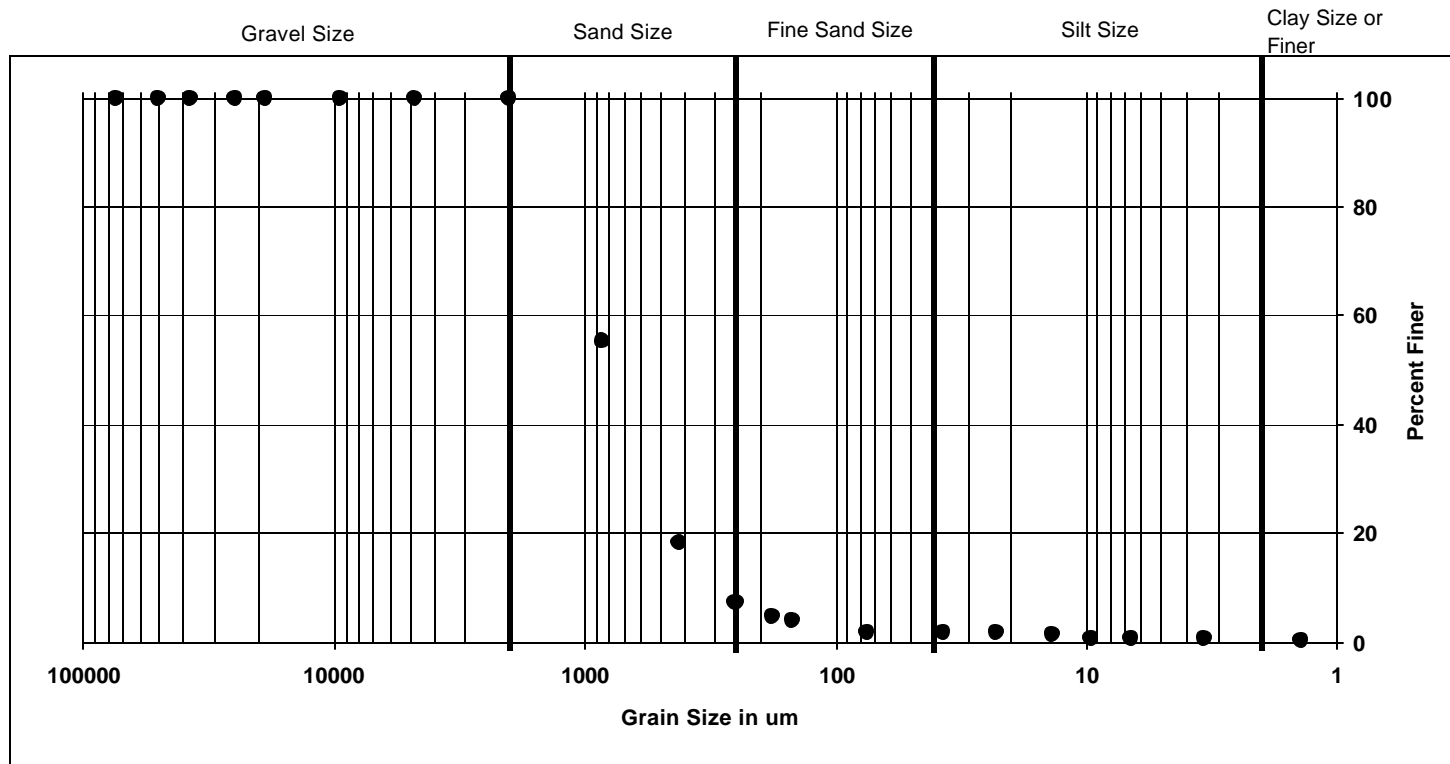


RR-6-T01N-SED		
10/8/2002		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		52.4
Fine Sand Size		39
Silt Size		7.74
Clay Size or Finer		0.86

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-6-T01N-SED

Date Received: 11/5/2003

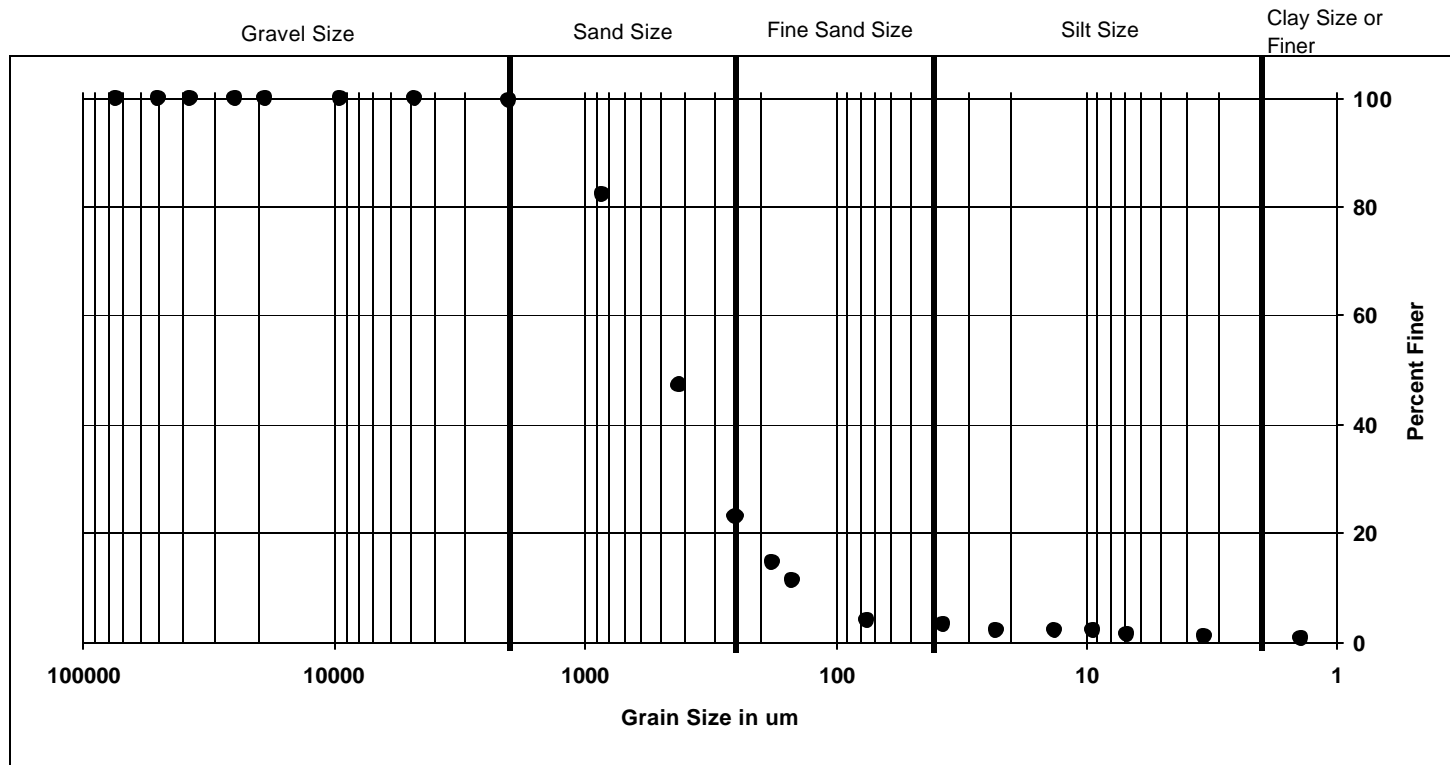


RR-6-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		92.6
Fine Sand Size		5.4
Silt Size		1.31
Clay Size or Finer		0.59

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: RR-6-T02N-SED

Date Received: 11/5/2003



RR-6-T02N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		76.6
Fine Sand Size		19.3
Silt Size		2.98
Clay Size or Finer		0.72

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-6A-T01N-SED

Date Received: 10/8/2002

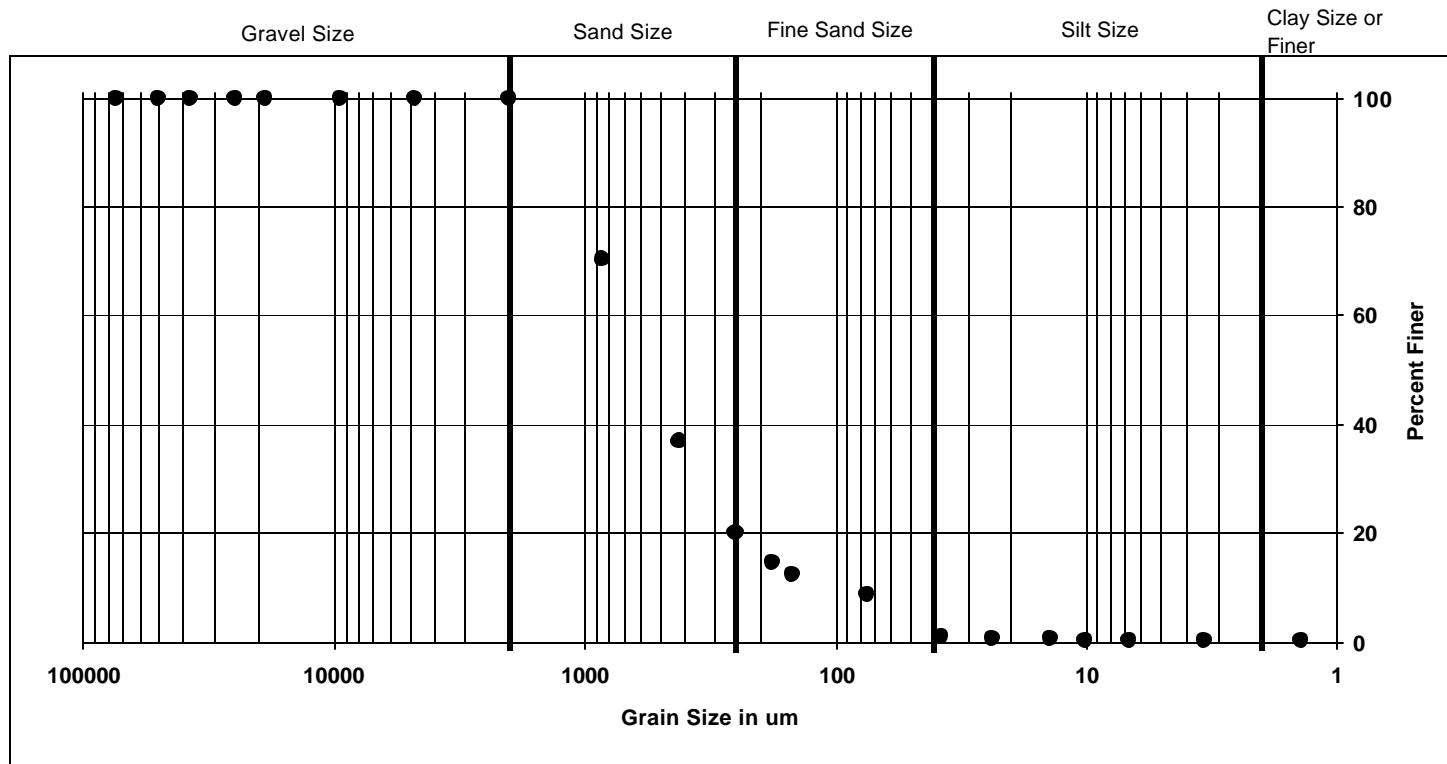


RR-6A-T01N-SED 10/8/2002	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	64.5
	Fine Sand Size	32.1
	Silt Size	3.17
	Clay Size or Finer	0.23

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-7-T01N-SED

Date Received: 10/8/2002

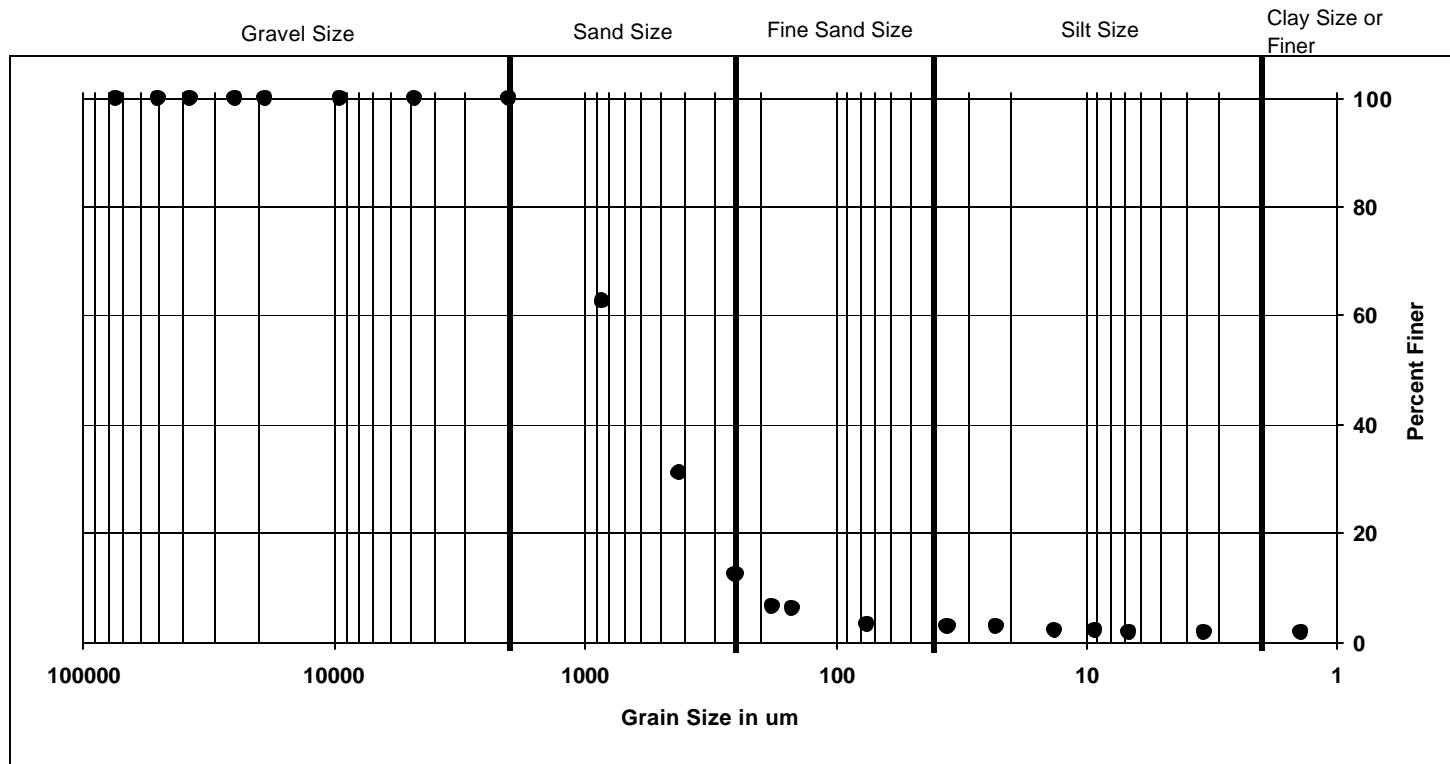


RR-7-T01N-SED 10/8/2002	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	79.8
	Fine Sand Size	16.7
	Silt Size	3.3
	Clay Size or Finer	0.2

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-7-T01N-SED

Date Received: 11/5/2003

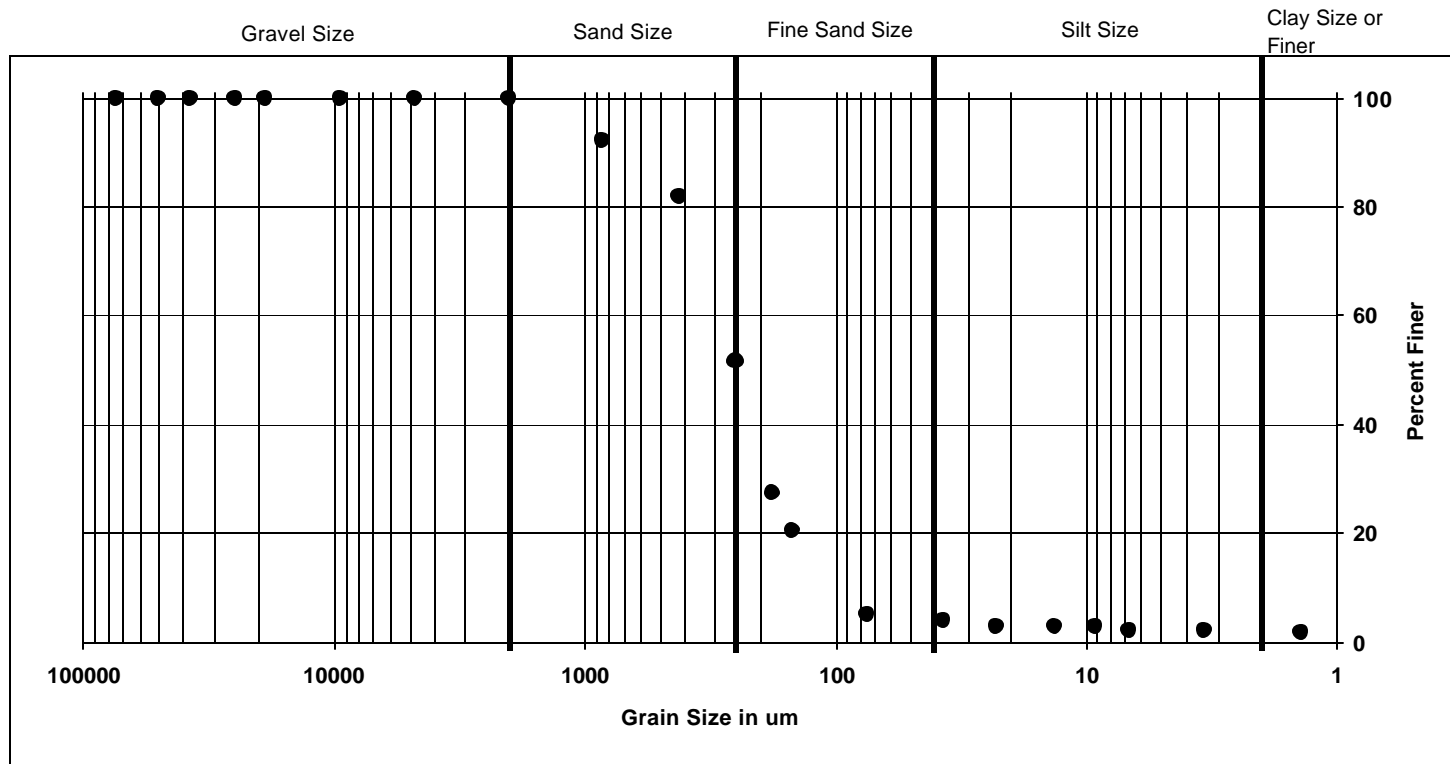


RR-7-T01N-SED		
11/5/2003		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	87.4	
Fine Sand Size	9.4	
Silt Size	1.2	
Clay Size or Finer	1.8	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-7-T02N-SED

