Job No. 20851

Laboratory Analytical Results for Surface Water and Surface Soil Samples Collected from the Proposed Runkle Canyon Development July 2, 2007

prepared for:

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EXECUTIVE SUMMARY

This report presents Tetra Tech, Inc.'s (Tetra Tech's) summary of field observations made during the collection of two surface water samples and one surface soil sample at the proposed Runkle Canyon development location (Site) (Figures 1 and 2) on July 2, 2007, the results of laboratory analysis of those samples, and our evaluation of the analysis results. The samples were collected for the City of Simi Valley (City) by Pat Chem Laboratories on July 2, 2007.

BACKGROUND

On May 18, 2007, surface water and surface soil samples were collected from the Site by Pat Chem, under direction from a citizen group that refers to itself as the Radiation Rangers. The sample collection and analytical data were discussed in an article published in the *Los Angeles City and Valley Beat* on June 21, 2007, and at the EnviroReporter website at EnviroReporter.com. The *Los Angeles City and Valley Beat* article contained several significant comments on the May 18 sampling event, implying that the surface water might be corrosive and comparing the sample results to various regulatory criteria. Tetra Tech's evaluation indicated that the surface water sample collected on July 2, 2007, was not corrosive, and that most of the comparisons of the May 18, 2007, sample results to regulatory criteria were accurate. However, Tetra Tech also indicated that applying the regulatory criteria for drinking water to the surface water of Runkle Canyon may not be appropriate.

For informational purposes, this report includes definitions for the following terms:

- Maximum Contaminant Levels for Drinking Water (MCLs);
- U.S. Environmental Protection Agency Region 9 Preliminary Remediation Goals (PRGs);
- Public Health Goals (PHGs);
- California State Notification Levels for Drinking Water (NLs); and
- California Environmental Protection Agency Department of Toxic Substances Control (DTSC) Field Action Levels (FALS).

Surface waters in the Site area are regulated under the California Regional Water Quality Control Board, Los Angeles Region's (LARWQCB's) *Water Quality Control Plan, Los Angeles Region* (LARWQCB 1994). The Basin Plan indicates that the beneficial uses for the surface water of the Site area watershed are Municipal and Domestic Supply, Industrial Service Supply, Groundwater Recharge, Freshwater Replenishment, Water Contact Recreation, Non-contact Water Recreation, Warm Fresh Water Habitat, and Wildlife Habitat. Potential human consumption of surface water is reasonably possible under the Municipal and Domestic Supply, Water Contact Recreation, and Non-contact Water Recreation beneficial use scenarios. In these types of situations, water quality criteria, such as the MCLs, PRGs, PHGs, and NLs, may be used as screening values to determine whether further evaluation of surface water may need to be considered. In addition, it may be necessary to determine if the surface water or groundwater are brackish and contain high concentrations of total dissolved solids (TDS) to the point of being considered non-potable, since the potential beneficial use designation may be changed by the LARWQCB.

SITE PHYSICAL CHARACTERISTICS

The Site includes, approximately, the area along the bottom of Runkle Canyon within approximately 50 feet of the stream from approximately 1 to 1.25 mile south of the southern end of Sequoia Avenue on the southern flank of the Simi Hills (Figure 2).

Quaternary alluvium consisting of gravel, sand, and clay occurs at the ground surface of the canyon bottom in the Site area, and the bedrock of the Paleocene Santa Susana Formation occurs at the ground surface in the surrounding hills.

Field observations and information on historical maps indicate that quarry operations have been performed throughout the Site area. Artifacts of the quarry operations were evident in the Site area based on field observations on July 2, 2007.

Runkle Canyon is a tributary stream of the Arroyo Simi and is considered a part of the Arroyo Simi watershed, which is a tributary to the Arroyo Las Posas and Calleguas Creek, as defined in the Basin Plan. The surface water observed at the locations sampled on July 2, 2007, was in two isolated locations where groundwater was apparently seeping to the surface.

Field observations indicate that groundwater apparently occurs in an unconfined state in the Runkle Canyon stream deposits. The depth of the Runkle Canyon stream deposits and groundwater was not determined for this report. The groundwater-bearing sediments of Runkle Canyon are considered a part of the Simi groundwater water basin as defined in the Basin Plan.

FIELD OBSERVATIONS

On behalf of the City, Mr. James Steele of Tetra Tech was present for the July 2, 2007, sample collection at Runkle Canyon. Other parties present at the sample collection event included representatives from the City, County of Ventura, a citizen's group, KB Home and their consultant Geocon, and Pat Chem.

Samples were collected at three locations between 0910 and 1050 on July 2, 2007, by Pat Chem on behalf of the City. The sample locations were selected by Pat Chem in coordination with the citizen group with the intention of collecting samples at the same locations as on May 18, 2007. Surface water samples were collected from the Runkle Canyon stream at two locations (Locations 1 and 2), and a surface soil sample was collected at one location (Location 3). Based on Mr. Steele's observations, the samples were collected in general accordance with appropriate environmental sampling protocol for surface water and surface soil sample collection.

Split samples of surface water and soil were analyzed by Pat Chem under contract to the City and by AETL under contract to Tetra Tech. The surface water samples were left unfiltered and were analyzed for California Assessment Method (CAM) Title 22 metals using U.S. Environmental Protection Agency (EPA) method 6010B/7140A; the surface soil samples were analyzed for CAM Title 22 metals using EPA method 6010B/7141A. Both AETL and Pat Chem are certified by the state of California to perform these analyses.

FINDINGS

Field Conditions

The surface water was relatively clear at Sample Location 1, and at Sample Location 2, the water exhibited a slight sheen and rust colored algae was observed coating the sediments and vegetation. Lush vegetation was observed growing in the stream water at both sample locations. The pH measurements indicated neutral conditions: at Sample Location 1 the pH was 6.97 and at Sample Location 2 the pH was 7.16. The Nitril sample gloves did not appear to be deteriorating after contacting the surface water (or soils). The source of the sheen at Location 2 is unknown, although one possibility could be natural secretions from the vegetation and algae growing in the stream. The reason for the presence of rust colored algae and sediments is also unknown, although under certain conditions iron may precipitate from water onto surfaces, such as stream sediments, and produce the rust color.

The unpaved road bed adjacent to Sample Location 2 appeared to be composed of local stream sediment materials that had been graded.

The white coating observed in the dry streambed areas of the Site appeared to be from naturally occurring salts, including metals and other substances, left behind when the surface water evaporates.

The surface soil at Sample Location 3 appeared to be largely derived from stream sediments. The appearance of the vegetation and sediments in the sample area indicated it was likely that the area was part of the active stream within the last year. The white coating observed in Sample Location 3 appears to be from naturally occurring salts, including metals and other substances, left behind when the surface water evaporates.

Laboratory Analytical Results

The analysis of the surface water samples indicates

- The sample laboratory reporting limits are different for each laboratory, with AETL's reporting limits being generally lower than Pat Chem's.
- In general, the concentrations of metals detected in the July 2, 2007, downstream split samples are slightly higher than those in the upstream split samples.
- The concentrations of metals detected in the July 2, 2007, downstream split samples analyzed by AETL and Pat Chem are similar.
- The concentrations of metals detected in the July 2, 2007, upstream sample analyzed by AETL are generally slightly lower than those detected in the sample analyzed by Pat Chem. Notably, the detected concentration of arsenic in the sample analyzed by AETL (0.057 mg/L) is about half of that detected in the sample analyzed by Pat Chem (0.12 mg/L).
- Many of the detected concentrations of metals exceeded California water quality criteria, typically in the downstream samples analyzed by Pat Chem. Only arsenic and chromium exceed their MCLs, while these and other metals exceed the risk-based screening levels, such as the tap water PRGs.

The analysis of the surface soil samples indicates

- The sample laboratory reporting limits are different for each laboratory, with AETL's reporting limits being generally lower than Pat Chem's.

- In the split samples collected on July 2, 2007, only one metal (arsenic at 8.00 mg/kg in the sample analyzed at AETL) exceeded the EPA Region 9 residential PRGs. In the sample analyzed at Pat Chem, arsenic was not detected at a concentration above the laboratory reporting limit of 25 mg/kg. The EPA Region 9 residential PRG for arsenic in soil is 0.39 mg/kg and the Cal-Modified Residential PRG for arsenic in soil is 0.062 mg/kg.

- When the detected results for the surface soil samples collected on July 2, 2007, are compared to the UC Soil Background Concentration, concentrations of all of the metals—with the exception of cadmium—are within the range of detected natural concentrations. The detected cadmium concentration does not exceed the residential PRG.

- Only one metal (arsenic) detected in one soil sample collected May 18, 2007 sample and analyzed by Pat Chem, had a concentration exceeding both the residential PRG and the UC Soil Background Concentration.

CONCLUSIONS

Surface Water

Surface water samples were collected from two locations, one upstream of the other. Lush vegetation was observed growing in the stream water at both sample locations. The pH measurements indicated neutral conditions (near pH 7) at both locations. The Nitril sample gloves did not appear to be deteriorating after contacting the surface water at the sample locations. A sheen was observed on surface water at the upstream sample (i.e., Location 2); the source of this sheen is unknown, although one possibility could be natural secretions from the vegetation and algae growing in the stream. The reason for the presence of rust colored algae and sediments is also unknown, although under certain conditions iron may precipitate from water onto surfaces, such as stream sediments, and produce the rust color.

The laboratory analytical results for surface water samples collected from the proposed Runkle Canyon development site indicate the surface water of the Runkle Canyon stream contains metals at concentrations exceeding selected water quality criteria. Surface waters in the Site area are regulated under the LARWQCB's Basin Plan and beneficial use designations include Municipal and Domestic Supply, Water Contact Recreation, and Non-contact Water Recreation. In these types of situations, the criteria were used as screening values to determine whether further evaluation of water may need to be considered, since water quality criteria, such as MCLs and NLs, are applicable only to public water systems, which provide water for human consumption.

Given the small number of samples evaluated in this report, the reasons for differences between upstream and downstream metal concentrations are not apparent, but may be related to differences in the surrounding formations (i.e., natural or quarry deposits) or disposed materials (e.g., pipelines). Also, since different metal concentrations were reported for surface water samples taken within minutes of each other at the same location, a larger sample set may be necessary to determine relationships, if any, between the analytical results and sample locations.

Surface Soil

In the split samples collected on July 2, 2007, only one metal (arsenic 8.00 mg/kg in the sample analyzed by AETL) exceeded the EPA Region 9 residential PRGs. In the sample analyzed by Pat Chem, arsenic was not detected at a concentration above the laboratory reporting limit of 25 mg/kg. The EPA Region 9 Residential PRGs for arsenic in soil is 0.39 mg/kg, and the Cal-Modified Residential PRGs for arsenic in soil is 0.062 mg/kg.

When the concentrations of metals detected in the surface soil samples collected on May 18 and July 2 2007 are compared to the UC Soil Background Concentrations, all of the metals—with the exception of cadmium—are within the range of detected natural concentrations. This indicates that if the detected metals concentrations in these samples are representative of Site soils, the metals were likely derived from natural geologic materials at the Site. The cadmium concentration does not exceed the residential PRG.

The arsenic concentration in the surface soil sample collected by Pat Chem on May 18, 2007, in which arsenic was detected at 34 mg/kg is approximately 4 times the concentration of the sample with a quantified concentration collected on July 2. The reason for this difference is not known, although the reported concentration also exceeds the UC Soil Background Concentrations. One possibility may be a difference in sample collection. It is not known how the May 18 sample was collected. However, if the sample was collected from the crusts around the streambed, a sample from soils with a high percentage of the crust could potentially contain higher metals concentrations than samples derived from soils with a low percentage or no crust. The reasons for crust formation are not known, but may include evaporation of the stream water or possibly precipitation of metals, such as iron, as oxygen-depleted groundwater discharges to surface water.

Threat to the Public

All metals except one (arsenic) detected in the surface soil samples collected at the Site May 18 and July 2, 2007, were at concentrations less than the risk-based residential PRGs. A comparison of the May and July 2007 sample laboratory results to background metal concentrations indicates that the metals concentrations in the sample results are comparable to naturally occurring concentrations present in California. Therefore, exposures to soil with metals at the concentrations detected the samples collected at the Site May 18 and July 2, 2007, are generally similar to what individuals may experience at other locations in California, and do not represent a potential threat to the public. Only one metal in one soil sample (arsenic detected at 34 mg/kg in the May 18, 2007, Pat Chem sample) had a concentration exceeding both the residential PRG and the UC Soil Background Concentration. The reason for this sample having a higher arsenic concentration than samples collected on July 2, 2007, is not known. Given the small number of samples evaluated in this report, the range of metals concentrations at the Site could not be determined. Further evaluation of metal concentrations in the crusts observed along the streambed may be necessary to determine whether the arsenic concentrations in the sample collected May 18, 2007 are associated with this material. This information could be used to determine the potential for future residential exposures to metals of potential concern, such as arsenic, and also to guide the procedures for implementing best management practices for dust control during Site development.

Several metals in the downstream surface water sample were detected at concentrations exceeding water quality criteria. Since drinking water is not currently obtained from the Runkle Canyon stream, nor is it anticipated that the planned housing development will obtain drinking water from the Runkle Canyon stream, these water quality criteria exceedances do not necessarily indicate a potential health concern for future occupants of the proposed development at the Site. Further, since the water quality criteria are based on assumed daily exposure over a lifetime and current and future recreational uses of this small creek are likely to be infrequent or of lesser duration, exposures and health threats are likely to be relatively low. Nevertheless, the results suggest that further evaluation of the potential reasons for criteria exceedances should be conducted in order to assess all potential uses of surface water in this area. For example, a larger sample set may be necessary to determine relationships, if any, between the analytical results and sample locations, since different metal concentrations were reported for water samples taken within minutes of each other at the same location.

To quantitatively evaluate the threat to public health and safety posed by the arsenic and other metals in surface water and surface soil at the Site, additional evaluations should be performed to determine:

- Surface water and groundwater quality in the vicinity of the Site, particularly with regard to conditions where groundwater may discharge to surface water;
- Factors related to differences in upstream and downstream surface water quality, such as surrounding formations (i.e., natural or quarry deposits) or disposed materials (e.g., pipelines);
- Whether the soil sample in which arsenic was detected at 34 mg/kg is representative of soils across the Site or of the potentially limited areas of crusts deposited along the stream; and
- Background levels of metals, particularly arsenic, in soils for the area.

RECOMMENDATIONS

Tetra Tech recommends further study to evaluate:

- Surface water and groundwater quality in the vicinity of the Site, particularly with regard to conditions where groundwater may discharge to surface water;
- Factors related to differences in upstream and downstream surface water quality, such as surrounding formations (i.e., natural or quarry deposits) or disposed materials (e.g., pipelines);
- Factors, such as evaporation, potentially contributing to “crusts” observed along the streambed and the effects on metal concentrations observed in soil samples; and
- Background levels of metals, particularly arsenic, in soils for the area.

The study results could then be used to perform a human health screening evaluation for metals concentrations in surface water and soil. Based on the results of this human health screening evaluation, the potential risks to humans from exposure to the metals in surface water and soil at the Site could be determined.

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) is pleased to submit this report to the City of Simi Valley (City). This report presents our summary of field observations made during the collection of two surface water samples and one surface soil sample at the proposed Runkle Canyon development site in the City of Simi Valley, California (hereafter referred to as the "Site"). The samples were collected for the City by Pat Chem Laboratories, Inc. (Pat Chem.) on July 2, 2007. The Site location is shown on Figure 1. This report also contains the results of laboratory analysis of the samples collected on July 2, 2007, and our evaluation of those results. The samples were collected by Pat Chem under contract to the City. Split samples were obtained; one sample set was analyzed by Pat Chem under contract to the City and the other sample set was analyzed by American Environmental Testing Laboratory (AETL) under contract to Tetra Tech. The samples were analyzed to evaluate metal concentrations in surface water and surface soil at the Site. Tetra Tech was retained by the City to observe the July 2, 2007, sample collection, analyze a set of split samples, and evaluate the analytical data.

