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Technical Memorandum

Data to Support Ecological Risk Assessment

Hanover/Whitewater Creeks Investigation Units

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ACRONYMS

AOC	Administrative Order on Consent
ASTM	American Society for Testing and Materials
BFD	blind field duplicate
bgs	below ground surface
cc	cubic centimeter
Chino	Chino Mines Company
Conf	confluence
D/S	downstream
EC	conductivity
EPA	U.S. Environmental Protection Agency
ERA	Ecological Risk Assessment
Golder	Golder Associates Inc.
GPS	Global Positioning System
H/WCIUs	Hanover and Whitewater Creeks Investigation Units
IU	Investigation Unit
Ml	milliliter
NewFields	NewFields LLC
NMED	New Mexico Environment Department
QA/QC	quality assurance/quality control
QAP	Quality Assurance Plan
SPLP	Synthetic Precipitation Leaching Procedure
SU	standard units
TDS	total dissolved solids
TSS	total suspended solids
U/S	upstream

µm	micrometer
URS	URS Inc.
µs/cm	microSiemens per centimeter

1.0 INTRODUCTION

This technical memorandum presents the results of the sampling to support the Ecological Risk Assessment (ERA) for the Hanover/Whitewater Creeks Investigation Units (H/WCIUs) under the Chino Administrative Order on Consent (AOC). The data contained in this technical memorandum fulfill data gaps identified by NewFields LLC (NewFields), a consultant for the New Mexico Environment Department (NMED), in a letter dated August 16, 2007 (NewFields, 2007). Both Golder Associates Inc. (Golder), a consultant for Chino Mines Company (Chino), and NewFields contributed data to this technical memorandum. It is organized into six sections:

- **Section 1.0 – Introduction** discusses the background and objectives of the project.
- **Section 2.0 – Summer Rainfall Pool Sampling** presents the rationale, methodology, and results of the summer rainfall pool sampling event.
- **Section 3.0 – Sediment Sampling** presents the rationale, methodology, and results for the overbanks/vegetated bars and active channel sampling events.
- **Section 4.0 – Biota Sampling** presents the rationale, methodology, and results for the biota sampling event.
- **Section 5.0 – Summary** presents an overview of the project.
- **Section 6.0 - References** lists documents used in preparation of this technical memorandum.

2.0 SUMMER RAINFALL POOL SAMPLING

Summer rainfall pools were first sampled in 1999 as part of the Phase 1 Remedial Investigation for the H/WCIUs (Golder, 2000) in support of the Site-wide ERA. Golder collected additional surface water samples in early and mid-September of 2007 to fulfill data gaps (NewFields, 2007). Summer rainfall pools are typically limited in size, on the order of tens to hundreds of square feet. Such pools are created by rain and runoff, and are therefore also limited in duration, sometimes persisting only hours to days if not fed by additional runoff. The summer rainfall pools flow temporarily, but can also be stagnant. Exposure to surface water by these pools is limited, relative to other potential media, because of their typically small size and short duration. This section presents the objectives, data needs and results of the summer rainfall pool sampling in Bayard and Lucky Bill Canyons and Lower Whitewater Creek (Figure 1).

Samples were collected from the following areas:

- Bayard Canyon - from the Chino Haul Road upstream to the confluence with Lucky Bill Canyon,
- Lucky Bill Canyon - from the confluence with Bayard Canyon to approximately 0.5 mile upstream of Lucky Bill No. 5 Stockpile, and
- Lower Whitewater Creek near the confluence with San Vicente Arroyo.

2.1 Objectives and Data Needs

The objective of this sampling event was to provide representative data from summer rainfall pools to support the ERA. The summer rainfall pool sampling event was designed to fulfill physical and chemical data needs, detailed below.

2.1.1 Physical Data Needs

Physical data needs for summer rainfall pool sampling included documentation of:

- Pool locations – via Global Positioning System (GPS) coordinates and photographs,
- Hydrologic conditions – via estimates of inflow or outflow (where possible) at each pool,
- General channel morphology, and
- Estimated volume and duration of water in each pool.

2.1.2 Chemical Data Needs

Chemical data needs for summer rainfall pool sampling included:

- Metals with designated use standards for livestock watering and wildlife habitat;
- Total and dissolved fractions for all metals being analyzed;
- Hardness;
- Field parameters (i.e., pH, temperature, and conductivity); and
- Total dissolved solids (TDS) and total suspended solids (TSS).

Table 1 contains the list of constituents, laboratory methods, and reporting limits.

2.2 Summer Rainfall Pool Sampling Event

Golder sampled a total of eight summer rainfall pools in September 2007. The locations are shown on Figure 1 and described in Table 2. Appendix A includes photographs of all of the sample locations. One blind field duplicate (BFD) sample was collected for quality assurance/quality control (QA/QC) purposes. Sampling the summer rainfall pools involved:

- Documenting the location and physical conditions of each site.
- Using new latex gloves.
- Collecting three, 500 milliliter (ml) bottles as follows:
  - Dissolved metals – filtered and preserved with nitric acid to pH <2;
  - Total metals – unfiltered and preserved with nitric acid to pH <2; and
  - TDS, TSS, hardness – raw sample (unpreserved and unfiltered).
- Pre-rinsing sampling supplies with sample water. All sampling supplies were disposable; no decontamination or rinseate blanks were needed.
- Filtering water for the dissolved metals sample with new disposable 140 cubic centimeter (cc) plastic syringes and high-capacity 0.45 micrometer (µm) filters.
- Measuring field parameters including pH, conductivity, and temperature with calibrated meter.
- Logging samples on chain of custody forms included in the sample coolers.
- Storing samples on ice and keeping them cold until arrival at SVL Analytical Laboratory in Kellogg, Idaho.

2.3 Data Validation and Data Quality Assessment

Summer rainfall pool analytical results were validated by URS Inc. (URS), a consultant to Chino, according to the Quality Assurance Plan (QAP) (SRK, 1997). After validation, overall data quality was assessed to reconcile with end uses and project objectives, and to identify any deviations from the QAP and their potential effects on the usability of the data. The Data Validation Report and Data Quality Assessment Report are included as Appendices B and C, respectively.

The overall quality of the summer rainfall pool results was sufficient to meet project objectives. The overall quality was assessed by the quantitative parameters of reporting

limits, precision, accuracy, and completeness, and by the qualitative parameters of comparability and representativeness. Because the laboratory duplicate pairs and field duplicate pairs satisfied the requirements of the QAP, the overall precision was also considered acceptable. The overall level of accuracy was also considered acceptable for the site-specific sample matrix. Program completeness was 100 percent, meaning that all available samples from those reaches requested by NewFields (2007) were collected. Analytical completeness was 100 percent, meaning that no analytical results were rejected. The reporting limits obtained were sufficient for comparing the results to the decision criteria.

2.4 Results

Table 3 compares the laboratory analytical results for summer rainfall pool samples to the State of New Mexico Standards for Interstate and Intrastate Surface Water Standards (20.6.4 NMAC). Hanover and Whitewater Creeks are intermittent, non-classified waters. In accordance with communication from NMED (2005), the designated uses for Whitewater Creek, Hanover Creek, and Lampbright Draw are livestock watering and wildlife habitat. Acceptable values for surface water pH are between 6.6 and 9 standard units (SU). With one exception (Lucky Bill U/S No. 5, which was just below the minimum permissible value), all summer rainfall pool pH values were in this range. All metals in summer rainfall pools were either below detection limits or below the applicable standards. The following sections discuss the results by sampling location.

2.4.1 Lower Whitewater Creek Rancher's Pond

Antimony, chromium, lead, mercury, silver, vanadium and zinc were all below detection limits in the dissolved fraction at the stock pond on Lower Whitewater Creek near the confluence with San Vicente Arroyo (LWWC Rancher's Pond).

Listed in order of relative abundance- aluminum, manganese, barium, boron, copper, iron, molybdenum, arsenic, nickel, selenium, cobalt, cadmium, and thallium -were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field–recorded values for pH and conductivity (EC) were 7.23 SU and 667 microSiemens per centimeter (µs/cm), respectively.

2.4.2 Bayard Canyon Upstream

Aluminum, iron, antimony, chromium, cobalt, nickel, mercury, silver, and thallium were all below detection limits in the dissolved fraction at the upstream sampling location in Bayard Canyon (Bayard Canyon U/S).

Listed in order of relative abundance- calcium, magnesium, zinc, barium, copper, boron, arsenic, molybdenum, cadmium, lead, manganese, vanadium, and selenium-were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field–recorded values for pH and EC were 6.94 SU and 532 µs/cm, respectively.

2.4.3 Bayard Canyon Middle

Aluminum, iron, antimony, chromium, cobalt, nickel, mercury, silver, and thallium were all below detection limits in the dissolved fraction at the middle sampling location in Bayard Canyon (Bayard Canyon Mid).

Listed in order of relative abundance- calcium, magnesium, zinc, barium, boron, copper, manganese, arsenic, molybdenum, cadmium, lead, vanadium, and selenium- were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field-recorded values for pH and EC were 6.90 SU and 437 µs/cm, respectively.

2.4.4 Bayard Canyon Downstream

Aluminum, iron, antimony, chromium, cobalt, mercury, silver, and thallium were all below detection limits in the dissolved fraction at downstream sampling location in Bayard Canyon (Bayard Canyon D/S).

Listed in order of relative abundance- calcium, magnesium, zinc, barium, copper, boron, arsenic, molybdenum, manganese, cadmium, vanadium, lead, nickel, and selenium- were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field–recorded values for pH and EC were 6.75 SU and 466 µs/cm, respectively.

2.4.5 *Confluence of Bayard and Lucky Bill Canyons*

Aluminum, iron, antimony, chromium, cobalt, nickel, mercury, silver, and thallium were all below detection limits in the dissolved fraction at the confluence of Bayard and Lucky Bill Canyons (Bayard/LB Conf).

Listed in order of relative abundance- calcium, magnesium, zinc, barium, manganese, boron, arsenic, molybdenum, copper, lead, vanadium, selenium, and cadmium-were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field–recorded values for pH and EC were 6.76 SU and 534 µs/cm, respectively.

2.4.6 *Mouth of Lucky Bill Canyon*

Aluminum, antimony, chromium, cobalt, nickel, mercury, lead, silver, and thallium were all below detection limits in the dissolved fraction at the mouth of Lucky Bill Canyon (Lucky Bill Mouth).

Listed in order of relative abundance- calcium, magnesium, barium, manganese, zinc, arsenic, boron, iron, molybdenum, copper, vanadium, selenium and cadmium -were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field–recorded values for pH and EC were 6.80 SU and 551 µs/cm, respectively.

2.4.7 *Lucky Bill Canyon Adjacent to the No. 5 Stockpile*

Aluminum, iron, antimony, chromium, cobalt, nickel, mercury, lead, silver, and thallium were all below detection limits in the dissolved fraction in Lucky Bill Canyon adjacent to the No. 5 Stockpile (Lucky Bill @ No. 5).

Listed in order of relative abundance- calcium, magnesium, manganese, zinc, barium, boron, arsenic, molybdenum, copper, vanadium, selenium, and cadmium- were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field–recorded values for pH and EC were 6.84 SU and 498 µs/cm, respectively.

2.4.8 *Lucky Bill Canyon Upstream of the No. 5 Stockpile*

Aluminum, antimony, cadmium, chromium, cobalt, nickel, mercury, lead, silver, thallium, and zinc were all below detection limits in the dissolved fraction at Lucky Bill Canyon upstream of the No. 5 Stockpile (Lucky Bill U/S No. 5).

Listed in order of relative abundance- calcium, magnesium, manganese, barium, iron, boron, arsenic, molybdenum, copper, vanadium, and selenium-were all above their respective detection limits, but not at levels in excess of applicable surface water standards. Field–recorded values for pH and EC were 6.42 SU and 422 µs/cm, respectively. The field

pH is slightly below the minimum standard of 6.6 SU for the livestock watering and wildlife habitat designated uses.

3.0 SEDIMENT SAMPLING

This section describes the objectives, data needs and results of the overbanks/vegetated bars and active channel sediment sampling and analysis programs undertaken to fulfill data gaps for the ERA (NewFields, 2007).

3.1 Overbanks and Vegetated Bars in Hanover Creek

As NewFields specified in their August 16, 2007 letter to the NMED (2007), the previous, baseline ERA (NewFields, 2005) identified several areas of potential risk within Hanover Creek. In order to fill these data gaps, NewFields requested collection and analysis of 10 additional surface sediment samples from overbanks and vegetated bars in that area (Figure 2A and Table 4).

3.1.1 Objectives and Data Needs

The objective of this sampling event was to collect and analyze composite sediment samples from overbanks and vegetated bars in Hanover Creek to support the ERA (NewFields, 2007). The overbanks and vegetated bars sampling event was designed to fulfill both physical and chemical data needs, detailed below.

3.1.1.1 Physical Data Needs

Physical data needs for overbanks and vegetated bars sampling included documentation of:

- Overbank and vegetated bar locations – via GPS coordinates and photographs, and
- American Society for Testing and Materials (ASTM) manual/visual descriptions of each final composite sample.

3.1.1.2 Chemical Data Needs

The sole chemical data need for overbanks and vegetated bars consisted of total metals concentrations in sediment for the ERA. Table 1 contains the list of constituents, laboratory methods, and reporting limits.

3.1.2 Overbanks and Vegetated Bars Sampling Event

Golder collected a total of nine samples from overbanks and vegetated bars during the weeks of September 4-6 and 17-20, 2007 from O48.8E, O47.5E, O44.2E, O43.5W, B47.2E, B46.4W, B45.8W, B45.3E and B44.2E (Figure 4). Note that B45.8E was not sampled because of changes in channel geomorphology. The sample locations are shown on Figures 2A and 2B, and are described in Table 4. One BFD sample was collected for QA/QC purposes. Sampling the overbanks and vegetated bars involved:

- Documenting the location and physical conditions of the geomorphologic feature.
- Locating five randomly-selected subsample locations.
- Excavating each subsample location from 0 to 6 inches below ground surface (bgs). All sampling was completed using disposable equipment; no decontamination procedures or rinseate blanks were necessary.
- Collecting one-half gallon of sediment evenly from the sides of subsample holes into one gallon Ziploc bags.
- Compiling the subsamples onto plastic sheeting, labeling, and photographing prior to mixing.
- Mixing the subsamples by the cone and quarter method.
- Describing the composite sample using the ASTM visual/manual method.
- Picking out rocks >1 inch in diameter from one quarter and triple bagging the remaining sediment from that quarter.
- Logging the samples on a chain-of-custody form.
- Storing samples on ice and keeping them cold until arrival at SVL Analytical in Kellogg, Idaho.
- Sieving the samples to <2,000 µm at the analytical laboratory before total metals analysis.

3.1.3 Data Validation and Data Quality Assessment

Overbanks and vegetated bars analytical results were validated by URS according to the QAP (SRK, 1997). After validation, overall data quality was assessed to reconcile with end uses and project objectives, and to identify any deviations from the QAP and their potential effects on the usability of the data. The Data Validation Report and Data Quality Assessment Report are included as Appendices B and C, respectively.

The overall quality of the overbanks/vegetated bars sediment total metals results was sufficient to meet project objectives. The overall quality was assessed by the quantitative parameters of reporting limits, precision, accuracy, and completeness, and by the qualitative parameters of comparability and representativeness. Because the laboratory-duplicate pairs and field-duplicate pairs satisfied the requirements of the QAP, the overall precision was also considered acceptable. The overall level of accuracy was considered acceptable for the site-specific sample matrix. Program completeness was 100 percent, considering that one vegetated bar (B45.8E) was not able to be sampled because of changes in the channel geomorphology (Figure 4).

Changes in channel geomorphology notwithstanding, all available samples from those features requested by NewFields (2007) were collected. Analytical completeness was 100 percent, meaning that no analytical results were rejected, and although the reporting limits obtained for some metals were insufficient for comparing results to the decision criteria (Appendix C), the levels at which most constituents were detected did not affect data usability.

3.1.4 Results

The laboratory analytical results for overbank and vegetated bar samples are presented in Table 5. In order of decreasing contribution to sediment mass, the four most prominent constituents in sediment samples from overbanks and vegetated bars were iron, calcium, aluminum, and zinc.

3.2 Active Channel along Hanover and Whitewater Creeks

In their letter to NMED (2007), NewFields requested additional sampling of in-channel sediment from the Hanover and Whitewater Creek drainages to characterize the bioavailability, potential mobility and solubility of metals. NewFields requested collection and analysis of 6 surface sediment samples (Table 4) from the active channel in these drainages.

3.2.1 Objectives and Data Needs

The objective of this sampling event was to collect and analyze sediment samples from the active channel in Hanover and Whitewater Creeks to support the ERA (NewFields, 2007). The active channel sampling event was designed to fulfill both physical and chemical data needs.

3.2.1.1 Physical Data Needs

Physical data needs for active channel sampling included documentation of:

- Document active channel locations – via GPS coordinates and photographs, and
- ASTM manual/visual description of final composite sample.

3.2.1.2 Chemical Data Needs

The chemical data needs for active channel sampling consisted of:

- Total metals for the ERA; and
- Modified Synthetic Precipitation Leaching Procedure (SPLP) to characterize solubility, bioavailability, and potential mobility of metals in channel sediment.

Table 1 contains the list of constituents, laboratory methods, and reporting limits.

3.2.2 Active Channel Sampling Event

Golder collected a total of six sediment samples from the active channel during September 4-6 and September 17-20, 2007. Samples were collected from the following areas:

- Hanover Creek from Highway 52 to Whitewater Creek,
- Whitewater Creek from Dam 17 to its confluence with Hanover Creek,
- Whitewater Creek from Hanover Creek to Bayard Canyon,
- Whitewater Creek from Bayard Canyon to Lake One,
- New Bolton Draw diversion from James Canyon to Whitewater Creek, and
- Whitewater Creek from Bolton Draw to slightly downstream of Highway 180.

The sample locations are shown on Figures 2A and 2B, and are described in Table 4. One BFD sample was collected for QA/QC purposes. Sampling the active channel involved:

- Documenting the location and physical conditions of the geomorphologic feature.
- Locating five, evenly spaced subsample locations along the centerline of the active channel.
- Excavating each subsample location from 0 to 6 inches bgs. All sampling was completed using disposable equipment; no decontamination procedures or rinseate blanks were necessary.

- Collecting one-half gallon of sediment evenly from the sides of subsample holes into one gallon Ziploc® bags.
- Compiling the subsamples onto plastic sheeting, labeling, and photographing prior to mixing.
- Mixing the subsamples by the cone and quarter method.
- Describing the composite sample using the ASTM visual/manual method.
- Picking out rocks larger than1 inch in diameter from one quarter of the composite and triple bagging the remaining sediment from that quarter.
- Logging the samples on a chain-of-custody form.
- Storing samples on ice and keeping them cold until arrival at SVL Analytical Laboratory in Kellogg, Idaho.
- Sieving the samples to less than 2,000 µm at the analytical laboratory before total metals analysis. Samples slated for SPLP analysis were not sieved.
- In accordance with NewFields' instructions, modifying the extractant-to-solid ratio for the SPLP (normally 20:1) to 5:1, and omitting the pH adjustment step at the beginning of the leaching process.

3.2.3 Data Validation and Data Quality Assessment

Active channel analytical results were validated by URS according to the QAP (SRK, 1997). After validation, overall data quality was assessed to reconcile with end uses and project objectives, and to identify any deviations from the QAP and the related potential effects on the usability of the data. The Data Validation Report and Data Quality Assessment Report are included as Appendices B and C, respectively.

The overall quality of the active channel sediment total metals results was sufficient to meet project objectives. The overall quality was assessed by the quantitative parameters of reporting limits, precision, accuracy, and completeness, and by the qualitative parameters of comparability and representativeness. Because the laboratory-duplicate pairs and field-duplicate pairs satisfied the requirements of the QAP, the overall precision was also considered acceptable. The overall level of accuracy was also considered acceptable for the site-specific sample matrix, and program completeness was 100 percent.

All available samples from those features requested by NewFields (2007) were collected. Analytical completeness was 100 percent, meaning that no analytical results were rejected.

The reporting limits obtained for both sediment total metals and SPLP analysis were sufficient for comparing results to the decision criteria.

3.2.4 Results

The laboratory analytical results for active channel samples are presented in Tables 5 and 6, respectively, for total metals and SPLP. In order of decreasing contribution to sediment mass, the four most prominent constituents in active channel sediments were iron, calcium, aluminum, and zinc. The four most prominent constituents in SPLP leachate were sulfate, calcium, chloride, and aluminum.

4.0 BIOTA SAMPLING

This section describes the objectives, data needs and results of the biota sampling and analysis program in support of the ERA. Ecological tissue samples were collected during September and October of 2007 by a NewFields sampling team. Data obtained from these samples will be used in the ERA to characterize potential exposure to wildlife receptors. Small, ground-feeding birds were identified as the most sensitive receptors in the Baseline Ecological Risk Assessment/Side-wide Ecological Risk Assessment (NewFields, 2005).

4.1 Objectives and Data Needs

The objective of this sampling event was to collect and analyze ecological tissue samples from the Hanover/Whitewater Investigation Unit (IU). The biota sampling event was designed to fulfill both physical and chemical data needs, detailed below.

4.1.1 Physical Data Needs

The physical data needs for biota sampling included:

- Documentation of sample collection locations with GPS coordinates, field notes, and photographs;
- Foliage (above-ground) and seed-head percent moisture; and
- Invertebrate percent solids.

4.1.2 Chemical Data Needs

The chemical data needs for active channel sampling consisted of total metals concentrations in foliage, seed head, and invertebrate samples. Constituents, laboratory methods, and reporting limits are given in Shafer and Associates, (1999).

4.2 Biota Sampling Event

To assess the dietary exposure of ground-feeding birds to constituents of concern, above-ground foliage, seed head, and terrestrial invertebrate samples were collected from 13 locations within the IU as shown in Figures 3 through 6:

- Hanover Creek: O48.8E, B47.2E, B45.8W, O43.5W, O44.2E (Figure 4);
- Whitewater Creek Breakout Area (Side Channel): SC-1, SC-2, SC-3 (Figure 5); and
- Lower Whitewater Creek: LW-03, LW-03E, LW-04, LW-05, LW-06, LW-07 (Figure 6).

Ecological sampling points were co-located with sediment samples collected by Golder between September 4-6 and September 17-20, 2007 (Section 3). Photographs were taken, and GPS coordinates were recorded, at the center of each sampling location. The field photographs are located in Appendix D. The GPS coordinates for each sampling location are located in Table 7.

Biota sampling involved:

- Collecting 50 grams of above-ground foliage by clipping with clean scissors,
- Compositing samples from species considered of forage quality within approximately 25 meters of the soil sampling sites,
- Compositing 5 grams of terrestrial invertebrate tissue from each site by sweep-netting, and
- Documenting site conditions, sampling and decontamination procedures in a field notebook and on sampling data sheets.

When available, forage quality seed heads were collected as grab samples using nitrile gloves. Similar to the forage samples, a percentage of seed heads in each sample reflected the percentage of the corresponding plant species at each site. In total, 14 foliage, 13 invertebrate, and five seed head samples were collected.

Although invertebrate sampling occurred within approximately 25 meters of the soil-sampling locations, the sampling area was expanded in order to collect a mass of tissue adequate for analysis in cases where sample mass was limited. An effort was made to include proportions of each species in the samples according to their relative proportion of the overall forage at each location.

Verification samples of vegetation were collected from each site and were identified to the lowest taxonomic level possible. Copies of field sampling sheets are found in Appendix E.

All of the samples were stored on ice, in Ziploc® bags, and kept in an upright freezer at the Hurley, New Mexico office until the samples were packed in coolers and shipped. Terrestrial invertebrates were shipped on ice first to the NewFields office, identified to order and weighed, and were then shipped on ice to ACZ Laboratories in Steamboat Springs, CO for analysis.

All of the samples were logged on chain of custody forms, which were included in the sample coolers.

A decontamination rinseate and trip blanks were collected periodically according to the QAP (SRK, 1997).

The samples were initially collected between September 11-13 of 2007, but, due to a laboratory error that resulted in the accidental disposal of a number of samples, 12 foliage samples and one seed-head sample had to be re-collected in October 2007. The following is a list of those samples (see Table 7) that were disposed of and had to be re-collected on October 18, 2007:

Foliage Samples

- Hanover Creek: O48.8E, B47.2E, B45.8W, O43.5W, O44.2E (Figure 4)
- Whitewater Creek Breakout Area (Side Channel): SC-2 (Figure 5)
- Lower Whitewater: LW-03, LW-03E, LW-04, LW-05, LW-06, LW-07 (Figure 6)

Seed Head Samples

- Hanover Creek: O43.5W (Figure 4)

There were no changes in the field sampling procedures followed during the October sampling event. These samples were shipped directly to ACZ Labs for analysis.

The samples were labeled with the corresponding site name and sample type. Sample type codes are “F” for foliage, “S” for seed heads, and “I” for invertebrates.

The samples collected in October 2007 were distinguished from the original samples collected in September 2007 in the sample name by a "-A" following the location. For example, sample O44.2E-F-A describes a foliage sample re-collected from site O44.2E in October 2007.

Total metals concentrations were determined for all samples by the designated analytical methods (Shafer and Associates, 1999). Metals analyzed included aluminum, antimony, arsenic, barium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, thallium, vanadium, and zinc. Foliage and seed head samples were evaluated for percent moisture, and invertebrate samples were evaluated for percent solids.

4.3 Data Validation and Data Quality

Data validation was completed by NewFields according to the QAP (SRK, 1997). The data validation files are located in Appendix F.

4.4 Results

A summary of data for the foliage, seed head, and invertebrate samples collected in each sampling area are found in Tables 8 through 10. Raw-data files are located in Appendix G.

5.0 SUMMARY

This technical memorandum compiles the results of the sampling to support the ERA for the H/WCIUs. The data contained in this technical memorandum fulfill data gaps identified by NewFields on behalf of NMED.

Golder collected eight summer rainfall pool samples in September 2007. Summer rainfall pools are typically limited in size, on the order of tens to hundreds of square feet. Such pools are created by rainfall and runoff, and are therefore also limited in duration, sometimes persisting only hours to days if not fed by additional runoff. The summer rainfall pools may flow temporarily, but may also be stagnant. Exposure to surface water by these pools is limited, relative to other potential media, because of their typically small size and short duration; however, for species that depend on the presence of surface water for reproductive purposes, the presence of these pools may be critical. The sample results were compared to NMED surface water quality standards for livestock watering and wildlife habitat. The field pH measured upstream of the Lucky Bill No. 5 Stockpile was slightly below the standard. All of the other results from all of the samples met the standards.

Golder collected nine overbank/vegetated bar and six active-channel, composite-sediment samples from Hanover and Whitewater Creeks. The samples were analyzed for total metals, paste pH, and organic matter content. Active-channel samples were also subjected to a modified SPLP.

NewFields collected 14 foliage, five seed head, and 13 invertebrate samples for the biota sampling event. All of the samples were analyzed for total metals content. Foliage and seed head samples were evaluated for percent moisture, and invertebrate samples were evaluated for percent solids.

6.0 REFERENCES

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TABLES

TABLE 1
LIST OF CONSTITUENTS, METHODS AND REPORTING LIMITS FOR SEDIMENT AND SUMMER RAINFALL POOLS

Parameter	Total Metals Analysis		Surface Water and Water Soluble Analysis	
	EPA METHOD	*Laboratory Reporting Limit (mg/kg)	EPA METHOD	*Laboratory Reporting Limit (µg/L)
Sediment Analyses - Overbanks/Vegetated Bars and Active Channel				
Aluminum (Al)	EPA 6010 ICP	8	EPA 200.7/6010 ICP	80
Antimony (Sb)	EPA 6020 ICP/MS	1.1	EPA 200.7/6010 ICP	20
Arsenic (As)	EPA 6020 ICP/MS	0.3	EPA 200.7/6010 ICP	25
Boron (B)	EPA 6010 ICP	1	EPA 200.7/6010 ICP	40
Cadmium (Cd)	EPA 6020 ICP/MS	0.02	EPA 200.8/6020 ICP/MS	0.2
Calcium (Ca)	EPA 6010 ICP	20	EPA 200.7/6010 ICP	40
Copper (Cu)	EPA 6010 ICP	1	EPA 200.8/6020 ICP/MS	10
Iron (Fe)	EPA 6010 ICP	1	EPA 200.7/6010 ICP	60
Lead (Pb)	EPA 6010 ICP	2	EPA 200.7/6010 ICP	7.5
Mercury (Hg)	EPA 200/7000 CVAA	0.02	EPA 200/7000 CVAA	0.2
Molybdenum (Mo)	EPA 6020 ICP/MS	0.1	EPA 200.7/6010 ICP	8
Nickel (Ni)	EPA 6010 ICP	1	EPA 200.7/6010 ICP	10
Selenium (Se)	EPA 200/7000 HGAA	0.2	EPA 200/7000 HGAA	2
Vanadium (V)	EPA 6020 ICP/MS	0.4	EPA 200.7/6010 ICP	5
Zinc (Zn)	EPA 6010 ICP	1	EPA 200.7/6010 ICP	10
Bicarbonate (HCO_3)	---	---	EPA 310.1 Titrimetric	2,000
Chloride (Cl)	---	---	EPA 300.0 Ion Chromatography	200
Nitrate/Nitrite (NO_3+NO_2)	---	---	EPA M353.2 Auto Color	20
Orthophosphate (PO_4)	---	---	EPA M365.1 Auto Color	5
Sulfate (SO_4)	---	---	EPA 300.0 Ion Chromatography	300
Soil Organic matter	USDA No. 60 (24)	0.10%	---	---
DOC	---	---	EPA M415.1 Comb/IR	1,000
pH (Saturated Paste)	USDA No. 60 (21a)	0.1 units	pH	electrode
Summer Rainfall Pools				
Aluminum (Al)	---	---	200.7	80
Antimony (Sb)	---	---	200.7	20
Arsenic (As)	---	---	200.7	25
Barium (Ba)	---	---	200.7	2
Boron (B)	---	---	200.7	40
Cadmium (Cd)	---	---	200.8	0.1/0.25
Chromium (Cr)	---	---	200.7	6
Cobalt (Co)	---	---	200.7	6
Copper (Cu)	---	---	200.8	0.7/1.75
Iron (Fe)	---	---	200.7	60
Lead (Pb)	---	---	200.8	0.2/0.5
Manganese (Mn)	---	---	200.7	4
Mercury (Hg)	---	---	245.1	0.2
Molybdenum (Mo)	---	---	200.7	8
Nickel (Ni)	---	---	200.7	10
Selenium (Se)	---	---	200.8	0.5/1.25
Silver (Ag)	---	---	200.8	0.05/0.125
Thallium (Tl)	---	---	200.8	0.2/0.5
Vanadium (V)	---	---	200.7	5
Zinc (Zn)	---	---	200.7	10
Total Dissolved Solids (TDS)	---	---	160.1	10
Total Suspended Solids (TSS)	---	---	160.2	5
Hardness	---	---	calculated	---

Notes:

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

ICP: Inductively Coupled Plasma

--- denotes not applicable

ICPMS: Inductively Coupled Plasma Mass Spectrometry

CVAA: Cold Vapor Atomic Adsorption

HGAA: Hydride Generation Atomic Absorption

Auto Color: Automated Colorimetric

DOC = Dissolved organic carbon

Comb/IR: Combustion/Infrared Spectroscopy

Reporting limits for Summer Rainfall Pool Analyses are for the Dissolved Fraction. Dual listings noted as Dissolved / Total (i.e., Cd - .042/.105).

**Revised 8/28/2007 from Method Detection Limits to Lab Reporting Limit with current limits by SVL Analytical, Inc.*

TABLE 2
SUMMER RAINFALL POOL SAMPLE LOCATIONS AND DESCRIPTIONS

Sample Name	Sample Date	Field Parameters			Easting *	Northing *	Estimated Pool Dimensions (feet)	Channel Morphology	Estimated Flow Rate	Estimated Persistence of Water Feature
		Ph (SU)	EC (µS/cm)	Temp. (°C)						
LWWCR Rancher's Pond	9/5/2007	7.23	667	26.9	2665831.029	539967.021	~ 2 ac. x 5 ft deep	N/A (pond)	No inflow	Weeks to month
Bayard Canyon D/S	9/19/2007	6.75	466	21.9	2637463.953	643939.118	20 x 10 x 2 deep	Boulder plunge pool	15 gpm	Weeks to month
Bayard Canyon MID	9/19/2007	6.90	437	26.3	2636203.148	642257.929	80 x 10 x 0.7 deep	Long alluvium pool	20 gpm	Weeks to month
Bayard Canyon U/S	9/19/2007	6.94	532	19.8	2637230.997	643827.998	30 x 5 x 0.5 deep	Short pool, cobbles	5 gpm	Days to week
Bayard/LB Conf	9/19/2007	6.76	534	23.2	2637463.855	643935.841	20 x 2 x 0.5 deep	Riffle pool, cobbles with red-brown coating	15 gpm	Weeks
Lucky Bill at No. 5	9/19/2007	6.84	498	22.1	2639180.186	643520.329	5 x 5 x 1.5 deep	Step-pool, well-vegetated. Large boulders.	30 gpm	Weeks to months
Lucky Bill Mouth	9/19/2007	6.80	551	21.6	2637983.206	643861.244	20 x 10 x 2 deep	Bedrock plunge pool.	30 gpm	Months to permanent
Lucky Bill U/S No.5	9/19/2007	6.42	422	22.1	2639299.784	643461	5 x 20 x 1 deep	Riffle pool, well-vegetated banks, some boulders.	25 gpm	Weeks to months

Notes:
SU = standard units
EC = electrical conductance
µS/cm = microSiemens per centimeter
D/S = downstream
U/S = upstream
Conf = conflluence
*All coordinates are given in feet, New Mexico State Plane West NAD 83
ac. = acres
gpm = gallons per minute
ft = feet

TABLE 3
SUMMER RAINFALL POOL SAMPLE RESULTS

Sample Name	Sample Date	Field Parameters			Hardness (mg/L)	TDS (mg/L)	TSS (mg/L)	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)
		pH (SU)	EC (µS/cm)	Temp. (°C)											
Surface Water Standards															
Livestock Watering		**6.6-9**	---	---	---	---	---	---	---	0.20	---	5.0	0.05	---	1.0
Wildlife Habitat		**6.6-9**	---	---	---	---	---	---	---	---	---	---	---	---	---
LWWCR Rancher's Pond	9/5/2007	7.23	667	26.9	228	404	9.00	0.159	<0.0034	0.0069	0.0276	0.0265	0.00007	72.7	<0.0004
Bayard Canyon D/S	9/19/2007	6.75	466	21.9	155	305	< 5	<0.013	<0.002	0.0144	0.0760	0.0265	0.0027	44.0	<0.0013
Bayard Canyon MID	9/19/2007	6.90	437	26.3	143	286	< 5	<0.013	<0.002	0.0141	0.0675	0.0313	0.0033	40.9	<0.0013
Bayard Canyon U/S	9/19/2007	6.94	532	19.8	179	352	< 5	<0.013	<0.002	0.0164	0.0572	0.0167	0.0044	51.9	<0.0013
Bayard/LB Conf	9/19/2007	6.76	534	23.2	172	352	< 5	<0.013	<0.002	0.0134	0.0759	0.0165	0.00042	48.0	<0.0013
Lucky Bill at No. 5	9/19/2007	6.84	498	22.1	158	330	< 5	<0.013	<0.002	0.0131	0.0570	0.0175	0.00019	43.5	<0.0013
Lucky Bill Mouth	9/19/2007	6.80	551	21.6	180	365	< 5	<0.013	<0.002	0.0148	0.0667	0.0148	0.00007	49.5	<0.0013
Lucky Bill U/S No.5	9/19/2007	**6.42**	422	22.1	126	283	< 5	<0.013	<0.002	0.0119	0.0561	0.0166	<0.00005	33.4	<0.0013

Sample Name	Sample Date	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
Surface Water Standards															
Livestock Watering		1.0	0.50	---	0.10	---	---	0.01	---	---	0.05	---	---	0.10	25
Wildlife Habitat		---	---	---	---	---	---	0.00077	---	---	0.005	---	---	---	---
LWWCR Rancher's Pond	9/5/2007	0.00097	0.0244	0.0162	<0.00003	11.4	0.0373	<0.0001	0.0079	0.0048	0.0013	<0.00002	0.00003	<0.0005	<0.0007
Bayard Canyon D/S	9/19/2007	<0.0013	0.0299	<0.0076	0.0020	10.9	0.0112	<0.0001	0.0139	0.0015	0.00072	<0.00005	<0.00005	0.0022	0.2780
Bayard Canyon MID	9/19/2007	<0.0013	0.0280	<0.0076	0.0032	9.83	0.0201	<0.0001	0.0138	<0.0011	0.00067	<0.00005	<0.00005	0.0019	0.3540
Bayard Canyon U/S	9/19/2007	<0.0013	0.0305	<0.0076	0.0037	12.1	0.0032	<0.0001	0.0137	<0.0011	0.00071	<0.00005	<0.00005	0.0024	0.3740
Bayard/LB Conf	9/19/2007	<0.0013	0.0044	<0.0076	0.0017	12.8	0.0595	<0.0001	0.0127	<0.0011	0.00058	<0.00005	<0.00005	0.0016	0.1440
Lucky Bill at No. 5	9/19/2007	<0.0013	0.0034	<0.0076	<0.00008	11.9	0.0917	<0.0001	0.0109	<0.0011	0.00061	<0.00005	<0.00005	0.0013	0.0892
Lucky Bill Mouth	9/19/2007	<0.0013	0.0020	0.0145	<0.00008	13.8	0.0547	<0.0001	0.0130	<0.0011	0.00063	<0.00005	<0.00005	0.0014	0.0152
Lucky Bill U/S No.5	9/19/2007	<0.0013	0.0021	0.0430	<0.00008	10.3	0.1050	<0.0001	0.0109	<0.0011	0.00063	<0.00005	<0.00005	0.0014	<0.003

Notes:
SU = standard units
EC = electrical conductance
µS/cm = microSiemens per centimeter
TDS = total dissolved solids
TSS = total suspended solids
mg/L = milligrams per liter
D/S = downstream
U/S = upstream
Conf = conflluence
Bold font indicates an exceedance

TABLE 4
OVERBANK/VEGETATED BAR AND ACTIVE CHANNEL SAMPLE LOCATIONS

Sample ID	Subsample No.	Easting	Northing
Overbanks			
O48.8E (U02-ER001)	1	2640508.49	652383.534
	2	2640530.8	652471.436
	3	2640524.84	652491.297
	4	2640574.29	652499.656
	5	2640596.21	652574.448
O47.5E (U02-ER002)	1	2640262.97	651524.866
	2	2640205.98	651483.928
	3	2640192.38	651467.933
	4	2640178.88	651455.216
	5	2640158.33	651426.308
O44.2E ((U02-ER003)	1	2638934.55	648900.977
	2	2638955.19	648933.163
	3	2638970.36	649001.597
	4	2638961.51	649034.666
	5	2638952.76	649071.012
O43.5W (U02-ER004)	1	2638673.07	648823.518
	2	2638659.37	648804.246
	3	2638616.67	648802.245
	4	2638566.62	648774.22
	5	2638512.81	648729.906
Vegetated Bars			
B46.4W (U02-ER006)	1	2640035.69	650508.192
	2	2640079.71	650444.546
	3	2640062.05	650402.43
	4	2640023.84	650331.406
	5	2640033.81	650226.135
B45.8W (U02-ER007)	1	2639603.47	649658.395
	2	2639570.01	649636.435
	3	2639454.12	649600.541
	4	2639397.22	649562.881
	5	2639298.27	649654.415
B45.3E (U02-ER009)	1	2639228.33	649728.679
	2	2639224.95	649725.5
	3	2639208.96	649739.101
	4	2639186.31	649749.62
	5	2639160.49	649763.515
B44.2E (U02-ER010)	1	2638850.15	648821.495
	2	2638893.74	648852.993
	3	2638911.41	648895.109
	4	2638921.4	649009.624
	5	2638906.19	649049.444
B47.2E (U02-ER005)	1	2640098.06	651385.469
	2	2640101.83	651401.758
	3	2640132.8	651450.036
	4	2458596.69	-10062603.4
	5	2640169.93	651485.008
Active Channel			
Hanover Creek from Highway 52 to HC/WWC Confluence			
UO2-ER011	1	2643161.06	656611.191
	2	2641604.94	654381.241
	3	2640734.58	652813.052
	4	2639705.76	649678.294
	5	2638588.33	648622.671
Whitewater Creek from Dam 17 to HC/WWC Confluence			
UO3-ER001	1	2639927.8	647782.137
	2	2639579.08	647858.189
	3	2639309.32	647613.677
	4	2639184.89	647292.644
	5	2638738.08	647269.941
Whitewater Creek from H/WWC confluence to Bayard Canyon			
UO3-ER002	1	2638291.2	647135.706
	2	2635974.73	646352.17
	3	2666819.03	644913.52
	4	2632562.83	643495.381
	5	2632724.81	641345.122
Whitewater Creek from Bayard Canyon to Lake One			
UO3-ER004	1	2631949.77	639124.497
	2	2632015.12	635169.603
	3	2632337.57	631144.695
	4	2632758.07	627654.853
	5	2634418.26	622947.006
New Bolton Draw Diversion from James Canyon to Whitewater Creek			
UO3-ER005	1	2641028.04	613938.336
	2	2640639.46	612240.871
	3	2641733.6	610213.727
	4	2642764.54	607607.859
	5	*	*
Confluence of Bolton Draw and Whitewater Creek to slightly downstream of Highway 180			
UO3-ER006	1	2644392.92	603366.958
	2	2644375.72	598834.041
	3	2645485.17	594349.527
	4	2645322.71	587692.025
	5	2644901.93	579848.182

Notes:
All coordinates are given in feet, New Mexico State Plane West NAD 83
* Subsample No.5 (northwest area) was inaccessible due to local blasting.

TABLE 5
OVERBANK/VEGETATED BAR AND ACTIVE CHANNEL SEDIMENT SAMPLE RESULTS

Sample Name	Sample Date	pH Paste (s.u.)	Total Organic Matter (%)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Bars & Vegetated Overbanks																		
U02-ER001	9/6/2007	6.40	0.68	6,500	0.15	7.90	6.70	4.60	7,940	549	48,900	312	0.02	8.10	3.60	0.65*	30.2	1,930
U02-ER002	9/5/2007	6.83	0.46	5,120	0.30	8.70	8.90	5.50	9,040	618	60,900	297	< 0.02	9.20	5.60	0.83*	32.1	2,510
U02-ER003	9/5/2007	6.60	1.38	7,220	0.18	10.2	7.60	6.00	8,950	449	45,000	458	0.03	5.70	3.70	0.68*	28.1	2,500
U02-ER004	9/4/2007	6.73	0.62	5,400	0.17	8.80	7.90	4.70	12,200	438	48,400	571	0.02	8.10	3.50	0.70*	26.7	2,040
U02-ER005	9/17/2007	7.65	0.36	5,530	0.23	3.40	3.00	4.00	9,830	544	41,600	169	0.06	6.00	16.1	0.34	18.1	1,680
U02-ER006	9/5/2007	7.66	0.26	4,630	0.20	3.80	6.70	3.00	12,600	441	42,100	89.3	< 0.02	7.90	3.90	0.34	36.4	1,360
U02-ER007	9/5/2007	7.54	0.32	4,730	0.16	4.10	6.70	2.90	12,700	463	40,700	126	< 0.02	9.10	4.50	0.24	33.6	1,220
U02-ER009	9/5/2007	7.61	0.41	5,000	0.12	4.50	7.30	3.00	15,200	585	38,000	165	< 0.02	9.20	5.30	0.54*	27.7	1,460
U02-ER010	9/5/2007	6.40	0.39	4,850	0.15	10	6.10	1.40	7,220	423	53,800	317	< 0.02	9.30	4.10	0.55*	30.1	886
Active Channel																		
U03-ER001	9/18/2007	7.16	0.16	5,920	0.25	2.00	3.00	2.90	5,050	622	36,100	682	< 0.02	7.10	13.8	0.4	20.2	335
U03-ER002	9/18/2007	7.68	0.08	4,600	0.10	1.70	1.00	2.40	8,960	307	25,200	134	0.02	2.50	11.3	0.27	14.4	979
U03-ER004	9/19/2007	7.10	0.12	6,410	0.30	2.40	2.90	1.50	4,870	387	35,500	99.0	0.02	5.30	15.2	0.33	20.3	707
U03-ER005	9/20/2007	7.33	0.06	2,940	0.08	1.70	0.96	0.49	1,680	111	8,440	5.90	< 0.02	1.00	6.20	0.24	14.7	24.2
U03-ER006	9/20/2007	7.39	0.09	3,310	0.26	1.20	0.87	0.26	1,880	358	11,400	39.8	0.02	1.60	8.10	0.26	14.5	43.2
U02-ER011	9/18/2007	7.77	0.11	3,500	0.12	1.60	2.00	2.50	10,500	249	29,900	71.2	0.02	3.50	12.2	0.25	15.5	958

Notes:
SU = standard units
mg/kg = milligrams per kilogram
*indicates a result with a reporting limit inadequate for comparison to decision criteria. See Appendix C.

