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United States
Department of the Interior
Bureau of Land Management
Mineral Report

Hazmat Characterization
Supplemental Report

Padre-Madre Waste Stockpile
Pyramid Construction and Aggregates
Mineral Material Contract

Imperial County, California
San Bernardino Meridian
T.15 S., R. 21 E.
Sec. 19, Portions of the S1/2 NE1/4
and N1/2 SE ¼

Aggregating approximately 20 acres, more or less

Prepared by:
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September 27, 2010
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Supplement Amended
16 Aug 2011

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ATTACHMENTS

Map A Sample index plat

Attachment A January 9, 2009, request to conduct STLC analyses on 4 rock samples.

Attachment B January 23, 2009, analytical results of the STLC CAM 17 from Microbac Laboratory.

Attachment C August 9, 2011, request to conduct STLC analyses on 4 rock samples

Attachment D August 16, 2011, analytical results of the STLC CAM 17 from Microbac Laboratory

SUMMARY AND CONCLUSIONS

While BLM recognizes the considerable work and associated costs AGJV expended in compliance with reclamation provisions of their approved reclamation plans for the Padre-Madre gold project, the United States has offered this material to meet regional demands for rock material from this site. In addition, removal of most of the rock stockpile will a provide a final topographic profile closer to the original profile before gold mining activity. Based on analysis of samples collected from the waste rock stockpile completed in October 2008, and further work in January 2009, the waste rock is not considered a toxic or hazardous material.

Total element analyses completed in October 2008 for various metals show that all but two elements (copper and lead) in three samples (copper in L-1, and lead in samples L-2 and L-4) are above 10 times the Soluble Threshold Limit Concentration (STLC). Because the threshold limit (10 times) was exceeded for these elements in some of the samples, the waste extraction test (WET) is required[1]. This test is more aggressive in leaching the subject elements, and is the basis for the STLC limits. I determined that all 17 metals of concern to the state of California would be analyzed by the WET process. The WET was done on all four samples collected in October 2008 for all California Administrative Manual (CAM) 17 metals[2], to determine if the waste rock leachate is above STLC limits for classification as a toxic material. Results showed that none of the samples had any of the CAM 17 elements (including mercury) above STLC limits.

All four samples were again tested by STLC (WET) procedures on a crushed component above 10-mesh screen and passing a 1/2–inch screen. Results showed that none of the samples had any of the CAM 17 elements (including mercury) above STLC limits. In addition, and overall, the four coarser samples had lower concentrations of the CAM 17 elements than were found in the January 2009 testing of the samples.

I conclude, based on sample and test results, that waste rock material at the Pyramid contract site is not considered a “toxic or hazardous” material requiring RCRA Subtitle C tracking from the generation, transport, and treatment and/or disposal (e.g., “cradle to grave”). The waste rock does not meet any threshold limits for any of the 17 metallic elements of concern to the state of California.

Based on the sampling and test methods applied in compliance with federal and state guidelines, I do not believe that mining of the waste rock from the Pyramid contract site would have no deleterious effect on humans or the natural environments when used as an aggregate admixture to concrete and asphalt concretes, or used as fill, rip-rap, or ballast applications.

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[1] The WET is now called the STLC CAM 17 test.

[2] Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc (CCR Title 22, Chapter 11, Article3, Section 66261.24(a)(1), Table I).

RECOMMENDATIONS

All rock material should be wet screened to minimize dust and fine material adhering to product aggregates.

While the material sampled does not meet the threshold for toxicity, no material should be removed from the property passing the 10-mesh screen (2.0 millimeter; heavy wire screen).

Periodic sampling and analysis by STLC methods of the minus 1 inch to plus 10-mesh screen size material should be made by the holder of the contract.

INTRODUCTION

The following supplements and amends information provided in the November 2008 mineral report

This supplement to my November 19, 2008, sample report and addresses those concerns expressed in response to the Draft Environmental Assessment made available for public review by the El Centro Field Office of the Bureau of Land Management (BLM) in January 2000. This supplement is specific to the sampling program completed by the BLM to characterize the rock stockpile as toxic/hazardous pursuant to sections 208, 25141 and 25159 of the California Health and Safety Code, and 40 Code of Federal Regulations (CFR), Subpart 261.20 (Environmental Protection Agency; Identification and Listing of Hazardous Waste).
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General

The El Centro Field office, Bureau of Land Management, offered by competitive sale, 500,000 tons of waste rock from previous gold mining operations at the Padre-Madre mine in August 2007. The Padre-Madre mine was part of a larger operation by the American Girl Joint Venture (AGJV) incorporating open pit heap leach operations in American Girl Wash, Tumco Wash, and at the Padre-Madre site. Overburden and interburden waste rock removal was authorized from mining plans of operation approved by the El Centro Field Office of the BLM, and Imperial County under the California Surface Mining and Reclamation Act of 1975 (SMARA[3]). The Colorado River Water Quality Control Board (CRWQCB) did not permit or consider closure plans for the waste rock stockpiles/dumps as a hazardous material site.

Pyramid Construction and Aggregates, Incorporated (Pyramid), won the competitive mineral material sales contract which incorporates a portion of the west rock stockpile at the Padre-Madre site (Case file CACA 49292). The contract will authorize Pyramid to mine and process waste rock from within an area comprising approximately 20 acres for a period of 10 years. The competitive contract will give pyramid the right to renew the contract after the 10 year term, or after materials contracted have been removed, subject to reappraisal.

The rock material under Pyramid's contract was never characterized or permitted as a hazardous or toxic waste, or characterized as such by AGJV. The waste rock area was not permitted by the Colorado River Water Quality Control Board[4] as a Clean Water Act

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[3] California Surface Mining and Reclamation Act of 1975 (SMARA; Public Resources Code, Division 2, Chapter 9; Title 14, California Code of Regulations, Chapter 8, Subchapter 1, Article 1, sections 3500 to 3508)).

[4] The Federal Clean Water Act (33 USC §1251 et seq.) gives States the primary responsibility for protecting and restoring surface water quality. The California Regional Water Quality Control Boards permit activities in order to mitigate potential discharge of hazardous or toxic substances that may have a potential for polluting waters of the state.

permitted activity, and hence no permit was “closed”. The waste rock facility was authorized on public land under the mining laws, and a reclamation plan was approved by both BLM (43 CFR 3809) and Imperial County (SMARA). There has been considerable effort to reclaim the mine and disposal areas to a condition as near as practicable to that which existed prior to mining by AGJV. After completion of reclamation of the site, the waste rock area was subsequently determined reclaimed in compliance with the reclamation plan. Subsequent to reclamation, AGJV and all interested parties in the Padre-Madre site relinquished all mining claim interests in the area.

It is BLM’s intent in the disposal of a portion of the waste rock pile under the subject contract to enhance work previously done by removal of waste rock material to a level as close as possible to pre-gold mining topography. We believe that by offering the material for disposal, the increased costs to remove this material will not be a burden on the United States, and will leave the area in a condition that more closely represents pre-gold mining topography.

DETERMINATION OF CHARACTERISTIC OF TOXICITY

General

On January 5, 2009, the Bureau of Land Management, El Centro Field Office, released the “Pyramid Construction Environmental Assessment” (EA; No. CA-670-2008-76), assessing the plan of operation and reclamation plan resulting from the sale of 500,000 tons of stockpiled rock to Pyramid Construction Company. As a result of that review, Hecla (and AGJV) had comments on the toxicity methods applied by me in my November 2008 report, and still considered secondary uses a liability placed on them under the CERCLA.

BLM is concerned about acid and metal mobility from abandoned mine-waste piles as well as from secondary uses of this material in non-cementatious applications. Drainage and runoff from piles of rock material can present water quality concerns similar to acid mine drainage. These piles may contain metal and sulfide zones that can become sources of acidic drainage when exposed to surface conditions of oxygen and water from precipitation. The regulations implemented under the resource Recovery and Conservation Act (RCRA; 42 USC §6901 et seq.) consider a “solid waste” as any discarded material, whether solid, liquid, or contained gas (40 CFR 261.2(a)(1)). A discarded material is any material that is abandoned, **recycled**, or considered inherently waste-like (40 CFR 261.2(a)(2)(i); also 42 USC 6903)). RCRA Subtitle C regulates “hazardous waste” generators and transporters, and treatment, storage, and disposal

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[5] Cementaceous applications include aggregate in a matrix of either Portland or asphalt cements.

facilities through permitting[6]. RCRA Subtitle D regulates management of "solid" waste as defined. As a general statement, hazardous waste is excluded from the permitting process if associated with and remains with mining operations (Bevill Exclusion[7]).

While not a "waste", the rock may contain concentrations of certain metals that are known to cause human and environmental health concerns. This is Hecla's concern as expressed in comments on the proposed sale of material to Pyramid Construction. The key to determining potential impacts associated with the secondary uses of the rock material center on whether or if the material is toxic or may release toxic elements or compounds into the human and natural environments. To effect resolution of the issue, BLM undertook sampling and analysis of the rock material to determine if the material is directly toxic to the human or natural environment, or if the rock material is susceptible to leaching and release of toxic substances as a result of normal and predictable natural or human activities.

Under Environmental Protection Agency guidelines, the rock material is characterized as a non-hazardous waste if it does not exhibit a characteristic by either testing or applying knowledge of the material (40 CFR 262.11; defined in 40 CFR 261.2), or the material is specifically excluded from regulation under 40 CFR 261.4. If the material is not specifically excluded, hazardous characteristics are determined by either testing the material according to the methods set forth in subpart C of the regulations at 40 CFR part 261, or to an equivalent method approved by the Environmental Protection Agency (EPA) Administrator under 40 CFR 260.21, such as California's procedures[8].