2.0 BACKGROUND

At least one soil and one surface water sample were collected from the Runkle Canyon site by Pat Chem, under direction from a citizen group that refers to itself as the Radiation Rangers (citizen group) on May 18, 2007. The sample collection event and analytical data were discussed in an article published in the *Los Angeles City and Valley Beat* on June 21, 2007, and at the EnviroReporter website at EnviroReporter.com. A portion (two pages) of the Pat Chem analytical report for the sample collected on May 18, 2007 was also posted on the EnviroReporter website. The full report was subsequently posted on the EnviroReporter website, but the additional information is not relevant to this analysis. The partial laboratory report contained the results of analyzing a surface water sample (sample I.D #3 0705319-01) and a top soil/mud sample (sample I.D #3 0705319-02) for metals. The sample locations were not documented in the *Los Angeles City and Valley Beat* article or on the EnviroReporter website.

It is Tetra Tech's understanding that the City arranged for the July 2, 2007, sampling event to collect surface soil and surface water samples from the same locations that were sampled by the citizen group on May 18, 2007, and to have the samples analyzed for same suite of metals as indicated in the partial May 18 sample report provided on the EnviroReporter website.

2.1 JUNE 21, 2007, *LOS ANGELES CITY AND VALLEY BEAT* ARTICLE

The June 21, 2007, *Los Angeles City and Valley Beat* article contained the following significant comments on the samples collected by the citizen group on May 18, 2007.

1. Mr. Terry Matheney reported, "I was filling these plastic bottles when my chemical gloves started bubbling. I couldn't believe it! I thought it's obviously eating its way through my gloves so I just tore them right off of me because it looked like it was permeating the rubber!"

2. "Runkle Canyon's surface water readings for arsenic are 15 times the maximum contaminant level (MCL) for drinking water, over 21,000 times the U.S Environmental Protection Agency's (EPA's) 'preliminary remediation goal,' and 37,500 times the agency's 'public health goal' for potable water."

3. "The mud sample was laced with arsenic as well, coming in at over 548 times the EPA's preliminary remediation goal for the contaminant in soil. That amount of the toxin is also 213 percent of the Department of Toxic Substances Control (DTSC) arsenic 'field action level,' where further investigation is warranted."

4. "The toxic metals nickel and vanadium were also detected in the water at worrisome levels by the Pat-Chem lab, in the case of the later (sic), tripping a government 'notification level' designed to keep pollutants out of the drinking water supply. Nickel was over 12 times the EPA's public health goal in water and vanadium came in at 1.8 times the notification level which is a threshold at which the most local government entity should be informed."

5. "The Runkle Canyon water is loaded with potassium, calcium, and sodium. Merely pouring it onto chemical-rated rubber gloves causes them to bubble after about 15 seconds for reasons not yet understood. This water, which percolates to the surface through seeps year-round, is so caustic that it seems to possess the properties of sodium hydroxide, or lye. It's as if Drano or Liquid-Plumr is flowing through Runkle Canyon."

6. “Rust-colored mud is scraped from where the creek has begun to dry up and recede.”

7. “creek water …with an oily sheen that should be tested for toxins.”

Tetra Tech was asked by the City to evaluate the statements made in the *Los Angeles City and Valley Beat* article and has the following comments:

Response to Statements 1 and 5: There are no drinking water criteria for potassium or calcium; both of these constituents occur naturally in water. The concentrations of these constituents detected in the surface water samples indicates that the water is “hard,” or high in specific metal anions that make it difficult to make suds with soap. Calcium and potassium do not make water toxic or corrosive.

Sodium can also occur naturally in water. Sodium has an EPA Drinking Water Advisory drinking water taste and odor threshold level of 30 milligrams per liter (mg/L) to 60 mg/L (Marshack 2003). This is a “nuisance” advisory and water exceeding this level may not taste good, but it is not considered to be toxic. Sodium also has a draft drinking EPA Drinking Water Health Advisory limit of 20 mg/L for individuals with a restricted sodium intake of 500 mg/day (Marshack 2003). Although the concentration of sodium detected in the May 18 surface water sample exceeds these draft advisory levels, sodium at this concentration will not make the water toxic or corrosive.

The City collected all gloves used during the July 2, 2007, sampling event and no corrosion, degradation, or bubbling was observed. Further, the pH of the surface water at Site on July 2, 2007, was approximately 7 (neutral). This indicates that the surface water at the Site is not corrosive.

Response to Statements 2 and 4: The concentration of arsenic detected in the surface water sample collected on May 18, 2007 was 0.15 mg/L. As stated in the article, this is 15 times the Federal Primary MCL of 0.01 mg/L (as defined in Code of Federal Regulations [CFR] [CFR 2007]) and 3 times the California Primary MCL for drinking water of 0.05 mg/L as defined in Title 22 of the California Code of Regulations (CCR) (State of California Office of Administrative Law 2006), which is the current standard of enforcement in California. As stated in the article, water with a concentration of 0.15 mg/L is 21,000 times the California modified U.S. EPA Region 9 PRG for tap water of 0.0000071 mg/L (U.S. EPA Region 9 2004), and 37,500 times the California Environmental Protection Agency (Cal/EPA) Public Health Goal (PHG) for Chemicals in Drinking Water (Marshack 2003) of 0.000004 mg/L. In the State of California, MCLs are enforceable regulatory standards for drinking water and apply to public water systems, which provide water for human consumption. Primary MCLs should not be exceeded in water supplied to the public (Title 22, Division 4, Chapter 15, Article 4, §64431). However, surface water at the Site is not likely to be used for a public water supply in the future. MCL’s are not applicable to non-potable water sources.

The concentration of nickel detected in the surface water sample collected on May 18, 2007, was 0.03 mg/L. The June 21 article states that “Nickel was over 12 times the EPA’s public health goal in water”. U.S. EPA does not have an MCL for nickel and does not provide public health goals. However, a nickel concentration of 0.03 mg/L is 2.5 times the Cal/EPA PHG of 0.012 mg/L.

The concentration of vanadium detected in the surface water sample collected on May 18, 2007, was 0.09 mg/L. This is 1.8 times the California State Notification Level of 0.05 mg/L, as stated in the article.

Response to Statement 3: The concentration of arsenic detected in the surface soil sample collected on May 18, 2007, was 34 milligrams per kilogram (mg/kg). This is 548 times the California modified U.S. EPA Region 9 PRG for residential soil of 0.062 mg/kg (U.S. EPA Region 9 2004) and 213 percent of the

DTSC field action level (FAL) (16 mg/kg), as stated in the article. The DTSC FALs were developed specifically for the Santa Susana Field Laboratory (SSFL) Resource Conservation and Recovery Act Field Investigation. Because the FALs were developed specifically for this SSFL investigation, additional evaluations need to be conducted on the derivation of the FALs and whether those conditions are consistent with the Runkle Canyon Site.

Response to Statement 6: Rust staining was observed on sediments and vegetation in the creek water at Surface Water Sample Location 2 on July 2, 2007. The rust coloration could possibly have been due to iron oxide precipitating out of the surface water as it became more oxygenated on contact with the atmosphere.

Response to Statement 7: A slight sheen was observed on the creek water surface at Surface Water Sample Location 2 on July 2, 2007. The source of this sheen is not known, but it might be a natural secretion from the abundant vegetation and algae observed in the creek water at this location, and this should also be considered a potential source in addition to materials disposed in the streambed.

2.2 REGULATORY CRITERIA DEFINITIONS

2.2.1 Maximum Contaminant Levels

Maximum Contaminant Levels (MCLs) are part of the drinking water standards adopted by the U.S. EPA pursuant to the federal Safe Drinking Water Act. In the State of California, MCLs are enforceable regulatory standards under the California Safe Drinking Water Act and apply to public water systems, which provide water for human consumption. An MCL is a chemical's concentration in drinking water that does not pose any significant risk to health, derived from health-based criteria (i.e., U.S. EPA MCL Goals and California Department of Public Health [CDPH] Public Health Goals [PHGs]). MCLs are adjusted from the MCL Goals and PHGs to levels that are technically and economically feasible. Primary MCLs should not be exceeded in water supplied to the public (Title 22, Division 4, Chapter 15, Article 4, §64431).

2.2.2 U.S. EPA Region 9 PRGs

The U.S. EPA Region 9 PRGs are chemical concentrations that correspond to fixed levels of risk (i.e., either a one-in-one-million cancer risk or a noncarcinogenic hazard quotient of one (1) in soil, air, and water, assuming daily exposure over a lifetime to these environmental media. Where a substance causes both cancer and noncancer (systemic) effects, the one-in-one-million cancer risk will result usually in a more stringent criterion, and consequently this value is used as the PRG. As described by the U.S. EPA (2004), "when EPA Region 9 first issued a draft of the PRG Table in 1992, there was concern expressed by Cal/EPA's DTSC that for some chemicals, the risk-based concentrations that are calculated using Cal/EPA toxicity values are 'significantly' more protective than the risk-based concentrations that are calculated using EPA toxicity values. Because the risk-based PRGs are order-of-magnitude estimates at best, it was agreed by both agencies that a difference of approximately a factor of 4 or more would be regarded as a significant difference. For chemicals with California and EPA values that differ by a factor of 4 or more, both the EPA PRGs and the 'Cal-Modified PRGs' are listed in the PRG table." PRGs may be used for several purposes. One purpose is to screen sites to determine whether further evaluation is necessary.

A necessary step in determining the applicability of PRGs is consideration of background concentrations. As stated by the U.S. EPA (2004), "in some cases, the predictive risk-based models generate PRG concentrations that lie within or even below typical background concentrations for the same element or compound. If natural background concentrations are higher than the risk-based PRG concentrations, then background concentrations should also be considered in determining whether further evaluation and/or remediation is necessary at a particular site." Since metals occur naturally in soils and water, background concentrations should be considered when evaluating metal concentrations in these environmental media.

2.2.3 Public Health Goals

The California Safe Drinking Water Act of 1996 requires the Office of Environmental Health Hazard Assessment (OEHHA) to perform risk assessments and adopt PHGs for contaminants in drinking water based exclusively on public health considerations. PHGs represent levels of contaminants in drinking water that would pose no significant health risk to individuals consuming the water on a daily basis over a lifetime. They are based on a one-in-one-million incremental cancer risk estimate for carcinogens and a threshold toxicity limit for other contaminants, with a margin of safety.

2.2.4 California State Notification Levels for Drinking Water

California State Notification Levels for Drinking Water are health-based advisory levels established by CDPH for chemicals in drinking water that lack maximum contaminant levels (MCLs). Notification levels are based mainly on health effects. An incremental cancer risk estimate of one-in-one million is used for carcinogens and a threshold toxicity limit is used for other constituents for individuals consuming the water on a daily basis over a lifetime. As with MCLs, the ability to quantify the amount of the constituent in a water sample using readily available analytical methods may cause notification levels to be set at somewhat higher concentrations than purely health-based values. Organoleptic (taste- and odor-based) values are also included as notification levels for some chemicals. Notification levels are advisory to public water suppliers. If exceeded, CDPH recommends that the supplier correct the problem or to find an alternative raw water source.

2.2.5 DTSC Field Action Levels

The DTSC Field Action Levels (FALs) were developed specifically for the Santa Susana Field Laboratory (SSFL) Resource Conservation and Recovery Act (RCRA) Field Investigation based on soil sampling conducted by Ogden Environmental and Energy Services Co., Inc. (Ogden) within and adjacent to the SSFL in May 1996 (MWH 2005). Because the FALs were developed specifically for this SSFL investigation, additional evaluations need to be conducted on the derivation of the FALs and whether those conditions are consistent with the Runkle Canyon Site.

2.3 WATER QUALITY CONTROL PLAN

Surface waters in the Site area are regulated under the California Regional Water Quality Control Board, Los Angeles Region's (LARWQCB's) *Water Quality Control Plan, Los Angeles Region* (LARWQCB 1994) (referred to here as the Basin Plan). Table 2-1 of the Basin Plan indicates that the beneficial uses for the surface water of the Arroyo Simi (and therefore the Runkle Canyon) watershed are Municipal and Domestic Supply, Industrial Service Supply, Groundwater Recharge, Freshwater Replenishment, Water Contact Recreation, Non-contact Water Recreation, Warm Fresh Water Habitat, and Wildlife Habitat. Table 2-1 and Chapter 2 of the Basin Plan are included, for reference, as Appendix A. The Basin Plan indicates that potential human consumption of surface water is reasonably possible under the Municipal and Domestic Supply, Water Contact Recreation, and Non-contact Water Recreation beneficial use scenarios. In these types of situations, water quality criteria, such as the MCLs, PRGs, PHGs, and NLs, may be used as screening values to determine whether further evaluation of water may need to be considered. In addition, it may be necessary to determine if the surface water or groundwater are brackish and contain high concentrations of total dissolved solids (TDS) to the point of being considered non-potable, since the potential beneficial use designation may be changed by the LARWQCB.

3.0 SITE PHYSICAL CHARACTERISTICS

The Site includes, approximately, the area along the bottom of Runkle Canyon within approximately 50 feet of the stream from approximately 1 to 1.25 miles south of the southern end of Sequoia Avenue (Figure 2).

3.1 TOPOGRAPHY

The Site is located in Runkle Canyon, which is on the southern flank of the Simi Hills (Figures 1 and 2). The topographic gradient and axis of Runkle Canyon slopes roughly from north to south, extending approximately 2.5 miles from the crest of the Simi Hills (at approximately 2,150 feet above mean sea level [msl]) to the floor of Simi Valley (starting at approximately 900 feet above msl). The canyon consists of one main channel in the first mile south of the end of Sequoia Avenue. At approximately 1 mile south of the end of Sequoia Avenue, Runkle Canyon divides into three main channels. In the Site area, surface elevations on the bottom of Runkle Canyon range from 1,200 above msl in the south to 1,300 feet above msl in the north, with the ridge tops at elevations 200 to 300 feet above the canyon to the east and west.

3.2 EARTH MATERIALS

The *Geologic Map of the Calabasas Quadrangle* (Dibblee Foundation 1992) indicates that Quaternary alluvium consisting of gravel, sand, and clay occurs at the ground surface of the canyon bottom in the Site area, and the bedrock of the Paleocene Santa Susana Formation occurs at the ground surface in the surrounding hills. The Santa Susana Formation consists of claystone and siltstone in the area surrounding Sample Location 1 with the Simi Conglomerate Member occurring in the area surrounding Sample Locations 2 and 3.

Quarry operations have been performed throughout the Site area. The U.S. Geological Survey 7.5 minute topographic map of the Site area, used as the base map for Figure 2, shows a quarry in the western tributary of Runkle Canyon and quarry deposits in the vicinity of Sample Location 1. Artifacts of the quarry operations were evident in the Site area based on field observations on July 2, 2007.

3.3 SURFACE WATER

Runkle Canyon is a tributary stream of the Arroyo Simi and is considered a part of the Arroyo Simi watershed, which is a tributary to the Arroyo Las Posas and Calleguas Creek, as defined in the Basin Plan (LARWQCB 1994). The Runkle Canyon stream is approximately 3 miles long, draining the Simi Hills from south to north into the Arroyo Simi. The Runkle Canyon stream is ephemeral, and surface water was observed to occur intermittently in the canyon bottom area on July 2, 2007. The surface water observed at Sample Locations 1 and 2 on July 2, 2007, occurred in two isolated locations where groundwater was apparently seeping to the surface from the water-bearing deposits of the Runkle Canyon watershed.

3.4 GROUNDWATER

Field observations indicate that groundwater occurs in an unconfined state in the narrow band of Runkle Canyon stream deposits, which consist of naturally derived alluvium and materials derived from the quarry deposits. The depth of the Runkle Canyon stream deposits and groundwater was not determined for this report, but it is not likely that they extend more than approximately 100 feet below ground surface (bgs) in the Site area. The groundwater-bearing sediments of Runkle Canyon are considered a part of the

Simi groundwater water basin as defined in the Basin Plan (LARWQCB 1994). The isolated areas of surface water observed at Sample Locations 1 and 2 on July 2, 2007, were likely derived from groundwater seeping to the surface at these two locations.