TABLE 6
ACTIVE CHANNEL SEDIMENT SAMPLE SPLP RESULTS

Sample Name	Sample Date	pH (s.u.)	DOC (mg/L)	Alkalinity (CO^3) (mg/L)	Alkalinity (HCO^3) (mg/L)	Alkalinity (TOTAL) (mg/L)	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	NO^2+NO^3 (as N) (mg/L)	Orthosphate (as P) (mg/L)	Selenium (mg/L)	Sulfate (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
U03-ER001	9/18/2007	7.14	1.89	< 1	74.3	74.3	< 0.013	0.0027	< 0.0088	0.0156	0.00002	35.7	0.71	0.0017	< 0.0076	0.0025	< 0.0001	0.0172	< 0.0011	0.0910	< 0.01	0.0003	51.1	< 0.001	< 0.003
U03-ER002	9/18/2007	7.82	0.8019	< 1	59.7	59.7	0.0148	0.0022	< 0.0088	0.0162	0.00003	23.9	1.97	0.0007	< 0.0076	< 0.0021	< 0.0001	0.0275	< 0.0011	0.0510	< 0.01	0.00008	37.7	< 0.001	0.0090
U03-ER004	9/19/2007	7.56	1.72	< 1	66.6	66.6	< 0.013	0.0029	< 0.0088	0.0097	< 0.00002	57.6	1.80	0.0009	< 0.0076	< 0.0021	< 0.0001	0.0195	< 0.0011	0.1460	< 0.01	0.0001	119	< 0.001	0.0042
U03-ER005	9/20/2007	9.41	1.59	28.6	48.3	76.9	1.11	< 0.002	< 0.0088	0.1066	< 0.00002	9.26	2.40	0.0059	0.5774	< 0.0021	< 0.0001	0.0130	< 0.0011	0.1130	0.0700	0.00027	14.2	0.0031	0.0054
U03-ER006	9/20/2007	8.99	1.73	13.7	49.7	63.4	0.2623	< 0.002	< 0.0088	0.0536	< 0.00002	16.1	0.89	0.0032	0.1500	< 0.0021	< 0.0001	0.0176	< 0.0011	0.2050	0.1100	0.00032	14.7	0.0021	< 0.003
U02-ER011	9/18/2007	8.01	0.8520	< 1	58.5	58.5	< 0.013	< 0.002	< 0.0088	0.0079	0.00002	23.0	1.98	0.0007	< 0.0076	< 0.0021	< 0.0001	0.0355	< 0.0011	0.0700	0.0100	0.00016	42.5	< 0.001	< 0.003

Notes:
SU = standard units
DOC = dissolved organic carbon
mg/L = milligrams per liter

TABLE 7
BIOTA SAMPLE LOCATIONS

Sampling Area	Site Name	Northing (°)	Easting (°)	Sample Date
Hanover Creek	B45.8W	32.78556	-108.1055	9/11/2007
	B45.8W-A	32.78564	-108.1055	10/18/2007
	B47.2E	32.79059	-108.1032	9/11/2007
	B47.2E-A	32.79054	-108.1033	10/18/2007
	O43.5W	32.78334	-108.1082	9/11/2007
	O43.5W-A	32.78334	-108.1082	10/18/2007
	O44.2E	32.78383	-108.1071	9/11/2007
	O44.2E-A	32.78381	-108.107	10/18/2007
	O48.8E	32.79326	-108.102	9/11/2007
	O48.8E-A	32.79336	-108.1019	10/18/2007
Side Channel	SC-1	32.6058	-108.0762	9/13/2007
	SC-2	32.60375	-108.0753	9/13/2007
	SC-2-A	32.60322	-108.0754	10/18/2007
	SC-3	32.60102	-108.0746	9/13/2007
Lower Whitewater Creek	LW-03	32.54246	-108.0757	9/12/2007
	LW-03-A	32.54252	-108.0758	10/18/2007
	LW-03E	32.54186	-108.0754	9/12/2007
	LW-03E-A	32.54167	-108.0751	10/18/2007
	LW-04	32.53385	-108.0663	9/12/2007
	LW-04-A	32.53401	-108.0668	10/18/2007
	LW-05	32.53347	-108.0684	9/12/2007
	LW-05-A	32.53382	-108.0684	10/18/2007
	LW-06	32.49635	-108.0292	9/12/2007
	LW-06-A	32.4963	-108.0292	10/18/2007
	LW-07	32.56893	-108.0848	9/12/2007
	LW-07-A	32.56852	-108.0849	10/18/2007

TABLE 8
FOLIAGE SAMPLE SUMMARY DATA

Sampling Area	Constituents of Concern	Number of Samples	Number of Non-detects	Detection Frequency	Detection Limits		Results	
					Min	Max	Min	Max
Hanover Creek	Aluminum	5	0	100%	N/A	N/A	90	144
	Antimony	5	4	20%	N/V	N/V	0.2	0.5
	Arsenic	5	5	0%	0.4	0.7	0.25	0.46
	Barium	5	0	100%	N/A	N/A	3.1	9.9
	Boron	5	0	100%	N/A	N/A	9	55
	Cadmium	5	0	100%	N/A	N/A	0.5	2.53
	Chromium	5	2	60%	0.48	0.67	0.24	0.89
	Cobalt	5	5	0%	N/V	N/V	2.5	2.5
	Copper	5	0	100%	N/A	N/A	10.2	12.9
	Iron	5	0	100%	N/A	N/A	278	456
	Lead	5	0	100%	N/A	N/A	0.73	3.41
	Manganese	5	0	100%	N/A	N/A	29.4	63.1
	Mercury	5	5	0%	N/V	N/V	0.15	0.25
	Molybdenum	5	0	100%	N/A	N/A	1.2	18
	Nickel	5	1	80%	N/V	N/V	0.3	1
	Selenium	5	5	0%	N/V	N/V	1.5	1.5
	Thallium	5	4	20%	N/V	N/V	0.09	0.15
	Vanadium	5	3	40%	N/V	N/V	0.7	1.5
	Zinc	5	0	100%	N/A	N/A	98	152
	% Moisture	5	N/A	N/A	N/A	N/A	33	64.2
Side Channel	Aluminum	3	0	100%	N/A	N/A	466	3870
	Antimony	3	3	0%	N/V	N/V	0.5	0.5
	Arsenic	3	3	0%	0.6	1.2	0.3	0.6
	Barium	3	0	100%	N/A	N/A	10.3	30.3
	Boron	3	0	100%	N/A	N/A	26	39
	Cadmium	3	0	100%	N/A	N/A	0.98	3.18
	Chromium	3	0	100%	N/A	N/A	0.73	5.3
	Cobalt	3	0	100%	N/A	N/A	3	19
	Copper	3	0	100%	N/A	N/A	25.1	47.4
	Iron	3	0	100%	N/A	N/A	528	4900
	Lead	3	0	100%	N/A	N/A	0.86	5.68
	Manganese	3	0	100%	N/A	N/A	280	1050
	Mercury	3	3	0%	N/V	N/V	0.2	0.25
	Molybdenum	3	0	100%	N/A	N/A	0.4	0.6
	Nickel	3	0	100%	N/A	N/A	3.4	10.5
	Selenium	3	3	0%	N/V	N/V	1.5	1.5
	Thallium	3	1	67%	N/V	N/V	0.06	0.18
	Vanadium	3	0	100%	N/A	N/A	0.7	8
	Zinc	3	0	100%	N/A	N/A	65	123
	% Moisture	3	N/A	N/A	N/A	N/A	55	65
Lower Whitewater	Aluminum	6	0	100%	N/A	N/A	115	535
	Antimony	6	6	0%	N/V	N/V	0.5	0.5
	Arsenic	6	6	0%	0.5	0.7	0.25	0.35
	Barium	6	0	100%	N/A	N/A	2.8	10
	Boron	6	0	100%	N/A	N/A	8	40
	Cadmium	6	1	83%	N/V	N/V	0.1	0.56
	Chromium	6	1	83%	0.75	0.75	0.075	1.42
	Cobalt	6	6	0%	N/V	N/V	2.5	2.5
	Copper	6	0	100%	N/A	N/A	14	34.5
	Iron	6	0	100%	N/A	N/A	143	892
	Lead	6	1	83%	N/V	N/V	0.058	0.67
	Manganese	6	0	100%	N/A	N/A	49.5	92.2
	Mercury	6	6	0%	N/V	N/V	0.2	0.25
	Molybdenum	6	0	100%	N/A	N/A	1	21
	Nickel	6	0	100%	N/A	N/A	0.4	2.4
	Selenium	6	5	17%	N/V	N/V	1.1	1.5
	Thallium	6	4	33%	N/V	N/V	0.06	0.28
	Vanadium	6	2	67%	N/V	N/V	0.7	2.3
	Zinc	6	0	100%	N/A	N/A	18	89
	% Moisture	5	N/A	N/A	N/A	N/A	42	55

N/A=Not Applicable
N/V=No Value Available
Summary statistics were computed using one-half the PQL (practical quantitation limit) for non-detects.

TABLE 9
SEED HEAD SAMPLE SUMMARY DATA

Sampling Area	Constituents of Concern	Number of Samples	Number of Non-detects	Detection Frequency	Detection Limits		Results	
					Min	Max	Min	Max
Hanover Creek	Aluminum	5	0	100%	N/A	N/A	115	223
	Antimony	5	4	20%	N/V	N/V	0.1	0.5
	Arsenic	5	5	0%	0.29	1.7	0.15	0.85
	Barium	5	0	100%	N/A	N/A	8.2	14.3
	Boron	5	0	100%	N/A	N/A	13.0	25.0
	Cadmium	5	0	100%	N/A	N/A	0.1	0.23
	Chromium	5	0	100%	N/A	N/A	0.23	0.99
	Cobalt	5	1	80%	N/V	N/V	1.00	2.50
	Copper	5	0	100%	N/A	N/A	3.52	16.9
	Iron	5	0	100%	N/A	N/A	310	603
	Lead	5	0	100%	N/A	N/A	2.9	11.1
	Manganese	5	0	100%	N/A	N/A	67.5	114
	Mercury	5	4	20%	N/V	N/V	0.15	0.25
	Molybdenum	5	0	100%	N/A	N/A	0.21	3.9
	Nickel	5	0	100%	N/A	N/A	0.13	0.7
	Selenium	5	5	0%	N/V	N/V	1.50	1.50
	Thallium	5	5	0%	N/V	N/V	0.03	0.15
	Vanadium	5	5	0%	N/V	N/V	1.50	1.50
	Zinc	5	0	100%	N/A	N/A	23.6	77.0
	% Moisture	5	N/A	N/A	N/A	N/A	9.5	60.1

N/A=Not Applicable
N/V=No Value Available
Summary statistics were computed using one-half the PQL (practical quantitation limit) for non-detects.

TABLE 10
INVERTEBRATE SAMPLE SUMMARY DATA

Sampling Area	Constituents of Concern	Number of Samples	Number of Non-detects	Detection Frequency	Detection Limits		Results	
					Min	Max	Min	Max
Hanover Creek	Aluminum	5	0	100%	N/A	N/A	80	186
	Antimony	5	5	0%	N/V	N/V	0.25	0.50
	Arsenic	5	5	0%	0.4	0.9	0.20	0.45
	Barium	5	0	100%	N/A	N/A	1.70	4.10
	Boron	5	1	80%	N/V	N/V	0.60	2.8
	Cadmium	5	0	100%	N/A	N/A	0.22	0.88
	Chromium	5	5	0%	0.22	0.43	0.03	0.22
	Cobalt	5	5	0%	N/V	N/V	0.50	1.25
	Copper	5	0	100%	N/A	N/A	11.5	79.7
	Iron	5	0	100%	N/A	N/A	150	775
	Lead	5	0	100%	N/A	N/A	1.52	5.76
	Manganese	5	0	100%	N/A	N/A	28.7	61.3
	Mercury	5	5	0%	N/V	N/V	0.25	0.50
	Molybdenum	5	0	100%	N/A	N/A	0.40	1.7
	Nickel	5	2	60%	N/V	N/V	0.20	0.50
	Selenium	5	5	0%	N/V	N/V	0.50	1.00
	Thallium	5	5	0%	N/V	N/V	0.05	0.1
	Vanadium	5	3	40%	N/V	N/V	0.30	1.00
	Zinc	5	0	100%	N/A	N/A	42.9	102
	% Solids	3	N/A	N/A	N/A	N/A	34.4	35.4
Side Channel	Aluminum	3	0	100%	N/A	N/A	198	375
	Antimony	3	3	0%	N/V	N/V	0.25	0.25
	Arsenic	3	3	0%	0.5	0.6	0.25	0.3
	Barium	3	0	100%	N/A	N/A	3.50	6.8
	Boron	3	0	100%	N/A	N/A	1.50	5.3
	Cadmium	3	0	100%	N/A	N/A	0.11	0.2
	Chromium	3	3	0%	0.31	0.66	0.16	0.33
	Cobalt	3	2	33%	N/V	N/V	0.80	1.00
	Copper	3	0	100%	N/A	N/A	32.8	55.5
	Iron	3	0	100%	N/A	N/A	394	646
	Lead	3	0	100%	N/A	N/A	0.05	0.60
	Manganese	3	0	100%	N/A	N/A	15.6	24.3
	Mercury	3	3	0%	N/V	N/V	0.10	0.10
	Molybdenum	3	0	100%	N/A	N/A	0.30	0.30
	Nickel	3	0	100%	N/A	N/A	0.70	1.1
	Selenium	3	3	0%	N/V	N/V	0.50	0.50
	Thallium	3	3	0%	N/V	N/V	0.05	0.05
	Vanadium	3	0	100%	N/A	N/A	0.4	0.9
	Zinc	3	0	100%	N/A	N/A	40.7	58.2
	% Solids	3	N/A	N/A	N/A	N/A	35.4	38.9
Lower Whitewater	Aluminum	5	0	100%	N/A	N/A	78	661
	Antimony	5	4	20%	N/V	N/V	0.20	0.25
	Arsenic	5	5	0%	0.3	1	0.15	0.5
	Barium	5	0	100%	N/A	N/A	1.10	16.3
	Boron	5	2	60%	N/V	N/V	1.00	3.2
	Cadmium	5	0	100%	N/A	N/A	0.09	1.2
	Chromium	5	0	100%	N/A	N/A	0.15	0.44
	Cobalt	5	5	0%	N/V	N/V	1.00	1.5
	Copper	5	0	100%	N/A	N/A	21.1	95.1
	Iron	5	0	100%	N/A	N/A	107	2000
	Lead	5	1	80%	N/V	N/V	0.05	2.83
	Manganese	5	0	100%	N/A	N/A	12.8	73.1
	Mercury	5	5	0%	N/V	N/V	0.10	0.10
	Molybdenum	5	0	100%	N/A	N/A	0.30	2.60
	Nickel	5	0	100%	N/A	N/A	0.20	0.80
	Selenium	5	5	0%	N/V	N/V	0.50	0.50
	Thallium	5	3	40%	N/V	N/V	0.03	0.09
	Vanadium	5	1	80%	N/V	N/V	0.5	2.1
	Zinc	5	0	100%	N/A	N/V	55.5	125
	% Solids	4	N/A	N/A	N/A	N/A	29.6	38.5

N/A=Not Applicable
N/V=No Value Available
Summary statistics were computed using one-half the PQL (practical quantitation limit) for non-detects.

FIGURES

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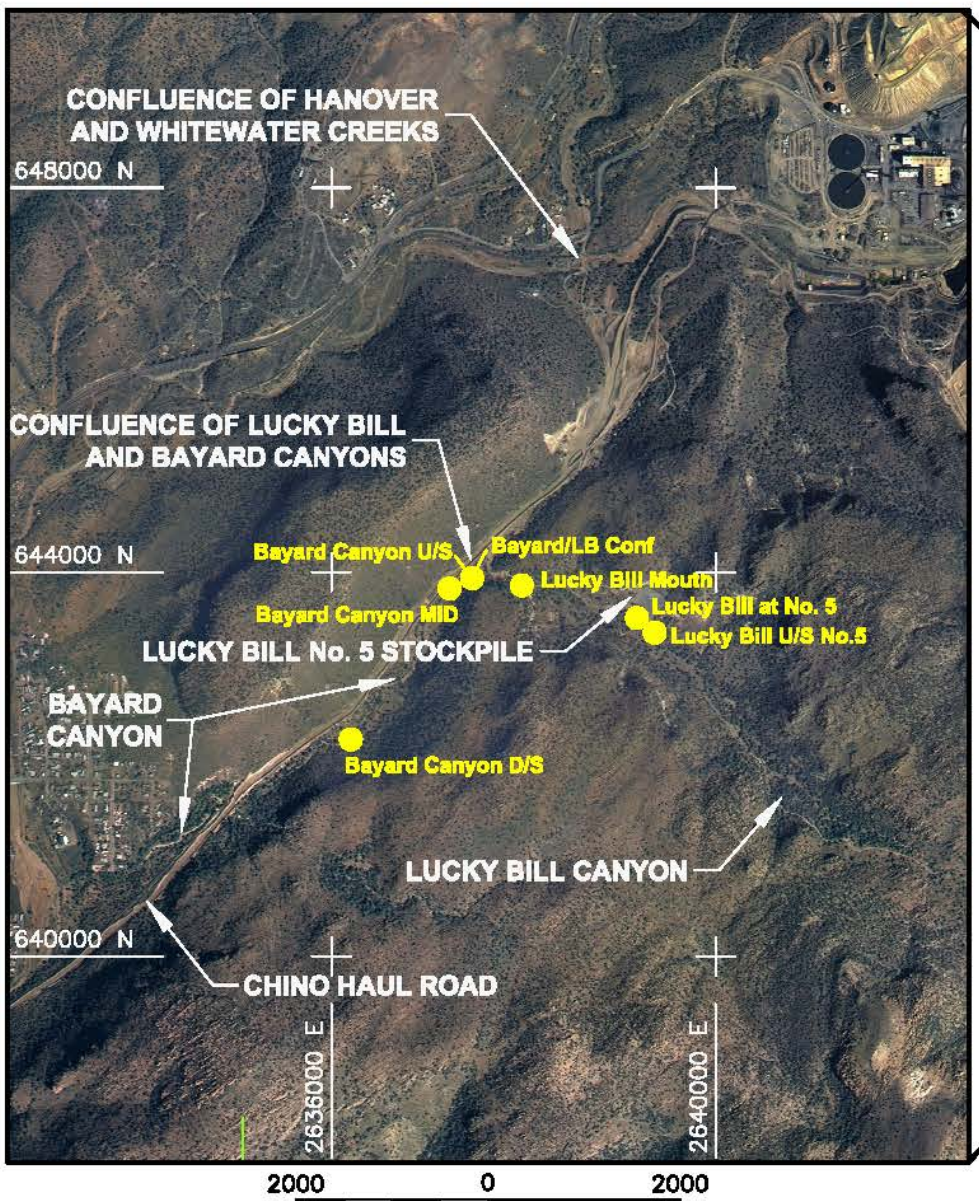

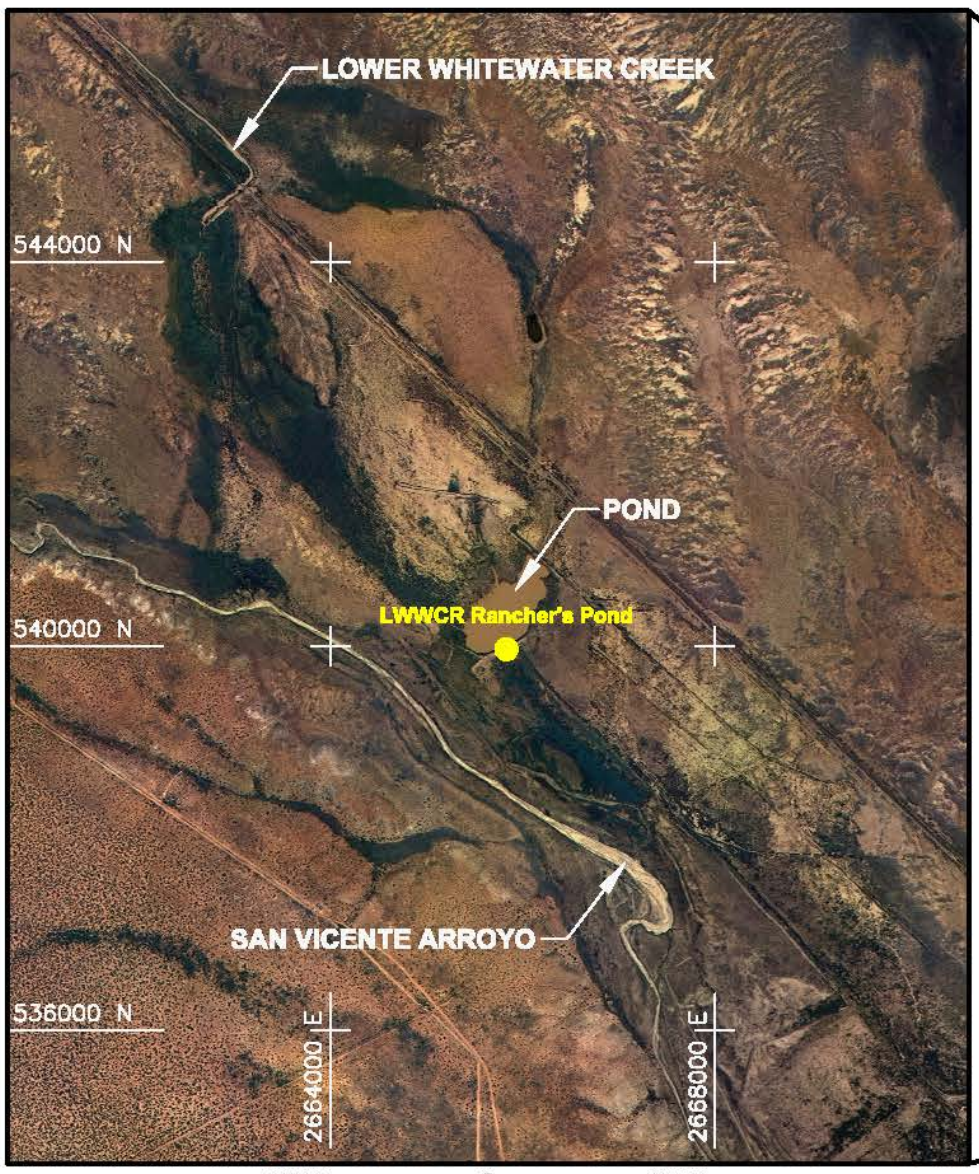

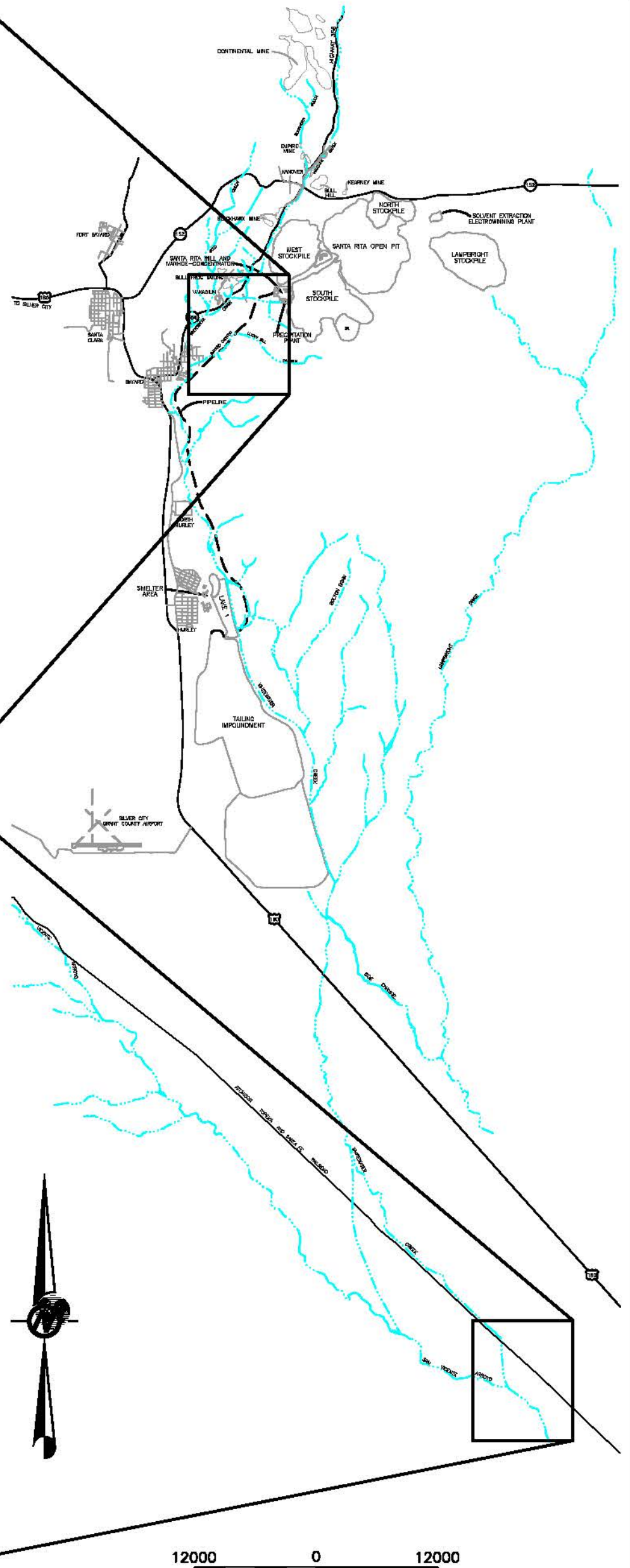

LEGEND

●	SUMMER RAINFALL POOL SAMPLE LOCATION (SEPTEMBER 2008) (SEE TABLE 2)
U/S	UPSTREAM
D/S	DOWNSTREAM

REFERENCES

1.) 2005 NEW MEXICO DIGITAL ORTHOPHOTOGRAPH PROVIDED BY EARTH DATA ANALYSIS CENTER (EDAC), IN UTM NAD 83 ZONE 13 PROJECTION, 1 METER RESOLUTION.

2.) COORDINATE SYSTEM IS NEW MEXICO STATE PLANE WEST NAD 83.

PROJECT
CHINO MINES COMPANY
DATA TO SUPPORT ECOLOGICAL RISK ASSESSMENT
HANOVER/WHITEWATER CREEK INVESTIGATION UNITS

TITLE
SUMMER RAINFALL POOL SAMPLING LOCATIONS AND DESCRIPTIONS

Golder Associates
Tucson, Arizona

PROJECT No. 073-92553-08			FILE No. 0739255306B101	
DESIGN	OM	01/22/08	SCALE AS SHOWN	REV. B
CADD	NIL	01/22/08		
CHECK	OM	01/22/08		
REVIEW	KRJ	01/23/08		

FIGURE 1

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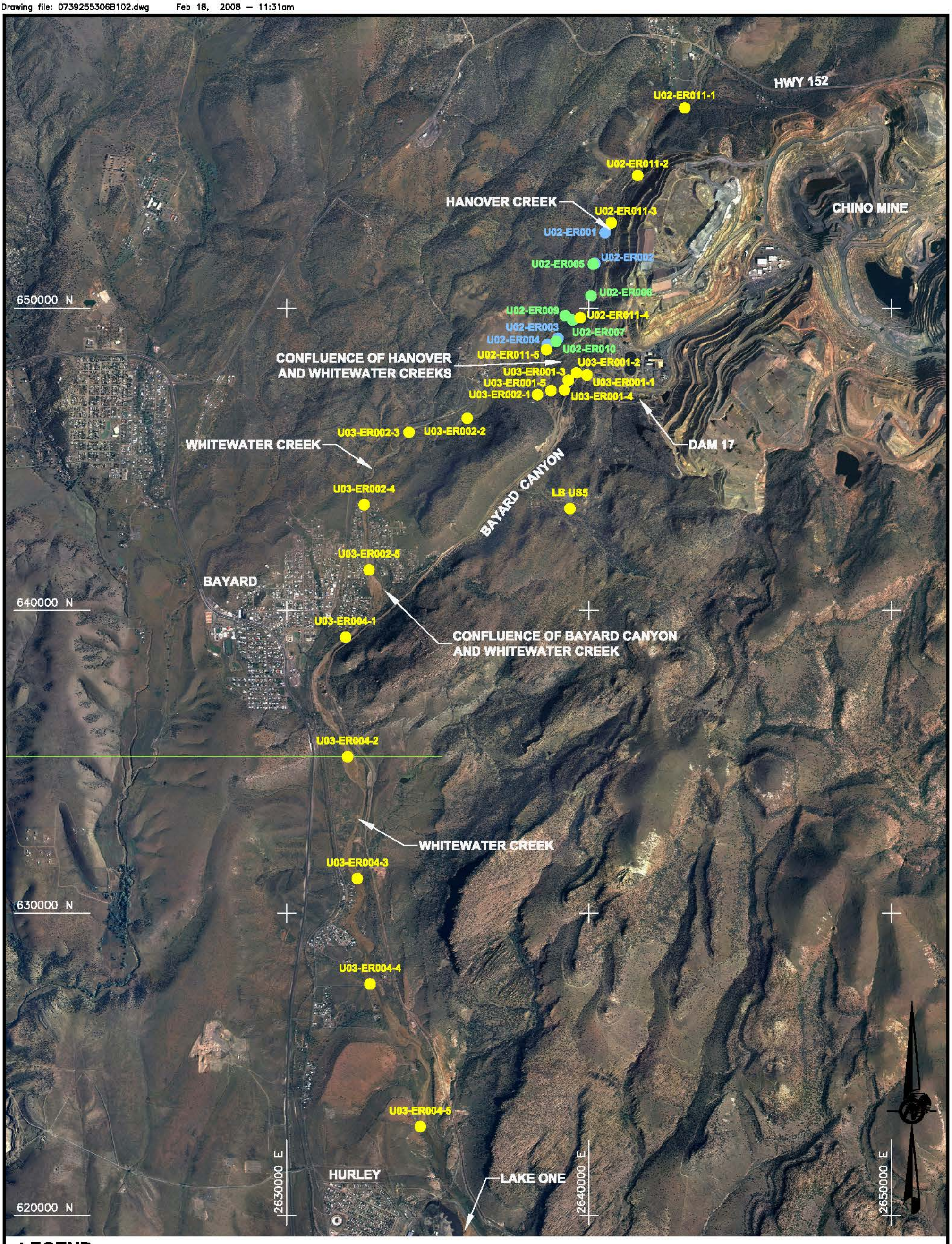


LEGEND

- ACTIVE CHANNEL SAMPLE LOCATION (SEE TABLE 4 FOR SUBSAMPLE LOCATIONS)
- OVERBANK SAMPLE LOCATION (SEE TABLE 4 FOR SUBSAMPLE LOCATIONS)
- VEGETATED BAR SAMPLE LOCATION (SEE TABLE 4 FOR SUBSAMPLE LOCATIONS)

REFERENCES

1.) 2005 NEW MEXICO DIGITAL ORTHOPHOTOGRAPH PROVIDED BY EARTH DATA ANALYSIS CENTER (EDAC), IN UTM NAD 83 ZONE 13 PROJECTION, 1 METER RESOLUTION.

2.) COORDINATE SYSTEM IS NEW MEXICO STATE PLANE WEST NAD 83.

3000 0 3000
SCALE 1" to 3000' FEET

PROJECT
CHINO MINES COMPANY
DATA TO SUPPORT ECOLOGICAL RISK ASSESSMENT
HANOVER/WHITEWATER CREEK INVESTIGATION UNITS

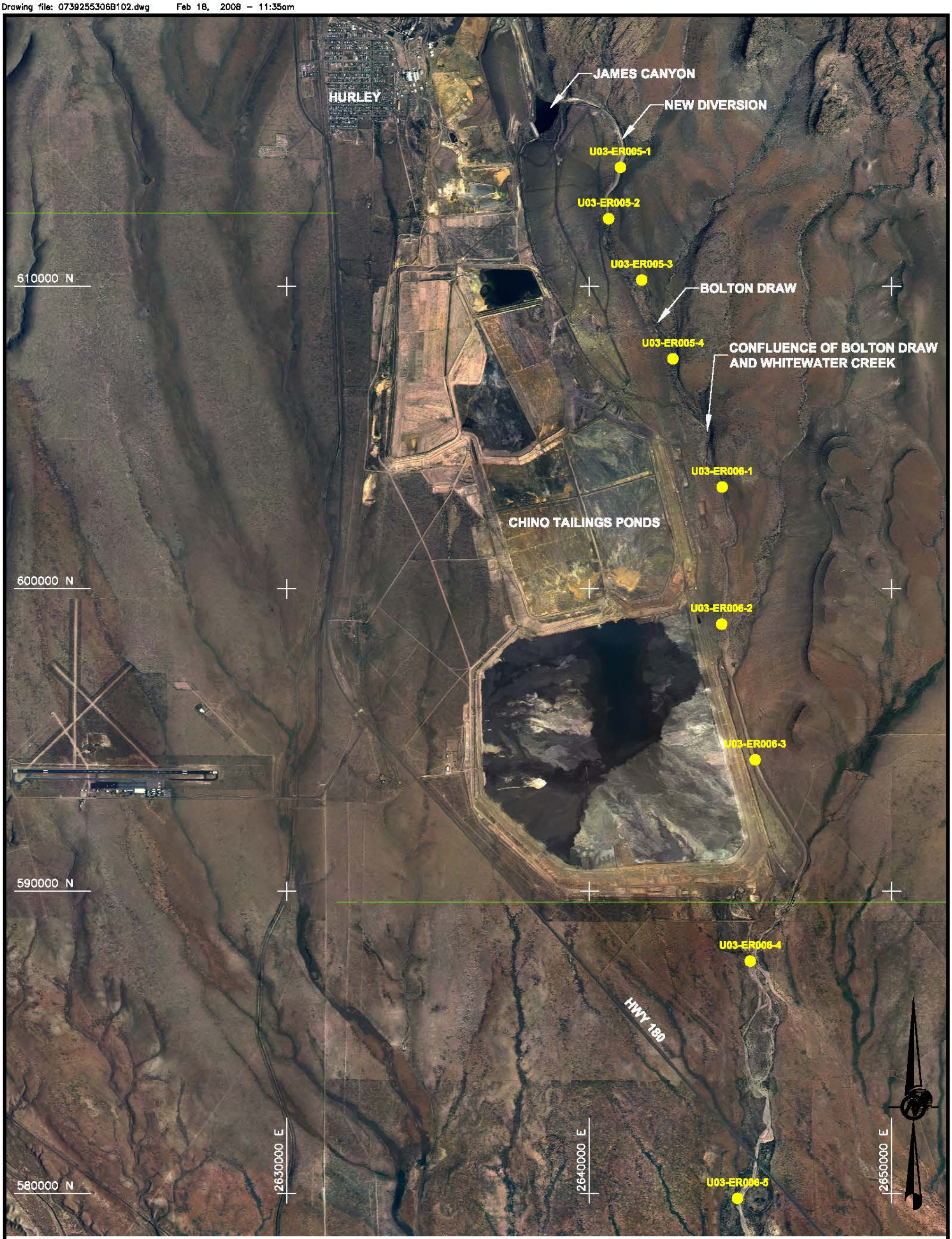
TITLE
OVERBANK, VEGETATED BAR, AND ACTIVE CHANNEL SAMPLE LOCATIONS, NORTH MINE AND NORTH HURLEY AREAS

Golder Associates
Tucson, Arizona

PROJECT No. 073-92553-08			FILE No. 0739255306B102	
DESIGN	OM	01/22/08	SCALE AS SHOWN	REV. B
CADD	NIL	01/22/08		
CHECK	OM	01/22/08		
REVIEW	KRJ	01/23/08		

FIGURE 2A

Drawing file: 0739255306B102.dwg Feb 18, 2008 – 11:35am



LEGEND

ACTIVE CHANNEL SAMPLE LOCATION
(SEE TABLE 4 FOR SUBSAMPLE LOCATIONS)

3000 0 3000
SCALE 1" to 3000' FEET

REFERENCES

1.) 2005 NEW MEXICO DIGITAL ORTHOPHOTOGRAPH PROVIDED BY EARTH DATA ANALYSIS CENTER (EDAC), IN UTM NAD 83 ZONE 13 PROJECTION, 1 METER RESOLUTION.

2.) COORDINATE SYSTEM IS NEW MEXICO STATE PLANE WEST NAD 83.

