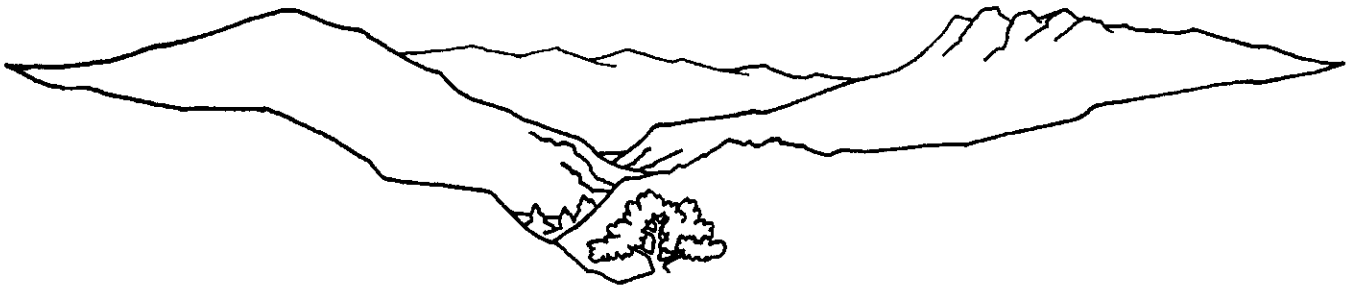
CONEJO OPEN SPACE CONSERVATION AGENCY



TO: Board of Directors

FROM: COSCA Staff

DATE: September 9, 2009

SUBJECT: **Proposed Soil Sampling Projects in Lang Ranch and Woodridge Open Space Areas**

RECOMMENDATION:

1. Consider the California Department of Toxic Substances Control (DTSC)'s request to sample surface and subsurface soils on COSCA property in the Woodridge Open Space, and

2. Make a recommendation to City Council regarding the U.S. Environmental Protection Agency (EPA)'s and DTSC's requests to sample surface and subsurface soils in the City-owned Lang Ranch Open Space.

BACKGROUND:

EPA and DTSC staff and contractors are requesting permission to sample soil in the Lang Ranch and Woodridge Open Space areas as part of the assessment and cleanup efforts for the Santa Susana Field Laboratory (SSFL). In separate but parallel studies, the EPA and DTSC are seeking to determine the background radiological and chemical composition (respectively) of surface and subsurface soil in these open space areas to allow comparison to contaminated soil at the SSFL site. EPA and DTSC researchers identified these COSCA-managed open space areas as optimal sampling locations because they are located within the same geological formations as the SSFL and are likely to be of sufficient distance from the SSFL to be unaffected by past activities at the facility.

The Santa Susana Field Laboratory, a 2,850-acre former rocket engine test site and nuclear research facility, is located in unincorporated Ventura County approximately five miles east of the Lang Ranch Open Space and four miles east of the Woodridge Open Space. The DTSC is currently overseeing a comprehensive environmental assessment

and cleanup program at the site to remediate chemical and radiological contamination caused by the facility's former operations.

DTSC's Chemical Background Study

The DTSC and its affiliates have identified two large Areas of Interest (AOIs) on the COSCA-owned Woodridge Open Space and the City-owned (COSCA-managed) Lang Ranch Open Space (**Exhibit A**), within which they propose to collect surface and subsurface soil samples from a total of approximately 45 randomly-selected locations. The sampling sites would be accessed only on foot, with significant off-trail hiking required to reach most of the sampling locations because of the large size and remote nature of the AOIs.

Over an initial two-week period, DTSC researchers would conduct detailed inspections of each AOI and mark proposed soil sampling locations with temporary wooden stakes for review by COSCA staff. Stakes that are determined to be too close to sensitive natural, geological, or cultural resources will be relocated. DTSC and its affiliates will also guide community advocates involved in the SSFL study to all the staked sites for their approval of the proposed sampling locations.

