

April 17, 2012

**Hand Delivered**

Ms. Danielle Taber  
Project Manager  
Voluntary Remediation Program  
Arizona Department of Environmental Quality  
1110 W. Washington St.  
Phoenix, AZ 85007

**Re: Response to Comments and Revised Work Plan for Training Facility  
Soil Excavation Project  
Freeport Sierrita Mine  
Green Valley, Arizona; Site Code: 100073-03**

Dear Ms. Taber:

This letter follows on Sierrita's Work Plan for Training Facility Soil Excavation Project submitted to ADEQ on February 29, 2012, for its new training facility to be located in the former Clear Plant area. The new training facility is within the area encompassed by Sierrita's Voluntary Remediation Program investigation. Excavation and construction are planned to commence beginning April 22, 2012.

We have reviewed your comments by letter dated March 29, 2012 and revised the work plan to be consistent with your comments. For ease of reference, ADEQ's comments (C) have been restated in italics followed by Sierrita's response (R).

1C. *General Comment:*

- a. *From statements in the work plan, the VRP understands that the soil cleanup levels in the area where the Training Facility is to be constructed is proposed to be to non-residential Soil Remediation Levels (nr-SRLs) and below Groundwater Protection Levels (GPLs). The VRP wants it clearly understood that soil contamination left in-place above residential SRLs will require either a Declaration of Environmental Use Restriction (DEUR) or a CLEAR Plant Area risk-assessment. The VRP recommends discussing the DEUR or risk-assessment options as soon as possible so it will be clear to the various parties how Sierrita plans to proceed with current and future remediation of the Sierrita Mine site within the VRP.*

- 1R. As discussed during conference calls on April 4, 2012 and April 12, 2012, a Human Health Risk Assessment (RA) work plan is currently being developed for the soil and sediment investigation area and will be submitted to ADEQ in the coming weeks. The RA will include that former CLEAR Plant area. The work plan has been revised to clarify that soil samples collected to the support the construction of the new training facility will be utilized in developing the RA. Additional, text in Section 4.1.1 has been added to describe how a site specific risk assessment will be conducted for the soil sample analytical results if needed.

2C. *General Comment:*

- b. *For convenience and clarification, please modify Figure 3 to include the analytical results for the labeled samples, and the dimensions in length, width, and depth for each footer excavation and the southern excavation area. Please add sample ID CP-13 in its proper orientation relative to the proposed Training Facility.*

2R. Figure 3 has been modified as requested by ADEQ.

3C. *Section 4.1.1*

*This section of the work plan identifies the number of confirmation soil samples to be collected: from each excavation area, the building footprint, and the parking lot. The VRP disagrees with the number of samples identified in Section 4.1.1 and requests the following modifications:*

- a. *Footer Excavation Areas: collect 1 floor sample for every 25 linear feet and 1 sidewall sample for every 25 linear feet along all excavation sides..*
  1. *Floor and sidewall sample depths should be collected: from areas where the highest concentrations would be expected based on prior investigations, visible contamination, or soil type/characteristics.*
- b. *Southern Excavation Area: without dividing the area in half, collect a minimum of 6 floor samples and 1 sidewall sample for every 25 linear feet along all excavation sides.*
  1. *As noted above, floor and sidewall sample depths should be collected from areas where the highest concentrations would be expected based on prior investigations, visible contamination, or soil type/characteristics.*
- c. *Building Footprint Area: 1 surface sample is acceptable if the sample collection procedures stipulated in (a) and (b) above are met.*
- d. *Parking Lot Areas: Grid the Parking Lot Area sections into grids of approximately 625 square feet and, using a random number generator, collect a minimum of 4 samples within each of the three Parking Lot Area sections.*
- e. *Please clarify if the Parking Lot Areas will be surface graded or excavated.*

3R. The sample locations suggested by ADEQ have been adopted and the work plan has been modified to reflect the suggested samples. To summarize, the new sample locations are:

- 10 samples will be collected from the footer excavation area floor
- 10 samples will be collected from the footer excavation area sidewalls
- 6 samples will be collected from the southern excavation area floor
- 10 samples will be collected from the southern excavation area sidewalls
- 1 sample will be collected from the building footprint area
- 12 samples will be collected from the parking lot area
- 4 samples each from the northern, eastern, and western parking lot areas.

4C. *Section 5.4*

*This section of the work plan discusses the disposition of material excavated: from the footer and southern excavations. The VRP concurs with how the material will be handled following receipt of the analytical results except for the last sentence, which states "...If the results neither exceed the nr-SRLs, TCLP, or the recoverable copper grade, the material will be used as landfill cover at Sierrita." The VRP strongly cautions against depositing contaminated soil as landfill on top of either non-contaminated soil or other contaminated soil.*

4R. Section 5.4 was revised to clarify that Sierrita may dispose of excess soil material that does not exceed TCLP, non-residential soil remediation levels (nr-SRLs), or groundwater protection levels (GPLs) at the on-site solid waste landfill. Material that does exceed TCLP, nr-SRLs, or GPLs will be disposed of at an off-site permitted facility.