Date Received: 11/5/2003

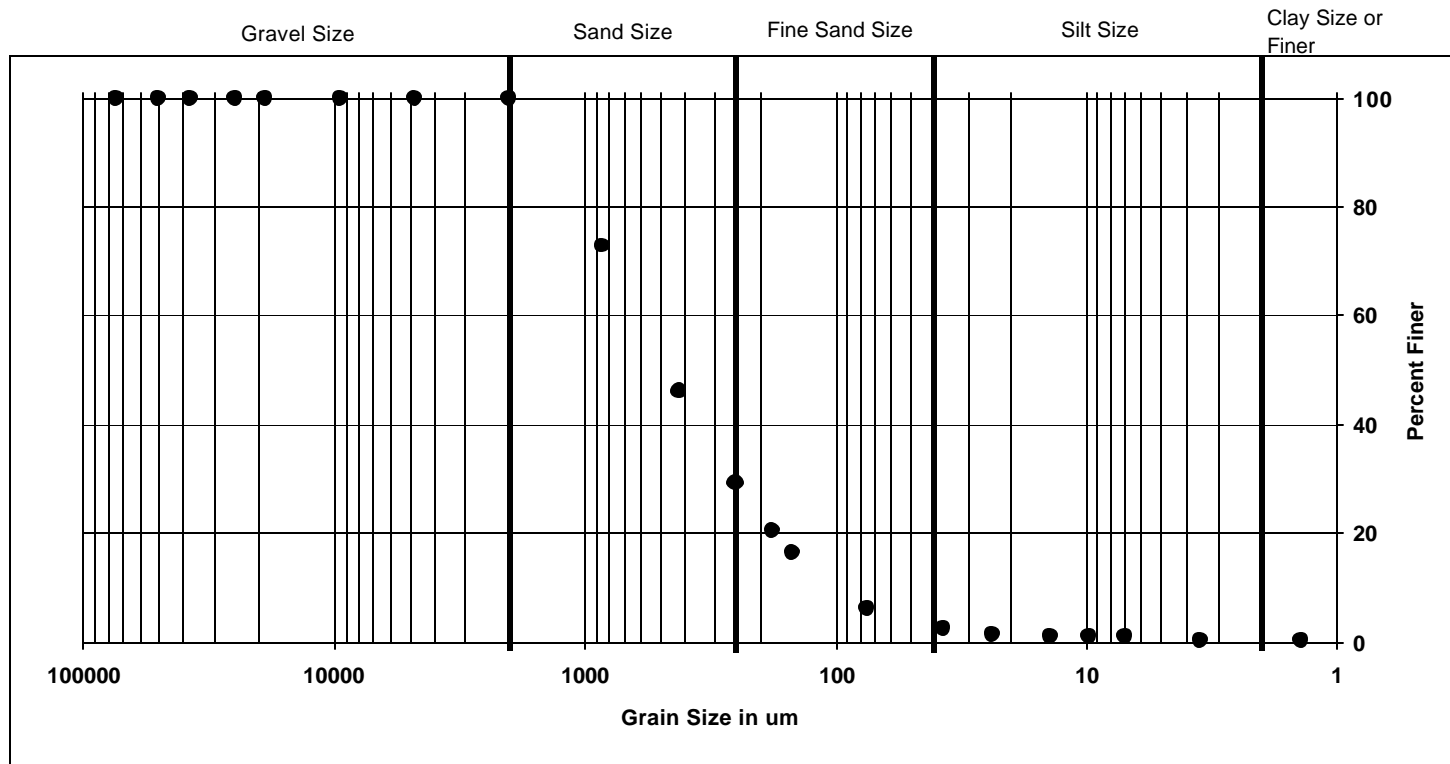


RR-7-T02N-SED		
11/5/2003		
Description	Percent of <2MM Sample sent to Lab (%)	
Sand Size	48.3	
Fine Sand Size	47.3	
Silt Size	2.4	
Clay Size or Finer	2	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-8-T01N-SED

Date Received: 10/8/2002

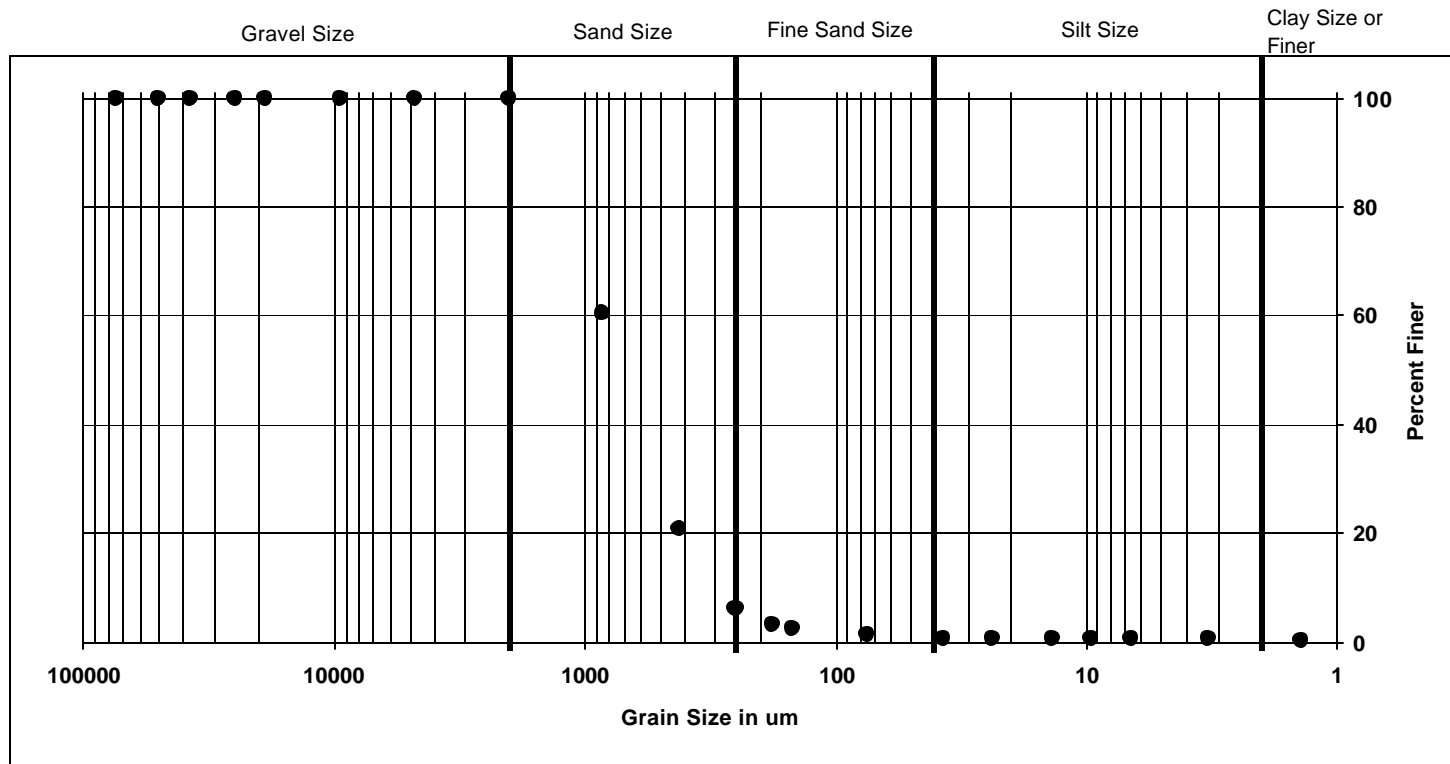


RR-8-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
10/8/2002		Description	
		Sand Size	70.8
		Fine Sand Size	25.4
		Silt Size	3.6
		Clay Size or Finer	0.2

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-8-T01N-SED

Date Received: 11/5/2003

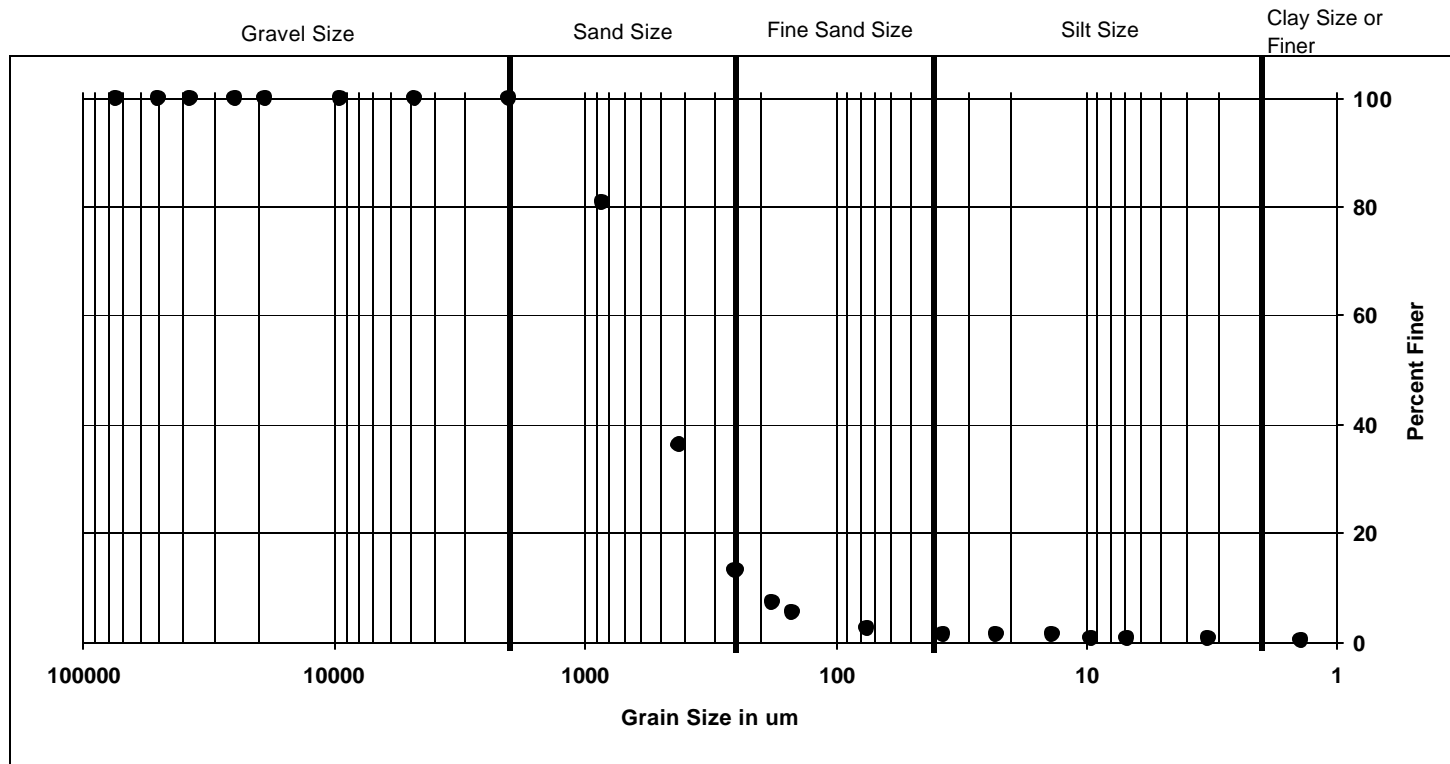


RR-8-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		93.7
Fine Sand Size		5.2
Silt Size		0.47
Clay Size or Finer		0.53

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RR-8-T02N-SED

Date Received: 11/5/2003

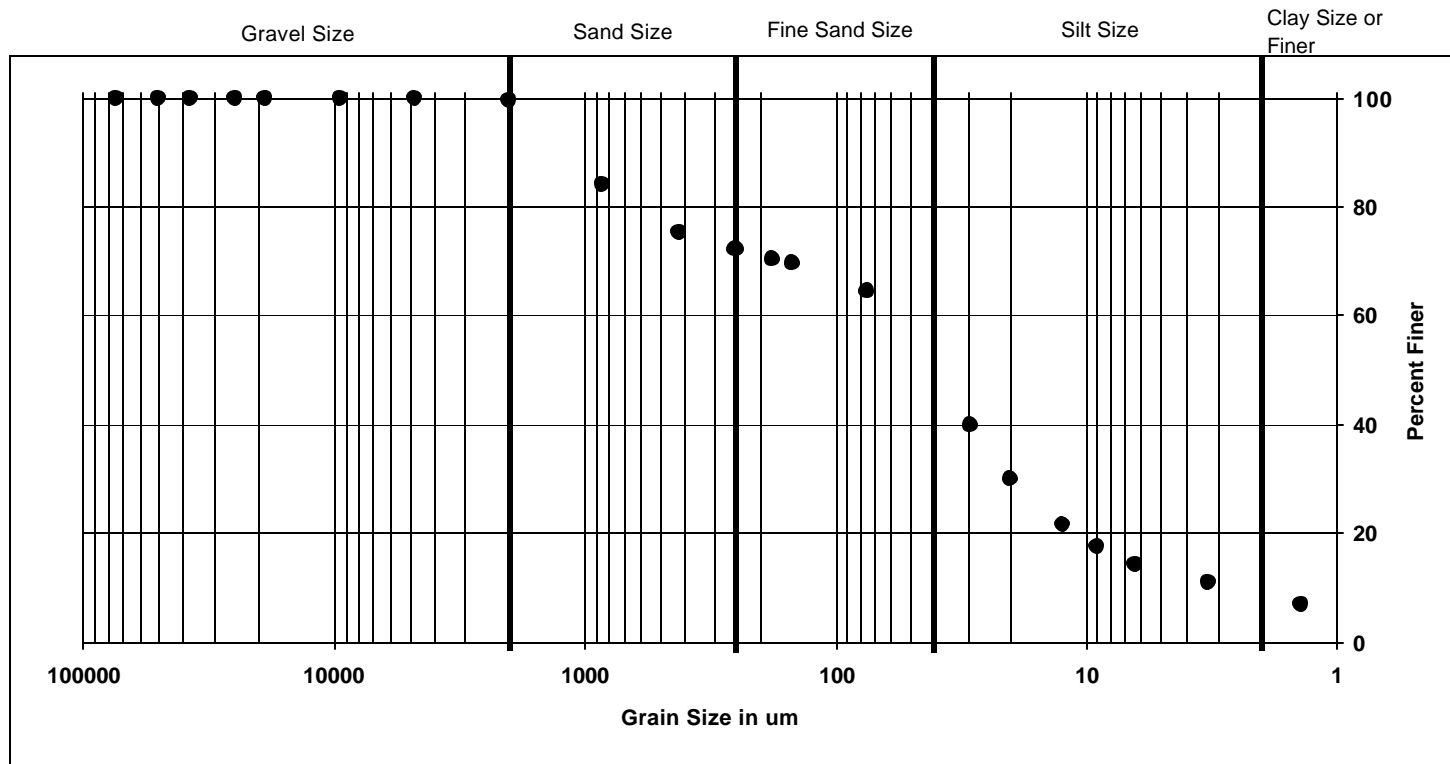


RR-8-T02N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		86.8
Fine Sand Size		11.5
Silt Size		1.14
Clay Size or Finer		0.56

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: RR20-T01N-SED

Date Received: 10/2/2002

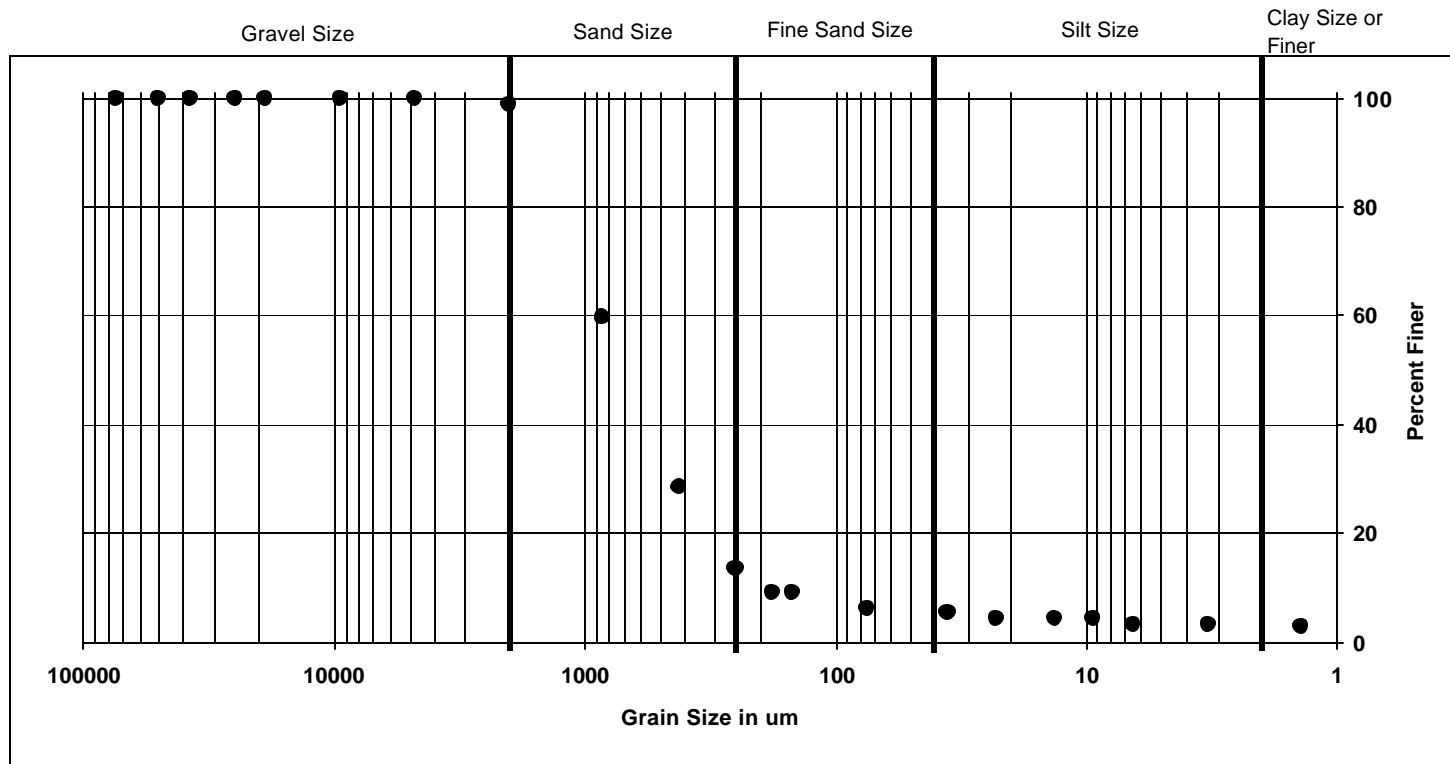


RR20-T01N-SED		Percent of <2MM Sample sent to Lab (%)
10/2/2002	Description	
	Sand Size	27.4
	Fine Sand Size	21
	Silt Size	42.8
	Clay Size or Finer	8.3