Once community members and COSCA staff have approved the sampling locations, DTSC staff and contractors will return to the sites to perform the sampling. Two or three 3-person sampling teams will collect soil samples using trowels and hand augers only; all necessary equipment will be carried in on foot. This sampling effort is expected to take approximately three weeks. The teams will collect a surface soil sample (up to 6 inches deep) and subsurface soil sample (up to 10 feet deep) at each staked site and will remove 20 to 32 ounces of soil from the holes for laboratory sampling. The holes, which will be approximately 4 inches in diameter, will be refilled with native soil collected adjacent to the hole.

Letters providing additional details about the DTSC's sampling plans are attached as **Exhibit B** and **Exhibit C**. The DTSC has obtained permission for similar sampling on National Park Service property at China Flat and on adjacent open space owned by the Rancho Simi Recreation and Park District (parcels #5 and #6 in Exhibit A).

EPA's Radiological Background Study

The EPA, through its contractor, Hydrogeologic, Inc. seeks to analyze soil radionuclide composition and soil radioactivity in a one-acre area in the City-owned (COSCA-managed) Lang Ranch Open Space, shown as the "Bridal Path" [*sic*] sampling location in **Exhibit D**. Researchers will collect 50 surface soil samples and 20 subsurface soil samples in a grid-like pattern within this one-acre sampling area (**Exhibit E**). As shown in Exhibit A, this area falls approximately on the far western edge of the DTSC's Lang

Ranch AOI. COSCA staff has determined that no sensitive species exist in the EPA's proposed sampling area.

The EPA's sampling efforts will take about six days, with three vehicles on site each day. The one-acre sampling area would be accessed only on foot; vehicles would not be driven off-road. To obtain each of the 50 surface soil samples, researchers will use a shovel to dig a hole approximately 6 inches deep and one foot in diameter and remove approximately one gallon of soil for laboratory sampling. The hole will then be filled to grade with soil from the surrounding area.

Subsurface soil samples will be collected using hand augers only. Technicians will auger holes approximately 4 inches in diameter and up to 10 feet deep and collect the excavated soil for laboratory sampling. After a borehole gamma logger is used to scan the interior of the hole for radioactivity, the holes will be filled with bentonite (clay) chips and capped at the surface with native soil from the surrounding area.

Additional details about the EPA's sampling plans are attached as **Exhibit F**. The EPA has obtained permission for similar sampling on National Park Service property at China Flat (labeled as the "Lang Ranch" sampling location in Exhibit D) and Mountains Recreation and Conservation Authority property at Rocky Peak.

COSCA Research Agreements

Individuals or institutions seeking to conduct scientific research on COSCA-managed open space (whether City-, CRPD-, or COSCA-owned) must submit a detailed research description and complete a COSCA Research Agreement form (**Exhibit G**), which is reviewed and approved administratively by staff. Researchers must also sign a Waiver and Release form to indemnify COSCA, the City, and CRPD from any liability associated with the research activities. Vehicular access to the open space is authorized only if staff determines that such access is appropriate for the proposed research location and necessary to conduct the research.

Because the expected impacts of the proposed EPA and DTSC research projects are more significant than any research requests authorized administratively by staff in the past, and because the anticipated short-term damage to vegetation and soils generally would not be permitted under COSCA's rules and regulations, staff recommends that these two research requests be considered by the COSCA Board and City Council.

Expected Impacts of EPA and DTSC Research

COSCA's Management Policies and Guidelines state that COSCA may permit research in open space, "*provided it is carried out in a prescribed manner compatible with conservation policies established by COSCA... in no case shall degradation of natural resources or values be allowed.*" COSCA's Ordinance No. 01-2009 prohibits removing

or disturbing soil (Section 222) or damaging plant life in COSCA open space (Section 220), *"unless specifically authorized in writing... and then only upon a finding that the removal or injury to flora is either (1) necessary to protect public health or safety or (2) that it is limited in scope and serves a necessary or useful public purpose."*

The proposed soil sampling projects will impact open space resources to a greater degree than any research projects approved in the past. Research projects allowed on COSCA open space usually benefit the open space by increasing knowledge about open space resources, thereby improving the future management and protection of those resources. In this case, the EPA and DTSC research will not directly benefit COSCA's open space resources, although public health and safety benefits are expected to accrue to citizens of the region.