Please contact me at (520) 393-2696 if you have any questions or need additional information.

Sincerely,



Martha G. Mottley  
Chief Environmental Engineer  
Attachments (1)  
20120417\_004

xc: Gwen Ziegler, ADEQ  
Lana Fretz, Sierrita  
Stuart Brown, Freeport-McMoRan Copper & Gold Inc.  
Ned Hall, Freeport-McMoRan Copper & Gold Inc.  
Katy Bratingham, Arcadis  
Anne Thatcher, Arcadis

**Freeport McMoRan Sierrita, Inc.**

**Former CLEAR Plant Area  
Soil Excavation Work Plan**

Sierrita Mine  
Green Valley, Arizona

April 17, 2011



A handwritten signature in black ink that reads "Lisa Gerwe".

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Lisa Gerwe  
Engineer

A handwritten signature in black ink that reads "K Brantingham".

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Kathryn B. Brantingham  
Associate Vice President/CPM2

**Former CLEAR Plant Area  
Soil Excavation Work Plan**

Sierrita Mine  
Green Valley, Arizona

Prepared for:  
Freeport McMoRan Sierrita, Inc.

Prepared by:  
ARCADIS U.S., Inc.  
4646 East Van Buren Street  
Suite 300  
Phoenix  
Arizona 85008  
Tel 602 438 0883  
Fax 602 438 0102

Our Ref.:  
AZ001233.0004

Date:  
April 17, 2012

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## **1. Introduction**

This work plan outlines proposed soil removal activities and c soil sampling and analysis to be conducted under the Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP) at the Freeport-McMoRan Sierrita, Inc. (Sierrita) near Green Valley, Arizona (Figure 1). The soil removal activities will be conducted as part of the construction of a new training facility located within the Former CLEAR Plant Area, This work plan was prepared at the request of the VRP and incorporates changes requested by the VRP in their letter dated March 29, 2012 and subsequent clarifications made during a conference call on April 12, 2012 (ADEQ).

Sierrita retained URS Corporation (URS) to prepare and implement a site investigation work plan to characterize soil, sediment, and groundwater at the Sierrita Mine. The site investigation activities were conducted by URS in accordance with the VRP Investigation Work Plan (URS 2008a) and the Addendum to Sampling and Analysis Plan & Quality Assurance Project Plan (SAP/QAPP) (URS 2008b). Both plans were approved by the ADEQ VRP. A Soil and Sediment Characterization Report (SSCR) was completed in 2011 summarizing investigation activities including the Former CLEAR Plant Area (URS, 2011). The SSCR has identified areas where constituents of interest (COI) were detected in soil at concentrations above non-residential soil remediation levels or groundwater protection levels (URS, 2011). ARCADIS is currently developing a work plan for a Human Health Risk Assessment for the VRP soil and sediment investigation areas that will be submitted to ADEQ. Soil samples collected during construction activities will also be used for a Human Health Risk Assessment for the VRP soil and sediment investigation areas, which includes the Former CLEAR Plant Area.

### **1.1 Site Description**

The Former CLEAR Plant was historically located in the north-central portion of the Sierrita property; in the area that is now utilized for an asset recovery yard, contractor offices and material storage, metal fabrication shop, and the Central Accumulation Building. The Former CLEAR Plant Building is currently utilized for storage of miscellaneous materials such as computers and office equipment. The building also is used as a training center.

The topography of the CLEAR Plant area generally slopes eastward and is incised by east-west trending drainages. The western portion of the area, where the new training facility will be located, is cut into bedrock. Fill ranging from a few inches to

approximately 25 feet in thickness is present in the remaining area. In the western portion of the property where fill is thin or non-existent, bedrock is at or near surface, and outcrops of granodiorite are visible. Additional information about the Former CLEAR Plant area topography is located in the SSCR.

According to interviews with current and former employees, the CLEAR Plant was commissioned in 1975, from 1977 to 1983 the CLEAR Plant produced metallic copper, and in 1995 it was demolished. Additional information about the CLEAR Plant operations is included in the SSCR (URS, 2011).

## **1.2 Scope Work Plan**

This work plan will address an approximately 1.3 acres located north of the Former CLEAR Plant Building (Figure 2) along the western edge of the CLEAR Plant subarea defined in the SSCR. The area has most recently been utilized as an asset recovery yard to store used equipment, machinery, and vehicles. According to interviews with current and former employees, this area contained a number of aboveground CLEAR Plant process tanks (URS, 2011). No traces of the aboveground process tanks are currently evident.