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RRS-20-T01N-SED

Date Received: 11/5/2003

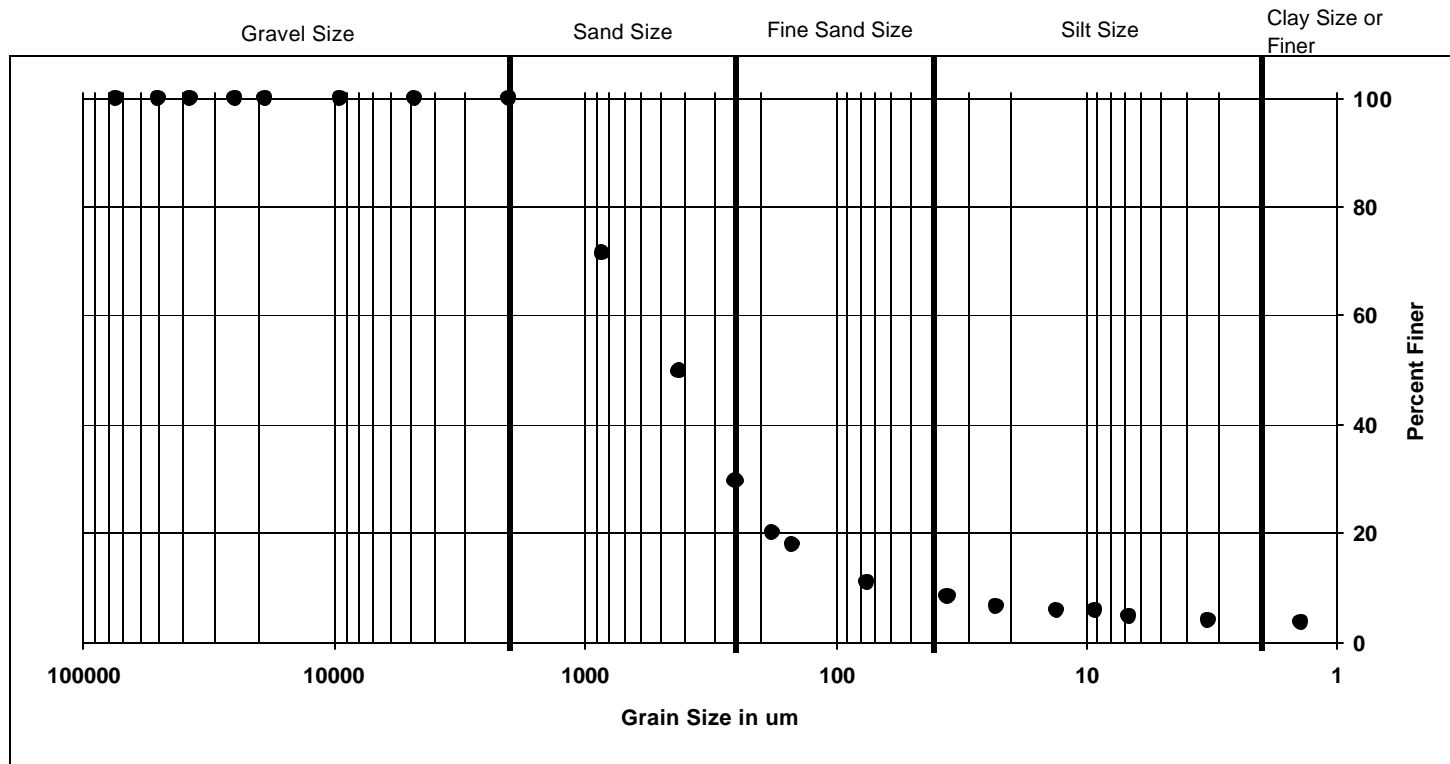


RRS-20-T01N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	85.5
	Fine Sand Size	7.7
	Silt Size	2.6
	Clay Size or Finer	3.1

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: RRS-20-T02N-SED

Date Received: 11/5/2003

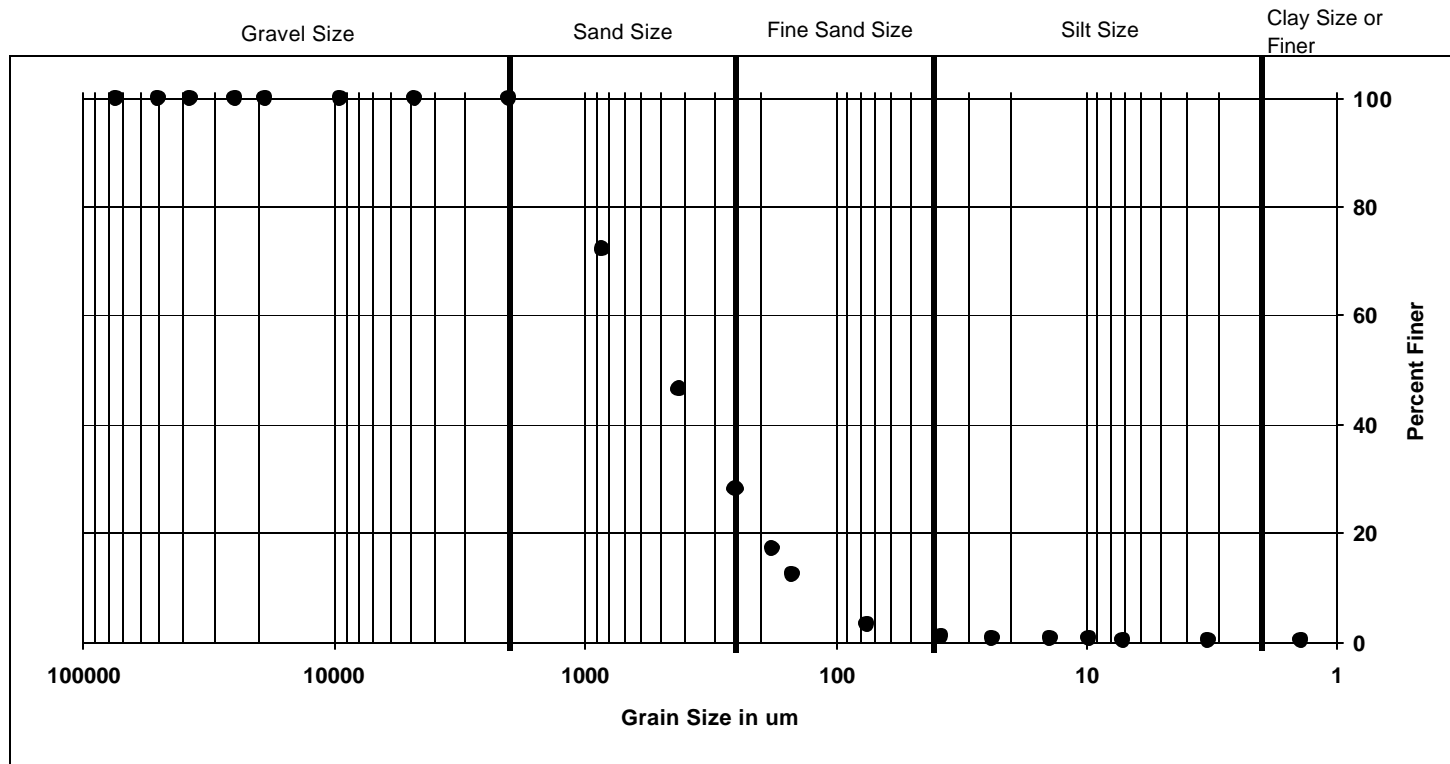


RRS-20-T02N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	70.2
	Fine Sand Size	20.4
	Silt Size	5.5
	Clay Size or Finer	3.7

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-101N-T01N-SED

Date Received: 9/28/2004

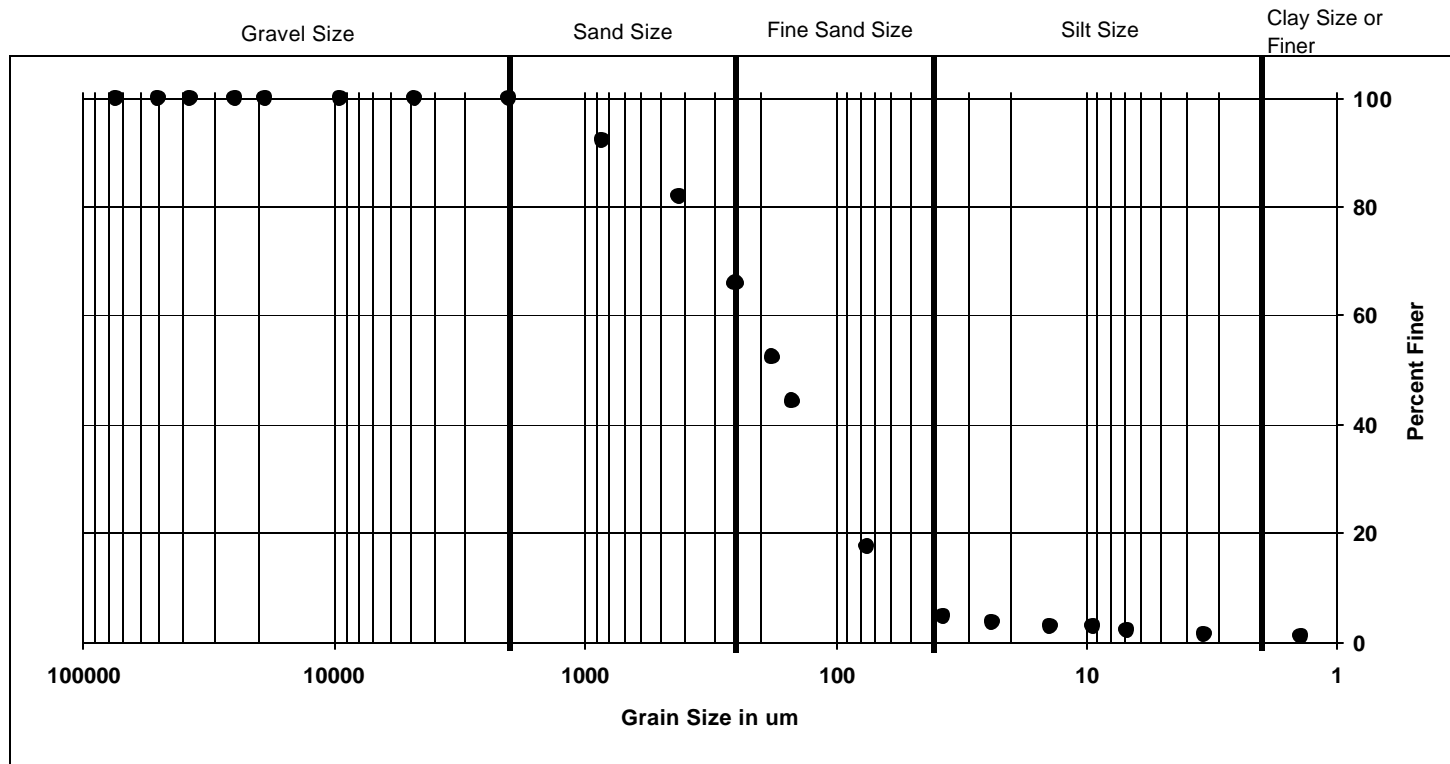


TR-101N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	71.9
		Fine Sand Size	26.3
		Silt Size	1.6
		Clay Size or Finer	0.2

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-102N-T01N-SED

Date Received: 9/28/2004

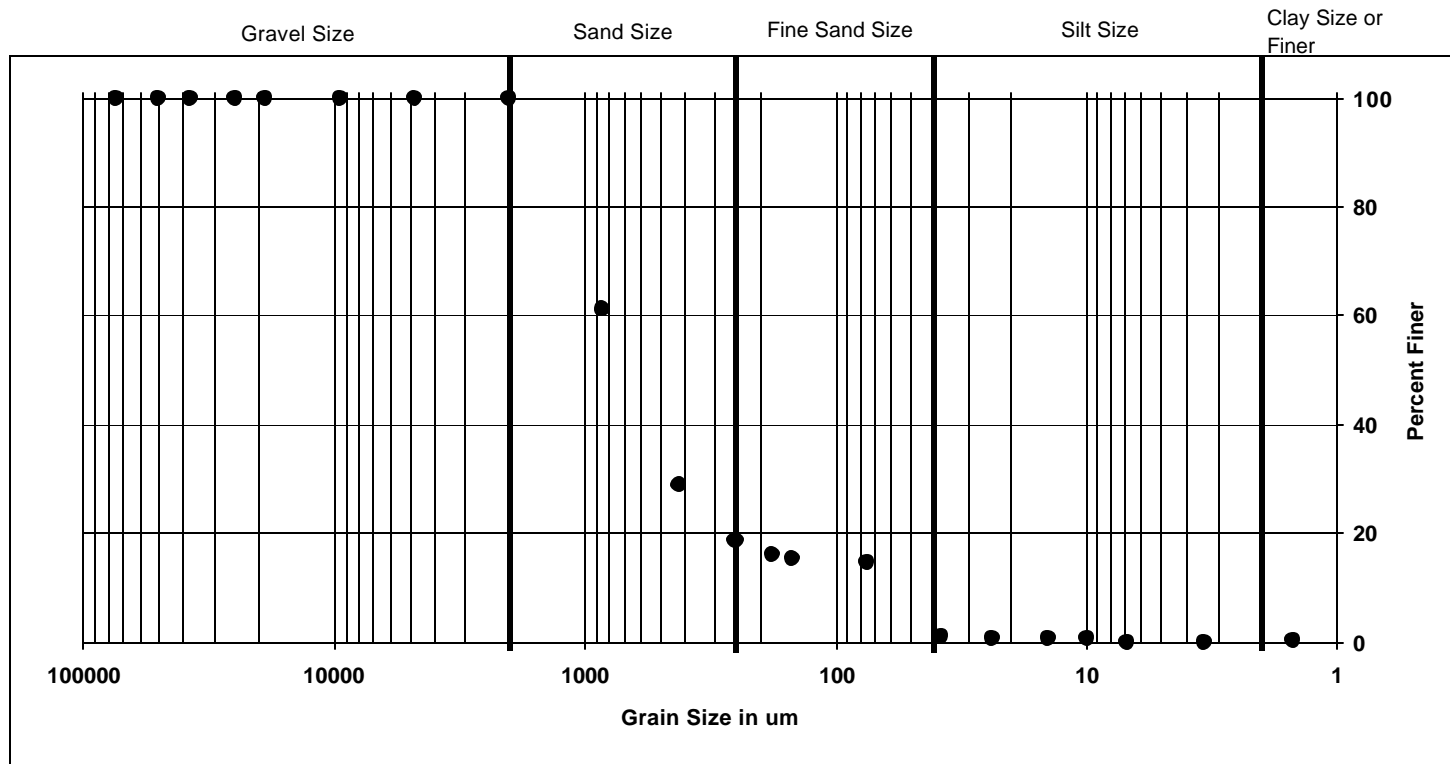


TR-102N-T01N-SED		
9/28/2004		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		34.1
Fine Sand Size		56.7
Silt Size		7.7
Clay Size or Finer		1.3

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-103N-T01N-SED

Date Received: 9/28/2004

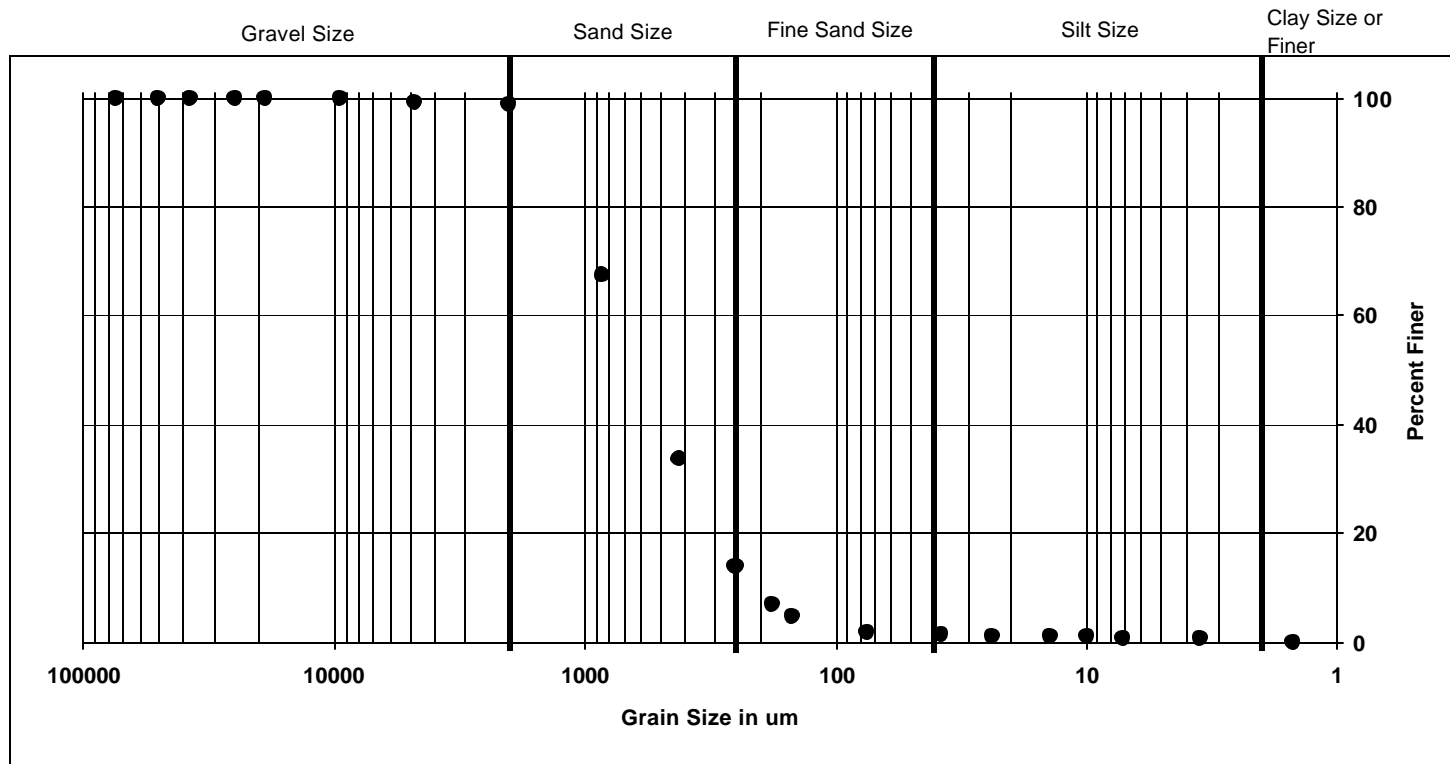


TR-103N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	81.3
		Fine Sand Size	13.2
		Silt Size	5.23
		Clay Size or Finer	0.17