Solid wastes that are not hazardous wastes include mining overburden returned to the mine site (40 CFR 261.4 (b) (3) (Exclusions)). This is the condition of the subject rock material under the AGJV mine permitting process. While the material is excluded as a hazardous material if returned to the mine site, it does not mean it is not a hazardous or toxic material if it is subsequently removed and used in a secondary material use as is proposed in the Pyramid contract. If the material is thought to be hazardous/toxic, it must be tested in compliance with accepted protocols. To this end, the comments of Hecla are valid in that the rock material must be characterized to assure that material severed and removed from the Padre-Madre mine site and used in secondary processes is not hazardous or toxic. However, it should be noted that Hecla did not provide any supporting evidence that the mine rock material placed by AGJV during mining operations at the Padre-Madre site was toxic. Nonetheless, BLM has considered their concern in support of the sale of the rock material to Pyramid Construction.

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6 Under California and federal law (RCRA Subtitle C), anyone who stores, treats or disposes of hazardous waste as described in the Hazardous Waste Control Law (Health and Safety Code, Division 20, Chapter 6.5) must obtain a permit or a grant of authorization from the Department of Toxic Substances Control (DTSC). A permit is not required for a Bevill Excluded facility.

7 In October 1980, the RCRA was amended by adding section 3001(b)(3)(A)(ii) (Bevill Exclusion).,

8 Title 22, California Civil Code, Article 3. Characteristics of Hazardous Waste, section 66261.20.

Material may be a hazardous waste if it exhibits a characteristic of toxicity (EPA waste code D004-D043). The Total Toxics Limits Concentration (TTLC) analysis determines the total concentration of certain regulated metallic elements in each sample. When any sample exceeds the TTLC limits, the waste is classified as hazardous and its waste code is determined by the compound(s) that exceeded the TTLC threshold limits. I conducted the TTLC analyses on the 4 samples in October 2008, and the results are reported in Tables 3 and 4, and Attachment 1 of the October 2008 Sample Report. None of the samples exceeded the TTLC threshold limits (Condition 3 on Table A)

The results of the TTLC analysis can also be used to determine if further analysis is required for characterizing toxicity even if the total concentration does not exceed the TTLC limits. If a substance's TTLC is equal to or greater than ten times the Soluble Threshold Limit Concentration (STLC) regulatory limit, the Waste Extraction Test (WET) is required to determine if the material is toxic. If the TTLC results do not exceed 10 times the STLC limit then normally no further analysis is required. If any substance in the waste extract (from WET) is equal to or greater than the STLC threshold limit value, it is considered a hazardous toxic waste.

Toxic Characteristic Leaching Procedure (TCLP) and the WET (in California) are test methods used to determine whether a waste is a toxic hazardous waste (material). The TCLP test method is designed to determine the mobility of both organic and inorganic compounds present in liquid, solid and multi-phase waste materials, and is used to classify waste as hazardous or non-hazardous for purposes of disposal in a landfill. The toxicity characteristic is determined through a laboratory procedure (TCLP) found at EPA SW-846 Method 1311 and 40 CFR 261.24[9]. In California the WET leachate procedure is used for solid samples or for samples containing greater than 0.5 percent solids[10] in lieu of the federal procedure because it is a more aggressive test. Results of my TTLC testing show that copper in Sample L-1 and lead in Samples L-3 and L-4 exceeded 10 times the STLC threshold limit (however, the total concentration of these elements did not exceed the TTLC threshold limits). Refer to Condition 2a of Table A for a distribution of element assumptions.

The TCLP/WET extraction test is performed by subjecting the material in question to a simulated landfill leachate. Some in the mining industry believe that this test does not reflect conditions in a waste stockpile on-site. Because of the aggressive leachates and long timeframes used for leaching materials in the TCLP/WET methods, material

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[9] The TCLP is a Federal guideline and differs from the California procedure. The alkalinity of the sample must first be determined in order to know which of two different extraction fluids should be used. Samples with a low alkalinity use a sodium acetate solution with a pH of 4.93. Samples with a high alkalinity use a dilute acetic acid solution with a pH of 2.8. The sample is tumbled in the appropriate extraction fluid for 18 hours.

[10] The WET process uses a 0.2M sodium citrate buffer in an amount equal to 10 times the sample weight. The sample is tumbled in the solution for 48 hours. This leachate is then analyzed to determine the soluble concentrations. This test is more aggressive at removing the 17 metals of concern under the California regulations.

stockpiled under normal weathering conditions do not truly emulated natural condition than might be expected. In stockpile and associated facilities, the Synthetic Precipitation Leaching Procedure (EPA SW-846 Method 1312) may be representative of expected conditions. This procedure is applicable for materials where the leaching potential due to normal rainfall is to be determined. Instead of the landfill leachate simulated by an acetic acid (TCLP) or citric acid (STLC/WET) leachate, solutions of nitric and sulfuric acids at a pH of 5.0 (western United States) are used in an effort to simulate the acid rains resulting from airborne nitric and sulfuric oxides interactions.

The TCLP/WET (in California) is the only leaching procedure used for characterizing waste as toxic under RCRA (and CERCLA for potential liabilities). I chose to use the Soluble Limits of Concentration Procedure (STCL; California WET) method because of the high aggressive nature of the leachate, which I believe will identify the mobility of toxic elements of concern resulting from any natural or man-made condition that might exist for all potential secondary uses of the rock material in non-cementaceous applications.

Sampling Methodology

Sampling and sample management of wastes and other materials for analysis and testing in California are pursuant to the sampling and processing protocols specified in chapter nine of the U.S. Environmental Protection Agency publication SW-846 (Test Methods for Evaluating Solid Waste, Physical/Chemical Methods). Publication SW-846 is generally considered the official guidance for analytical and sampling methods that are used to evaluate and classify materials under the RCRA regulations. SW-846 functions primarily as guidance for acceptable, although not required, methods to use in responding to RCRA-related sampling and analysis requirements.

I chose to sample the area as described in the November 2008 report. I conducted sampling of the Pyramid contract site on October 1, 2008, for the purpose of determining whether the waste rock has the characteristics of toxicity and is, subsequently, a hazardous material. Four transects were made each transect a composite of from 16 to 33 sample collection points. Samples were collected in a uniform manner and at as equal distance as the topography of the site would allow. In October 2008, I made 4 sample transects of the proposed waste rock mining site to characterize, in general, the site for the occurrence of 17 metals listed by the State of California as elements of concern, and the concentration in the sample as well as the concentration through the WET.

Samples were collected by traversing across the widest portion of the waste rock stockpile as depicted on the attached plat (Map 1). Sampling was done by locating a position along the transect line and a shallow pit 6-inch to 8-inch deep was excavated with a small hand pick (refer to photographs in October 2008 report). A 0.7-0.8 pound sample was collected from the bottom of the cut and placed in a sample bag.. The samples were collected and composited along four transects across the surface of the rock stockpile. Samples collected from the stockpile represented the compositional and size distribution or rock material at the site. Rock and fine material was scooped into a

sample bag, representing approximately ¼ pound of material. All samples along the transect line were collected in the same manner. Some were collected at the bottom of scalloped areas, part of AGJV's reclamation of the site.

The waste rock stockpile is not a horizontally stratified deposit, and does not contain soil. Rock waste from mining and stripping operations was end-dumped over the side of the stockpile (Figure 1). While drill holes or borings would have been preferred, the character of the waste pile does not necessitate drilling or borings to characterize the rock as toxic or hazardous. As such, drilling or boring, as compared with compositing of samples collected along surface transect lines, in my opinion, would provide no better or worse information about the toxicity of the stockpile. I believe that surface sampling for initial characterization of the material meets the requirements for sampling this type deposit as a toxic and hazardous material.

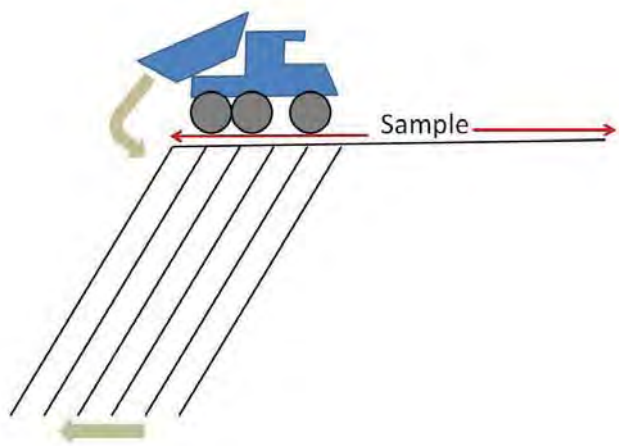


Figure 1 Stratification of rock stockpile.

The rock material collected was initially screened at plus ¼ –inch and minus ¼ -inch to emulate the distribution of run-of-mine (rock stockpile) materials for aggregate applications. The size distribution is shown in Table B, varying from 80 to 85 percent plus ¼-inch material and 15 to 20 percent minus ¼ inch size. The intended use of the material by Pyramid is the plus ¼-inch particle size after crushing. The sample size fractions were recombined and sent to Centrum/Microbac Laboratories for analysis of the California Title 22, 17 metals (CAM 17) determined to be of concern in October 2008. A chain of custody has been maintained for these samples since they were collected in October 2008.

Sample Analysis

Centrum/Microbac Laboratories was requested in October 2008 to analyze all four composited samples for total toxics limit of concentration (TTLC) for the CAM 17 metals (including mercury). Three of these metals (lead, mercury, and arsenic) were further analyzed by TCLP methods to determine if there was a potential for weathering out these elements and creating a hazardous situation if the waste rock were to be severed, processed, and used for construction and industrial mineral uses. Results for the TCLP showed that the waste rock stockpile is not considered toxic or hazardous for the three elements tested by this method.