4.0 FIELD OBSERVATIONS

On behalf of the City, Mr. James Steele of Tetra Tech attended the July 2, 2007 sampling event at Runkle Canyon to observe field operations, obtain splits of the surface water and surface soil samples, and to submit the split samples to an analytical laboratory for analysis. Mr. Steele is a California Professional Geologist, Certified Engineering Geologist, and Certified Hydrogeologist with over 19 years of professional experience performing environmental assessments throughout California. He is very familiar with geologic and hydrogeologic conditions in the vicinity of Simi Valley. Photographs taken during the July 2, 2007, sampling event are included in Appendix B.

Mr. Steele arrived at the entrance to the proposed Runkle Canyon development at the south end of Sequoia Avenue at approximately 0900 with Mr. Magdaleno Mora, Environmental Compliance Program Coordinator for the City. Other parties present for the sampling event (the Sampling Group) included

- Mr. Paul Miller, Mayor;
- Mr. Mike Sedell, City Manager;
- Barbra Williamson, City Council Member;
- Mr. Peter Foy, Ventura County Supervisor;
- Ms. Laura Behjan, Assistant City Manager;
- Representatives from the citizen group;
- Mr. Scott Ouellette and other representatives from KB Home;
- Mr. Michael P. Conkle, P.G., Geocon Consultants (for KB Home); and
- Mr. Ron Lovato, Pat Chem.

The Sampling Group proceeded into the Site area in separate vehicles. Samples were collected between 0910 and 1050, and the Sampling Group left the Site at approximately 1100. The sample locations were selected by Mr. Lovato of Pat Chem in coordination with the citizen group with the intention of collecting samples at the same locations as during the May 18, 2007, sampling event. The approximate sample locations are shown on Figure 2. Surface water samples were collected from the Runkle Canyon stream at two locations (Locations 1 and 2), and a surface soil sample was collected at one location (Location 3).

4.1 SAMPLE LOCATION 1

Sample Location 1 is approximately 1 mile south of the southern end of Sequoia Avenue in Runkle Canyon Creek (Figure 2). The area around Sample Location 1 is shown in photographs 1 though 12 and 26 in Appendix B of this report. The sample location was at a surface elevation of approximately 1,200 to 1,220 feet above msl, in a ravine incised approximately 10 to 20 feet into the quarry deposits of the surrounding canyon bottom area. The stream deposits exposed at the surface largely consisted of sand and silty sand. Numerous iron pipelines, metallic debris, and asphalt and concrete rubble were observed in the ravine walls and stream bottom areas (Appendix B: Photographs 1, 2, 8, and 9). A white precipitate was observed in dry areas of the stream channel. Numerous livestock tracks were also observed (Appendix B: Photograph 10). Vegetation in the stream bed area consisted largely of mock willows and grasses, with thick stands of grass growing in the stream. The stream water appeared to be clear and was nearly still, with little evidence of flowing (Appendix B: Photograph 11).

Mr. Lovato collected an unfiltered split surface water sample at Location 1 at approximately 0910 (Appendix B: Photographs 1 through 7). The sample was collected using a plastic sampling ladle, with Mr. Lovato wearing blue Nitril gloves. The split samples were poured into glass sample containers supplied by Pat Chem and the City, labeled, sealed, and placed into a precooled ice chest with ice pending delivery to the analytical laboratories. Mr. Conkle, P.G. of Geocon Consultants also collected surface water samples by dipping his sample containers directly into the stream; he was also wearing blue Nitril gloves (Appendix B: Photograph 12). The sample gloves were collected by a City representative after use and no apparent degradation of the gloves was observed.

Pat Chem returned to Sample Location 1 at approximately 1050 and obtained a pH measurement of 6.97 in the surface water.

4.2 SAMPLE LOCATION 2

Sample Location 2 is approximately 1.25 mile south of the southern end of Sequoia Avenue in the central branch of Runkle Canyon Creek (Figure 2). The area around Sample Location 2 is shown in Photographs 13 though 19 in Appendix B. The sample location is at a surface elevation of approximately 1,300 to 1,320 feet above msl in a naturally formed canyon bottom ravine approximately 5 to 10 feet east of the unpaved canyon access road. The stream deposits exposed at the surface largely consisted of fine to medium grained gravel and gravelly-silty sand (Appendix B: Photographs 16 and 17). As at Location 1, a white precipitate was observed in dry areas of the stream channel. The stream bed area vegetation consisted largely of mock willows and grasses, with thick stands of grass growing in the stream. There was a sheen on the surface of the stream water, and rust-colored algae were growing on vegetation and sediments in the stream (Appendix B: Photographs 13 through 15). The stream was nearly still, with little evidence of water flow.

Mr. Lovato collected an unfiltered surface water sample at Location 2 at approximately 0955. The sample was collected using a different plastic sampling ladle than used at Location 1, and Mr. Lovato wore a fresh pair of blue Nitril gloves while collecting the sample. The split samples were poured into glass sample containers supplied by Pat Chem and the City, labeled, sealed, and placed into a precooled ice chest with ice pending delivery to the analytical laboratories (Appendix B: Photographs 18 and 19). Mr. Conkle, P.G. of Geocon Consultants also collected surface water samples by dipping his sample containers directly into the stream; he was also wearing blue Nitril gloves. The sample gloves were collected by a City representative after use and no apparent degradation of the gloves was observed.

The pH measurement of surface water at Sample Location 2 at approximately 0950 was 7.16.

4.3 SAMPLE LOCATION 3

Sample Location 3 is approximately 1.20 mile south of the southern end of Sequoia Avenue in the central branch of Runkle Canyon Creek (Figure 2). The area around Sample Location 3 is shown in Photographs 20 though 25 in Appendix B. The sample location is at a surface elevation of approximately 1,280 to 1,300 feet above msl in a naturally formed canyon bottom ravine that lies approximately 5 to 10 feet west of the unpaved canyon access road. The stream deposits exposed at the surface largely consisted of fine to medium grained gravel and gravelly-silty sand. A white precipitate was observed in dry areas of the stream channel. The sample area vegetation consisted largely of mock willows and grasses (Appendix B: Photographs 20 through 25).

Mr. Lovato collected a surface soil sample at Location 3 at approximately 1020. The sample was collected from approximately 0 to 0.5 foot bgs by scooping soil into a clean plastic bag and mixing it, then pouring the split soil samples into individual glass sample jars supplied by Pat Chem and the City. The sample containers were labeled, sealed, and placed into a precooled ice chest with ice pending delivery to the analytical laboratories. Mr. Lovato wore a fresh pair of blue Nitril gloves while collecting the sample. Mr. Conkle, P.G. of Geocon Consultants also collected a surface soil sample from the mixture prepared by Pat Chem. The sample gloves were collected by a City representative after use and no apparent degradation of the gloves was observed.

5.0 SAMPLE ANALYSES

One set of the split surface water and surface soil samples was analyzed by Pat Chem under contract to the City, and the other sample set was analyzed by AETL under contract to Tetra Tech. The surface water samples were analyzed unfiltered for California Assessment Method (CAM) Title 22 metals using EPA method 6010B/7140A, and the surface soil samples were analyzed for CAM Title 22 metals using EPA method 6010B/7141A. AETL and Pat Chem are certified by the state of California to perform these analyses.

6.0 FINDINGS

6.1 SURFACE WATER FIELD CONDITIONS AT SAMPLE LOCATIONS 1 AND 2

The surface water was relatively clear at Sample Location 1. At Sample Location 2, the water exhibited a slight sheen and rust colored algae was observed coating the sediments and vegetation. Lush vegetation was observed growing in the stream water at both sample locations. The pH measurements indicated neutral conditions: at Sample Location 1 the pH was 6.97 and at Sample Location 2 the pH was 7.16. The Nitril sample gloves did not appear to be deteriorating after contacting the surface water (or soils) at the sample locations. A sheen was observed on surface water at sample Location 2; the source of this sheen is unknown, although one possibility could be natural secretions from the vegetation and algae growing in the stream. The reason for the presence of rust colored algae and sediments is also unknown, although under certain conditions iron may precipitate from water onto surfaces, such as stream sediments, and produce the rust color.

The unpaved road bed adjacent to Sample Location 2 appeared to be composed of local stream sediment materials that had been graded.

The white coating observed in the dry streambed areas of the Site appeared to be from naturally occurring salts, including metals and other substances, left behind when the surface water evaporates.

6.2 SURFACE SOIL FIELD CONDITIONS AT SAMPLE LOCATION 3

The surface soil at Sample Location 3 appeared to be largely derived from stream sediment that accumulated when the stream flowed through the area in the past. The appearance of the vegetation and sediments in the sample area indicated it was likely that the area was part of the active stream within the last year. The unpaved road bed adjacent to the sample area appeared to be composed of local stream sediment materials that had been graded. The white coating observed in Sample Location 3 appears to be from naturally occurring salts, including metals and other substances, left behind when the surface water evaporates.

6.3 SURFACE WATER SAMPLE ANALYTICAL RESULTS

The laboratory analytical reports for both sets of split surface water samples are presented in Appendix C, and the surface water sample analytical results are summarized in Table 1. Table 1 also presents the analysis results for the surface water sample collected by Pat Chem on May 18, 2007, in addition to the regulatory criteria for drinking water.

The analysis of the surface water samples indicates

- The sample laboratory reporting limits are different for each laboratory, with AETL's reporting limits being generally lower than Pat Chem's.
- In general, the concentrations of metals detected in the July 2, 2007, downstream split samples are slightly higher than those in the upstream split samples.
- The concentrations of metals detected in the July 2, 2007, downstream split samples analyzed by AETL and Pat Chem are similar.

- The concentrations of metals detected in the July 2, 2007, upstream sample analyzed by AETL are generally slightly lower than those detected in the sample analyzed by Pat Chem. Notably, the detected concentration of arsenic in the sample analyzed by AETL (0.057 mg/L) is about half of that detected in the sample analyzed by Pat Chem (0.12 mg/L).

- Many of the detected concentrations of metals exceeded California water quality criteria, typically in the downstream samples analyzed by Pat Chem. Only arsenic and chromium exceed their MCLs, while these and other metals exceed the risk-based screening levels, such as the tap water PRGs.

Given the small number of samples evaluated in this report, the reasons for differences between upstream and downstream metal concentrations are not apparent, but may be related to differences in the surrounding formations (i.e., natural or quarry deposits) or disposed materials (e.g., pipelines). Also, since different metal concentrations were reported for surface water samples taken within minutes of each other at the same location, a larger sample set may be necessary to determine relationships, if any, between the analytical results and sample locations.

6.4 SURFACE SOIL SAMPLE ANALYTICAL RESULTS

The laboratory analytical reports for both sets of split surface soil samples are presented in Appendix C, and the surface soil sample analytical results are summarized in Table 2. Table 2 also presents the sample results for the surface soil sample collected by Pat Chem on May 18, 2007, as well as screening criteria for surface soil, including the "Background Concentrations of Trace and Major Elements in California Soils" (Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California [University of California] 1996) (referred to here as UC Soil Background Concentration).

The sample laboratory reporting limits are different for each laboratory, with AETL's reporting limits being generally lower than Pat Chem's. It is notable that AETL's reporting limit for arsenic of 5.0 mg/kg is 5 times less than Pat Chem's reporting limit of 25 mg/kg.

In the split samples collected on July 2, 2007, only one metal (arsenic) exceeded the EPA Region 9 residential PRGs (Table 2). Arsenic was detected at 8.00 mg/kg in the sample analyzed by AETL. In the sample analyzed by Pat Chem, arsenic was not detected at a concentration above the laboratory reporting limit of 25 mg/kg (Table 2). The EPA Region 9 residential PRG for arsenic in soil is 0.39 mg/kg and the Cal-Modified Residential PRG for arsenic in soil is 0.062 mg/kg.

When the detected results for the surface soil samples collected on July 2, 2007, are compared to the UC Soil Background Concentration, concentrations of all of the metals—with the exception of cadmium—are within the range of detected natural concentrations. The detected concentration of cadmium in the sample analyzed by AETL was 4.80 mg/kg, which exceeds the Background Concentration upper limit of 1.70 mg/kg. As noted above and shown in Table 2, this cadmium concentration does not exceed the residential PRG.

Only one metal (arsenic) detected in one soil sample collected May 18, 2007 and analyzed by Pat Chem, had a concentration exceeding the residential PRG and the UC Soil Background Concentration.

The May 18, 2007, soil sample analyzed by Pat Chem yielded arsenic at 34 mg/kg, approximately 4 times the concentration of the sample with a quantified concentration collected on July 2. The reason for this difference is not known. One possibility may be a difference in sample collection. It is not known how the May 18 sample was collected. However, the surface soil samples collected on July 2, 2007, were intentionally collected from a mixture of soil in the surface and shallow subsurface from approximately 0 to 0.5 foot bgs. The sampled soils were mixed together to “homogenize” them before they were split into three samples. This collection process could possibly have resulted in a different proportion of the “crust” and potentially associated substances included in the sample. A sample from soils with a high percentage of the crust could potentially contain higher metals concentrations than samples derived from soils with a low percentage or no crust. The surface sample soil collected on July 2, 2007, was from an area where a white crust was present on the ground surface (Appendix B, photographs 21 through 25). It is likely that some of the crust was included in the homogenized, spilt surface soil samples. The reasons for crust formation are not known, but may include evaporation of the stream water or possibly precipitation of metals, such as iron, as oxygen-depleted groundwater discharges to surface water.

7.0 CONCLUSIONS

7.1 SURFACE WATER

Surface water samples were collected from two locations, one upstream of the other. Lush vegetation was observed growing in the stream water at both sample locations. The pH measurements indicated neutral conditions (near pH 7) at both locations. The Nitril sample gloves did not appear to be deteriorating after contacting the surface water at the sample locations. A sheen was observed on surface water at the upstream sample (i.e., Location 2); the source of this sheen is unknown, although one possibility could be natural secretions from the vegetation and algae growing in the stream. The reason for the presence of rust colored algae and sediments is also unknown, although under certain conditions iron may precipitate from water onto surfaces, such as stream sediments, and produce the rust color.

The laboratory analytical results for surface water samples collected from the proposed Runkle Canyon development site indicate the surface water of the Runkle Canyon stream contains metals at concentrations exceeding selected water quality criteria. The concentrations of metals detected in the July 2, 2007, downstream split samples are slightly higher than those in the upstream split samples. Surface waters in the Site area are regulated under the LARWQCB's Basin Plan and beneficial use designations include Municipal and Domestic Supply, Water Contact Recreation, and Non-contact Water Recreation. In these types of situations, the criteria were used as screening values to determine whether further evaluation of water may need to be considered, since water quality criteria, such as MCLs and NLs, are applicable only to public water systems, which provide water for human consumption.

Given the small number of samples evaluated in this report, the reasons for differences between upstream and downstream metal concentrations are not apparent, but may be related to differences in the surrounding formations (i.e., natural or quarry deposits) or disposed materials (e.g., pipelines). Also, since different metal concentrations were reported for surface water samples taken within minutes of each other at the same location, a larger sample set may be necessary to determine relationships, if any, between the analytical results and sample locations.

7.2 SURFACE SOIL

In the split samples collected on July 2, 2007, only one metal (arsenic) exceeded the EPA Region 9 residential PRGs (Table 2). Arsenic was detected at 8.00 mg/kg in the sample analyzed by AETL. In the sample analyzed by Pat Chem, arsenic was not detected at a concentration above the laboratory reporting limit of 25 mg/kg (Table 2). The EPA Region 9 Residential PRGs for arsenic in soil is 0.39 mg/kg, and the Cal-Modified Residential PRGs for arsenic in soil is 0.062 mg/kg.