## **2. Soil Investigation Summary**

Initial soil characterization activities were conducted between August and October 2004 at the Former CLEAR Plant and additional soil characterization was performed between July and August of 2008. The soil investigation activities included the collection and analysis of soil samples from the Former CLEAR Plant Area as well as several other subareas on the Sierrita property.

The focus of the previous site characterization activities was on suspected or known releases of COIs. The soil and sediment COIs selected for analysis include mining-related total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, calcium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, thallium, and zinc), total uranium, uranium isotopes (uranium-234, uranium-235, and uranium-238), and radium isotopes (radium-226 and radium-228). Many of these constituents occur naturally in soils, rocks, and groundwater at non-mineralized and mineralized mine sites (URS, 2011). However within the Former CLEAR Plant Area, where 78 soil samples from 34 locations were collected, only arsenic, copper, and lead concentration were detected above their respective non-residential soil remediation level (nr-SRL) or the groundwater protection level (GPL).

Based on the results of the soil and sediment characterization, soil samples will be collected and analyzed for arsenic, copper, and lead and compared to SRLs and GPLs for the purposes of this work plan. If the results are above residential SRLs a site-specific risk evaluation will be conducted. Following the U.S. Environmental Protection Agency risk assessment guidance, soil sample results will be used to calculate the 95% Upper Confidence Limit on the mean concentration for each chemical. A site specific risk will be developed and evaluated to determine if the risk level is acceptable.

Figure 3 displays the location of soil samples reported in the SSCR relative to the location of the new training facility. In total, 10 soil samples were collected within the footprint of the new training facility and within 50 yards of the new training facility location. Within the new training facility footprint, three soil sample locations had sample concentrations that exceeded nr-SRL for arsenic, copper or lead or the GPL for lead (Table 1). Exceedences occurred at CP-T-3 at depths of 0.75 and 8 feet below grade surface (ft bgs) and at CP-16 from 0 to 0.25 ft bgs. One soil sample collected outside of the new training facility's footprint, CP-15, exceeded a nr-SRL for arsenic at a depth of 0-0.25 ft bgs.

### **3. New Training Facility Construction**

As stated previously this work plan was prepared in support of the construction of a new training facility. The new training facility will require the disturbance of approximate 37,800 square feet, which will include an approximately 9,000 square feet building and gravel parking lot located in the Former CLEAR Plant Area (Figure 2). The parking lot area will be graded then scarified and compacted, and then covered with gravel. Sierrita may potentially pave the parking lot area following the construction of the training facility building. The soil below the training facility building will be graded and then, at a minimum, the top eight inches will be scarified and compacted. The building foundation will consist of a four-inch reinforced concrete slab over base course material. Construction of the new training facility building will require the removal of approximately 20 cubic yards of soil from the foundation footer locations. The footer excavation areas run along the perimeter of the training facility and will be 2 ft wide and 1 ft bgs deep. Additionally, on the south side of the new training facility, another soil excavation will be required to remove approximately 600 cubic yards of soils that have been determined to be geotechnically unstable to support the building foundation. This southern excavation area will range from 3 to 5 ft bgs in depth in an area approximately 37 feet long by 104 feet wide. The southern excavation area will be backfilled with clean engineered fill.

#### **4. Sampling and Analysis Plan**

The training facility construction activities will include the disturbance of soil, as discussed in Section 3. The following Sections 4 and 5 discuss soil sampling and management procedures for potentially-impacted soil encountered during and following these construction activities. The field activities will follow the SAP/QAPP submitted by URS on behalf of Sierrita in September 2008 (URS 2008b). Deviations from the SAP/QAPP are described in the following sections. In addition, administrative and project information addendums to the SAP/QAPP are included in Table 2.

##### **4.1 Training Facility Construction Soil Sampling and Analysis**

The following is a summary of proposed soil samples to be collected within the new training facility footprint.

Soil samples from the proposed construction area will be collect in the following areas: the footer excavation area, the southern excavation area, the building footprint area where the structure's foundation will be poured, and from the future parking lot area. Within these areas, soil samples will be collected from areas where the highest concentration would be expected based on previous investigations, visible contamination, or soil characteristics.

One discrete soil sample every 25 linear feet will be collected from the floor and sidewall of the north, east, and west footer excavations. Based on the planned dimensions of the footer excavation area, 10 sidewall, and 10 floor sample locations are anticipated. Sidewall samples from the footer exaction area will be collected from alternating sides. The floor samples will be collected at a depth of one foot bgs and the wall samples will be collected at a depth of approximately 0.5 ft bgs.

Six samples will be collected from the southern excavation area floor. One discrete soil sample will be collected from the sidewall for every 25 linear feet along the north, east, south, and west side of the southern excavation area. Side wall samples will be collected from mid-depth, between 1.5 to 2.5 ft bgs for a 3 to 5 ft bgs excavation, unless evidence of higher concentrations of contamination exists at other depths along the sidewall. Based on the planned dimensions of the southern excavation area, 10 sidewall sample locations are anticipated.