Although permanent impacts are unlikely, staff anticipates that the soil sampling and off-trail activity proposed by the EPA and DTSC will cause short-term damage to vegetation and soils. Staff is particularly concerned about the adverse visual impacts that may be caused by the trampling of vegetation and disturbance of soil during the collection of 70 soil samples in the EPA's one-acre study area. Because this one-acre site is adjacent to a popular trail and is on a ridgeline saddle overlooking Lang Ranch, Woodridge and Sunset Hills (see photos in **Exhibit H**), any damage to the vegetation will be visible by hikers and many homeowners in those areas. Risk of wildfire must also be considered and managed appropriately.

COSCA staff expects to receive phone calls and emails from curious or concerned citizens during and after sampling. Residents may notice multiple vehicles accessing the open space through their neighborhood several times each day, and open space users may see research crews digging holes in remote locations. Because of the visibility of the EPA sampling location and the remote nature and relatively long duration of the DTSC sampling, the Ranger and staff time required to accommodate and monitor these two sampling efforts will be more significant than the staff time required by any previous research project on COSCA-managed open space.

Staff has drafted proposed conditions to accompany the Research Agreements if sampling is approved by the Board and/or City Council, which would reduce – but not avoid – these anticipated impacts to staff time and open space resources (**Exhibit I**).

CONCLUSION:

After weighing the expected impacts and benefits of the proposed research, the Board should determine whether to authorize the DTSC to sample soil in the COSCA-owned Woodridge Open Space.

In addition, because COSCA staff manages the City-owned Lang Ranch Open Space and because COSCA's Joint Powers Agreement specifies that COSCA "shall act in an

advisory capacity to the governing boards of City and District [CRPD] relative to the acquisition, management, and preservation of open space", the Board should make a recommendation to City Council regarding the EPA and DTSC soil sampling requests in the Lang Ranch Open Space.

Should the COSCA Board and City Council approve the EPA and/or DTSC research requests, COSCA staff will work with representatives of those agencies to finalize the necessary COSCA Research Agreements, Additional Terms and Conditions, and Waiver and Release forms.

Prepared by:

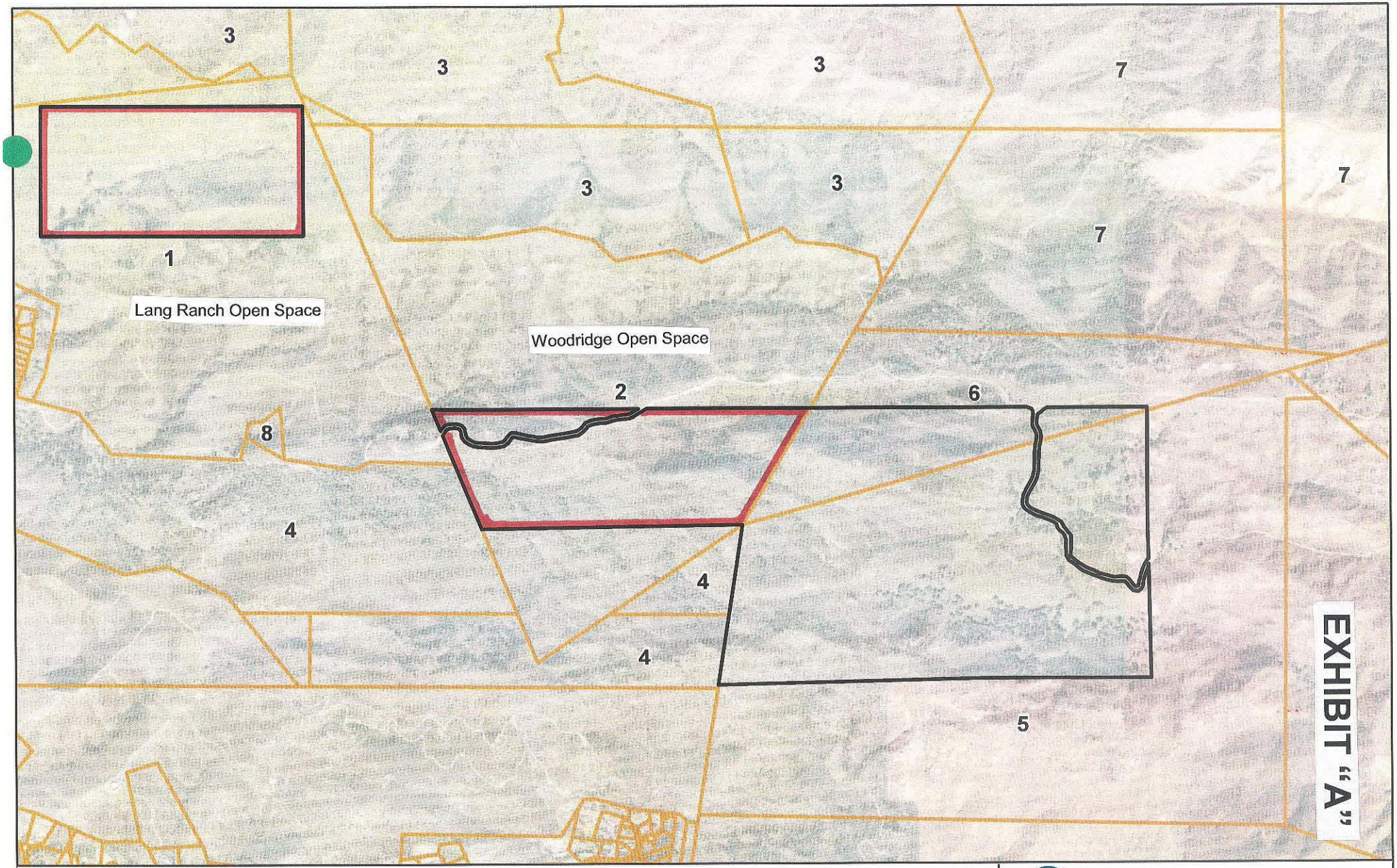
Kristin E. Foord
COSCA Manager

Submitted by:

Scott Mitnick, City Manager
City of Thousand Oaks

Jim Friedl, General Manager
Conejo Recreation & Park District

CDD:531-70/h/common/cosca/agreements/Staff report EPA_DTSC Sampling 9_09 2.doc



MWH

AUGUST 2009

SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA

PROPOSED SAMPLING AREA

FIGURE 1

EXHIBIT "B"

Department of Toxic Substances Control

Linda S. Adams
Secretary for
Environmental Protection

Maziar Movassaghi
Acting Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Arnold Schwarzenegger
Governor

September 1, 2009

Ms. Kristin Foord, Manager
Conejo Open Space Conservation Agency
Thousand Oaks, California

Subject: **Project Summary**
Chemical Soil Background Study
Supporting Investigations and Clean-up at the Santa Susana Field Laboratory
Simi Hills, Ventura County, California

Dear Ms. Foord:

The Department of Toxic Substances Control (DTSC) is pleased to submit, as requested, this project summary to the Conejo Open Space Conservation Agency (COSCA). This summary is based, in part, on information shared with the DTSC in response to previous discussions about the project's objectives and scope.

This project summary is being submitted to the COSCA in support of the DTSC's pending application for a permit to conduct a chemical soil background study within two proposed areas of interest (AOIs) on land managed by COSCA (please see attached figure). Subsequent submittals are indicated below.

It is DTSC's understanding that this information is to be shared with the COSCA Board of Directors and considered in its decision whether to grant DTSC the requested permit. The DTSC made a formal request to the COSCA that the permit be issued to conduct the proposed study in a letter addressed to the Board's Chairperson, Ms. Rorie Skei, dated August 12, 2009.

We trust that this summary and its additional information meet COSCA's needs.