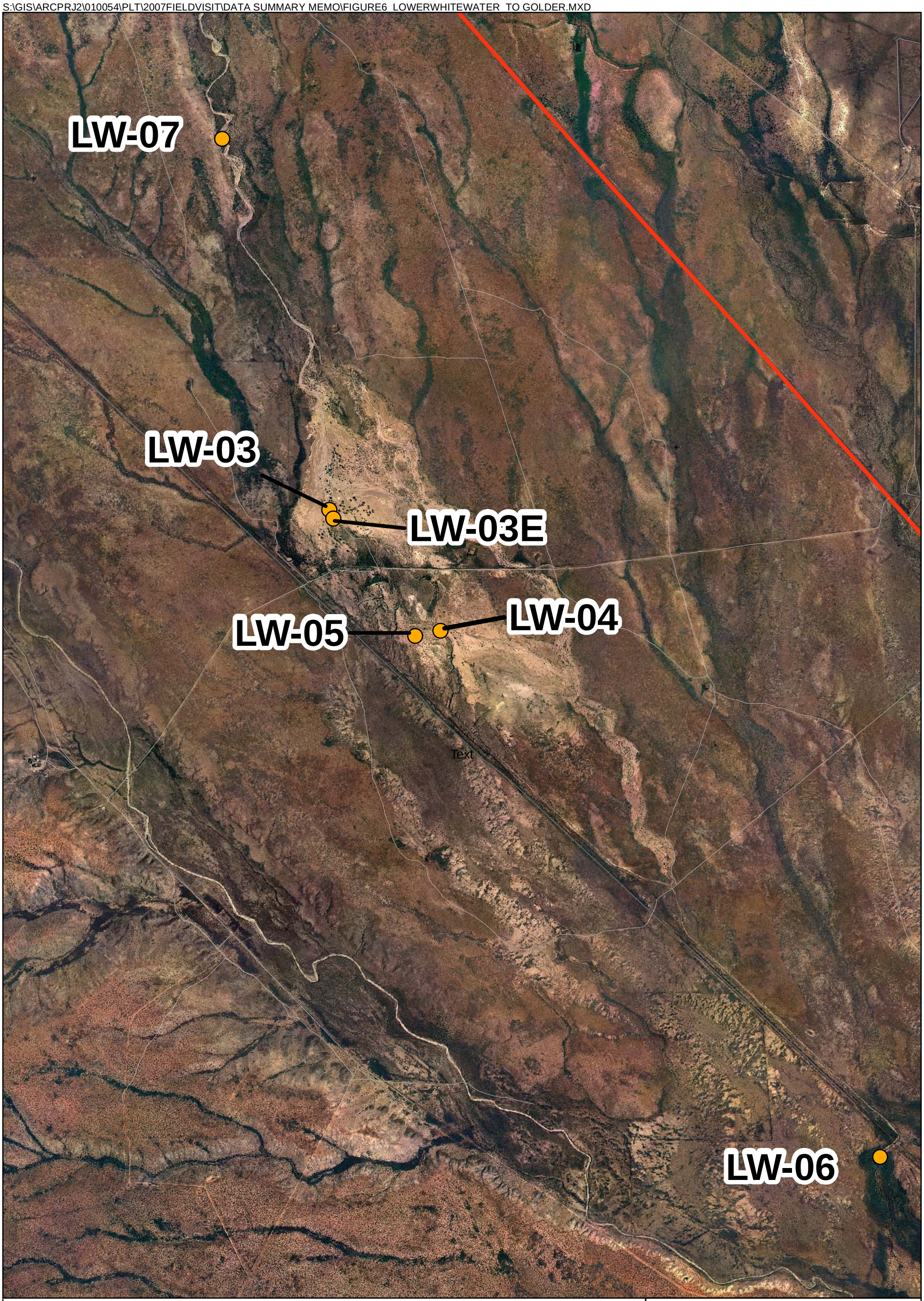
PROJECT
CHINO MINES COMPANY
DATA TO SUPPORT ECOLOGICAL RISK ASSESSMENT
HANOVER/WHITEWATER CREEK INVESTIGATION UNITS

TITLE
OVERBANK, VEGETATED BAR, AND ACTIVE CHANNEL SAMPLE LOCATIONS, LAKE ONE AND TAILINGS POND AREAS

Golder Associates
Tucson, Arizona

PROJECT No. 073-92553-06			FILE No. 0739255306B102	
DESIGN	OM	01/22/08	SCALE AS SHOWN	REV. B
CADD	NIL	01/22/08	FIGURE 2B	
CHECK	OM	01/22/08		
REVIEW	KRJ	01/23/08		

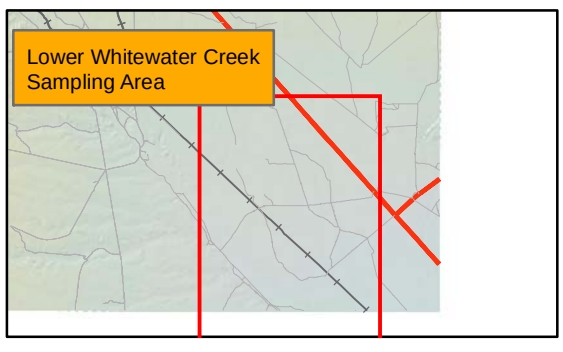
S:\GIS\ARCPRJ2\010054\PLT\2007FIELDVISIT\DATA SUMMARY MEMO\FIGURE6_LOWERWHITEWATER_TO GOLDER.MXD



Legend

- Lower Whitewater Creek Sampling Points
- Road
- Railroad
- Highway

N



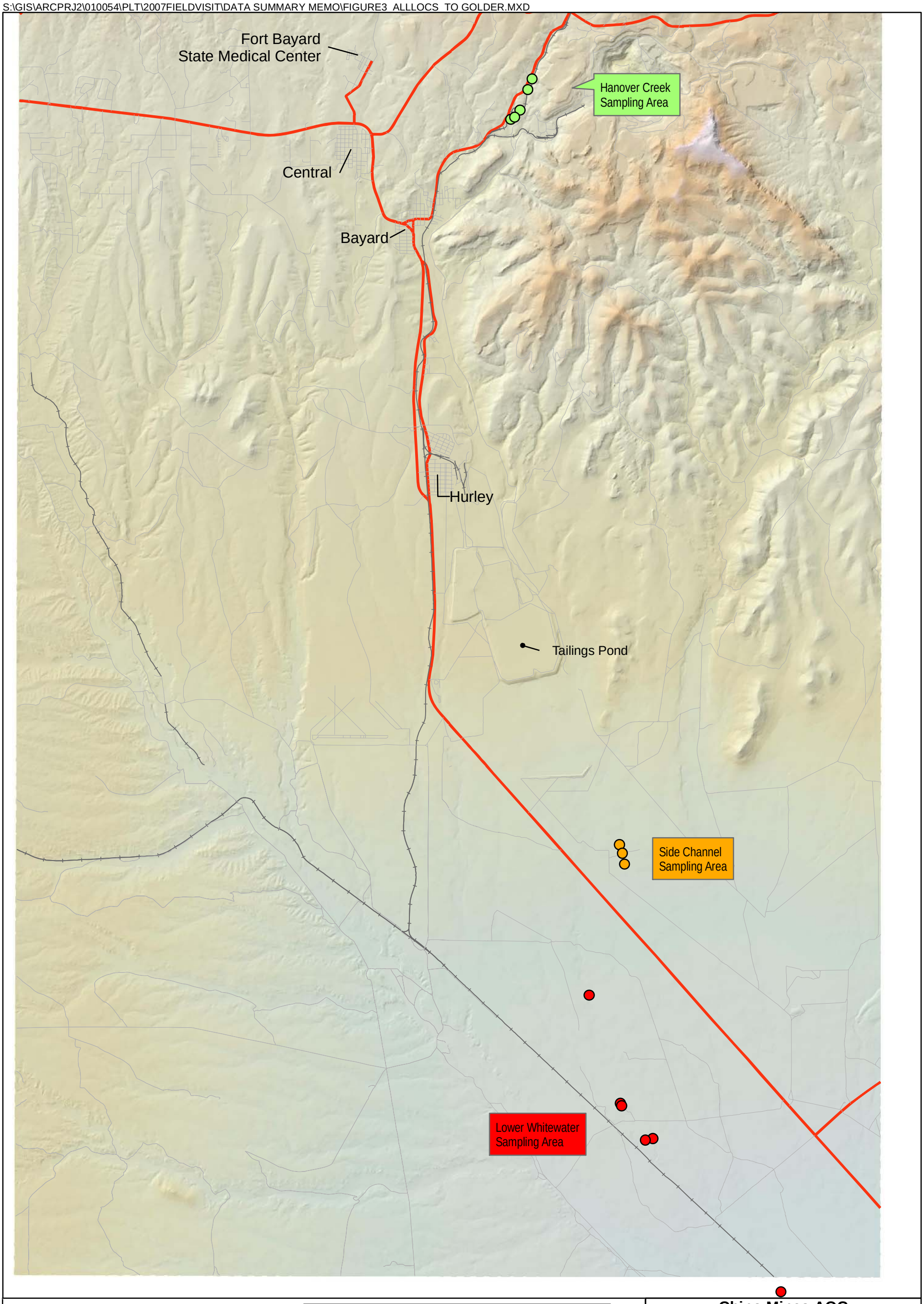
Chino Mines AOC
Hanover/Whitewater
Ecological Risk Assessment

Figure 6
Eco-Sampling Points-
Lower Whitewater Creek
September/October 2007

PRJ: 0473-002-900	DATE: JAN 18, 2008	
REV: 0	BY: RLW	CHK: MCL

NEWFIELDS

S:\GIS\ARCPRJ2\010054\PLT\2007FIELDVISIT\DATA SUMMARY MEMO\FIGURE3_ALLLOCS_TO GOLDER.MXD



Legend

- Road
- Railroad
- Highway

N

0 9,000 Feet

Chino Mines AOC
Hanover/Whitewater
Ecological Risk Assessment

Figure 3
HWWIU Eco-Sampling Points
September/October 2007

PRJ: 0473-002-900	DATE: JAN 18, 2008	
REV: 0	BY: RLW	CHK: MCL

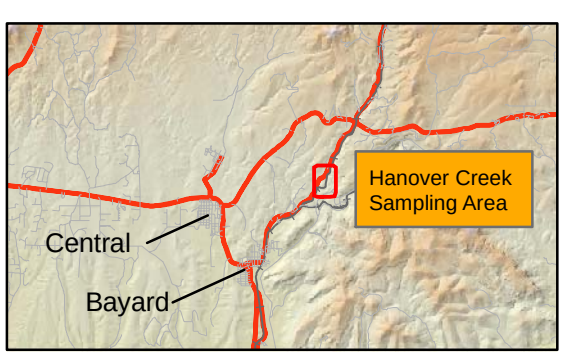
NEWFIELDS

S:\GIS\ARCPRJ2\010054\PLT\2007FIELDVISIT\DATA SUMMARY MEMO\FIGURE4_HANOVER_TO GOLDER.MXD

Legend

- Hanover Creek Sampling Points
- Road
- River or Pond
- Railroad
- Highway

N



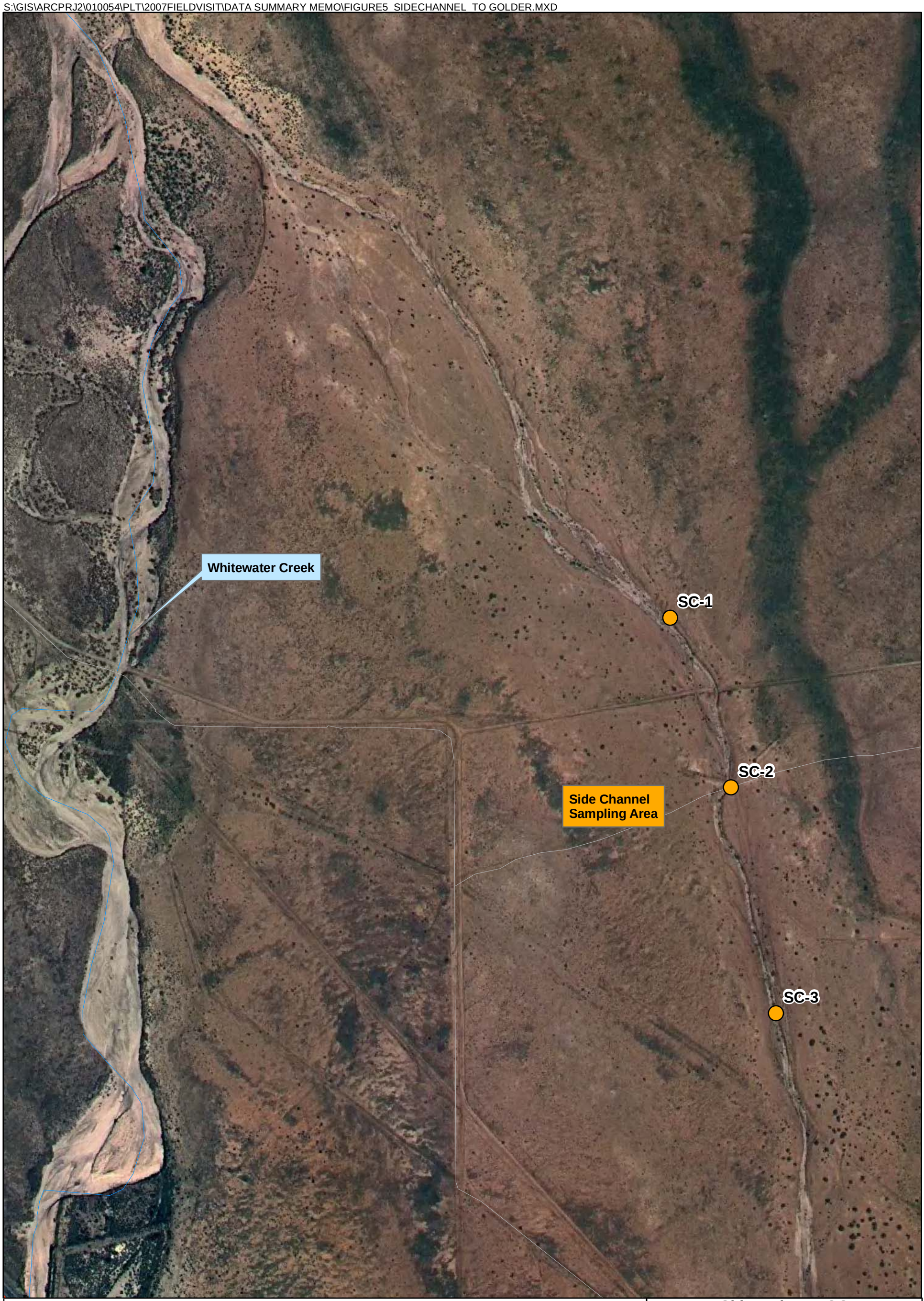
Chino Mines AOC
Hanover/Whitewater
Ecological Risk Assessment

Figure 4
HWWIU Eco-Sampling Points
Hanover Creek
September/October 2007

PRJ: 0473-002-900	DATE: JAN 18, 2008	
REV: 0	BY: RLW	CHK: MCL

NEWFIELDS

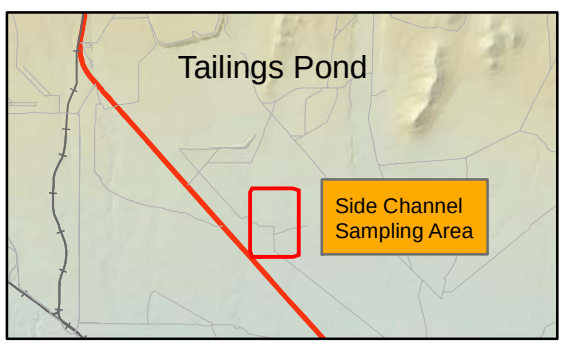
S:\GIS\ARCPRJ2\010054\PLT\2007FIELDVISIT\DATA SUMMARY MEMO\FIGURE5_SIDECHANNEL_TO GOLDER.MXD



Legend

- Side Channel Sampling Points
- Road
- River or Pond
- Railroad
- Highway

N



Chino Mines AOC
Hanover/Whitewater
Ecological Risk Assessment

Figure 5
Eco-Sampling Points
Side Channel
September/October 2007

PRJ: 0473-002-900	DATE: JAN 18, 2008	
REV: 0	BY: RLW	CHK: MCL

NEWFIELDS

APPENDIX A

SUMMER RAINFALL POOL SAMPLE LOCATION PHOTOGRAPHS

Lucky Bill U/S No. 5

Lucky Bill at No. 5

Lucky Bill Mouth

Bayard/LB Conf

Bayard Canyon D/S

Bayard Canyon MID

Bayard Canyon U/S

APPENDIX B

DATA VALIDATION REPORT (URS WORK PRODUCT)

Final Report

DATA VALIDATION REPORT FOR HANOVER WHITEWATER CREEK – NEWFIELDS DATA

Prepared for
Chino Mines Company
Hurley, New Mexico

January 21, 2008

URS

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Project No. 22239973 Task 00001

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Appendix A Data Reporting Forms

1. INTRODUCTION

This report contains the results of the data validation conducted for the summer rainfall pool samples and sediment samples collected for the Hanover/Whitewater Creeks Investigation Unit in August and September of 2007. The data were generated and reviewed in accordance with the approved Quality Assurance Plan (QAP) prepared by Chino Mines Company and Steffen, Robertson and Kirsten (U.S.), Inc. (March 1997).

The samples were collected in August and September 2007. The samples were sent to SVL Analytical, Inc. in Kellogg, Idaho for analysis. The summer rainfall pool samples were analyzed for total and dissolved metals, total dissolved solids, total suspended solids, and hardness (calculated). The sediment samples were analyzed for total metals, paste pH, total organic matter (TOM), and Synthetic Precipitation Leaching Procedure (SPLP) for dissolved metals, dissolved organic carbon (DOC)), and general chemistry parameters (alkalinity, pH, chloride, orthophosphate as P, sulfate, nitrate/nitrite), Results of the data validation performed on samples reported in these packages are presented in Sections 4 and 5.1 through 5.7 of this report.

Table 1-1 lists the samples for which data were validated, the corresponding data package, and the review narrative section in which validation results are presented. The cross reference to the laboratory identification numbers can be found in each of the review sections.

TABLE 1-1
DATA PACKAGE AND SAMPLE IDENTIFICATION SUMMARY

Data Package	Report Section[1]	Field Sample Identification
Sediment 131855 (TOM and paste pH) 131355 (Total Metals)	4 and 5.1, 5.2	U02-ER001
		U02-ER002
		U02-ER003
		U02-ER004
		BFD
		U02-ER006
		U02-ER007
		U02-ER009
		U02-ER010
Sediment 131857 (TOM and paste pH) 131519 (Total Metals)	5.3 and 5.4	U03-ER001
		U03-ER004
		U03-ER005
		BFD
		U03-ER002
		U03-ER006
		U02-ER011
		U02-ER005
Summer Rainfall Pools 131511 (Total and Dissolved Metals, TDS, TSS)	5.5	BAYARD CANYON U/S
		BAYARD CANYON MID
		BAYARD CANYON D/S
		BAYARD/LB CONF2
		BAYARD/LB CON
		LUCKY BILL MOUTH
		LUCKY BILL AT NO. 5
		LUCKY BILL U/S NO. 5
Summer Rainfall Pools 131354 (Total and Dissolved Metals, TDS, TSS)	5.6	LWWCR RANCHERS POND
		LWWCR RANCHERS POND (dissolved metals)
Sediment 131520 (SPLP Extraction)	5.7	EXTRACTION FLUID
		U03-ER001
		U03-ER004
		U03-ER005
		BFD
		U03-ER002
		U03-ER006
		U02-ER011

1 Data package 131855, 131355, and 131520 were used to evaluate both laboratory performance criteria (Section 4) and sample specific criteria (Section 5).

TOM - Total Organic Matter TDS - Total Dissolved Solids TSS – Total Suspended Solids
SPLP – Synthetic Precipitation Leaching Procedure

This data validation report describes the data validation process used and presents the data review results for the soil and water samples and associated quality control (QC) sample analyses.

In accordance with the QAP, a review of all data was conducted independently of the laboratory. The review consisted of evaluation of laboratory performance criteria and sample-specific criteria using guidance from the USEPA National Functional Guidelines for Inorganic Data Review (February 1994). The laboratory performance criteria evaluated included: initial calibration procedures and results, continuing calibration procedures and results, inductively coupled plasma (ICP) interference check sample results, contract required detection limit (CRDL) standard analysis and results, laboratory control sample results, and result quantitation and verification. An evaluation of laboratory performance criteria was conducted on at least 10% of the data set per analysis type. Section 2 and Tables 2-1 and 2-2 provide the QC requirements for the laboratory performance criteria.

The sample-specific criteria evaluated included: COC and sample receipt documentation, holding times, blank contamination, duplicate sample analysis, matrix spike/matrix spike duplicate sample analysis, serial dilution results, post digestion spike recovery, and field duplicate results agreement as applicable to the method. The sample specific criteria were evaluated for every data package received. Section 3 and Table 3-1 summarize the sample-specific criteria that were used in the data validation process and how data were qualified.

Section 4 presents the results of the evaluation of laboratory performance criteria. The review of sample-specific criteria is presented in Section 5. The results obtained for field quality control samples are discussed in Section 6 and an overall assessment of data, with respect to the data quality indicators, is presented in Section 7.

During the data validation process, the data reviewer annotated on the analytical data sheets any data validation qualifiers assigned (“U”, “J”, “UJ”, and “R”) and associated qualifier and bias codes as listed in Tables 1-2 and 1-3. The purpose of the qualifier codes is to provide information with regard to the data quality condition(s) that resulted in the assigned qualifiers. The bias code provides an indication of the bias direction of the results qualified as estimated based on data quality condition(s) that resulted in the data qualification and the results of the other associated quality control analyses. The data qualifier codes are followed by a hyphen and the applicable bias code. For example, a result qualified as estimated due to a holding time exceedance, which resulted in a potential low bias in the result, has the following code annotated on the

data sheet, "HT-L." In the case of multiple data quality conditions resulting in qualification, each qualifier code is listed and separated by a comma. For example, a result qualified as estimated due to low matrix spike recovery and poor method duplicate precision would have the following codes annotated on the data sheet, "MS, D – I. The data reporting forms with assigned data qualifiers are included in Appendix A.

TABLE 1-2
DATA VALIDATION QUALIFIER DEFINITIONS

Qualifier	Definitions [1]
U	The analyte was analyzed for, but was not detected above the level of the associated value. The associate value is either the sample quantitation limit or the sample detection limit.
J	The associated value is an estimated quantity.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. (Note: Analyte may or may not be present.)

[1] USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994.

TABLE 1-3
DATA VALIDATION QUALIFIER CODES

Qualifier Code	Data Quality Condition Resulting In Assigned Qualification
General use	
HT	Holding time requirement was not met
MB or PB	Method blank or preparation blank contamination
LCS	Laboratory control sample evaluation criteria not met
RB	Rinsate blank contamination
FD	Field duplicate evaluation criteria not met
P	Preservation requirement was not met
EF	Extraction fluid contamination
RL	Reporting limit exceeds decision criteria (for nondetects)
Inorganic methods	
ICV	Initial calibration verification evaluation criteria not met
CCV	Continuing calibration verification evaluation criteria not met
CCB	Continuing calibration blank contamination
PB	Preparation blank contamination
ICS	Interference check sample evaluation criteria not met
LD	Laboratory duplicate precision evaluation criteria not met
MS and/or MSD	Matrix spike and/or matrix spike duplicate recovery outside acceptance range
PDS	Post-digestion spike recovery outside acceptance range
MSA	Method of standard additions correlation coefficient ≤ 0.995
D	Duplicate precision evaluation criteria not met
IS	Internal standard recovery outside acceptance range for ICP-MS
ICS	Interferent check solution evaluation criteria not met
SD	Serial dilution results did not meet evaluation criteria
CRDL	Contract Required Detection Limit standard recovery not met
CE	Counting error
Bias Codes	**Bias Direction**
H	Bias in sample result likely to be high
L	Bias in sample result likely to be low
I	Bias in sample result is indeterminate

2. EVALUATION OF LABORATORY PERFORMANCE CRITERIA

The review of laboratory performance criteria is summarized in Tables 2-1 and 2-2. Table 2-1 is pertinent to metals determination by ICP and ICP-MS. Table 2-2 is pertinent to mercury, TOM, and general chemistry parameters. Laboratory performance criteria were evaluated for one of the packages for each analysis parameter groups. The results of the laboratory performance criteria review are presented in Section 4.

TABLE 2-1
LABORATORY PERFORMANCE CRITERIA – METALS (ICP-200.7 AND ICPMS – 200.8)

Method	QC Check	Minimum Frequency	Acceptance Criteria	Qualifiers
ICP/ICP-MS	Initial calibration (minimum 1 standard and a blank)	Daily prior to sample analysis	• Correlation Coefficient ≥0.995 for linear regression.	• If r <0.995, qualify all results as estimated (J/UJ).
	Second source initial calibration verification (ICV)	Daily after initial calibration	• All analytes within ±10% of expected value. • RSD of replicate integrations <5%.	• If %R falls outside the acceptance range but within range of 75-89% or 111-125%, qualify results >IDL as estimated (J). • If %R is within 111-125%, results <IDL are acceptable. • If %R is 75-89%, qualify results <IDL as estimated (UJ). • If %R is <75%, qualify all results as unusable (R). • If %R is >125%, qualify results >IDL as unusable (R); results <IDL are acceptable without qualification. • No qualification issued for RSD >5%.
	Continuing calibration verification (CCV)	After every 10 samples and at the end of the analysis sequence	• All analytes within ±10% of expected value. • RSD of replicate integrations <5%.	
	Linear Range Analysis (LRA)	Quarterly	• All analytes agree within 5% of true value.	• NA
	Contract Required Detection Limit (CRDL) standard	At beginning and end of each sample analysis	• None	• Professional judgment will be used for the need for qualification for %Rs outside 50-150% based on the relative concentration of the CRDL standard and the sample concentration.
	Interference check solution (ICS)	At the beginning and end of the analytical run	• Recovery of spiked analytes within ±20% of expected value. • Results for analytes not present in the ICS solution must be <RL.	• If %R is >120%, results <IDL are acceptable. • If %R is >120%, qualify results >IDL as estimated (J). • If %R is within 50-79%, qualify results >IDL as estimated (J). • If %R is within 50-79%, qualify results <IDL as estimated (UJ). • If %R is <50%, qualify all results as unusable (R). • If results > IDL are observed that are not present in the ICS solution and the sample has concentrations at the level of the interferents concentrations, qualify sample results >IDL as estimated (J) if the amount of bias is ≥25% of sample result. • If negative concentrations are observed that are not present in the ICS solution at a concentration where the absolute value is >IDL, qualify sample results as estimated (J/UJ) if the bias is more than 25% of the reported result and the sample has a concentration comparable to the interferent concentrations in the ICS solution.
	Laboratory Control Sample (LCS) (aqueous)	One per analytical batch containing aqueous samples	• 80-120% recovery for water samples.	• If %R is within 50-79% or >120%, qualify results >IDL as estimated (J). • If %R >120%, results <IDL are acceptable without qualification. • If %R is within 50-79%, qualify results <IDL as estimated (J/UJ) • If %R is <50%, qualify all results as unusable (R).
	Laboratory Control Sample (LCS) (solid)	One per analytical batch containing solid samples	• LCS results must fall within the control limits established by the EPA.	• If LCS recovery falls outside the control limits, qualify results >IDL as estimated (J). • If LCS recovery is > control limits, results <IDL are acceptable without qualification. • If LCS recovery is>50 % and < control limits, qualify results <IDL as estimated (J/UJ). • If %R is <50%, qualify all results as unusable (R).

TABLE 2-2
LABORATORY PERFORMANCE CRITERIA – MERCURY, TOM, AND GENERAL CHEMISTRY PARAMETERS

Method	QC Check	Minimum Frequency	Acceptance Criteria	Qualifiers
Mercury* TOM* General Chemistry Parameters*	Initial multipoint calibration (minimum 3 standards and a blank)	Daily prior to sample analysis	• Correlation Coefficient ≥0.995 for linear regression.	• If r <0.995, qualify all results as estimated (J/UJ).
	CRDL standard	At beginning and end of each sample analysis	None	• Professional judgment will be used for the need for qualification for %Rs outside 50-150% based on the relative concentration of the CRDL standard and the sample concentration.
	Second source initial calibration verification (ICV)	Daily after initial calibration	• Analyte within ± 20% of expected value.	• If %R falls outside the acceptance range but within range of 65-79% or 121-135%, qualify results >IDL as estimated (J). • If %R is within 121-135%, results <IDL are acceptable without qualification. • If %R is 65-79%, qualify results <IDL as estimated (UJ). • If %R is <65%, qualify all results as unusable (R). • If %R is >135%, qualify results >IDL as unusable (R); results <IDL are acceptable.
	Continuing calibration verification (CCV)	After every 10 samples and at the end of the analysis sequence	• Analyte within 20% of expected value.	• If %R falls outside the acceptance range but within range of 65-79% or 121-135%, qualify results >IDL as estimated (J). • If %R is within 121-135%, results <IDL are acceptable without qualification. • If %R is 65-79%, qualify results <IDL as estimated (UJ). • If %R is <65%, qualify all results as unusable (R). • If %R is >135%, qualify results >IDL as unusable (R); results <IDL are acceptable.
	Laboratory Control Sample (LCS) (aqueous)	One per analytical batch containing aqueous samples	• 80-120% recovery for water samples.	• If %R is within 50-79% or >120%, qualify results >IDL as estimated (J). • If %R >120%, results <IDL are acceptable without qualification. • If %R is within 50-79%, qualify results <IDL as estimated (J/UJ) • If %R is <50%, qualify all results as unusable (R).
	Laboratory Control Sample (LCS) (solid)	One per analytical batch containing solid samples	• LCS results must fall within the control limits.	• If LCS recovery falls outside the control limits, qualify results >IDL as estimated (J). • If LCS recovery is > control limits, results <IDL are acceptable without qualification. • If LCS recovery is>50 % and < control limits, qualify results <IDL as estimated (J/UJ). • If %R is <50%, qualify all results as unusable (R).

*As applicable to the method
TOM – Total Organic Matter

3. EVALUATION OF SAMPLE-SPECIFIC CRITERIA

Sample-specific criteria were reviewed for all data packages. The review criteria and resultant actions are summarized in Table 3-1. The results of the sample-specific review are detailed in Section 5. Each subsection of Section 5 presents the review narrative for one data package.

TABLE 3-1
SAMPLE-SPECIFIC CRITERIA

Method	QC Check	Minimum Frequency	Acceptance Criteria	Qualifiers
ICP ICPMS* TOM* Mercury* General Chemistry Parameters*	Holding Time	Each Sample	• Analysis within the holding time requirements specified in the QAPP. • No holding time was specified in the QAPP for pH. The reviewer used a holding time of 2 days for sediment samples.	• If sample was analyzed outside the holding time requirements, then the sample results were qualified as estimated (J/UJ).
	Continuing calibration blank (CCB)	After every calibration verification	• <RL for positive results. • <RL for |negative results|.	• Sample results, for an analyte detected in an associated blank at a concentration, <5x the blank concentration, qualify as nondetect (U). • Sample results for an analyte reported in an associated blank at a negative concentration < | 4x blank concentration |, qualify results as estimated (J/UJ).
	Method Blank	One per analytical batch	• No analytes detected ≥ RL.	• Sample results, for an analyte detected in the method blank at a concentration, <5x the blank concentration, qualify as nondetect (U). • Sample results for an analyte reported in the method blank at a negative concentration < | 4x blank concentration |, qualify results as estimated (J/UJ).
	ICP Serial Dilution Test	One per analytical batch	• 1:5 dilution must agree within ±10% of the original determination for analytes present at concentrations >50x MDL.	• If %D is >10%, qualify associated data as estimated (J/UJ).
	Matrix Spike (MS)	One per 20 samples	• Recovery within 75-125% for both water and soils. • If sample result is ≥4x the spike amount then the matrix spike is not an appropriate for assessing accuracy measurement.	• If % R is >125%, results <IDL are acceptable without qualification. • If %R is >125% or <75%, qualify results >IDL as estimated (J). • If % R is within 30-74%, qualify results <IDL as estimated (J/UJ). • If % R is <30%, qualify results <IDL as unusable(R).
	Laboratory Duplicate or Matrix Spike Duplicate	One per 20 samples	If both results >5x RL • RPD for water is ≤20%. • RPD for soils is ≤35%. If either sample result is <5x the RL then • Absolute difference ≤1x RL (waters). • Absolute difference ≤2x RL (soils).	• If the RPD or absolute difference falls outside the appropriate fixed control windows, qualify the results for that analyte as estimated (J/UJ).
	Field Duplicate		If both results >5x RL • RPD for soils is ≤50%. If either sample result is <5x then • Absolute difference ≤ 3x RL.	• If the RPD or absolute difference fall outside the appropriate fixed control windows, qualify the results for that analyte as estimated (J/UJ).

TABLE 3-1
SAMPLE-SPECIFIC CRITERIA

Method	QC Check	Minimum Frequency	Acceptance Criteria	Qualifiers
	Post-digestion spike (PDS) 200.7 (ICP)	Typically, when the MS failed or at analyst discretion	• Recovery within 75-125% for both water and soils. • If sample result is ≥4x the spike amount then the PDS is not an appropriate for assessing accuracy measurement.	• No qualification was issued. • Post-digestion spikes were conducted to aid in determining whether the MS results that were out of acceptance limits were caused by the sample matrix, a bias in the analytical system, or a combination of both.

*As applicable to the method.

4. REVIEW OF LABORATORY PERFORMANCE EVALUATION CRITERIA

Data package 131855 (sediment) for TOM, 131355 (sediment) for total metals, and 131520 (sediment) for general chemistry parameters (alkalinity, pH, chloride, orthophosphate as P, sulfate, nitrate/nitrite and DOC) analyses were used to evaluate the laboratory performance criteria. The data reported in these data packages accounted for greater than 10% of the data. The evaluation of laboratory performance criteria was conducted as summarized in Tables 2-1 and 2-2.

4.1 Initial Calibration

ICP – Each ICP analytical run was initiated with the analysis of a blank and at least one standard, which satisfied the initial calibration criterion. All metals in the second source ICV standard were recovered within the acceptance range of 90-110% for all ICV analyses. Several target analytes were detected in the initial calibration blank sample. No samples were analyzed directly after the initial calibration blank and before the first calibration blank. Therefore, data qualification for ICP metals data was not necessary based on the initial calibration.

ICPMS – Each ICPMS analytical run was initiated with a blank and at least five standards. The calibrations were verified with the analysis of an ICV. All metals were recovered within the acceptance range of 90-110%. Several target analytes were detected in the initial calibration blank sample. No samples were analyzed directly after the initial calibration blank and before the first calibration blank. Because all response criteria were met, data qualification on the basis of initial calibration was not necessary.

Mercury – All mercury analytical runs were initiated with the analysis of a blank and six standards, which satisfies the initial calibration criterion for number of standards. The linear fit correlation coefficients obtained were all >0.995. Mercury was recovered within the acceptance limits of 80-120% in all ICV standards. The initial calibration blank sample result for mercury analysis was acceptable. Data qualification of mercury results was not necessary based on the initial calibration.

TOM – The TOM analytical run was initiated with the analysis of a blank and six standards, which satisfies the initial criterion for number of standards. The linear fit correlation coefficients obtained were all >0.995. TOM in all second source initial

calibration verification was recovered within the laboratory's acceptance limits of 80-120%. The initial calibration blank sample results for TOM analysis were acceptable. Data qualification of TOM results was not necessary based on initial calibration.

Anions (Chloride, Orthophosphate, Sulfate, Nitrate/Nitrite) - The relationship between instrument response and concentration was established with a blank and six standards for chloride, orthophosphate, and sulfate. The relationship between instrument response and concentration was established with a blank and seven standards for nitrate/nitrite. The calibration curve could not be recalculated for the nitrate/nitrite because the area was not provided in the data package. The correlation coefficients were >0.995 for chloride, sulfate, and orthophosphate. The calibrations were verified with the analysis of an ICV. All anions were recovered within the acceptance range of 80-120%. Because all response and linearity criteria were met, data qualification on the basis of initial calibration was not necessary.

DOC – The calibration curve was not provided in the data package. Data qualification of DOC results was not necessary based on initial calibration.

pH – The pH meter used for paste pH analysis was calibrated by measuring a 4.00 standard and a 7.00 standard.

4.2 Continuing Calibration Verification

The continuing calibration verification solutions (CCV) were analyzed at the required frequency for all methods. All continuing calibration criteria were satisfied and data qualification was not necessary.

4.3 Interference Check Sample (ICS) for Metals

The frequency of analysis of the ICS A and ICS AB standards was acceptable. The percent recoveries for all analytes present in the ICS AB solution were within the acceptance range of 80-120%.

For each metals package evaluated, results for a few analytes not present in the ICS A standard solution were reported with absolute values greater than the instrument detection limit (IDL).

All of the samples reported in this data package contained concentrations of interferent elements approaching the concentrations present in the ICS A and ICS AB. The table

below lists the analytes detected in the ICS A with absolute values greater than the IDL and any qualification issued.

Analyte	ICSA (Initial) (µg/l)	Data Qualification
Cadmium	3	The cadmium result for sample BFD
Lead	35	None. All sample results were reported at concentrations greater than four times the absolute value of the amount found in the ICS A or reported as nondetect.
Zinc	-47	

Results in µg/l. To determine equivalent soil value in mg/kg, multiply by the preparation factor of 0.1.

If samples contained concentrations of interferent elements in other data packages approaching the concentrations present in the ICS A and ICS AB, then the results are discussed in the individual review narratives presented in Section 5.

4.4 Laboratory Control Samples (LCS)

Laboratory control samples were prepared with each batch of samples. The recoveries for all analytes were within the control limits reported on the forms. Therefore, data qualification based on LCS results was not necessary.

4.5 CRDL Standard (Metals Only)

A CRDL standard (a low standard with concentrations at the laboratory reporting limit) was analyzed at the proper location in each analytical sequence.

For each metals data package, the CRDL standard for each analyte was evaluated to determine if the recovery was outside the acceptance range of 50-150%. With the exceptions listed in the table below, all of the CRDL recoveries reported in this data package were outside the acceptance range of 50-150%. The table also includes the range of sample concentrations and any qualifications that may have been issued.

Analyte	CRDL Range %R	CRDL TV (mg/kg)	CCV TV (mg/kg)	Result Range (mg/kg)	Data Qualification
Aluminum	226.8	8	200	4630 - 7220	Based on the sample results all being much higher than the CRDL and closer in concentration to the CCV, data qualification was not considered necessary.

Note: All CCV %Rs were within 90-110%, implying acceptable accuracy at the high end.
TV – True Value NA – Not Applicable

If the CRDL recoveries were outside 50-150% in other data packages, then the results are discussed in the individual review narratives presented in Section 5.

4.6 Tune (ICPMS)

The tuning solution was analyzed at the beginning of every 12 hours of sample analysis. The relative standard deviations were all < 5% for all analytes contained in the tuning solution and the resolution and mass calibration of the instrument were also within the required acceptance ranges. Data qualification on the basis of instrument tuning was not necessary.

4.7 Sample Quantitation and Result Verification

Sample quantitation was checked by recalculating a minimum of 10% of the reported sample results from the raw system printouts. Examples of calculated results included correlation coefficients, reported sample results, percent differences for serial dilutions, recoveries for calibration standards, and RPDs between duplicate results. No calculation or reporting errors were found.

5. REVIEW OF SAMPLE SPECIFIC CRITERIA FOR ALL DATA PACKAGES

Sample-specific criteria were evaluated for all data packages. The evaluation of sample-specific criteria was conducted as summarized in Table 3-1. The data review narratives for the three data packages are presented in Subsections 5.1 through 5.7.

5.1 SVL Data Package 131855

Data package 131855 (sediment) contained the analytical results for eight samples and one field duplicate sample for paste pH and TOM. The table below lists the laboratory IDs, corresponding field IDs, and QC designations.

Laboratory ID	Field ID	QC Designation
698458	U02-ER001	MS/MD - TOM
698459	U02-ER002	
698460	U02-ER003	
698461	U02-ER004	
698462	BFD	FD to sample U02-ER010
698463	U02-ER006	
698464	U02-ER007	
698465	U02-ER009	
698466	U02-ER010	

MD – Method Duplicate
FD – Field Duplicate
MS – Matrix Spike
TOM – Total Organic Matter

5.1.1 Overall Assessment

The data are considered usable for meeting project objectives with the qualifications noted in the following narrative. The data qualifiers and associated qualifier and bias codes were hand-entered on the sample reporting forms. The sample reporting forms are included in Appendix A.

5.1.2 COC and Sample Receipt Documentation

The samples were shipped to SVL under COC. The laboratory sample custodian noted that all samples were received intact. The cooler temperature was not measured upon sample receipt.

The paste pH and TOM analyses were requested on November 4, 2007. The samples were received September 10, 2007.

5.1.3 Holding Times

The TOM analysis was performed outside of holding time because the TOM analysis was requested after the holding time had expired. Therefore, the TOM results for the samples reported in this data package were qualified as estimated (J) with an indeterminate bias.

5.1.4 Preparation Blanks and Calibration Blanks

Preparation Blanks

No target analytes were detected in the preparation blanks. Therefore, data qualification was not necessary.

5.1.5 Duplicate Sample Analysis

An additional aliquot of sample U02-ER001 was used to prepare the method duplicate sample for TOM. The concentration-dependent evaluation criteria listed in Table 3-1 were met for all analytes. Therefore, data qualification was not necessary.

5.1.6 Matrix Spike Analysis

An additional aliquot of sample U02-ER001 was used to prepare the matrix spike sample for TOM. The recovery was within the acceptance range of 75-125%.

5.2 SVL Data Package 131355

Data package 131355 (sediment) contained the analytical results for eight samples and one field duplicate sample for total metals analyses. The table below lists the laboratory IDs, corresponding field IDs, and QC designations.

Laboratory ID	Field ID	QC Designation
S599854	U02-ER001	MS/MSD/SD/PDS - Metals
S599855	U02-ER002	
S599856	U02-ER003	
S599857	U02-ER004	
S599858	BFD	FD to sample U02-ER010
S599859	U02-ER006	
S599860	U02-ER007	
S599861	U02-ER009	
S599862	U02-ER010	

MSD – Matrix Spike Duplicate
MS – Matrix Spike
FD – Field Duplicate
SD – Serial Dilution
PDS – Post-Digestion Spike

5.2.1 Overall Assessment

The data are considered usable for meeting project objectives with the qualifications noted in the following narrative. The data qualifiers and associated qualifier and bias codes were hand-entered on the sample reporting forms. The sample reporting forms are included in Appendix A.

5.2.2 COC and Sample Receipt Documentation

The samples were shipped to SVL under COC. The laboratory sample custodian noted that all samples were received intact. The cooler temperature was not measured upon sample receipt.

5.2.3 Holding Times

The samples were prepared and analyzed within the required holding time limits. Therefore, data qualification was not considered necessary.

5.2.4 Preparation Blanks and Calibration Blanks

Preparation Blanks

Several target analytes were detected in the preparation blanks. The table below lists the analytes detected in the preparation blanks and any qualification issued.

Analyte	PB (mg/kg)	Data Qualification
Iron	1.214	None. Either the blank result was negative and the blank concentration does not account for more than 25% of the associated reported results or the sample results were reported at concentrations greater than five times positive amounts found in the CCBs
Nickel	-0.385	
Selenium	0.212	All selenium results for the samples reported in this data package were qualified as nondetect (U) at the reported concentrations.

Calibration Blanks

Several targets analytes were detected in various CCBs for the metals analysis. The table below lists the analytes detected in the CCBs associated with the samples reported in this SDG and any qualification issued.

Analyte	CCB1 (µg/l)*	CCB2 (µg/l)*	CCB3 (µg/l)*	Data Qualification
Aluminum	-5.867			None. Either the blank result was negative and the blank concentration does not account for more than 25% of the associated reported results or the sample results were reported at concentrations greater than five times positive amounts found in the CCBs.
Antimony	0.090	0.099	0.073	
Cadmium	0.624		0.659	
Calcium	-4.763		-4.506	
Copper	-1.684	-2.683	-2.763	
Nickel	1.721			
Selenium	0.194	0.232		
Selenium		-0.097		
Boron			6.799	

- An empty cell indicates that the analyte was not detected with an absolute value > IDL.

  To determine equivalent soil value in mg/kg, multiply by the preparation factor of 0.1.

5.2.5 Duplicate Sample Analysis

Additional aliquots of sample U02-ER001 were used to prepare the matrix spike duplicate samples. The concentration-dependent evaluation criteria listed in Table 3-1 were met for all analytes. Therefore, data qualification was not necessary.

5.2.6 Matrix Spike Analysis

Additional aliquots of sample U02-ER001 were used to prepare the matrix spike samples. With the exceptions listed in the table below, recoveries for all analytes were within the acceptance range of 75-125%. The matrix spike recovery for aluminum, copper, iron, and zinc were not considered appropriate for assessing accuracy because the sample results were greater than four times the spike amount.

Analyte	MS %R	Data Qualification
Antimony	35.9	The results for the listed analytes for all samples reported in this package were qualified as estimated (J/UJ) to reflect the potential low bias.
Calcium	59.7	
Lead	53.1	
Selenium	62.4	

Post-digestion spike analyses are conducted for ICP analysis to aid in determining whether the matrix spike results that were out of acceptance limits were caused by the sample matrix, a bias in the analytical system, or a combination of both. Recoveries for the calcium and lead post-digestion spike recoveries were within the acceptance range of 75-125%.

5.2.7 Serial Dilutions

A serial dilution analysis was conducted on sample U02-ER001 for ICPMS for 200.8. However, a serial dilution is not required by Methods 200.7 and 200.8. No analyte concentrations were greater than 50 times their respective IDLs, such that the results were not appropriate for comparing to the evaluation criterion.

1.1 Internal Standards

All internal standard recoveries for the 200.8 analyses were within the acceptance limits.

5.3 SVL Data Package 131857

Data package 131857 (sediment) contained the analytical results for seven samples and one field duplicate sample for paste pH and TOM. The table below lists the laboratory IDs, corresponding field IDs, and QC designations.

Laboratory ID	Field ID	QC Designation
608479	U03-ER001	MS/MD - TOM
608480	U03-ER004	
608481	U03-ER005	
608482	BFD	FD to sample U03-ER006
608483	U03-ER002	
608484	U03-ER006	
608485	U02-ER011*	
608486	U02-ER005	

MD – Method Duplicate
MS – Matrix Spike
FD – Field Duplicate
TOM – Total Organic Matter
*Sample was inadvertently labeled as U0**3**-ER011 on the COC, the data reviewer changed the ID on the data sheet to U0**2**-ER011 to reflect the correct field ID..

5.3.1 Overall Assessment

The data are considered usable for meeting project objectives with the qualifications noted in the following narrative. The data qualifiers and associated qualifier and bias codes were hand-entered on the sample reporting forms. The sample reporting forms are included in Appendix A.

5.3.2 COC and Sample Receipt Documentation

The samples were shipped to SVL under COC. The laboratory sample custodian noted that all samples were received intact. The cooler temperatures were 3.4°C below the

criterion of 6°C and 6.8°C slightly above the temperature criterion. Data qualification was not considered necessary based on the stability of the parameters of interest.

The paste pH and TOM analyses were requested on November 4, 2007. The samples were received September 21, 2007.

5.3.3 Holding Times

The TOM analysis was performed outside of holding time because the TOM analysis was requested after the holding time had expired. Therefore, the TOM results for the samples reported in this data package were qualified as estimated.

5.3.4 Preparation Blanks and Calibration Blanks

Preparation Blanks

No target analytes were detected in the preparation blanks. Therefore, data qualification was not necessary.

5.3.5 Duplicate Sample Analysis

An additional aliquot of sample U03-ER001 was used to prepare the method duplicate sample for TOM. The concentration-dependent evaluation criteria listed in Table 3-1 were met for all analytes. Therefore, data qualification was not necessary.

5.3.6 Matrix Spike Analysis

An additional aliquot of sample U03-ER001 was used to prepare the matrix spike sample for TOM. The recovery was within the acceptance range of 75-125%.

5.4 SVL Data Package 131519

Data package 131519 (sediment) contained the analytical results for eight samples and one field duplicate sample for total metals analyses. The table below lists the laboratory IDs, corresponding field IDs, and QC designations.

Laboratory ID	Field ID	QC Designation
S602528	U03-ER001	MS/MSD/PDS - Metals
S602529	U03-ER004	
S602530	U03-ER005	
S602531	BFD	FD to sample U03-ER006
S602532	U03-ER002	
S602533	U03-ER006	
S602534	U02-ER011*	
S602535	U02-ER005	

MSD – Matrix Spike Duplicate MS – Matrix Spike FD – Field Duplicate
PDS – Post-Digestion Spike

*Sample was inadvertently labeled as U0**3**-ER011 on the COC, the data reviewer changed the ID on the data sheet to U0**2**-ER011 to reflect the correct field ID.

5.4.1 Overall Assessment

The data are considered usable for meeting project objectives with the qualifications noted in the following narrative. The data qualifiers and associated qualifier and bias codes were hand-entered on the sample reporting forms. The sample reporting forms are included in Appendix A.

5.4.2 COC and Sample Receipt Documentation

The samples were shipped to SVL under COC. The laboratory sample custodian noted that all samples were received intact. The cooler temperatures were 3.4°C below the criterion of 6°C and 6.8°C slightly above the temperature criterion. Data qualification was not considered necessary based on the stability of the parameters of interest.

5.4.3 Holding Times

The samples were prepared and analyzed within the required holding time limits. Therefore, data qualification was not considered necessary.

5.4.4 Preparation Blanks and Calibration Blanks

Preparation Blanks

Several target analytes were detected in the preparation blanks. The table below lists the analytes detected in the preparation blanks and any qualification issued.

Analyte	PB (mg/kg)	Data Qualification
Antimony	0.088	All detectable antimony results for the samples reported in this data package were qualified as nondetect (U) at the reported concentration.
Calcium	0.460	None. Either the blank result was negative and the blank concentration does not account for more than 25% of the associated reported results or the sample results were reported at concentrations greater than five times positive amounts found in the CCBs
Copper	-0.162	
Molybdenum	0.015	
Nickel	-0.853	
Selenium	0.056	The selenium results for samples U03-ER005, BFD, U03-ER002, U03-ER006, and U02-ER011 were qualified as nondetect (U) at the reported concentration.