When the concentrations of metals detected in the surface soil samples collected on May 18 and July 2 2007 are compared to the UC Soil Background Concentrations, all of the metals—with the exception of cadmium—are within the range of detected natural concentrations. This indicates that if the detected metals concentrations in these samples are representative of Site soils, the metals were likely derived from natural geologic materials at the Site. The cadmium concentration does not exceed the residential PRG.

The arsenic concentration in the surface soil sample collected by Pat Chem on May 18, 2007, in which arsenic was detected at 34 mg/kg is approximately 4 times the concentration of the sample with a quantified concentration collected on July 2. The reason for this difference is not known, although the reported concentration also exceeds the UC Soil Background Concentrations. One possibility may be a difference in sample collection. It is not known how the May 18 sample was collected. However, if the sample was collected from the crusts around the streambed, a sample from soils with a high percentage of the crust could potentially contain higher metals concentrations than samples derived from soils with a low percentage or no crust. The reasons for crust formation are not known, but may include evaporation of the stream water or possibly precipitation of metals, such as iron, as oxygen-depleted groundwater discharges to surface water.

7.3 THREAT TO THE PUBLIC

As noted above, all metals except one (arsenic) detected in the surface soil samples collected at the Site May 18 and July 2, 2007, were at concentrations less than the risk-based residential PRGs. Also, based on a comparison of concentrations detected in soil samples collected at the Site May 18 and July 2, 2007 and background metal concentrations presented in the UC Soil Background Concentration study, it appears that the metals concentrations in the samples are comparable to naturally occurring concentrations present in California. These results indicate that the exposures to a majority of the metals detected in the soil samples are similar to what individuals may experience at other locations in California, and do not represent a potential threat to the public. Only one metal in one soil sample (arsenic detected at 34 mg/kg in the May 18, 2007, Pat Chem sample) had a concentration exceeding both the residential PRG and the UC Soil Background Concentration. The reason for this sample having a higher arsenic concentration than samples collected on July 2, 2007, is not known. Given the small number of samples evaluated in this report, the range of metals concentrations across the Site could not be determined. Further evaluation of metal concentrations in the crusts observed along the streambed may be necessary to determine whether the arsenic concentrations in the sample collected May 18, 2007 are associated with this material. This information could be used to determine the potential for future residential exposures to metals of potential concern, such as arsenic, and also to guide the procedures for implementing best management practices for dust control during Site development.

Several metals in the downstream surface water sample were detected at concentrations exceeding water quality criteria. Since drinking water is not currently obtained from the Runkle Canyon stream, nor is it anticipated that the planned housing development will obtain drinking water from the Runkle Canyon stream, these water quality criteria exceedances do not necessarily indicate a potential health concern for future occupants of the proposed development at the Site. Further, since the water quality criteria are based on assumed daily exposure over a lifetime and current and future recreational uses of this small creek are likely to be infrequent or of lesser duration, exposures and health threats are likely to be relatively low. Nevertheless, the results suggest that further evaluation of the potential reasons for criteria exceedances should be conducted in order to assess all potential uses of surface water in this area. For example, a larger sample set may be necessary to determine relationships, if any, between the analytical results and sample locations, since different metal concentrations were reported for surface water samples taken within minutes of each other at the same location.

To quantitatively evaluate the threat to public health and safety posed by the arsenic and other metals in surface water and surface soil at the Site, additional evaluations should be performed to determine:

- Surface water and groundwater quality in the vicinity of the Site, particularly with regard to conditions where groundwater may discharge to surface water;
- Factors related to differences in upstream and downstream surface water quality, such as surrounding formations (i.e., natural or quarry deposits) or disposed materials (e.g., pipelines);

- Whether the soil sample in which arsenic was detected at 34 mg/kg is representative of soils across the Site or of the potentially limited areas of crusts deposited along the stream; and

- Background levels of metals, particularly arsenic, in soils for the area.

8.0 RECOMMENDATIONS

Tetra Tech recommends further study to evaluate:

- Surface water and groundwater quality in the vicinity of the Site, particularly with regard to conditions where groundwater may discharge to surface water;
- Factors related to differences in upstream and downstream surface water quality, such as surrounding formations (i.e., natural or quarry deposits) or disposed materials (e.g., pipelines);
- Factors, such as evaporation, potentially contributing to "crusts" observed along the streambed and the effects on metal concentrations observed in soil samples; and
- Background levels of metals, particularly arsenic, in soils for the area.

The study results could then be used to perform a human health screening evaluation for metals concentrations in surface water and soil. Based on the results of this human health screening evaluation, the potential risks to humans from exposure to the metals in surface water and soil at the Site could be determined.

9.0 DISCLAIMER

Services performed by Tetra Tech under our contract have been and will continue to be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same general area under the same general conditions. No other representation and no warranty, express or implied, or guarantee is included or intended in this report or in any subsequent opinion or document.

The client should recognize that special risks occur whenever engineering or related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing program, carefully implemented with the appropriate equipment and experienced personnel under the direction of a trained and registered professional who functions in accordance with a professional standard of care, may fail to detect certain conditions because they are hidden, and therefore cannot be considered in the development of a subsurface exploration program. The passage of time must also be considered, and the client should recognize that due to natural occurrences or direct or indirect human intervention at the Site or at areas distant from it, actual conditions may change quickly. It should be recognized that nothing can be done to eliminate risks altogether, but certain techniques can be applied by Tetra Tech to help reduce the risks to that level deemed tolerable by the client. In any event, the scope of services provided by Tetra Tech must be that which the client agrees to or selects in light of personal risk preferences and other considerations.

Since the facts forming the basis for the report are subject to professional interpretation, differing conclusions could be reached. Tetra Tech does not assume responsibility for the discovery and elimination of hazards that could possibly cause accidents, injuries, or damage. Compliance with submitted recommendations or suggestions does not assure elimination of hazards or the fulfillment of client's obligation under local, state, or federal laws or any modifications or changes to such laws.

None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature, but shall be a representation of findings of fact from records examined.

If you have any questions regarding this letter report, please contact James Steele at (805) 681-3100, or jim.steele@tetratech.com. We appreciate this opportunity to present our recommendation for this very important project.

Sincerely,

TETRA TECH, INC.

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James R Steele

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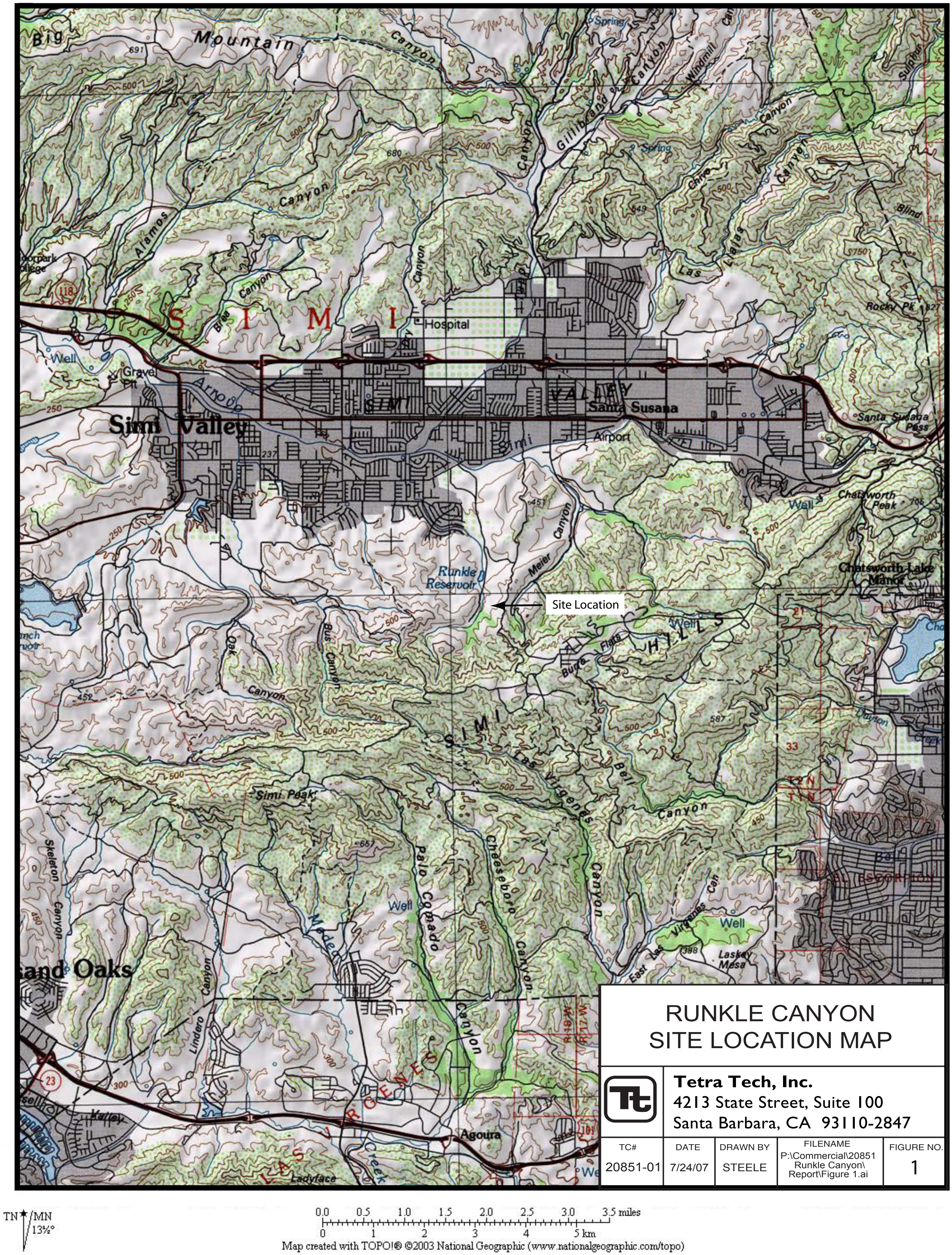
FIGURES



Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

RUNKLE CANYON
SITE LOCATION MAP

Tetra Tech, Inc.
4213 State Street, Suite 100
Santa Barbara, CA 93110-2847

TC#	DATE	DRAWN BY	FILENAME	FIGURE NO.
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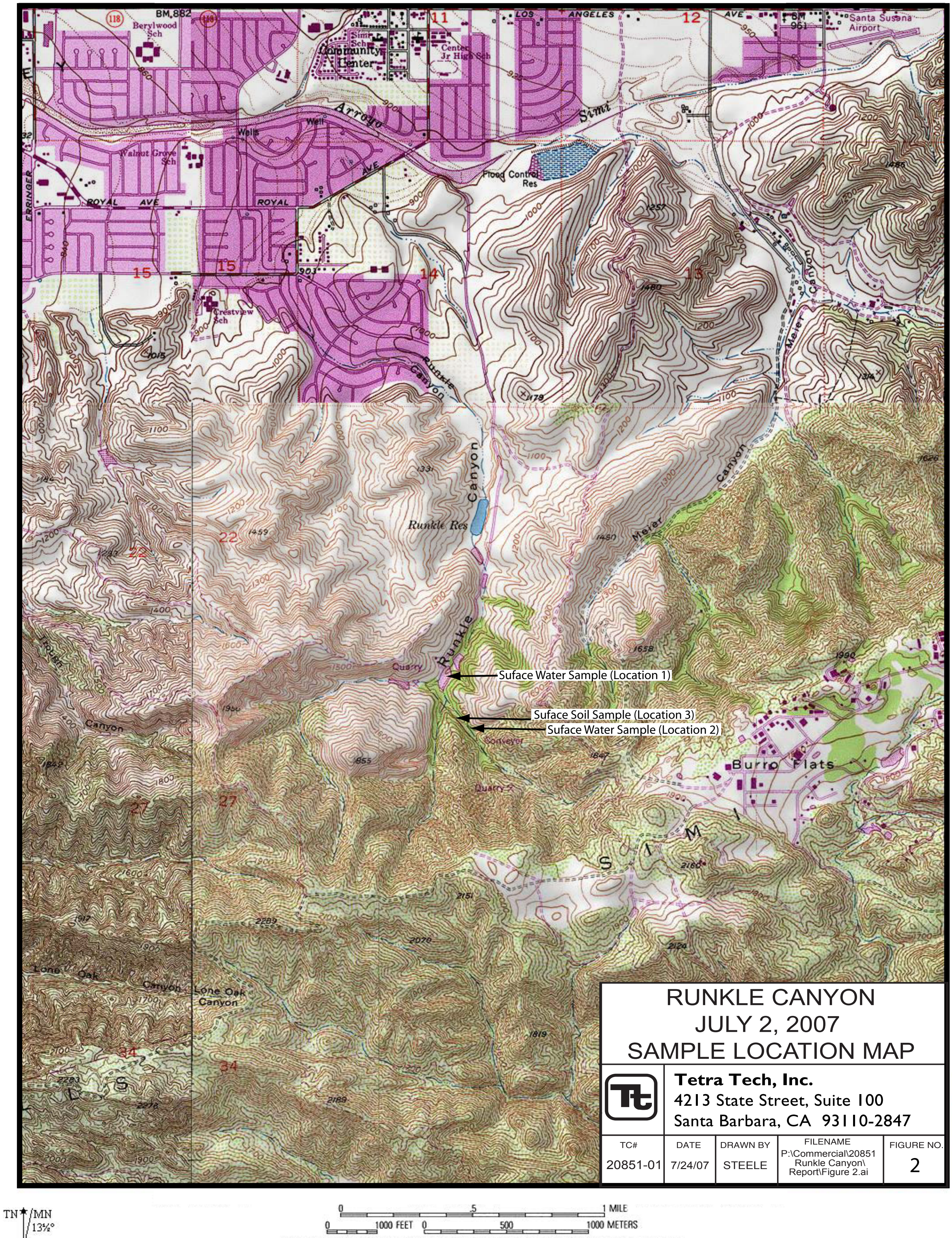

RUNKLE CANYON
JULY 2, 2007
SAMPLE LOCATION MAP

Tetra Tech, Inc.
4213 State Street, Suite 100
Santa Barbara, CA 93110-2847

TC#	DATE	DRAWN BY	FILENAME	FIGURE NO.
20851-01	7/24/07	STEELE	P:\Commercial\20851 Runkle Canyon\ Report\Figure 2.ai	2

Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

TABLES

Table 1
Surface Water Sample Results
(milligrams per liter)

	Analytical Results					**Regulatory Criteria**				
	AETL Downstream Split Surface Water Sample	**AETL Upstream Split Surface Water Sample**	**Pat Chem Downstream Split Surface Water Sample**	**Pat Chem Upstream Split Surface Water Sample**	**Pat Chem Surface Water Sample**	**California Drinking Water MCL**	**Drinking Water Notification Levels[b]**	**Drinking Water Public Health Goals[a]**	**Tap Water PRG**	**PRG Notes**
Sample Date	**July 2, 2007**	**July 2, 2007**	**July 2, 2007**	**July 2, 2007**	**May 18, 2007**					
Antimony	ND<0.05	ND<0.05	ND<0.10	ND<0.10	ND<0.10	0.006	NA	0.02	1.5E-04	nc
Arsenic	**0.188**	**0.057J**	**0.12**	**0.12**	**0.15**	0.05	NA	0.000004	4.5E-05	ca
									7.1E-06	Cal Modified, c
Barium	**0.747**	**0.527**	**0.84**	**0.63**	**0.36**	1	NA	0.7	2.6E+00	nc
Beryllium	ND<0.01	ND<0.01	ND<0.02	ND<0.02	ND<0.02	0.004	NA	0.001	7.3E-02	nc
Calcium	–	–	–	–	**460**	NA	NA	NA	NA	
Cadmium	**0.049J**	**0.023J**	ND<0.02	ND<0.02	ND<0.02	0.005	NA	0.00007	1.8E-02	nc
Chromium	**0.026J**	**0.018J**	**0.06**	**0.04**	**0.04**	0.05	NA	NA	5.5E+01	nc Cr III
									1.1E-01	nc Cr VI
Cobalt	**0.028J**	**0.013J**	**0.04**	**0.02**	**0.02**	NA	NA	NA	7.3E-01	nc
Copper	**0.034J**	**0.023J**	**0.07**	**0.04**	**0.05**	1.3	NA	0.170	1.5E+00	nc
Lead	ND<0.05	ND<0.05	**0.02**	ND<0.02	ND<0.02	0.015	NA	0.002	NA	
Magnesium	–	–	**140**	**110**	**140**	NA	NA	NA	NA	
Mercury	ND<0.001	ND<0.001	ND<0.2	ND<0.2	ND<0.2	0.002	NA	NA	1.1E-02	nc
Molybdenum	ND<0.01	ND<0.01	ND<0.02	ND<0.02	ND<0.02	NA	NA	NA	1.8E-01	nc
Nickel	**0.023J**	**0.015J**	**0.04**	**0.03**	**0.03**	NA	NA	0.012	7.3E-01	nc
Potassium	–	–	**18**	**15**	**14**	NA	NA	NA	NA	
Selenium	ND<0.05	ND<0.05	ND<0.10	ND<0.10	ND<0.10	0.05	NA	NA	1.8E-01	nc
Silver	ND<0.01	ND<0.01	ND<0.02	ND<0.02	ND<0.02	NA	NA	NA	1.8E-01	nc
Sodium	–	–	–	–	**199**	NA	NA	NA	NA	
Thallium	ND<0.05	ND<0.05	ND<0.02	ND<0.10	ND<0.10	0.002	NA	0.0001	2.4E-03	nc
Vanadium	**0.096**	**0.062**	**0.14**	**0.11**	**0.09**	NA	0.050	NA	3.6E-02	nc
Zinc	**0.251**	**0.205**	**0.20**	ND<0.02	**0.14**	NA	NA	NA	1.1E+01	nc