Introduction

The DTSC is the lead regulatory agency responsible for overseeing clean-up of contamination at the Santa Susana Field Laboratory (SSFL), Simi Hills, Ventura County, California. Efforts to clean up the SSFL have taken many years, involving millions of dollars and participation by federal, state and local agencies. In 2007, the State legislature passed Senate Bill 990 (SB-990) requiring contamination at the SSFL be cleaned up to strict standards and obligating the DTSC to oversee the characterization and clean-up of such conditions at the SSFL. Protection of human health and the environment and clean-up of releases at the SSFL is of the highest priority to elected representatives, the DTSC, and nearby communities.

Purpose

To meet clean-up goals obligated by State law, the DTSC is conducting a chemical soil background study in specific areas off the SSFL site. In order to be scientifically defensible, this background study must be conducted on the same geologic formations that underlie the SSFL, on similar landforms, including drainages, and in areas with a similar fire history to that of the SSFL. The U.S. Environmental Protection Agency is conducting a similar, parallel study for radiological constituents. The proposed chemical and radiological background studies are critical to providing scientifically-based data that will be used to evaluate potential impacts from SSFL activities and form the basis for important decisions regarding clean-up levels at the SSFL.

After many months of research and reconnaissance for suitable locations, certain AOIs on lands managed by the COSCA, near the Lang Ranch development in Thousand Oaks, are proposed for the chemical soil background study. These AOIs are underlain by the same geologic formations, have similar landforms and fire history, and are located away from the SSFL such that potential impacts from SSFL operations are expected to either be very minimal or non-existent. These factors are key conditions not available at other lands around the SSFL.

Summary

The following briefly summarizes the DTSC's overall approach to collecting near-surface and shallow soil samples within the two AOIs where a series of proposed sample locations are to be positioned according to a "randomized-grid" design. The attached map shows the two, general AOIs within the COSCA-managed lands, drawn relatively broadly (the northern AOI is on land owned by the City of Thousand Oaks). These areas are subject to revision depending on the results of planned preliminary fieldwork and possible resource-related concerns that may be forthcoming from COSCA's review. The attached map also shows the general AOIs that fall within the lands managed by the Rancho Simi Recreation and Park District (RSRPD) and U.S. National Park Service (NPS). It is within the two AOIs on COSCA-managed lands where initial sample locations will be proposed.

The DTSC will be assisted by and will oversee consultant investigators (see below) who represent the SSFL's responsible parties (Boeing, NASA, and the DOE) and who are regulated by the DTSC.

The DTSC must conduct a more-detailed inspection of the AOIs, on foot, and install temporary wooden stakes that will mark the proposed soil sample locations. It is anticipated that the initial inspections and staking will be completed within two consecutive work weeks, to be scheduled soon after the permit is received.

The DTSC plans to collect soil samples from a maximum of 45 locations (total) within the two AOIs on COSCA-managed land, subdivided approximately as 30 non-drainage and 15 drainage locations. The actual number of sampling locations may be less depending on the availability of nearby and/or contiguous lands managed by other agencies. The DTSC has received a permit from the RSRPD (parcel owner 6 on attached map) and will soon be issued a permit by the NPS (parcel owner 5).

Initially, the draft non-drainage sample locations will be selected using a "randomized-grid" approach that divides each AOI into an array of boxes. A computer then selects the position for

each location within each box. For the drainages, a slightly different randomized approach is used, based on the drainage length, to establish a series of 30-foot transects that are drawn perpendicular to the drainage course. The transect lengths will depend on the actual drainage width as determined in the field. Within each transect, the computer again selects the sample location position.

The proposed initial locations will be documented with GPS coordinates and photographs. These locations will be discussed subsequently with the public in the field and in open meetings. As such, these proposed locations may be adjusted, with technical justification, to satisfy agreed-upon selection criteria. If either non-drainage or drainage sample locations are to be adjusted, then the same randomized process summarized above will be used to select the alternative locations.

At present, it is anticipated that the sample location selection would be conducted in late-September to late-October 2009, depending on when the COSCA permit may be issued and other schedule and logistical matters are resolved.

Involving interested public members for their review, in the field, of the proposed sample locations is a necessary and important step and will be done under DTSC supervision and guidance, taking into account COSCA concerns for cultural and/or biological resource protection and permit requirements. Accessing the various sample locations with the public will be managed in the same conscientious manner as will be employed by the DTSC and the field team during subsequent sample collection.