Calibration Blanks

Several targets analytes were detected in various CCBs for the metals analysis. The table below lists the analytes detected in the CCBs associated with the samples reported in this SDG and any qualification issued.

Analyte	CCB1 (µg/l)*	CCB2 (µg/l)*	CCB3 (µg/l)*	Data Qualification
Antimony	0.130	0.097	0.106	None. Either the blank result was negative and the blank concentration does not account for more than 25% of the associated reported results or the sample results were reported at concentrations greater than five times positive amounts found in the CCBs.
Calcium	4.034			
Copper	-2.609	-4.088	-1.532	
Vanadium	0.259			
Molybdenum	0.081	0.036	0.031	

- An empty cell indicates that the analyte was not detected with an absolute value > IDL.

  To determine equivalent soil value in mg/kg, multiply by the preparation factor of 0.1.

5.4.5 Duplicate Sample Analysis

Additional aliquots of sample U03-ER001 were used to prepare the matrix spike duplicate samples. With one exception, the concentration-dependent evaluation criteria listed in Table 3-1 were met for all analytes. The RPD for lead exceeded the evaluation criterion of ≤35% with an RPD of 75.3%. Therefore, the lead results for all samples reported in this package were qualified as estimated (J/UJ) with an indeterminate bias.

5.4.6 Matrix Spike Analysis

Additional aliquots of sample U03-ER001 were used to prepare the matrix spike samples. With the exceptions listed in the table below, recoveries for all analytes were within the acceptance range of 75-125%. The matrix spike recovery for aluminum,

copper, iron, lead and vanadium were not considered appropriate for assessing accuracy because the sample results were greater than four times the spike amount.

Analyte	MS %R	Data Qualification
Arsenic	71.2	The results for the listed analytes for all samples reported in this package were qualified as estimated (J/UJ) to reflect the potential low bias.
Calcium	53.1	
Selenium	50.5	
Molybdenum	57.4	
Zinc	146.4	The detectable zinc results for all samples reported in this data package were qualified as estimated (J) to reflect the potential high bias.

Post-digestion spike analyses are conducted for ICP analysis to aid in determining whether the matrix spike results that were out of acceptance limits were caused by the sample matrix, a bias in the analytical system, or a combination of both. Recoveries for the arsenic, calcium, selenium, and molybdenum post-digestion spike recoveries were within the acceptance range of 75-125% indicating that the matrix spike recoveries were outside the acceptance limits due to the sample matrix. The post-spike recovery for zinc was slightly below the acceptance range with a recovery of 73.7% indicating that the matrix spike recovery for zinc was outside the acceptance limits due the combination of the sample matrix and a bias in the analytical system. Therefore, the zinc results for all samples were qualified as estimated (J). The overall bias for the zinc results based on the matrix spike and post-digestion spike recoveries is indeterminate because the matrix spike analysis suggested a high bias, but the PDS recovery suggested a low bias.

5.4.7 Serial Dilutions

A serial dilution is not required by Methods 200.7 and 200.8.

5.4.8 Internal Standards

All internal standard recoveries for the 200.8 analyses were within the acceptance limits.

5.4.9 Other Parameters

ICS

Several of the samples, U03-ER001, U03-ER004, U03-ER003, U02-ER011and U02-ER005, reported in this data package contained concentrations of interferent elements approaching the concentrations present in the ICS A and ICS AB. The table below lists

the analytes detected in the ICS A with absolute values greater than the IDL and any qualification issued.

Analyte	ICSA (Initial) (µg/l)	Data Qualification
Lead	-38	None. All sample results were reported at concentrations greater than four times the absolute value of the amount found in the ICS A.
Zinc	-32	

Results in µg/l. To determine equivalent soil value in mg/kg, multiply by the preparation factor of 0.1.

5.5 SVL Data Package 131511

Data package 131511 (summer rainfall pools) contained the analytical results for eight samples for total and dissolved metals, total dissolved solids (TDS), and total suspended solids (TSS) analyses. The table below lists the laboratory IDs, corresponding field IDs, and QC designations.

Laboratory ID	Field ID	QC Designation
W602365	BAYARD CANYON U/S	MS/MSD – Metals MD – TDS/TSS
W602366	BAYARD CANYON MID	
W602367	BAYARD CANYON D/S	
W602368	BAYARD/LB CONF2	
W602369	BAYARD/LB CON	
W602370	LUCKY BILL MOUTH	
W602371	LUCKY BILL AT NO. 5	
W602372	LUCKY BILL U/S NO. 5	
W602373 Dis	BAYARD CANYON U/S (Dissolved)	MS - Metals
W602374 Dis	BAYARD CANYON MID (Dissolved)	
W602375 Dis	BAYARD CANYON D/S (Dissolved)	
W602376 Dis	BAYARD/LB CONF2 (Dissolved)	
W602377 Dis	BAYARD/LB CON (Dissolved)	
W602378 Dis	LUCKY BILL MOUTH (Dissolved)	
W602379 Dis	LUCKY BILL AT NO. 5 (Dissolved)	
W602380 Dis	LUCKY BILL U/S NO. 5 (Dissolved)	

MSD – Matrix Spike Duplicate
MS – Matrix Spike
TDS- Total Dissolved Solids
TSS- Total Suspended Solids
MD – Method Duplicate

5.5.1 Overall Assessment

The data are considered usable for meeting project objectives with the qualifications noted in the following narrative. The data qualifiers and associated qualifier and bias codes were hand-entered on the sample reporting forms. The sample reporting forms are included in Appendix A.

5.5.2 COC and Sample Receipt Documentation

The samples were shipped to SVL under COC. The laboratory sample custodian noted that all samples were received intact. The cooler temperature was 2.3°C below the criterion of 6°C. Data qualification was not necessary.

5.5.3 Holding Times

The samples were prepared and analyzed within the required holding time limits. Therefore, data qualification was not considered necessary.

5.5.4 Preparation Blanks and Calibration Blanks

Preparation Blanks

Several target analytes were detected in the preparation blanks. The table below lists the analytes detected in the preparation blanks and any qualification issued.

Analyte	PB (µg/l)	Data Qualification
Aluminum	-17.633	All total and dissolved aluminum results reported in this data package were qualified as estimated (J/UJ) to reflect the potential low bias.
Calcium	-20.870	None. Either the blank result was negative and the blank concentration does not account for more than 25% of the associated reported results or the sample results were reported at concentrations greater than five times positive amounts found in the MBs
Magnesium	-16.783	
Lead	0.075	
Chromium	-1.602	All total and dissolved chromium results reported in this data package were qualified as estimated (J/UJ) to reflect the potential low bias.
Copper	-0.655	The copper results for samples LUCKY BILL MOUTH (dissolved) and LUCKY BILL U/S NO. 5 (dissolved) were qualified as estimated (J) to reflect the potential low bias.
Iron	-10.854	The total iron results for samples BAYARD CANYON U/S, BAYARD CANYON MID, BAYARD/LB CONF2, BAYARD/LB CON and the dissolved iron results for all samples were qualified as estimated (J) to reflect the potential low bias.
Nickel	2.159	The nickel result for sample BAYARD CANYON D/S (dissolved) was qualified as nondetect (U) at the report concentration.

Calibration Blanks

Several targets analytes were detected in various CCBs for the metals analysis. The table below lists the analytes detected in the CCBs associated with the samples reported in this SDG and any qualification issued.

Analyte	CCB1 (µg/l)	CCB2 (µg/l)	CCB3 (µg/l)	CCB4 (µg/l)	CCB5 (µg/l)	Data Qualification
Aluminum		-13.835	-14.584	-15.676		All total and dissolved aluminum results reported in this data package were qualified as estimated (J/UJ) to reflect the potential low bias.
Cadmium		0.023				The cadmium results for samples LUCKY BILL MOUTH and LUCKY BILL MOUTH (dissolved) were qualified as nondetect (U) at the reported concentration.
Calcium	-10.635	-12.016	-14.273	-12.756		None. Either the blank result was negative and the blank concentration does not account for more than 25% of the associated reported results or the sample results were reported at concentrations greater than five times positive amounts found in the CCBs
Copper		-0.159	-0.149	-0.143		
Magnesium			-15.135		-13.028	
Thallium	0.020					

- An empty cell indicates that the analyte was not detected with an absolute value > IDL.

5.5.5 Duplicate Sample Analysis

Additional aliquots of samples BAYARD CANYON U/S and BAYARD CANYON U/S (dissolved) were used to prepare the matrix spike duplicate samples for metals. Additional aliquots of sample BAYARD CANYON U/S were used to prepare the method duplicate for TDS and TSS. With one exception, the concentration-dependent evaluation criteria listed in Table 3-1 were met for all analytes. The RPD between the matrix spike and matrix spike duplicate results for total iron for sample BAYARD CANYON U/S exceeded the evaluation criterion of ≤20% with an RPD of 77.7%. Therefore, the total iron results for all samples reported in this package were qualified as estimated (J/UJ) with an indeterminate bias.

5.5.6 Matrix Spike Analysis

Additional aliquots of samples BAYARD CANYON U/S and BAYARD CANYON U/S (dissolved) were used to prepare the matrix spike samples. All recoveries for all analytes were within the acceptance range of 75-125%. Therefore, data qualification was not necessary.

5.5.7 Serial Dilutions

A serial dilution is not required by Methods 200.7 and 200.8.

5.5.8 Internal Standards

All internal standard recoveries for the 200.8 analyses were within the acceptance limits.

5.5.9 Other Parameters

CRDL

A CRDL standard (a low standard with concentrations at the laboratory reporting limit) was analyzed at the beginning and end of the analytical sequence for ICP. As indicated in the tables below, four of the CRDL recoveries for the total metals analysis were outside 50-150%. The table also includes the range of sample concentrations and any qualifications that may have been issued as a result of the CRDL standard recovery.

Analyte	CRDL %R	CRDL TV (µg/l)	CCV TV (µg/l)	Sample Result Range (µg/l)	Data Qualification
Calcium	40.7	40	2000	33,400 – 51,900	Based on the sample results all being much higher than the CRDL, data qualification was not considered necessary.

Note: All CCV %Rs were within 90-110%, implying acceptable accuracy at the high end.
TV – True Value NA – Not Applicable

5.6 SVL Data Package 131354

Data package 131354 (summer rainfall pools) contained the analytical results for two samples for total and dissolved metals, total dissolved solids (TDS), and total suspended solids (TSS) analyses. The table below lists the laboratory IDs, corresponding field IDs, and QC designations.

Laboratory ID	Field ID	QC Designation
W599850	LWWCR RANCHERS POND	MS/MSD – Metals MD – TDS/TSS
W599851 dis	LWWCR RANCHERS POND (dissolved metals)	MS/MSD – Metals

MSD – Matrix Spike Duplicate
MS – Matrix Spike
TDS- Total Dissolved Solids
TSS- Total Suspended Solids
MD – Method Duplicate

5.6.1 Overall Assessment

The data are considered usable for meeting project objectives with the qualifications noted in the following narrative. The data qualifiers and associated qualifier and bias codes were hand-entered on the sample reporting forms. The sample reporting forms are included in Appendix A.

5.6.2 COC and Sample Receipt Documentation

The samples were shipped to SVL under COC. The laboratory sample custodian noted that all samples were received intact. The cooler temperature was 2.3°C below the criterion of 6°C. Data qualification was not necessary.

5.6.3 Holding Times

The samples were prepared and analyzed within the required holding time limits. Therefore, data qualification was not considered necessary.

5.6.4 Preparation Blanks and Calibration Blanks

Preparation Blanks

Several target analytes were detected in the preparation blanks. The table below lists the analytes detected in the preparation blanks and any qualification issued.

Analyte	PB (µg/l)	Data Qualification
Aluminum	-16.258	The aluminum result for sample LWWCR RANCHERS POND (dissolved) was qualified as estimated (UJ) to reflect the potential low bias.
Cobalt	0.953	The results for the listed analytes for both samples reported in this package were qualified as nondetect (U) at the reported concentration.
Nickel	3.154	
Selenium	0.159	None. The associated selenium results were reported at concentrations greater than five times positive amounts found in the MBs
Molybdenum	-2.700	The molybdenum results for both samples reported in this package were qualified as estimated (J) to reflect the potential low bias.

Calibration Blanks

Several targets analytes were detected in various CCBs for the metals analysis. The table below lists the analytes detected in the CCBs associated with the samples reported in this SDG and any qualification issued.

Analyte	CCB1 (µg/l)	CCB2 (µg/l)	CCB3 (µg/l)	Data Qualification
Aluminum		-14.689	13.276	The aluminum result for sample LWWCR RANCHERS POND (dissolved) was qualified as estimated (UJ) to reflect the potential low bias.
Cadmium		0.031		The results for the listed analytes for both samples reported in this package were qualified as nondetect (U) at the reported concentration.
Cobalt	0.320			
Nickel	1.317			
Selenium	0.139	0.129		None. Either the blank result was negative and the blank concentration does not account for more than 25% of the associated reported results or the sample results were reported at concentrations greater than five times positive amounts found in the CCBs
Silver		0.059		
Vanadium			-0.542	The vanadium result for sample LWWCR RANCHERS POND was qualified as estimated (UJ) to reflect the potential low bias.

- An empty cell indicates that the analyte was not detected with an absolute value > IDL.

5.6.5 Duplicate Sample Analysis

Additional aliquots of samples LWWCR RANCHERS POND and LWWCR RANCHERS POND (dissolved) were used to prepare the matrix spike duplicate samples for metals. Additional aliquots of sample LWWCR RANCHERS POND were used to prepare the method duplicate for TDS and TSS. The concentration-dependent evaluation criteria listed in Table 3-1 were met for all analytes. Data qualification was not necessary.

5.6.6 Matrix Spike Analysis

Additional aliquots of samples LWWCR RANCHERS POND and LWWCR RANCHERS POND (dissolved) were used to prepare the matrix spike samples. With

one exception, all recoveries for all analytes were within the acceptance range of 75-125%. The dissolved selenium matrix spike recovery for sample LWWCR RANCHERS POND (dissolved) exceeded the upper limit of the acceptance limit with a recovery of 137.1%. Therefore, the dissolved selenium result for sample LWWCR RANCHERS POND (dissolved) was qualified as estimated (J) to reflect the potential high bias.

5.6.7 Serial Dilutions

A serial dilution is not required by Methods 200.7 and 200.8.

5.6.8 Internal Standards

All internal standard recoveries for the 200.8 analyses were within the acceptance

5.7 SVL Data Package 131520

Data package 131520 (sediment) contained the analytical results for six samples, extraction fluid sample, and one field duplicate sample for SPLP extraction followed and then analyzed for metals and general chemistry parameters (alkalinity, pH, chloride, orthophosphate as P, sulfate, nitrate/nitrite, and dissolved organic carbon). The table below lists the laboratory IDs, corresponding field IDs, and QC designations.

Laboratory ID	Field ID	QC Designation
E602538	EXTRACTION FLUID	
E602539	U03-ER001	MS/MSD - Metals MS/MSD – General Chemistry
E602540	U03-ER004	
E602541	U03-ER005	
E602542	BFD	FD to U03-ER006
E602543	U03-ER002	
E602544	U03-ER006	
E602545	U02-ER011	

MSD – Matrix Spike Duplicate MS – Matrix Spike
FD – Field Duplicate

5.7.1 Overall Assessment

The data are considered usable for meeting project objectives with the qualifications noted in the following narrative. The data qualifiers and associated qualifier and bias codes were hand-entered on the sample reporting forms. The sample reporting forms are included in Appendix A.

5.7.2 COC and Sample Receipt Documentation

The samples were shipped to SVL under COC. The laboratory sample custodian noted that all samples were received intact. The cooler temperatures were 8.4°C and 6.4 slightly above the temperature criterion of 6°C. Data qualification was not considered necessary based on the stability of the parameters of interest.

5.7.3 Holding Times

With one exception, the samples were prepared and analyzed within the required holding time limits.

The pH analysis was conducted four days after extraction exceeding the holding time requirement of immediate analysis. Therefore, all pH results for samples reported in this data package were qualified as estimated.

5.7.4 Preparation Blanks and Calibration Blanks

Preparation Blanks

Several target analytes were detected in the preparation blanks. The table below lists the analytes detected in the preparation blanks and any qualification issued.

Analyte	PB (µg/l)	Data Qualification
Calcium	14.630	The calcium result for sample extraction fluid was qualified as nondetect (U) at the reported concentration.
Nickel	-3.892	The nickel results for all samples were qualified as estimated (UJ) to reflect the potential low bias.
Boron	-9.925	The boron results for samples extraction fluid, U03-ER001, U03-ER004, U03-ER002, and U02-ER011 were qualified estimated (J/UJ) to reflect the potential low bias.

Calibration Blanks

Several targets analytes were detected in various CCBs for the metals analysis. The table below lists the analytes detected in the CCBs associated with the samples reported in this SDG and any qualification issued.

Analyte	CCB1 (µg/l)	CCB2 (µg/l)	CCB3 (µg/l)	Data Qualification
Antimony	-2.007			All antimony results were qualified as estimated (UJ/J) to reflect the potential low bias.
Cadmium		0.027	0.029	The results for samples U03-ER001, U03-ER002, and U02-ER011 were qualified as nondetect (U) at the reported concentration.

- An empty cell indicates that the analyte was not detected with an absolute value > IDL.

Extraction Fluid

After accounting for method contamination, several targets analytes were detected in the extraction fluid for the metals analysis. The table below lists the analytes detected in the extraction fluid associated with the samples reported in this SDG and any qualification issued.

Analyte	EB* (µg/l)	Data Qualification
Antimony	2.5	All detectable antimony results were qualified as nondetect (U) at the reported concentrations.
Copper	0.08	None. All results for the listed analytes were reported at concentrations greater than five times the amount found in the extraction fluid blank.
Iron	69.9	
Sulfate	0.32 mg/l	

*A 5:1 ratio was used to extract the sample; therefore, divide by 5 to determine the amount in the sample.

5.7.5 Duplicate Sample Analysis

Additional aliquots of samples U03-ER001 were used to prepare the matrix spike duplicate samples for metals and general chemistry parameters. The concentration-dependent evaluation criteria listed in Table 3-1 were met for all analytes. Data qualification was not necessary.

5.7.6 Matrix Spike Analysis

Additional aliquots of sample U03-ER001 were used to prepare the matrix spike samples as applicable to the method. All recoveries for all analytes were within the acceptance range of 75-125%. Therefore, data qualification was not necessary.

5.7.7 Serial Dilutions

A serial dilution is not required by Methods 200.7 and 200.8.

5.7.8 Internal Standards

All internal standard recoveries for the 200.8 analyses were within the acceptance.

6. FIELD QUALITY PARAMETERS

During the investigation no rinsate blanks were collected because all equipment was disposable and no decontamination was needed. Two field duplicate pairs were collected. The results obtained for these field quality control samples are discussed in the sections below.

6.1 Rinsate Blank Results

No rinsate blank samples were collected in association with this sampling event.

6.2 Field Duplicate Agreement

The field duplicate sample pairs collected during this sampling event are listed in the table below.

Field Duplicate Pair
BFD/U02-ER010 (collected 9/5/2007)
BFD/U03-ER006 (collected 9/20/2007)

With the exceptions listed in the table below, all field duplicate results satisfied the applicable evaluation criterion in Table 3-1. This indicates an acceptable level of overall sampling and analysis precision.

Field Duplicate Pair	Analyte	RPD (%)	Criterion	Data Qualification
BFD/U03-ER006 (collected 9/20/2007)	Copper	126	≤50%	The results for the listed analytes for samples BFD/U03-ER006 were qualified as estimated (J/UJ).
	Lead	141		
	Zinc	54		

7. OVERALL ASSESSMENT

The sample data are considered to be acceptable for use in reconciliation with project objectives as qualified.

A general overall assessment of each of the QAP's data quality assurance objectives is provided below.

7.1 Reporting Limits

Reporting limits (RLs) are established by the analytical laboratory based on the instrument detection limits (IDLs), historical data, and comparison to EPA limits for the respective methods. Table 7- 1 presents IDL obtained versus the required RLs for the total and dissolved water samples. Table 7-2 presents IDLs obtained versus the required RLs for soil and sediment samples. Table 7-3 presents IDLs obtained versus the required RLs for SPLP analyses. With the exceptions highlighted in the table below, all reporting limits satisfied the reporting limit requirements.

TABLE 7-1
REPORTING LIMIT COMPARISON FOR SUMMER RAINFALL POOL SAMPLES

Analyte	Reporting Limit Requirements (µg/l)*	SVL IDL (µg/l)
Aluminum (Al)	30	11
Antimony (Sb)	20	3.4
Arsenic (As)	25	4.6
Barium (Ba)	2	0.5
Boron (B)	40	4.300
Cadmium (Cd)	0.042/0.105	0.02 or 0.05
Chromium (Cr)	6	0.40
Cobalt (Co)	6	0.20
Copper (Cu)	0.2/0.5	0.040
Iron (Fe)	60	7.2
Lead (Pb)	0.220/0.550	0.03
Manganese (Mn)	4	0.80
Mercury (Hg)	0.2	0.1
Molybdenum (Mo)	8	2.200

TABLE 7-1
REPORTING LIMIT COMPARISON FOR SUMMER RAINFALL POOL SAMPLES

Analyte	Reporting Limit Requirements (µg/l)*	SVL IDL (µg/l)
Nickel (Ni)	10	1.300
Selenium (Se)	0.625	0.080
Silver (Ag)	0.03/.075	0.020
Thallium (Tl)	0.1/0.25	0.020
Vanadium (V)	5	0.500
Zinc (Zn)	10	1.300
Total Dissolved Solids (TDS)	10 mg/l	10 mg/l
Total Suspended Solids (TSS)	5 mg/l	5 mg/l
Hardness	---	---

IDL – Instrument Detection Limit **(µg/l)**– micrograms per liter
*SVL limits noted as Dissolved / Total (i.e., Cd - .042/.105)

The cadmium reporting limit 0.05 µg/l for the one of the dissolved summer rainfall pool water samples for metals exceeded the required RL of 0.042 µg/l. The cadmium result for this sample was reported as nondetect. The effect on the usability of this cadmium results will be discussed in the DQAR.

TABLE 7-2
REPORTING LIMIT COMPARISON FOR SEDIMENT SAMPLES

Analyte	Reporting Limit Requirements (mg/kg)	SVL IDL (mg/kg)
Aluminum (Al)	8	0.330
Antimony (Sb)	1.1	0.060
Arsenic (As)	0.3	0.740
Boron (B)	1	0.430
Cadmium (Cd)	0.02	0.060
Calcium (Ca)	20	0.430
Copper (Cu)	1	0.150
Iron (Fe)	1	0.910
Lead (Pb)	2	0.500
Mercury (Hg)	0.02	0.010

TABLE 7-2
REPORTING LIMIT COMPARISON FOR SEDIMENT SAMPLES

Analyte	Reporting Limit Requirements (mg/kg)	SVL IDL (mg/kg)
Molybdenum (Mo)	0.1	0.130
Nickel (Ni)	1	0.150
Selenium (Se)	0.2	0.0086
Vanadium (V)	0.4	0.050
Zinc (Zn)	1	0.130
Paste pH	0.1 Unit	0.1 Unit
Total organic Matter	0.10 %	0.10 %

The molybdenum reporting limit of 0.130 mg/kg for the samples exceeded the required RL of 0.1 mg/kg. Molybdenum was reported as detected in all samples, so the elevated RL does not affect the usability of the data for these samples.

The arsenic reporting limit of 0.740 mg/kg for the samples exceeded the required RL of 0.3 mg/kg. Arsenic was reported as detected in all samples, so the elevated RL does not affect the usability of the data for these samples.

TABLE 7-3
REPORTING LIMIT COMPARISON FOR SPLP ANALYSES

Analyte	Reporting Limit Requirements (µg/l)	SVL IDL (µg/l)
Aluminum (Al)	80	13
Antimony (Sb)	20	2.0
Arsenic (As)	25	8.8
Boron (B)	40	7.6
Cadmium (Cd)	0.2	0.02
Calcium (Ca)	40	8.2
Copper (Cu)	10	0.04
Iron (Fe)	60	7.6
Lead (Pb)	7.5	2.1
Mercury (Hg)	0.2	0.1
Molybdenum (Mo)	8	2.1

TABLE 7-3
REPORTING LIMIT COMPARISON FOR SPLP ANALYSES

Analyte	Reporting Limit Requirements (µg/l)	SVL IDL (µg/l)
Nickel (Ni)	10	1.1
Selenium (Se)	2	0.08
Vanadium (V)	5	1.0
Zinc (Zn)	10	3.0
Bicarbonate (HCO_3)	2 mg/l	1.0 mg/l
Chloride (Cl)	0.2 mg/l	0.2 mg/l
Nitrate/Nitrite (NO_3+NO_2)	0.02 mg/l	0.02 mg/l
Orthophosphate (PO_4)	0.005 mg/l	0.01 mg/l
Sulfate (SO_4)	0.3 mg/l	0.3 mg/l
DOC	1 mg/l	1.0 mg/l

All reporting limits satisfied the reporting limit requirements for the SPLP analysis.

7.2 Accuracy

Accuracy is defined as the degree of agreement of a measurement to an accepted reference or true value. Accuracy was measured as the percent recovery (%R) of an analyte in a reference standard or spiked sample.

All laboratory control samples and all calibration standards and were within acceptance limits demonstrating acceptable overall accuracy of the analytical system.

With the exceptions described in Section 5, all matrix spike recoveries were within the acceptance limits.

7.3 Precision

Precision is defined as the agreement between a set of replicate measurements without assumption or knowledge of the true value. Precision of laboratory measurements was evaluated by the comparison of sample/sample duplicate results.

With two exceptions, all of the laboratory duplicate results satisfied the applicable evaluation criteria. Therefore, the overall level of precision demonstrated by the analyses is considered to be acceptable

Precision of field sampling and laboratory analysis was evaluated by the comparison of field duplicate sample results. The agreement shown by the field duplicate results is indicative of an acceptable level of overall sampling and analysis precision.

7.4 Completeness

All of the results are considered usable as qualified. As such, the analytical completeness for the supplemental sampling, defined as the ratio of the number of valid analytical results (valid analytical results include estimated values) to the total number of analytical results requested on samples submitted for analysis, is greater than 100% which satisfies the QAP requirement of 80%. All valid results are considered acceptable for use in meeting project objectives.

7.5 Representativeness

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness was maintained during sampling efforts by completing sampling in compliance with the FSP, and relevant SOPs.

Consistent, uniform sample collection protocols, including such tasks as storage, preservation and transportation, were used to assure that the representativeness of the samples gathered during the AOC met project objectives. Proper documentation in the field and laboratory verified that protocols were followed and that sample identification as well as integrity was preserved.

7.6 Comparability

Comparability expresses the confidence with which one data set can be compared to another. Comparability can be related to accuracy and precision because these quantities are measures of data reliability. Data are comparable if collection techniques, measurement procedures, method, and reporting limits are equivalent for the samples within a sample set. As the samples in this set were analyzed in accordance with the quality assurance and quality control measures prescribed in the

QAP, and acceptable levels of overall accuracy and precision were attained, the data within this set are considered to be comparable to each other.

APPENDIX A

DATA REPORTING FORMS

4

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: U03-ER001
Sample Collected: 9/18/07 14:10
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608479

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.16 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.16	%		H60#24	11/20/07

J HT-I

TOM ANALYZED PAST HOLDING TIME
Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
ORO

5

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: U03-ER004
Sample Collected: 9/19/07 12:30
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608480
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.10 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.12	%		H60#24	11/20/07

J HT-I

TOM ANALYZED PAST HOLDING TIME
Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
DKO

6

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: U03-ER005
Sample Collected: 9/20/07 15:35
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608481

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.33 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.06	%		H60#24	11/20/07

J HT-I

Reviewed By: Kelly Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07

7

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: BFD
Sample Collected: 9/20/07
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608482

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.36 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.10	%		H60#24	11/20/07

J HT-I

Reviewed By: Kristy Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07

8

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: U03-ER002
Sample Collected: 9/18/07 16:30
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608483
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.68 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.08	%		H60#24	11/20/07

J HT-I

TOM ANALYZED PAST HOLDING TIME
Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
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9

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: U03-ER006
Sample Collected: 9/20/07 15:20
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608484
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.39 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.09	%		H60#24	11/20/07

J HT-I

Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
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10

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: U02
CLIENT SAMPLE ID: ~~U03~~-ER011
Sample Collected: 9/18/07 11:45
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608485
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.77 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.11	%		H60#24	11/20/07

J HT-I

TOM ANALYZED PAST HOLDING TIME
Reviewed By: Kelly Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
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11

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: U02-ER005
Sample Collected: 9/17/07 16:55
Sample Receipt : 9/25/07
Date of Report : 11/21/07

SVL JOB: 131857
SAMPLE: 608486
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.65 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.36	%		H60#24	11/20/07

J HT I

TOM ANALYZED PAST HOLDING TIME
Reviewed By: Kelly Gray Date 11/21/07
11/21/07 8:16

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
DLO

4A

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: LWWCR.RANCHERSPOND
Sample Collected: 9/05/07 15:00
Sample Receipt : 9/10/07
Date of Report : 10/15/07

SVL JOB: 131354
SAMPLE: 599850
TOT/DIS
Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	404	mg/L		2540C	9/13/07
T	TSS	9	mg/L		2540D	9/13/07

Filtered fraction: 599851
Tests:CHINO-AOC TBL 1

Reviewed By: Kirby Gray Date 10/19/07
10/19/07 12:11

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

1/23/08

5R

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W599851(DIS

Lab Name: SVL_ANALYTICAL_INC._____ Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131354_____
Matrix (soil/water): WATER Lab Sample ID: W599851
Level (low/med): LOW__ Date Received: 09/10/07
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum__	11.0	U		P_	UJ CCB,PB-L
7440-36-0	Antimony__	3.4	U		P_	
7440-38-2	Arsenic___	6.9	B		P_	
7440-39-3	Barium____	27.6			P_	
7440-43-9	Cadmium___	0.07	B		PM	u CCB-H
7440-70-2	Calcium___				NR	
7440-47-3	Chromium__	0.40	U		P_	
7440-48-4	Cobalt____	0.97	B		P_	u CCB,PB-H
7440-50-8_	Copper____	24.4			PM	
7439-89-6_	Iron_____	16.2	B		P_	
7439-92-1_	Lead_____	0.03	U		PM	
7439-95-4_	Magnesium_				NR	
7439-96-5_	Manganese_	37.3			P_	
7439-97-6_	Mercury___	0.10	U		CV	
7440-02-0_	Nickel____	4.8	B		P_	u PB,CCB-H
7782-49-2_	Selenium__	1.3		N	PM	J MS-H
7440-22-4_	Silver____	0.02	U		PM	
7440-28-0_	Thallium__	0.03	B		PM	
7440-62-2_	Vanadium__	0.50	U		P_	
7440-66-6_	Zinc_____	0.70	U		P_	
7440-74-8_	Boron_____	26.5	B		P_	~~J PB-L~~
7439-98-7_	Molybdenum	7.9	B		P_	J PB-L
7440-23-5_	Hardness__				NR	

Color Before: COLORLESS Clarity Before: CLERAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
CLIENT_ID:_LWWCR_RANCHERS_POND_(DISSOLVED_METALS)

FORM I - IN

1/23/08

U.S. EPA - CLP

4R

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W599850

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131354
Matrix (soil/water): WATER Lab Sample ID: W599850
Level (low/med): LOW Date Received: 09/10/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	159			P	
7440-36-0	Antimony	3.4	U		P	
7440-38-2	Arsenic	4.6	U		P	
7440-39-3	Barium	31.5			P	
7440-43-9	Cadmium	0.10	B		PM	u CCB-H
7440-70-2	Calcium	72700		N	P	
7440-47-3	Chromium	0.40	U		P	
7440-48-4	Cobalt	1.2	B		P	u CCB,PB-H
7440-50-8	Copper	39.1			PM	
7439-89-6	Iron	209			P	
7439-92-1	Lead	0.43	B		PM	
7439-95-4	Magnesium	11400		N	P	
7439-96-5	Manganese	188			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	3.0	B		P	u PB,CCB-H
7782-49-2	Selenium	1.1	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	0.50	U		P	uJ CCB-L
7440-66-6	Zinc	2.3	B		P	
7440-74-8	Boron	28.6	B		P	
7439-98-7	Molybdenum	9.3			P	J PB-L
7440-23-5	Hardness	228000			P	

Color Before: COLORLESS Clarity Before: CLERAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID: LWWCR_RANCHERS_POND
HARDNESS_BY_CALCULATION

FORM I - IN

1/23/08 JRO

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599854

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599854
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6500			P	
7440-36-0	Antimony	0.15	B	N	PM	J ms-L
7440-38-2	Arsenic	7.9			P	
7440-43-9	Cadmium	4.6			P	
7440-70-2	Calcium	7940		N	P	J ms-L
7440-50-8	Copper	549			P	
7439-89-6	Iron	48900			P	
7439-92-1	Lead	312		N	P	J ms-L
7439-97-6	Mercury	0.02	B		CV	
7440-02-0	Nickel	3.6			P	PB, ms-I
7782-49-2	Selenium	0.65	B	N	PM	U ~~MB-I~~
7440-62-2	Vanadium	30.2			P	
7440-66-6	Zinc	1930			P	
7440-74-8	Boron	6.7			P	
7439-98-7	Molybdenum	8.1			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT ID: U02-ER001
PERCENT SOLIDS NOT APPLICABLE.
SAMPLES SIEVED <2000 UM

12/17/07 [illegible]

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599855

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599855
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5120			P	
7440-36-0	Antimony	0.30	B	N	PM	J ms-L
7440-38-2	Arsenic	8.7			P	
7440-43-9	Cadmium	5.5			P	
7440-70-2	Calcium	9040		N	P	J ms-L
7440-50-8	Copper	618			P	
7439-89-6	Iron	60900			P	
7439-92-1	Lead	297		N	P	J ms-L
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	5.6			P	
7782-49-2	Selenium	0.83	B	N	PM	u PB, ~~MS~~-I
7440-62-2	Vanadium	32.1			P	
7440-66-6	Zinc	2510			P	
7440-74-8	Boron	8.9			P	
7439-98-7	Molybdenum	9.2			P	

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: U02-ER002 12/17/07 DRO
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599856

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599856
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7220			P	
7440-36-0	Antimony	0.18	B	N	PM	J MS-L
7440-38-2	Arsenic	10.2			P	
7440-43-9	Cadmium	6.0			P	
7440-70-2	Calcium	8950		N	P	J MS-L
7440-50-8	Copper	449			P	
7439-89-6	Iron	45000			P	
7439-92-1	Lead	458		N	P	J MS-L
7439-97-6	Mercury	0.03	B		CV	
7440-02-0	Nickel	3.7			P	
7782-49-2	Selenium	0.68	B	N	PM	U PB, MS-I
7440-62-2	Vanadium	28.1			P	
7440-66-6	Zinc	2500			P	
7440-74-8	Boron	7.6			P	
7439-98-7	Molybdenum	5.7			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID: U02-ER003
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

12-17-07

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599857

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599857
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5400			P	
7440-36-0	Antimony	0.17	B	N	PM	J MS-L
7440-38-2	Arsenic	8.8			P	
7440-43-9	Cadmium	4.7			P	
7440-70-2	Calcium	12200		N	P	J MS-L
7440-50-8	Copper	438			P	
7439-89-6	Iron	48400			P	
7439-92-1	Lead	571		N	P	J MS-L
7439-97-6	Mercury	0.02	B		CV	
7440-02-0	Nickel	3.5			P	
7782-49-2	Selenium	0.70	B	N	PM	u PB, MS-I
7440-62-2	Vanadium	26.7			P	
7440-66-6	Zinc	2040			P	
7440-74-8	Boron	7.9			P	
7439-98-7	Molybdenum	8.1			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID: U02-ER004
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

12/17/07

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599858

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599858
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4990			P	
7440-36-0	Antimony	0.06	U	N	PM	UJ MS-L
7440-38-2	Arsenic	10.0			P	
7440-43-9	Cadmium	1.1			P	J ICS-AH
7440-70-2	Calcium	7470		N	P	J MS-L
7440-50-8	Copper	371			P	
7439-89-6	Iron	55000			P	
7439-92-1	Lead	312		N	P	J MS-L
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	2.2			P	
7782-49-2	Selenium	0.63	B	N	PM	U PB, MS-I
7440-62-2	Vanadium	29.7			P	
7440-66-6	Zinc	846			P	
7440-74-8	Boron	7.0			P	
7439-98-7	Molybdenum	9.4			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID: BFD
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

12-17-07 [illegible]

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599859

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599859
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4630			P	
7440-36-0	Antimony	0.20	B	N	PM	J MS-L
7440-38-2	Arsenic	3.8			P	
7440-43-9	Cadmium	3.0			P	
7440-70-2	Calcium	12600		N	P	J MS-L
7440-50-8	Copper	441			P	
7439-89-6	Iron	42100			P	
7439-92-1	Lead	89.3		N	P	J MS-L
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	3.9			P	
7782-49-2	Selenium	0.34	B	N	PM	U PB; MS-I
7440-62-2	Vanadium	36.4			P	
7440-66-6	Zinc	1360			P	
7440-74-8	Boron	6.7			P	
7439-98-7	Molybdenum	7.9			P	

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: UO2-ER006
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

12/17/07 [illegible]

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599860

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599860
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4730			P	
7440-36-0	Antimony	0.16	B	N	PM	J MS-L
7440-38-2	Arsenic	4.1			P	
7440-43-9	Cadmium	2.9			P	
7440-70-2	Calcium	12700		N	P	J MS-L
7440-50-8	Copper	463			P	
7439-89-6	Iron	40700			P	
7439-92-1	Lead	126		N	P	J MS-L
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	4.5			P	
7782-49-2	Selenium	0.24	B	N	PM	u PB, MS-I
7440-62-2	Vanadium	33.6			P	
7440-66-6	Zinc	1220			P	
7440-74-8	Boron	6.7			P	
7439-98-7	Molybdenum	9.1			P	

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: UO2-ER007
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599861

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599861
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5000			P	
7440-36-0	Antimony	0.12	B	N	PM	J MS-L
7440-38-2	Arsenic	4.5			P	
7440-43-9	Cadmium	3.0			P	
7440-70-2	Calcium	15200		N	P	J MS-L
7440-50-8	Copper	585			P	
7439-89-6	Iron	38000			P	
7439-92-1	Lead	165		N	P	J MS-L
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	5.3			P	
7782-49-2	Selenium	0.54	B	N	PM	U PB, MS-L
7440-62-2	Vanadium	27.7			P	
7440-66-6	Zinc	1460			P	
7440-74-8	Boron	7.3			P	
7439-98-7	Molybdenum	9.2			P	

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: UO2-ER009
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

12/17/07

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S599862

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131355
Matrix (soil/water): SOIL Lab Sample ID: S599862
Level (low/med): LOW Date Received: 09/10/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4850			P	
7440-36-0	Antimony	0.15	B	N	PM	J MS-L
7440-38-2	Arsenic	10			P	
7440-43-9	Cadmium	1.4			P	
7440-70-2	Calcium	7220		N	P	J MS-L
7440-50-8	Copper	423			P	
7439-89-6	Iron	53800			P	
7439-92-1	Lead	317		N	P	J MS-L
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	4.1			P	
7782-49-2	Selenium	0.55	B	N	PM	U PB, MS-I
7440-62-2	Vanadium	30.1			P	
7440-66-6	Zinc	886			P	
7440-74-8	Boron	6.1			P	
7439-98-7	Molybdenum	9.3			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

12/17/07 [illegible]

Comments:
CLIENT_ID: UO2-ER010
PERCENT_SOLIDS_NOT_APPLICABLE.
SAMPLES_SIEVED_<2000_UM

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SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: BAYARD CANYON U/S
Sample Collected: 9/19/07 18:25
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602365
TOT/DIS
Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	352	mg/L		2540C	9/25/07
T	TSS	<5	mg/L		2540D	9/25/07

Filtered fraction: 602373

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
DRO

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SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: BAYARD CANYON MID
Sample Collected: 9/19/07 17:45
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602366
TOT/DIS
Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	286	mg/L		2540C	9/25/07
T	TSS	<5	mg/L		2540D	9/25/07

Filtered fraction: 602374

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
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SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: BAYARD CANYON D/S
Sample Collected: 9/19/07 17:15
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602367
TOT/DIS

Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	305	mg/L		2540C	9/25/07
T	TSS	<5	mg/L		2540D	9/25/07

Filtered fraction: 602375

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
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7

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: BAYARD/LB CONF2
Sample Collected: 9/19/07 16:00
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602368
TOT/DIS
Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	353	mg/L		2540C	9/25/07
T	TSS	<5	mg/L		2540D	9/25/07

Filtered fraction: 602376

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
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8

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: BAYARD/LB CON
Sample Collected: 9/19/07 15:50
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602369
TOT/DIS
Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	352	mg/L		2540C	9/25/07
T	TSS	<5	mg/L		2540D	9/25/07

Filtered fraction: 602377

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
DO

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: LUCKY BILL MOUTH
Sample Collected: 9/19/07 15:15
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602370
TOT/DIS
Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	365	mg/L		2540C	9/25/07
T	TSS	<5	mg/L		2540D	9/25/07

Filtered fraction: 602378

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
020

10

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: LUCKY BILL AT NO.5
Sample Collected: 9/19/07 14:45
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602371
TOT/DIS
Matrix: WATERS

	Determination	Result	Units	Dilution	Method	Analyzed
T	TDS	330	mg/L		2540C	9/25/07
T	TSS	<5	mg/L		2540D	9/25/07

Filtered fraction: 602379

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
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11

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT:
CLIENT SAMPLE ID: LUCKY BILL U/S NO.5
Sample Collected: 9/19/07 14:15
Sample Receipt : 9/24/07
Date of Report : 10/27/07

SVL JOB: 131511
SAMPLE: 602372
Matrix: WATERS

Determination	Result	Units	Dilution	Method	Analyzed
TDS	283	mg/L		2540C	9/25/07
TSS	<5	mg/L		2540D	9/25/07

Reviewed By: Kirby Gray Date 10/29/07
10/27/07 14:45

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/20/07
DRO

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

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CLIENT SAMPLE NO.