Notes:	Analytical results detected at a concentration above the laboratory method detection limit or reporting limit are shown in **bold font** for clarity.
a	California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment, Public Health Goals for Chemicals in Drinking Water (various dates), http://www.oehha.org/water/phg/.
b	California Department of Health Services, Drinking Water Program, *Drinking Water Notification Levels and Response Levels: An Overview* (28 June 2006), http://www.dhs.ca.gov/ps/ddwem/
ca	carcinogenic
Cal Modified	PRG modified using California Environmental Protection Ageny toxicity values that are significantly more protective than U.S. EPA values.
J	J indicates the analytes was detected, however the analyte concentration is an estimated value which is between the laboratory method detection limit and the practical quantitation limit.
MCL	Primary Maximum Contaminant Level for drinking water as defined in California Code of Regulations Title 22
NA	not applicable
nc	non-carcinogenic
ND	Analyte was not detected at a concentation above the listed laboratory method detection limit or reporting limit.
PRG	U.S. Environmental Protection Agency Region 9 Preliminary Remediation Goal for tap water

Table 2
Surface Soil Sample Results
(milligrams per kilogram)

	Analytical Results			Regulatory Criteria			Background Study		
	AETL Surface Soil Sample Split	Pat Chem Surface Soil Sample Split	Pat Chem Surface Soil Sample	TTLC Limit	Soil PRG (Res)	PRG Notes	California Benchmark Soils[a]		
Sample Date	**July 2, 2007**	**July 2, 2007**	**May 18, 2007**				**Mean**	**min.**	**max.**
Antimony	ND<1.0	ND<5.0	ND<25	500	3.1E+01	nc	0.6	0.15	1.95
Arsenic	**8.00**	ND<25.0	**34**	500	3.9E-01	c	3.5	0.6	11
					6.2E-02	Cal Modified, c			
Barium	**72.0**	**85**	**57**	10,000	5.4E+03	nc	509	133	1,400
Beryllium	ND<1.3	ND<5.0	ND<5.0	75	1.5E+02	nc	1.28	0.25	2.70
Calcium	NA	NA	**37,110**	NA	NA		14,466	2,451	45,577
Cadmium	**4.80**	ND<5.0	ND<5.0	100	3.7E+01	nc	0.36	0.05	1.70
Chromium	**6.10**	**10**	**5**	2,500	2.1E+02	ca	122	23	1,579
Cobalt	**8.90**	**12**	**5.8**	8,000	9.0E+02	ca**	14.9	2.7	46.9
Copper	**4.65J**	**7.9**	ND<5.0	2,500	3.1E+03	nc	28.7	9.1	96.4
Lead	**5.05**	ND<5.0	ND<5.0	1,000	4.0E+02	nc	23.9	12.4	97.1
					1.5E+02	Cal Modified, nc			
Magnesium	NA	**6,800**	**4,100**	NA	NA		9,923	1,456	32,378
Mercury	ND<0.1	ND<0.050	–	20	2.3E+01	nc	0.26	0.05	0.90
Molybdenum	ND<2.5	ND<5.0	ND<5.0	3,500	3.9E+02	nc	1.3	0.1	9.6
Nickel	**6.05**	**9.3**	ND<5.0	2,000	1.6E+03	nc	57	9	509
Potassium	NA	**2,000**	**1,000**	NA	NA		17,300	2,100	30,000
Selenium	ND<1.0	ND<5.0	ND<25	100	3.9E+02	nc	0.058	0.015	0.430
Silver	ND<2.5	ND<5.0	ND<5.0	500	3.9E+02	nc	0.80	0.10	8.30
Sodium	–	–	**1,140**	NA	NA		15,838	5,580	3,430
Thallium	ND<1.0	ND<5.0	ND<25	700	5.2E+00	nc	15.7	5.3	36.2
Vanadium	**19.1**	**25**	**11**	2,400	7.8E+01	nc	112	39	288
Zinc	**43.0**	**47**	**22**	5,000	2.3E+04	nc	145	88	236

Notes: Analytical results detected at a concentration above the laboratory method detection limit or reporting limit are shown in **bold font** for clarity.

a Background Concentrations of Trace and Major Elements in California Soils (Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California. March 1996)

c carcinogenic

Cal Modified PRG modified using California Environmental Protection Ageny toxicity values that are significantly more protective than U.S. EPA values.

NA not applicable

nc non-carcinogenic

ND Analyte was not detected at a concentation above the listed laboratory method detection limit or reporting limit.

PRG U.S. Environmental Protection Agency Region 9 Preliminary Remediation Goal for soil (Residential)

TTLC Total Threshold Limit Concentrations for Hazardous Waste as defined in California Code of Regulations Title 22.

APPENDIX A EXCERPTS FROM REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION BASIN PLAN

2. BENEFICIAL USES

Table of Contents

Introduction

Beneficial uses form the cornerstone of water quality protection under the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives can be established and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses. The designated beneficial uses, together with water quality objectives (referred to as criteria in federal regulations), form water quality standards. Such standards are mandated for all waterbodies within the state under the California Water Code. In addition, the federal Clean Water Act mandates standards for all surface waters, including wetlands.

Twenty-four beneficial uses in the Region are identified in this Chapter. These beneficial uses and their definitions were developed by the State and Regional Boards for use in the Regional Board Basin Plans. Three beneficial uses were added since the original 1975 Basin Plans. These new beneficial uses are Aquaculture, Estuarine Habitat, and Wetlands Habitat.

Beneficial uses can be designated for a waterbody in a number of ways. Those beneficial uses that have been attained for a waterbody on, or after, November 28, 1975, must be designated as "existing" in the Basin Plans. Other uses can be designated, whether or not they have been attained on a waterbody, in order to implement either federal or state mandates and goals (such as fishable and swimmable) for regional waters. Beneficial uses of streams that have intermittent flows, as is typical of many streams in southern California, are designated as intermittent. During dry periods, however, shallow ground water or small pools of water can support some beneficial uses associated with intermittent streams; accordingly, such beneficial uses (e.g., wildlife habitat) must be protected throughout the year and are designated "existing." In addition, beneficial uses can be designated as "potential" for several reasons, including:

- implementation of the State Board's policy entitled "Sources of Drinking Water Policy" (State Board Resolution No. 88-63, described in Chapter 5),
- plans to put the water to such future use,
- potential to put the water to such future use,
- designation of a use by the Regional Board as a regional water quality goal, or
- public desire to put the water to such future use.

Beneficial Use Definitions

Beneficial uses for waterbodies in the Los Angeles Region are listed and defined below. The uses are listed in no preferential order.

Municipal and Domestic Supply (MUN)
Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR)
Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Industrial Process Supply (PROC)
Uses of water for industrial activities that depend primarily on water quality.

Industrial Service Supply (IND)
Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Ground Water Recharge (GWR)
Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH)

Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

Navigation (NAV)
Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW)
Uses of water for hydropower generation.

Water Contact Recreation (REC-1)
Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2)
Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Commercial and Sport Fishing (COMM)
Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA)
Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM)
Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD)
Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Inland Saline Water Habitat (SAL)
Uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.

Estuarine Habitat (EST)
Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Wetland Habitat (WET)
Uses of water that support wetland ecosystems, including, but not limited to, preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions which enhance water quality, such as providing flood and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.

Marine Habitat (MAR)
Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

Wildlife Habitat (WILD)
Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats (BIOL)
Uses of water that support designated areas or habitats, such as **Areas of Special Biological Significance (ASBS),** established refuges, parks, sanctuaries, ecological reserves, or other areas where the preservation or enhancement of natural resources requires special protection.

The following coastal waters have been designated as ASBS in the Los Angeles Region. For detailed descriptions of their boundaries, see the Ocean Plan discussion in Chapter 5, Plans and Policies:

- San Nicolas Island and Begg Rock
- Santa Barbara Island and Anacapa Island
- San Clemente Island
- Mugu Lagoon to Latigo Point

- Santa Catalina Island, Subarea One, Isthmus Cove to Catalina Head
- Santa Catalina Island, Subarea Two, North End of Little Harbor to Ben Weston Point
- Santa Catalina Island, Subarea Three, Farnsworth Bank Ecological Reserve
- Santa Catalina Island, Subarea Four, Binnacle Rock to Jewfish Point

The following areas are designated Ecological Reserves or Refuges:

- Channel Islands National Marine Sanctuary
- Santa Barbara Island Ecological Reserve
- Anacapa Island Ecological Reserve
- Catalina Marine Science Center Marine Life
- Point Fermin Marine Life Refuge
- Farnsworth Bank Ecological Reserve
- Lowers Cove Reserve
- Abalone Cove Ecological Reserve
- Big Sycamore Canyon Ecological Reserve

Rare, Threatened, or Endangered Species (RARE)
Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

Migration of Aquatic Organisms (MIGR)
Uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN)
Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL)
Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

Beneficial Uses for Specific Waterbodies

Tables 2-1 through 2-4 list the major regional waterbodies and their designated beneficial uses. These tables are organized by waterbody type: (i) inland surface waters (rivers, streams, lakes, and inland wetlands), (ii) ground water, (iii) coastal waters (bays, estuaries, lagoons, harbors, beaches, and ocean waters), and (iv) coastal wetlands. Within Table 2-1 waterbodies are organized by major watersheds. Hydrologic unit, area, and subarea numbers are noted in the surface water tables (2-1, 2-3, and 2-4) as a cross reference to the classification system developed by the California Department of Water Resources. For those surface waterbodies that cross into other hydrologic units, such waterbodies appear more than once in a table. Furthermore, certain coastal waterbodies are duplicated in more than one table for completeness (e.g., many lagoons are listed both in inland surface waters and in coastal features tables). Major groundwater basins are classified in Table 2-2 according to the Department of Water Resources Bulletin No. 118 (1980). A series of maps (Figures 2-1 to 2-22) illustrates regional surface waters, ground waters, and major harbors.

The Regional Board contracted with the California Department of Water Resources for a study of beneficial uses and objectives for the upper Santa Clara River (DWR, 1989) and for another study of the beneficial uses and objectives the Piru, Sespe, and Santa Paula Hydrologic areas of the Santa Clara River (DWR, 1993). In addition, the Regional Board contracted with Dr. Prem Saint of California State University at Fullerton to survey and research beneficial uses of all waterbodies throughout the Region (Saint, et al., 1993a and 1993b). Information from these studies was used to update this Basin Plan.

State Board Resolution No. 88-63 (Sources of Drinking Water) followed by Regional Board Resolution No. 89-03 (Incorporation of Sources of Drinking Water Policy into the Water Quality Control Plans (Basin Plans)) states that " All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic waters supply and should be so designated by the Regional Boards ... [with certain exceptions which must be adopted by the Regional Board]." In adherence with these policies, all inland surface and ground waters have been designated as MUN - presuming at least a potential suitability for such a designation.

These policies allow for Regional Boards to consider the allowance of certain exceptions according to criteria set forth in SB Resolution No. 88-63. While supporting the protection of all waters that may be used as a municipal water supply in the future, the

Regional Board realizes that there may be exceptions to this policy.

In recognition of this fact, the Regional Board will soon implement a detailed review of criteria in the State Sources of Drinking Water policy and identify those waters in the Region that should be excepted from the MUN designation. Such exceptions will be proposed under a special Basin Plan Amendment and will apply exclusively to those waters designated as MUN under SB Res. No. 88-63 and RB Res. No. 89-03.

In the interim, no new effluent limitations will be placed in Waste Discharge Requirements as a results of these designations until the Regional Board adopts this amendment.

The following sections summarize general information regarding beneficial uses designated for the various waterbody types.

Inland Surface Waters

Inland surface waters consist of rivers, streams, lakes, reservoirs, and inland wetlands. Beneficial uses of these inland surface waters and their tributaries (which are graphically represented on Figures 2-1 to 2-10) are designated on Table 2-1.

Beneficial uses of inland surface waters generally include REC-1 (swimmable) and WARM, COLD, SAL, or COMM (fishable), reflecting the goals of the federal Clean Water Act. In addition, inland waters are usually designated as IND, PRO, REC-2, WILD, and are sometimes designated as BIOL and RARE. In a few cases, such as reservoirs used primarily for drinking water, REC-1 uses can be restricted or prohibited by the entities that manage these waters. Many of these reservoirs, however, are designated as potential for REC-1, again reflecting federal goals. Furthermore, many regional streams are primary sources of replenishment for major groundwater basins that supply water for drinking and other uses, and as such must be protected as GWR. Inland surface waters that meet the criteria mandated by the *Sources of Drinking Water Policy* (which became effective when the State Board adopted Resolution No. 88-63 in 1988) are designated MUN. (This policy is reprinted in Chapter 5, Plans and Policies).

Under federal law, all surface waters must have water quality standards designated in the Basin Plans. Most of the inland surface waters in the Region have beneficial uses specifically designated for them. Those waters not specifically listed (generally smaller tributaries) are designated with the same beneficial uses as the streams, lakes, or reservoirs to which they are tributary. This is commonly referred to as the "tributary rule."

Ground Waters

Beneficial uses for regional groundwater basins (Figure 1-9) are designated on Table 2-2. For reference, Figures 2-11 to 2-18 show enlargements of all of the major basins and sub-basins referred to in the ground water beneficial use table (Table 2-2) and the water quality objective table (Table 3-8) in Chapter 3.

Many groundwater basins are designated MUN, reflecting the importance of ground water as a source of drinking water in the Region and as required by the State Board's *Sources of Drinking Water Policy.* Other beneficial uses for ground water are generally IND, PROC, and AGR. Occasionally, ground water is used for other purposes (e.g., ground water pumped for use in aquaculture operations at the Fillmore Fish Hatchery).

Coastal Waters

Coastal waters in the Region include bays, estuaries, lagoons, harbors, beaches, and ocean waters. Beneficial uses for these coastal waters provide habitat for marine life and are used extensively for recreation, boating, shipping, and commercial and sport fishing, and are accordingly designated in Table 2-3. Figures 2-19 to 2-22 show specific sub-areas of some of these coastal waters.

Wetlands

Wetlands include freshwater, estuarine, and saltwater marshes, swamps, mudflats, and riparian areas. As the California Water Code (§13050[e]) defines "waters of the state" to be "any water, surface or underground, including saline waters, within the boundaries of the state," natural wetlands are therefore entitled to the same level of protection as other waters of the state.