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-104N-T01N-SED

Date Received: 9/28/2004

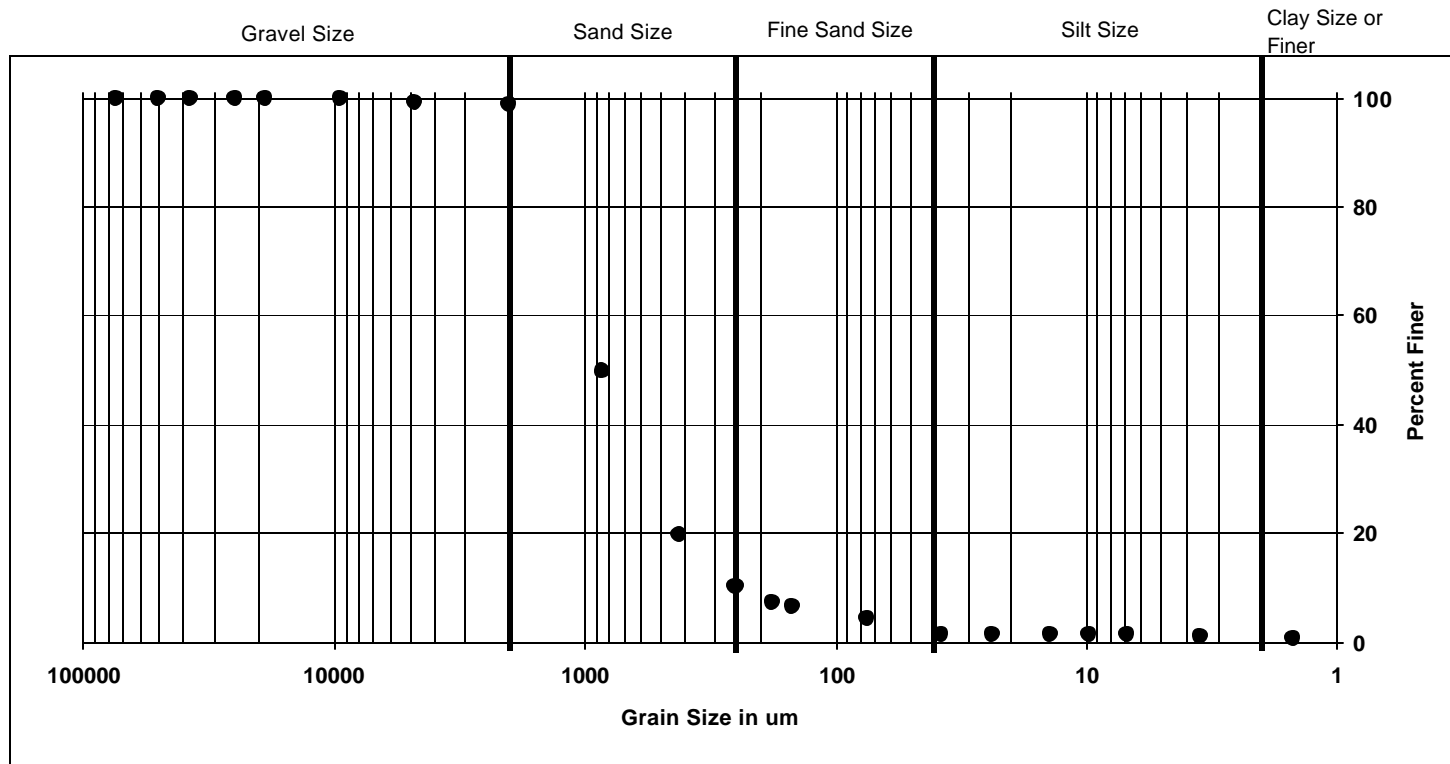


TR-104N-T01N-SED		
9/28/2004		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		84.9
Fine Sand Size		12.3
Silt Size		1.47
Clay Size or Finer		0.23

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: TR-10N-T01N-SED

Date Received: 9/25/2004

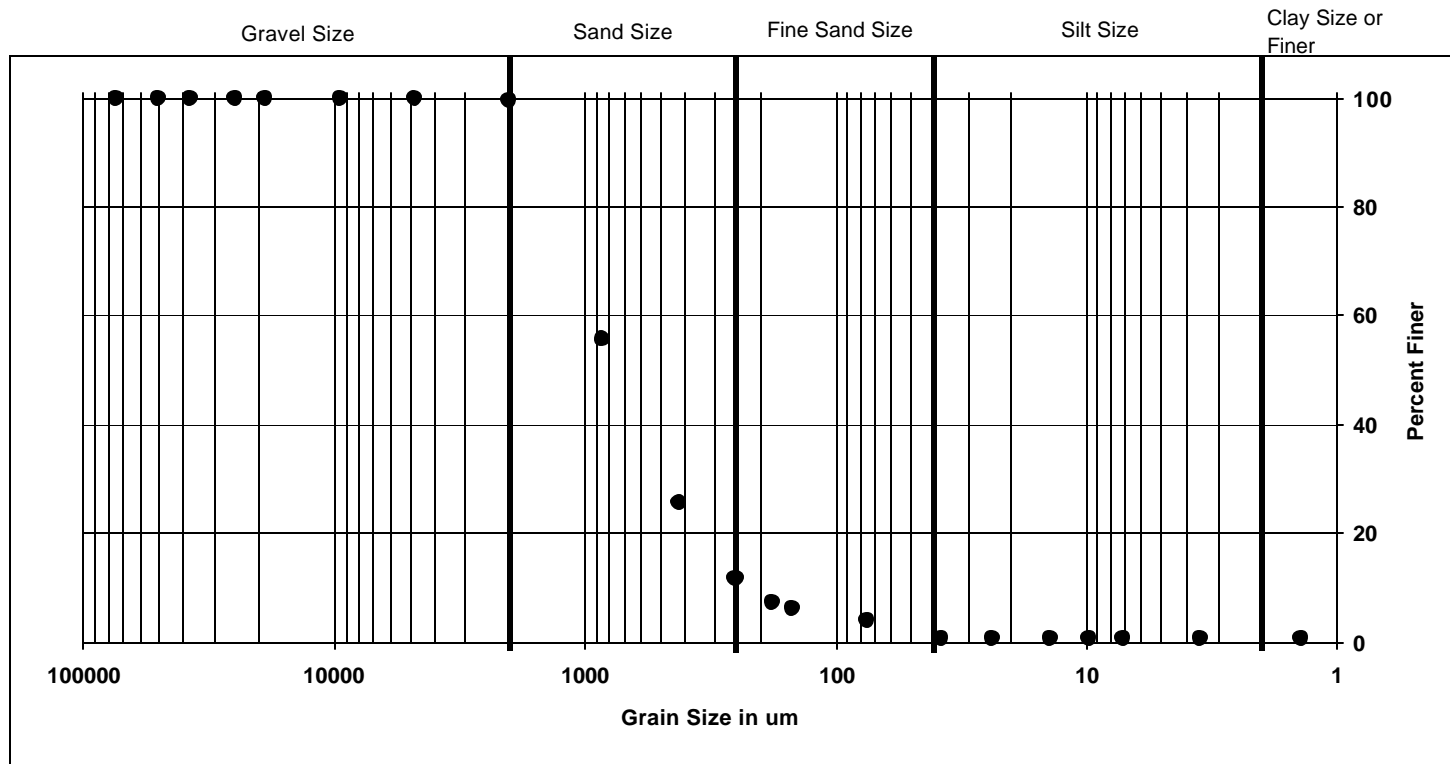


TR-10N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/25/2004		Description	
		Sand Size	88.6
		Fine Sand Size	7.9
		Silt Size	1.58
		Clay Size or Finer	0.82

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-11N-T01N-SED

Date Received: 9/25/2004



TR-11N-T01N-SED 9/25/2004	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	88
	Fine Sand Size	9.9
	Silt Size	1.07
	Clay Size or Finer	0.73

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-12N-T01N-SED

Date Received: 9/25/2004

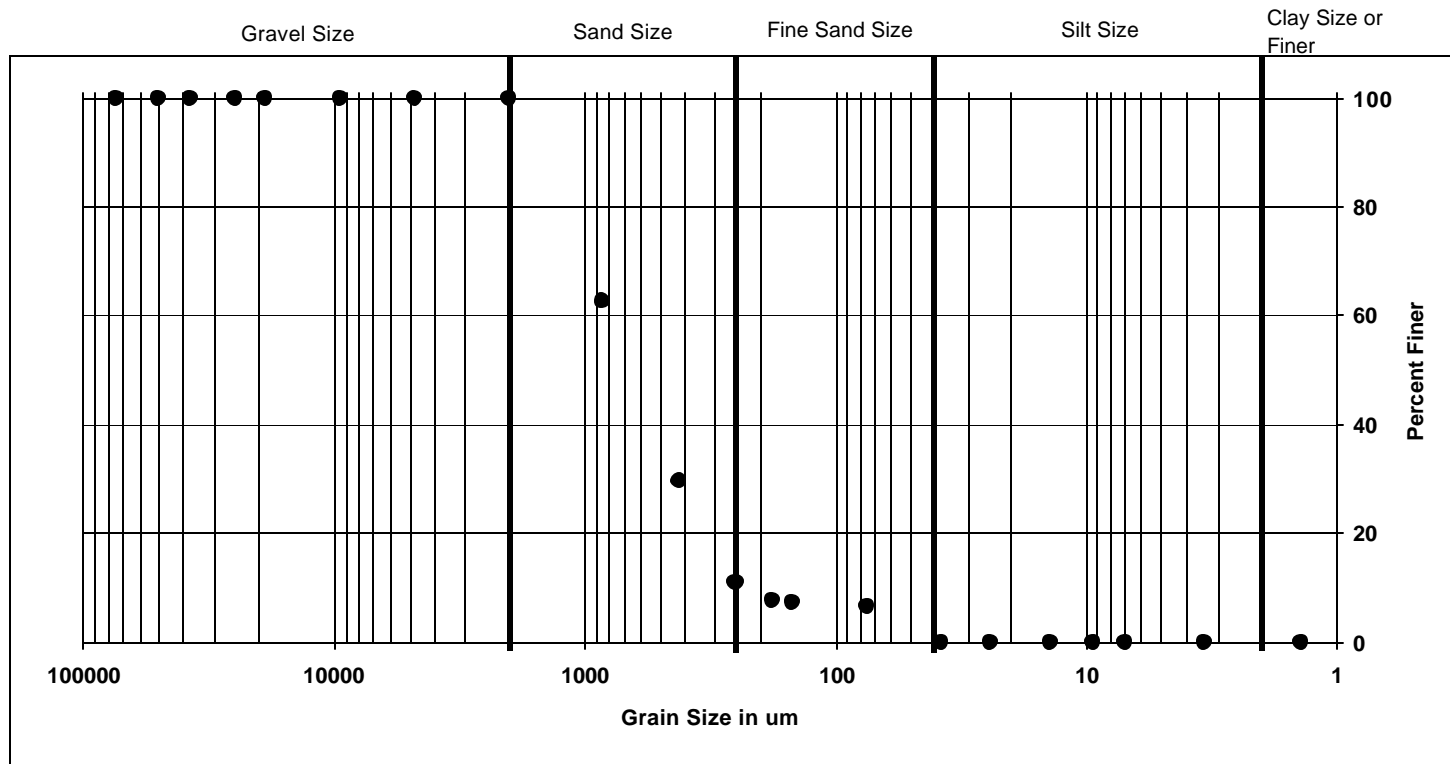


TR-12N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/25/2004		Description	
		Sand Size	75.5
		Fine Sand Size	21.7
		Silt Size	1.7
		Clay Size or Finer	1

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-13N-T01N-SED

Date Received: 9/28/2004

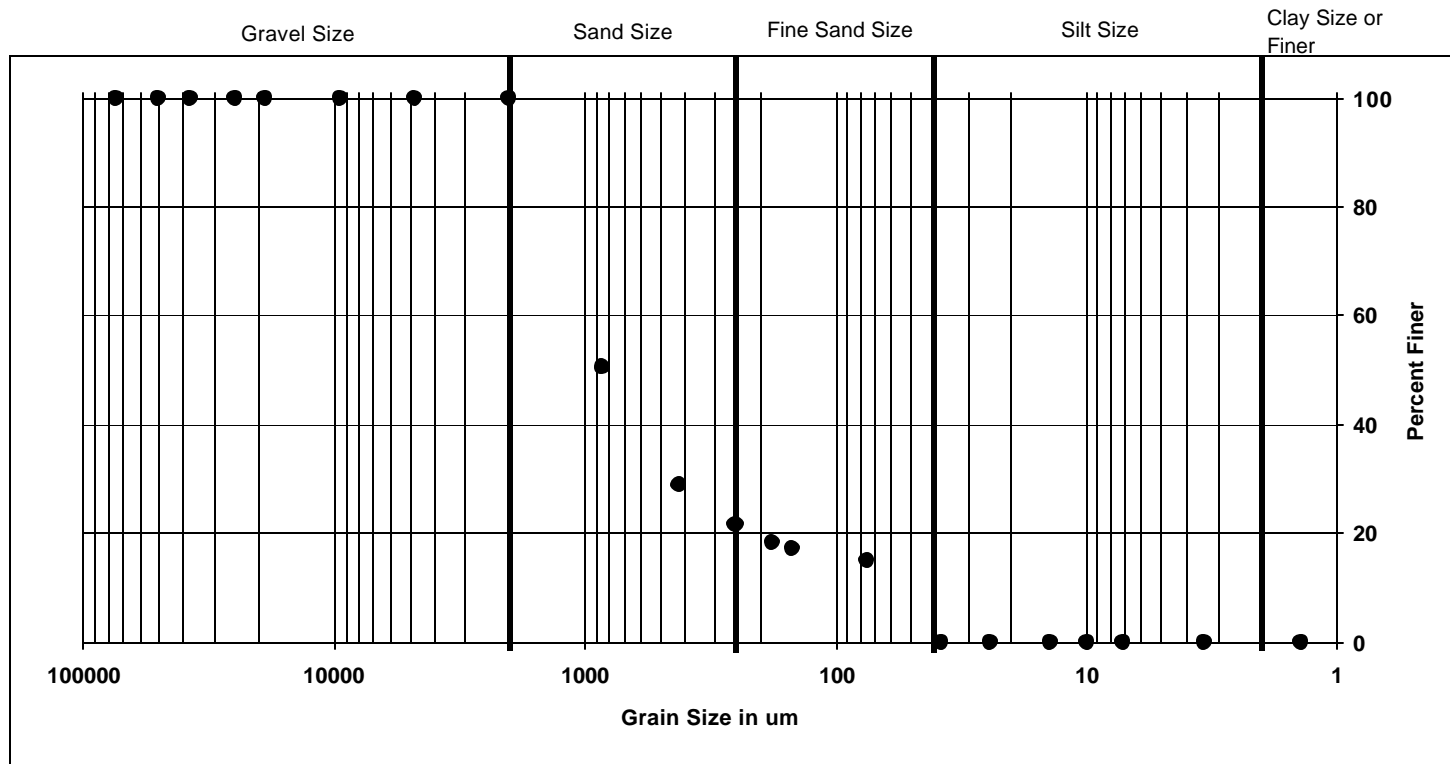


TR-13N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	88.9
		Fine Sand Size	8.8
		Silt Size	2.1
		Clay Size or Finer	0

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: TR-14N-T01N-SED

Date Received: 9/28/2004

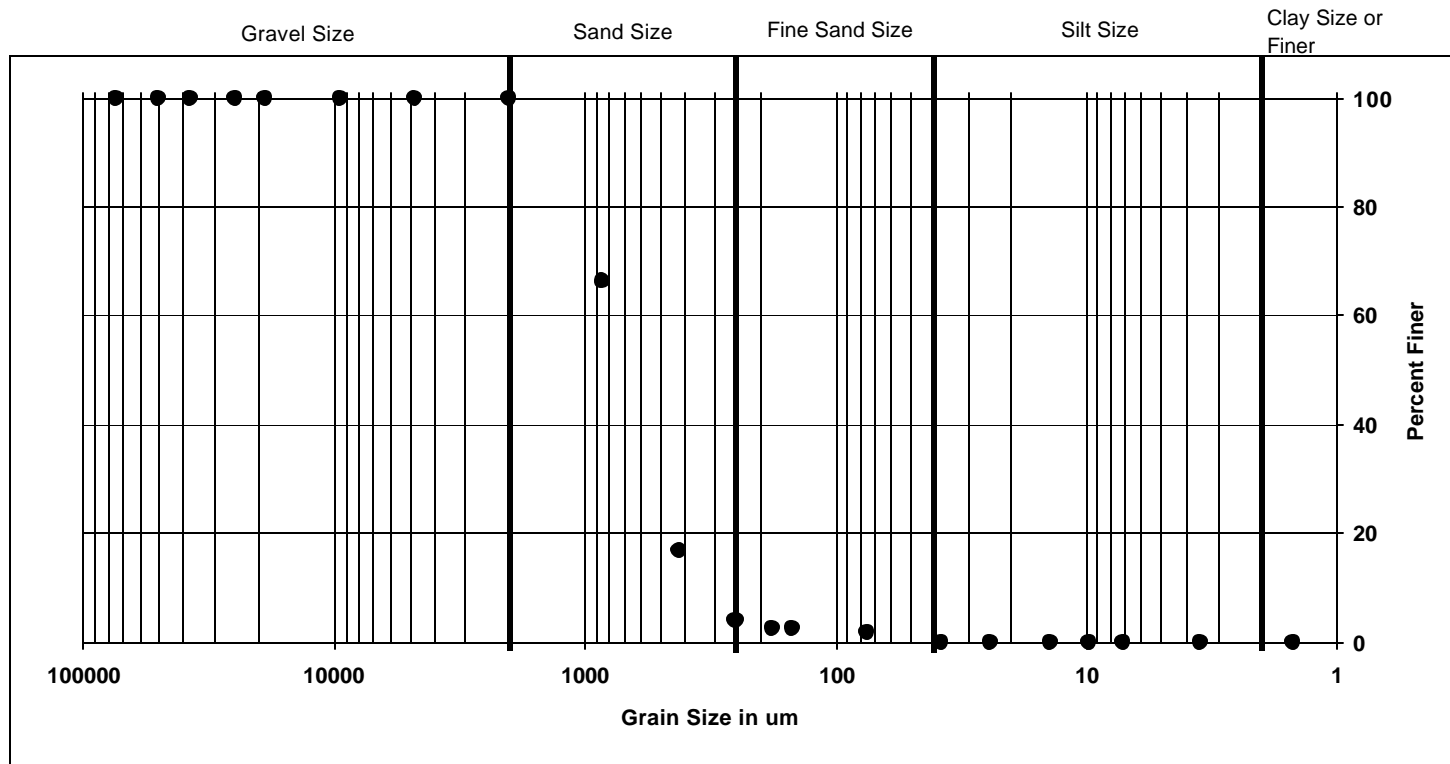


TR-14N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	78.2
		Fine Sand Size	16.8
		Silt Size	4.8
		Clay Size or Finer	0