In response to comments received on the sample report in January 2009, I analyzed all four composited samples by the more leach aggressing WET process by directing Centrum/Microbac Laboratories to complete the work on all CAM 17 metals (including mercury) by note dated January 9, 2009 (Attachment A). Results of this analysis were sent to me on January 23, 2009 (Attachment B).

The results indicate that there were no Cam 17 metals (including mercury) with concentrations at or above STLC thresholds in any of the samples collected from the rock stockpile. Table A shows the results of all testing, and the criteria for testing and set results. In addition, three elements tested by TCLP in 2008 (lead, arsenic, and mercury) were well below the STLC (WET) concentrations for the same elements supporting the more aggressive attack on the samples material by the STLC (WET) procedure.

In the process, Centrum milled a split of the sample to minus 10-mesh (2 millimeter) size. This does not reflect material that actually will be used in aggregate applications by Pyramid because of the high surface area of the material exposed to leachate materials. To reflect actual rock material expected to be exposed to potential natural and man-made leachates, I crushed the sample in two cycles at the BLM materials lab in Bakersfield. A 4 by 3-inch crusher was used to crush the samples to minus ¾-inch, and then to minus ½-inch. Wet screening was done with a carbon steel perforated plate with holes at 3/32 inch (2.38 millimeter (mm)). A water spray was used from tap water, with a final rinse of the material above 10-mesh size with distilled water. The material was air dried and weighted. The 3/32-inch hole size best reflects a medium wire screen at 10-mesh (standard). All material above 10-mesh size screened from each

sample is considered salable product. All material minus 10-mesh size is considered waste material and will be disposed back onto the rock stockpile area in compliance with the mine and reclamation plan. The dried plus 10-mesh sized material was weight to 100.0 grams each, and placed in sterile plastic containers sent to A&R (Microbac) laboratory on August 10, 2011, for further STLC (WET) analysis.

The January 2009 analyses were completed on rock material that was milled to minus 10-mesh size (2.0 mm). It is expected that the minus 10-mesh size material would contribute a higher proportion of CAM 17 metals to the leach liquor compared with a coarser sample because the 10-mesh sized material has a higher surface area to volume ratio than would rock clasts in the plus ¼- inch size. For example, a cube with a side of 2 inches when crushed to equal smaller cubes have a sides of 0.1 inch, will have an increase in surface area 20 times that of the larger cube. The smaller cubes would expose 20 times the area to leaching than would the larger cube.

The August 2011 STLC confirmed that the larger clast sized material resulted in lower values for the CAM 17 metals as a result of less surface area of the rock exposed to leach liquors. I can conclude from these tests that the plus ¼-inch material would generally be lower in STLC values than the composited sample as a whole. As such, the potential leaching any of the CAM 17 metals is lower for the crushed rock than the natural and crusher fine material (minus 10-mesh).

Results of the August 2011 analysis show that the coarser material had less leachable elements in the leachate than in the January 2009 analyses. None of the samples showed values above STLC thresholds (Condition 2b(2) in Table A). This lower values in CAM metals is expected because the aggregate product will have a lower surface area that would be exposed to leaching solutions than the minus 10-mesh sized material.

SIZE CLASSIFICATION

Samples collected during transects of the waste rock stockpile were analyzed on the particle size distribution as collected in the field. My observation of the material was that all clasts are generally 95 percent minus 4-inches in size, grading to fine sand sized particles. As collected, I concentrated on minus 2-inch sized particle clasts.

I “cut” the particle size distribution at the ¼-inch screen sized particle for each sample after both the TTLC and STLC analyses of the sample materials was completed. Remaining material from each sample was weighed into plus ¼- inch and minus ¼ -inch fractions. As proposed by the operator, only the rock material would be separated, crushed, and sold into the market. Sand sized material (minus No. 10 mesh material; 2.3 mm) would be placed and reclaimed into the site.

Based on the ¼- inch split, all samples contained approximately 14 to 20 percent fine material (less than ¼- inch mesh screen) as collected in October 2008. On February 18, 2009, I crushed the remaining sample to 100 percent minus ¾- inch at the BLM facility in Bakersfield, California. My purpose was to determine the increased amount of minus ¼ -inch material that would result from crushing operations and the approximate amount of material that would be reclaimed back to the site.

Table A **Results of TTLC, STLC Analysis, with Toxicity Standards**

(CAM 17) Metal/Element	Element Crustal Abundance (ppb)**	Total Threshold Limit Concentration (TTLC) Values, Section 66261.24(a)(2), Table II, Characteristic of Toxicity, California Code of Regulations (Title 22, Division 4.5, Chapter 11, Article 3)	Rock Dump Assayed Concentration CAM 17 (TTLC; ppb)				Chemical Abstracts Service Number	Toxicity Characteristic Leaching Procedure (TCLP), Maximum Concentration of Contaminants for the Toxicity Characteristic-Section 66261.24 (a)(2), Table I, Characteristic of Toxicity,California Code of Regulations (Title 22, Division 4.5, Chapter 11, Article 3)		Rock Dump TCLP (ppb)				STLC Element/Metal	List of Inorganic Toxic Substances and Their Soluble Threshold Limit Concentration (STLC)- Section 66261.24(a)(2), Table II, Characteristic of Toxicity, California Code of Regulations (Title 22, Division 4.5, Chapter 11, Article 3)		Rock Dump minus 10 mesh- STLC (WET; ppb)				Rock Dump minus 1/2 plus -10 mesh- STLC (WET; ppb)			
		TTLC ug/L (ppb) Threshold Limits (3)	Sample L-1	Sample L-2	Sample L-3	Sample L-4	(CAS#)	Hazardous Waste Criterian (ug/L)	Microbac Lab Reporting Limit	Sample L-1	Sample L-2	Sample L-3	Sample L-4		Hazardous Waste Criterian (STLC Threshold; ug/L)	Microbac Lab Reporting Limit	Sample L-1	Sample L-2	Sample L-3	Sample L-4	Sample L-1	Sample L-2	Sample L-3	Sample L-4
Antimony	200	500,000	1,910	2,910	1,390	1,120	7440-36-0							**Antimony**	15,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
Arsenic	1,800	500,000	7,080	16,600	9,520	11,900	7440-38-2	5,000	20	<20	<20	<20	<20	**Arsenic**	5,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
Barium (4)	425,000	10,000,000	24,400	28,300	30,900	41,600	7440-39-3	100,000						**Barium**	100,000	1,000	2,090	1,500	1,630	1,400	<1,000	<1,000	<1,000	<1,000
Beryllium	2,800	75,000	625	793	860	1,110	7440-41-7	100,000						**Beryllium**	750	50	<500	<500	<500	<500	<500	<500	<500	<500
Cadmium	150	100,000	1,030	1,280	1,710	3,620	7440-47-3	1,000						**Cadmium**	1,000	500	<500	<500	<500	<500	<500	<500	<500	<500
Chromium (5)	102,000	2,500,000	3,520	3,300	3,780	3,780	7440-48-4	5,000						**Chromium**	5,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Cobalt	25,000	8,000,000	4,540	6,750	8,960	6,320	7440-50-8							**Cobalt**	80,000	500	<500	<500	<500	<500	<500	<500	<500	<500
Copper	60,000	2,500,000	269,000	133,000	62,700	118,000	7440-36-0							**Copper**	25,000	1,000	14,900	11,200	<1,000	<1,000	6,560	6,410	<1,000	<1,000
Lead	14,000	1,000,000	23,200	39,400	64,700	72,500	7439-92-1	5,000	10	18	14	28	11	**Lead**	5,000	1,000	1,630	3,250	3,110	3,270	<2,000	<2,000	<2,000	<2,000
Mercury	85	20,000	739	1,186	185	223	7439-97-6	200	0.20	<0.20	<0.20	<0.20	<0.20	**Mercury**	200	20	<20	<20	<20	<20	<20	<20	<20	<20
Molybdenum	1,200	3,500,000	2,680	8,480	8,470	6,060	7439-98-7							**Molybdenum**	350,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Nickel	84,000	2,000,000	2,910	3,080	4,030	1,800	7440-02-0							**Nickel**	20,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Selenium	50	100,000	Det	Det	Det	Det	7782-49-2	1,000						**Selenium**	1,000	200	<200	<200	<200	<200	<200	<200	<200	<200
Silver	75	500,000	Det	Det	Det	Det	7440-22-4	5,000						**Silver**	5,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
Thallium	850	700,000	Det	Det	Det	Det	7440-28-0							**Thallium**	7,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Vanadium	120,000	2,400,000	24,200	38,500	32,600	48,900	7440-62-2							**Vanadium**	24,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Zinc	70,000	5,000,000	173,000	249,000	167,000	483,000	7440-66-6							**Zinc**	250,000	4,000	4,580	7,310	<4,000	<4,000	<4,000	4,480	<4,000	<4,000

** CRC Handbook of Chemistry and Physics, 85th Edition. CRC Press. Boca Raton, Florida (2005). Section 14, Geophysics, Astronomy, and Acoustics; Abundance of Elements in the Earth's Crust and in the Sea

STLC and TTLC are used for California regulated hazardous waste materials. Source is the California Code of Regulations, Title 22, Chapter 11, Article 3.

(2) If a substance analyzed by TTLC is ten times the STLC regulatory limit, the Waste Extraction Test (WET) is indicated (Condition 2a). If any substance in the waste extract is equal to or greater than the STLC threshold limit, it is considered a hazardous toxic material (Title 22, Division 4.5, Chapter 11, Article 3; Condition 2b)).

(3) Section 1.2 of the TCLP guide allows for a total constituent analysis (TTLC) in lieu of the TCLP extraction (Condition 2c). If a substance in a waste is equal to or greater than the TTLC threshold limit, it is considered a hazardous toxic w

(4) Excludes barium sulfate.

(5) If the soluble chromium as determined by the TCLP is less than 5 mg/L (5 ppm or 5,000 ppb), and the soluble chromium as determined by the STLC test equals or otherwise identified as a RCRA hazardous waste, then the waste is a non-RCRA hazardous waste.