Wetlands also are protected under the Clean Water Act, which was enacted to restore and maintain the physical, chemical, and biological integrity of the nation's waters, including wetlands. Regulations developed under the CWA specifically include wetlands "as waters of the United States" (40 CFR 116.3) and defines them as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Although the definition of wetlands differs widely among federal agencies, both the USEPA and the U.S. Army Corps of Engineers use this definition in administrating the 404 permit program.

Recently, both state and federal wetlands policies have been developed to protect these valuable waters. Executive Order W-59-93 (signed by Governor Pete Wilson on August 23, 1993) established state policy guidelines for wetlands conservation. The primary goal of this policy is to ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage in California. The federal wetlands policy, representing a significant advance in wetlands protection, was unveiled by nine federal agencies on August 24, 1993. This policy represents an agreement that is sensitive to the needs of landowners, more efficient, and provides flexibility in the permit process.

The USEPA has requested that states adopt water quality standards (beneficial uses and objectives) for wetlands as part of their overall effort to protect the nation's water resources. The 1975 Basin Plans identified a number of waters which are known to include wetlands; these wetlands, however, were not specifically identified as such. In this Basin Plan, a wetlands beneficial use category has been added to identify inland waters that support wetland habitat as well as a variety of other beneficial uses. The wetlands habitat definition recognizes the uniqueness of these areas and functions they serve in protecting water quality. Table 2-4 identifies and designates beneficial uses for significant coastal wetlands in the Region. These waterbodies are also included on Tables 2-1 and 2-3. Beneficial uses of wetlands include many of the same uses designated for the rivers, lakes, and coastal waters to which they are adjacent, and include REC-1, REC-2, WARM, COLD, EST, MAR, WET, GWR, COMM, SHELL, MIGR, SPWN, WILD and often RARE or BIOL.

As some wetlands can not be easily identified in southern California because of the hydrologic regime, the Regional Board identifies wetlands using indicators such as hydrology, presence of hydrophytic plants (plants adapted for growth in water), and/or hydric soils (soils saturated for a period of time during the growing season). The Regional Board contracted with Dr. Prem Saint, et al. (1993a and 1993b), to inventory and describe major regional wetlands. Information from this study was used to update this Basin Plan.

Water Quality Control Plan Los Angeles Region

Chapter: Beneficial Uses

Table 2-1 ~ Table 2-4

Table 2-1. Beneficial Uses of Inland Surface Waters.

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
VENTURA COUNTY COASTAL STREAMS																									
Los Sauces Creek	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
Poverty Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
Madranio Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
Javon Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		E
Padre Juan Canyon	401.00	P*	I	I	I	I				I	I			I	I				E			I	I		
McGrath Lake c	403.11									Ed	Ed	P					E		E		Ee				E
Big Sycamore Canyon Creek	404.47	P*				I				I	I			I	E				E			P	P		E
Little Sycamore Canyon Creek	404.45	P*								I	I			I					E		E		P		
VENTURA RIVER WATERSHED												E													
Ventura River Estuary c	402.10							E		E	E	E		E			E	E	E		Ee	Ef	Ef	E	E
Ventura River	402.10	P*	E		E	E	E			E	E			E	E				E		E	E	E		E
Ventura River	402.20	E	E	E	E	E	E			E	E			E	E				E		Eg	E	E		E
Cañada Larga	402.10	P*		I	I	I	I			I	I			I	I				E			I	I		
Lake Casitas	402.20	E	E	E	E	P	P		P	Ph	E			E	E				E		E				
Lake Casitas tributaries	402.20	E*			P	E				E	E			E	E				E		P	E	E		E
Coyote Creek below dam	402.20	P*				E				P				E	E				E			E	E		E
San Antonio Creek	402.20	E	E	E	E	E				E	E			E	E				E			E	E		E
San Antonio Creek	402.32	E	E	E	E	E	E			E	E			E	E				E			E	E		E
Lion Creek	402.31	I*	I	I	I					I	I			I	I				E						
Reeves Creek	402.32	I*	I	I	I	I				I	I			I	I				E			I	I		
Mirror Lake	402.20	P*				E				P	E			E					E						E
Ojai Wetland	402.20	P*								P	E			E					E						E
Matilija Creek	402.20	P*				E				E	E				E				E			E	E		E
Murietta Canyon Creek	402.20	P*				E				E	E				E				E			E	E		E
North Fork Matilija Creek	402.20	E*	E	E	E	E				E	E			E	E				E		E	E	E		E
Matilija Reservoir	402.20	E			E	E	E			E	E			E	E				E			E	E		E
SANTA CLARA RIVER WATERSHED																									
Santa Clara River Estuary c	403.11							E		E	E	E					E	E	E		Ee	Ef	Ef		E
Santa Clara River	403.11	P*	E	E	E	E	E			E	E			E	E				E		E	E			E
Santa Clara River	403.21	P*	E	E	E	E	E			Ed	E			E					E		E	E			E
Santa Clara River	403.31	P*	E	E	E	E	E			Ed	E			E					E		E	E			E
Santa Clara River	403.41	P*	E	E	E	E	E			E	E			E					E		E	E			E
Santa Clara River	403.51	P*	E	E	E	E	E			E	E			E					E		E				E
Santa Clara River (Soledad Cyn)	403.55	E*	E	E	E	E	E			E	E			E					E		Ei				E
Santa Paula Creek	403.21	P	E	E	E	E	E			E	E			E	E				E		E	E	E		

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all beneficial use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries
Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody.
Any regulatory action would require a detailed analysis of the area.

c Coastal waterbodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).

d Limited public access precludes full utilization.

e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.

f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.

g Condor refuge.

h Water contact recreational activities prohibited by Casitas MWD.

i Soledad Canyon is the habitat of the Unarmored Three-Spine Stickleback.

Table 2-1. Beneficial Uses of Inland Surface Waters (Continued).

WATERSHED[a]	Hydro. Unit No.	MUN	IND	PROC	AGR	GWR	FRSH	NAV	POW	REC1	REC2	COMM	AQUA	WARM	COLD	SAL	EST	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET[b]
SANTA CLARA RIVER WATERSHED (CONT)																									
Mint Canyon Creek	403.51	I	I	I	I	I	I			Im	I			I					E						
Mint Canyon Creek	403.53	I*	I	I	I	I	I			Im	I			I					E						
Agua Dulce Canyon Creek	403.54	I*	I	I	I	I	I			I	I			I					E		E				
Agua Dulce Canyon Creek	403.55	I*			I	I	I			I	I			I					E						
Aliso Canyon Creek	403.55	P*			P	E				E	E			E					E						E
Lake Hughes	403.51	P	P	P	P	P	P			E	E			E					E						
Munz Lake	403.51	P*	P	P	P	E	P			E	E			E					E						
Lake Elizabeth	403.51	P	P	P	P	P	P			E	E			E					E		E				
CALLEGUAS-CONEJO CREEK WATERSHED																									
Mugu Lagoon c	403.11							E		Pn	E	Ed					E	E	Eo	E	Ee,p	Ef	Ef	Ed	E
Calleguas Creek Estuary c	403.11							P		Pn	E	E					E		E		Ee,p	Ef	Ef		E
Calleguas Creek	403.11	P*			E	E	E			E	E			E	E				E		Ep				E
Calleguas Creek	403.12	P*	E	E	E	E				Eq	E			E					E						
Revolon Slough	403.11	P*	P		E	E				Eq	E			E					E						E
Beardsley Wash	403.61	P*					E			E	E			E					E						
Conejo Creek	403.12	P*	E	E	E	E				Eq	E			E					E						
Conejo Creek	403.63	P*				I	I			I	I			I					E				E		
Arroyo Conejo	403.64	P*				I	I			I	I			I					E		E				
Arroyo Conejo	403.68	P*				I	I			I	I			I					E						
Arroyo Santa Rosa	403.63	P*				I	I			I	I			I					E						
Arroyo Santa Rosa	403.65	P*				I	I			I	I			I					E						
North Fork Arroyo Conejo	403.64	P*			E	E				E	E			E					E				E		
Arroyo Las Posas	403.12	P*	P	P	P	E				E	E			E	P				E						
Arroyo Las Posas	403.62	P*	P	P	P	E	E			E	E			E	P				E						
Arroyo Simi	403.62	P*	I			I	I			I	I			I					E		E				
Arroyo Simi	403.67	I*	I			I	I			I	I			I					E						
Tapo Canyon Creek	403.66	I*		P	P	I				I	I			I					E						
Tapo Canyon Creek	403.67	I*		P	P	I				I	I			I					E						
Gillibrand Canyon Creek	403.66	P*				I	I			I	I			I					E						
Gillibrand Canyon Creek	403.67	P*				I				I	I			I					E						
Lake Bard (Wood Ranch Reservoir)	403.67	E	E	E	E	P				Pr	Er			E					E						
LOS ANGELES COUNTY COASTAL STREAMS																									
Arroyo Sequit	404.44	P*				I				E	E			E	E				E		E	E	E		E
San Nicholas Canyon Creek	404.43	P*								I	I			I					E						

Runkle Canyon →

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use
E, P, and I shall be protected as required
* Asterixed MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date. (See pages 2-3,4 for more details).

Footnotes are consistent on all benefical use tables.

a Waterbodies are listed multiple times if they cross hydrologic area or subarea boundaries. Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

b Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

c Coastal waterbodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).

d Limited public access precludes full utilization.

e One or more rare species utilize all ocean, bays, esturaries, and coastal wetlands for foraging and/or nesting.

f Aquatic organisms utilize all bays, estuaries, lagoons and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs

m Access prohibited by Los Angeles County DPW in the concrete-channelized areas.

n Area is currently under control of the Navy: swimming is prohibited.

o Marine habitats of the Channel Islands and Mugu Lagoon serve as pinneped haul-out areas for one or more species (i.e., sea lions).

p Habitat of the Clapper Rail.

q Whenever flow conditions are suitable.

r Public access prohibited by Calleguas MWD.

APPENDIX B JULY 2, 2007, SITE PHOTOGRAPHS

Table B-1
Runkle Canyon Sample Collection Photographs
July 2, 2007

Photo. Number	Time (Approx.)	Description
1	0920	Location 1, preparing to collect surface water sample. Location is approximately 100 feet east of the access road.
2	0920	Location 1, view to the southwest of sample location, showing stream bank wall with fill material and rusted metal pipes.
3–7	0920	Location 1, collecting surface water sample.
8	0925	Location 1, view to the south of sample location, showing stream bank wall with fill material and rusted metal pipes.
9	0925	Location 1, view to southwest of sample location, showing concrete rubble, asphalt, and metallic debris in stream channel and white precipitate (probably gypsum) on dry portion of stream bottom surface just west of active stream channel.
10	0925	Location 1, view to just north of sample location, showing recent livestock tracks in stream channel.
11	0925	Location 1, view of sample location, showing apparently healthy grass growing in stream channel.
12	0925–0930	Location 1, KB Home consultant rep., Mike Conkle of GeoCon collecting surface water sample (downstream) just north of split sample location.
13–15	0945–0950	Location 2, view of stream water at sample location (on immediate east side of access road). Note apparent sheen on water (probably from algae) and rusty (probably iron) staining of soil and algae.
16	0950–1000	Location 2, Magdaleno Mora (City of Simi Valley) and Ron Lovato (Pat Chem Laboratory) labeling surface water samples from Site 2.
18,19	1010–1020	Location 2, Ron Lovato (Pat Chem Laboratory) sealing surface water samples from Site 2.
20	1010–1020	Location 3, surface soil sample site, approximately 100 to 150 feet north of the surface water sample location, on the immediate west side of the access road.

Table B-1 (Continued)
Runkle Canyon Sample Collection Photographs

July 2, 2007

Photo. Number	Time (Approx.)	Description
21–24	1020–1025	Location 3, collecting the surface soil sample in a plastic bag. The sample was mixed in the plastic bag to homogenize it before it was divided into three split samples.
25	1025	Location 3, labeling the surface soil sample containers.
26	1040	Location 1, monitoring the pH of surface water at the Site 1 sample location.

Photograph 1

Photograph 2

Photograph 3

Photograph 4

Photograph 5

Photograph 6

Photograph 7

Photograph 8

Photograph 9

Photograph 10

Photograph 11

Photograph 12

Photograph 13

Photograph 14

Photograph 15

Photograph 16

Photograph 17

Photograph 18

Photograph 19

Photograph 20

Photograph 21

Photograph 22

Photograph 23

Photograph 24

Photograph 25

Photograph 26

APPENDIX C LABORATORY REPORTS

American Environmental Testing Laboratory Inc.
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Santa Barbara, CA 93110-2847

Number of Pages 4
Date Received 07/02/2007
Date Reported 07/10/2007

Telephone: (805)681-3100
Attention: James Steele

Job Number	Order Date	Client
42959	07/02/2007	T/TSB

Project ID: 13308
Project Name: KB Site
Site: Runkle Canyon
Below Sequoia Avenue

Enclosed please find results of analyses of 1 soil sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: ____________________

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

Job# 42959

THE CITY OF SIMI VALLEY SOURCE CONTROL
CHAIN OF CUSTODY RECORD

S.V.LAB. # 13308

Facility Name: Runkle Canyon	Program Requesting	Sampled by: Ron Lovato (SIGNATURE)
Address: Below Sequoia Ave SIMI VALLEY, CA KB site	IPP SW HW	Sample date: 7/02/07 I.U. CLASS:

TIME	GRAB /COMP.	# Bot.	SAMPLE DESCRIPTION/LOCATION	REQUIRED TEST	PRESERVATIVES	BOTTLE TYPE	BOTTLE SIZE
	G COMP			BOD_5 TSS TDS Cl SO_4	ICE	P G	1L
	G COMP			Cd Cr Cu Pb Ni Ag Zn	ICE HNO_3	P G	250 ml
	G COMP			COD	ICE H_2SO_4	P G	250 ml
	G COMP			AMMONIA (NH_3)	ICE H_2SO_4 HNO_3	P G	1L
	G			CYANIDE (CN)	ICE $Na_2S_2O_3$ NaOH	P G	1L
	G			OIL & GREASE	ICE HNO_3 H_2SO_4	G	1L
1020	[✓ G] COMP	1	Top Soil Sample split	Title 22 metals	[✓ ICE] 42959.01	P [✓ G] V	250 m/s
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	

SIGNATURE	PRINT NAME	AGENCY	DATE	TIME	FIELD DATA
Relinquished by: M Mora	MAGDALENO MORA	ECD/SV	7/02/07	1140AM	pH: TEMP:
Received by: JR Steele	James R Steele	TetraTech	7/02/07	1140AM	Sampler set TIME: DATE:
Relinquished by: JR Steele	James R Steele	Tetra Tech	7/02/07	1440	Picked up TIME:
Received by:	AREG ALEXANDRIA	AETL	07/02/07	14:40	DATE:

Comments: Normal TAT

SPLIT

GRAPHICS 7/98 DISTRIBUTION: WHITE - Outside Lab* CANARY - WWTP Lab PINK - Source Control GOLDENROD - Business Representative

TABLE
Summary of Soil Analytical Results for CAM Title 22 Metals (SW-846)
Runkle Canyon Below Sequoia Avenue

CAM Title 22 Metals (SW-846). Method: (6010B/7000CAM)

Sample ID	STLC Limit mg/L	TCLP Limit mg/L	TTLC Limit mg/Kg	Units	TOP SOIL SAMPLE SF
Sample Date					7/2/2007
Laboratory Job Number					42959
Antimony	15		500	mg/Kg	ND<1.0
Arsenic	5.0	5.0	500	mg/Kg	**8.00**
Barium	100	100	10000	mg/Kg	**72.0**
Beryllium	0.75		75	mg/Kg	ND<1.3
Cadmium	1.0	1.0	100	mg/Kg	**4.80**
Chromium	5	5.0	2500	mg/Kg	**6.10**
Cobalt	80		8000	mg/Kg	**8.90**
Copper	25		2500	mg/Kg	**4.65J**
Lead	5.0	5.0	1000	mg/Kg	**5.05**
Mercury (By EPA 7471)	0.2	0.2	20	mg/Kg	ND<0.1
Molybdenum	350		3500	mg/Kg	ND<2.5
Nickel	20		2000	mg/Kg	**6.05**
Selenium	1.0	1.0	100	mg/Kg	ND<1.0
Silver	5	5.0	500	mg/Kg	ND<2.5
Thallium	70		700	mg/Kg	ND<1.0
Vanadium	24		2400	mg/Kg	**19.1**
Zinc	250		5000	mg/Kg	**43.0**

1) "ND<X" INDICATES CONSTITUENT(S) NOT DETECTED AT OR ABOVE METHOD DETECTION LIMIT.
2) "J" INDICATES ANALYTE WAS DETECTED. HOWEVER, ANALYTE CONCENTRATION IS AN ESTIMATED VALUE WHICH IS BETWEEN THE METHOD DETECTION LIMIT (MDL) AND THE PRACTICAL QUANTITATION LIMIT(PQL).
3) "D" INDICATES THE SAMPLE WAS DILUTED TO BRING THE ANALYTE CONCENTRATION WITHIN CALIBRATION RANGE.