One discrete surface sample will be collected within the building footprint area. The training facility's parking lot area will be divided into a grid of approximately 25 feet by

25 feet squares, and using a random number generator, four samples will be collected from the north, east, and west parking lot area sections. The parking lot area will be surface graded and samples will be collected from 0 to 0.5 bgs.

Two additional sample locations have been identified based on previous sampling results contained in the SSCR. Previous soil sampling general locations will be identified using a GPS hand held device and visual evidence. A discrete soil sample will be collected near the CP-T-3 sample location. Following the removal of soil, in the southern excavation area, a discrete sidewall sample, approximately 2.5 ft bgs, will be collected near the location of CP-16. Table 4-1 summarizes the planned additional soil samples.

The analytical methods and parameters specified for each soil sample consider the compounds or constituents identified during previous site characterization activities (see section 2.1). Soil samples will be submitted to ACZ Laboratories for Arsenic, copper, and lead by EPA Method 6010B.

Collected soil samples will be submitted to the analytical laboratory for as fast of a turnaround as possible. Soil sample concentrations will be reviewed and compared to SRLs and GPLs. If soil sample concentrations exceed residential SRLs, soil sample results will be used to calculate the 95% Upper Confidence Limit and calculate the site specific risk. If the risk is acceptable, the results and the risk calculations will be submitted to ADEQ for review. If the risk is not acceptable, additional excavation and sampling may be performed to reduce constituent concentrations below the nr-SRLs or GPLs.

The goal behind collecting these soil samples is to achieve a No Further Action decision from ADEQ, or to provide analytical support for Declaration of Environmental Use Restriction (DEUR). Table 3 summarizes the planned construction soil samples.

#### **4.2 Excavated Soil Characterization and Analysis**

The excavated soil will be sampled upon completion of the excavation. The number of samples to be collected is detailed in Table 4.

Engineering judgment will be used to determine the most appropriate sampling locations in order to properly characterize the soil. Consideration will be given to how the soil was stockpiled, potential contamination characteristics, visible material changes, size of stockpile, and depth of stockpile.

Composite soil samples from excess soil stockpiles will be collected as follows:

- Using a disposable scoop place soil samples from four distinct location into a stainless steel bowl;
- Homogenize soil sample in stainless steel bowl with disposable scoop;
- Transfer the soil sample into the laboratory-supplied sample jars with a disposable scoop;
- Secure the cap and label the sample jars with the appropriate information; and
- Place filled containers in cooler on ice immediately.

Excavated soil samples will be submitted to ACZ Laboratories for:

- Arsenic, copper, and lead by EPA Method 6010B; and
- RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by Toxic Characteristic Leaching Procedure (TCLP) SW-846 Method 1311.

## **5. Field Activities**

Excavation equipment and personnel will be provided by Sierrita. Initial field activities will include obtaining utility clearances and mobilizing equipment to the site.

### **5.1 Employee Training Requirements**

ARCADIS will adhere to the training requirements of the SAP/QAPP and Sierrita contractor and site specific requirements.

### **5.2 Sampling Procedures**

#### **5.2.1 Discrete Soil Samples**

Discrete soil samples from within the training facility area will be collected as follows:

- Using a disposable scoop collect soil samples from the designated sample location;
- Transfer the soil sample into the laboratory-supplied sample jars with a disposable scoop;
- Secure the cap and label the sample jars with the appropriate information; and
- Place filled containers in cooler on ice immediately.

### **5.3 Decontamination**

Most soil samples will be collected using disposable plastic scoops that are intended for one time use and will not require decontamination. Non-disposable sampling equipment, such as a stainless steel bowl, will be decontaminated as follows:

- Wash with detergent solution (such as Alconox® and water) to remove all visible particles and any residual material;
- Rinse with tap water; and
- Rinse with deionized water.

### **5.4 Investigation-Derived Waste Management**

The excavated material will be stored on a combination of the former cooling tower pad due south of the Copper Sulfate facility and surrounding 10 mil polyethylene liner. This pad is constructed of 8-inch concrete with an estimated 4 inches of compacted subgrade aggregate. This pad has a secondary containment which provides an area of 1920 square feet. An additional 20 feet by 80 feet polyethylene liner will be utilized in sections with a surrounding berm to act as secondary containment located adjacent to the cooling tower concrete pad. This material will be covered and stored temporarily while waiting for the results of the analytical testing. The material will be sampled within one week of completion of the excavation.

Upon receipt of the analytical results, a material determination will be made. It is anticipated the material will have a high copper content as indicated in the previous sampling conducted. In the event the recoverable copper concentrations exceed Sierrita's average ore grade, the material will be placed in the appropriate copper recovery process (SX/EW or Mill/Concentration). If the material is determined not to be beneficial to copper recovery and exceeds one or more TCLP limit, nr-SRL constituents, or GPLs, the material will be containerized and sent to an approved permitted off-site landfill. If the results neither exceed the nr-SRLs, TCLP, or the recoverable copper grade, the material will be used as landfill cover at Sierrita's onsite permitted non-hazardous waste landfill.