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-15N-T01N-SED

Date Received: 9/28/2004

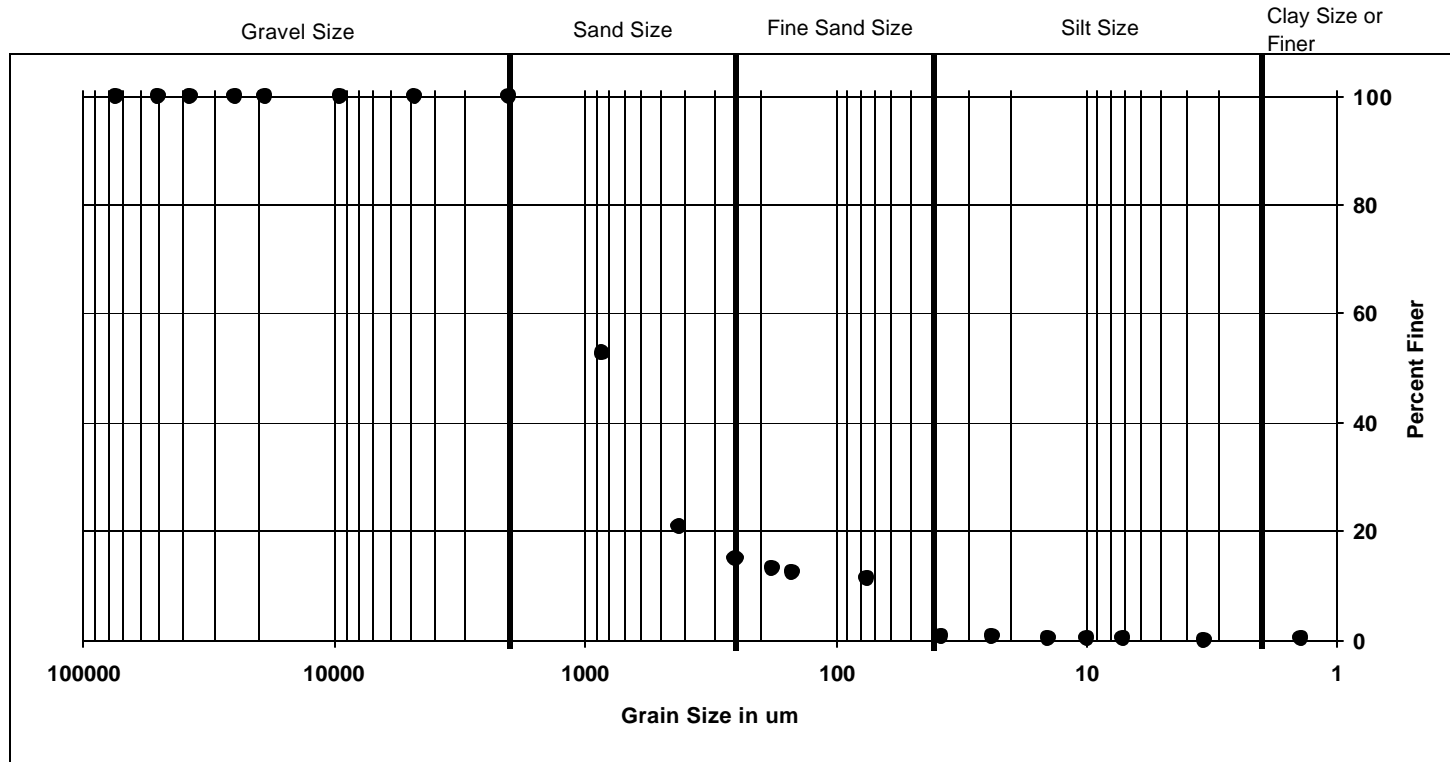


TR-15N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	95.8
		Fine Sand Size	3.59
		Silt Size	0.61
		Clay Size or Finer	0

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-16N-T01N-SED

Date Received: 9/28/2004

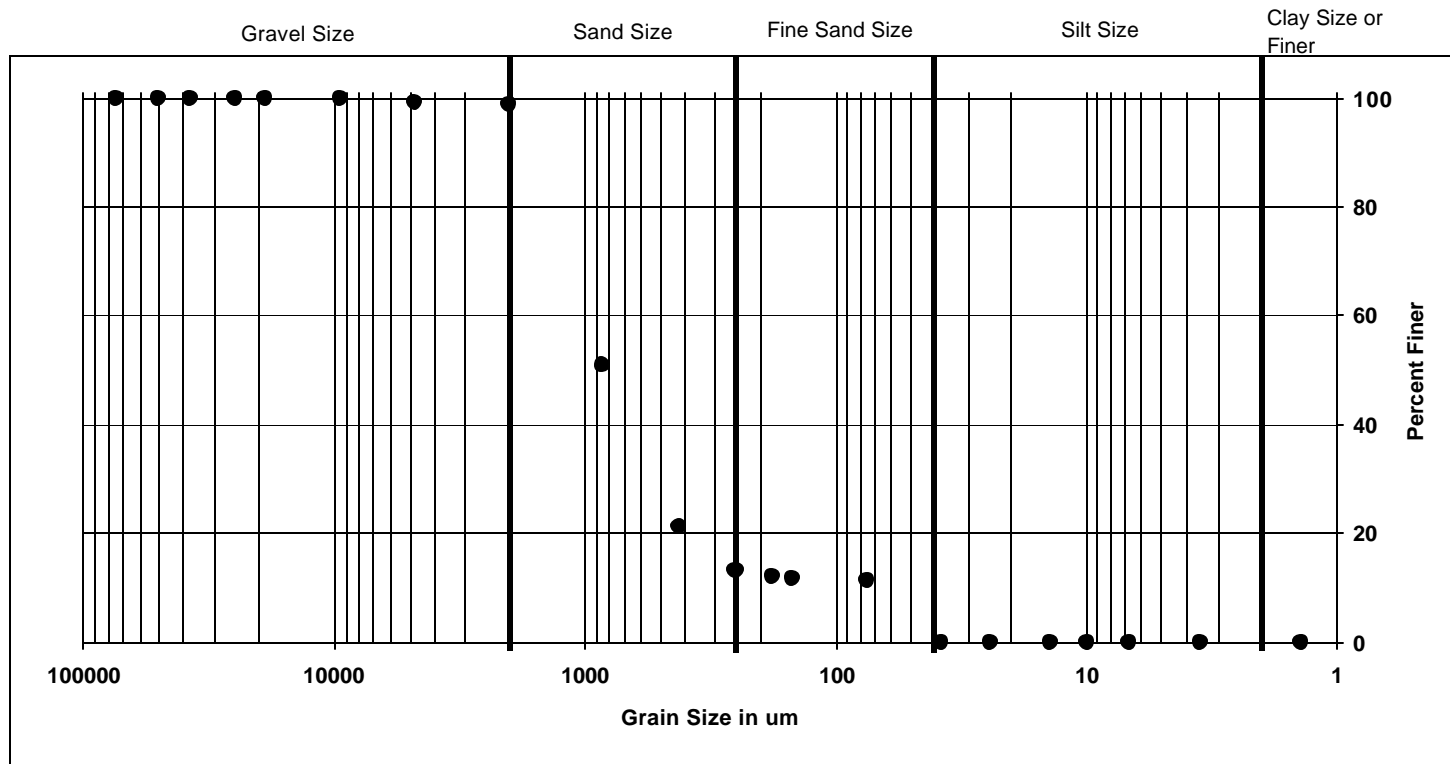


TR-16N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	84.7
		Fine Sand Size	11
		Silt Size	3.93
		Clay Size or Finer	0.17

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: TR-17N-T01N-SED

Date Received: 9/28/2004

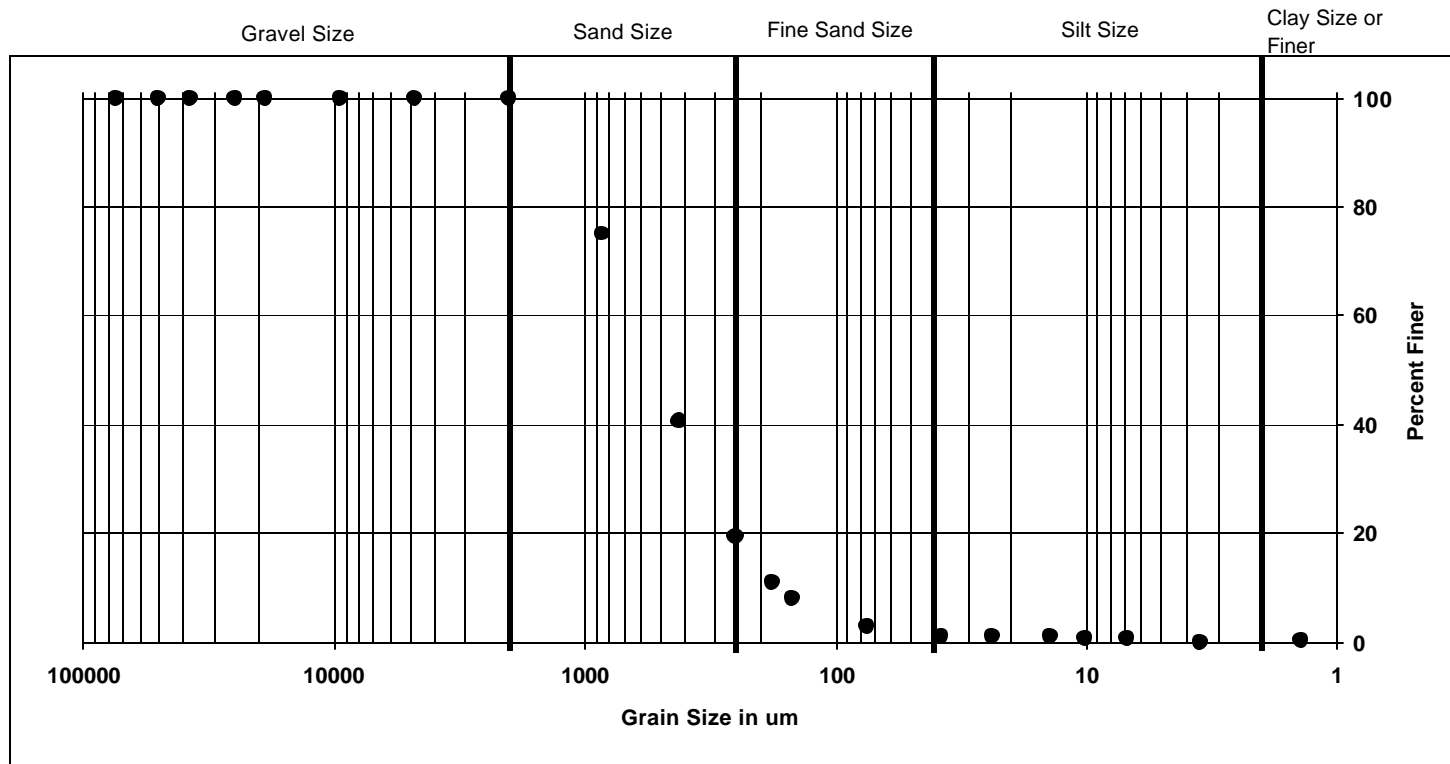


TR-17N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	85.7
		Fine Sand Size	9.5
		Silt Size	3.7
		Clay Size or Finer	0

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-18N-T01N-SED

Date Received: 9/28/2004

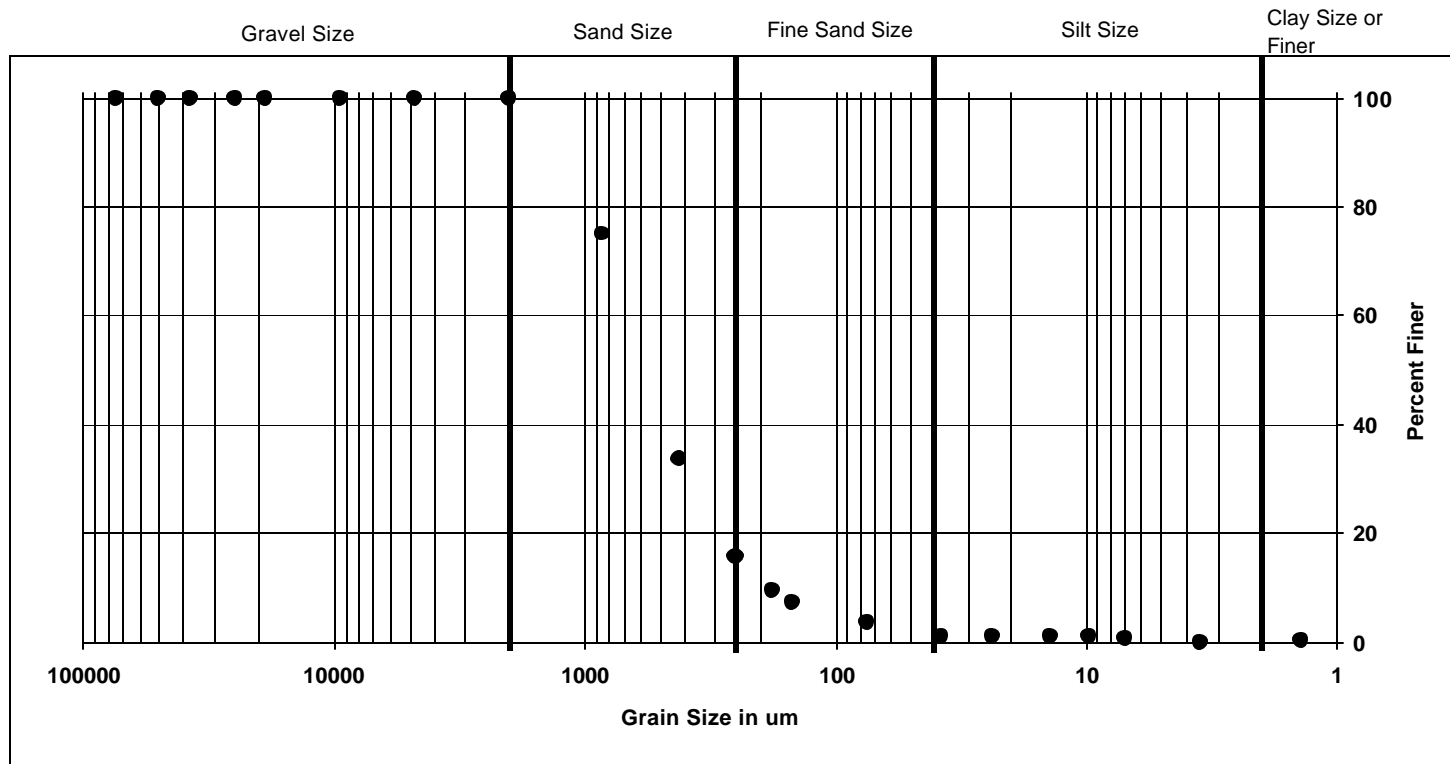


TR-18N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	80.7
		Fine Sand Size	17.6
		Silt Size	1.53
		Clay Size or Finer	0.17

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-19N-T01N-SED

Date Received: 9/28/2004

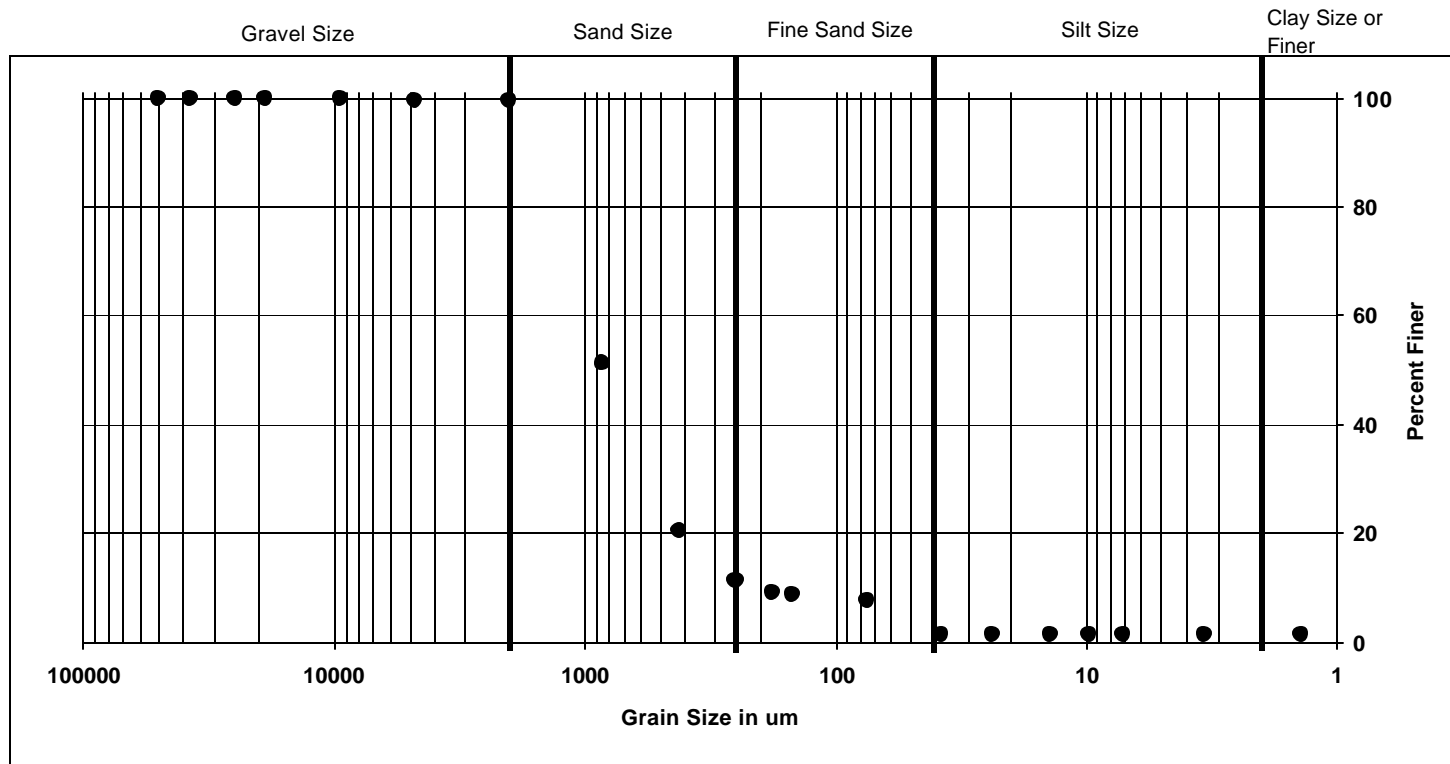


TR-19N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/28/2004		Description	
		Sand Size	84.2
		Fine Sand Size	13.8
		Silt Size	1.83
		Clay Size or Finer	0.17