ANALYTICAL RESULTS

Ordered By

Tetra Tech Inc.
4213 State Street
Suite 100
Santa Barbara, CA 93110-2847

Site

Runkle Canyon
Below Sequoia Avenue

Telephone: (805)681-3100
Attn: James Steele

Page: 2

Project ID: 13308
Project Name: KB Site

AETL Job Number	Submitted	Client
42959	07/02/2007	T/TSB

Method: (6010B/7000CAM), CAM Title 22 Metals (SW-846)

QC Batch No: 070307

Our Lab I.D.			Method Blank	42959.01			
Client Sample I.D.				Top Soil Sample Split			
Date Sampled				07/02/2007			
Date Prepared			07/03/2007	07/03/2007			
Preparation Method			3050B	3050B			
Date Analyzed			07/03/2007	07/03/2007			
Matrix			Soil	Soil			
Units			mg/Kg	mg/Kg			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Antimony	1.0	5.0	ND	ND			
Arsenic	1.0	5.0	ND	8.00			
Barium	2.5	5.0	ND	72.0			
Beryllium	1.3	2.5	ND	ND			
Cadmium	1.3	2.5	ND	4.80			
Chromium	2.5	5.0	ND	6.10			
Cobalt	2.5	5.0	ND	8.90			
Copper	2.5	5.0	ND	4.65J			
Lead	2.5	5.0	ND	5.05			
Mercury (By EPA 7471)	0.1	0.2	ND	ND			
Molybdenum	2.5	5.0	ND	ND			
Nickel	2.5	5.0	ND	6.05			
Selenium	1.0	5.0	ND	ND			
Silver	2.5	5.0	ND	ND			
Thallium	1.0	5.0	ND	ND			
Vanadium	2.5	5.0	ND	19.1			
Zinc	2.5	5.0	ND	43.0			

ANALYTICAL RESULTS

Ordered By

Tetra Tech Inc.
4213 State Street
Suite 100
Santa Barbara, CA 93110-2847

Site

Runkle Canyon
Below Sequoia Avenue

Telephone: (805)681-3100
Attn: James Steele

Page: 3

Project ID: 13308
Project Name: KB Site

AETL Job Number	Submitted	Client
42959	07/02/2007	T/TSB

Method: (6010B/7000CAM), CAM Title 22 Metals (SW-846)

QUALITY CONTROL REPORT

QC Batch No: 070307; Sample Spiked: 42941.01; LCS: Clean Sand; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007; Units: ppm

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Antimony	ND	1.00	0.95	95	1.00	0.95	95	<1	80-120	<15
Arsenic	0.005	1.00	0.98	97	1.00	0.99	98	1.0	80-120	<15
Barium	1.93	1.00	2.87	94	1.00	2.86	93	1.1	80-120	<15
Beryllium	ND	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15
Cadmium	0.044	1.00	0.95	91	1.00	0.96	92	1.1	80-120	<15
Chromium	0.276	1.00	1.23	95	1.00	1.23	95	<1	80-120	<15
Cobalt	0.178	1.00	1.09	91	1.00	1.10	92	1.1	80-120	<15
Copper	0.333	1.00	1.44	111	1.00	1.43	110	<1	80-120	<15
Lead	0.126	1.00	1.00	87	1.00	1.01	88	1.1	80-120	<15
Mercury (By EPA 7471)	0.001	0.01	0.01	106	0.01	0.01	107	<1	80-120	<15
Molybdenum	0.005	1.00	1.01	100	1.00	1.01	100	<1	80-120	<15
Nickel	0.184	1.00	1.08	90	1.00	1.09	91	1.1	80-120	<15
Selenium	ND	1.00	0.85	85	1.00	0.83	83	2.4	80-120	<15
Silver	ND	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15
Thallium	0.002	1.00	0.89	89	1.00	0.90	90	1.1	80-120	<15
Vanadium	0.701	1.00	1.69	99	1.00	1.69	99	<1	80-120	<15
Zinc	1.15	1.00	2.08	93	1.00	2.08	93	<1	80-120	<15

QC Batch No: 070307; Sample Spiked: 42941.01; LCS: Clean Sand; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007; Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Antimony	1.00	0.93	93	80-120						
Arsenic	1.00	0.93	93	80-120						
Barium	1.00	1.01	101	80-120						
Beryllium	1.00	0.98	98	80-120						
Cadmium	1.00	0.96	96	80-120						
Chromium	1.00	0.95	95	80-120						
Cobalt	1.00	0.96	96	80-120						
Copper	1.00	0.98	98	80-120						
Lead	1.00	0.95	95	80-120						
Mercury (By EPA 7471)	0.01	0.01	99	80-120						
Molybdenum	1.00	0.97	97	80-120						
Nickel	1.00	0.96	96	80-120						

ANALYTICAL RESULTS

Project ID: 13308
Project Name: KB Site

AETL Job Number	Submitted	Client
42959	07/02/2007	T/TSB

Method: (6010B/7000CAM), CAM Title 22 Metals (SW-846)

QC Batch No: 070307; Sample Spiked: 42941.01; LCS: Clean Sand; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007; Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Selenium	1.00	0.94	94	80-120						
Silver	1.00	0.96	96	80-120						
Thallium	1.00	0.96	96	80-120						
Vanadium	1.00	0.97	97	80-120						
Zinc	1.00	1.02	102	80-120						

Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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4213 State Street Suite 100
Santa Barbara, CA 93110-2847

Number of Pages 4
Date Received 07/02/2007
Date Reported 07/10/2007

Telephone: (805)681-3100
Attention: James Steele

Job Number	Order Date	Client
42960	07/02/2007	T/TSB

Project ID: 13306
Project Name: KB Site
Site: Runkle Canyon
Below Sequoia Avenue

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: ____________

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

Job # 42960

THE CITY OF SIMI VALLEY SOURCE CONTROL
CHAIN OF CUSTODY RECORD

S.V.LAB. # 13306

Facility Name: Runkle Canyon	Program Requesting	Sampled by: Ron Lovato (SIGNATURE)
Address: Below Sequoia Ave SIMI VALLEY, CA KB site	IPP SW HW	Sample date: 7/02/07 I.U. CLASS:

TIME	GRAB /COMP.	# Bot.	SAMPLE DESCRIPTION/LOCATION	REQUIRED TEST	PRESERVATIVES	BOTTLE TYPE	BOTTLE SIZE
	G COMP			BOD_5 TSS TDS Cl SO_4	ICE	P G	1L
	G COMP			Cd Cr Cu Pb Ni Ag Zn	ICE HNO_3	P G	250 ml
	G COMP			COD	ICE H_2SO_4	P G	250 ml
	G COMP			AMMONIA (NH_3)	ICE H_2SO_4 HNO_3	P G	1L
	G			CYANIDE (CN)	ICE $Na_2S_2O_3$ NaOH	P G	1L
	G			OIL & GREASE	ICE HNO_3 H_2SO_4	G	1L
0920	[✓ G] COMP Water	1	Downstream Split	Title 22 Metals 42960.01	[✓ ICE] HNO3	[✓ P] G V	1/2 L
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	

SIGNATURE	PRINT NAME	AGENCY	DATE	TIME	FIELD DATA
Relinquished by: M Mora	MAGDALENO MORA	ECD / SV	7/02/07	11 40AM	pH: 7.03 Geo 6.97 pc TEMP:
Received by: JR Steele	James R Steele	Tetra Tech	7/02/07	1140	Sampler set TIME: DATE:
Relinquished by: JR Steele	James R Steele	Tetra Tech	7/02/07	14:40	Picked up TIME: DATE:
Received by:	AREG	AETL	07/02/07	14:40	

Comments: Normal TAT

SPLIT

GRAPHICS 7/98 DISTRIBUTION: WHITE - Outside Lab* CANARY - WWTP Lab PINK - Source Control GOLDENROD - Business Representative

TABLE
Summary of Aqueous Analytical Results for CAM Title 22 Metals (SW-846)
Runkle Canyon Below Sequoia Avenue

CAM Title 22 Metals (SW-846). Method: 6010/7000CAM

Sample ID	STLC Limit mg/L	TCLP Limit mg/L	TTLC Limit mg/Kg	Units	DOWNSTREAM SPLIT
Sample Date					7/2/2007
Laboratory Job Number					42960
Antimony	15		500	mg/L	ND<0.05
Arsenic	5.0	5.0	500	mg/L	**0.188**
Barium	100	100	10000	mg/L	**0.747**
Beryllium	0.75		75	mg/L	ND<0.01
Cadmium	1.0	1.0	100	mg/L	**0.049J**
Chromium	5	5.0	2500	mg/L	**0.026J**
Cobalt	80		8000	mg/L	**0.028J**
Copper	25		2500	mg/L	**0.034J**
Lead	5.0	5.0	1000	mg/L	ND<0.05
Mercury (By EPA 7470)	0.2	0.2	20	mg/L	ND<0.001
Molybdenum	350		3500	mg/L	ND<0.01
Nickel	20		2000	mg/L	**0.023J**
Selenium	1.0	1.0	100	mg/L	ND<0.05
Silver	5	5.0	500	mg/L	ND<0.01
Thallium	70		700	mg/L	ND<0.05
Vanadium	24		2400	mg/L	**0.096**
Zinc	250		5000	mg/L	**0.251**

1) "ND<X" INDICATES CONSTITUENT(S) NOT DETECTED AT OR ABOVE METHOD DETECTION LIMIT.
2) "J" INDICATES ANALYTE WAS DETECTED. HOWEVER, ANALYTE CONCENTRATION IS AN ESTIMATED VALUE WHICH IS BETWEEN THE METHOD DETECTION LIMIT (MDL) AND THE PRACTICAL QUANTITATION LIMIT(PQL).
3) "D" INDICATES THE SAMPLE WAS DILUTED TO BRING THE ANALYTE CONCENTRATION WITHIN CALIBRATION RANGE.

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ANALYTICAL RESULTS

Ordered By

Tetra Tech Inc.
4213 State Street
Suite 100
Santa Barbara, CA 93110-2847

Telephone: (805)681-3100
Attn: James Steele

Site

Runkle Canyon
Below Sequoia Avenue

Page: 2
Project ID: 13306
Project Name: KB Site

AETL Job Number	Submitted	Client
42960	07/02/2007	T/TSB

Method: 6010/7000CAM, CAM Title 22 Metals (SW-846)

QC Batch No: 070307-1

Our Lab I.D.			Method Blank	42960.01			
Client Sample I.D.				Downstream Split			
Date Sampled				07/02/2007			
Date Prepared			07/03/2007	07/03/2007			
Preparation Method			3005A	3005A			
Date Analyzed			07/03/2007	07/03/2007			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Antimony	0.05	0.10	ND	ND			
Arsenic	0.05	0.10	ND	0.188			
Barium	0.03	0.05	ND	0.747			
Beryllium	0.01	0.05	ND	ND			
Cadmium	0.01	0.05	ND	0.049J			
Chromium	0.01	0.05	ND	0.026J			
Cobalt	0.01	0.05	ND	0.028J			
Copper	0.01	0.05	ND	0.034J			
Lead	0.05	0.10	ND	ND			
Mercury (By EPA 7470)	0.001	0.002	ND	ND			
Molybdenum	0.01	0.05	ND	ND			
Nickel	0.01	0.05	ND	0.023J			
Selenium	0.05	0.10	ND	ND			
Silver	0.01	0.05	ND	ND			
Thallium	0.05	0.10	ND	ND			
Vanadium	0.03	0.05	ND	0.096			
Zinc	0.01	0.05	ND	0.251			

ANALYTICAL RESULTS

Ordered By

Tetra Tech Inc.
4213 State Street
Suite 100
Santa Barbara, CA 93110-2847

Site

Runkle Canyon
Below Sequoia Avenue

Telephone: (805)681-3100
Attn: James Steele

Page: 3
Project ID: 13306
Project Name: KB Site

AETL Job Number	Submitted	Client
42960	07/02/2007	T/TSB

Method: 6010/7000CAM, CAM Title 22 Metals (SW-846)

QUALITY CONTROL REPORT

QC Batch No: 070307-1 ; Sample Spiked: 42919.03 LCS: Clean Water; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007;
Units: ppm

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Antimony	0.010	1.00	0.92	91	1.00	0.90	89	2.2	80-120	<15
Arsenic	0.015	1.00	0.96	94	1.00	0.95	93	1.1	80-120	<15
Barium	0.115	1.00	1.04	92	1.00	1.05	93	1.1	80-120	<15
Beryllium	ND	1.00	0.98	98	1.00	0.97	97	1.0	80-120	<15
Cadmium	ND	1.00	0.89	89	1.00	0.90	90	1.1	80-120	<15
Chromium	0.002	1.00	0.91	91	1.00	0.91	91	<1	80-120	<15
Cobalt	ND	1.00	0.88	88	1.00	0.88	88	<1	80-120	<15
Copper	0.004	1.00	0.94	94	1.00	0.95	95	1.1	80-120	<15
Lead	0.008	1.00	0.88	87	1.00	0.88	87	<1	80-120	<15
Mercury (By EPA 7470)	0.001	0.01	0.01	87	0.01	0.01	88	1.1	80-120	<15
Molybdenum	0.002	1.00	0.94	94	1.00	0.95	95	1.1	80-120	<15
Nickel	0.001	1.00	0.87	87	1.00	0.87	87	<1	80-120	<15
Selenium	ND	1.00	0.90	90	1.00	0.87	87	3.4	80-120	<15
Silver	ND	1.00	0.81	81	1.00	0.82	82	1.2	80-120	<15
Thallium	0.012	1.00	0.92	91	1.00	0.92	91	<1	80-120	<15
Vanadium	0.001	1.00	0.94	94	1.00	0.95	95	1.1	80-120	<15
Zinc	0.799	1.00	1.73	93	1.00	1.73	93	<1	80-120	<15

QC Batch No: 070307-1 ; Sample Spiked: 42919.03 LCS: Clean Water; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007;
Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Antimony	1.00	0.93	93	80-120						
Arsenic	1.00	0.96	96	80-120						
Barium	1.00	1.01	101	80-120						
Beryllium	1.00	0.99	99	80-120						
Cadmium	1.00	0.98	98	80-120						
Chromium	1.00	0.96	96	80-120						
Cobalt	1.00	0.97	97	80-120						
Copper	1.00	0.98	98	80-120						
Lead	1.00	0.96	96	80-120						
Mercury (By EPA 7470)	0.01	0.01	94	80-120						
Molybdenum	1.00	0.97	97	80-120						

ANALYTICAL RESULTS

Page: **4**
Project ID: 13306
Project Name: KB Site

AETL Job Number	Submittd	Client
42960	07/02/2007	T/TSB

Method: 6010/7000CAM, CAM Title 22 Metals (SW-846)