W602365

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602365
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.8	B		P	J PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	12.7	B		P	
7440-39-3	Barium	54.0			P	
7440-43-9	Cadmium	4.8	B		PM	
7440-70-2	Calcium	51900			P	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	38.4			PM	
7439-89-6	Iron	9.4	B		P	J PB,D-L
7439-92-1	Lead	4.9	B		PM	
7439-95-4	Magnesium	12100			P	
7439-96-5	Manganese	3.6	B		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.55	B		PM	
7440-22-4	Silver	0.07	B		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	2.5	B		P	
7440-66-6	Zinc	418			P	
7440-74-8	Boron	18.6	B		P	
7439-98-7	Molybdenum	16.0			P	
7440-23-5	Hardness	179000			P	

12/20/07

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID: BAYARD_CANYON_U/S
HARDNESS_BY_CALCULATION

12/20/07

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.
W602373(DIS

Lab Name: SVL_ANALYTICAL_INC._____ Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511_____
Matrix (soil/water): WATER Lab Sample ID: W602373
Level (low/med): LOW__ Date Received: 09/21/07
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ CCB,PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	16.4	B		P	
7440-39-3	Barium	57.2			P	
7440-43-9	Cadmium	4.4	B		PM	
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	30.5			PM	
7439-89-6	Iron	7.6	U		P	UJ PB-L
7439-92-1	Lead	3.7	B		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	3.2	B		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.71	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	2.4	B		P	
7440-66-6	Zinc	374			P	
7440-74-8	Boron	16.7	B		P	
7439-98-7	Molybdenum	13.7			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID:_BAYARD_CANYON_U/S_(DISSOLVED_METALS) 12-20-07 DKO

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602366

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602366
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	16.0	B		P	J PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	9.8	B		P	
7440-39-3	Barium	66.6			P	
7440-43-9	Cadmium	3.0	B		PM	
7440-70-2	Calcium	40900			P	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	31.0			PM	
7439-89-6	Iron	10.9	B		P	J PB,D-L
7439-92-1	Lead	4.7	B		PM	
7439-95-4	Magnesium	9830			P	
7439-96-5	Manganese	19.8			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.45	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	2.2	B		P	
7440-66-6	Zinc	328			P	
7440-74-8	Boron	28.9	B		P	
7439-98-7	Molybdenum	14.7			P	
7440-23-5	Hardness	143000			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT_ID: BAYARD_CANYON_MID 12/20/07
HARDNESS_BY_CALCULATION

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602374(DIS

Lab Name: SVL ANALYTICAL INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602374
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	14.1	B		P	
7440-39-3	Barium	67.5			P	
7440-43-9	Cadmium	3.3	B		PM	
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	28.0			PM	
7439-89-6	Iron	7.6	U		P	UJ PB-L
7439-92-1	Lead	3.2	B		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	20.1			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.66	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.9	B		P	
7440-66-6	Zinc	354			P	
7440-74-8	Boron	31.3	B		P	
7439-98-7	Molybdenum	13.8			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: BAYARD CANYON MID (DISSOLVED METALS) 12/20/07

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602367

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602367
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	14.3	B		P	
7440-39-3	Barium	77.5			P	
7440-43-9	Cadmium	2.6	B		PM	
7440-70-2	Calcium	44000			P	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	33.3			PM	
7439-89-6	Iron	242			P	J D-I
7439-92-1	Lead	3.7	B		PM	
7439-95-4	Magnesium	10900			P	
7439-96-5	Manganese	14.7			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.66	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	2.2	B		P	
7440-66-6	Zinc	281			P	
7440-74-8	Boron	28.0	B		P	
7439-98-7	Molybdenum	13.7			P	
7440-23-5	Hardness	155000			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

12/20/07 DKO

Comments:
CLIENT_ID: BAYARD_CANYON_D/S
HARDNESS_BY_CALCULATION

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602375(DIS

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602375
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ CLB, PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	14.4	B		P	
7440-39-3	Barium	76.0			P	
7440-43-9	Cadmium	2.7	B		PM	
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	29.9			PM	
7439-89-6	Iron	7.6	U		P	UJ PB-L
7439-92-1	Lead	2.0	B		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	11.2			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.5	B		P	U PB-H
7782-49-2	Selenium	0.72	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	2.2	B		P	
7440-66-6	Zinc	278			P	
7440-74-8	Boron	26.5	B		P	
7439-98-7	Molybdenum	13.9			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: Clarity After: Artifacts:

Comments:
CLIENT_ID: BAYARD_CANYON_D/S_(DISSOLVED_METALS)

12/20/07 JES

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602368

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602368
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	W CCB,PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	9.6	B		P	
7440-39-3	Barium	74.6			P	
7440-43-9	Cadmium	0.37	B		PM	
7440-70-2	Calcium	48600			P	
7440-47-3	Chromium	1.3	U		P	W PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	6.0	B		PM	
7439-89-6	Iron	7.6	U		P	W PB,D-L
7439-92-1	Lead	2.7	B		PM	
7439-95-4	Magnesium	12900			P	
7439-96-5	Manganese	60.3			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.42	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.5	B		P	
7440-66-6	Zinc	140			P	
7440-74-8	Boron	16.0	B		P	
7439-98-7	Molybdenum	13.0			P	
7440-23-5	Hardness	175000			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT_ID: BAYARD/LB_CONF2
HARDNESS_BY_CALCULATION

12/20/07 DKO

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602376(DIS

Lab Name: SVL ANALYTICAL INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602376
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ CCB,PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	15.4	B		P	
7440-39-3	Barium	75.0			P	
7440-43-9	Cadmium	0.32	B		PM	
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	4.3	B		PM	
7439-89-6	Iron	7.6	U		P	UJ PB-L
7439-92-1	Lead	1.7	B		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	59.2			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.60	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.8	B		P	
7440-66-6	Zinc	143			P	
7440-74-8	Boron	16.5	B		P	
7439-98-7	Molybdenum	13.8			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: BAYARD/LB_CONF2 (DISSOLVED METALS) 12/20/07

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602369

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602369
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	12.6	B		P	
7440-39-3	Barium	76.2			P	
7440-43-9	Cadmium	0.44	B		PM	
7440-70-2	Calcium	48000			P	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	~~UJ PB-L~~
7440-50-8	Copper	6.1	B		PM	
7439-89-6	Iron	19.7	B		P	J PB,D-L
7439-92-1	Lead	2.5	B		PM	
7439-95-4	Magnesium	12800			P	
7439-96-5	Manganese	61.8			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.36	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.8	B		P	
7440-66-6	Zinc	145			P	
7440-74-8	Boron	20.2	B		P	
7439-98-7	Molybdenum	13.3			P	
7440-23-5	Hardness	172000			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT_ID: BAYARD/LB_CON 12/20/07
HARDNESS_BY_CALCULATION

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602377(DIS

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602377
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ CCB,PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	13.4	B		P	
7440-39-3	Barium	75.9			P	
7440-43-9	Cadmium	0.42	B		PM	
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	4.4	B		PM	
7439-89-6	Iron	7.6	U		P	UJ PB-L
7439-92-1	Lead	1.7	B		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	59.5			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.58	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.6	B		P	
7440-66-6	Zinc	144			P	
7440-74-8	Boron	16.5	B		P	
7439-98-7	Molybdenum	12.7			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: Clarity After: Artifacts:

Comments:
CLIENT_ID: BAYARD/LB_CON (DISSOLVED_METALS)

12/20/07

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602370

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602370
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	12.0	B		P	
7440-39-3	Barium	67.1			P	
7440-43-9	Cadmium	0.09	B		PM	U CCB-H
7440-70-2	Calcium	49500			P	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	4.1	B		PM	
7439-89-6	Iron	74.4			P	J D-I
7439-92-1	Lead	0.31	B		PM	
7439-95-4	Magnesium	13800			P	
7439-96-5	Manganese	59.6			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.45	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.4	B		P	
7440-66-6	Zinc	17.2			P	
7440-74-8	Boron	14.7	B		P	
7439-98-7	Molybdenum	13.7			P	
7440-23-5	Hardness	180000			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID: LUCKY_BILL_MOUTH
HARDNESS_BY_CALCULATION

12/20/07 SEO

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602378(DIS

Lab Name: SVL ANALYTICAL INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602378
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ CCB,PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	14.8	B		P	
7440-39-3	Barium	66.7			P	
7440-43-9	Cadmium	0.07	B		PM	u CCB-I
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	2.0	B		PM	UJ PB-L
7439-89-6	Iron	14.5	B		P	J PB-L
7439-92-1	Lead	0.08	U		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	54.7			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.63	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.4	B		P	
7440-66-6	Zinc	15.2			P	
7440-74-8	Boron	14.8	B		P	
7439-98-7	Molybdenum	13.0			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

12/20/07 JLO

Comments:
CLIENT_ID: LUCKY_BILL_MOUTH_(DISSOLVED_METALS)

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602371

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602371
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	9.7	B		P	
7440-39-3	Barium	56.7			P	
7440-43-9	Cadmium	0.20	B		PM	
7440-70-2	Calcium	43500			P	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	5.3	B		PM	
7439-89-6	Iron	46.9	B		P	J D-I
7439-92-1	Lead	0.41	B		PM	
7439-95-4	Magnesium	11900			P	
7439-96-5	Manganese	98.3			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.34	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.3	B		P	
7440-66-6	Zinc	90.2			P	
7440-74-8	Boron	19.9	B		P	
7439-98-7	Molybdenum	12.4			P	
7440-23-5	Hardness	158000			P	

12/20/07 DRO

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT_ID: LUCKY_BILL_AT_NO.5
HARDNESS_BY_CALCULATION

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602379(DIS

Lab Name: SVL_ANALYTICAL_INC._____ Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511_____
Matrix (soil/water): WATER Lab Sample ID: W602379
Level (low/med): LOW__ Date Received: 09/21/07
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ CCB,PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	13.1	B		P	
7440-39-3	Barium	57.0			P	
7440-43-9	Cadmium	0.19	B		PM	
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	3.4	B		PM	
7439-89-6	Iron	7.6	U		P	UJ PB-L
7439-92-1	Lead	0.08	U		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	91.7			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.61	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.3	B		P	
7440-66-6	Zinc	89.2			P	
7440-74-8	Boron	17.5	B		P	
7439-98-7	Molybdenum	10.9			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID:_LUCKY_BILL_AT_NO.5_(DISSOLVED_METALS)

12/20/07 [illegible]

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602372

Lab Name: SVL ANALYTICAL INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602372
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	19.7	B		P	J PB,CCB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	8.8	U		P	
7440-39-3	Barium	57.8			P	
7440-43-9	Cadmium	0.05	U		PM	
7440-70-2	Calcium	33400			P	
7440-47-3	Chromium	1.3	U		P	US PB-L std
7440-48-4	Cobalt	1.3	U		P	~~US PB-L~~
7440-50-8	Copper	4.8	B		PM	
7439-89-6	Iron	174			P	J D-I
7439-92-1	Lead	0.11	B		PM	
7439-95-4	Magnesium	10300			P	
7439-96-5	Manganese	116			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.43	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.4	B		P	
7440-66-6	Zinc	4.0	B		P	
7440-74-8	Boron	20.3	B		P	
7439-98-7	Molybdenum	10.9			P	
7440-23-5	Hardness	126000			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
CLIENT_ID: LUCKY_BILL_U/S_NO.5 12/26 107 080
HARDNESS_BY_CALCULATION

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

W602380(DIS

Lab Name: SVL ANALYTICAL INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131511
Matrix (soil/water): WATER Lab Sample ID: W602380
Level (low/med): LOW Date Received: 09/21/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	UJ CCB, PB-L
7440-36-0	Antimony	2.0	U		P	
7440-38-2	Arsenic	11.9	B		P	
7440-39-3	Barium	56.1			P	
7440-43-9	Cadmium	0.05	U		PM	
7440-70-2	Calcium				NR	
7440-47-3	Chromium	1.3	U		P	UJ PB-L
7440-48-4	Cobalt	1.3	U		P	
7440-50-8	Copper	2.1	B		PM	J CC PB-L
7439-89-6	Iron	43.0	B		P	J ~~PB-L~~ PB-L
7439-92-1	Lead	0.08	U		PM	
7439-95-4	Magnesium				NR	
7439-96-5	Manganese	105			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	
7782-49-2	Selenium	0.63	B		PM	
7440-22-4	Silver	0.05	U		PM	
7440-28-0	Thallium	0.05	U		PM	
7440-62-2	Vanadium	1.4	B		P	
7440-66-6	Zinc	3.0	U		P	
7440-74-8	Boron	16.6	B		P	
7439-98-7	Molybdenum	10.9			P	
7440-23-5	Hardness				NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

12/20/07 [illegible]

Comments:
CLIENT_ID: LUCKY_BILL_U/S_NO.5 (DISSOLVED_METALS)

U.S. EPA - CLP

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1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602528

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602528
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5920			P	
7440-36-0	Antimony	0.25	B		PM	U PB-H
7440-38-2	Arsenic	2.0	B	N	PM	J MS-L
7440-43-9	Cadmium	2.9		*	PM	
7440-70-2	Calcium	5050		N*	P	J MS-L
7440-50-8	Copper	622			P	
7439-89-6	Iron	36100		*	P	
7439-92-1	Lead	682		*	P	J D-I
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	13.8			P	
7782-49-2	Selenium	0.40	B	N	PM	J MS-L
7440-62-2	Vanadium	20.2			PM	
7440-66-6	Zinc	335		N	P	J MS, PDS-I
7440-74-8	Boron	3.0	B		P	
7439-98-7	Molybdenum	7.1		N	PM	J MS-L

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: U03-ER001
ANALYZED_ON_SIEVED_PORTION
PERCENT_SOLIDS_NOT_APPLICABLE

12/20/07 [illegible]

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602529

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602529
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6410			P	
7440-36-0	Antimony	0.30	B		PM	U PB-H
7440-38-2	Arsenic	2.4	B	N	PM	J MS-L
7440-43-9	Cadmium	1.5		*	PM	
7440-70-2	Calcium	4870		N*	P	J MS-L
7440-50-8	Copper	387			P	
7439-89-6	Iron	35500		*	P	
7439-92-1	Lead	99.0		*	P	J D-I
7439-97-6	Mercury	0.02	B		CV	
7440-02-0	Nickel	15.2			P	
7782-49-2	Selenium	0.33	B	N	PM	J MS-L
7440-62-2	Vanadium	20.3			PM	
7440-66-6	Zinc	707		N	P	J MS,PDS-I
7440-74-8	Boron	2.9	B		P	
7439-98-7	Molybdenum	5.3		N	PM	J MS-L

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID: U03-ER004
ANALYZED_ON_SIEVED_PORTION
PERCENT_SOLIDS_NOT_APPLICABLE

12/20/07 [illegible]

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602530

Lab Name: SVL_ANALYTICAL_INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602530
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2940			P	
7440-36-0	Antimony	0.08	B		PM	u PB-H
7440-38-2	Arsenic	1.7	B	N	PM	J MS-L
7440-43-9	Cadmium	0.50	B	*	PM	
7440-70-2	Calcium	1680		N*	P	J MS-L
7440-50-8	Copper	111			P	
7439-89-6	Iron	8440		*	P	
7439-92-1	Lead	5.9		*	P	J D-I
7439-97-6	Mercury	0.02	U		CV	
7440-02-0	Nickel	6.2			P	
7782-49-2	Selenium	0.24	B	N	PM	UPB, MS-I
7440-62-2	Vanadium	14.7			PM	
7440-66-6	Zinc	24.2		N	P	J MS-L
7440-74-8	Boron	0.96	B		P	
7439-98-7	Molybdenum	1.0	B	N	PM	J MS-L

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID: U03-ER005
ANALYZED ON SIEVED PORTION
PERCENT_SOLIDS_NOT_APPLICABLE

12/20/07
PKO

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602531

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602531
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2830			P	
7440-36-0	Antimony	0.06	U		PM	
7440-38-2	Arsenic	1.1	B	N	PM	J MS-L
7440-43-9	Cadmium	0.27	B	*	PM	
7440-70-2	Calcium	1830		N*	P	J MS-L
7440-50-8	Copper	81.7			P	J FD-I
7439-89-6	Iron	10100		*	P	
7439-92-1	Lead	6.9		*	P	J FD-I
7439-97-6	Mercury	0.02	B		CV	
7440-02-0	Nickel	8.3			P	
7782-49-2	Selenium	0.22	B	N	PM	U PB, MS-I
7440-62-2	Vanadium	13.4			PM	
7440-66-6	Zinc	24.8		N	P	J FD MS, PDS-I
7440-74-8	Boron	0.69	B		P	
7439-98-7	Molybdenum	1.2	B	N	PM	J MS-L

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT ID: BFD
ANALYZED ON SIEVED PORTION
PERCENT SOLIDS NOT APPLICABLE

12/20/07 [illegible]

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602532

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602532
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4600			P	
7440-36-0	Antimony	0.10	B		PM	u PB - H
7440-38-2	Arsenic	1.7	B	N	PM	J MS-L
7440-43-9	Cadmium	2.4		*	PM	
7440-70-2	Calcium	8960		N*	P	J MS-L
7440-50-8	Copper	307			P	
7439-89-6	Iron	25200		*	P	
7439-92-1	Lead	134		*	P	J D-I
7439-97-6	Mercury	0.02	B		CV	
7440-02-0	Nickel	11.3			P	
7782-49-2	Selenium	0.27	B	N	PM	UJPB, MS-I
7440-62-2	Vanadium	14.4			PM	
7440-66-6	Zinc	979		N	P	J MS, PDS-I
7440-74-8	Boron	1.0	B		P	
7439-98-7	Molybdenum	2.5	B	N	PM	J MS-L

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

10/20/07

Comments:
CLIENT_ID: U03-ER002
ANALYZED_ON_SIEVED_PORTION
PERCENT_SOLIDS_NOT_APPLICABLE

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602533

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602533
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	3310			P	
7440-36-0	Antimony	0.26	B		PM	U PB-H
7440-38-2	Arsenic	1.2	B	N	PM	J MS-L
7440-43-9	Cadmium	0.26	B	*	PM	
7440-70-2	Calcium	1880		N*	P	J MS-L
7440-50-8	Copper	358			P	J FD-I
7439-89-6	Iron	11400		*	P	
7439-92-1	Lead	39.8		*	P	J FD,D-I
7439-97-6	Mercury	0.02	B		CV	
7440-02-0	Nickel	8.1			P	
7782-49-2	Selenium	0.26	B	N	PM	U PB,MS-I
7440-62-2	Vanadium	14.5			PM	
7440-66-6	Zinc	43.2		N	P	J FD,MS,PDS-I
7440-74-8	Boron	0.87	B		P	
7439-98-7	Molybdenum	1.6	B	N	PM	J MS-L

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID: U03-ER006 12/20/07
ANALYZED_ON_SIEVED_PORTION
PERCENT_SOLIDS_NOT_APPLICABLE

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602534

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602534
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	3500			P	
7440-36-0	Antimony	0.12	B		PM	u PB-H
7440-38-2	Arsenic	1.6	B	N	PM	J MS-L
7440-43-9	Cadmium	2.5		*	PM	
7440-70-2	Calcium	10500		N*	P	J MS-L
7440-50-8	Copper	249			P	
7439-89-6	Iron	29900		*	P	
7439-92-1	Lead	71.2		*	P	J D-I
7439-97-6	Mercury	0.02	B		CV	
7440-02-0	Nickel	12.2			P	
7782-49-2	Selenium	0.25	B	N	PM	u PB, MS-I
7440-62-2	Vanadium	15.5			PM	
7440-66-6	Zinc	958		N	P	J MS, PDS-I
7440-74-8	Boron	2.0	B		P	
7439-98-7	Molybdenum	3.5	B	N	PM	J MS-L

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: U02
CLIENT_ID: ~~U03~~-ER011
ANALYZED_ON_SIEVED_PORTION
PERCENT_SOLIDS_NOT_APPLICABLE

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

S602535

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131519
Matrix (soil/water): SOIL Lab Sample ID: S602535
Level (low/med): LOW Date Received: 09/25/07
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5530			P	
7440-36-0	Antimony	0.23	B		PM	U PB-H
7440-38-2	Arsenic	3.4	B	N	PM	J MS-L
7440-43-9	Cadmium	4.0		*	PM	
7440-70-2	Calcium	9830		N*	P	J MS-L
7440-50-8	Copper	544			P	
7439-89-6	Iron	41600		*	P	
7439-92-1	Lead	169		*	P	J D-I
7439-97-6	Mercury	0.06			CV	
7440-02-0	Nickel	16.1			P	
7782-49-2	Selenium	0.34	B	N	PM	J MS-L
7440-62-2	Vanadium	18.1			PM	
7440-66-6	Zinc	1680		N	P	J MS,PDS-E
7440-74-8	Boron	3.0	B		P	
7439-98-7	Molybdenum	6.0		N	PM	J MS-L

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID: U02-ER005
ANALYZED_ON_SIEVED_PORTION
PERCENT_SOLIDS_NOT_APPLICABLE

FORM I - IN

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SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: EXTRACTION FLUID
Sample Collected:
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602538
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	<1.0	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	<1.0	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	<1.0	mg CaCO3/L		2320B	10/23/07
pH	2.99 @ 19°C			4500-H	10/23/07
Chloride	<0.20	mg/L Ext		300.0	10/22/07
Ortho-Phos. as P	<0.010	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	0.32	mg/L Ext		300.0	10/22/07
DOC	0.6976	mg/L Ext		415.1	10/22/07

J HT-I

Reviewed By: Kirby Geary Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/31/07
DKO

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SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: U03-ER001
Sample Collected: 9/18/07 14:10
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602539
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	74.3	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	<1.0	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	74.3	mg CaCO3/L		2320B	10/23/07
pH	7.14 @ 20°C			4500-H	10/23/07
Chloride	0.71	mg/L Ext		300.0	10/22/07
NO2+NO3-N	0.091	mg/L Ext		353.2	11/08/07
Ortho-Phos. as P	<0.010	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	51.1	mg/L Ext	2	300.0	10/22/07
DOC	1.892	mg/L Ext		415.1	10/22/07

HT-I

Reviewed By: Kirby Gray Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/31/07
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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: U03-ER004
Sample Collected: 9/19/07 12:30
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602540
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	66.6	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	<1.0	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	66.6	mg CaCO3/L		2320B	10/23/07
pH	7.56 @ 20°C			4500-H	10/23/07 J HT-I
Chloride	1.80	mg/L Ext		300.0	10/22/07
NO2+NO3-N	0.146	mg/L Ext		353.2	11/08/07
Ortho-Phos. as P	<0.010	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	119	mg/L Ext	5	300.0	10/22/07
DOC	1.724	mg/L Ext		415.1	10/22/07

Reviewed By: Kirby Gray Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: U03-ER005
Sample Collected: 9/20/07 15:35
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602541
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	76.9	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	28.6	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	48.3	mg CaCO3/L		2320B	10/23/07
pH	9.41 @ 20°C			4500-H	10/23/07 J HT-I
Chloride	2.40	mg/L Ext		300.0	10/22/07
NO2+NO3-N	0.113	mg/L Ext		353.2	11/08/07
Ortho-Phos. as P	0.070	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	14.2	mg/L Ext		300.0	10/22/07
DOC	1.591	mg/L Ext		415.1	10/22/07

TIME ON SAMPLE LABEL READS 15:55.

Reviewed By: Kerby Gray Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/31/07
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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: BFD
Sample Collected: 9/20/07
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602542
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	67.9	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	10.0	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	57.8	mg CaCO3/L		2320B	10/23/07
pH	8.81 @ 20°C			4500-H	10/23/07 J HT-I
Chloride	1.20	mg/L Ext		300.0	10/22/07
NO2+NO3-N	0.252	mg/L Ext		353.2	11/08/07
Ortho-Phos. as P	0.130	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	15.6	mg/L Ext		300.0	10/22/07
DOC	2.966	mg/L Ext		415.1	10/22/07

Reviewed By: Kirby Gray Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/3/07 DKC

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: U03-ER002
Sample Collected: 9/18/07 16:30
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602543
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	59.7	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	<1.0	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	59.7	mg CaCO3/L		2320B	10/23/07
pH	7.82 @ 21°C			4500-H	10/23/07 J HT-I
Chloride	1.97	mg/L Ext		300.0	10/22/07
NO2+NO3-N	0.051	mg/L Ext		353.2	11/08/07
Ortho-Phos. as P	<0.010	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	37.7	mg/L Ext		300.0	10/22/07
DOC	0.8019	mg/L Ext		415.1	10/22/07

Reviewed By: Kathy Gray Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/3/07

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: U03-ER006
Sample Collected: 9/20/07 15:20
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602544
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	63.4	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	13.7	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	49.7	mg CaCO3/L		2320B	10/23/07
pH	8.99 @ 20°C			4500-H	10/23/07 J HT-I
Chloride	0.89	mg/L Ext		300.0	10/22/07
NO2+NO3-N	0.205	mg/L Ext		353.2	11/08/07
Ortho-Phos. as P	0.110	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	14.7	mg/L Ext		300.0	10/22/07
DOC	1.725	mg/L Ext		415.1	10/22/07

Reviewed By: Kirby Gray Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 07392553--06.61
CLIENT SAMPLE ID: U02-ER011
Sample Collected: 9/18/07 11:45
Sample Receipt : 9/25/07
Date of Report : 11/06/07

SVL JOB: 131520
SAMPLE: 602545
Matrix: ESOIL
Extraction: SPLP

Determination	Result	Units	Dilution	Method	Analyzed
ALKALINITY	58.5	mg CaCO3/L		2320B	10/23/07
CO3, CaCO3	<1.0	mg CaCO3/L		2320B	10/23/07
HCO3, CaCO3	58.5	mg CaCO3/L		2320B	10/23/07
pH	8.01 @ 21°C			4500-H	10/23/07
Chloride	1.98	mg/L Ext		300.0	10/22/07
NO2+NO3-N	0.070	mg/L Ext		353.2	11/08/07
Ortho-Phos. as P	0.010	mg/L Ext		4500PE	10/19/07
Sulfate, SO4	42.5	mg/L Ext		300.0	10/22/07
DOC	0.8520	mg/L Ext		415.1	10/22/07

5 HT-I

Reviewed By: Kelly Gray Date 11/13/07
11/12/07 16:56

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/3/07 OKU

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602538

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131520
Matrix (soil/water): WATER Lab Sample ID: E602538
Level (low/med): LOW Date Received: 09/24/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	
7440-36-0	Antimony	2.5	B		P	J CCB-L
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.02	U		PM	
7440-70-2	Calcium	12.4	B		P	u PB-H
7440-50-8	Copper	0.08	B		PM	
7439-89-6	Iron	69.9			P	
7439-92-1	Lead	2.1	U		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-L
7782-49-2	Selenium	0.08	U		PM	
7440-62-2	Vanadium	1.0	U		P	
7440-66-6	Zinc	3.0	U		P	
7440-74-8	Boron	7.6	U		P	UJ PB-L
7439-98-7	Molybdenum	2.1	U		P	

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
EXTRACTION FLUID 12/31/07

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1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602539

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131520
Matrix (soil/water): WATER Lab Sample ID: E602539
Level (low/med): LOW Date Received: 09/25/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	
7440-36-0	Antimony	2.7	B		P	UJ CCB, EF-I
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.03	B		PM	U ~~PB~~ CCB-H
7440-70-2	Calcium	35700			P	
7440-50-8	Copper	1.7	B		PM	
7439-89-6	Iron	7.6	U		P	
7439-92-1	Lead	2.5	B		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-L
7782-49-2	Selenium	0.30	B		PM	
7440-62-2	Vanadium	1.0	U		P	
7440-66-6	Zinc	3.0	U		P	
7440-74-8	Boron	15.6	B		P	J PB-L
7439-98-7	Molybdenum	17.2			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
SPLP EXTRACTION RATIO 5:1 12/31/07 DLO
CLIENT_ID: U03-ER001

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1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602540

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131520
Matrix (soil/water): WATER Lab Sample ID: E602540
Level (low/med): LOW Date Received: 09/25/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	
7440-36-0	Antimony	2.9	B		P	UJ CCB, EF-I
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.02	U		PM	
7440-70-2	Calcium	57600			P	
7440-50-8	Copper	0.90	B		PM	
7439-89-6	Iron	7.6	U		P	
7439-92-1	Lead	2.1	U		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-L
7782-49-2	Selenium	0.10	B		PM	
7440-62-2	Vanadium	1.0	U		P	
7440-66-6	Zinc	4.2	B		P	
7440-74-8	Boron	9.7	B		P	J PB-L
7439-98-7	Molybdenum	19.5			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
SPLP EXTRACTION RATIO 5:1 12/31/07
CLIENT ID: U03-ER004

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1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602541

Lab Name: SVL_ANALYTICAL_INC._____ Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131520_____
Matrix (soil/water): WATER Lab Sample ID: E602541
Level (low/med): LOW__ Date Received: 09/25/07
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1110			P	
7440-36-0	Antimony	2.0	U		P	UJ CCB-L
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.02	U		PM	
7440-70-2	Calcium	9260			P	
7440-50-8	Copper	5.9	B		PM	
7439-89-6	Iron	577			P	
7439-92-1	Lead	2.1	U		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-L
7782-49-2	Selenium	0.27	B		PM	
7440-62-2	Vanadium	3.1	B		P	
7440-66-6	Zinc	5.4	B		P	
7440-74-8	Boron	107			P	
7439-98-7	Molybdenum	13.0			P	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
SPLP_EXTRACTION_____RATIO_5:1_____ 12/31/07
CLIENT_ID:_U03-ER005_____

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1
INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602542

Lab Name: SVL_ANALYTICAL_INC._____ Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131520_____
Matrix (soil/water): WATER Lab Sample ID: E602542
Level (low/med): LOW__ Date Received: 09/25/07
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	218			P	
7440-36-0	Antimony	3.0	B		P	UJ CCB, EF-I
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.02	B		PM	U CCB-H
7440-70-2	Calcium	15700			P	
7440-50-8	Copper	3.1	B		PM	
7439-89-6	Iron	122			P	
7439-92-1	Lead	2.1	U		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-J
7782-49-2	Selenium	0.41	B		PM	
7440-62-2	Vanadium	2.2	B		P	
7440-66-6	Zinc	3.0	U		P	
7440-74-8	Boron	66.3			P	
7439-98-7	Molybdenum	18.4			P	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
SPLP_EXTRACTION___RATIO_5:1 12/31/07
CLIENT_ID:_BFD

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602543

Lab Name: SVL ANALYTICAL INC. Contract:
Lab Code: SILVER Case No: SAS No: SDG No: 131520
Matrix (soil/water): WATER Lab Sample ID: E602543
Level (low/med): LOW Date Received: 09/25/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	14.8	B		P	
7440-36-0	Antimony	2.2	B		P	UJ CCB, EF-I
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.03	B		PM	u CCB-H
7440-70-2	Calcium	23900			P	
7440-50-8	Copper	0.69	B		PM	
7439-89-6	Iron	7.6	U		P	
7439-92-1	Lead	2.1	U		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-L
7782-49-2	Selenium	0.09	B		PM	
7440-62-2	Vanadium	1.0	U		P	
7440-66-6	Zinc	9.0	B		P	
7440-74-8	Boron	16.2	B		P	J PB-L
7439-98-7	Molybdenum	27.5			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
SPLP EXTRACTION RATIO 5:1 12/3/07 ORO
CLIENT_ID: U03-ER002

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602544

Lab Name: SVL_ANALYTICAL_INC._____ Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131520_____
Matrix (soil/water): WATER Lab Sample ID: E602544
Level (low/med): LOW__ Date Received: 09/25/07
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	262			P	
7440-36-0	Antimony	2.0	U		P	UJ CCB-L
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.02	U		PM	
7440-70-2	Calcium	16100			P	
7440-50-8	Copper	3.2	B		PM	
7439-89-6	Iron	150			P	
7439-92-1	Lead	2.1	U		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-L
7782-49-2	Selenium	0.32	B		PM	
7440-62-2	Vanadium	2.1	B		P	
7440-66-6	Zinc	3.0	U		P	
7440-74-8	Boron	53.6			P	
7439-98-7	Molybdenum	17.6			P	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
SPLP_EXTRACTION__RATIO_5:1
CLIENT_ID:_U03-ER006

12/31/07

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE NO.

E602545

Lab Name: SVL_ANALYTICAL_INC. Contract: _____
Lab Code: SILVER Case No: _____ SAS No: _____ SDG No: 131520
Matrix (soil/water): WATER Lab Sample ID: E602545
Level (low/med): LOW Date Received: 09/25/07
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13.0	U		P	
7440-36-0	Antimony	2.0	U		P	UJ CCB-L
7440-38-2	Arsenic	8.8	U		P	
7440-43-9	Cadmium	0.02	B		PM	U CCB-H
7440-70-2	Calcium	23000			P	
7440-50-8	Copper	0.68	B		PM	
7439-89-6	Iron	7.6	U		P	
7439-92-1	Lead	2.1	U		P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.1	U		P	UJ PB-L
7782-49-2	Selenium	0.16	B		PM	
7440-62-2	Vanadium	1.0	U		P	
7440-66-6	Zinc	3.0	U		P	
7440-74-8	Boron	7.9	B		P	J PB-L
7439-98-7	Molybdenum	35.5			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
SPLP_EXTRACTION RATIO_5:1
CLIENT_ID: U02-ER011

12/31/07

FORM I - IN

ANALYTICAL, INC.
e Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

4

Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER001
Sample Collected: 9/06/07 9:20
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608458

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	6.40 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.68	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME

Reviewed By: Becky Geary Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

12/13/07 DLO

5

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER002
Sample Collected: 9/05/07 16:15
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608459
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	6.83 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.46	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME
Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER003
Sample Collected: 9/05/07 9:45
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608460
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	6.60 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	1.38	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME
Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER004
Sample Collected: 9/04/07 17:00
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608461
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	6.73 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.62	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME
Reviewed By: Becky Gray Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: BFD
Sample Collected: 9/05/07
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608462

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	6.41 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.40	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME

Reviewed By: Lisby Leary Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER006
Sample Collected: 9/05/07 12:30
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608463

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.66 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.26	%		H60#24	11/20/07

J HTI

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME

Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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10

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER007
Sample Collected: 9/05/07 13:40
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608464

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.54 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.32	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME

Reviewed By: Kelly Gray Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER009
Sample Collected: 9/05/07 14:40
Sample Receipt : 9/05/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608465
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	7.61 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.41	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME
Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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Certificate: ID ID00019

CLIENT : Phelps Dodge - Chino Mines
PROJECT: 073-92553-06610
CLIENT SAMPLE ID: U02-ER010
Sample Collected: 9/05/07 10:30
Sample Receipt : 9/10/07
Date of Report : 11/21/07

SVL JOB: 131855
SAMPLE: 608466

Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
pH Paste	6.40 @ 25°C			ASA M9	11/16/07
TOTAL ORG MATTER	0.39	%		H60#24	11/20/07

J HT-I

TOM ANALYSIS REQUESTED AND ANALYZED PAST HOLDING TIME

Reviewed By: Kirby Gray Date 11/21/07
11/21/07 8:32

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

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APPENDIX C

DATA QUALITY ASSESSMENT REPORT (URS WORK PRODUCT)

Final Report

DATA QUALITY ASSESSMENT REPORT FOR HANOVER WHITEWATER CREEK – NEWFIELDS DATA

Prepared for
Chino Mines Company
Hurley, New Mexico

January 21, 2008

URS

URS Corporation
8181 East Tufts Avenue
Denver, Colorado 80237

Project No. 22239973 Task 00001

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1. INTRODUCTION

This Data Quality Assessment Report (DQAR) is the written record of the reconciliation of the analytical data quality with the end use of the data and specific project objectives. The data were generated and reviewed in accordance with the approved Quality Assurance Plan (QAP) prepared by Chino Mines Company and Steffen, Robertson and Kirsten (U.S.), Inc. (March 1997).

The samples were collected in August and September 2007. All samples were sent to SVL Analytical (SVL) in Kellogg, Idaho and were analyzed in accordance with the Contract Laboratory Program (CLP) Statement of Work for the analytes requested on the Chain of Custody (COC) documentation. These samples are listed in Table 1-1. The summer rainfall pool samples were analyzed for total and dissolved metals, total dissolved solids, total suspended solids, and hardness (calculated). The sediment samples were analyzed for total metals, paste pH, total organic matter (TOM), and Synthetic Precipitation Leaching Procedure (SPLP) for dissolved metals, dissolved organic carbon (DOC), and general chemistry parameters (alkalinity, pH, chloride, orthophosphate as P, sulfate, nitrate/nitrite).

TABLE 1-1

SEDIMENT AND SUMMER RAINFALL POOL SAMPLES COLLECTED

Data Package	Field Sample Identification	QC Designation
Sediment 131855 (TOM and paste pH) 131355 (Total Metals)	U02-ER001	MS/MSD – TOM MS/MSD/PDS/SD - Metals
	U02-ER002	
	U02-ER003	
	U02-ER004	
	BFD	FD to sample U02-ER010
	U02-ER006	
	U02-ER007	
	U02-ER009	
	U02-ER010	
Sediment 131857 (TOM and paste pH) 131519 (Total Metals)	U03-ER001	MS/MSD – TOM, Metals
	U03-ER004	
	U03-ER005	
	BFD	FD to sample U03-ER006
	U03-ER002	
	U03-ER006	
	U02-ER011	
	U02-ER005	
Summer Rainfall Pools 131511 (Total and Dissolved Metals, TDS, TSS)	BAYARD CANYON U/S	MS/MSD – Metals MD – TDS/TSS MD
	BAYARD CANYON MID	
	BAYARD CANYON D/S	
	BAYARD/LB CONF2	
	BAYARD/LB CON	
	LUCKY BILL MOUTH	
	LUCKY BILL AT NO. 5	
	LUCKY BILL U/S NO. 5	
Summer Rainfall Pools 131354 (Total and Dissolved Metals, TDS, TSS)	LWWCR RANCHERS POND	
	LWWCR RANCHERS POND (dissolved metals)	

TABLE 1-1

SEDIMENT AND SUMMER RAINFALL POOL SAMPLES COLLECTED

Data Package	Field Sample Identification	QC Designation
Sediment 131520 (SPLP Extraction)	EXTRACTION FLUID	
	U03-ER001	MS/MSD – Metals, General Chemistry
	U03-ER004	
	U03-ER005	
	BFD	FD to sample U03-ER006
	U03-ER002	
	U03-ER006	
	U02-ER011	

TOM – Total Organic Matter TDS – Total Dissolved Solids TSS – Total Suspended Solids
SPLP – Synthetic Precipitation Leaching Procedure QC – quality control PDS – Post Digestion Spike
MS/MSD – Matrix Spike/Matrix Spike Duplicate MD – Method Duplicate SD – Serial Dilution
General Chemistry Parameters include the following alkalinity, pH, chloride, orthophosphate as P, sulfate, nitrate/nitrite, and dissolved organic carbon.

The data were generated and reviewed in accordance with the approved Administrative Order on Consent Quality Assurance Plan (QAP). The data were evaluated against the quantitative acceptance limits prescribed by the QAP for the data quality assurance parameters of reporting limits (RLs) (QAP-specified RLs were superseded by FSP required RLs), accuracy, precision, and completeness. The data were also evaluated for fulfillment of the qualitative data quality assurance parameters of representative and comparability as defined in the QAP.

The data validation results are presented in the Data Validation Report for Hanover Whitewater Creek – Newfields Data (URS, January 2008). The data validation report, on which this DQAR is based, contains a detailed narrative in which all results that did not satisfy the data quality assurance objectives in the QAP and the subsequent data qualification issued, if any, are described.

The DQAR is organized as follows and includes the required elements listed in Section 15 of the QAP. Section 2.0 provides a detailed discussion of the usability of the data relative to the intended end uses (project objectives). In order to facilitate this discussion, the project objectives and decision criteria are also summarized in this section. Section 3.0 provides recommendations for usability in potential additional data uses and limitations in data uses. Section 4.0 provides a brief summary of the results obtained for the data quality assurance objectives. Section 5.0 discusses corrective actions implemented and deviations from the Field Sampling Plan. Section 6.0 provides a summary of all instances where the data were considered inadequate for use in satisfying project objectives (DQOs) and the significance of the problems, if any. Conclusions are presented in Section 7.0.

2. DATA USABILITY RELATIVE TO PROJECT OBJECTIVES

The usability of the sample data relative to the intended end uses is discussed in this section. The purpose of the sampling event was to provide data for ecological evaluation under the Hanover/Whitewater Creeks Investigation Units. The objective of the sediment sampling was to provide (1) concentrations of total metals in overbanks, vegetated bars, and the active channel for use in the ecological risk assessment and comparison to screening criteria, and (2) concentrations of leachable metals and other constituents in the active channel for evaluation of solubility and mobility. The objective of the summer rainfall pool sampling was to provide total and dissolved concentrations of metals and other constituents for use in the ecological risk assessment and comparison to standards.

Sediment Samples

Objective: Comparison of total metals concentrations in sediment to Ecological Soil Screening Levels.

Decision: Do concentrations of constituents exceed decision criteria?

Criteria: The lowest Ecological Soil Screening Level will be used as the decision criteria.

Summer Rainfall Pools

Objective: Comparison of dissolved metals concentrations to surface water standards.

Decision: Do concentrations of constituents exceed decision criteria?

Criteria: The surface water standards for livestock watering will be used as the decision criteria.

Summer Rainfall Pools

Objective: Comparison of total metals concentrations to surface water standards.

Decision: Do concentrations of constituents exceed decision criteria?

Criteria: The surface water standards for wildlife habitat will be used as the decision criteria.

In order to evaluate the usability of the data for meeting project objectives, the data must be reconciled with project objectives and decision criteria, as applicable. Only data considered to be valid, as determined through data validation, may be considered for reconciliation with project objectives. Thus, a summary of data validation results is provided in Section 2.1 below.

For the comparison to the ecological decision criteria for sediment and summer pool rainfall water samples, the reconciliation process begins with a comparison of the reporting limits obtained to the decision criteria. In general, for data to be considered usable for making project decisions, the reporting limit obtained for each analyte must be less than or equal to the decision criterion. However, analyte results for which the reporting limit is greater than the decision criterion may be usable if the sample results obtained were positive or if the reporting limit is less than the decision criterion. Nondetect results at reporting limits which exceed decision criteria are not sufficient for making project decisions based on those criteria. With this in mind, the reporting limits obtained for samples collected are compared to the applicable standards in Section 2.2.

After evaluating the usability of the data with respect to reporting limits obtained and project decision criteria, any potential biases and imprecision in results suggested by QC results must be assessed in order to evaluate the ultimate usability of the data for making decisions. Potential biases and imprecision in analytical results and data usability are discussed in Section 2.3.

Two field duplicate pairs were collected in association with this sampling event. The results of this evaluation are discussed in Section 2.4.

2.1 Data Validation Summary

The total number of results for the evaluation reported for the Hanover Whitewater Creek Newfields Investigation is 907 (291 sediment sample results, 432 summer rainfall pool results, and 184 SPLP results). The total number of results is calculated by summing

the number of analytes reported for all samples analyzed. The section below discusses the data validation summary for the surface water samples.

2.1.1 Sediment Samples for Ecological Evaluation

Based on the results of data validation, 40% of the results were qualified as estimated, 7.2% of the results were qualified as nondetect, and none of the results were qualified as unusable. There were a total of 291 results for the sediment samples collected for this sampling event.

Twenty-one of the results were qualified as nondetect due to method blank and/or calibration blank contamination. These results comprise 7.2% of the data set.

None of the results were qualified as unusable.

Approximately 40% of the results (117 of 291) were qualified as estimated for various reasons. The breakdown of the reasons for qualification as estimated is as follows:

- Eighteen of the results were qualified as estimated on the basis of exceeding holding time. These results comprise approximately 6.1% of the data set.
- Eight of the results were qualified as estimated due to low or high post-digestion spike recoveries. These results comprise approximately 2.7% of the data set.
- Seventy-six of the results were qualified as estimated due to high or low matrix spike recoveries. These results comprise approximately 26% of the data set.
- None of the results were qualified as estimated due to high or low CRDL standard recoveries.
- Fourteen of the results were qualified as estimated on the basis of field or method duplicate results. These results comprise approximately 4.8% of the data set.
- None of the results were qualified as estimated on the basis of the serial dilution results.
- One of the results was qualified as estimated due to the ICSA standard. These results comprise approximately 0.3% of the data set.
- None of the results were qualified as estimated on the basis of the method blank and/or calibration blank.

All analytical data generated were considered usable for reconciliation with project objectives as these data were considered to be valid (valid data include results qualified as estimated or nondetect).

2.1.2 Total and Dissolved Summer Rainfall Pool Samples for Ecological Evaluation

Based on the results of data validation, 18% of the results were qualified as estimated, 3% of the results were qualified as nondetect, and none of the results were qualified as unusable. There were a total of 432 results for the summer rainfall pool samples collected for this sampling event.

Thirteen of the results were qualified as nondetect due to method blank and/or calibration blank contamination. These results comprise 3% of the data set.

None of the results were qualified as unusable.

Approximately 18% of the results (76 of 432) were qualified as estimated for various reasons. The breakdown of the reasons for qualification as estimated is as follows:

- None of the results were qualified as estimated on the basis of exceeding holding time.
- None of the results were qualified as estimated due to low or high post-digestion spike recoveries.
- One of the results was qualified as estimated due to high or low matrix spike recoveries. These results comprise approximately 0.2% of the data set.
- None of the results were qualified as estimated due to high or low CRDL standard recoveries.
- Eight of the results were qualified as estimated on the basis of field or method duplicate results. These results comprise approximately 1.8% of the data set.
- None of the results were qualified as estimated on the basis of the serial dilution results.
- None of the results was qualified as estimated due to the ICSA standard.