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-1N-T01N-SED

Date Received: 9/25/2004

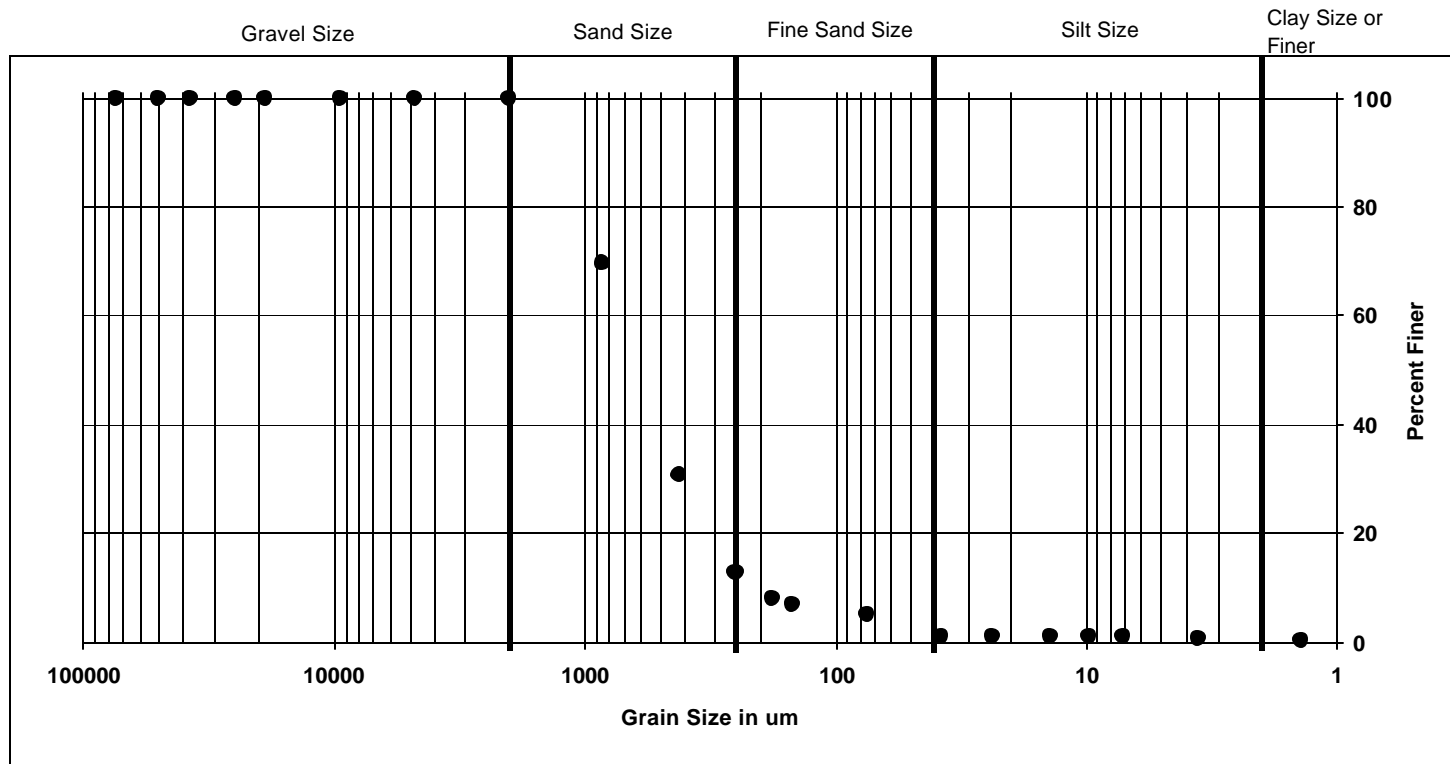


TR-1N-T01N-SED 9/25/2004		Percent of <2MM Sample sent to Lab (%)	
Description			
Sand Size		88.2	
Fine Sand Size		7.9	
Silt Size		2.1	
Clay Size or Finer		1.3	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-20N-T01N-SED

Date Received: 9/28/2004



TR-20N-T01N-SED 9/28/2004		Percent of <2MM Sample sent to Lab (%)	
Description			
Sand Size		87.2	
Fine Sand Size		10.3	
Silt Size		2.19	
Clay Size or Finer		0.31	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-2N-T01N-SED

Date Received: 9/25/2004



TR-2N-T01N-SED		
9/25/2004		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		91.1
Fine Sand Size		7.2
Silt Size		0.3
Clay Size or Finer		1.1

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-3N-T01N-SED

Date Received: 9/25/2004

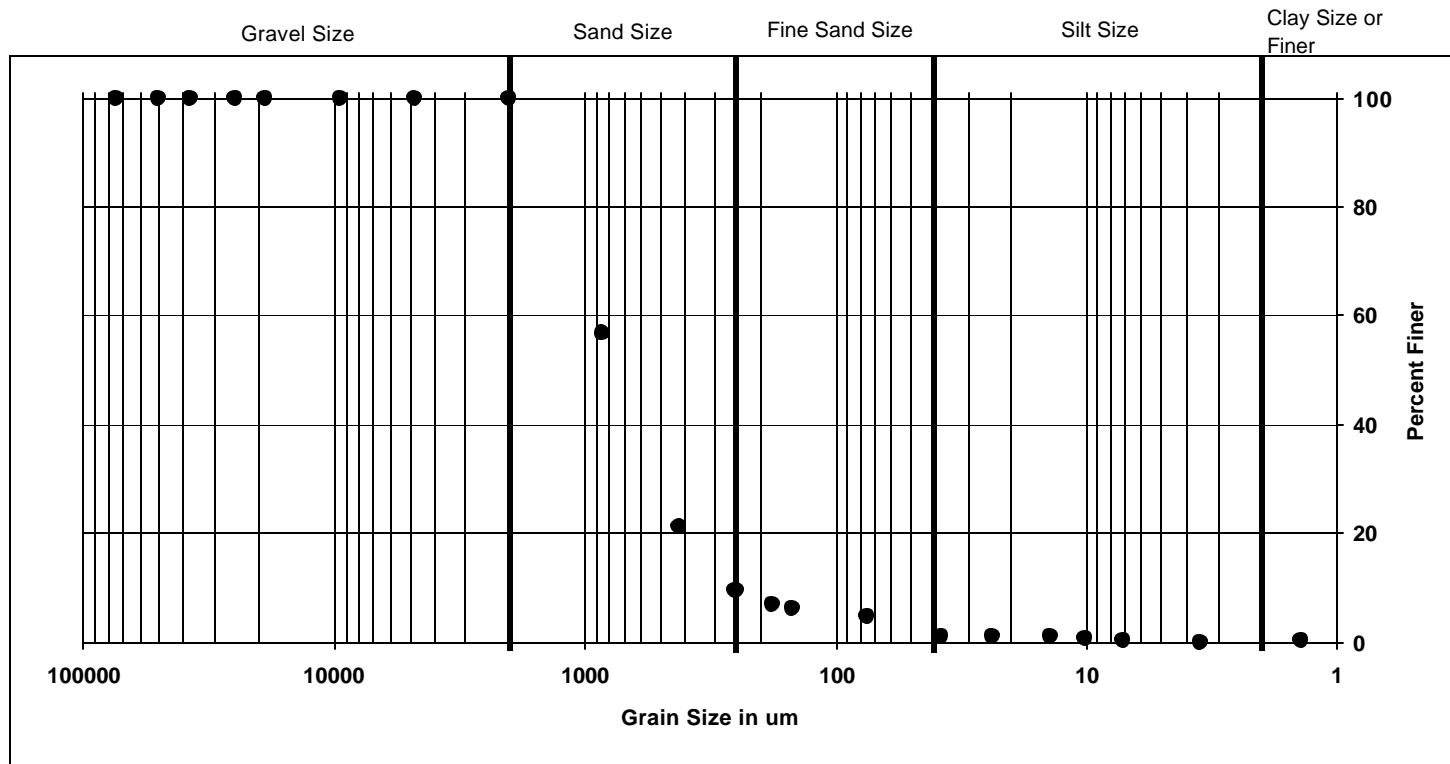


TR-3N-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
9/25/2004		Description	
		Sand Size	89.9
		Fine Sand Size	7.7
		Silt Size	1.4
		Clay Size or Finer	0.7

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-4N-T01N-SED

Date Received: 9/28/2004

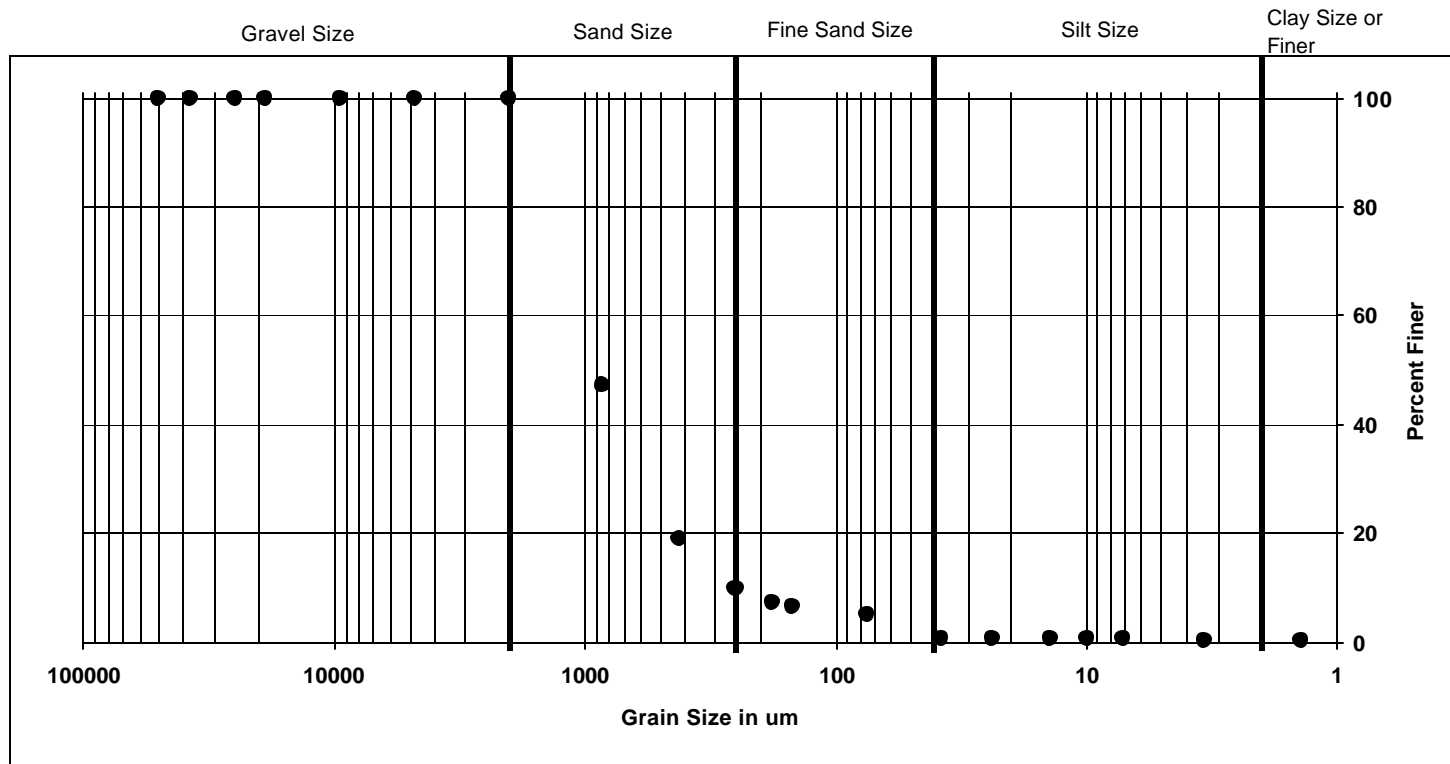


TR-4N-T01N-SED		
9/28/2004		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		90.2
Fine Sand Size		7.3
Silt Size		2.13
Clay Size or Finer		0.17

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-5N-T01N-SED

Date Received: 9/28/2004

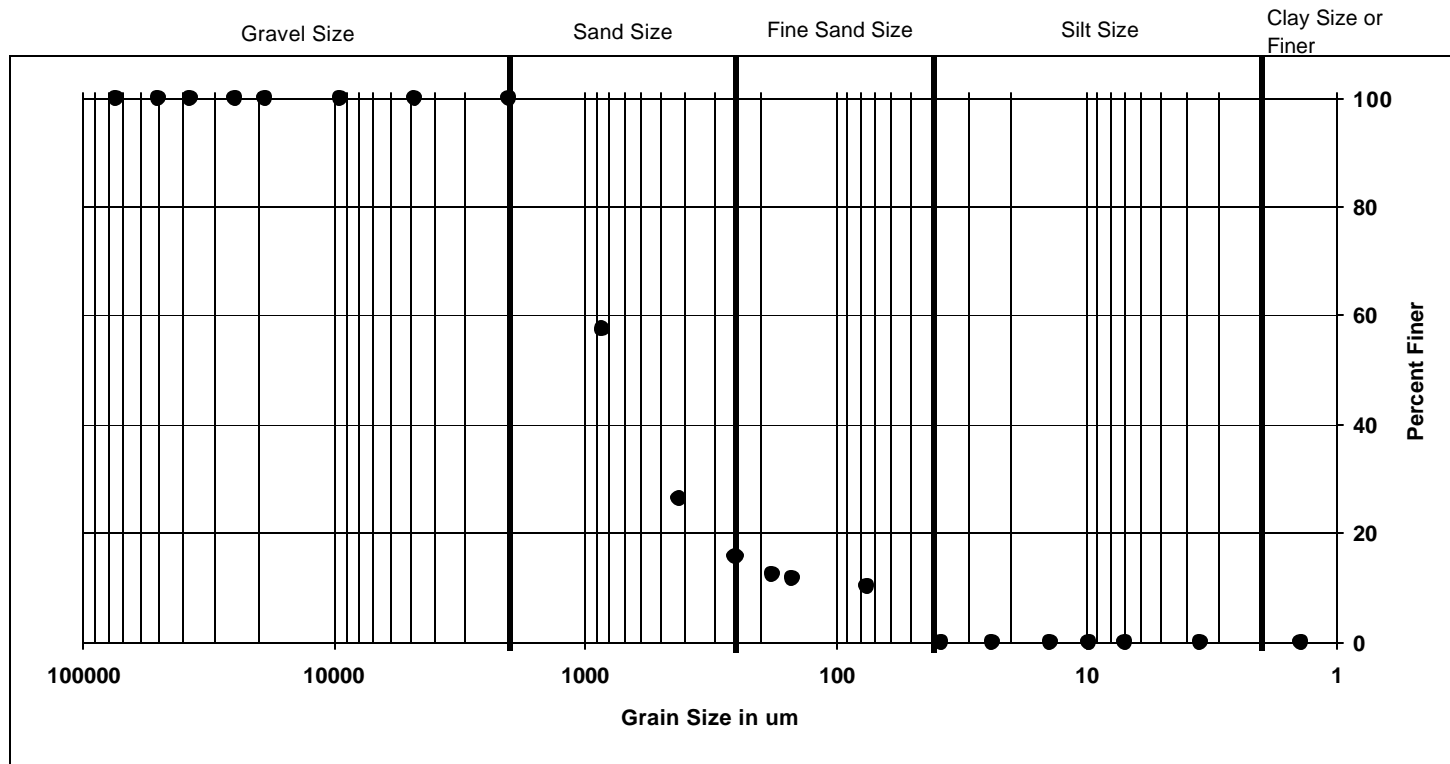


TR-5N-T01N-SED		
9/28/2004		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		90.1
Fine Sand Size		7.7
Silt Size		1.9
Clay Size or Finer		0.2

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: TR-6N-T01N-SED

Date Received: 9/28/2004

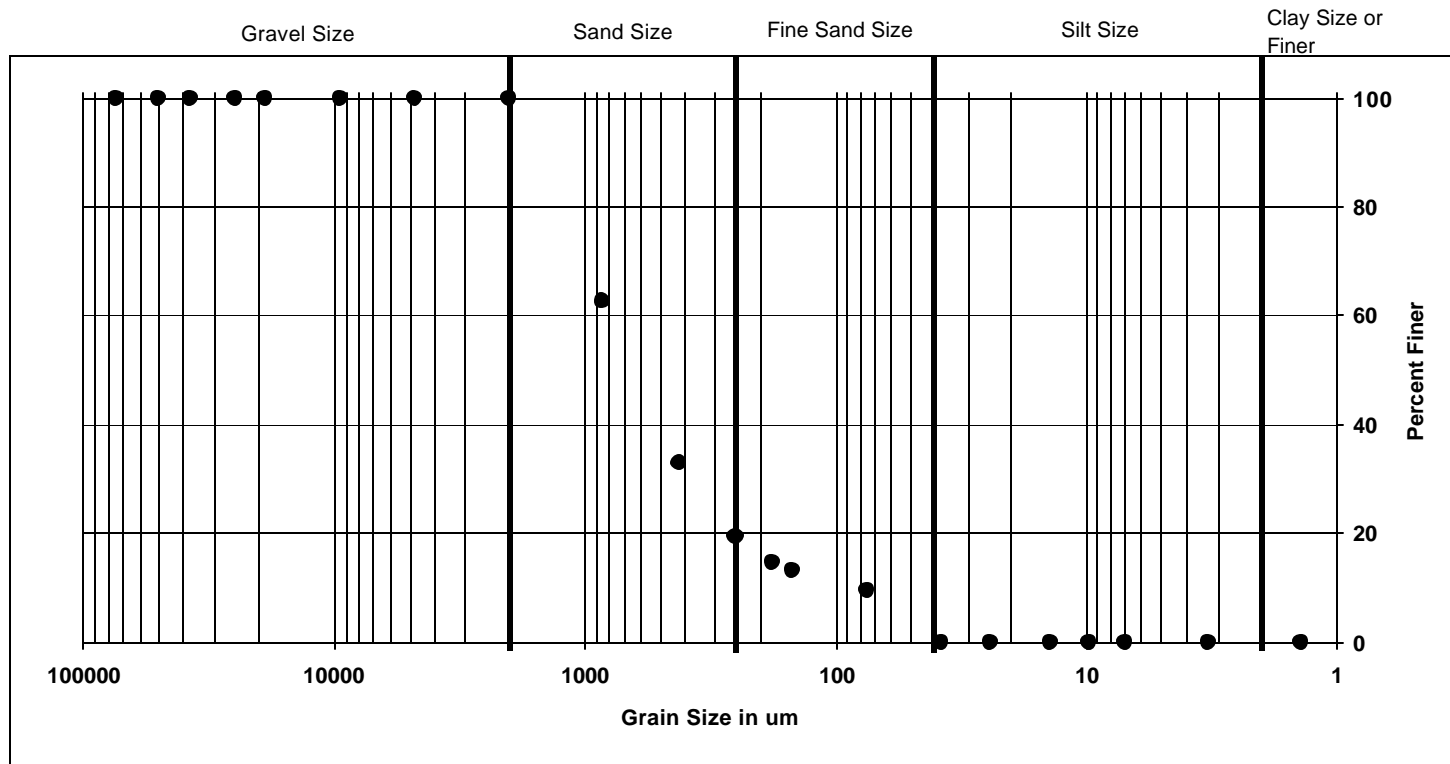


TR-6N-T01N-SED 9/28/2004		Percent of <2MM Sample sent to Lab (%)	
Description			
Sand Size		84.4	
Fine Sand Size		12.1	
Silt Size		3.5	
Clay Size or Finer		0	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-7N-T01N-SED