### **5.6 Sampling Corrective Action Process**

ARCADIS will follow SAP/QAPP guidelines.

### **5.7 Sample Designation**

Samples collected will be identified with a sample label in addition to an entry on a chain-of-custody form and field notebook. Each sample will be identified with a unique sample number that designates the sample location in the prefix, as well as the sample type, orientation (if applicable), depth and number. The abbreviations that will be used in the sample identifications are in Table 5. Table 6 provides some sample identification examples.

### **5.8 Sample Container, Volume, Preservatives and Holding Time**

ARCADIS will follow SAP/QAPP guidelines.

### **5.9 Sample Management and Tracking**

ARCADIS will follow SAP/QAPP guidelines.

### **5.10 Sample Analysis**

ARCADIS will follow SAP/QAPP guidelines with the exception that soil samples will be analyzed for total metals for arsenic, lead, and copper.

### **5.11 Quality Control**

ARCADIS will follow SAP/QAPP guidelines with the exception that field duplicates will be collected at a frequency of once every 10 investigative soil samples collected. Equipment rinsate blanks and matrix spike/matrix duplicate will remain at the same frequency of one per 20 investigative soil samples.

### **5.12 Field Instrumentation**

ARCADIS will follow SAP/QAPP guidelines.

## **6. Project Organization**

Responsibilities for the Project Director (*i.e.*, Project Manager), Task Manager, Quality Assurance (QA) Manager, and Field Task Managers remain the same as presented in the 2008 QAPP. An updated distribution list and project directory is included as Table 2.

## **7. Data Quality Objectives**

The DQOs will remain the same as presented in the 2008 QAPP; however the proposed sampling listed in Appendix Table 4-1 in support of the DQOs has been modified based on the limited size and impacts of the excavation area. Please see the Sections 4 and 5 for the proposed sampling plan.

## **8. Analytical Laboratory Procedures**

ARCADIS will follow procedures outlined within the SAP/QAPP.

## **9. Data Review and Qualifications**

ARCADIS will follow procedures outlined within the SAP/QAPP.

## **10. Progress Reports**

A written report will be provided to ADEQ within 45 days after receipt of final analytical results from the analytical laboratory.

## **11. Intuitive/Engineering Controls**

Environmental control procedures will be developed and documented for use during soil excavation activities. The field activities described in this plan will all take place within the secure Sierrita property. Access to the property is restricted a 24-hour security guard. Proper personal protective equipment will be utilized during activities described in this work plan. This will consist of hand, foot, hearing, eye, and head protection at a minimum, when necessary. Workers not associated with the activities will be notified of the activities and kept at a safe distance.

These procedures will include (at a minimum):

- Site security and access requirements;
- Ingress and Egress routes and site entry/exit conditions for heavy equipment/trucks (including decontamination and truck staging requirements);
- Truck loading and cover requirements;
- Dust control methods for stockpiled soils, soil excavation activities, and final grades;
- Dust monitoring; and

- Storm water control methods to prevent washout of stockpiled soils from designated areas.

## **12. Permits/Legal Requirements**

The following permits or approvals (organized by regulatory authority) may be required for remedial action activities:

- ADEQ: Voluntary Remediation Program (VRP) Work Plan Approval
- Pima County: Air Quality Activity Permit

## **13. Financial Capability of the Applicant**

Financial capability information is available on request.

## **14. References**

ADEQ. 2012. Review of Work Plan for Training Facility Soil Excavation Project. Freeport-McMoRan Sierrita Inc., Green Valley, Arizona. March.

URS Corporation. 2008a. Voluntary Remediation Program (VRP) Investigation Work Plan, Freeport-McMoRan Sierrita Inc., Green Valley, Arizona. Volumes I and II. Prepared for Freeport-McMoRan Sierrita Inc. April.

URS Corporation. 2008b. Addendum to Sampling & Analyses Plan (SAP) & Quality Assurance Project Plan (QAPP), Voluntary Remediation Program (VRP), Freeport-McMoRan Sierrita Green Valley, Arizona. Prepared for Freeport-McMoRan Sierrita Inc. September.

URS Corporation. 2011. Final Voluntary Remediation Program (VRP) Soil and Sediment Characterization Report, Freeport-McMoRan Sierrita Inc., Green Valley, Arizona. April.