- Sixty-seven of the results were qualified as estimated on the basis of the method blank and/or calibration blank. These results comprise approximately 15.5% of the data set.

All analytical data generated were considered usable for reconciliation with project objectives as these data were considered to be valid (valid data include results qualified as estimated or nondetect).

2.1.3 Samples Collected for SPLP Analyses

Based on the results of data validation, 16% of the results were qualified as estimated, 4.9% of the results were qualified as nondetect, and none of the results were qualified as unusable. There were a total of 184 results for the SPLP analyses collected for this sampling event.

Nine of the results were qualified as nondetect due to method blank, and/or calibration blank contamination, and/or extraction fluid blank contamination. These results comprise 4.9% of the data set.

None of the results were qualified as unusable.

Approximately 16% of the results (29 of 184) were qualified as estimated for various reasons. The breakdown of the reasons for qualification as estimated is as follows:

- Eight of the results were qualified as estimated on the basis of exceeding holding time. These results comprise approximately 4.3% of the data set.
- None of the results were qualified as estimated due to low or high post-digestion spike recoveries.
- None of the results were qualified as estimated due to high or low matrix spike recoveries.
- None of the results were qualified as estimated due to high or low CRDL standard recoveries.
- None of the results were qualified as estimated on the basis of field or method duplicate results.
- None of the results were qualified as estimated on the basis of the serial dilution results.

- None of the results was qualified as estimated due to the ICSA standard.
- Twenty-one of the results were qualified as estimated on the basis of the method blank and/or calibration blank. These results comprise approximately 11.4% of the data set.

All analytical data generated were considered usable for reconciliation with project objectives as these data were considered to be valid (valid data include results qualified as estimated or nondetect).

2.2 Reporting Limits and Decision Criteria Comparison

In order to determine whether the data are sufficient for comparing to the decision criteria, the reporting limits obtained need to be reconciled with the decision criteria. Table 2-1 lists the reporting limit requirements and decision criteria for the sediment samples. Table 2-2 lists the reporting limit requirements and decision criteria for the summer rainfall pool samples. Table 2-3 lists the reporting limit requirements for the SPLP analyses. No decision criteria were given for the SPLP analyses.

2.2.1 Sediment Samples for Ecological Evaluation

The molybdenum reporting limit of 0.130 mg/kg for the samples exceeded the required RL of 0.1 mg/kg. Molybdenum was reported as detected in all samples, so the elevated RL does not affect the usability of the data for these samples.

The arsenic reporting limit of 0.740 mg/kg for the samples exceeded the required RL of 0.3 mg/kg. Arsenic was reported as detected in all samples, so the elevated RL does not affect the usability of the data for these samples.

Twenty-one of the sample results for the sediment samples were qualified as nondetect on the basis of various combinations of method blank and/or continuing calibration blank contamination. For these results, the reported values then become the “effective” reporting limits.

The antimony “adjusted” reporting limits ranged from 0.08 mg/kg to 0.30 mg/kg, all below or equal to the lowest screening level of 0.3 mg/kg. For seven of the fourteen

selenium results qualified as nondetect, the selenium "adjusted" reporting limits ranged from 0.22 mg/kg to 0.34 mg/kg, below the lowest screening level of 0.52 mg/kg. Therefore, the elevated RLs do not affect the usability of the data for these samples.

The selenium "adjusted" reporting limit for seven of the samples listed in the table below ranged from 0.54 mg/kg to 0.83 mg/kg, above the lowest screening level of 0.52 mg/kg (plants) and five above the second lowest screening level of 0.63 mg/kg (mammals). Therefore, these data are not usable for comparing to the decision criterion.

Sample ID	Result (mg/kg)
U02-ER001	0.65
U02-ER002	0.83
U02-ER003	0.68
U02-ER004	0.70
BFD (FD to sample U02-ER010)	0.63
U02-ER009	0.54
U02-ER010	0.55

2.2.2 Total and Dissolved Summer Rainfall Pool Samples for Ecological Evaluation

The cadmium reporting limit of 0.05 µg/l for one of the summer rainfall pool samples for metals exceeded the required RL of 0.042 µg/l. The dissolved cadmium result for sample LUCKY BILL U/S No. 5 was reported as nondetect at a concentration of 0.05 µg/L. The reporting limit reported for dissolved cadmium is below the dissolved screening criterion of 50 µg/L. Therefore, the elevated RLs do not affect the usability of the data for these samples.

Thirteen of the sample results for the summer rainfall pool samples were qualified as nondetect on the basis of various combinations of method blank and/or continuing calibration blank contamination. For these results, the reported values then become the "effective" reporting limits.

The total cadmium "adjusted" reporting limits were 0.09 μg/L and 0.010 μg/L for samples LUCKY BILL MOUTH and LWWCR RANCHERS POND. The total cobalt and total nickel "adjusted" reporting limits for sample LWWCR RANCHERS POND were 1.2 μg/L and 3.0 μg/L, respectively. There are no screening criteria for total cadmium, total cobalt, or total nickel. Therefore, the elevated RLs do not affect the usability of the data for these samples.

The dissolved cadmium "adjusted" reporting limits were 0.07 μg/L for samples LUCKY BILL MOUTH and LWWCR RANCHERS POND, below the dissolved screening criterion of 50 μg/L. The dissolved nickel "adjusted" reporting limits for samples BAYARD CANYON D/S and LWWCR RANCHERS POND were 1.5 μg/L and 4.8 μg/L, respectively. There is no screening criterion for dissolved nickel. The dissolved cobalt "adjusted" reporting limit for sample LWWCR RANCHERS POND was 0.97 μg/l, below the screening criterion of 1,000 μg/L. Therefore, the elevated RLs do not affect the usability of the data for these samples.

2.2.3 Samples Collected for SPLP Analyses

All reporting limits satisfied the reporting limit requirements for the SPLP analyses.

Nine of the sample results for the SPLP analyses were qualified as nondetect on the basis of various combinations of method blank, continuing calibration blank, and/or extraction blank contamination. For these results, the reported values then become the "effective" reporting limits.

The calcium "adjusted" reporting limit for sample EXTRACTION FLUID was 12.4 μg/l. The antimony "adjusted" reporting limits for samples U03-ER001, U03-ER004, BFD, U03-ER002 ranged from 2.2 μg/l to 3.0 μg/l. The cadmium "adjusted" reporting limits for samples U03-ER001, BFD, U03-0002, and U03-ER011 ranged from 0.02 μg/l to 0.03 μg/l. The elevated RLs do not affect the usability of the data for these samples as the "adjusted" RLs were below the reporting limit requirements given in Table 2-3.

2.3 Effect of Potential Biases and Imprecision on Usability of the Data

Any potential biases and imprecision in results suggested by QC results must be assessed in order to evaluate the ultimate usability of the data for making decisions. Potential biases and imprecision in analytical results are inferred from results obtained for various types of quality control sample analyses. Potential bias and imprecision can result from specific sample matrix analyzed or the analytical system.

Quality control analyses that provide an indication of the analytical system relative to the specific sample matrix include matrix spike analyses, post-digestion spike analyses, laboratory duplicate analyses, and field duplicate analyses. Matrix spike samples are site-specific samples into which target analytes are spiked. As such, the percent recoveries obtained from matrix spike analyses provide an indication of the potential biases of the analytical method on the site-specific samples. Additionally, laboratory duplicate analyses provide an indication of the precision of the analyses. A matrix spike and/or duplicate sample analysis (as applicable to the methodology) was conducted for each analysis type using a site-specific sample.

Results obtained for other QC parameters, such as contract required detection limit (CRDL) standard recoveries and laboratory control sample recoveries (LCS), provide indications of biases existing in the analytical system.

While the results obtained for the vast majority of quality control analyses satisfied the QAP acceptance limits indicating that overall, acceptable levels of accuracy and precision were attained, results for a few quality control results were outside the QAP prescribed acceptance limits. Quality control results that suggest a potential bias in the analytical result are discussed below for the samples collected for human health evaluation and the ecological evaluation along with their effect on the usability of the associated data.

2.3.1 Sediment Samples for Ecological Evaluation

Antimony Accuracy – The recovery for one matrix spike sample was 35.9%; the other matrix spike recovery was within the acceptance limits of 75-125% suggesting a maximum potential low bias of 64.1%

The antimony results for the samples ranged from ND (0.06 – 0.30 mg/kg) to detectable at 0.30 mg/kg. The lowest ecological screening level (EcoSSL) for antimony is 0.30 mg/kg. Therefore, sample concentrations between about 0.11 mg/kg (35.9% of 0.30 mg/kg) and 0.30 mg/kg are considered not to be usable for demonstrating the concentration is less than the criterion. There were thirteen results falling in this concentration range. The results below 0.11 mg/kg are considered usable for demonstrating that the concentrations are less than 0.30 mg/kg.

Calcium Accuracy – The calcium matrix spike recoveries was below the lower limit of the acceptance range of 75-125% with recoveries of 59.7% and 53.1%, suggesting a potential low bias. The magnitude of the potential low bias may be up to 46.9%.

There are no EcoSSLs. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Lead Imprecision and Accuracy – The RPD between the MS/MSD for lead exceeded the evaluation criterion of ≤35% with a RPD of 75.3%. The RPD between the parent sample and field duplicate results exceeded the evaluation criterion of ≤50% with a RPD of 141%. Based on the duplicate results, the maximum imprecision may be up to ±141%.

The recovery for one matrix spike sample was 53.1%; the other matrix spike recovery was within the acceptance limits of 75-125% suggesting a maximum potential low bias of 46.9%.

The lead results for the samples ranged from 5.9 mg/kg to 682 mg/kg. The lowest EcoSSL for lead is 11 mg/kg. Since the maximum imprecision/accuracy was 141% imprecision, sample concentrations between from 1.9 mg/kg (RPD 141% relative to 11 mg/kg) and 11 mg/kg are considered not to be usable for demonstrating the concentration is

less than the criterion. There were two sample results (U03-ER005, BFD - FD to U03-ER006) falling in this concentration range.

Selenium Accuracy – The recoveries for the matrix spike samples were 62.4% and 50.5% outside the acceptance limits of 75-125% suggesting a maximum potential low bias of 49.5%.

The selenium results for the samples ranged from 0.22 mg/kg to 0.83 mg/kg. The lowest EcoSSL for selenium is 0.52 mg/kg. Therefore, sample concentrations between about 0.26 mg/kg and 0.52 mg/kg are considered not to be usable for demonstrating the concentration is less than the criterion. The results below 0.26 mg/kg are considered usable for demonstrating that the concentrations are less than 0.52 mg/kg. There were six results (U03-ER001, U03-ER004, U03-ER002, U02-ER005, U02-ER006) falling in this concentration range. The selenium results for samples U02-ER001, U02-ER002, U02-ER003, U02-ER004, BFD, U02-ER009, and U02-ER010 were reported at concentrations greater than the screening level.

Arsenic Accuracy – The recovery for one of the matrix spike sample was 71.2%, the other matrix spike recovery was within the acceptance limits of 75-125% suggesting a maximum potential low bias of 28.8%.

The arsenic results for the samples ranged from 1.1 mg/kg to 10.2 mg/kg. The lowest EcoSSL for arsenic is 43 mg/kg. As the samples results were a least a factor of 4 times (400%) lower than that the screening criterion, the magnitude of the potential low bias (28.8%) does not affect the usability of the results for making the specified decision.

Molybdenum Accuracy – The recovery for one of the matrix spike sample was 57.4%, the other matrix spike recovery was within the acceptance limits of 75-125% suggesting a maximum potential low bias of 42.6%.

The molybdenum results for the samples ranged from 1.0 mg/kg to 9.4 mg/kg. The lowest EcoSSL for molybdenum is 0.26 mg/kg. All molybdenum results were reported at concentrations greater than the lowest EcoSSL.

Zinc Imprecision and Accuracy – The RPD between the parent sample and field duplicate results exceeded the evaluation criterion of ≤50% with a RPD of 54%. Based on the duplicate results, the maximum imprecision may be up to ±54%.

The recovery for one matrix spike sample was 146.4%, suggesting a maximum potential high bias of 46.4%. The other matrix spike recovery was not spike at an appropriate concentration to evaluate accuracy.

The post-digestion spike recovery was 73.7% below the acceptance range of 75-125%, indicating a potential low bias of 26.3%.

The zinc results for the samples ranged from 24.2 mg/kg to 2510 mg/kg. The lowest EcoSSL for zinc is 46 mg/kg. Since the maximum imprecision/accuracy was imprecision of 54%, sample concentrations between 26.4 mg/kg (RPD 54% relative to 46 mg/kg) and 46 mg/kg are considered not to be usable for demonstrating the concentration is less than the criterion. There were three results (U03-ER005, BFD to U03-ER006, U03-ER006) falling into this range.

Copper Imprecision – The RPD between the parent sample and field duplicate results exceeded the evaluation criterion of ≤50% with a RPD of 126%. Based on the duplicate results, the maximum imprecision may be up to ±126%.

The copper results for the samples ranged from 81.7 mg/kg to 622 mg/kg. The lowest EcoSSL for copper is 28 mg/kg. Sample concentrations between 6.3 mg/kg (RPD 126% relative to 28 mg/kg) are not to be usable for demonstrating the concentration is less than the criterion. No results were reported at concentrations less 28 mg/kg; therefore, the potential imprecision does not affect the usability of the results for making the specified decision.

2.3.2 Total and Dissolved Summer Rainfall Pool Samples for Ecological Evaluation

Total Aluminum Accuracy – The concentration of aluminum found in the preparation blank (concentration -17.633 µg/l) and in three of the continuing calibration

blanks (highest concentration -15.676 μg/l) suggests a potential low bias in associated sample results of up to – 17.633 μg/l.

There is no total aluminum screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Total Chromium Accuracy – The concentration of chromium found in the preparation blank (concentration -1.602 μg/l) suggests a potential low bias in associated sample results of up to – 1.602 μg/l.

There is no total chromium screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Total Molybdenum Accuracy – The concentration of molybdenum found in the preparation blank (concentration –2.700 μg/l) suggests a potential low bias in associated sample results of up to – 2.700 μg/l.

There is no total molybdenum screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Total Vanadium Accuracy – The concentration of vanadium found in the calibration blank (concentration –0.542 μg/l) suggests a potential low bias in associated sample results of up to –0.542 μg/l.

There is no total vanadium screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Total Lead Imprecision - The RPD between the MS/MSD for lead exceeded the evaluation criterion of ≤35% with a RPD of 77.7%. Based on the duplicate results, the maximum imprecision may be up to ±77.7%.

There is no total lead screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Dissolved Aluminum Accuracy – The concentration of aluminum found in the preparation blank (concentration -17.633 μg/l) and in three of the continuing calibration

blanks (highest concentration -15.676 μg/l) suggests a potential low bias in associated sample results of up to – 17.633 μg/l.

There is no dissolved aluminum screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Dissolved Chromium Accuracy – The concentration of chromium found in the preparation blank (concentration -1.602 μg/l) suggests a potential low bias in associated sample results of up to – 1.602 μg/l.

All dissolved chromium results were reported as nondetect at concentrations of 0.4 μg/l (sample LWWCR RANCHERS POND) or 1.3 μg/l (all other samples). The dissolved chromium standard is 1000 μg/l. As all results were at least a factor of 769 times lower than the screening criteria, the potential bias does not affect the usability of the results for making the specified decision.

Dissolved Copper Accuracy – The concentration of copper found in the preparation blank (concentration - 0.655 μg/l) suggests a potential low bias in associated sample results of up to – 0.655 μg/l.

The dissolved copper results for the samples ranged from 2.0 μg/l to 30.5 μg/l. The dissolved copper standard is 500 μg/l. As all results were at least a factor of 16 times lower than the screening criteria, the potential bias does not affect the usability of the results for making the specified decision.

Dissolved Iron Accuracy – The concentration of iron found in the preparation blank (concentration – 10.854 μg/l) suggests a potential low bias in associated sample results of up to – 10.854 μg/l.

There is no dissolved iron screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Dissolved Molybdenum Accuracy – The concentration of molybdenum found in the preparation blank (concentration –2.700 μg/l) suggests a potential low bias in associated sample results of up to – 2.700 μg/l.

There is no dissolved molybdenum screening criteria. Therefore, the potential bias does not affect the usability of the results for making the specified decision.

Dissolved Selenium Accuracy – The recovery for one of the matrix spike sample was 137%, the other matrix spike recovery was within the acceptance limits of 75-125% suggesting a maximum potential high bias of 37%.

The dissolved selenium results for the samples ranged from 0.58 μg/l to 1.3 μg/l. The dissolved selenium standard is 50 μg/l. As all results were at least a factor of 38 times lower than the screening criteria, the potential bias does not affect the usability of the results for making the specified decision.

2.3.3 Samples Collected for SPLP Analyses

There were no screening criteria specified for SPLP analyses. The magnitude of potential biases and imprecisions discussed below should be considered relative to project end uses.

Antimony Accuracy – The concentration of antimony found in the calibration blank (concentration –2.007 μg/l) suggests a potential low bias in associated sample results of up to – 2.007 μg/l.

Nickel Accuracy – The concentration of nickel found in the preparation blank (concentration –3.892 μg/l) suggests a potential low bias in associated sample results of up to – 3.892 μg/l.

Boron Accuracy – The concentration of boron found in the preparation blank (concentration –9.925 μg/l) suggests a potential low bias in associated sample results of up to – 9.925 μg/l.

2.4 Representativeness Evaluation

Representativeness is the degree to which data accurately and precisely represent a characteristic population, parameter variations at a sampling point, or an environmental condition. All sampling and analysis was conducted in compliance with the FSP and

relevant standard operating procedures (SOPs) as a means of obtaining representative samples.

Additionally, the results obtained for field duplicate results can be used to assess representativeness. Two field duplicate pairs were collected in association with this sampling event. The results for the field duplicate samples were compared using the applicable concentration-dependent evaluation criteria. With three exceptions, all analytes satisfied the applicable concentration-dependent criteria indicating that the samples collected can be considered representative of the medium sampled at the locations.

TABLE 2-1

REPORTING LIMIT REQUIREMENTS AND ECOLOGICAL DECISION CRITERIA FOR SEDIMENT SAMPLES

Analytes	Reporting Limit Requirements (mg/kg)	SVL IDL (mg/kg)	Plants (mg/kg)	Invertebrates (mg/kg)	Birds (mg/kg)	Mammals (mg/kg)
Aluminum	8	0.330	50 [3]	NA	NA	NA
Antimony	1.1	0.060	NA	78	NA	0.3
Arsenic	0.3	0.740	18	NA	43	46
Boron	1	0.430	0.5 [3]	NA	8.5 [4]	28.8 [1]
Cadmium	0.02	0.060	32	140	0.77	0.36
Calcium	20	0.430	- -	--	--	--
Copper	1	0.150	70	80	28	49
Iron	1	0.910	NA	NA	NA	NA
Lead	2	0.500	120	1700	11	56
Mercury	0.02	0.010	0.3 [3]	0.1 [3]	0.018 [4]	0.66 [5]
Molybdenum	0.1	0.130	2 [3]	NA	6.97 [4]	0.26 [2]
Nickel	1	0.150	38	280	210	130
Selenium	0.2	0.0086	0.52	4.1	1.2	0.63
Vanadium	0.4	0.050	NA	NA	7.8	280
Zinc	1	0.130	160	120	46	79
Paste pH	0.1 Unit	0.1 Unit	--	--	--	--
Total organic Matter	0.10 %	0.10 %	- -	--	--	--

Ecological Soil Screening Levels (EcoSSLs) from USEPA OSWER Directive 9285.7
NA – Not Applicable

[1] Value derived from samples et al. 1996, final NOAEL, mg/kg dry

[2] Value derived from PRC, 1994, final NOAEL, mg/kg dry

[3] Ecological Screening Level from Efroymson et al, 1997a, 1997b

[4] Ecological Screening Level presented as NOAEL for the Mourning Dove, mg/kg

[3] Ecological Screening Level presented as NOAEL for the Deer Mouse, mg/kg

TABLE 2-2

REPORTING LIMIT REQUIREMENTS AND DECISION CRITERIA FOR SUMMER RAINFALL POOL SAMPLES

Analyte	Reporting Limit Requirements (µg/l)*	SVL IDL (µg/l)	Livestock Watering (µg/l)		Wildlife Habitat (µg/l)	
Aluminum	30	11	---	---	---	---
Antimony	20	3.4	---	---	---	---
Arsenic	25	4.6	200	D	---	---
Barium	2	0.5	---	---	---	---
Boron	40	4.300	500	D	---	---
Cadmium	0.042/0.105 [1]	0.02 or 0.05	50	D	---	---
Chromium	6	0.40	1000	D	---	---
Cobalt	6	0.20	1000	D	---	---
Copper	0.2/0.5 [1]	0.040	500	D	---	---
Iron	60	7.2	---	---	---	---
Lead	0.220/0.550 [1]	0.03	100	D	---	---
Manganese	4	0.80	---	---	---	---
Mercury	0.2	0.1	10	D	0.77	T
Molybdenum	8	2.200	---	---	---	---
Nickel (Ni)	10	1.300	---	---	---	---
Selenium	0.625	0.080	50	D	5	TR
Silver	0.03/.075 [1]	0.020	---	---	---	---
Thallium	0.1/0.25 [1]	0.020	---	---	---	---
Vanadium	5	0.500	100	D	---	---
Zinc	10	1.300	25,000	D	---	---
Total Dissolved Solids	10 mg/l	10 mg/l	---	---	---	---
Total Suspended Solids	5 mg/l	5 mg/l	---	---	---	---

IDL – Instrument Detection Limit **(µg/l)** – micrograms per liter D – Dissolved

TR – Total Recoverable

*SVL limits noted as Dissolved/Total (i.e, Cd - 0.042/0.05)

[1] Dissolved Reporting limits/Total reporting limits (Only dissolved standard applies)

TABLE 2-3

REPORTING LIMIT COMPARISON FOR SPLP ANALYSES

Analyte	Reporting Limit Requirements (µg/l)	SVL IDL (µg/l)
Aluminum (Al)	80	13
Antimony (Sb)	20	2.0
Arsenic (As)	25	8.8
Boron (B)	40	7.6
Cadmium (Cd)	0.2	0.02
Calcium (Ca)	40	8.2
Copper (Cu)	10	0.04
Iron (Fe)	60	7.6
Lead (Pb)	7.5	2.1
Mercury (Hg)	0.2	0.1
Molybdenum (Mo)	8	2.1
Nickel (Ni)	10	1.1
Selenium (Se)	2	0.08
Vanadium (V)	5	1.0
Zinc (Zn)	10	3.0
Bicarbonate (HCO_3)	2 mg/l	1.0 mg/l
Chloride (Cl)	0.2 mg/l	0.2 mg/l
Nitrate/Nitrite (NO_3+NO_2)	0.02 mg/l	0.02 mg/l
Orthophosphate (PO_4)	0.005 mg/l	0.01 mg/l
Sulfate (SO_4)	0.3 mg/l	0.3 mg/l
DOC	1 mg/l	1.0 mg/l

3. POTENTIAL ADDITIONAL DATA USES AND LIMITATIONS

In addition to use in making decisions specified in the FSP, the data generated may potentially have other end uses including risk assessment and exploratory data analysis. The analytical data quality is generally considered sufficient for these potential end uses, however, the magnitude of potential biases and imprecisions discussed above must be considered. Prior to use in risk assessment or exploratory data analysis, end users of the data should perform a data quality assessment relative to their specific risk assessment objectives and should perform an evaluation of whether the analytical data are sufficiently representative of the medium under evaluation.

All analytical results not qualified as rejected are considered useable in these additional potential end uses. All data were validated in accordance with the provisions of the Administrative Order on Consent approved Quality Assurance Plan (March, 1997) using guidance from the USEPA National Functional Guidelines for Inorganic Data Review (February 1994). The data validation meets the minimum requirements specified in USEPA's Risk Assessment Guidance for Superfund (September, 1989) (RAGS) and those specified in USEPA's Guidance for Data Usability in Risk Assessment (April, 1992) (DURA). Data qualified as estimated were assigned a "J" qualifier and data rejected during validation were assigned an "R" qualifier and are not useable for any end use. All data which were qualified as estimated were assigned a qualifier code indicating the reason for qualification and a suffix to the qualifier code indicating the potential bias direction based on the QC indicators. The qualifier codes have been annotated on the analytical result reporting forms and also entered into the project database management system. A code suffix of "L" for a given result indicates a potential low bias exists, "H" a potential high bias, and "I" indicates imprecision in the result without a bias direction being discernible from the QC indicators.

As specified in DURA, data qualified as "U" (nondetect) or "J" (estimated) are acceptable for risk assessment purposes. DURA (page 5-15) further indicates that:

"the guidance here is to use J-qualified concentrations the same way as positive data that do not have this qualifier. If possible, note potential uncertainties associated with the qualifier, so that if data qualified with a J contribute significantly to the risk, then appropriate caveats can be attached."

Section 2.3 above provides a detailed description of the magnitude and direction of potential biases associated with J-qualified data and should be useful to the risk assessor in evaluating the uncertainty associated with qualified results.

Each end user of the data should perform a data quality assessment relative to their specific end use objectives for the data and should perform an evaluation of whether the analytical data are sufficiently representative of the medium under evaluation for their specific data use. The discussion on reporting limits, bias, and representativeness should be useful in performing a data quality assessment relative to other end uses of the data and in evaluating whether the data are sufficiently representative of the medium under evaluation for a specified end use.

4. SUMMARY OF DATA QUALITY ASSURANCE OBJECTIVES RELATIVE TO THE QAP OBJECTIVES

In this section, the results of the data validation process are briefly summarized relative to each of the data quality assurance objectives. The Data Validation Report for Hanover Whitewater Creek – Newfields Data (URS, January 2008) provides additional detailed narratives describing each QC problem and the data qualification assigned if necessary. The overall data quality was assessed by the quantitative parameters of reporting limits, accuracy, precision, and completeness and the qualitative parameters of representativeness and comparability. Sections 4.1 and 4.2, respectively, present the overall assessment of the data quality with regard to the quantitative and qualitative evaluation parameters.

4.1 Quantitative Parameters

The overall assessment for each of the quantitative data quality assurance parameters (of reporting limits, accuracy, precision, and completeness) is provided below. The summaries are based on the results obtained during the data validation process.

4.1.1 Reporting Limits

Reporting limits (RLs) are established by the analytical laboratory based on the instrument detection limits (IDLs), historical data, and comparison to EPA limits for the respective methods. As discussed in Section 2.2 and summarized below, several reporting limits exceeded the reporting limit requirements.

Sediment Samples

The molybdenum reporting limit of 0.130 mg/kg for the samples exceeded the required RL of 0.1 mg/kg. Molybdenum was reported as detected in all samples, so the elevated RL does not affect the usability of the data for these samples.

The arsenic reporting limit of 0.740 mg/kg for the samples exceeded the required RL of 0.3 mg/kg. Arsenic was reported as detected in all samples, so the elevated RL does not affect the usability of the data for these samples

Twenty-one of the sample results for the sediment samples were qualified as nondetect on the basis of various combinations of method blank and/or continuing calibration blank contamination. For these results, the reported values then become the "effective" reporting limits.

The antimony "adjusted" reporting limits ranged from 0.08 mg/kg to 0.30 mg/kg, all below or equal to the lowest screening level of 0.3 mg/kg. For seven of the fourteen selenium results qualified as nondetect, the selenium "adjusted" reporting limits ranged from 0.22 mg/kg to 0.34 mg/kg, below the lowest screening level of 0.52 mg/kg. Therefore, the elevated RLs do not affect the usability of the data for these samples.

The selenium "adjusted" reporting limit for seven of the samples ranged from 0.54 mg/kg to 0.83 mg/kg, above the lowest screening level of 0.52 mg/kg (plants) and five above the second lowest screening level of 0.63 mg/kg (mammals). Therefore, these data are not usable for comparing to the decision criterion.

Summer Pool Rainfall Samples

The cadmium reporting limit of 0.05 μg/l for one of the summer rainfall pool samples for metals exceeded the required RL of 0.042 μg/l. The dissolved cadmium result for sample LUCKY BILL U/S No. 5 was reported as nondetect at a concentration of 0.05 μg/L. The reporting limit reported for dissolved cadmium is below the dissolved screening criterion of 50 μg/L. Therefore, the elevated RLs do not affect the usability of the data for these samples.

Thirteen of the sample results for the summer rainfall pool samples were qualified as nondetect on the basis of various combinations of method blank and/or continuing calibration blank contamination. For these results, the reported values then become the "effective" reporting limits.

The total cadmium "adjusted" reporting limits were 0.09 μg/L and 0.010 μg/L for samples LUCKY BILL MOUTH and LWWCR RANCHERS POND. The total cobalt and total nickel "adjusted" reporting limits for sample LWWCR RANCHERS POND were 1.2 μg/L and 3.0 μg/L, respectively. There is no screening criteria for total cadmium, total cobalt, or total nickel. Therefore, the elevated RLs do not affect the usability of the data for these samples.

The dissolved cadmium "adjusted" reporting limits were 0.07 μg/L for samples LUCKY BILL MOUTH and LWWCR RANCHERS POND, below the dissolved screening criterion of 50 μg/L. The dissolved nickel "adjusted" reporting limits for samples BAYARD CANYON D/S and LWWCR RANCHERS POND were 1.5 μg/L and 4.8 μg/L, respectively. There is no screening criterion for dissolved nickel. The dissolved cobalt "adjusted" reporting limit for sample LWWCR RANCHERS POND was 0.97 μg/l, below the screening criterion of 1,000 μg/L. Therefore, the elevated RLs do not affect the usability of the data for these samples.

Sample Collected for SPLP Analyses

All reporting limits satisfied the reporting limit requirements for the SPLP analyses.

Nine of the sample results for the SPLP analyses were qualified as nondetect on the basis of various combinations of method blank, continuing calibration blank, and/or extraction blank contamination. For these results, the reported values then become the "effective" reporting limits.

The calcium "adjusted" reporting limit for sample EXTRACTION FLUID was 12.4 μg/l. The antimony "adjusted" reporting limits for samples U03-ER001, U03-ER004, BFD, U03-ER002 ranged from 2.2 μg/l to 3.0 μg/l. The cadmium "adjusted" reporting limits for samples U03-ER001, BFD, U03-0002, and U03-ER011 ranged from 0.02 μg/l to 0.03 μg/l. The elevated RLs do not affect the usability of the data for these samples as the "adjusted" RLs were below the reporting limit requirements.

4.1.2 Precision

Precision is defined as the agreement between a set of replicate measurements without assumption or knowledge of the true value. Precision of laboratory measurements was evaluated by the comparison of matrix spike sample/matrix spike sample duplicate results.

With two exceptions, all of the matrix spike sample/matrix spike sample duplicate results satisfied the applicable evaluation criteria. Therefore, the overall level of precision demonstrated by the analyses is considered to be acceptable

Precision of field sampling and laboratory analysis was evaluated by the comparison of field duplicate sample results. The agreement shown by the field duplicate results is indicative of an acceptable level of overall sampling and analysis precision.

4.1.3 Accuracy

Accuracy is defined as the degree of agreement of a measurement to an accepted reference or true value. Accuracy was measured as the percent recovery (%R) of an analyte in a reference standard or spiked sample.

All laboratory control samples and all calibration standards and were within acceptance limits demonstrating acceptable overall accuracy of the analytical system.

Approximately 57% of the sediment matrix spike recoveries were within the acceptance limits.

With one exception, all of the summer pool rainfall water matrix spike recoveries were within acceptance limits indicating that the overall level of accuracy attained with respect to the site-specific sample matrix is considered to be acceptable.

All of the SPLP analyses matrix spike recoveries were within acceptance limits indicating that the overall level of accuracy attained with respect to the site-specific sample matrix is considered to be acceptable.

4.1.4 Completeness

Two types of completeness were calculated, program completeness and analytical completeness. Sections 4.1.4.1 and 4.1.4.2 provide respective definitions and a summary of the results.

4.1.4.1 Program Completeness

As one sediment sample (i.e., sample U02-ER008 from Bar B45.8E) was eliminated at the direction of Chino because the bar simply did not exist anymore, the program completeness is considered to be ~98% (number of samples and field QC samples collected compared to the planned sampling stations and the quantity of field QC samples) which met QAP requirements.

4.1.4.2 Analytical Completeness

All of the results are considered usable as qualified. As such, the analytical completeness for the Hanover Whitewater Creek Newfields investigation samples, defined as the ratio of the number of valid analytical results (valid analytical results include values estimated) to the total number of analytical results requested on samples submitted for analysis, is 100% which satisfies the QAP requirement of 80%. All valid results are considered acceptable for use in meeting project objectives.

4.2 Qualitative Parameters

The qualitative data quality assessment parameters include comparability and representativeness. Sections 4.2.1 and 4.2.2 provide the respective definitions and summary of the results for each parameter.

4.2.1 Comparability

Comparability expresses the confidence with which one data set can be compared to another. Comparability can be related to accuracy and precision because these quantities are measures of data reliability. Data are comparable if collection techniques, measurement procedures, method, and reporting limits are equivalent for the samples within a sample set.

As the samples in this set were analyzed in accordance with the quality assurance and quality control measures prescribed in the QAP; and acceptable levels of overall accuracy and precision were attained, the data within this set are considered to be comparable to each other and comparable to other data collected under the RI.

4.2.2 Representativeness

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness was maintained during sampling efforts by completing sampling in compliance with the FSP, and relevant SOPs.

Consistent, uniform sample collection protocols, including such tasks as storage, preservation and transportation, were used to assure that the representativeness of the samples gathered during the AOC met project objectives. Proper documentation in the field and laboratory verified that protocols were followed and that sample in identification as well as integrity was preserved. As noted in Section 2.4, the agreement between the field duplicate samples collected in an earlier sampling event suggest that the samples collected can be considered representative of the medium sampled.

5. CORRECTIVE ACTIONS AND WORKPLAN MODIFICATIONS

This section describes the corrective actions implemented and workplan modifications that occurred during the supplemental sampling and analysis and the effect on the usability of the data.

5.1 Corrective Action

No field or laboratory corrective actions were required during this investigation.

5.2 QAP and FSP Modifications

There were no modifications to the QAP. However, there was one field modification to the FSP. One sediment sample (i.e., sample U02-ER008 from Bar B45.8E) was eliminated at the direction of Chino because the bar simply did not exist anymore. There was a sub-site for UO3-ER005, during the Active Channel sampling, near James Canyon which could not be sampled due to blasting operations in the area.

6. REJECTED DATA AND PROJECT CONSEQUENCES

As no data were qualified as unusable, all results will be considered acceptable for use in meeting project objectives.

7. CONCLUSIONS

With the exceptions of any limitations noted in Section 2.0, the data are considered to be usable for meeting project objectives. As described in Section 3.0, these data are also considered to be of sufficient analytical quality for a variety of other end uses. For end uses of the data other than those for which are specified in Section 2.0, the end user of the data should perform a data quality assessment relative to their specific end use objectives and should perform an evaluation of whether the analytical data are sufficiently representative of the medium under evaluation for their specific data use.

APPENDIX D

BIOTA SAMPLING FIELD PHOTOGRAPHS (NEWFIELDS WORK PRODUCT)

Upper Hanover Creek

Photo 1. Site O48.8E.

Photo 2. Site B47.2E.

Photo 3. Site B45.8W.

Photo 4. Site O43.5W.

Photo 5. Site O44.2E.

Lower Whitewater Creek Sample Sites:

Photo 6. Site LW-03.

Photo 7. Site LW-03 E.

Photo 8. Sediment Sampling Site LW-03E.

Photo 9. Site LW-04.

Photo 10. Site LW-07.

APPENDIX E

BIOTA SAMPLING FIELD SAMPLING SHEETS (NEWFIELDS WORK PRODUCT)

①

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: 048.8E GPS Coordinates: 32.79336 108.10195 Way Point: 18

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: JMH/MCL/RW Date: 9/11/07

Site Description: Overbank on Hanover Crk.

Weather Conditions: Sunny/Cool

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Alconox
Sampling: Sweep Net/Invert Clip/Foliage & Seed

INSTRUMENTS
Scale:

Photo #s: 108-0827 ✓
108-0828 ✓
108-0829 ✓
108-0830 ✓

SAMPLE INVENTORY

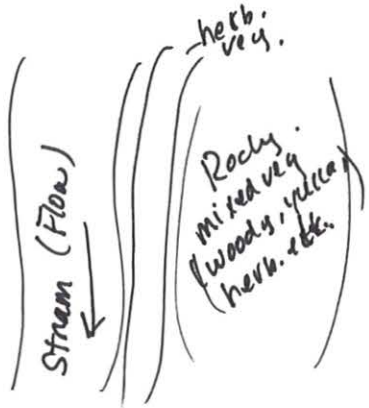
Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
		V	169.7 ~~179.5~~	
		SH	35.6 ~~45.4~~	
		I	1.2g ~~2.8~~	Very low mass Coleoptera, Lepidoptera, Orthoptera, Diptera, Hemiptera, Homoptera, Arachnida-Araecea, Hymenoptera.

Sample Location Map

3 way points - stored.

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [signature]

Chain of custody Record No. pgs 1-5.

(2)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: B47.2E GPS Coordinates: N: 32.790590° W: 108.103210° Way Point: 020

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: RW/ML/JA Date: 9/11/07

Site Description: Side Bar on Hanover Creek

Weather Conditions: Sunny, Cool

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Alconox
Sampling: Scoop net/Invert Cutting/Veg

Photo #s: 108-0833 ✓
108-0832 ✓
108-031 ✓

INSTRUMENTS
Scale:

SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
		V	134.9 ~~1144~~7	
		SH	35.7 ~~15.5~~	
		I	2.59 ~~1.4~~	Coleoptera, Orthoptera, Hymenoptera, Arachnida - Araneae

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)

NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature: Rebecca L Uhl

Chain of custody Record No.

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: B4 5.8 W GPS Coordinates: N: 32.78556° W: 108.10553° Way Point: 021

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: RW/ML/JA Date: 09/11/07 11:44AM

Site Description: Heavily vegetated BAR

Weather Conditions:
Sunny
WARM

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Scissors re-cored
Sampling: ~~Sw~~ Sweep Net/Invert Cutting/Foliage

Photo #s: 108-0836 ✓
108-0835 ✓
108-0834 ✓

INSTRUMENTS
Scale:

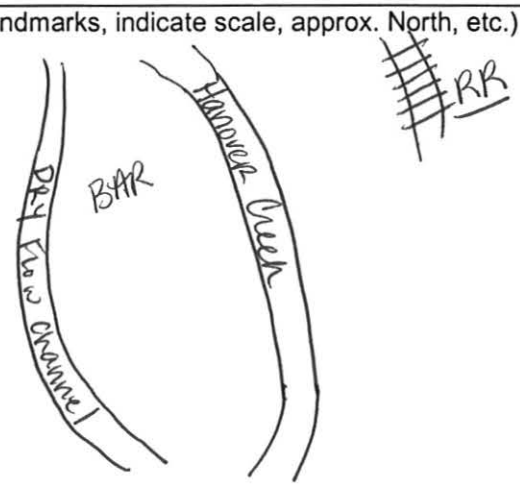
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
		V	152.7 ~~162.3~~	
		SH	21.7 ~~31.5~~	
		I	3.9 ~~27.5~~	Orthoptera, Coleoptera, Lepidoptera Aracnida - Araneae Homoptera, Hymenoptera, Diptera ~~Mantodea~~, Mantidae

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [signature]

Chain of custody Record No.

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: 043.5W GPS Coordinates: N: 32.78334° W: 108.10817° Way Point: 022

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: RW/JA/ML Date: 09/11/07

Site Description: Dry overbank

12:36pM

Weather Conditions: Sunny
WARM

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Alconox-Scissors
Sampling: SweepNets (Invertebrates)
Clip/Hand (veg)

INSTRUMENTS
Scale:

Photo #'s 108-0841
108-0840
108-0839
108-0838
108-0837
Delineation

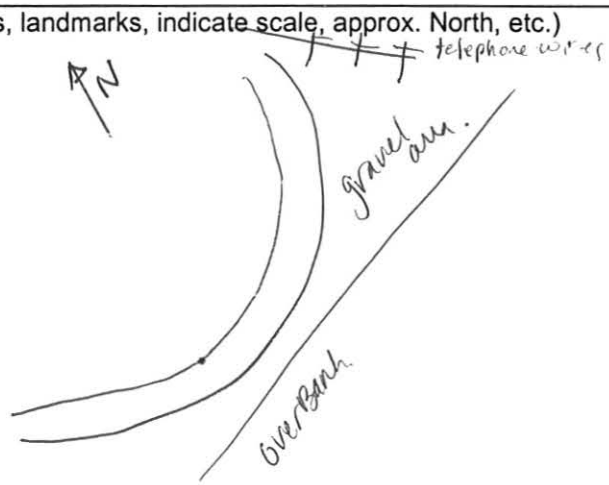
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
		I	4.2g ~~[illegible]~~	ORDER: Hymenoptera, Coleoptera, Diptera, Homoptera, Hemiptera, Orthoptera, Odonata, Arachnida - Araneae
		V	105.5 ~~[illegible]~~	
		SH	39.1 ~~48.9~~	

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [signature]

Chain of custody Record No.

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: 044.2E GPS Coordinates: N: 32.78383° W: 108.10705° Way Point: 023

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: RW/ML/JA Date: 09/11/07 18:10

Site Description: Overbank

Weather Conditions: Sunny, WARM

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Scissors Decon – Alconox
Sampling: Invert. (Sweep Nets)
Foliage/Seeds (Clip)
INSTRUMENTS
Scale:

Photo #'s: 108-043 ✓
108-044 ✓
108-045 ✓
note: 108-042 is of mine pile.

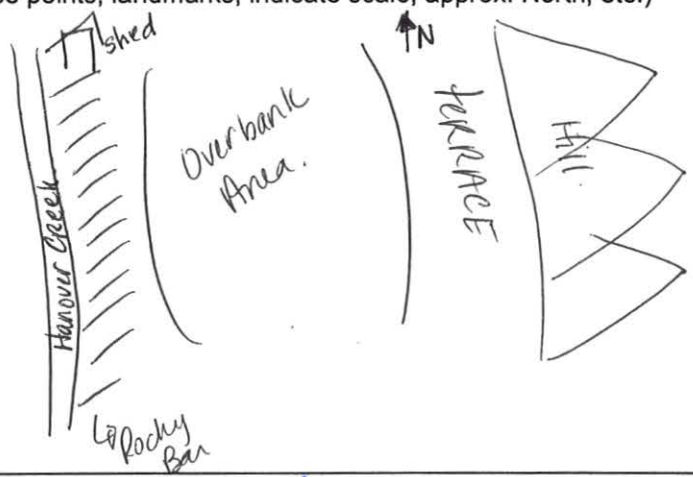
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
		V	93.0 ~~107.8~~	
		I	5.6g ~~32.4~~	Homoptera, Coleoptera, Hemiptera, Hymenoptera, Aranniolae-Araneae, Orthoptera, Neuroptera
		SH	27.9 ~~37.7~~	

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [signature]

Chain of custody Record No.

(6)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: Lower Whitewater. ~~(LWW03)~~ (LW03) GPS Coordinates: N: 32.54246 W: 108.07572 Way Point: 025

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: RW/JA/MC Date: 09/12/07

Site Description: Lower Whitewater Creek outwash.
Obvious impact b/c virtually no growth. Sparse vegetation consists of clumps of grass & salt cedar/walnut (stressed). Sediment consists of rocky pebbles above fine fluvial material. (Sands → clays?).

Weather Conditions: ↳ Sunny, cool.