Condition 2a - Rock Dump Assay (TTLC) Exceeds Ten times the STLC regulatory limit found in the TTLC						
	10X STLC Threshold (ppb)	L-1	L-2	L-3	L-3	L-4
Antimony	150,000	Less Than	Less Than	Less Than	Less Than	Less Than
Arsenic	50,000	Less Than	Less Than	Less Than	Less Than	Less Than
Barium (4)	1,000,000	Less Than	Less Than	Less Than	Less Than	Less Than
Beryllium	7,500	Less Than	Less Than	Less Than	Less Than	Less Than
Cadmium	10,000	Less Than	Less Than	Less Than	Less Than	Less Than
Chromium (5)	50,000	Less Than	Less Than	Less Than	Less Than	Less Than
Cobalt	800,000	Less Than	Less Than	Less Than	Less Than	Less Than
Copper	250,000	Requires WET	Less Than	Less Than	Less Than	Less Than
Lead	50,000	Less Than	Less Than	Exceeds	Requires WET	Requires WET
Mercury	2,000	Less Than	Less Than	Less Than	Less Than	Less Than
Molybdenum	3,500,000	Less Than	Less Than	Less Than	Less Than	Less Than
Nickel	200,000	Less Than	Less Than	Less Than	Less Than	Less Than
Selenium	10,000	Less Than	Less Than	Less Than	Less Than	Less Than
Silver	50,000	Less Than	Less Than	Less Than	Less Than	Less Than
Thallium	70,000	Less Than	Less Than	Less Than	Less Than	Less Than
Vanadium	240,000	Less Than	Less Than	Less Than	Less Than	Less Than
Zinc	2,500,000	Less Than	Less Than	Less Than	Less Than	Less Than

Condition 2b(1) - STLC (WET; minus 10 mesh) Value is Equal to or Greater than the STLC Threshold Value (Regulatory Limit)				
STLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
15,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
750	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
80,000	Less Than	Less Than	Less Than	Less Than
25,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
200	Less Than	Less Than	Less Than	Less Than
350,000	Less Than	Less Than	Less Than	Less Than
20,000	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
7,000	Less Than	Less Than	Less Than	Less Than
24,000	Less Than	Less Than	Less Than	Less Than
250,000	Less Than	Less Than	Less Than	Less Than

Condition 2b(2) - STLC (WET; minus 1/2 inch plus 10 mesh) Value is Equal to or Greater than the STLC Threshold Value (Regulatory Limit)				
STLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
15,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
750	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
80,000	Less Than	Less Than	Less Than	Less Than
25,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
200	Less Than	Less Than	Less Than	Less Than
350,000	Less Than	Less Than	Less Than	Less Than
20,000	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
7,000	Less Than	Less Than	Less Than	Less Than
24,000	Less Than	Less Than	Less Than	Less Than
250,000	Less Than	Less Than	Less Than	Less Than

Condition 2c - Rock Dump Assay (TTLC) Exceeds Twenty times the TCLP regulatory limit found in the TTLC				
TTLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
1,120	Less Than	Less Than	Less Than	Less Than
11,900	Less Than	Less Than	Less Than	Less Than
41,600	Less Than	Less Than	Less Than	Less Than
1,110	Less Than	Less Than	Less Than	Less Than
3,620	Less Than	Less Than	Less Than	Less Than
3,780	Less Than	Less Than	Less Than	Less Than
6,320	Less Than	Less Than	Less Than	Less Than
118,000	Less Than	Less Than	Less Than	Less Than
72,500	Less Than	Less Than	Less Than	Less Than
223	Less Than	Less Than	Less Than	Less Than
6,060	Less Than	Less Than	Less Than	Less Than
1,800	Less Than	Less Than	Less Than	Less Than
Det	Less Than	Less Than	Less Than	Less Than
Det	Less Than	Less Than	Less Than	Less Than
Det	Less Than	Less Than	Less Than	Less Than
48,900	Less Than	Less Than	Less Than	Less Than
483,000	Less Than	Less Than	Less Than	Less Than

Condition 3 - TTLC Value Exceeds the TTLC Regulatory Limits				
TTLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
500,000	Less Than	Less Than	Less Than	Less Than
500,000	Less Than	Less Than	Less Than	Less Than
10,000,000	Less Than	Less Than	Less Than	Less Than
75,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
2,500,000	Less Than	Less Than	Less Than	Less Than
8,000,000	Less Than	Less Than	Less Than	Less Than
2,500,000	Less Than	Less Than	Less Than	Less Than
1,000,000	Less Than	Less Than	Less Than	Less Than
20,000	Less Than	Less Than	Less Than	Less Than
3,500,000	Less Than	Less Than	Less Than	Less Than
2,000,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
500,000	Less Than	Less Than	Less Than	Less Than
700,000	Less Than	Less Than	Less Than	Less Than
2,400,000	Less Than	Less Than	Less Than	Less Than
5,000,000	Less Than	Less Than	Less Than	Less Than

Table B Sample weights and general distribution.

Sample Number:	**L-1 (pounds)**	**L-2 (pounds)**	**L-3 (pounds)**	**L-4 (pounds)**
Sample Weight Collected	16.3	12.4	22.7	15.2
Lab Split (calculated)	4.5	0.8	7.9	0.1
Sample received back from lab	11.8	11.6	14.8	15.1
Plus 1/4 inch (sample remaining)	9.6	9.5	12.5	12.6
Minus 1/4 inch (sample remaining)	2.2	2.1	2.3	2.5
Percent Retained (sample remaining)	81%	82%	85%	83%
Percent Passing (sample remaining)	19%	18%	15%	17%
First Crushing (minus 3/4 inch) and dry screen				
Sample Remaining	11.7	11.5	14.7	14.9
Plus 1/4 inch	7.3	7.2	9.7	10.0
Minus 1/4 inch	4.5	4.3	5.1	5.0
Percent Retained	62%	62%	66%	67%
Percent Passing - Crusher Fines + minus 1/4 inch)	38%	38%	34%	33%
Crusher loss (percent)	0.85%	0.86%	0.68%	1.32%
Second Crushing (minus 1/2 inch) and dry screen				
Sample Remaining	11.6	11.4	14.6	14.8
Plus 1/4 inch minus1/2	6.7	6.3	8.7	9.3
Plus 10 mesh minus1/4 inch	2.0	1.9	2.2	2.1
Minus 10 mesh (waste)	2.9	3.2	3.7	3.4
Total minus 1/4 inch	4.9	5.1	6.0	5.5
Total plus 10 mesh	8.6	8.2	10.9	11.4
Percent plus 1/4 inch	58%	55%	59%	63%
Percent minus 1/4 inch	42%	45%	41%	37%
Weighted Average	**plus 1/4 inch:**	**59%**	**minus 1/4 inch:**	**41%**
Percent plus 10 mesh	75%	72%	74%	77%
Percent minus 10 mesh (waste)	25%	28%	26%	23%
Weighted Average	**plus10-mesh:**	**75%**	**minus 10-mesh:**	**25%**
Crusher loss (percent)	0.98%	0.83%	0.34%	0.48%

Overall, I believe that fine waste material (minus 10-mesh size) from processing rock material at the Pyramid site will be about 40 percent after crushing and screening operations are complete. A portion of the minus ¼-inch material may be further processed to concrete and stucco sands. However, the majority of the fines material will be returned to the site. Photograph 1 at Figure 2 shows the crushed rock material in the size range of minus ½-inch to plus ¼ inch. This is the lower size range to Class 2 base aggregate. Photograph 2 at Figure 3 shows the crushed rock material in the size range of minus 1/4-inch to plus 10-mesh. This material represents coarse sand and plaster sand (inclusive of natural and crusher sands).

Figure 2 Crushed rock material in the minus ½-inch to plus ¼ size range.