Date Received: 9/28/2004

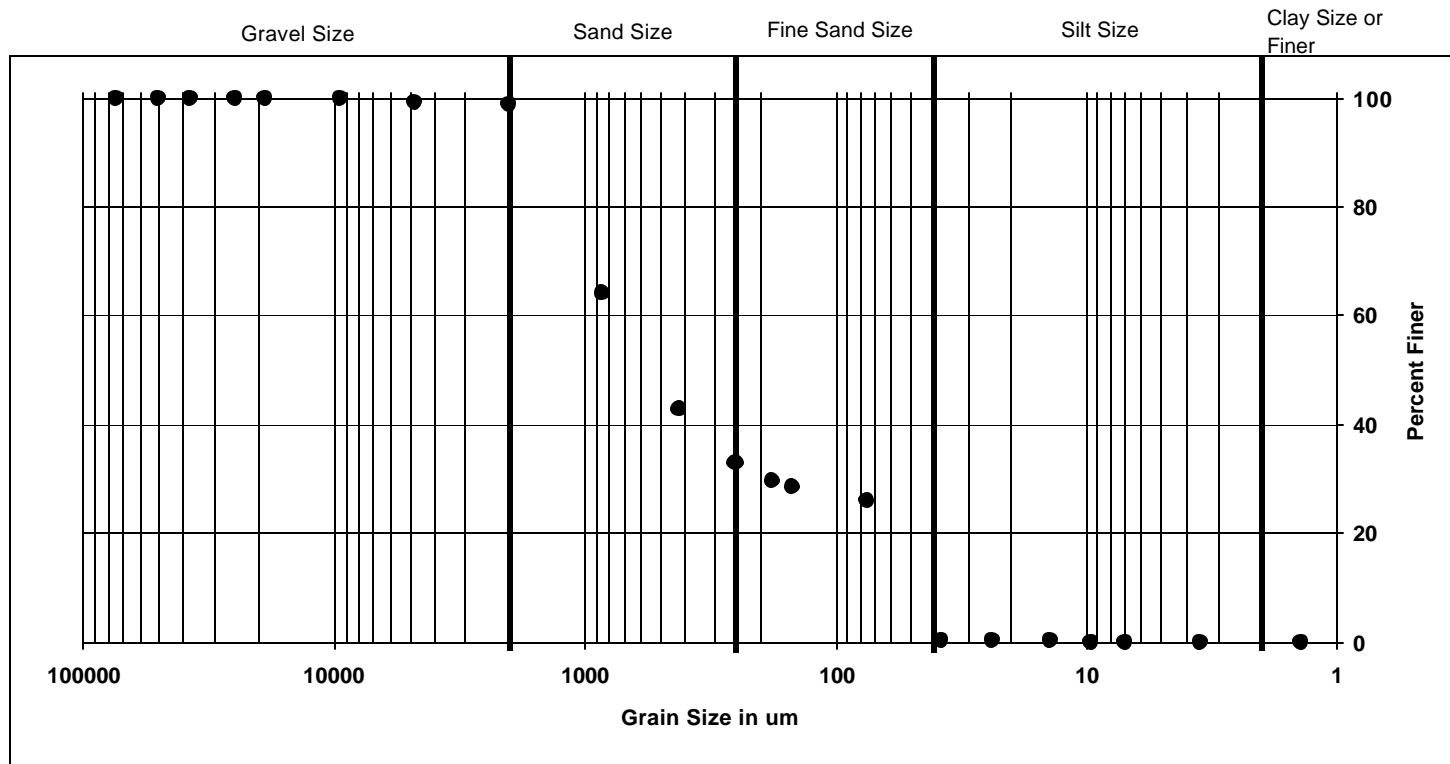


TR-7N-T01N-SED 9/28/2004		Percent of <2MM Sample sent to Lab (%)	
Description			
Sand Size		80.5	
Fine Sand Size		16.2	
Silt Size		3.1	
Clay Size or Finer		0	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-8N-T01N-SED

Date Received: 9/28/2004

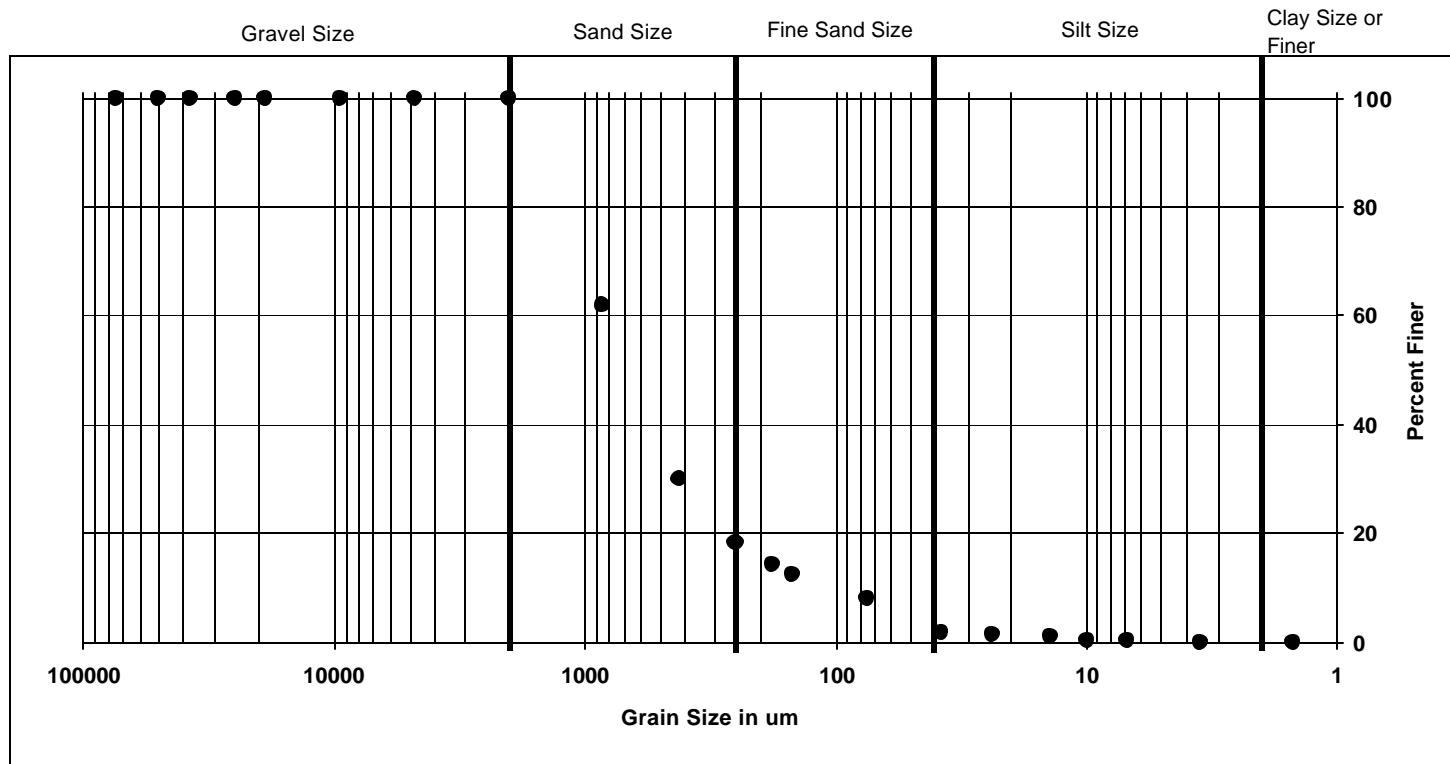


TR-8N-T01N-SED 9/28/2004	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	65.7
	Fine Sand Size	24.3
	Silt Size	8.8
	Clay Size or Finer	0

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: TR-9N-T01N-SED

Date Received: 9/28/2004

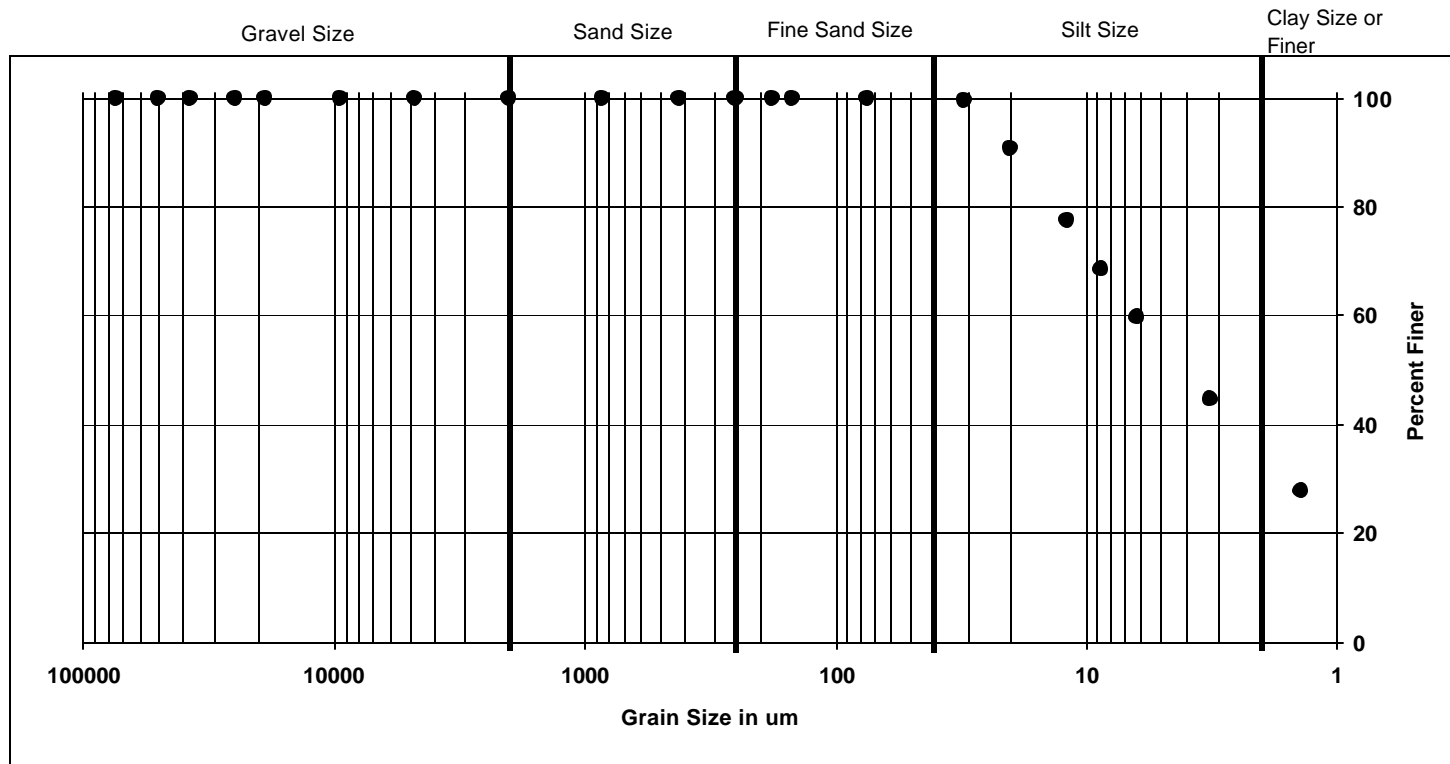


TR-9N-T01N-SED 9/28/2004		Percent of <2MM Sample sent to Lab (%)	
Description			
Sand Size		81.7	
Fine Sand Size		14.4	
Silt Size		3.7	
Clay Size or Finer		0.1	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: UFLMID-T01N-SED

Date Received: 10/10/2002

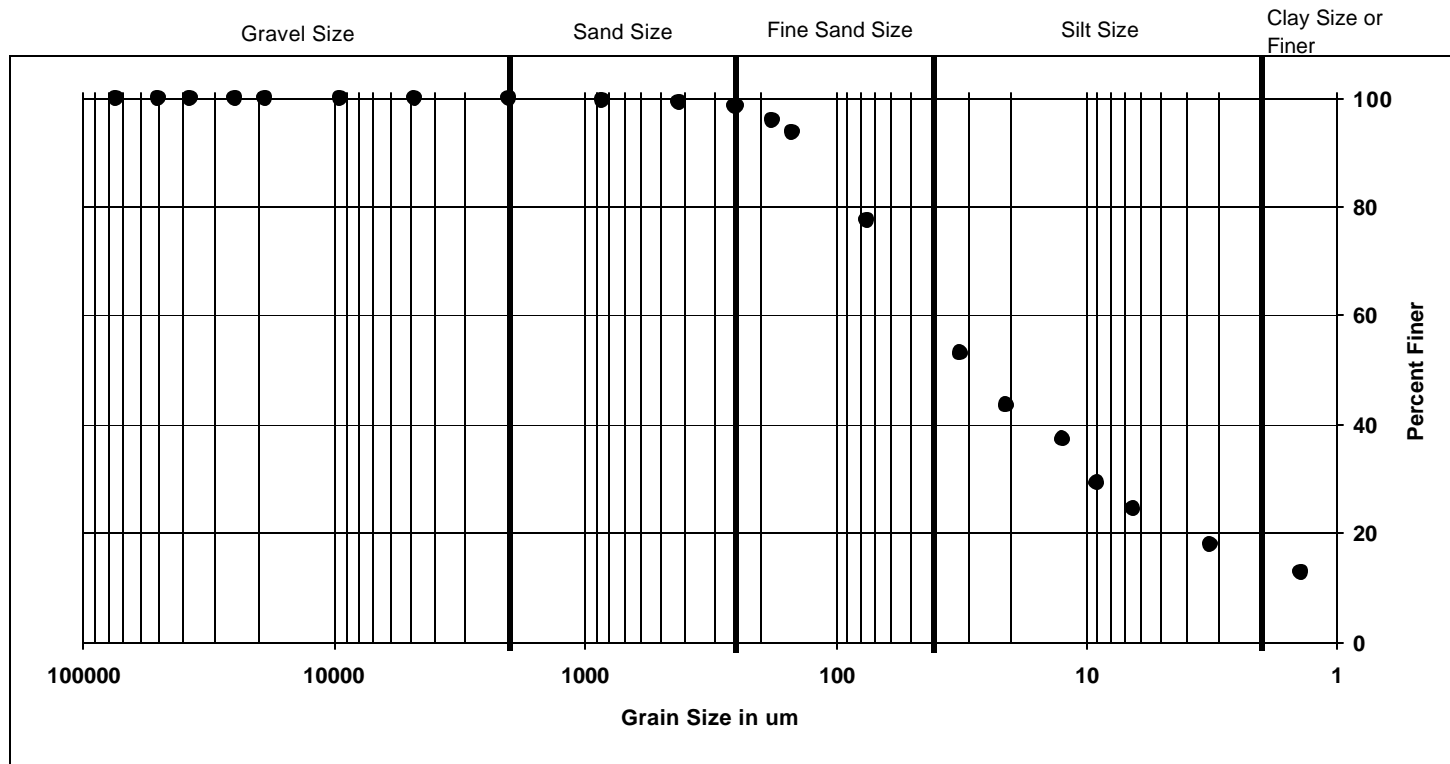


UFLMID-T01N-SED 10/10/2002		Percent of <2MM Sample sent to Lab (%)	
Description			
Sand Size		0	
Fine Sand Size		0.2000000000000003	
Silt Size		66.3	
Clay Size or Finer		33.5	

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: UFLMID-T01N-SED

Date Received: 11/5/2003

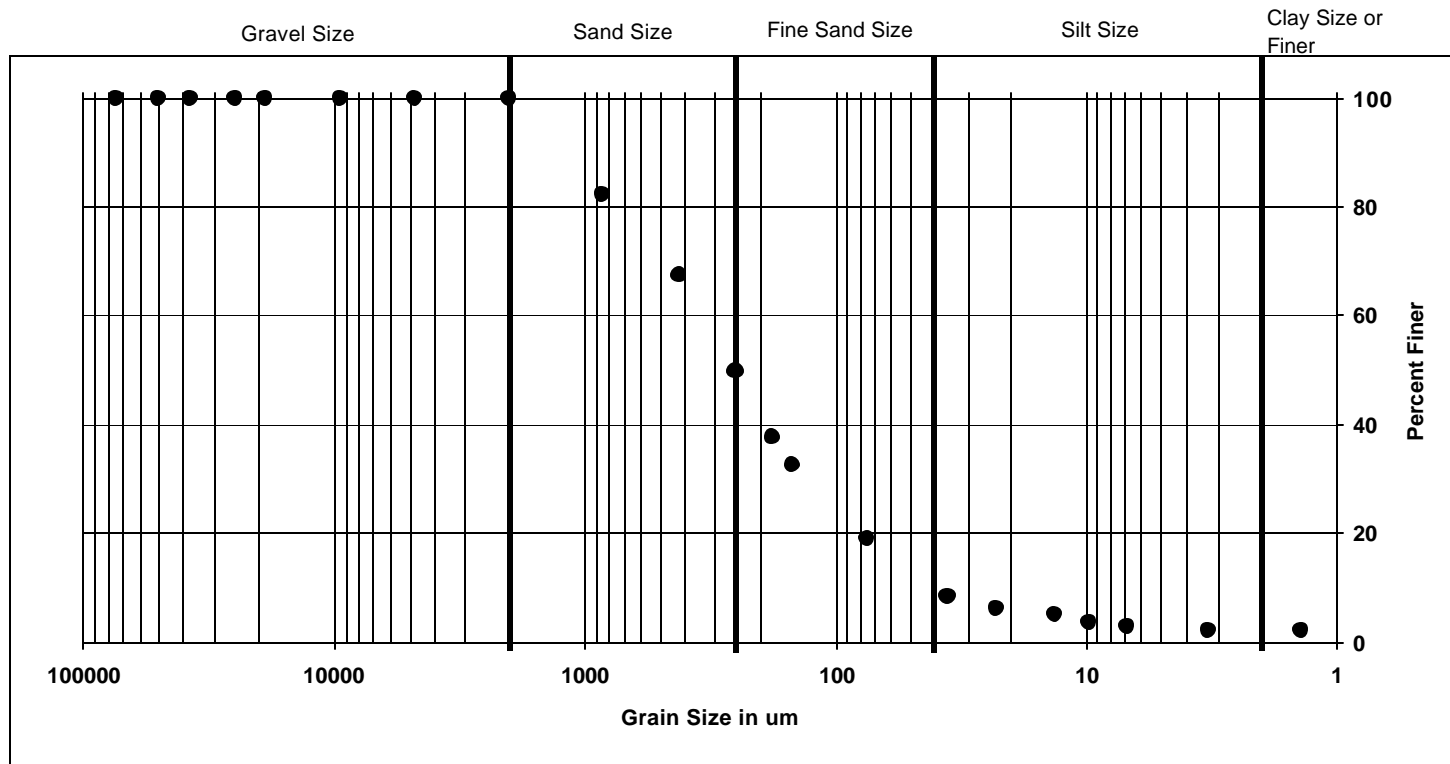


UFLMID-T01N-SED		
11/5/2003		
Description		Percent of <2MM Sample sent to Lab (%)
Sand Size		1.59999999999999
Fine Sand Size		35.1
Silt Size		48.7
Clay Size or Finer		14.6