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Alconox, Scissors
Sampling: Net → inverts.
Clipping → veg.
INSTRUMENTS
Scale:

No seeds available for sampling.

photos: 108-046 ✓
108-047 ✓
108-048 ✓

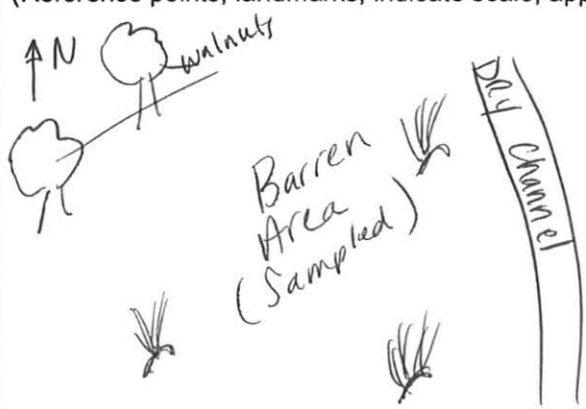
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	LW03-F	Veg	111.8 ~~121.0~~	
	LW03-I	I	21.0	Coleoptera (all Beetles)
		NO SEED!		

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [illegible]

Chain of custody Record No.

(7)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: LWW3E GPS Coordinates: N: 32.54184° W: 108.07539° Way Point: 026

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: RW/JA/ML Date: 09/12/07 9:50AM

Site Description: Grassy Area. Grasses growing in 'clumps' on mounds. Substrate is very fine, w/no pebbles/rocks.

Weather Conditions: Sunny, WARM

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Scissors, Alconox
Sampling: Clip (Veg)
Sweep nets (Inverts)

Photos: 108-049 ✓
108-050 ✓
108-051 ✓

INSTRUMENTS
Scale:

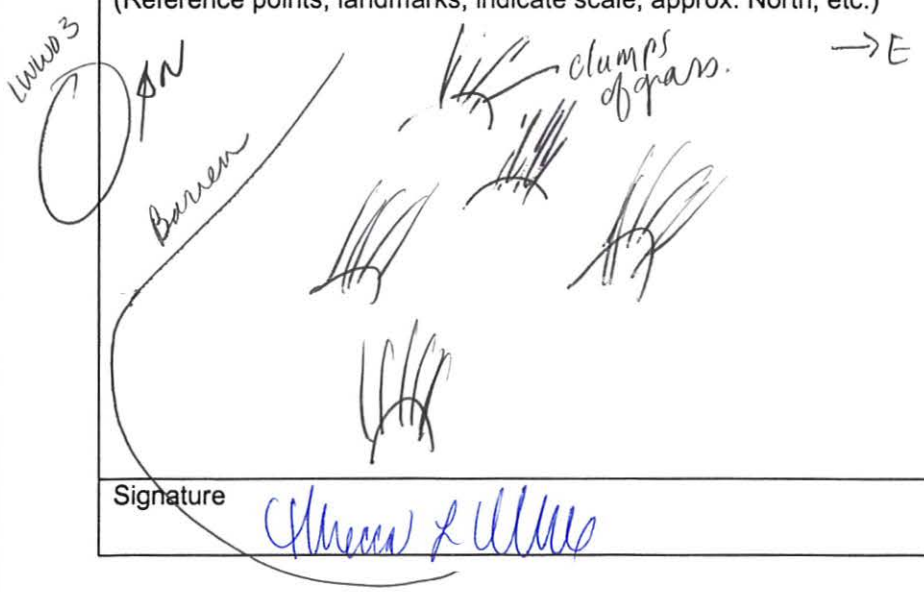
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	LW3E-~~4~~F	Veg	144.7 ~~154.5~~	
	LW3E-I	I	9.4 ~~7.0~~	Coleoptera (mainly) Orthoptera (only 1 grasshopper)
		NO Seed!		

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [signature]

Chain of custody Record No.

(8)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: LW04 GPS Coordinates: N: 32.53385° W: 108.06633° Way Point: 032

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: RW/JA/MC Date: 09/12/07

Site Description: Patchy veg. of saltbush, snakeweed, Mormon tea, yucca. Substrate fine (sandy w/ pebbles/gravel).

Weather Conditions: Hot Sunny 11:10AM

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Scissors - Alcohol
Sampling:

Photos: 108-059 ✓
108-058 ✓
108-057 ✓

INSTRUMENTS
Scale:

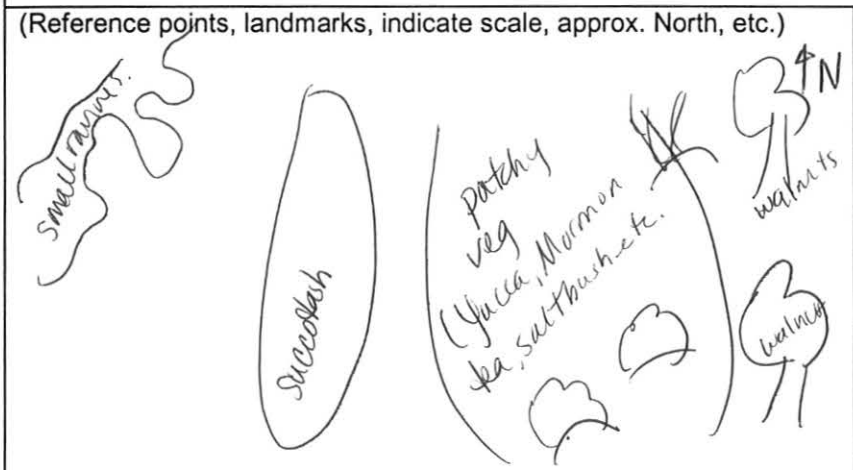
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	LW04-F	V	127.4 ~~137.7~~	
	LW04-I	I	~~[illegible]~~ 3.0	Arachnida - Araneae: Coleoptera, Hemiptera, Orthoptera, Phasmatodea, Hymenoptera, Homoptera, Lepidoptera, Odonata
		No Seed!	/	

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature: [illegible]

Chain of custody Record No.

(9)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: LW05 GPS Coordinates: N: 32.533470 W: 108.008440 Way Point: 033

Project No: _____ Project Name: Chino Page 1 of i

Sampled by: RW/MLJA Date: 9/12/07 11:46AM

Site Description: Area of patchy succulents (on mounds). Substrate gray w/ few small pebbles.

Photos: ~~108-060~~ 108-061 ~~108-062~~ no photos

Weather Conditions: HOT SUNNY

QUALITY ASSURANCE

METHODS (describe): Alconox Decon - Scissors
Cleaning Equipment (decon):
Sampling:

INSTRUMENTS
Scale:

SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	LW05-F	V	87.6 ~~97.9~~	
		No Inverts!	/	
		No Seed!	/	

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)

NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [illegible]

Chain of custody Record No.

(10)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: LW-06 GPS Coordinates: N: 32.49635° W: 108.029210° Way Point: 034

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: BW/JA/ML Date: 09/12/07 12:50pm

Site Description: Very rutted 'wet' area. No standing water at this time, but some sediment in channel moist. Heavily vegetated. Primarily succotashgrass.

Weather Conditions:

HOT, SUNNY.

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Alconox, Scissors.
Sampling:

INSTRUMENTS
Scale:

note: Mark Lewis has photos on personal camera.

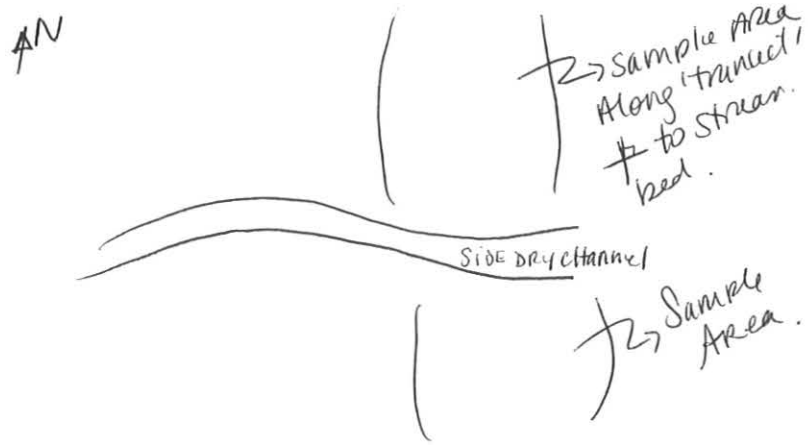
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	LW-06-F ~~I~~ Veg		130.1 ~~139.9~~	
	LW06-I ~~Veg~~ I		9.6 ~~225~~	Lepidoptera, Coleoptera, Hymenoptera, odanta, Orthoptera, Hemiptera, Arachnida Araneae
	No Seed!			

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature [signature]

Chain of custody Record No.

(11)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: LW-07 GPS Coordinates: N: 32.546893° Way Point: 035 W: 108.08482°

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: BW/JAM/ML Date: 9/12/07 14:36

Site Description: Overbank along Whitewater Creek.
Veg. primarily succotash' grass, some snakeweed, & unknown.

Weather Conditions:
HOT SUNNY

QUALITY ASSURANCE

METHODS (describe): Decon Alconox-Scissors.
Cleaning Equipment (decon):
Sampling: Clip-Veg
SweepNet-Invertebrate.
INSTRUMENTS
Scale:

Photos: 108-063 ✓
108-062 ✓
108-061 ✓

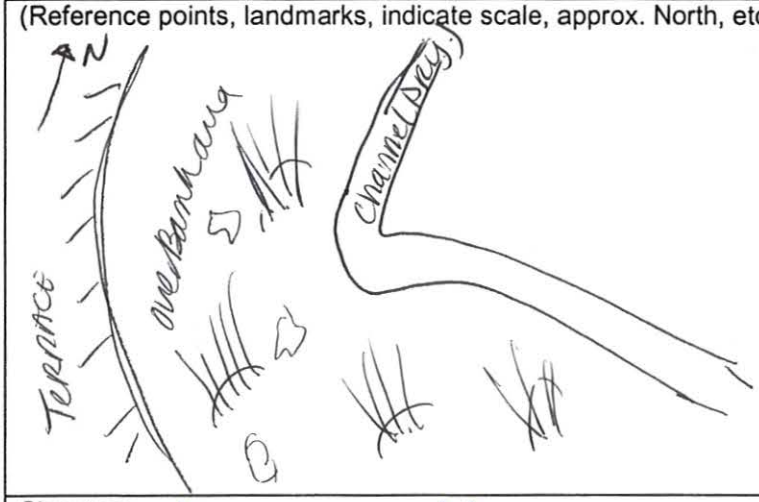
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	LW07-F	V	106.5 ~~116.3~~g	
	LW07-I	I	7.9g ~~25.7~~	Orthoptera, Hemiptera, Arachnia-Araceae, Hymenoptera, Lepidoptera, Coleoptera. → Mainly grasshopper sp Hemiptera
		NO Seed		

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature: [signature]

Chain of custody Record No.

(12)

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: SC-1 GPS Coordinates: N: 32.60580° W: 108.07615° Way Point: 036

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: BW/JM/ML Date: 09/13/07

Site Description: Wet soil (fine) along & in stream bed. Rocks and sand. ~~Dry~~ No flow in channel. Sparse veg on overbank areas. Patchy veg w/in stream BAR.

Weather Conditions:

SUNNY, COOL - A Bit damp from Rains on 9/12/07

QUALITY ASSURANCE

METHODS (describe): ALCONOX - Scissors
Cleaning Equipment (decon):
Sampling:

Photo #'s (M.L.'s camera)
⋮
188 last one.

INSTRUMENTS
Scale:

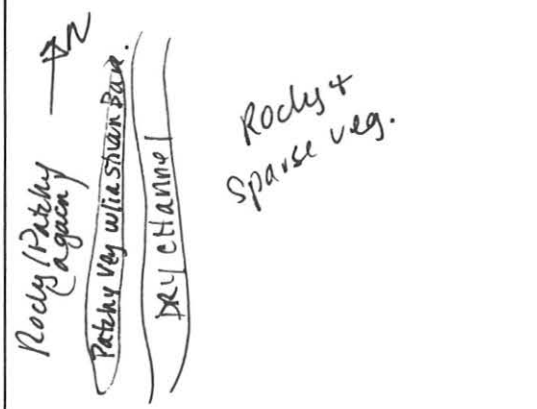
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	SC-1-F	Veg	104.0 ~~115.8~~	
	SC-1-I	Inver.	10.8 ~~14.0~~	Coleoptera, Hemiptera, Neuroptera, Orthoptera (Grasshoppers Beetles)
		No seed.		

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature: [illegible]

Chain of custody Record No.

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: SC-2 GPS Coordinates: N: 32.603750 W: 108.075280 Way Point: 037

Project No: _____ Project Name: Claw Page 1 of 1

Sampled by: BW/TA/MC Date: 9/13/07

Site Description: Similar to SC-1. Fine soil w/ ~~Rocky~~ gravel mixed in. Soil wet from rains. E-side of channel nearly Barren. Most veg is w/in side Bank of channel.

Weather Conditions:
Cool, Sunny, Damp

QUALITY ASSURANCE

METHODS (describe):
Cleaning Equipment (decon): Alconox - Scissors
Sampling:

INSTRUMENTS
Scale:

189-194 Photos. ML's camera!

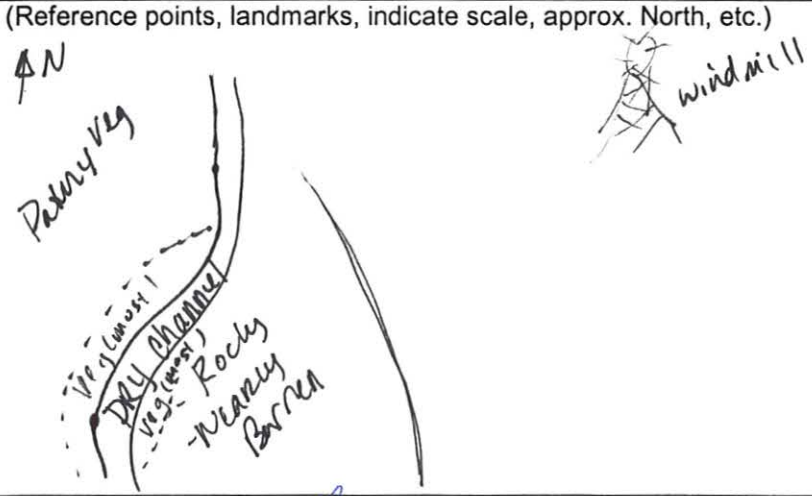
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	SC-2-F	Veg	120.8 ~~130.6~~	
	SC-2-I	Invert.	8.5g ~~[illegible]~~	Orthoptera Coleoptera Hymenoptera Lepidoptera Hemiptera Arachnida - Aranae (mainly grasshoppers + Beetles)
		No Seed.		

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature: [signature]

Chain of custody Record No.

TERRESTRIAL INVERTEBRATE/VEGETATION SAMPLING RECORD	Sample Location: SC-03 GPS Coordinates: N: 32.60102° W: 108.07463° Way Point: 038

Project No: _____ Project Name: Chino Page 1 of 1

Sampled by: BW/JA/ML Date: 09/13/07

Site Description: Wet soil. Gravely + larger Rocks. Veg. growing along stream. Barren areas parallel to streamchannel on E&W sides of channel.

Weather Conditions: Sunny, WARM - Damp.

QUALITY ASSURANCE

METHODS (describe): Alconox - Scissors
Cleaning Equipment (decon):
Sampling: Clip (Veg) Sweep Net (Invertebrates)
INSTRUMENTS
Scale:

Photo #s ML's camera 195, 196, 197, 198, 199

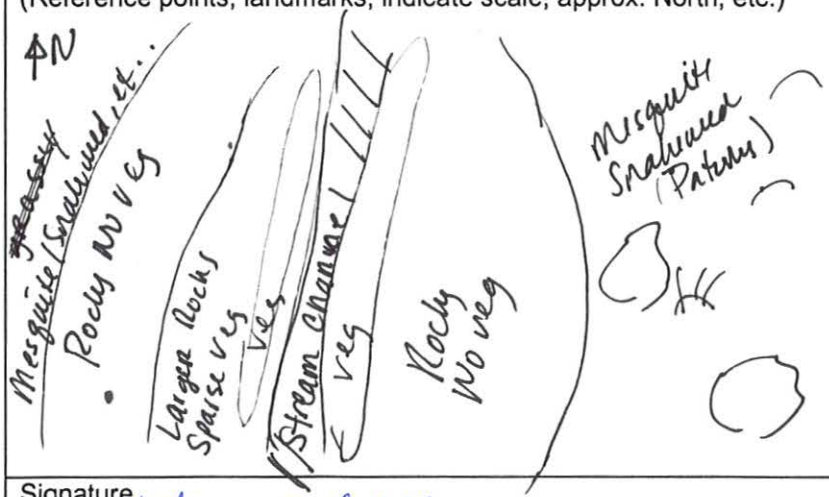
SAMPLE INVENTORY

Number of separate samples collected from this location:

Time	Sample ID	Sample Type (V=Veg; SH=seed head; I=invertebrate)	Fresh Weight (g)	Comments (Species, etc.)
	SC-3-F	Veg	137.0 ~~146.8~~	
	SC-3-I	I	8.4 ~~13.0~~	Orthoptera, Coleoptera, Hymenoptera, Neuroptera, Lepidoptera, Arachnida - Aranea → Primarily Grasshoppers + Beetles.
		No Seed!		

Sample Location Map

(Reference points, landmarks, indicate scale, approx. North, etc.)



NEWFIELDS
Boulder, CO
303-442-0267

Hanover and Whitewater Creek – Chino Mining Site

Signature: [signature]

Chain of custody Record No.

APPENDIX F

BIOTA SAMPLING DATA VALIDATION FILES (NEWFIELDS WORK PRODUCT)

NEWFIELDS
DATA EVALUATION CHECKLIST

Project Name: Phelps-Dodge Chino ERA
NEWFIELDS Project No.: 0473-002-900
Laboratory Name: ACZ Laboratories, Inc. - Steamboat Springs, CO
Laboratory Project No.: L65817
Field Sample IDs: LW03-F-A, SC-02-F-A, LW-07-F-A, O48.8E-F-A, B47-2E-F-A, LW-03E-F-A, O43.5W-S-A, O44.2E-F-A, B45.8W-F-A, O43.5W-F-A, LW-04-F-A, LW-06-F-A and LW-05-F-A.
Matrix: Vegetation (all samples except one) and Seed Heads (sample O43.5W-S-A only)
Parameter(s)/Analytical Method(s):
Al, Ba, B, Co, Fe, Mn and V by EPA 6010B
Sb, As, Cd, Cr, Cu, Pb, Mo, Ni, Tl and Zn by EPA 6020
Hg by 7471A
Se by 7742 modified

	YES	NO
1. Is a Work Plan, SAP or QAP available?	**YES**	
Chino Mines Administrative Order on Consent, Sitewide Ecological Risk Assessment, Technical Memorandum No. 2: Sampling and Analysis Data Needs (Schafer & Associates, 1999); Administrative Order on Consent, Quality Assurance Plan, Chino Mine Investigation Area (Chino Mines Company and Steffen Robertson and Kirsten (U.S.), 1997).		
2. Chain-of-Custody (COC) Records:		
Are the COCs present?	**YES**	
Are the COCs complete and signed off?	**YES**	
Note: the "Analyses Requested" was blank on the COCs since the lab was provided this information separately.		
Were the samples received at $4^{o}\pm2^{o}C$?		**NO**
The cooler temperature measured upon receipt at the lab was $15.5^{o}C$. The Tech Memo No. 2 calls for samples to be kept frozen or on ice and therefore, all sample results will be considered estimated (J flags) or estimated non-detect (UJ flags).		
Were all samples on the COCs analyzed?	**YES**	
Were any problems noted?		**NO**
3. Were any problems noted by the laboratory within the data package?	**YES**	
Some of the Pb results were qualified due to Pb being detected in the calibration blank and Pb being detected in an interference check sample. Matrix interference was cited as the probable cause for these issues. Also, the samples were received outside of the acceptable temperature range.		
4. Were all holding times met?	**YES**	
5. Was the frequency of field QC sample collection met?	**YES**	
One rinsate blank was collected off of the scissors used to collect the vegetation samples. One trip blank (sample of decon water) was also submitted for analysis.		

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6. Were all blank results non-detect? **NO**

Low concentrations of Al, As, Ba, Cr, Fe, Pb, Mn and V were detected in the prep blank, ICB and/or CCBs. All sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). Five samples (B47-2E-F-A, O43.5W-S-A, B45.8W-F-A, O43.5W-F-A and LW-05-F-A) contained Cr concentrations less than five times the prep blank concentration and will also be qualified as non-detect (U flag). The trip blank contained low concentrations of Al, Ba, Cu, Fe, Pb, Mn and Zn, however the sample concentrations were either greater than five times the blank concentration or non-detect. The rinsate blank was non-detect.

7. Were all matrices, units and reporting limits reported correctly? **YES**

8. Were all LCS recoveries within control limits? **YES**

9. Were all MS/MSD recoveries and RPDs within control limits? **NO**

The MS/MSD recoveries for Al (179.5% and 166.1%) were above the 75%-125% control limits. Therefore, all Al results will be considered potentially biased high (J+ flags). The MS/MSD recoveries for As (71.5% and 72.5%) are below the 75%-125% control limits. Since the As data has been qualified as non-detect (U flags) due to blank contamination, the As data will be qualified as estimated non-detect (UJ flags). The MSD recoveries for Cu (69.6%) and Fe (68.3%) were below the control limits, however the MS recoveries (106.4% and 89.9%, respectively) were within the control limits so the data will not be qualified.

10. Were all analytical duplicate RPDs within control limits? **NA**

Analytical duplicates were not analyzed - LCSDs and MSDs were used to assess analytical precision. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits.

11. Were all field duplicate RPDs within control limits? **NA**

Field duplicates were not collected.

12. Was the project completeness goal met? **YES**

100% laboratory completeness was obtained.

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DATA EVALUATION CHECKLIST

COMMENTS:

One seed head and twelve vegetation samples were collected on October 18, 2007 and submitted to ACZ Laboratories in Steamboat Springs, Colorado for analysis of metals. The samples were received by the laboratory at a temperature of 15.5^{o}C. Since the samples were supposed to be frozen or kept on ice, all results will be qualified as estimated (J flags) or estimated non-detect (UJ flags). The samples were analyzed within the proper holding times.

Low concentrations of Al, As, Ba, Cr, Fe, Pb, Mn and V were detected in the prep blank, ICB and/or CCBs. All sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). Five samples (B47-2E-F-A, O43.5W-S-A, B45.8W-F-A, O43.5W-F-A and LW-05-F-A) contained Cr concentrations less than five times the prep blank concentration and will also be qualified as non-detect (U flag). The trip blank contained low concentrations of Al, Ba, Cu, Fe, Pb, Mn and Zn, however the sample concentrations were either greater than five times the blank concentration or non-detect. The rinsate blank was non-detect. All laboratory control sample (LCS) recoveries were within the laboratory control limits, indicating the samples were analyzed with acceptable accuracy for the methodology.

The MS/MSD recoveries for Al were above the 75%-125% control limits, so all Al results will be considered potentially biased high (J+ flags). The MS/MSD recoveries for As were below the 75%-125% control limits. Since the As data has been qualified as non-detect (U flags) due to blank contamination, the As data will be qualified as estimated non-detect (UJ flags). The MSD recoveries for Cu and Fe were below the control limits, however the MS recoveries were within the control limits so the data will not be qualified.

Laboratory precision was assessed by analyzing LCSDs and MSDs. The relative percent difference (RPD) was calculated for sample pairs when both results were greater than five times the detection limit. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits. Field duplicates were not collected, so field precision could not be assessed.

The reported analytical results are 100% complete and usable with the qualifications described above and listed on the attached table.

Reviewed by: Laura Clayton, December 9, 2007

NEWFIELDS
DATA EVALUATION CHECKLIST

Project Name: Phelps-Dodge Chino ERA
NEWFIELDS Project No.: 0473-002-900
Laboratory Name: ACZ Laboratories, Inc. - Steamboat Springs, CO
Laboratory Project No.: L65144
Field Sample IDs: SC-1-F and SC-3-F.
Matrix: Vegetation
Parameter(s)/Analytical Method(s):
Al, Ba, B, Co, Fe, Mn and V by EPA 6010B
Sb, As, Cd, Cr, Cu, Pb, Mo, Ni, Tl and Zn by EPA 6020
Hg by 7471A
Se by 7742 modified

	YES	NO
1. Is a Work Plan, SAP or QAP available?	**YES**	

Chino Mines Administrative Order on Consent, Sitewide Ecological Risk Assessment, Technical Memorandum No. 2: Sampling and Analysis Data Needs (Schafer & Associates, 1999); Administrative Order on Consent, Quality Assurance Plan, Chino Mine Investigation Area (Chino Mines Company and Steffen Robertson and Kirsten (U.S.), 1997).

2. Chain-of-Custody (COC) Records:		
Are the COCs present?	**YES**	
Are the COCs complete and signed off?		**NO**

The COCs are not signed off by ACZ. The samples were relinquished by NewFields on September 18, 2007 and received by ACZ on September 19, 2007 according to the data report. ACZ will be notified of this omission. Also, the "Analyses Requested" was blank on the COCs since the lab was provided this information separately.

Were the samples received at $4^{o}\pm2^{o}C$?	**YES**	

The cooler temperature measured upon receipt at the lab was $3.4^{o}C$.

Were all samples on the COCs analyzed?		**NO**

Twelve of the vegetation samples were accidentally disposed of by ACZ. They were resampled and analyzed in SDG L65817.

Were any problems noted?		**NO**
3. Were any problems noted by the laboratory within the data package?	**YES**	

Hg was analyzed outside of the holding time.

4. Were all holding times met?		**NO**

Hg was analyzed 61 days after sample collection. The 28 day holding time for Hg is for aqueous samples, and professional judgement is necessary for non-aqueous samples. Due to the gross exceedance (33 days), the Hg data will be considered estimated non-detect (UJ flag).

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5. Was the frequency of field QC sample collection met? **YES**

One rinsate blank was collected off of the scissors used to collect the vegetation samples (RINSATE091307). Two trip blanks (samples of decon water) were also submitted for analysis (TRIPBLANK1 and TRIPBLANK2).

6. Were all blank results non-detect? **NO**

Low concentrations of As and Cr were detected in the prep blank and/or CCBs. Both sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). The Cr concentrations in the two samples were greater than five times the blank concentration, so qualification of the Cr data was not necessary. The trip blanks contained low concentrations of B and the rinsate blank contained a low concentration of Ba, however the sample concentrations were greater than five times the blank concentrations.

7. Were all matrices, units and reporting limits reported correctly? **YES**

8. Were all LCS recoveries within control limits? **YES**

9. Were all MS/MSD recoveries and RPDs within control limits? **NO**

The MS/MSD recoveries for Hg (83.1% and 80.4%) were below the laboratory control limits (85%-115%), but within the 75%-125% control limits typically used for Hg. As the Hg data are already UJ flagged due to the holding time exceedance, no further qualification of the data will be necessary. The MS/MSD recoveries were not used to assess data quality for Al, Fe and Mn because the sample concentrations were greater than four times the spike concentrations.

10. Were all analytical duplicate RPDs within control limits? **NA**

Analytical duplicates were not analyzed - LCSDs and MSDs were used to assess analytical precision. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits.

11. Were all field duplicate RPDs within control limits? **NA**

Field duplicates were not collected.

12. Was the project completeness goal met? **YES**

100% laboratory completeness was obtained. The samples that were accidentally disposed of were resampled and analyzed at a later date.

NEWFIELDS
DATA EVALUATION CHECKLIST

COMMENTS:

Two vegetation samples were collected on September 13, 2007 and submitted to ACZ Laboratories in Steamboat Springs, Colorado for analysis of metals. Twelve additional vegetation samples were accidentally disposed of by ACZ and resampled at a later date. The COCs were not signed off by the lab, however it is noted in the data package that the samples were received the day following shipment. The samples were received by the laboratory at a temperature of 3.4^{o}C. The samples were analyzed within the proper time for all analyses with the exception of Hg. The Hg data will be qualified as estimated non-detect (UJ flag).

Low concentrations of As and Cr were detected in the prep blank and/or CCBs. Both sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). The Cr concentrations in the two samples were greater than five times the blank concentration, so qualification of the Cr data was not necessary. The trip blanks contained low concentrations of B and the rinsate blank contained a low concentration of Ba, however the sample concentrations were greater than five times the blank concentrations so qualification was not necessary. All laboratory control sample (LCS) recoveries were within the laboratory control limits, indicating the samples were analyzed with acceptable accuracy for the methodology.

The MS/MSD recoveries for Hg were below the laboratory control limits (85%-115%), but within the 75%-125% control limits typically used for Hg. As the Hg data are already UJ flagged due to the holding time exceedance, no further qualification of the data will be necessary. The MS/MSD recoveries were not used to assess data quality for Al, Fe and Mn because the sample concentrations were greater than four times the spike concentrations.

Laboratory precision was assessed by analyzing LCSDs and MSDs. The relative percent difference (RPD) was calculated for sample pairs when both results were greater than five times the detection limit. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits. Field duplicates were not collected, so field precision could not be assessed.

The reported analytical results are 100% complete and usable with the qualifications described above and listed on the attached table.

Reviewed by: Laura Clayton, December 10, 2007

NEWFIELDS
DATA EVALUATION CHECKLIST

Project Name: Phelps-Dodge Chino ERA
NEWFIELDS Project No.: 0473-002-900
Laboratory Name: ACZ Laboratories, Inc. - Steamboat Springs, CO
Laboratory Project No.: L65145
Field Sample IDs: B45.8W-S, O44.2E-S, O48.8E-S and B47.2E-S.
Matrix: Seed Heads
Parameter(s)/Analytical Method(s):
Al, Ba, B, Co, Fe, Mn and V by EPA 6010B
Sb, As, Cd, Cr, Cu, Pb, Mo, Ni, Tl and Zn by EPA 6020
Hg by 7471A
Se by 7742 modified

	YES	NO
1. Is a Work Plan, SAP or QAP available?	**YES**	
Chino Mines Administrative Order on Consent, Sitewide Ecological Risk Assessment, Technical Memorandum No. 2: Sampling and Analysis Data Needs (Schafer & Associates, 1999); Administrative Order on Consent, Quality Assurance Plan, Chino Mine Investigation Area (Chino Mines Company and Steffen Robertson and Kirsten (U.S.), 1997).		
2. Chain-of-Custody (COC) Records:		
Are the COCs present?	**YES**	
Are the COCs complete and signed off?		**NO**
The COCs are not signed off by ACZ. The samples were relinquished by NewFields on September 18, 2007 and received by ACZ on September 19, 2007 according to the data report. ACZ will be notified of this omission. Also, the "Analyses Requested" was blank on the COCs since the lab was provided this information separately.		
Were the samples received at $4^{o}\pm2^{o}C$?	**YES**	
The cooler temperature measured upon receipt at the lab was $3.4^{o}C$.		
Were all samples on the COCs analyzed?		**NO**
One seed head sample (O43.5W-S-A) accidentally disposed of by ACZ . It was resampled and analyzed in SDG L65817.		
Were any problems noted?		**NO**
3. Were any problems noted by the laboratory within the data package?	**YES**	
See note above concerning sample O43.5W-S-A. Also, Pb was detected in an interference check sample, but the sample concentration was >10x the contaminant concentration.		
4. Were all holding times met?		**NO**
Hg was analyzed 63 days after sample collection. The 28 day holding time for Hg is specified for aqueous samples only and professional judgement is necessary for non-aqueous samples. Due to the gross exceedance (35 days), the Hg data will be considered estimated (J flag) or estimated non-detect (UJ flag).		
5. Was the frequency of field QC sample collection met?	**NA**	

NEWFIELDS
DATA EVALUATION CHECKLIST

6. Were all blank results non-detect? **NO**

Low concentrations of As, Cr and Tl were detected in the prep blank and/or CCBs. All sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). All sample concentrations were greater than five times the blank concentrations for Cr so qualification of the Cr data was not necessary. All sample concentrations of Tl were non-detect, so qualification of the Tl data is not necessary.

7. Were all matrices, units and reporting limits reported correctly? **YES**

8. Were all LCS recoveries within control limits? **YES**

9. Were all MS/MSD recoveries and RPDs within control limits? **NO**

The MS/MSD recoveries for Hg (83.1% and 80.4%) were below the laboratory control limits (85%-115%), but within the 75%-125% control limits typically used for Hg. As the data are already J/UJ flagged due to the holding time exceedance, no further qualification of the data will be necessary. The MS/MSD recoveries were not used to assess data quality for Al, Fe and Mn because the sample concentrations were greater than four times the spike concentrations.

10. Were all analytical duplicate RPDs within control limits? **NA**

Analytical duplicates were not analyzed - LCSDs and MSDs were used to assess analytical precision. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits.

11. Were all field duplicate RPDs within control limits? **NA**

Field duplicates were not collected.

12. Was the project completeness goal met? **YES**

100% laboratory completeness was obtained. The one sample that was accidentally disposed of was resampled and analyzed at a later date.

NEWFIELDS
DATA EVALUATION CHECKLIST

COMMENTS:

Four seed head samples were collected on September 11, 2007 and submitted to ACZ Laboratories in Steamboat Springs, Colorado for analysis of metals. A fifth sample was accidentally disposed of by the lab, and resampled and analyzed at a later date. The COCs were not signed off by the laboratory, however it is noted in the data package that they received the samples the day following shipment. The samples were received by the laboratory at a temperature of 3.4^{o}C. The samples were analyzed within the proper holding times, with the exception of Hg. Hg was analyzed 63 days after sample collection. The 28 day holding time for Hg is specified for aqueous samples only and professional judgement is necessary for non-aqueous samples. Due to the gross exceedance (35 days), the Hg data will be considered estimated (J flag) or estimated non-detect (UJ flag).

Low concentrations of As, Cr and Tl were detected in the prep blank and/or CCBs. All sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). All sample concentrations were greater than five times the blank concentrations for Cr so qualification of the Cr data was not necessary. All sample concentrations of Tl were non-detect, so qualification of the Tl data is not necessary. All laboratory control sample (LCS) recoveries were within the laboratory control limits, indicating the samples were analyzed with acceptable accuracy for the methodology. The MS/MSD recoveries for Hg were below the laboratory control limits, but within the 75%-125% control limits typically used for Hg. As the data are already J/UJ flagged due to the holding time exceedance, no further qualification of the data will be necessary.

Laboratory precision was assessed by analyzing LCSDs and MSDs. The relative percent difference (RPD) was calculated for sample pairs when both results were greater than five times the detection limit. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits. Field duplicates were not collected, so field precision could not be assessed.

The reported analytical results are 100% complete and usable with the qualifications described above and listed on the attached table.

Reviewed by: Laura Clayton, December 8, 2007

NEWFIELDS
DATA EVALUATION CHECKLIST

Project Name: Phelps-Dodge Chino ERA
NEWFIELDS Project No.: 0473-002-900
Laboratory Name: ACZ Laboratories, Inc. - Steamboat Springs, CO
Laboratory Project No.: L65142
Field Sample IDs: LW07-I, LW06-I, LW03-I, LW03-E-I, LW04-I, O43.5W-I, B45.8W-I, O44.2E-I, O48.8E-I, B47.2E-I, SC-1-I, SC-2-I and SC-3-I.
Matrix: Invertebrate tissue
Parameter(s)/Analytical Method(s):
Al, Ba, B, Co, Fe, Mn and V by EPA 6010B
Sb, As, Cd, Cr, Cu, Pb, Mo, Ni, Tl and Zn by EPA 6020
Hg by 7471A
Se by 7742 modified

	YES	NO
1. Is a Work Plan, SAP or QAP available?	**YES**	

Chino Mines Administrative Order on Consent, Sitewide Ecological Risk Assessment, Technical Memorandum No. 2: Sampling and Analysis Data Needs (Schafer & Associates, 1999); Administrative Order on Consent, Quality Assurance Plan, Chino Mine Investigation Area (Chino Mines Company and Steffen Robertson and Kirsten (U.S.), 1997).

2. Chain-of-Custody (COC) Records:		
Are the COCs present?	**YES**	
Are the COCs complete and signed off?		**NO**

The COCs are not signed off by ACZ. The samples were relinquished by NewFields on September 18, 2007 and received by ACZ on September 19, 2007 according to the data report. ACZ will be notified of this omission. Also, the "Analyses Requested" was blank on the COCs since the lab was provided this information separately.

Were the samples received at $4^{o}\pm2^{o}C$?	**YES**	

The cooler temperature measured upon receipt at the lab was $4.7^{o}C$.

Were all samples on the COCs analyzed?	**YES**	
Were any problems noted?		**NO**
3. Were any problems noted by the laboratory within the data package?	**YES**	

Cr and Pb were qualified with "N1" due to QC outside control limits. Percent solids could not be performed on some samples due to insufficient sample volume.

4. Were all holding times met?	**YES**	

5. Was the frequency of field QC sample collection met? NA

NEWFIELDS
DATA EVALUATION CHECKLIST

6. Were all blank results non-detect? **NO**

Low concentrations of Al, As, Cr, Pb, Mn and Tl were detected in the prep blank and/or CCBs. All sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). All sample concentrations of Cr except for sample B47.2E-I were detected at concentrations less than five times the blank concentration and will also be qualified as non-detect (U flag).

7. Were all matrices, units and reporting limits reported correctly? **YES**

8. Were all LCS recoveries within control limits? **YES**

All LCS recoveries were within the control limits provided by the laboratory. The LCSD for Mo was slightly above the control limits, however the LCS recovery and LCS/LCSD RPD were within the control limits.

9. Were all MS/MSD recoveries and RPDs within control limits? **NO**

The MS/MSD recoveries for Cu (183.4%-186.4%) were high, and the sample results will therefore be qualified as estimated and potentially biased high (J+ flag). The MS/MSD recoveries for Hg (72.2%-73.6%) were low, and the sample results will therefore be qualified as estimated non-detect (UJ) since all results were non-detect. The MS/MSD recoveries were not used to assess data quality for Al, Fe and Zn because the sample concentrations were greater than four times the spike concentrations.

10. Were all analytical duplicate RPDs within control limits? **NO**

Analytical duplicates were not analyzed - LCSDs and MSDs were used to assess analytical precision. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits with the exception of Hg (23.5% RPD). All Hg results are non-detect, and will be flagged as estimated non-detect (UJ flags) due to poor analytical precision (as well as low MS/MSD recoveries).

11. Were all field duplicate RPDs within control limits? **NA**

Field duplicates were not collected.

12. Was the project completeness goal met? **YES**

100% laboratory completeness was obtained.

NEWFIELDS
DATA EVALUATION CHECKLIST

COMMENTS:

Thirteen invertebrate samples were collected on September 11-13, 2007 and submitted to ACZ Laboratories in Steamboat Springs, Colorado for analysis of metals. The COCs were not signed off by the laboratory, however it is noted in the data package that they received the samples the day following shipment. The samples were received by the laboratory at a temperature of 4.7^{o}C. The samples were analyzed within the proper holding times.

Low concentrations of Al, As, Cr, Pb, Mn and Tl were detected in the prep blank and/or CCBs. All sample concentrations of As were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). All sample concentrations of Cr except for sample B47.2E-I were detected at concentrations less than five times the blank concentration and will also be qualified as non-detect (U flag). All laboratory control sample (LCS) recoveries were within the laboratory control limits, indicating the samples were analyzed with acceptable accuracy for the methodology. The LCSD for Mo was slightly above the control limits, however the LCS recovery and LCS/LCSD RPD were within the control limits. The MS/MSD recoveries for Cu were high, and the sample results will therefore be qualified as estimated and potentially biased high (J+ flag). The MS/MSD recoveries for Hg were low, and the sample results will therefore be qualified as estimated non-detect (UJ) since all results were non-detect.

Laboratory precision was assessed by analyzing LCSDs and MSDs. The relative percent difference (RPD) was calculated for sample pairs when both results were greater than five times the detection limit. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits with the exception of Hg (23.5% RPD). All Hg results are non-detect, and will be flagged as estimated non-detect (UJ flags) due to poor analytical precision (as well as low MS/MSD recoveries).

The reported analytical results are 100% complete and usable with the qualifications described above and listed on the attached table.

Reviewed by: Laura Clayton, December 6, 2007

NEWFIELDS
DATA EVALUATION CHECKLIST

Project Name: Phelps-Dodge Chino ERA
NEWFIELDS Project No.: 0473-002-900
Laboratory Name: ACZ Laboratories, Inc. - Steamboat Springs, CO
Laboratory Project No.: L65143 and L66146
Field Sample IDs: LW3E-S01-SD, LW3E-S02-SD, LW3E-S03-SD, LW3E-S04-SD and LW3E-S05-SD.
Matrix: Sediment
Parameter(s)/Analytical Method(s):
Al, Ba, B, Co, Fe, Mn and V by EPA 6010B
Sb, As, Cd, Cr, Cu, Pb, Mo, Ni, Tl and Zn by EPA 6020
Hg by 7471A
Se by 7742 modified
TOC by ASA No. 9 29-2.2.4
pH by USDA No. 60 (21A)
Note: pH was analyzed in SDG L66146. All other parameters were analyzed in SDG L65143.

	YES	NO
1. Is a Work Plan, SAP or QAP available?	**YES**	

Chino Mines Administrative Order on Consent, Sitewide Ecological Risk Assessment, Technical Memorandum No. 2: Sampling and Analysis Data Needs (Schafer & Associates, 1999); Administrative Order on Consent, Quality Assurance Plan, Chino Mine Investigation Area (Chino Mines Company and Steffen Robertson and Kirsten (U.S.), 1997).

2. Chain-of-Custody (COC) Records:

Are the COCs present?	**YES**	
Are the COCs complete and signed off?		**NO**

The COCs are not signed off by ACZ. The samples were relinquished by NewFields on September 18, 2007 and received by ACZ on September 19, 2007 according to the data report. ACZ will be notified of this omission. Also, the "Analyses Requested" was blank on the COCs since the lab was provided this information separately.

Were the samples received at $4^{o}\pm2^{o}C$?	**YES**	

The cooler temperatures measured upon receipt at the lab were $3.4^{o}C$ and $4.7^{o}C$.

Were all samples on the COCs analyzed?	**YES**	
Were any problems noted?		**NO**

3. Were any problems noted by the laboratory within the data package?		**NO**

Note: pH was not originally requested, and therefore analyzed at a later date.

4. Were all holding times met?	**YES**	

pH was not originally requested, and therefore not analyzed immediately upon receipt.

5. Was the frequency of field QC sample collection met? NA
The sediment samples were not required to be collected per the AOC. They were collected based on field observations.

NEWFIELDS
DATA EVALUATION CHECKLIST

6. Were all blank results non-detect? **NO**

Low concentrations of As, Cr, Pb and Tl were detected in the prep blank and/or CCBs. All sample concentrations of Tl were less than five times the prep blank concentration, and will be qualified as non-detect (U flag). All sample concentrations were greater than five times the blank concentrations for As, Cr and Pb, so qualification of the As, Cr and Pb data was not necessary.

7. Were all matrices, units and reporting limits reported correctly? **YES**

8. Were all LCS recoveries within control limits? **YES**

All LCS recoveries were within the control limits provided by the laboratory. The LCSD for mercury was slightly above the control limits, however the LCS recovery and LCS/LCSD RPD were within the control limits.

9. Were all MS/MSD recoveries and RPDs within control limits? **NO**

The MS/MSD recoveries for Ba (152.3%-171.1%) were high, and the sample results will therefore be qualified as estimated and potentially biased high (J+ flag). The MS/MSD recoveries for Sb (42.6%-43.4%) and Se (77.3%-80.7%) were below the laboratory control limits. However, the recoveries for Se are within the 75%-125% control limits specified in the QAP and will not be qualified. All sample results for Sb were non-detect, and will therefore be qualified as estimated non-detect (UJ flags). The MS/MSD recoveries were not used to assess data quality for Al, Cu, Fe and Mn because the sample concentrations were greater than four times the spike concentrations.

10. Were all analytical duplicate RPDs within control limits? **NA**

Analytical duplicates were not analyzed - LCSDs and MSDs were used to assess analytical precision. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits.