**Tables**

**Table 1**  
**Former CLEAR PLANT Soil Characterization Results near Work Plan Area**  
**Work Plan**  
**Freeport McMoRan Sierrita Operations**

Area Description	Sample Name	Sample Date	Depth (feet)	Antimony (mg/kg)	Arsenic (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Notes
<b>Clear Plant Area Soil Concentrations near the New Training Facility</b>								
<b>Within New Training Facility Footprint</b>	CP-16	8/13/2004	0-0.25	11	34.9	109,000	950	Training Facility building will require soil removal to 5 ft bgs
	CP-T-3-0.5'	10/4/2004	0.5	NA	5.6	4,750	31.1	Bedrock suspected at 8 ft bgs; Training Facility building will require soil removal to 2 ft bgs
	CP-T-3-0.75'	10/4/2004	0.75	1.2	20.9	978	6.03	
	CP-T-3-8'	10/4/2004	8	NA	26.9	14100	488	
	CP-JS-02-00-01	7/15/2008	0-1	1	6.3	2,690	39.7	Bedrock suspected at 3 ft bgs; Training Facility building will require soil removal to 3 ft bgs
	CP-JS-02-01-03	7/15/2008	1-3	0.2	2.8	174	7.39	
<b>Area Surrounding New Training Facility Footprint</b>	CP-13	8/13/2004	0-0.25	0.6	5.44	1,090	15.4	
	CP-15	8/13/2004	0-0.25	1.9	13.7	8,260	116	
	CP-M06-00-01	7/11/2008	0-1	<1	2.6	207	7.76	Bedrock suspected at 3 ft bgs
	CP-M06-01-03	7/11/2008	1-3	0.2	3	200	8.17	
<b>r-SRL (mg/kg)</b>				31	10	3,100	400	
<b>nr-SRL (mg/kg)</b>	-	-	-	410	10	41,000	800	
<b>GPL (mg/kg)</b>	-	-	-	35	290	NE	290	

XX - Value Exceeds r-SRL but not nr-SRL and not GPL

XX - Value Exceeds nr-SRL or GPL

NA - Not Available

NE - Not Established

nr-SRL - Non-Residential Soil Remediation Levels

GPL - Groundwater Protection Limit

mg/kg - miligram per kilogram

ft bgs - feet below ground surface

**Table 2**  
**Distribution List and Project Directory**

Name	Project Role	Street Address	City and State	Zip Code	Phone and Fax Numbers
Danielle Taber	ADEQ Project Manager	1110 W. Washington St.	Phoenix, AZ	85007	(602) 771-4414
Martha Mottley	Sierrita Project Manager	6200 West Duval Mine Road P.O. Box 527	Green Valley, AZ	85622	520-393-2696 520-393-2396 (fax)
Katy Brantingham	ARCADIS Project Manager	4646 E. Van Buren St. Ste. 300	Phoenix, AZ	85008	602-659-3252 602-438-0102 (fax)

**Table 3**  
**Construction Samples Summary**

<b>Area</b>	<b>Sample Location<sup>a</sup></b>	<b>Number of Samples<sup>b</sup></b>	<b>Sample Depth(ft bgs)<sup>a</sup></b>
Footer Excavation	Floor of the Excavation Trench	10	1
Footer Excavation	Sidewall of Excavation Trench	10	0-0.5
Southern Excavation	Floor of Excavation	6	3-5
Southern Excavation	Side Wall of Excavation	10	1.5-2.5
Building Footprint	Surface	1	0-0.6
Parking Lot Area	North Surface Sample	4	0-0.5
Parking Lot Area	West Surface Sample	4	0-0.5
Parking Lot Area	East Surface Sample	4	0-0.5
Former CP-T-3 Location	Bottom of Excavation	1	0-0.5
Former CP-16 Location	South Sidewall of Southern Excavation	1	2.5

<sup>a</sup> Sample locations and depths may be adjusted in the field, such that areas with visible contamination or soil characteristic that may indicate the presence of contamination will be sampled

<sup>b</sup> Number of samples collected is based on construction plan dimensions. If dimensions are altered in the field sample quantity may change, but will follow schedule recommended by ADEQ.

**Table 4**  
**Excess Soil Sampling Summary**

<b>Contaminant and Sample Type</b>		
	<b>Total Metals</b>	
<b>Soil Quantity</b>	<b>Grab</b>	<b>Composite</b>
500-800 c.y.	6	2