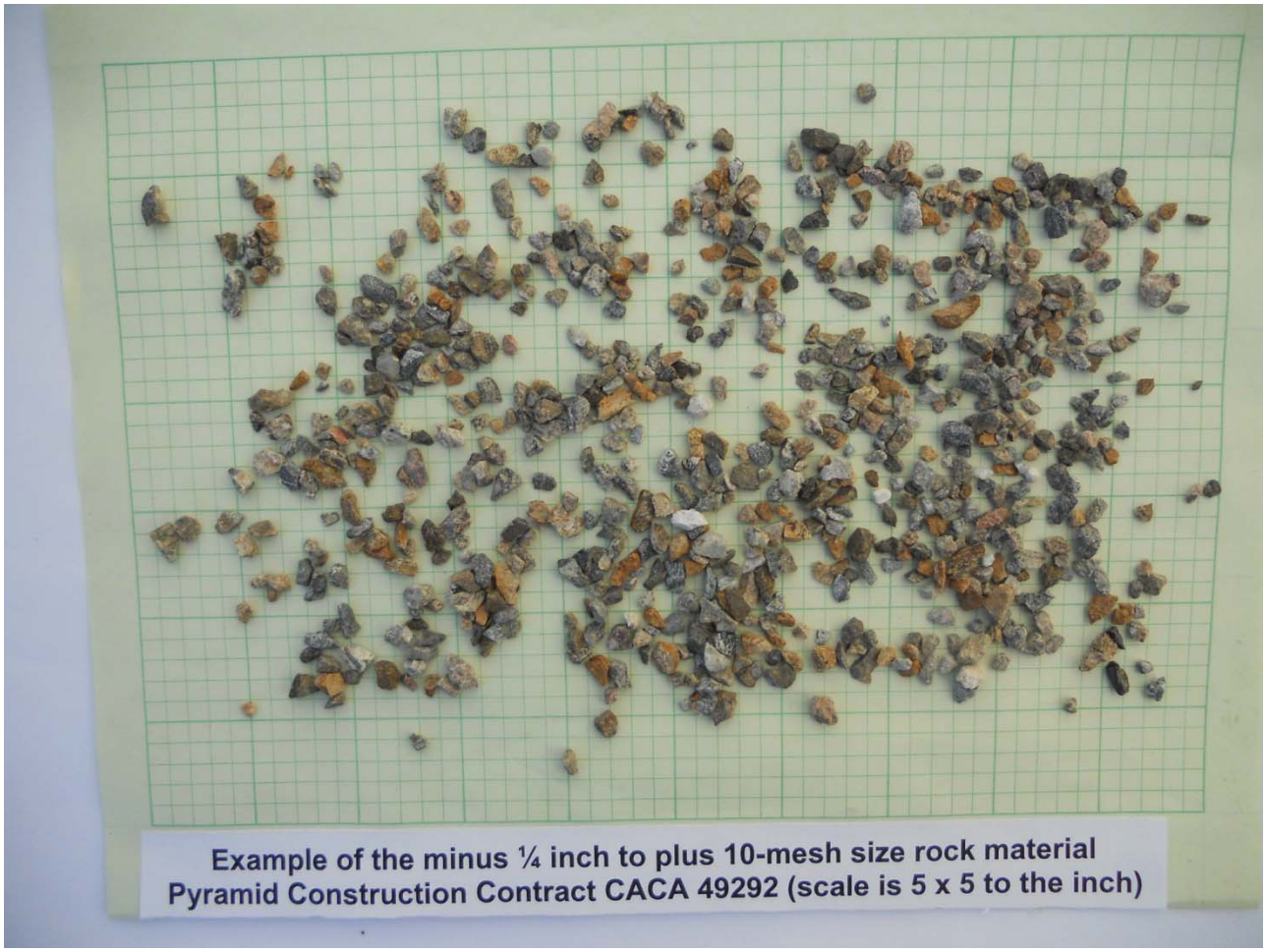
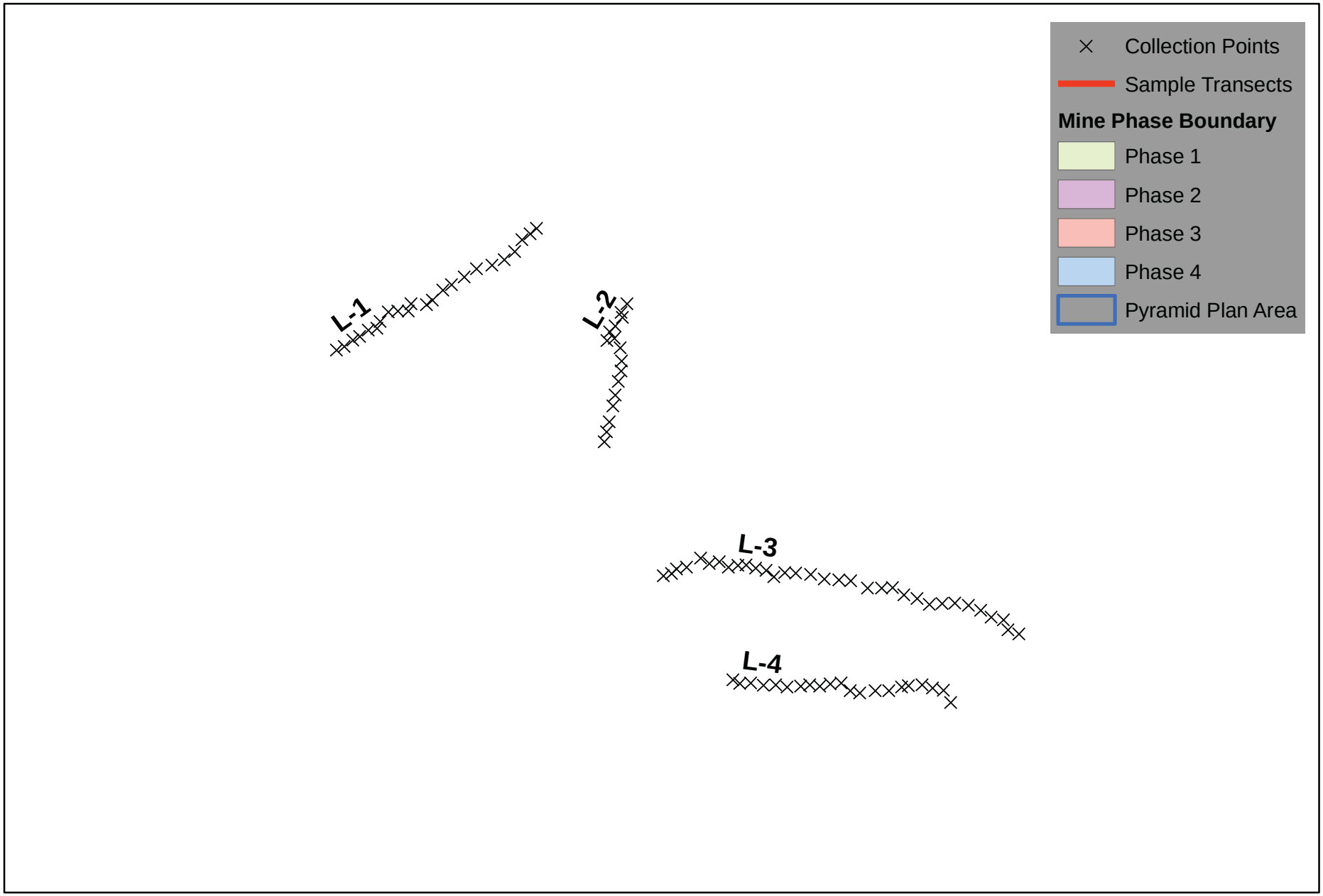


Figure 3 Crushed rock material in the minus 1/4-inch to plus 10-mesh size range.

R21E

T15S

T15S



R21E

0 500 1,000 1,500 2,000 2,500 Feet

Sampling conducted October 1, 2008

US Department of the Interior
BUREAU OF LAND MANAGEMENT
California Desert District
Moreno Valley, California
(951) 697-5200
www.ca.blm.gov/cdd
Date Prepared: 7/14/2008

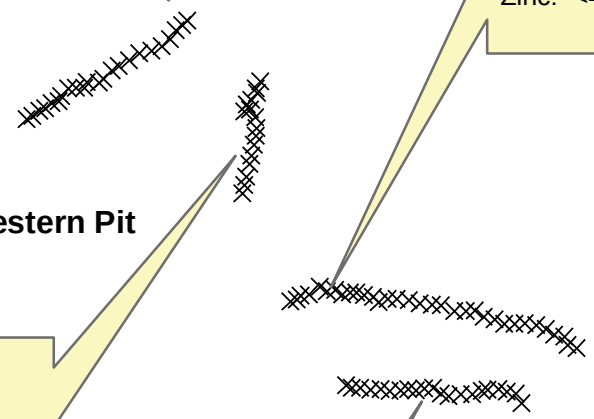
Map A

Pyramid Construction Contract Area
CACA 49292

Sample Data: January 23, 2009

Sample L-4 STLC Results (ppb) 23 Jan 2009 (ppb):
Antimony: <2,000, Arsenic: <2,000, Barium: 2,090
Beryllium: <500, Cadmium: <500, Chromium: <1,000
Cobalt: <500, Copper: 14,900, Lead: 1630
Mercury: <20, Molybdenum: <1,000, Nickel: <1,000
Selenium: <200, Silver: <2,000, Thallium: <1,000
Vanadium: <1,000, Zinc: 4,580

Sample L-2 STLC Results (ppb) 23 Jan 2009:
Antimony: <2,000, Arsenic: <2,000, Barium: 1,400,
Beryllium: <500, Cadmium: <500, Chromium: <1,000,
Cobalt: <500, Copper: <1,000, Lead: 3270, Mercury: <20,
Molybdenum: <1,000, Nickel: <1,000, Selenium: <200,
Silver: <2,000, Thallium: <1,000, Vanadium: <1,000
Zinc: <4,000



Sample L-3 STLC Results (ppb) 23 Jan 2009:
Arsenic: <2,000, Barium: 1500, Beryllium: <500
Cadmium: <500, Chromium: <1,000, Cobalt: <500
Copper: 11,200, Lead: 3,250, Mercury: <20
Molybdenum: <1,000, Nickel: <1,000, Selenium: <200
Silver: <2,000, Thallium: <1,000, Vanadium: <1,000
Zinc: 7,310

Sample L-1 STLC Results (ppb) 23 Jan 2009:
Antimony: <2,000, Arsenic: <2,000, Barium: 1630, Beryllium: <500
Cadmium: <500, Chromium: <1,000, Cobalt: <500, Copper <1,000
Lead: 3110, Mercury: <20, Molybdenum: <1,000, Nickel: <1,000
Selenium: <200, Silver: <2,000, Thallium: <1,000, Vanadium: <1,000,
Zinc: <4,000

× Collection Points
Sample Transects

Mine Phase Boundary

Phase 1
Phase 2
Phase 3
Phase 4
Pyramid Plan Area

0 500 1,000 1,500 2,000 2,500 Feet

US Department of the Interior
BUREAU OF LAND MANAGEMENT
California Desert District
Moreno Valley, California
(951) 697-5200
www.ca.blm.gov/cdd
Date Prepared: 7/14/2008