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: UNIQUE3-T01N-SED

Date Received: 11/5/2003

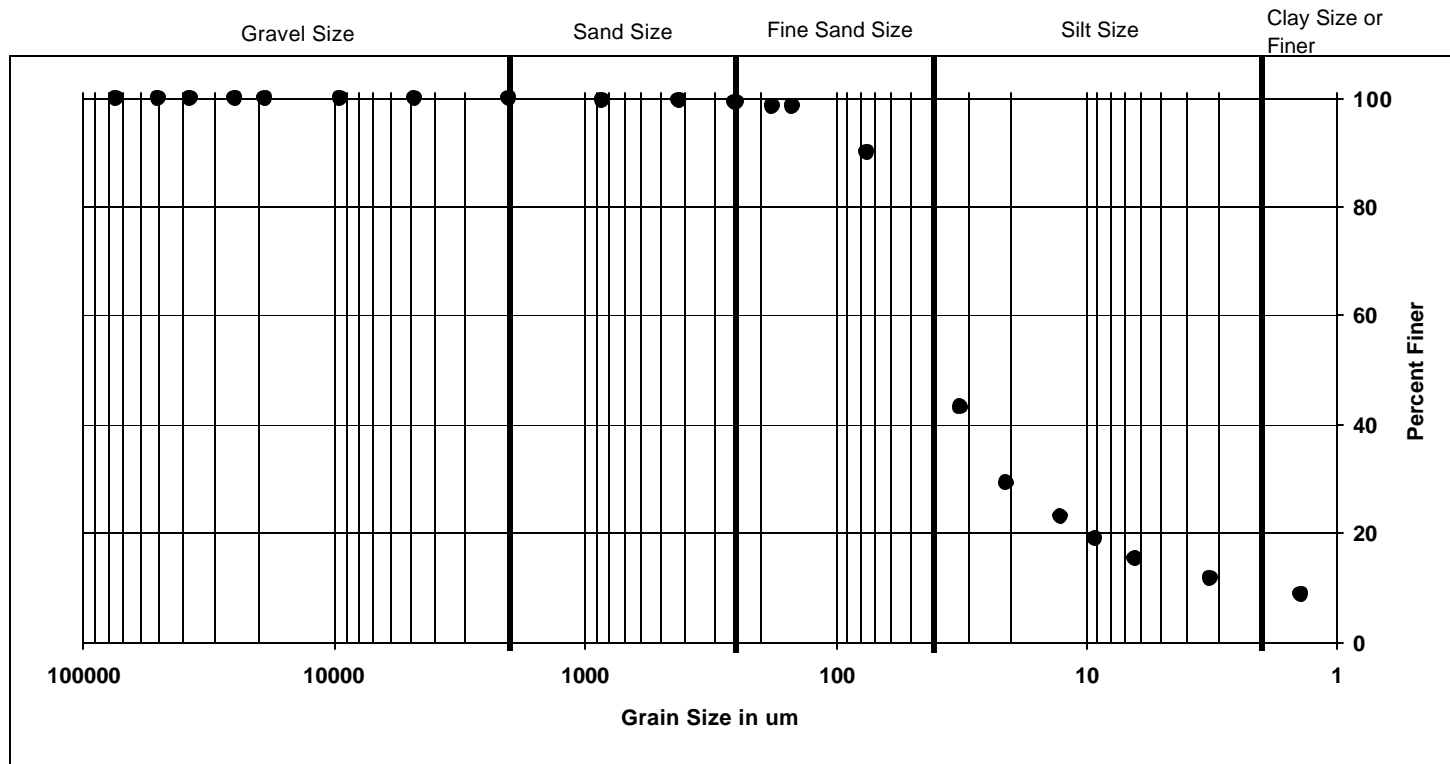


UNIQUE3-T01N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	50.2
	Fine Sand Size	37.4
	Silt Size	10.1
	Clay Size or Finer	2.2

**Particle Size Distribution for Sediment
by Method ASTM D422**

Client Sample ID: UNIQUE4-T01N-SED

Date Received: 11/5/2003

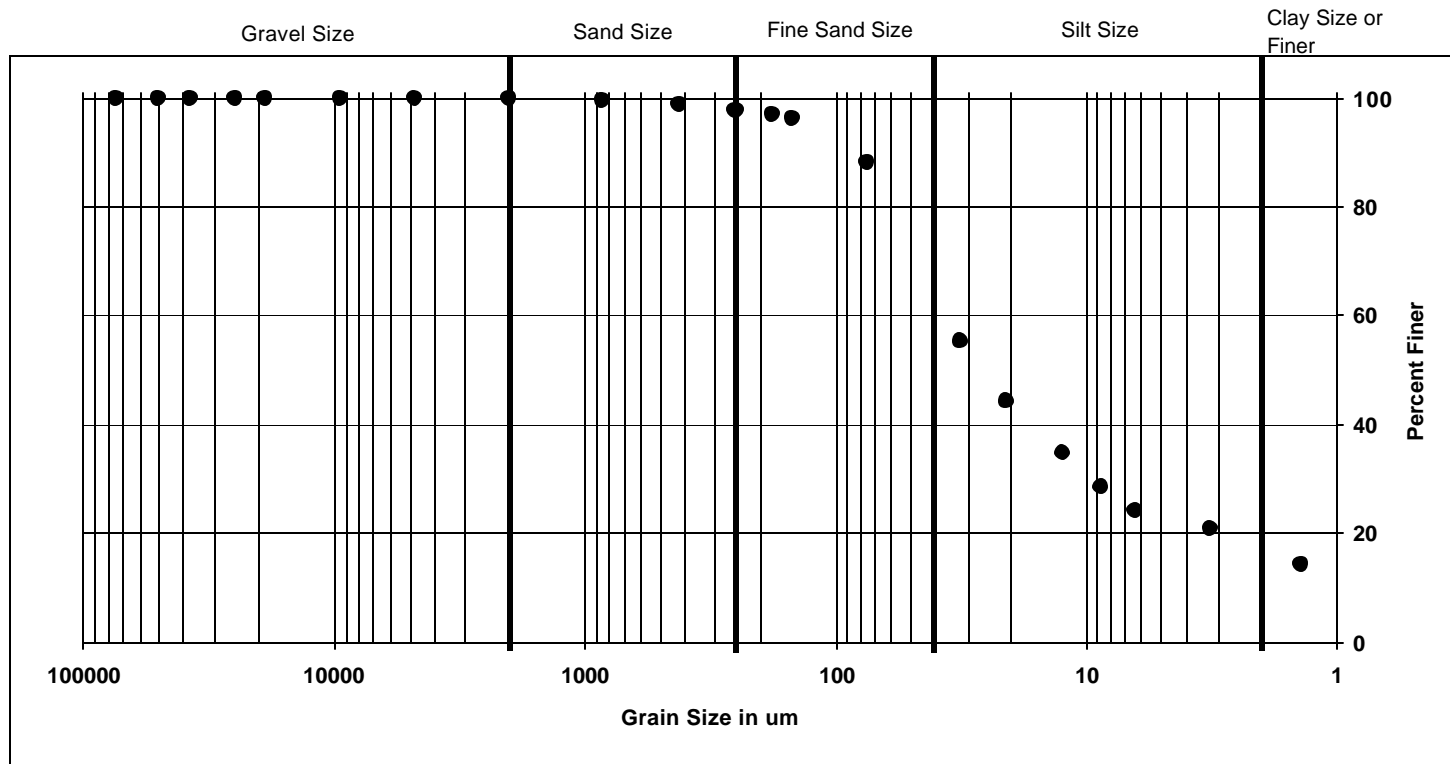


UNIQUE4-T01N-SED 11/5/2003	Description	Percent of < 2MM Sample sent to Lab (%)
	Sand Size	1
	Fine Sand Size	36.3
	Silt Size	52.9
	Clay Size or Finer	9.8

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: UNIQUE5-T01N-SED

Date Received: 11/5/2003

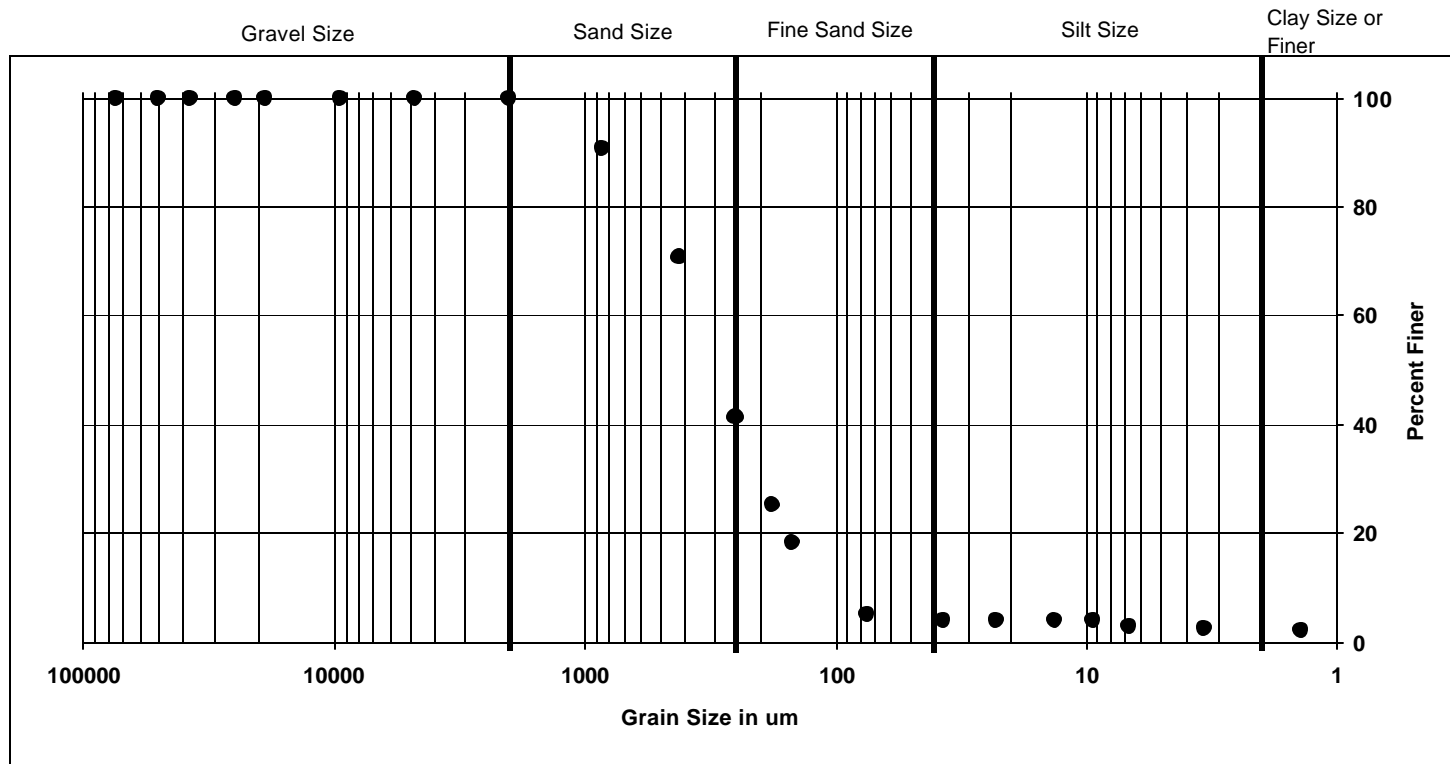


UNIQUE5-T01N-SED 11/5/2003	Description	Percent of <2MM Sample sent to Lab (%)
	Sand Size	2.2
	Fine Sand Size	28.8
	Silt Size	52.7
	Clay Size or Finer	16.3

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: UNIQUE6-T01N-SED

Date Received: 11/5/2003

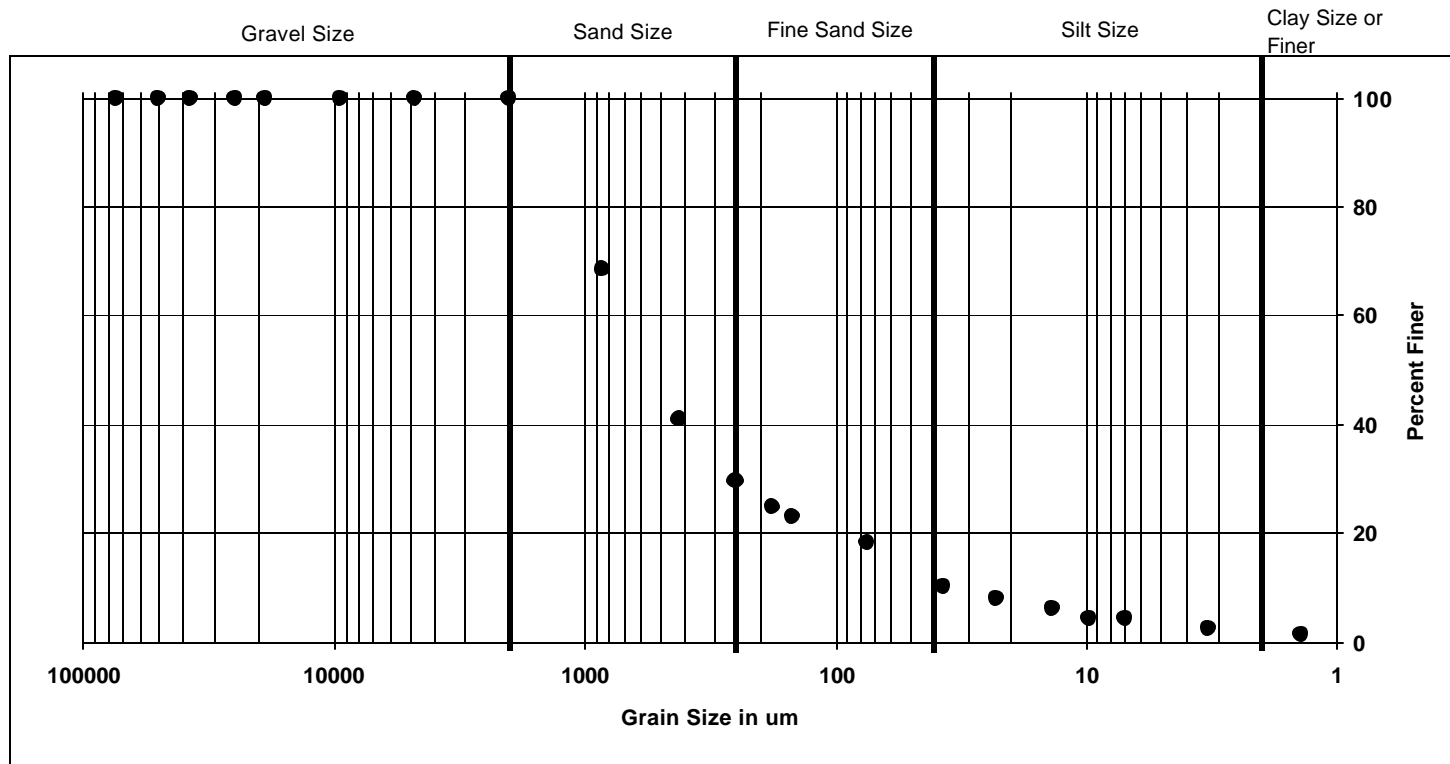


UNIQUE6-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
11/5/2003		Description	
		Sand Size	58.3
		Fine Sand Size	37.1
		Silt Size	2.1
		Clay Size or Finer	2.3

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: ZWERGEL-T01N-SED

Date Received: 10/9/2002



ZWERGEL-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
10/9/2002		Description	
		Sand Size	70.5
		Fine Sand Size	16.6
		Silt Size	11.2
		Clay Size or Finer	1.7

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: ZWERGEL-T01N-SED

Date Received: 11/5/2003



ZWERGEL-T01N-SED		Percent of <2MM Sample sent to Lab (%)	
11/5/2003		Description	
		Sand Size	84.9
		Fine Sand Size	10.6
		Silt Size	2
		Clay Size or Finer	2.2

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: ZWERGEL-T02N-SED

Date Received: 11/5/2003

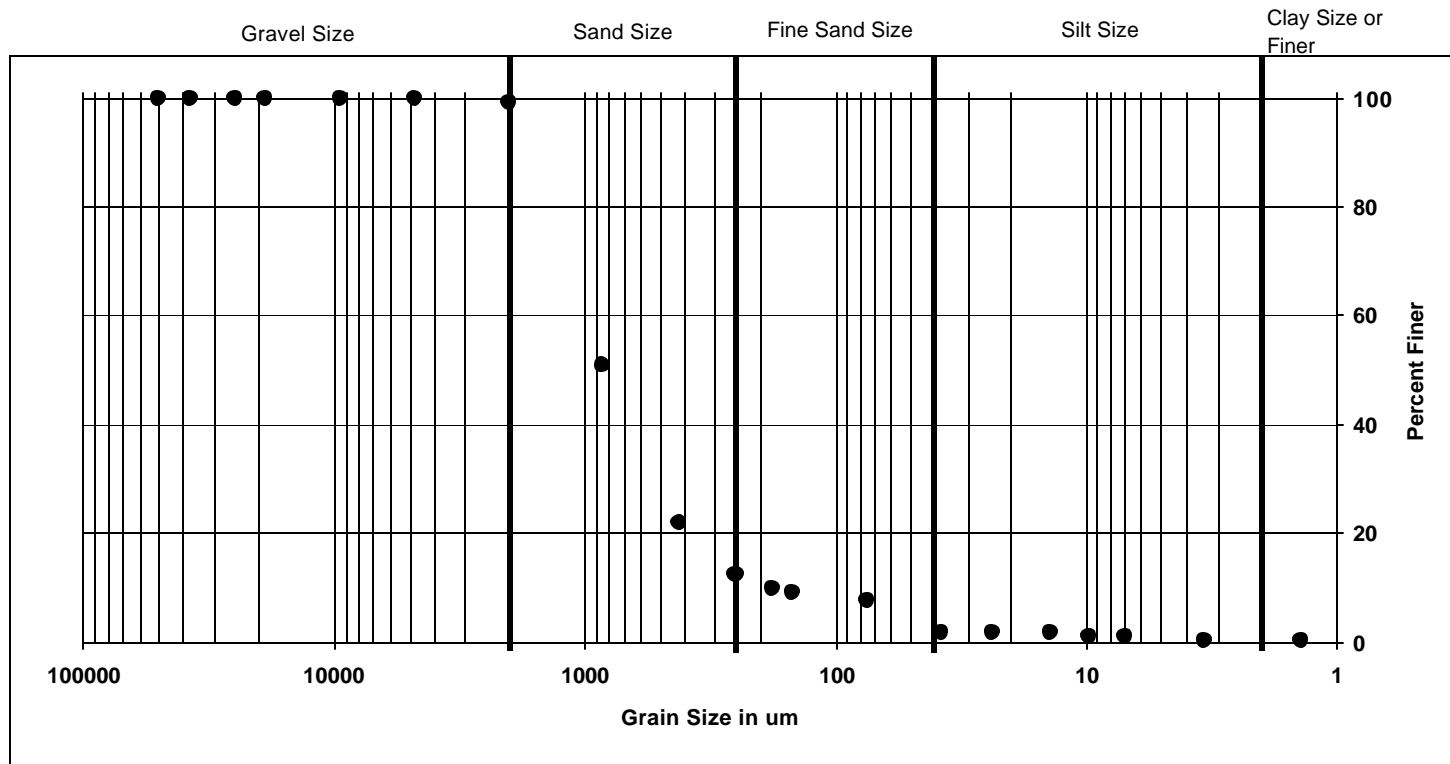


ZWERGEL-T02N-SED		Percent of <2MM Sample sent to Lab (%)	
11/5/2003		Description	
		Sand Size	70.8
		Fine Sand Size	22.9
		Silt Size	3.1
		Clay Size or Finer	2.8

Particle Size Distribution for Sediment by Method ASTM D422

Client Sample ID: ZWERGLE-T04N-SED

Date Received: 10/2/2004



ZWERGLE-T04N-SED		Percent of <2MM Sample sent to Lab (%)	
10/2/2004		Description	
		Sand Size	86.8
		Fine Sand Size	8.7
		Silt Size	3.3
		Clay Size or Finer	0.4