**Table 5**  
**Sample Identification Abbreviations**

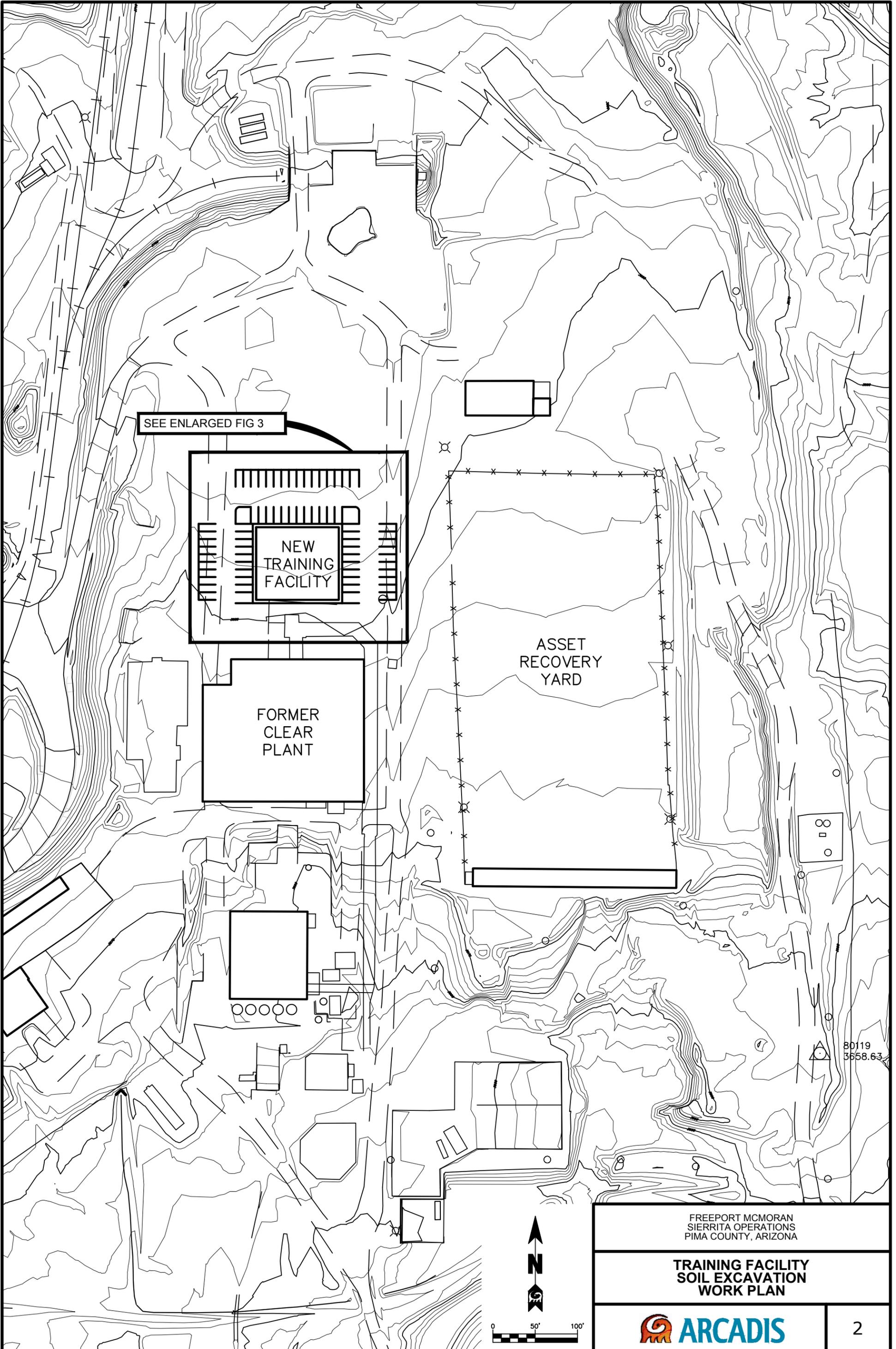
Abbreviation	Definition
<i>Sample Area/Type</i>	
CPS	Clear Plant Southern Excavation Area
CPF	Clear Plant Footer Excavation Area
CPB	Clear Plant Building Footprint Area
CPP	Clear Plant Parking Lot Area
CPE	Clear Plant Excavated Soil
RCP-16	Previous sample location of interest (CP-16)
RCP-T-3	Previous sample location of interest (CP-T-3)
<i>Sample Location (if applicable)</i>	
A(N, S, E, W)	Area Orientation: North-N, South-S, East-E, West-W
SW(N, S, E, W)	Side Wall Sample- Orientation: North-N, South-S, East-E, West-W
<i>Sample Depth (if applicable)</i>	
D4	Depth, ft bgs
S	Surface