Survey conducted October 1, 2008

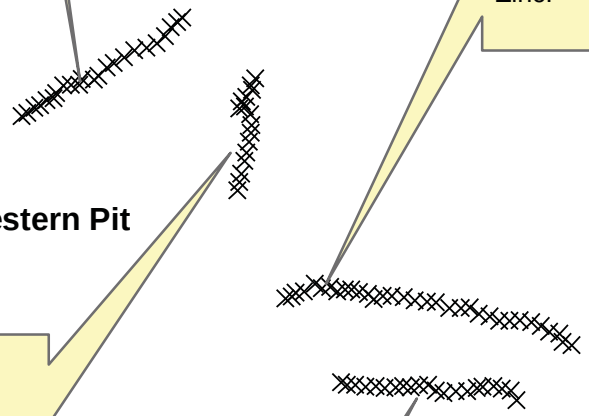
Sample Map 1

Pyramid Construction Contract Area
CACA 49292

Sample Data: August 15, 2011

Sample L-4 STLC Results (ppb) 15 August 2011:
Arsenic: <2,000, Barium: <1,000, Beryllium: <500
Cadmium: <500, Chromium: <1,000, Cobalt: <500
Copper: <1,000, Lead: <2,000, Mercury: <20
Molybdenum: <1,000, Nickel: <1,000, Selenium: <200
Silver: <2,000, Thallium: <1,000, Vanadium: <1,000
Zinc: <4,000

Sample L-2 STLC Results (ppb) 15 August 2011:
Antimony: <2,000, Arsenic: <2,000, Barium: 1400,
Beryllium: <50, Cadmium: <500, Chromium: <1,000,
Cobalt: <500, Copper: <1,000, Lead: 3270, Mercury: <20,
Molybdenum: <1,000, Nickel: <1,000, Selenium: <200,
Silver: <2,000, Thallium: <1,000, Vanadium: <1,000
Zinc: <4,000



Sample L-3 STLC Results (ppb) 15 August 2011:
Arsenic: <2,000, Barium: <1,000, Beryllium: <500
Cadmium: <500, Chromium: <1,000, Cobalt: <500
Copper: <1,000, Lead: <2,000, Mercury: <20
Molybdenum: <1,000, Nickel: <1,000, Selenium: <200
Silver: <2,000, Thallium: <1,000, Vanadium: <1,000
Zinc: <4,000

Sample L-2 STLC STLC Results (ppb) 15 August 2011:
Antimony: <2,000, Arsenic: <2,000, Barium: <1,000, Beryllium: <500,
Cadmium: <500, Chromium: <1,000, Cobalt: <500,
Copper: 6,410, Lead: <2,000, Mercury: <20, Molybdenum: <1,000,
Nickel: <1,000, Selenium: <200, Silver: <2,000,
Thallium: <1,000, Vanadium: <1,000, Zinc: 4,480

× Collection Points
Sample Transects
Mine Phase Boundary
Phase 1
Phase 2
Phase 3
Phase 4
Pyramid Plan Area

0 500 1,000 1,500 2,000 2,500 Feet

US Department of the Interior
BUREAU OF LAND MANAGEMENT
California Desert District
Moreno Valley, California
(951) 697-5200
www.ca.blm.gov/cdd
Date Prepared: 7/14/2008

Survey conducted October 1, 2008

Sample Map 2

Robert Waiwood/CASO/CA/BLM/DOI
01/09/2009 11:24 AM

To "Marilu Escher" <mescher@microbac.com>
cc
bcc
Subject Further Analyses

Marilu

I would like further work done on 4 solid samples of rock/soil samples I delivered to the Riverside office on October 10, 2008 (Work Number -0810-66).

As a result of findings from earlier analyses, I would like Microbac to analyze by the Solubility Threshold Limit Concentration (STLC) analysis for all 17 reportable metallic elements.

Thank you for your assistance in this matter

I tried to direct this to jiniquez@microbac.com but keep getting a delivery failure message. If you could direct this to the proper recipient, I would appreciate the effort.

Please direct any questions to me at:

Rob Waiwood
Mineral Examiner
California Desert District
Bureau of Land Management
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553
(951-697-5306)
FAX: (951-697-5299)
Email: robert_waiwood@blm.gov

Attachment A

Microbac Laboratories, Inc.

SOUTHERN CALIFORNIA DIVISION
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LA City#	10159
ELAP#'s	2373
	2562
	2665
	2479
	2122

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Authorized Signature Name / Title (print)	Mark Horan, Division Manager
Signature / Date	Mark Horan, Division Manager 01/23/2009 11:27:37
Laboratory Job No. (Certificate of Analysis No.)	0901-00118
Project Name / No.	AMERICAN GIRL-PYRAMID
Dates Sampled (from/to)	10/01/08 To 10/01/08
Dates Received (from/to)	10/03/08 To 10/03/08
Dates Reported (from/to)	01/23/09 To 1/23/2009
Chains of Custody Received	Yes

Comments:

Subcontracting

Inorganic Analyses

No analyses sub-contracted

Other Analyses

No analyses sub-contracted

Sample Condition(s)

All samples intact

Positive Results (Organic Compounds)

None

The data and information on this, and other accompanying documents, represent only the sample(s) analyzed and is rendered upon condition that it is not to be reproduced, wholly or in part, for advertising or other purposes without approval from the laboratory.
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FDA#	2030513
LA City#	10159
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CERTIFICATE OF ANALYSIS

0901-00118

Bureau Of Land Management-BLM
Robert Waiwood
22835 Calle San Juan
De Los Lagos
Moreno Valley, CA 92553
AMERICAN GIRL-PYRAMID

Date Reported	01/23/09
Date Received	10/03/08
Invoice No.	51076
Cust #	1009
Permit Number	
Customer P.O.	

Analysis	Result	Qual	Units	Method	DF	RL	Date	Tech
Sample: 001 **L-1**					Date & Time Sampled:		10/01/08 @ 10:26	
[Metals Title 22 STLC]								
STLC	Complete		---	Title 22			01/23/09	EJL
Antimony	<2.0		mg/L	EPA 200.7	100	2.0	01/12/09	EJL
Arsenic	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Barium	**2.09**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Beryllium	<0.05		mg/L	EPA 200.7	10	0.05	01/12/09	EJL
Cadmium	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Chromium	<1.00		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Cobalt	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Copper	**14.9**		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Lead	**1.63**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Molybdenum	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Mercury	<0.020		mg/L	EPA 7470	100	0.020	01/12/09	EJL
Nickel	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Selenium	<0.20		mg/L	EPA 200.7	10	0.20	01/12/09	EJL
Silver	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Thallium	<1.0		mg/L	EPA 200.7	10	1.0	01/12/09	EJL
Vanadium	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Zinc	**4.58**		mg/L	EPA 200.7	100	4.0	01/12/09	EJL
Sample: 002 **L-2**					Date & Time Sampled:		10/01/08 @ 11:25	
[Metals Title 22 STLC]								
STLC	Complete		---	Title 22			01/23/09	EJL
Antimony	<2.0		mg/L	EPA 200.7	100	2.0	01/12/09	EJL
Arsenic	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Barium	**1.50**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Beryllium	<0.05		mg/L	EPA 200.7	10	0.05	01/12/09	EJL
Cadmium	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Chromium	<1.00		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Cobalt	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Copper	**11.2**		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Lead	**3.25**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Molybdenum	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Mercury	<0.020		mg/L	EPA 7470	100	0.020	01/12/09	EJL
Nickel	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL

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SOUTHERN CALIFORNIA DIVISION
1401 RESEARCH PARK DRIVE, SUITE 100
RIVERSIDE CA, 92507
951-779-0310 FAX 951-779-0344
www.microbac.com socal@microbac.com

FDA#	2030513
LA City#	10159
ELAP#'s	2373
	2562
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WATER · AIR · SOIL · WASTES · FOOD · PHARMACEUTICALS · NUTRACEUTICALS · COSMETICS

CERTIFICATE OF ANALYSIS

0901-00118

Bureau Of Land Management-BLM
Robert Waiwood
22835 Calle San Juan
De Los Lagos
Moreno Valley, CA 92553
AMERICAN GIRL-PYRAMID

Date Reported	01/23/09
Date Received	10/03/08
Invoice No.	51076
Cust #	1009
Permit Number	
Customer P.O.	

Analysis	Result	Qual	Units	Method	DF	RL	Date	Tech
Sample: 002 **L-2**					Date & Time Sampled:		10/01/08 @ 11:25	
.....continued								
Selenium	<0.20		mg/L	EPA 200.7	10	0.20	01/12/09	EJL
Silver	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Thallium	<1.0		mg/L	EPA 200.7	10	1.0	01/12/09	EJL
Vanadium	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Zinc	**7.31**		mg/L	EPA 200.7	100	4.0	01/12/09	EJL
Sample: 003 **L-3**					Date & Time Sampled:		10/01/08 @ 18:09	
[Metals Title 22 STLC]								
STLC	Complete		---	Title 22			01/23/09	EJL
Antimony	<2.0		mg/L	EPA 200.7	100	2.0	01/12/09	EJL
Arsenic	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Barium	**1.63**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Beryllium	<0.05		mg/L	EPA 200.7	10	0.05	01/12/09	EJL
Cadmium	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Chromium	<1.00		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Cobalt	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Copper	<1.00		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Lead	**3.11**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Molybdenum	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Mercury	<0.020		mg/L	EPA 7470	100	0.020	01/12/09	EJL
Nickel	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Selenium	<0.20		mg/L	EPA 200.7	10	0.20	01/12/09	EJL
Silver	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Thallium	<1.0		mg/L	EPA 200.7	10	1.0	01/12/09	EJL
Vanadium	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Zinc	<4.0		mg/L	EPA 200.7	100	4.0	01/12/09	EJL
Sample: 004 **L-1**					Date & Time Sampled:		10/01/08 @ 18:56	
[Metals Title 22 STLC]								
STLC	Complete		---	Title 22			01/23/09	EJL
Antimony	<2.0		mg/L	EPA 200.7	100	2.0	01/12/09	EJL
Arsenic	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Barium	**1.40**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL

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CERTIFICATE OF ANALYSIS

0901-00118

Bureau Of Land Management-BLM
Robert Waiwood
22835 Calle San Juan
De Los Lagos
Moreno Valley, CA 92553
AMERICAN GIRL-PYRAMID

Date Reported	01/23/09
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Invoice No.	51076
Cust #	1009
Permit Number	
Customer P.O.	