Depending on the extent of possible adjustments stemming from discussions with the public, the COSCA may be asked to provide further review of the proposed sample locations. Based on that review, the proposed locations may be subsequently further adjusted. The finalized locations will be documented in a draft workplan to be submitted to the COSCA and made available to the wider public for comment.

Following acceptance of the draft workplan by the concerned parties, the soil sampling will be scheduled. The sampling is anticipated to be completed within two to three consecutive work weeks. At present, it is anticipated that the sampling would be conducted in January 2010, depending on weather and related field and site-access conditions.

At each finalized sample location, where soil thickness allows, two discrete soil samples will be collected by hand, using hand augers, from surface (0 to 6 inches below surface) and subsurface (no deeper than 10 feet below surface or auger refusal, whichever is shallower). No fuel-driven, mechanized equipment will be used to advance the borings or in sample collection. It is anticipated that two teams (up to three persons each) will be employed in the sampling effort. Each soil sample will weigh approximately 10 to 16 ounces and be placed into 16-oz. glass jars for submittal to the laboratory for analysis of the study's target analytes (metals, dioxins, polyaromatic hydrocarbons, and chlorinated pesticides and herbicides).

The sample locations will be accessed on foot and all necessary field gear, equipment, and supplies (including water) will be carried in and out by hand. No materials will be left behind. The DTSC will work with COSCA rangers and/or its other personnel to establish reasonably-acceptable routes to and from the various sampling areas. The DTSC and the field team will work to ensure that foot-traffic impacts are minimized.

Following sample collection, each auger hole will be backfilled flush to surface with the resulting cuttings. Due to the loss of volume represented by the collected samples, backfilling the auger holes may require that a small amount of nearby surface soil be used to supplement the backfill. All stakes will be removed and each location will be returned, as nearly as possible, to the conditions that existed prior to the sampling.

Support vehicles will be safely parked on either the established nearby roadsides, available turn-outs, or landings in such a manner so as to avoid obstructing other authorized vehicular traffic and the recreational public (e.g., bicyclists, hikers, joggers). No off-road driving will be allowed. No fieldwork will be conducted during designated "red-flag" days or when wet weather presents the risk that access roads are impassable.

Each day's fieldwork will be conducted within the hours of operation as may be established by the COSCA according to the permit conditions. It is anticipated that field team members will require more than one entry and exit during each work day. Where practical, cellular telephones will be used to communicate with the COSCA, for check-in at each field day's start and check-out upon leaving the COSCA lands. Unless directed otherwise by COSCA, all locked gates will be secured upon leaving. If at all possible, the DTSC would appreciate being entrusted with keys to the several locked gates into the area so as to avoid the obvious impositions on the COSCA rangers.

The work will be conducted under an approved health and safety plan (HASP) and daily tailgate briefings will be held by the site safety officer before each day's work begins. Fire danger is a particularly important concern and all fire safety precautions will be observed. If requested, a separate copy of the project HASP will be submitted to the COSCA. The HASP will also be appended to the project's workplan.

The resulting, validated and finalized laboratory data will be included in the project's final report. The COSCA will receive a copy of the final report.

The DTSC project manager and principal investigator for the chemical soil background study is:

Doug Sheeks, R.G., Engineering Geologist
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826
(916) 255-3593 office
(916) 956-8902 cell
dsheeks1@dtsc.ca.gov

The consultant investigator project managers are:

Dixie Hambrick, P.G., Program Director
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
(626) 568-6348 office
(818) 612-7443 cell
dixie.a.hambrick@us.mwhglobal.com

Joseph Hammer, Project Manager
5100 SW Macadam Avenue, Suite 420
Portland, OR 97239
(503) 220-5412 office
(503) 841-7379 cell