11. Were all field duplicate RPDs within control limits? **NA**

Field duplicates were not collected.

12. Was the project completeness goal met? **YES**

100% laboratory completeness was obtained. .

NEWFIELDS
DATA EVALUATION CHECKLIST

COMMENTS:

Five sediment samples were collected on September 11-12, 2007 and submitted to ACZ Laboratories in Steamboat Springs, Colorado for analysis of metals and TOC. In November, 2007 the lab was asked to measure the pH of the samples. The COCs were not signed off by the laboratory, however it is noted in the data package that they received the samples the day following shipment. The samples were received by the laboratory at a temperatures of 3.4^{o}C and 4.7^{o}C. The metals and TOC samples were analyzed within the proper holding times. As pH was not requested to be measured until November, the pH was not measured immediately upon receipt at the lab.

Low concentrations of As, Cr, Tl and Pb were detected in the prep blanks and/or continuing calibration blanks. Qualification of the As, Cr and Pb data was not necessary because the sample concentrations were greater than five times the blank concentrations. However, all Tl will be qualified as non-detect (U flag) due to the sample concentrations being less than five times the prep blank concentration. All laboratory control sample (LCS) recoveries were within the laboratory control limits, indicating the samples were analyzed with acceptable accuracy for the methodology. Matrix spike (MS) sample recoveries were outside the control limits for several metals. The MS/MSD recoveries for Ba were high, and the sample results will therefore be qualified as estimated and potentially biased high (J+ flags). The MS/MSD recoveries for Sb and Se were below the laboratory control limits. However, the recoveries for Se are within the 75%-125% control limits specified in the QAP and will not be qualified. All sample results for Sb were non-detect, and will therefore be qualified as estimated non-detect (UJ flags).

Laboratory precision was assessed by analyzing LCSDs and MSDs. The relative percent difference (RPD) was calculated for sample pairs when both results were greater than five times the detection limit. All LCS/LCSD RPDs and MS/MSD RPDs were within the control limits. Field duplicates were not collected, so field precision could not be assessed.

The reported analytical results are 100% complete and usable with the qualifications described above and listed on the attached table.

Reviewed by: Laura Clayton, December 5, 2007

NEWFIELDS
DATA EVALUATION CHECKLIST

Project Name: Phelps-Dodge Chino ERA
NEWFIELDS Project No.: 0473-002-900
Laboratory Name: ACZ Laboratories, Inc. - Steamboat Springs, CO
Laboratory Project No.: L65818
Field Sample IDs: TRIPBLANK and RINSATEBLANK.
Matrix: Aqueous blanks
Parameter(s)/Analytical Method(s):
Al, Ba, B, Co, Fe, Mn and V by 200.7
Sb, As, Cd, Cr, Cu, Pb, Mo, Ni, Tl and Zn by 200.8
Hg by 245.1
Se by 3114 B

	YES	NO
1. Is a Work Plan, SAP or QAP available?	**YES**	
Chino Mines Administrative Order on Consent, Sitewide Ecological Risk Assessment, Technical Memorandum No. 2: Sampling and Analysis Data Needs (Schafer & Associates, 1999); Administrative Order on Consent, Quality Assurance Plan, Chino Mine Investigation Area (Chino Mines Company and Steffen Robertson and Kirsten (U.S.), 1997).		
2. Chain-of-Custody (COC) Records:		
Are the COCs present?	**YES**	
Are the COCs complete and signed off?	**YES**	
Note: the "Analyses Requested" was blank on the COCs since the lab was provided this information separately.		
Were the samples received at $4^{o}\pm2^{o}C$?		**NO**
The cooler temperature measured upon receipt at the lab was $15.5^{o}C$. Data will not be qualified since these are blank samples.		
Were all samples on the COCs analyzed?	**YES**	
Were any problems noted?		**NO**
3. Were any problems noted by the laboratory within the data package?		**NO**
4. Were all holding times met?	**YES**	
5. Was the frequency of field QC sample collection met?	**NA**	
This rinsate sample was collected off of deconned scissors. The trip blank was a bottle filled with the decon water.		

NEWFIELDS
DATA EVALUATION CHECKLIST

6. Were all blank results non-detect? **NO**

Low concentrations of Ba, Cd, Cr and Tl were detected in the CCBs. The Cr result for RINSATEBLANK and Tl for TRIPBLANK will be qualified as non-detect (U flag) due to their concentrations being less than five times the corresponding CCB concentration. Al, Ba, Cu, Fe, Pb, Mn and Zn were detected in the trip blank (decon water) sample. The Cu, Fe, Pb, Mn and Zn concentrations in the rinsate blank sample were less than five times the trip blank concentrations, and will therefore be qualified as non-detect (U flags).

7. Were all matrices, units and reporting limits reported correctly? **YES**

8. Were all LCS recoveries within control limits? **YES**

The laboratory analyzed LFBs (Laboratory Fortified Blanks), and all results were within their control limits.

9. Were all MS/MSD recoveries and RPDs within control limits? **YES**

The LFM (Laboratory Fortified Matrix) and LFMDs (LFM duplicates) were all within the control limts, with the exception of Se and Zn. However, the samples used for the Se and Zn LFM/LFMDs were not one of NewField's samples, so the results are not applicable. Since all NewFields samples were blanks, matrix interferences are not likely.

10. Were all analytical duplicate RPDs within control limits? **YES**

All LFM/LFMD RPDs were within the 20% control limit.

11. Were all field duplicate RPDs within control limits? **NA**

Field duplicates were not collected.

12. Was the project completeness goal met? **YES**

100% laboratory completeness was obtained. .

NEWFIELDS
DATA EVALUATION CHECKLIST

COMMENTS:

Two blank samples were collected on October 18, 2007 and submitted to ACZ Laboratories in Steamboat Springs, Colorado for analysis of metals. The samples were received intact by the laboratory at a temperature of 15.5^{o}C. As these were blank samples, qualification of the data was not necessary. The samples were analyzed within the proper holding times.

Low concentrations of Ba, Cd, Cr and Tl were detected in the CCBs. The Cr result for RINSATEBLANK and Tl for TRIPBLANK will be qualified as non-detect (U flag) due to their concentrations being less than five times the corresponding CCB concentration. Al, Ba, Cu, Fe, Pb, Mn and Zn were detected in the trip blank (decon water) sample. The Cu, Fe, Pb, Mn and Zn concentrations in the rinsate blank sample were less than five times the trip blank concentrations, and will therefore be qualified as non-detect (U flags). All Laboratory Fortified Blank (LFB) recoveries were within the laboratory control limits, indicating the samples were analyzed with acceptable accuracy for the methodology. Laboratory Fortified Matrix (LFM) sample recoveries were all within the control limits with the exception of Se and Zn. However, non-project samples were used for the LFMs so the results are not applicable for Se and Zn.

Laboratory precision was assessed by analyzing LFMDs. The relative percent difference (RPD) was calculated for sample pairs when both results were greater than five times the detection limit. All LFM/LFMD RPDs were within the control limits.

The reported analytical results are 100% complete and usable with the qualifications described above and listed on the attached table.

Reviewed by: Laura Clayton, December 6, 2007

NEWFIELDS
DATA EVALUATION CHECKLIST

Project Name: Phelps-Dodge Chino ERA
NEWFIELDS Project No.: 0473-002-900
Laboratory Name: ACZ Laboratories, Inc. - Steamboat Springs, CO
Laboratory Project No.: L65140
Field Sample IDs: RINSATE091107, RINSATE091207, RINSATE091307, TRIPBLANK1 and TRIPBLANK2.
Matrix: Aqueous blanks
Parameter(s)/Analytical Method(s):
Al, Ba, B, Co, Fe, Mn and V by 200.7
Sb, As, Cd, Cr, Cu, Pb, Mo, Ni, Tl and Zn by 200.8
Hg by 245.1
Se by 3114 B

	YES	NO
1. Is a Work Plan, SAP or QAP available?	**YES**	

Chino Mines Administrative Order on Consent, Sitewide Ecological Risk Assessment, Technical Memorandum No. 2: Sampling and Analysis Data Needs (Schafer & Associates, 1999); Administrative Order on Consent, Quality Assurance Plan, Chino Mine Investigation Area (Chino Mines Company and Steffen Robertson and Kirsten (U.S.), 1997).

2. Chain-of-Custody (COC) Records:		
Are the COCs present?	**YES**	
Are the COCs complete and signed off?		**NO**

The COCs are not signed off by ACZ. The samples were relinquished by NewFields on September 18, 2007 and received by ACZ on September 19, 2007 according to the data report. ACZ will be notified of this omission. Also, the "Analyses Requested" was blank on the COCs since the lab was provided this information separately.

Were the samples received at 4°±2°C?	**YES**	

The cooler temperatures measured upon receipt at the lab were 3.4°C and 4.7°C.

Were all samples on the COCs analyzed?	**YES**	
Were any problems noted?		**NO**
3. Were any problems noted by the laboratory within the data package?	**YES**	

Samples qualified with "E6" in the Quality Control Summary have estimated concentrations due to internal standard recoveries not meeting acceptance criteria. Samples qualified with "IA" had internal standard recoveries that exceeded acceptance limits. Sample concentrations for these analytes were <MDL.

4. Were all holding times met?	**YES**	

5. Was the frequency of field QC sample collection met? NA
These rinsate samples were collected off of deconned scissors. The trip blanks were bottles filled with the decon water.

NEWFIELDS
DATA EVALUATION CHECKLIST

6. Were all blank results non-detect? **NO**

Low concentrations of Al, Cr, Cu, Ni and Tl were detected in the prep blank and/or CCBs. The Al result for RINSATE091207 and the Cr result for RINSATE091107 will be qualified as non-detect (U flag) due to their concentrations being less than five times the corresponding blank concentration. All other sample concentrations were non-detect these analytes, so qualification of the remaining data was not necessary. Boron was detected in the two trip blank (decon water) samples, and the B concentrations in all three rinsate samples were less than five times the trip blank concentrations. Therefore, the B concentrations for RINSATE091107, RINSATE091207 and RINSATE091307 will be qualified as non-detect (U flag).

7. Were all matrices, units and reporting limits reported correctly? **YES**

8. Were all LCS recoveries within control limits? **YES**

The laboratory analyzed LFBs (Laboratory Fortified Blanks), and all results were within their control limits.

9. Were all MS/MSD recoveries and RPDs within control limits? **YES**

The LFM (Laboratory Fortified Matrix) and LFMDs (LFM duplicates) were all within the control limts, with the exception of Sb. However, the sample used for the Sb LFM/LFMD was not one of NewField's samples, so the results are not applicable. Since all NewFields samples were blanks, matrix interferences are not likely.

10. Were all analytical duplicate RPDs within control limits? **YES**

All LFM/LFMD RPDs were within the 20% control limit.

11. Were all field duplicate RPDs within control limits? **NA**

Field duplicates were not collected.

12. Was the project completeness goal met? **YES**

100% laboratory completeness was obtained. .

NEWFIELDS
DATA EVALUATION CHECKLIST

COMMENTS:

Five blank samples were collected on September 11-13, 2007 and submitted to ACZ Laboratories in Steamboat Springs, Colorado for analysis of metals. The COCs were not signed off by the laboratory, however it is noted in the data package that they received the samples the day following shipment. The samples were received by the laboratory at a temperatures of 3.4^{o}C and 4.7^{o}C. The samples were analyzed within the proper holding times.

Low concentrations of Al, Cr, Cu, Ni and Tl were detected in the prep blank and/or CCBs. The Al result for RINSATE091207 and the Cr result for RINSATE091107 will be qualified as non-detect (U flag) due to their concentrations being less than five times the corresponding blank concentration. Boron was detected in the two trip blank (decon water) samples, and the B concentrations in all three rinsate samples were less than five times the trip blank concentrations. Therefore, the B concentrations for RINSATE091107, RINSATE091207 and RINSATE091307 will be qualified as non-detect (U flag). All Laboratory Fortified Blank (LFB) recoveries were within the laboratory control limits, indicating the samples were analyzed with acceptable accuracy for the methodology. Laboratory Fortified Matrix (LFM) sample recoveries were all within the control limits with the exception of Sb. However, a non-project sample was used for the LFM so the results are not applicable for Sb.

Laboratory precision was assessed by analyzing LFMDs. The relative percent difference (RPD) was calculated for sample pairs when both results were greater than five times the detection limit. All LFM/LFMD RPDs were within the control limits.

The reported analytical results are 100% complete and usable with the qualifications described above and listed on the attached table.

Reviewed by: Laura Clayton, December 6, 2007

APPENDIX G

BIOTA SAMPLING RAW DATA FILES (NEWFIELDS WORK PRODUCT)

LabID	SampleID	SampleType	DateSampled	DateReceived	DateAnalyzed	LabMatrix	CAS	PrepMethod	AnalyticalMethod	AnalyteGroup	Analyte	TotalorDissolved	Result	LabQual	Units	MDL	PQL	ValidationQual	ValidationReason
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	103		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.7		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	3.1		mg/Kg	0.3	2	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	44		mg/Kg	1	5	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.7		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.48		mg/Kg	0.05	0.3	UJ	conc. <5x blank conc.
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	10.5		mg/Kg	0.3	1	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	284		mg/Kg	2	5	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.73		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	29.4		mg/Kg	0.5	3	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.07	0.3	UJ	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	25-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		64.2		%	0.1	0.5		
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	18		mg/Kg	0.3	1	J	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total		U	mg/Kg	0.3	2	UJ	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-09	B45.8W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	101		mg/Kg	1	5	J	temp. exceedance
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	131		mg/Kg	1	7		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.4		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	1.7		mg/Kg	0.1	0.7		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	2.8		mg/Kg	0.5	2		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.88		mg/Kg	0.02	0.1		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.28		mg/Kg	0.02	0.1	U	conc. <5x blank conc.
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	2		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	79.7		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	403		mg/Kg	1	2		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	2.24		mg/Kg	0.02	0.1		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	28.7		mg/Kg	0.2	1		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.04	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.7		mg/Kg	0.1	0.6		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.2	B	mg/Kg	0.1	0.7		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	19-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		35.4		%	0.1	0.5		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.02	0.1		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.3	B	mg/Kg	0.2	1		
L65142-07	B45.8W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	94.3		mg/Kg	0.5	2		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	208		mg/Kg	3	20		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total	0.2	B	mg/Kg	0.2	1		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	1.7		mg/Kg	0.3	0.5	U	conc. <5x blank conc.
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	8.2		mg/Kg	0.3	2		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	15		mg/Kg	1	5		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.23	B	mg/Kg	0.05	0.3		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	22-Oct-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.99		mg/Kg	0.05	0.3		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	1	B	mg/Kg	1	5		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	16.9		mg/Kg	0.3	1		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	525		mg/Kg	2	5		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	11.1		mg/Kg	0.05	0.3		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	93.3		mg/Kg	0.5	3		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	13-Nov-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		UH	mg/Kg	0.08	0.4	UJ	holding time exceedance
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	02-Oct-07	PL			M209F, Gravimetric -	Soil Analysis	Moisture Content		51.7		%	0.1	0.5		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	3.9		mg/Kg	0.3	1		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.7	B	mg/Kg	0.3	2		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	26-Oct-07	PL	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3		
L65145-02	B45.8W-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	77		mg/Kg	1	5		
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	126		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total	0.2	B	mg/Kg	0.2	1	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.4	B	mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	8.6		mg/Kg	0.3	2	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	27		mg/Kg	1	5	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.5		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.65		mg/Kg	0.05	0.3	J	conc. <5x blank conc.
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	11.1		mg/Kg	0.3	1	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	326		mg/Kg	2	5	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	1.38		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	54.9		mg/Kg	0.5	3	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.1	0.5	UJ	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	24-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		54.5		%	0.1	0.5		
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	13.1		mg/Kg	0.3	1	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.3	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-05	B47.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	112		mg/Kg	1	5	J	temp. exceedance
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	80		mg/Kg	1	7		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.4		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	1.7		mg/Kg	0.1	0.7		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	0.6	B	mg/Kg	0.5	2		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.22		mg/Kg	0.02	0.1		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total		U	mg/Kg	0.02	0.1		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	2		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	11.5		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	150		mg/Kg	1	2		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	1.85		mg/Kg	0.02	0.1		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	41.5		mg/Kg	0.2	1		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.03	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	1.7		mg/Kg	0.1	0.6		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total		U	mg/Kg	0.1	0.7		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.02	0.1		
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.2	1		

LabID	SampleID	SampleType	DateSampled	DateReceived	DateAnalyzed	LabMatrix	CAS	PrepMethod	AnalyticalMethod	AnalyteGroup	Analyte	TotalorDissolved	Result	LabQual	Units	MDL	PQL	ValidationQual	ValidationReason
L65142-10	B47.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	42.9		mg/Kg	0.5	2		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	223		mg/Kg	3	20		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.05	0.2		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.29		mg/Kg	0.06	0.1	U	conc. <5x blank conc.
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	10.9		mg/Kg	0.3	2		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	21		mg/Kg	1	5		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.17		mg/Kg	0.01	0.06		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	22-Oct-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.61		mg/Kg	0.05	0.3		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	1	B	mg/Kg	1	5		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	5.19		mg/Kg	0.06	0.3		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	603		mg/Kg	2	5		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	22-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	3.02		mg/Kg	0.05	0.3		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	74.9		mg/Kg	0.5	3		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	13-Nov-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		UH	mg/Kg	0.1	0.5	UJ	holding time exceedance
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	02-Oct-07	PL			M209F, Gravimetric -	Soil Analysis	Moisture Content		48		%	0.1	0.5		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	2.95		mg/Kg	0.06	0.3		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.13	B	mg/Kg	0.07	0.4		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	26-Oct-07	PL	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.01	0.06		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3		
L65145-05	B47.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	23.6		mg/Kg	0.2	1		
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	500		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	6.1		mg/Kg	0.3	2	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	39		mg/Kg	1	5	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.56		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	1.39		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	34.5		mg/Kg	0.3	1	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	892		mg/Kg	2	5	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.67		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	92.2		mg/Kg	0.5	3	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.09	0.5	UJ	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	24-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		55		%	0.1	0.5		
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	1.3		mg/Kg	0.3	1	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	2.4		mg/Kg	0.3	2	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	2.3	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-06	LW-03E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	77		mg/Kg	1	5	J	temp. exceedance
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	295		mg/Kg	1	7		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.4		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	3.9		mg/Kg	0.1	0.7		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total		U	mg/Kg	0.5	2		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.17		mg/Kg	0.02	0.1		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.45		mg/Kg	0.02	0.1	U	conc. <5x blank conc.
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	2		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	21.1		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	565		mg/Kg	1	2		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.42		mg/Kg	0.02	0.1		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	35.6		mg/Kg	0.2	1		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.04	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.8		mg/Kg	0.1	0.6		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.5	B	mg/Kg	0.1	0.7		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	18-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		29.6		%	0.1	0.5		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total	0.03	B	mg/Kg	0.02	0.1		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.5	B	mg/Kg	0.2	1		
L65142-04	LW-03E-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	114		mg/Kg	0.5	2		
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	201		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	3.7		mg/Kg	0.3	2	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	14		mg/Kg	1	5	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.12	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	1.42		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	19.3		mg/Kg	0.3	1	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	296		mg/Kg	2	5	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.24	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	70.7		mg/Kg	0.5	3	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.1	0.5	UJ	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	22-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		52.6		%	0.1	0.5		
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	3.4		mg/Kg	0.3	1	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	1.2	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	29-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total	0.06	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	1.6	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-01	LW03-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	56		mg/Kg	1	5	J	temp. exceedance
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	661		mg/Kg	2	8		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.7		mg/Kg	0.1	0.3	U	conc. <5x blank conc.
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	8.8		mg/Kg	0.2	0.8		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total		U	mg/Kg	0.5	3		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.3		mg/Kg	0.03	0.1		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.76		mg/Kg	0.03	0.1	U	conc. <5x blank conc.
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	3		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	30.8		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	2000		mg/Kg	1	3		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	2.19		mg/Kg	0.03	0.1		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	73.1		mg/Kg	0.3	1		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.03	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.9		mg/Kg	0.1	0.6		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.8	B	mg/Kg	0.2	0.8		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.3	1		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	18-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		31.1		%	0.1	0.5		

LabID	SampleID	SampleType	DateSampled	DateReceived	DateAnalyzed	LabMatrix	CAS	PrepMethod	AnalyticalMethod	AnalyteGroup	Analyte	TotalorDissolved	Result	LabQual	Units	MDL	PQL	ValidationQual	ValidationReason
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.03	0.1		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	2.1		mg/Kg	0.3	1		
L65142-03	LW-03-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	125		mg/Kg	0.5	3		
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	535		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.7		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	7.5		mg/Kg	0.3	2	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	40		mg/Kg	1	5	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.31		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.93		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	32.7		mg/Kg	0.3	1	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	733		mg/Kg	2	5	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.058		mg/Kg	0.003	0.02	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	89.5		mg/Kg	0.5	3	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.1	0.5	UJ	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	25-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		43.2		%	0.1	0.5		
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	1		mg/Kg	0.3	1	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	1.9	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	1.1	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-11	LW-04-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	89		mg/Kg	1	5	J	temp. exceedance
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	319		mg/Kg	2	8		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5		mg/Kg	0.1	0.3	U	conc. <5x blank conc.
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	4.6		mg/Kg	0.2	0.8		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	2.5	B	mg/Kg	0.5	3		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.09	B	mg/Kg	0.03	0.1		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.54		mg/Kg	0.03	0.1	U	conc. <5x blank conc.
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	3		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	78		mg/Kg	0.1	0.7	J+	MS/MSD recoveries high
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	512		mg/Kg	1	3		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.47		mg/Kg	0.03	0.1		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	26.5		mg/Kg	0.3	1		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.03	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.7		mg/Kg	0.1	0.7		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.4	B	mg/Kg	0.2	0.8		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.3	1		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	18-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		38.5		%	0.1	0.5		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.03	0.1		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.6	B	mg/Kg	0.3	1		
L65142-05	LW-04-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	55.5		mg/Kg	0.5	3		
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	115		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.6		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	2.9		mg/Kg	0.3	2	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	8		mg/Kg	1	5	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.75		mg/Kg	0.05	0.3	UJ	conc. <5x blank conc.
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	14		mg/Kg	0.3	1	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	143		mg/Kg	2	5	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.06	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	50		mg/Kg	0.5	3	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.09	0.4	UJ	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	26-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		42		%	0.1	0.5		
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	17.2		mg/Kg	0.3	1	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.4	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total	1.1	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-13	LW-05-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	18		mg/Kg	1	5	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	163		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.6		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	2.8		mg/Kg	0.3	2	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	18		mg/Kg	1	5	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.1	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.82		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	17.6		mg/Kg	0.3	1	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	218		mg/Kg	2	5	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	49.5		mg/Kg	0.5	3	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.07	0.4	UJ	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	26-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		52.5		%	0.1	0.5		
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	1		mg/Kg	0.3	1	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.5	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-12	LW-06-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	31		mg/Kg	1	5	J	temp. exceedance
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	78		mg/Kg	1	7		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.3		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	1.1		mg/Kg	0.1	0.7		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	1.2	B	mg/Kg	0.5	2		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.15		mg/Kg	0.02	0.1		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.3		mg/Kg	0.02	0.1	U	conc. <5x blank conc.
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	2		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	41.4		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	107		mg/Kg	1	2		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total		U	mg/Kg	0.02	0.1		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	12.8		mg/Kg	0.2	1		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.04	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.3	B	mg/Kg	0.1	0.6		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.2	B	mg/Kg	0.1	0.7		

LabID	SampleID	SampleType	DateSampled	DateReceived	DateAnalyzed	LabMatrix	CAS	PrepMethod	AnalyticalMethod	AnalyteGroup	Analyte	TotalorDissolved	Result	LabQual	Units	MDL	PQL	ValidationQual	ValidationReason
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	18-Oct-07	AN			CLPSOW390, PART F, D	Metals	Solids, Percent		32.8		%	0.1	0.5		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.02	0.1		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.2	1		
L65142-02	LW-06-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	73.2		mg/Kg	0.5	2		
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	262		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5	B	mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	10		mg/Kg	0.3	2	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	40		mg/Kg	1	5	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.39		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.89		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	30		mg/Kg	0.3	1	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	334		mg/Kg	2	5	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.25	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	56.9		mg/Kg	0.5	3	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.1	0.5	UJ	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	23-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		48.4		%	0.1	0.5		
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	21		mg/Kg	0.3	1	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.6	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total	0.28	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.7	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-03	LW-07-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	81		mg/Kg	1	5	J	temp. exceedance
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	286		mg/Kg	2	8		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total	0.2	B	mg/Kg	0.1	0.5		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	1		mg/Kg	0.1	0.3	U	conc. <5x blank conc.
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	16.3		mg/Kg	0.2	0.8		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	3.2		mg/Kg	0.5	3		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	1.2		mg/Kg	0.03	0.1		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.88		mg/Kg	0.03	0.1	U	conc. <5x blank conc.
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	3		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	95.1		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	329		mg/Kg	1	3		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	2.83		mg/Kg	0.03	0.1		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	16		mg/Kg	0.3	1		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.03	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	2.6		mg/Kg	0.1	0.6		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.3	B	mg/Kg	0.2	0.8		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.3	1		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total	0.09	B	mg/Kg	0.03	0.1		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.8	B	mg/Kg	0.3	1		
L65142-01	LW-07-I	Invertebrate	12-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	86.1		mg/Kg	0.5	3		
L66146-01	LW3E-SO1-SD	Sediment	11-Sep-07	07-Nov-07	18-Nov-07	SO			USDA No. 60 (21A)	pH	pH, Saturated Paste		4		units	0.1	0.1		
L66146-02	LW3E-SO2-SD	Sediment	12-Sep-07	07-Nov-07	18-Nov-07	SO			USDA No. 60 (21A)	pH	pH, Saturated Paste		4.9		units	0.1	0.1		
L66146-03	LW3E-SO3-SD	Sediment	12-Sep-07	07-Nov-07	18-Nov-07	SO			USDA No. 60 (21A)	pH	pH, Saturated Paste		3.9		units	0.1	0.1		
L66146-04	LW3E-SO4-SD	Sediment	12-Sep-07	07-Nov-07	18-Nov-07	SO			USDA No. 60 (21A)	pH	pH, Saturated Paste		5.8		units	0.1	0.1		
L66146-05	LW3E-SO5-SD	Sediment	12-Sep-07	07-Nov-07	18-Nov-07	SO			USDA No. 60 (21A)	pH	pH, Saturated Paste		3.7		units	0.1	0.1		
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	90		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.6		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	9.9		mg/Kg	0.3	2	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	28		mg/Kg	1	5	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	2.53		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.67		mg/Kg	0.05	0.3	UJ	conc. <5x blank con.
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	10.2		mg/Kg	0.3	1	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	278		mg/Kg	2	5	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	08-Nov-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	1.18		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	45.3		mg/Kg	0.5	3	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.06	0.3	UJ	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	25-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		38.7		%	0.1	0.5		
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	1.2		mg/Kg	0.3	1	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.3	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	1.5	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-10	O43.5W-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	98		mg/Kg	1	5	J	temp. exceedance
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	186		mg/Kg	2	8		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.6		mg/Kg	0.1	0.3	U	conc. <5x blank conc.
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	4.1		mg/Kg	0.2	0.8		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	2.2	B	mg/Kg	0.5	3		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.61		mg/Kg	0.03	0.1		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.43		mg/Kg	0.03	0.1	U	conc. <5x blank conc.
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	3		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	54.9		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	775		mg/Kg	1	3		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	5.76		mg/Kg	0.03	0.1		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	61.3		mg/Kg	0.3	1		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.03	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.4	B	mg/Kg	0.1	0.6		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.4	B	mg/Kg	0.2	0.8		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.3	1		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	19-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		34.8		%	0.1	0.5		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.03	0.1		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.3	B	mg/Kg	0.3	1		
L65142-06	O43.5W-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	102		mg/Kg	0.5	3		
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	115		mg/Kg	3	20		
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.4	B	mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	14.3		mg/Kg	0.3	2	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	13		mg/Kg	1	5	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.13	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.46		mg/Kg	0.05	0.3	UJ	conc. <5x blank conc.
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	11.9		mg/Kg	0.3	1	J	temp. exceedance

LabID	SampleID	SampleType	DateSampled	DateReceived	DateAnalyzed	LabMatrix	CAS	PrepMethod	AnalyticalMethod	AnalyteGroup	Analyte	TotalorDissolved	Result	LabQual	Units	MDL	PQL	ValidationQual	ValidationReason
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	310		mg/Kg	2	5	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	2.9		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	114		mg/Kg	0.5	3	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.07	0.3	UJ	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	24-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		9.5		%	0.1	0.5		
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.7	B	mg/Kg	0.3	1	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.4	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-07	O43.5W-S-A	Seed Head	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	68		mg/Kg	1	5	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	120		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5	B	mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	7.1		mg/Kg	0.3	2	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	9		mg/Kg	1	5	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.74		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.89		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	11.6		mg/Kg	0.3	1	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	362		mg/Kg	2	5	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	3.41		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	63.1		mg/Kg	0.5	3	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.08	0.4	UJ	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	24-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		33		%	0.1	0.5		
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	2.2		mg/Kg	0.3	1	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.3	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.7	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-08	O44.2E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	152		mg/Kg	1	5	J	temp. exceedance
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	103		mg/Kg	1	7		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	1.8		mg/Kg	0.1	0.7		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	2.4		mg/Kg	0.5	2		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.81		mg/Kg	0.02	0.1		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.22		mg/Kg	0.02	0.1	U	conc. <5x blank conc.
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	2		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	28.1		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	495		mg/Kg	1	2		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	2.57		mg/Kg	0.02	0.1		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	42.5		mg/Kg	0.2	1		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.04	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.5	B	mg/Kg	0.1	0.6		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.2	B	mg/Kg	0.1	0.7		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	19-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		34.4		%	0.1	0.5		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.02	0.1		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.2	1		
L65142-08	O44.2E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	90.4		mg/Kg	0.5	2		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	147		mg/Kg	3	20		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.05	0.3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.38		mg/Kg	0.07	0.1	U	conc. <5x blank conc.
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	8.3		mg/Kg	0.3	2		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	17		mg/Kg	1	5		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.1		mg/Kg	0.01	0.07		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	22-Oct-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.99		mg/Kg	0.05	0.3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	1	B	mg/Kg	1	5		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	3.52		mg/Kg	0.07	0.3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	477		mg/Kg	2	5		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	22-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	5.87		mg/Kg	0.05	0.3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	90.8		mg/Kg	0.5	3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	13-Nov-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total	0.15	BH	mg/Kg	0.09	0.5	J	holding time exceedance
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	02-Oct-07	PL			M209F, Gravimetric -	Soil Analysis	Moisture Content		55.7		%	0.1	0.5		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.21	B	mg/Kg	0.07	0.3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.17	B	mg/Kg	0.08	0.4		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	26-Oct-07	PL	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.01	0.07		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3		
L65145-03	O44.2E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	28.7		mg/Kg	0.3	1		
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	144		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	7.2		mg/Kg	0.3	2	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	55		mg/Kg	1	5	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.92		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	03-Nov-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.86		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5	UJ	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	12.9		mg/Kg	0.3	1	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	456		mg/Kg	2	5	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	1.6		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	60.7		mg/Kg	0.5	3	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.07	0.4	UJ	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	23-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		56.2		%	0.1	0.5		
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	14.9		mg/Kg	0.3	1	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.4	B	mg/Kg	0.3	2	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total	0.09	B	mg/Kg	0.05	0.3	J	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-04	O48.8E-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	123		mg/Kg	1	5	J	temp. exceedance
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	171		mg/Kg	3	10		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.9		mg/Kg	0.2	0.5	U	conc. <5x blank conc.
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	2.3		mg/Kg	0.3	1		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total		U	mg/Kg	1	5		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.32		mg/Kg	0.05	0.2		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.37		mg/Kg	0.05	0.2	U	conc. <5x blank conc.

LabID	SampleID	SampleType	DateSampled	DateReceived	DateAnalyzed	LabMatrix	CAS	PrepMethod	AnalyticalMethod	AnalyteGroup	Analyte	TotalorDissolved	Result	LabQual	Units	MDL	PQL	ValidationQual	ValidationReason
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	1	5		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	29.2		mg/Kg	0.2	1	J+	MS/MSD recoveries high
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	468		mg/Kg	2	5		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	1.52		mg/Kg	0.05	0.2		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	44.5		mg/Kg	0.5	2		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.04	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.5	B	mg/Kg	0.2	1		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total		U	mg/Kg	0.3	1		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	2		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.2		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	2		
L65142-09	O48.8E-I	Invertebrate	11-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	85		mg/Kg	1	5		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	169		mg/Kg	3	20		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.05	0.3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.31		mg/Kg	0.06	0.1	U	conc. <5x blank conc.
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	11.1		mg/Kg	0.3	2		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	25		mg/Kg	1	5		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.11		mg/Kg	0.01	0.06		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	22-Oct-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.6		mg/Kg	0.05	0.3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	1	B	mg/Kg	1	5		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	4.42		mg/Kg	0.06	0.3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	509		mg/Kg	2	5		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	22-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	3.96		mg/Kg	0.05	0.3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	67.5		mg/Kg	0.5	3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	13-Nov-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		UH	mg/Kg	0.08	0.4	UJ	holding time exceedance
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	02-Oct-07	PL			M209F, Gravimetric -	Soil Analysis	Moisture Content		60.1		%	0.1	0.5		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	1.4		mg/Kg	0.06	0.3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.19	B	mg/Kg	0.08	0.4		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	26-Oct-07	PL	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.01	0.06		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total		U	mg/Kg	0.5	3		
L65145-04	O48.8E-S	Seed Head	11-Sep-07	19-Sep-07	18-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	24.2		mg/Kg	0.3	1		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	466		mg/Kg	3	20		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.8		mg/Kg	0.3	0.5	U	conc. <5x blank conc.
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	10.3		mg/Kg	0.3	2		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	26		mg/Kg	1	5		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.98		mg/Kg	0.05	0.3		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	22-Oct-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.73		mg/Kg	0.05	0.3		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	3	B	mg/Kg	1	5		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	25.1		mg/Kg	0.3	1		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	528		mg/Kg	2	5		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	22-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.86		mg/Kg	0.05	0.3		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	280		mg/Kg	0.5	3		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	13-Nov-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		UH	mg/Kg	0.08	0.4	UJ	holding time exceedance
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	02-Oct-07	PL			M209F, Gravimetric -	Soil Analysis	Moisture Content		65		%	0.1	0.5		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.4	B	mg/Kg	0.3	1		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	3.4		mg/Kg	0.3	2		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	26-Oct-07	PL	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total	0.18	B	mg/Kg	0.05	0.3		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.7	B	mg/Kg	0.5	3		
L65144-12	SC-1-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	65		mg/Kg	1	5		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	351		mg/Kg	1	7		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.5		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	5.2		mg/Kg	0.1	0.7		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	4.8		mg/Kg	0.5	2		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.11		mg/Kg	0.02	0.1		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.52		mg/Kg	0.02	0.1	U	conc. <5x blank conc.
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	2		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	49.3		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	623		mg/Kg	1	2		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.6		mg/Kg	0.02	0.1		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	18.7		mg/Kg	0.2	1		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.03	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.3	B	mg/Kg	0.1	0.6		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	0.7		mg/Kg	0.1	0.7		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	19-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		35.4		%	0.1	0.5		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.02	0.1		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.9	B	mg/Kg	0.2	1		
L65142-11	SC-1-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	42.4		mg/Kg	0.5	2		
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	1560		mg/Kg	3	20	J+	MS/MSD recoveries high, temp exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1	UJ	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.6		mg/Kg	0.3	0.5	UJ	conc. <5x blank conc., MS/MSD recoveries low, temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	18.4		mg/Kg	0.3	2	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	39		mg/Kg	1	5	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	1.95		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	2.05		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	4	B	mg/Kg	1	5	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	47.1		mg/Kg	0.3	1	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	1540		mg/Kg	2	5	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	1.57		mg/Kg	0.05	0.3	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	27-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	487		mg/Kg	0.5	3	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.08	0.4	UJ	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	23-Oct-07	PL			M209F Gravimetric -	Soil Analysis	Moisture Content		55		%	0.1	0.5		
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.6	B	mg/Kg	0.3	1	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	4.9		mg/Kg	0.3	2	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	31-Oct-07	PL	7782-49-2	3050B	M7742 Modified AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3	UJ	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.05	0.3	UJ	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	28-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	1.6	B	mg/Kg	0.5	3	J	temp. exceedance
L65817-02	SC-2-F-A	Foliage	18-Oct-07	22-Oct-07	30-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	90		mg/Kg	1	5	J	temp. exceedance
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	198		mg/Kg	1	7		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.6		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	3.5		mg/Kg	0.1	0.7		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	1.5	B	mg/Kg	0.5	2		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.2		mg/Kg	0.02	0.1		

LabID	SampleID	SampleType	DateSampled	DateReceived	DateAnalyzed	LabMatrix	CAS	PrepMethod	AnalyticalMethod	AnalyteGroup	Analyte	TotalorDissolved	Result	LabQual	Units	MDL	PQL	ValidationQual	ValidationReason
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.31		mg/Kg	0.02	0.1	U	conc. <5x blank conc.
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	0.8	B	mg/Kg	0.5	2		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	55.5		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	394		mg/Kg	1	2		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.05	B	mg/Kg	0.02	0.1		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	15.6		mg/Kg	0.2	1		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.03	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.3	B	mg/Kg	0.1	0.6		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	1		mg/Kg	0.1	0.7		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	19-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		35.7		%	0.1	0.5		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.02	0.1		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.4	B	mg/Kg	0.2	1		
L65142-12	SC-2-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	58.2		mg/Kg	0.5	2		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	3870		mg/Kg	3	20		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.2	1		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	1.2		mg/Kg	0.3	0.5	U	conc. <5x blank conc.
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	30.3		mg/Kg	0.3	2		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	34		mg/Kg	1	5		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	3.18		mg/Kg	0.05	0.3		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	22-Oct-07	PL	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	5.3		mg/Kg	0.05	0.3		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total	19		mg/Kg	1	5		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	47.4		mg/Kg	0.3	1		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	4900		mg/Kg	2	5		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	22-Oct-07	PL	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	5.68		mg/Kg	0.05	0.3		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	1050		mg/Kg	0.5	3		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	13-Nov-07	PL	7439-97-6		M7471A CVAA	Metals	Mercury	Total		UH	mg/Kg	0.09	0.5	UJ	holding time exceedance
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	02-Oct-07	PL			M209F, Gravimetric -	Soil Analysis	Moisture Content		67.1		%	0.1	0.5		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.6	B	mg/Kg	0.3	1		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	10.5		mg/Kg	0.3	2		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	26-Oct-07	PL	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.5	3		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total	0.06	B	mg/Kg	0.05	0.3		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	8		mg/Kg	0.5	3		
L65144-14	SC-3-F	Foliage	13-Sep-07	19-Sep-07	18-Oct-07	PL	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	123		mg/Kg	1	5		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7429-90-5	3050B	M6010B ICP	Metals	Aluminum	Total	375		mg/Kg	1	7		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-36-0	3050B	M6020 ICP-MS	Metals	Antimony	Total		U	mg/Kg	0.1	0.5		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-38-2	3050B	M6020 ICP-MS	Metals	Arsenic	Total	0.6		mg/Kg	0.1	0.2	U	conc. <5x blank conc.
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-39-3	3050B	M6010B ICP	Metals	Barium	Total	6.8		mg/Kg	0.1	0.7		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-42-8	3050B	M6010B ICP	Metals	Boron	Total	5.3		mg/Kg	0.5	2		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-43-9	3050B	M6020 ICP-MS	Metals	Cadmium	Total	0.11		mg/Kg	0.02	0.1		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-47-3	3050B	M6020 ICP-MS	Metals	Chromium	Total	0.66		mg/Kg	0.02	0.1	U	conc. <5x blank conc.
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-48-4	3050B	M6010B ICP	Metals	Cobalt	Total		U	mg/Kg	0.5	2		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-50-8	3050B	M6020 ICP-MS	Metals	Copper	Total	32.8		mg/Kg	0.1	0.6	J+	MS/MSD recoveries high
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7439-89-6	3050B	M6010B ICP	Metals	Iron	Total	646		mg/Kg	1	2		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-92-1	3050B	M6020 ICP-MS	Metals	Lead	Total	0.3		mg/Kg	0.02	0.1		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-96-5	3050B	M6010B ICP	Metals	Manganese	Total	24.3		mg/Kg	0.2	1		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	09-Oct-07	AN	7439-97-6		M7471A CVAA	Metals	Mercury	Total		U	mg/Kg	0.04	0.2	UJ	MS/MSD recoveries low and MS/MSD RPD outside control limit
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7439-98-7	3050B	M6020 ICP-MS	Metals	Molybdenum	Total	0.3	B	mg/Kg	0.1	0.6		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-02-0	3050B	M6020 ICP-MS	Metals	Nickel	Total	1.1		mg/Kg	0.1	0.7		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	16-Oct-07	AN	7782-49-2	3050B	M7742 Modified, AA-H	Metals	Selenium	Total		U	mg/Kg	0.2	1		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	19-Oct-07	AN			CLPSOW390, PART F, D	Soil Analysis	Solids, Percent		38.9		%	0.1	0.5		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-28-0	3050B	M6020 ICP-MS	Metals	Thallium	Total		U	mg/Kg	0.02	0.1		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	11-Oct-07	AN	7440-62-2	3050B	M6010B ICP	Metals	Vanadium	Total	0.7	B	mg/Kg	0.2	1		
L65142-13	SC-3-I	Invertebrate	13-Sep-07	19-Sep-07	17-Oct-07	AN	7440-66-6	3050B	M6020 ICP-MS	Metals	Zinc	Total	40.7		mg/Kg	0.5	2		

Site Name	Site Area	Northing	Easting	Sample Date
LW-06-A	Lower Whitewater Creek	32.4963	-108.0292	10/18/2007
LW-06	Lower Whitewater Creek	32.49635	-108.02921	9/12/2007
LW-05	Lower Whitewater Creek	32.53347	-108.06844	9/12/2007
LW-05-A	Lower Whitewater Creek	32.53382	-108.06836	10/18/2007
LW-04	Lower Whitewater Creek	32.53385	-108.06633	9/12/2007
LW-04-A	Lower Whitewater Creek	32.53401	-108.06683	10/18/2007
LW-03E-A	Lower Whitewater Creek	32.54167	-108.07508	10/18/2007
LW-03E	Lower Whitewater Creek	32.54186	-108.07539	9/12/2007
LW-03	Lower Whitewater Creek	32.54246	-108.07572	9/12/2007
LW-03-A	Lower Whitewater Creek	32.54252	-108.07579	10/18/2007
LW-07-A	Lower Whitewater Creek	32.56852	-108.08485	10/18/2007
LW-07	Lower Whitewater Creek	32.56893	-108.08482	9/12/2007
SC-3	Side Channel	32.60102	-108.07463	9/13/2007
SC-2-A	Side Channel	32.60322	-108.07539	10/18/2007
SC-2	Side Channel	32.60375	-108.07528	9/13/2007
SC-1	Side Channel	32.6058	-108.07615	9/13/2007
O43.5W	Hanover Creek	32.78334	-108.10817	9/11/2007
O43.5W-A	Hanover Creek	32.78334	-108.10815	10/18/2007
O44.2E-A	Hanover Creek	32.78381	-108.10704	10/18/2007
O44.2E	Hanover Creek	32.78383	-108.10705	9/11/2007
B45.8W	Hanover Creek	32.78556	-108.10553	9/11/2007
B45.8W-A	Hanover Creek	32.78564	-108.10549	10/18/2007
B47.2E-A	Hanover Creek	32.79054	-108.10326	10/18/2007
B47.2E	Hanover Creek	32.79059	-108.10321	9/11/2007
O48.8E	Hanover Creek	32.79326	-108.10195	9/11/2007
O48.8E-A	Hanover Creek	32.79336	-108.10193	10/18/2007