Sample: 004 **L-1** Date & Time Sampled: 10/01/08 @ 18:56

.....continued

Analysis	Result	Qual	Units	Method	DF	RL	Date	Tech
Beryllium	<0.05		mg/L	EPA 200.7	10	0.05	01/12/09	EJL
Cadmium	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Chromium	<1.00		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Cobalt	<0.5		mg/L	EPA 200.7	100	0.5	01/12/09	EJL
Copper	<1.00		mg/L	EPA 200.7	100	1.00	01/12/09	EJL
Lead	**3.27**		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Molybdenum	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Mercury	<0.020		mg/L	EPA 7470	100	0.020	01/12/09	EJL
Nickel	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Selenium	<0.20		mg/L	EPA 200.7	10	0.20	01/12/09	EJL
Silver	<2.00		mg/L	EPA 200.7	100	2.00	01/12/09	EJL
Thallium	<1.0		mg/L	EPA 200.7	10	1.0	01/12/09	EJL
Vanadium	<1.0		mg/L	EPA 200.7	100	1.0	01/12/09	EJL
Zinc	<4.0		mg/L	EPA 200.7	100	4.0	01/12/09	EJL

Respectfully Submitted:

Mark Horan - Division Manager

QUALIFIERS

B = Detected in the associated Method Blank at a concentration above the routine RL.
B1 = BOD dilution water is over specifications . The reported result may be biased high.
D = Surrogate recoveries are not calculated due to sample dilution.
E = Estimated value; Value exceeds calibration level of instrument.
H = Analyte was prepared and/or analyzed outside of the analytical method holding time
I = Matrix Interference.
J = Analyte concentration detected between RL and MDL.
Q = One or more quality control criteria did not meet specifications. See Comments for further explanation.

ABBREVIATIONS

DF = Dilution Factor
RL = Reporting Limit
MDL = Method Detection Limit
Qual = Qualifier
Tech = Technician

As regulatory limits change frequently, Microbac advises the recipient of this report to confirm such limits with the appropriate federal, state, or local authorities before acting in reliance on the regulatory limits provided.

For any feedback concerning our services, please contact Mark Horan, the Division Manager at 951.779.0310. You may also contact both Trevor Boyce, President and Robert Morgan, Chief Operating Officer at president@microbac.com.

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ELECTRONIC QUALITY CONTROL DATA REPORT

0901-00118

Bureau Of Land Management-BLM
Moreno Valley, CA 92553

Date Reported	**01/23/2009**
Date Received	**10/03/2008**
Date Sampled	**10/01/2008**
Invoice No.	**51076**
Customer #	**1009**
Customer P.O.	

AMERICAN GIRL-PYRAMID

ethod **EPA 200.7**
C Reference 10187 **Date Analyzed:** 1/12/2009 **Technician:** EJL
Samples 001 002 003 004

Results	LCS %REC	LCS %DUP	LCS %RPD	Control Ranges LCS %REC	Control Ranges LCS %RPD
Antimony	106	109	2.8	75 - 125	0 - 20
Arsenic	107	108	0.9	75 - 125	0 - 20
Barium	104	104	0.0	75 - 125	0 - 20
Beryllium	101	103	2.0	75 - 125	0 - 20
Cadmium	105	106	0.9	75 - 125	0 - 20
Chromium	107	108	0.9	75 - 125	0 - 20
Cobalt	101	103	2.0	75 - 125	0 - 20
Copper	98	100	1.7	75 - 125	0 - 20
Lead	106	108	1.9	75 - 125	0 - 20
Molybdenum	103	105	2.0	75 - 125	0 - 20
Nickel	101	103	2.0	75 - 125	0 - 25
Selenium	101	103	2.0	75 - 125	0 - 20
Silver	119	121	1.7	75 - 125	0 - 20
Thallium	104	106	1.9	75 - 125	0 - 20
Vanadium	100	102	2.0	75 - 125	0 - 20
Zinc	112	112	0.0	75 - 125	0 - 20

ethod **EPA 7470**
C Reference 10187 **Date Analyzed:** 1/12/2009 **Technician:** EJL
Samples 001 002 003 004

Results	LCS %REC	LCS %DUP	LCS %RPD	Control Ranges LCS %REC	Control Ranges LCS %RPD
Mercury	107	106	0.9	70 - 130	0 - 25

No method blank results were above reporting limit

RESPECTFULLY SUBMITTED:

MICROBAC LABORATORIES, INC.

For any feedback concerning our services, please contact Mark Horan, the Division Manager at 951.779.0310. You may also contact both Trevor Boyce, President and Robert Morgan, Chief Operating Officer at president@microbac.com.

CURRENT WO#: 0901-118

Chain of Custody Record

Centrum Job # 0810-666

Centrum Analytical Laboratories, Inc.
1401 Research Park Drive, Suite 100
Riverside, CA 92507
Voice: 951.779.0310 • 800.798.9336
Fax: 951.779.0344

3299 Hill Street, Suite 305
Signal Hill, CA 90755
Voice: 562.498.7005
Fax: 562.498.8617

www.centrum-labs.com lab@centrum-labs.com

Project No:

Project Name: American Girl-Pyramid

Project Manager: Rob Waiwood
robert_waiwood@blm.gov

Phone: 951-697-5306 Fax: 951-697-5299

Client Name: (Report and Billing) Robert Waiwood, US Bureau of Land Management

Address: (Report and Billing) 22835 Calle San Juan De Los Lagos, Moreno Valley, CA 92553

Please Circle Analyses Requested

Turn-Around Time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gas only	8021B: BTEX/MBE Only	418.1 (TRPH), 413.2, 1664	STLC Cam 17	GC or GCMS Volatiles by 5035*	GCMS: 8260B, 8021B, 624, 524.2	GCMS: MtBE Conf. Only, BTEX/Oxygenates Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	TCLP As, Pb, Hg	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr		Remarks/Special Instructions
1	L-1	10/01/08	10:26	Solid	Padre-Madre Waste Dump	Poly Bag					⊗						⊗	X				Maintain splits for pickup
2	L-2	10/01/08	11:25	↓	Padre-Madre Waste Dump	Poly Bag					⊗						⊗	X				Maintain splits for pickup
3	L-3	10/01/08	18:09	↓	Padre-Madre Waste Dump	Poly Bag					⊗						⊗	X				Maintain splits for pickup
4	L-4	10/01/08	18:56	↓	Padre-Madre Waste Dump	Poly Bag					⊗						⊗	X				Maintain splits for pickup

	Date:	Time:		Date:	Time:
1) Relinquished by: (Sampler's Signature)	10/3/08	1355	3) Relinquished by: Robert M. Waiwood		
2) Received by:			4) Received by:		
			5) Relinquished by:		
			6) Received for Laboratory by:	10/3/08	1355

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:
Samples chilled? ☐ Yes ☒ No ☐ From Field
Custody seals? ☒ Yes ☐ No
All sample containers intact? ☒ Yes ☐ No
☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Sample Disposal
- ☒ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes: ⊗ added analyses per Robert W. 10/22/08 - new WO#: 0810-425 QMC # added analyses per Robert W. 1/9/09 - new WO# 0901-118 QMC
Homogenize samples before analyzing.

Sample Locator No.

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
California Desert District
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

In Reply Refer To:
3500
3840
CA-610.39

August 9, 2011

Microbac Testing Laboratories, Inc.
1401 Research Park Dr.,
St 100, Riverside, CA 92507

Dear Sir/Madam:

Enclosed please find 4 samples marked L-1, L-2, L-3, and L-4 that I would like tested for the California Assessment Manual (CAM) 17 metals by the Waste Extraction Test (WET) method (STLC; California Title 22, §66700), and analyzed using EPA methods 6010 and 7471 (mercury).

These are crushed rock samples and have been weight to 100.0 grams each. Because particle size distribution is important for this test, the samples must be run as submitted.

Please direct any questions to me by telephone at (951-697-5306) or by email at "robert_waiwood@blm.gov ". Also, please refer to order number CDD-11-rob when invoicing this work.

Sincerely,

Robert M. Waiwood
Mineral Examiner
California Desert District Office

Enclosures
4 samples

A & R Laboratories

Formerly Microbac Southern California

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CASE NARRATIVE

Authorized Signature Name / Title (print)	Christopher Rattray, Laboratory Director
Signature / Date	Christopher Rattray, Laboratory Director 08/15/2011 11:33:27
Laboratory Job No. (Certificate of Analysis No.)	1108-00066
Project Name / No.	PADRE - MADRE
Dates Sampled (from/to)	10/03/08 To 10/03/08
Dates Received (from/to)	08/09/11 To 08/09/11
Dates Reported (from/to)	08/15/11 To 08/15/11
Chains of Custody Received	Yes

Comments:

Subcontracting

Inorganic Analyses

No analyses sub-contracted

Other Analyses

No analyses sub-contracted

Sample Condition(s)

All samples intact

Positive Results (Organic Compounds)

None

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CERTIFICATE OF ANALYSIS

1108-00066

Bureau Of Land Management-BLM
Robert Waiwood
22835 Calle San Juan
De Los Lagos
Moreno Valley, CA 92553

Project: PADRE - MADRE

Date Reported	08/15/11
Date Received	08/09/11
Invoice No.	65674
Cust #	1009
Permit Number	
Customer P.O.	