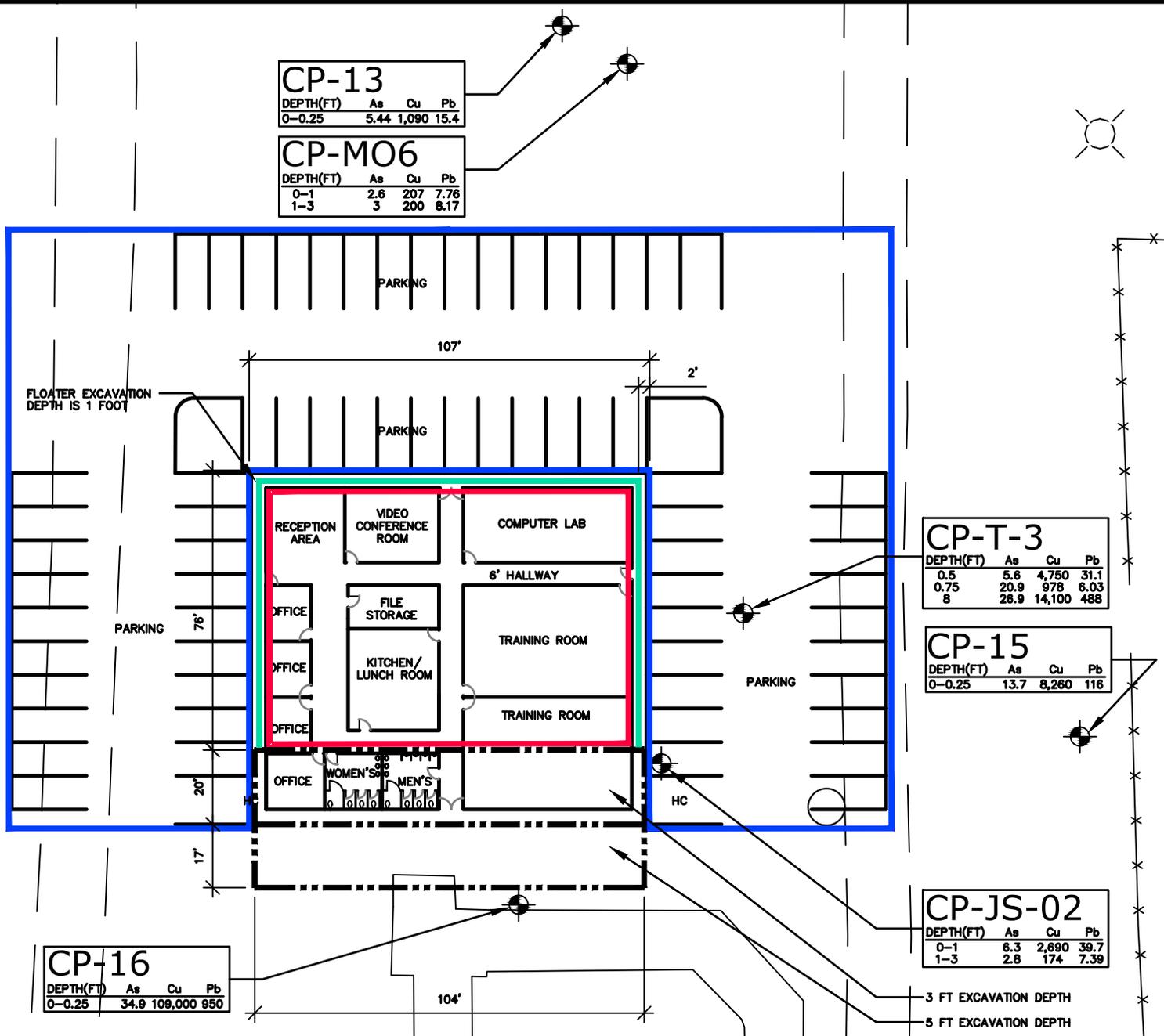
**Table 6**  
**Examples of Sample Identifications**

Sample Description	Example Sample ID
Third excavated soil sample	CPE-03
First east side wall sample from the southern excavation area collected 2.5 feet bgs	CPS-SWE-D2.5-01
First sample from the west footing excavation area collected 2 feet bgs	CPF-AW-D2-01
First surface sample located in the east parking lot area	CPP-AE-S-01
First surface sample located in the building footprint area	CPB-S-01
First sample collected near CP-16 at a depth of 3 feet	RCP-16-D3-01

**Figures**







**CP-13**

DEPTH(FT)	As	Cu	Pb
0-0.25	5.44	1,090	15.4

**CP-MO6**

DEPTH(FT)	As	Cu	Pb
0-1	2.6	207	7.76
1-3	3	200	8.17

**CP-T-3**

DEPTH(FT)	As	Cu	Pb
0.5	5.6	4,750	31.1
0.75	20.9	978	6.03
8	28.9	14,100	488

**CP-15**

DEPTH(FT)	As	Cu	Pb
0-0.25	13.7	8,260	116

**CP-16**

DEPTH(FT)	As	Cu	Pb
0-0.25	34.9	109,000	950

**CP-JS-02**

DEPTH(FT)	As	Cu	Pb
0-1	6.3	2,690	39.7
1-3	2.8	174	7.39

**LEGEND**

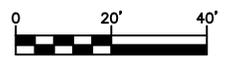
SOIL AND SEDIMENT CHARACTERIZATION REPORT SOIL SAMPLE

PARKING LOT AREA

SOUTHERN EXCAVATION AREA

FOOTER EXCAVATION AREA

BUILDING FOOTPRINT AREA



FREEPORT MCMORAN  
 SIERRITA OPERATIONS  
 PIMA COUNTY, ARIZONA

**TRAINING FACILITY  
 SOIL EXCAVATION  
 WORK PLAN**

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