QC Batch No: 070307-1 ; Sample Spiked: 42919.03 LCS: Clean Water; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007;
Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Nickel	1.00	0.97	97	80-120						
Selenium	1.00	0.95	95	80-120						
Silver	1.00	0.97	97	80-120						
Thallium	1.00	0.98	98	80-120						
Vanadium	1.00	0.97	97	80-120						
Zinc	1.00	1.02	102	80-120						

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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Ordered By

Tetra Tech Inc.
4213 State Street Suite 100
Santa Barbara, CA 93110-2847

Number of Pages	4
Date Received	07/02/2007
Date Reported	07/10/2007

Telephone: (805)681-3100
Attention: James Steele

Job Number	Order Date	Client
42961	07/02/2007	T/TSB

Project ID: 13307
Project Name: KB Site
Site: Runkle Canyon
Below Sequoia Avenue

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Cl

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

Job #42961

THE CITY OF SIMI VALLEY SOURCE CONTROL
CHAIN OF CUSTODY RECORD

S.V.LAB. # 13307

Facility Name: Runkle Canyon	Program Requesting	Sampled by: Ron Lovato (SIGNATURE)
Address: Below Sequoia Ave SIMI VALLEY, CA KB site	IPP SW HW	Sample date: 7/02/07 I.U. CLASS:

TIME	GRAB /COMP.	# Bot.	SAMPLE DESCRIPTION/LOCATION	REQUIRED TEST	PRESERVATIVES	BOTTLE TYPE	BOTTLE SIZE
	G COMP			BOD_5 TSS TDS Cl SO_4	ICE	P G	1L
	G COMP			Cd Cr Cu Pb Ni Ag Zn	ICE HNO_3	P G	250 ml
	G COMP			COD	ICE H_2SO_4	P G	250 ml
	G COMP			AMMONIA (NH_3)	ICE H_2SO_4 HNO_3	P G	1L
	G			CYANIDE (CN)	ICE $Na_2S_2O_3$ NaOH	P G	1L
	G			OIL & GREASE	ICE HNO_3 H_2SO_4	G	1L
0955	[✓ G] COMP water	1	Upstream Split	Title 22 metals	[✓ ICE] HNO_3	[✓ P] G V	1/2 L
	G COMP			42961.01	ICE	P G V	
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	
	G COMP				ICE	P G V	

SIGNATURE	PRINT NAME	AGENCY	DATE	TIME	FIELD DATA
Relinquished by: M Mora	MAGDALENA MORA	ECD/SV	7/02/07	11 40 AM	pH: 7.17 Geo 7.16 Pat chem TEMP:
Received by: JR Steele	James R. Steele	Tetra Tech	7/02/07	11 40 Am	Sampler set TIME: DATE:
Relinquished by: JR Steele	James R Steele	Tetra Tech	7/02/07	14:40	Picked up TIME: DATE:
Received by:	AREG	AETL	07/02/07	14:40	

Comments: Normal TAT

SPLIT

GRAPHICS 7/98 DISTRIBUTION: WHITE - Outside Lab* CANARY - WWTP Lab PINK - Source Control GOLDENROD - Business Representative

TABLE
Summary of Aqueous Analytical Results for CAM Title 22 Metals (SW-846)
Runkle Canyon Below Sequoia Avenue

CAM Title 22 Metals (SW-846). Method: 6010/7000CAM

Sample ID	STLC Limit mg/L	TCLP Limit mg/L	TTLC Limit mg/Kg	Units	UPSTREAM SPLIT
Sample Date					7/2/2007
Laboratory Job Number					42961
Antimony	15		500	mg/L	ND<0.05
Arsenic	5.0	5.0	500	mg/L	**0.057J**
Barium	100	100	10000	mg/L	**0.527**
Beryllium	0.75		75	mg/L	ND<0.01
Cadmium	1.0	1.0	100	mg/L	**0.023J**
Chromium	5	5.0	2500	mg/L	**0.018J**
Cobalt	80		8000	mg/L	**0.013J**
Copper	25		2500	mg/L	**0.023J**
Lead	5.0	5.0	1000	mg/L	ND<0.05
Mercury (By EPA 7470)	0.2	0.2	20	mg/L	ND<0.001
Molybdenum	350		3500	mg/L	ND<0.01
Nickel	20		2000	mg/L	**0.015J**
Selenium	1.0	1.0	100	mg/L	ND<0.05
Silver	5	5.0	500	mg/L	ND<0.01
Thallium	70		700	mg/L	ND<0.05
Vanadium	24		2400	mg/L	**0.062**
Zinc	250		5000	mg/L	**0.205**

1) "ND<X" INDICATES CONSTITUENT(S) NOT DETECTED AT OR ABOVE METHOD DETECTION LIMIT.
2) "J" INDICATES ANALYTE WAS DETECTED. HOWEVER, ANALYTE CONCENTRATION IS AN ESTIMATED VALUE WHICH IS BETWEEN THE METHOD DETECTION LIMIT (MDL) AND THE PRACTICAL QUANTITATION LIMIT(PQL).
3) "D" INDICATES THE SAMPLE WAS DILUTED TO BRING THE ANALYTE CONCENTRATION WITHIN CALIBRATION RANGE.

ANALYTICAL RESULTS

Ordered By

Tetra Tech Inc.
4213 State Street
Suite 100
Santa Barbara, CA 93110-2847

Telephone: (805)681-3100
Attn: James Steele

Site

Runkle Canyon
Below Sequoia Avenue

Page: 2
Project ID: 13307
Project Name: KB Site

AETL Job Number	Submitted	Client
42961	07/02/2007	T/TSB

Method: 6010/7000CAM, CAM Title 22 Metals (SW-846)

QC Batch No: 070307-1

Our Lab I.D.			Method Blank	**42961.01**			
Client Sample I.D.				Upstream Split			
Date Sampled				07/02/2007			
Date Prepared			07/03/2007	07/03/2007			
Preparation Method			3005A	3005A			
Date Analyzed			07/03/2007	07/03/2007			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Antimony	0.05	0.10	ND	ND			
Arsenic	0.05	0.10	ND	0.057J			
Barium	0.03	0.05	ND	0.527			
Beryllium	0.01	0.05	ND	ND			
Cadmium	0.01	0.05	ND	0.023J			
Chromium	0.01	0.05	ND	0.018J			
Cobalt	0.01	0.05	ND	0.013J			
Copper	0.01	0.05	ND	0.023J			
Lead	0.05	0.10	ND	ND			
Mercury (By EPA 7470)	0.001	0.002	ND	ND			
Molybdenum	0.01	0.05	ND	ND			
Nickel	0.01	0.05	ND	0.015J			
Selenium	0.05	0.10	ND	ND			
Silver	0.01	0.05	ND	ND			
Thallium	0.05	0.10	ND	ND			
Vanadium	0.03	0.05	ND	0.062			
Zinc	0.01	0.05	ND	0.205			

ANALYTICAL RESULTS

Ordered By

Tetra Tech Inc.
4213 State Street
Suite 100
Santa Barbara, CA 93110-2847

Telephone: (805)681-3100
Attn: James Steele

Site

Runkle Canyon
Below Sequoia Avenue

Page: 3
Project ID: 13307
Project Name: KB Site

AETL Job Number	Submitted	Client
42961	07/02/2007	T/TSB

Method: 6010/7000CAM, CAM Title 22 Metals (SW-846)

QUALITY CONTROL REPORT

QC Batch No: 070307-1 ; Sample Spiked: 42919.03 LCS: Clean Water; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007; Units: ppm

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Antimony	0.010	1.00	0.92	91	1.00	0.90	89	2.2	80-120	<15
Arsenic	0.015	1.00	0.96	94	1.00	0.95	93	1.1	80-120	<15
Barium	0.115	1.00	1.04	92	1.00	1.05	93	1.1	80-120	<15
Beryllium	ND	1.00	0.98	98	1.00	0.97	97	1.0	80-120	<15
Cadmium	ND	1.00	0.89	89	1.00	0.90	90	1.1	80-120	<15
Chromium	0.002	1.00	0.91	91	1.00	0.91	91	<1	80-120	<15
Cobalt	ND	1.00	0.88	88	1.00	0.88	88	<1	80-120	<15
Copper	0.004	1.00	0.94	94	1.00	0.95	95	1.1	80-120	<15
Lead	0.008	1.00	0.88	87	1.00	0.88	87	<1	80-120	<15
Mercury (By EPA 7470)	0.001	0.01	0.01	87	0.01	0.01	88	1.1	80-120	<15
Molybdenum	0.002	1.00	0.94	94	1.00	0.95	95	1.1	80-120	<15
Nickel	0.001	1.00	0.87	87	1.00	0.87	87	<1	80-120	<15
Selenium	ND	1.00	0.90	90	1.00	0.87	87	3.4	80-120	<15
Silver	ND	1.00	0.81	81	1.00	0.82	82	1.2	80-120	<15
Thallium	0.012	1.00	0.92	91	1.00	0.92	91	<1	80-120	<15
Vanadium	0.001	1.00	0.94	94	1.00	0.95	95	1.1	80-120	<15
Zinc	0.799	1.00	1.73	93	1.00	1.73	93	<1	80-120	<15

QC Batch No: 070307-1 ; Sample Spiked: 42919.03 LCS: Clean Water; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007; Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Antimony	1.00	0.93	93	80-120
Arsenic	1.00	0.96	96	80-120
Barium	1.00	1.01	101	80-120
Beryllium	1.00	0.99	99	80-120
Cadmium	1.00	0.98	98	80-120
Chromium	1.00	0.96	96	80-120
Cobalt	1.00	0.97	97	80-120
Copper	1.00	0.98	98	80-120
Lead	1.00	0.96	96	80-120
Mercury (By EPA 7470)	0.01	0.01	94	80-120
Molybdenum	1.00	0.97	97	80-120

ANALYTICAL RESULTS

Page: **4**
Project ID: 13307
Project Name: KB Site

AETL Job Number	Submittd	Client
42961	07/02/2007	T/TSB

Method: 6010/7000CAM, CAM Title 22 Metals (SW-846)

QC Batch No: 070307-1 ; Sample Spiked: 42919.03 LCS: Clean Water; QC Prepared: 07/03/2007; QC Analyzed: 07/03/2007;

Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Nickel	1.00	0.97	97	80-120						
Selenium	1.00	0.95	95	80-120						
Silver	1.00	0.97	97	80-120						
Thallium	1.00	0.98	98	80-120						
Vanadium	1.00	0.97	97	80-120						
Zinc	1.00	1.02	102	80-120						

Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
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J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

PAT-CHEM LABORATORIES

11990 Discovery Ct. • Moorpark, CA 93021 • Ph. (805) 532-0012 • Fax (805) 532-0016

Page 1 of 3

Customer: **City of Simi Valley**
500 W. Los Angeles Avenue
Simi Valley CA, 93063

Attention: Larry Whitney
Report Date: 13-Jul-07 14:40
Subject: Water Samples

Project/P.O.#: Runkle Canyon

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT	NOTE
Downstream Split (Sample I.D.# : 0707011-01) Collected: 02-Jul-07 By R. Lovato + Magdaleno Mora							
Silver	EPA 6010B	AG70906	0.02	10-Jul-07 (AF)	<	0.02 mg/l	
Arsenic	EPA 6010B	AG70906	0.10	10-Jul-07 (AF)		0.12 mg/l	
Barium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.84 mg/l	
Beryllium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Cadmium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Cobalt	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.04 mg/l	
Chromium	EPA 6010B	AG70906	0.02	10-Jul-07 (AF)		0.06 mg/l	
Copper	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.07 mg/l	
Potassium	EPA 6010B	AG70906	0.20	09-Jul-07 (AF)		18 mg/l	
Magnesium	EPA 6010B	AG70906	0.02	10-Jul-07 (AF)		140 mg/l	
Molybdenum	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Sodium	EPA 6010B	AG70906	1.00	10-Jul-07 (AF)		151 mg/l	
Nickel	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.04 mg/l	
Lead	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Antimony	EPA 6010B	AG70906	0.10	10-Jul-07 (AF)	<	0.10 mg/l	
Selenium	EPA 6010B	AG70906	0.10	09-Jul-07 (AF)	<	0.10 mg/l	
Thallium	EPA 6010B	AG70906	0.02	10-Jul-07 (AF)	<	0.02 mg/l	
Vanadium	EPA 6010B	AG70906	0.02	10-Jul-07 (AF)		0.14 mg/l	
Zinc	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.20 mg/l	
Mercury	EPA 7470A	AG70903	0.20	09-Jul-07 (MB)	<	0.20 ug/l	
Upstream Split (Sample I.D.# : 0707011-02) Collected: 02-Jul-07 By R. Lovato + Magdaleno Mora							
Silver	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Arsenic	EPA 6010B	AG70906	0.10	09-Jul-07 (AF)		0.12 mg/l	
Barium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.63 mg/l	
Beryllium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Cadmium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Cobalt	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.02 mg/l	
Chromium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.04 mg/l	
Copper	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.04 mg/l	
Potassium	EPA 6010B	AG70906	0.20	09-Jul-07 (AF)		15 mg/l	

Respectfully Submitted,

Pat Brueckner 7/17/2007
Laboratory Director

Customer: **City of Simi Valley**
500 W. Los Angeles Avenue
Simi Valley CA, 93063

Attention: Larry Whitney
Report Date: 13-Jul-07 14:40
Subject: Water Samples
Project/P.O.#: Runkle Canyon

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT	NOTE
Upstream Split (Sample I.D.# : 0707011-02) Collected: 02-Jul-07 By R. Lovato + Magdaleno Mora							
Magnesium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		110 mg/l	
Molybdenum	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Sodium	EPA 6010B	AG70906	1.00	09-Jul-07 (AF)		102 mg/l	
Nickel	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.03 mg/l	
Lead	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)	<	0.02 mg/l	
Antimony	EPA 6010B	AG70906	0.10	09-Jul-07 (AF)	<	0.10 mg/l	
Selenium	EPA 6010B	AG70906	0.10	09-Jul-07 (AF)	<	0.10 mg/l	
Thallium	EPA 6010B	AG70906	0.10	09-Jul-07 (AF)	<	0.10 mg/l	
Vanadium	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.11 mg/l	
Zinc	EPA 6010B	AG70906	0.02	09-Jul-07 (AF)		0.16 mg/l	
Mercury	EPA 7470A	AG70903	0.20	09-Jul-07 (MB)	<	0.20 ug/l	
Top Soil Split (Sample I.D.# : 0707011-03) Collected: 02-Jul-07 By R. Lovato + Magdaleno Mora							
Silver	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Arsenic	EPA 6010B	AG71026	25	12-Jul-07 (AF)	<	25 mg/kg	
Barium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		85 mg/kg	
Beryllium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Cadmium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Cobalt	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		12 mg/kg	
Chromium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		10 mg/kg	
Copper	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		7.9 mg/kg	
Potassium	EPA 6010B	AG71026	25	12-Jul-07 (AF)		2000 mg/kg	
Magnesium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		6800 mg/kg	
Molybdenum	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Sodium	EPA 6010B	AG71026	250	12-Jul-07 (AF)		2100 mg/kg	
Nickel	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		9.3 mg/kg	
Lead	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Antimony	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Selenium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Thallium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)	<	5.0 mg/kg	
Vanadium	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		25 mg/kg	

Respectfully Submitted,

Pat Brueckner 7/17/2007
Laboratory Director

PAT-CHEM LABORATORIES

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Customer: **City of Simi Valley**
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Attention: Larry Whitney
Report Date: 13-Jul-07 14:40
Subject: Water Samples

Project/P.O.#: Runkle Canyon

PARAMETER	METHOD	QC BATCH	REPORTING LIMIT	ANALYZED (ANALYST)		RESULT	NOTE
Top Soil Split (Sample I.D.# : 0707011-03) Collected: 02-Jul-07 By R. Lovato + Magdaleno Mora							
Zinc	EPA 6010B	AG71026	5.0	12-Jul-07 (AF)		47 mg/kg	
Mercury	EPA 7471A	AG70904	0.050	09-Jul-07 (AA)	<	0.050 mg/kg	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis

Respectfully Submitted,

Pat Brueckner 7/17/2007
Laboratory Director