Analysis	Result	Qual	Units	Method	DF	RL	Date	Tech
Sample: 001 **L-1**					Date & Time Sampled:		10/03/08	
Sample Matrix: **Solid**								
[Metals Title 22 STLC]								
STLC	Complete			Title 22	1		08/15/11	TLB
Antimony	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Arsenic	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Barium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Beryllium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Cadmium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Chromium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Cobalt	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Copper	**6.56**		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Lead	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Molybdenum	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Mercury	<0.0200		mg/L	EPA 7471A	100	0.0200	08/10/11	TLB
Nickel	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Selenium	<0.200		mg/L	EPA 6010B	10	0.200	08/10/11	TLB
Silver	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Thallium	<1.00		mg/L	EPA 6010B	10	1.00	08/10/11	TLB
Vanadium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Zinc	<4.00		mg/L	EPA 6010B	100	4.00	08/10/11	TLB
Sample: 002 **L-2**					Date & Time Sampled:		10/03/08	
Sample Matrix: **Solid**								
[Metals Title 22 STLC]								
STLC	Complete			Title 22	1		08/15/11	TLB
Antimony	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Arsenic	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Barium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Beryllium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Cadmium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Chromium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Cobalt	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Copper	**6.41**		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Lead	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB

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Analysis	Result	Qual	Units	Method	DF	RL	Date	Tech
Sample: 002 **L-2**					Date & Time Sampled:		10/03/08	
Sample Matrix: **Solid**								
.....continued								
Molybdenum	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Mercury	<0.0200		mg/L	EPA 7471A	100	0.0200	08/10/11	TLB
Nickel	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Selenium	<0.200		mg/L	EPA 6010B	10	0.200	08/10/11	TLB
Silver	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Thallium	<1.00		mg/L	EPA 6010B	10	1.00	08/10/11	TLB
Vanadium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Zinc	**4.48**		mg/L	EPA 6010B	100	4.00	08/10/11	TLB
Sample: 003 **L-3**					Date & Time Sampled:		10/03/08	
Sample Matrix: **Solid**								
[Metals Title 22 STLC]								
STLC	Complete			Title 22	1		08/15/11	TLB
Antimony	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Arsenic	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Barium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Beryllium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Cadmium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Chromium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Cobalt	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Copper	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Lead	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Molybdenum	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Mercury	<0.0200		mg/L	EPA 7471A	100	0.0200	08/10/11	TLB
Nickel	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Selenium	<0.200		mg/L	EPA 6010B	10	0.200	08/10/11	TLB
Silver	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Thallium	<1.00		mg/L	EPA 6010B	10	1.00	08/10/11	TLB
Vanadium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Zinc	<4.00		mg/L	EPA 6010B	100	4.00	08/10/11	TLB

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LA City#	10159
ELAP#'s	2746
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CERTIFICATE OF ANALYSIS

1108-00066

Bureau Of Land Management-BLM
Robert Waiwood
22835 Calle San Juan
De Los Lagos
Moreno Valley, CA 92553

Project: PADRE - MADRE

Date Reported	08/15/11
Date Received	08/09/11
Invoice No.	65674
Cust #	1009
Permit Number	
Customer P.O.	

Analysis	Result	Qual	Units	Method	DF	RL	Date	Tech
Sample: 004 **L-4**					Date & Time Sampled:		10/03/08	
Sample Matrix: **Solid**								
[Metals Title 22 STLC]								
STLC	Complete			Title 22	1		08/15/11	TLB
Antimony	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Arsenic	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Barium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Beryllium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Cadmium	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Chromium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Cobalt	<0.500		mg/L	EPA 6010B	100	0.500	08/10/11	TLB
Copper	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Lead	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Molybdenum	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Mercury	<0.0200		mg/L	EPA 7471A	100	0.0200	08/10/11	TLB
Nickel	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Selenium	<0.200		mg/L	EPA 6010B	10	0.200	08/10/11	TLB
Silver	<2.00		mg/L	EPA 6010B	100	2.00	08/10/11	TLB
Thallium	<1.00		mg/L	EPA 6010B	10	1.00	08/10/11	TLB
Vanadium	<1.00		mg/L	EPA 6010B	100	1.00	08/10/11	TLB
Zinc	<4.00		mg/L	EPA 6010B	100	4.00	08/10/11	TLB

Respectfully Submitted:

Christopher Rattray - Laboratory Director

QUALIFIERS

B = Detected in the associated Method Blank at a concentration above the routine RL.
B1 = BOD dilution water is over specifications . The reported result may be biased high.
D = Surrogate recoveries are not calculated due to sample dilution.
E = Estimated value; Value exceeds calibration level of instrument.
H = Analyte was prepared and/or analyzed outside of the analytical method holding time
I = Matrix Interference.
J = Analyte concentration detected between RL and MDL.
Q = One or more quality control criteria did not meet specifications. See Comments for further explanation.
S = Customer provided specification limit exceeded.

ABBREVIATIONS

DF = Dilution Factor
RL = Reporting Limit, Adjusted by DF
MDL = Method Detection Limit, Adjusted by DF
Qual = Qualifier
Tech = Technician

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For any feedback concerning our services, please contact Christopher Rattray, Laboratory Director at 951.779.0310. You may also contact Ken Zheng, President at arlab@arlaboratories.com.

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QUALITY CONTROL DATA REPORT

1108-00066

Bureau Of Land Management-BLM
Moreno Valley, CA 92553

Date Reported	**08/15/2011**
Date Received	**08/09/2011**
Date Sampled	**10/03/2008**
Invoice No.	**65674**
Customer #	**1009**
Customer P.O.	

Project: PADRE - MADRE

Method # EPA 6010B
QC Reference # 31121 **Date Analyzed:** 08/10/11 **Technician:** TLB
Samples 001 002 003 004

Results	LCS %REC	LCS %DUP	LCS %RPD	Control Ranges LCS %REC	Control Ranges LCS %RPD
Antimony	90	95	5.5	75 - 125	0 - 20
Arsenic	92	106	14.6	75 - 125	0 - 20
Barium	94	102	8.9	75 - 125	0 - 20
Beryllium	91	98	7.6	75 - 125	0 - 20
Cadmium	93	98	4.8	75 - 125	0 - 20
Chromium	93	99	6.6	75 - 125	0 - 20
Cobalt	94	101	7.0	75 - 125	0 - 20
Copper	91	96	5.5	75 - 125	0 - 20
Lead	92	97	5.0	75 - 125	0 - 20
Molybdenum	93	96	3.9	75 - 125	0 - 20
Nickel	95	102	6.5	75 - 125	0 - 25
Selenium	91	95	4.9	75 - 125	0 - 20
Silver	101	100	1.2	75 - 125	0 - 20
Thallium	94	94	0.1	75 - 125	0 - 20
Vanadium	92	97	6.4	75 - 125	0 - 20
Zinc	95	101	6.5	75 - 125	0 - 20

Method # EPA 7471A
QC Reference # 31121 **Date Analyzed:** 08/10/11 **Technician:** TLB
Samples 001 002 003 004

Results	LCS %REC	LCS %DUP	LCS %RPD	Control Ranges LCS %REC	Control Ranges LCS %RPD
Mercury	102	103	1.6	70 - 130	0 - 25

No method blank results were above reporting limit

Respectfully Submitted:

Christopher Rattray - Laboratory Director

For any feedback concerning our services, please contact Christopher Rattray, Laboratory DIrector at 951.779.0310. You may also contact Ken Zheng, President at arlab@arlaboratories.com.

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Chain of Custody Recor 1108 - 66

Page 1 of 1

Project No:

Project Name: Padre - Madre

Project Manager: Rob Waiwood

Phone: 951-697-5306 Fax:

Customer Name: (Report and Billing) Rob Waiwood

Address: (Report and Billing) Bureau of Land Management 22835 Calle San Juan Moreno Valley CA 92553

Email: robert_waiwood@blm.gov

Analyses Requested (circle appropriate)

Lab # (Lab use only)	Sample ID (As it should appear on report)	Grab/ Comp	Date sampled	Time sampled	Sample matrix	Container # & Type	Preserved	Micro: Plate Cnt., Coliform, E.Coli	Chem: BOD, TSS, TDS, Ph, EC	Chem: Cyanide, Ammonia, TKN, Oil & Grease	IC: Br, SO4, PO4, NO3, Cl	Metals: Title 22(CAM) or ~~RCRA~~ STLC	LUFT Gas or 8015 GRO or C4-C12	LUFT Diesel or 8015 DRO or C13-C40	VOCs by GCMS: 8260 or 624	VOCs by GCMS: BTEX, OXYs	SVOCs: 8270 or 625	Pest. &/or PCBs: 608 or 8081/8082				Special Instructions
1	L-1		10/03/08		ROCK	plastic Cont						X										As Submitted
2	L-2											X										Whole Sample
3	L-3											X										
4	L-4		10/03/08									X										

Turn Around
- ○ 24hr RUSH*
- ○ 48hr RUSH*
- ☒ Normal
- ○ Other ____

*PRIOR approval, additional fee, work received after 4 pm will be processed next work day.

	Date:	Time:		Date:	Time:		Date:	Time:
1) Relinquished by: (Sampler's Signature) Robert Waiwood	08/04/11	15:20	3) Relinquished by:			5) Relinquished by:		
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:	6) Received for Laboratory by:	Date: 8/4/11	Time: 1520

Disposal
- ○ Return
- ☒ Lab Disposal

Unless other arrangements are made samples will be disposed of 60 days after reciept.

This section is to be completed by laboratory personnel:

Samples Chilled: ○ Yes ☒ No ○ From Field

Custody Seals: ○ Yes ☒ No

Samples Intact: ☒ Yes ○ No

Temp C:

Delivery: ○ Courier ☒ Walk In ○ UPS/Fed Ex

Report Delivery Formats: ☐ Paper ☒ EMAIL ☐ XLS ☐ EDD, Type ____ ☐ EDF, EPA Site ID ____

Laboratory Notes: STLC WET Analyze as submitted
All CAM 17

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