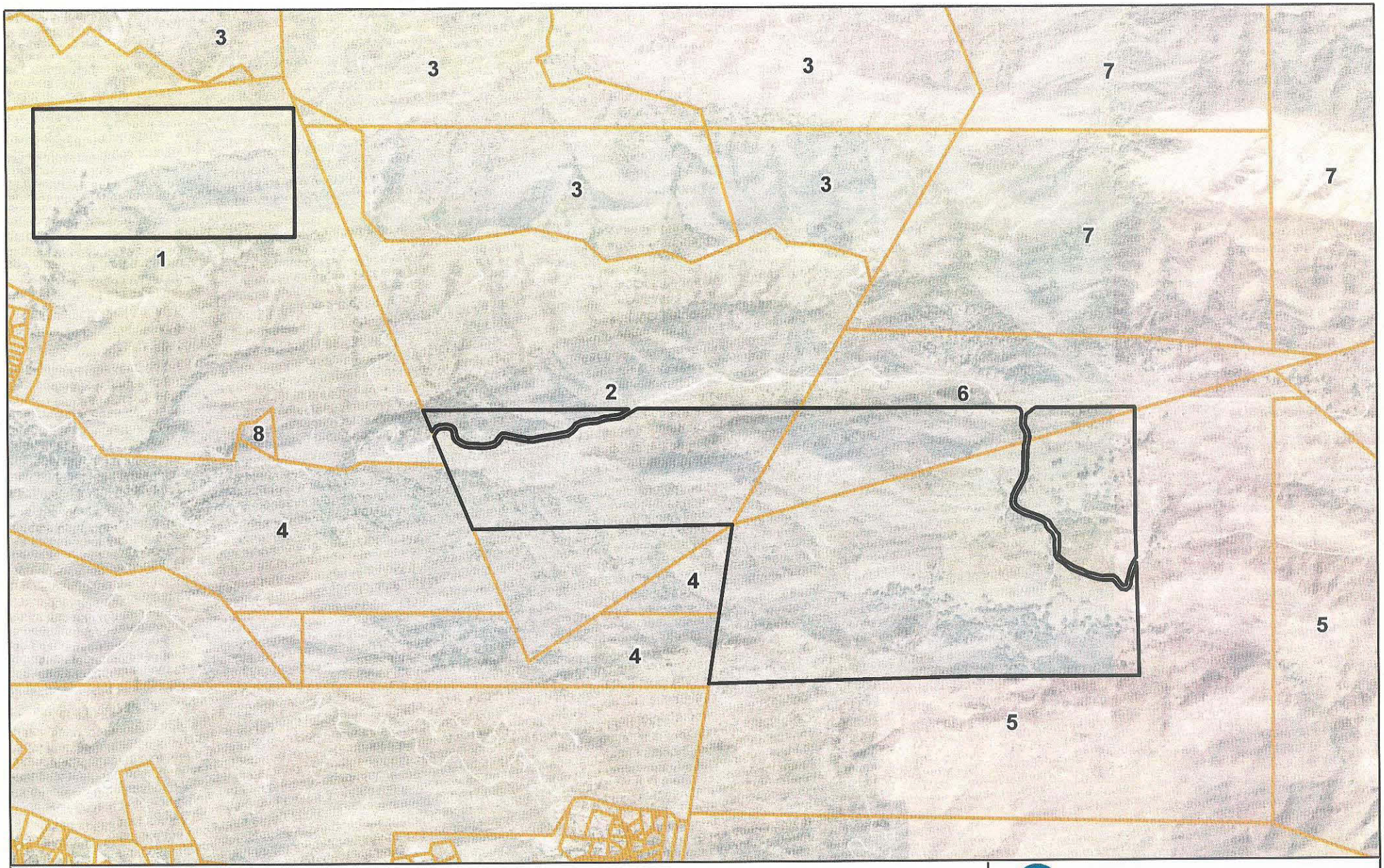
Sincerely,

Douglas I. Sheeks, R.G.

Attachment

cc:

R. Brausch, HQ
J. Pappas, Cal Center
L. Woodson, Cal Center
S. Callery, Chatsworth
G. Abrams, Cal Center



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S

0 750 1,500 3,000 Feet

LEGEND

Proposed Area of Interest

Parcel Boundary

Parcel Owners:

1 City of Thousands Oaks
2 COSCA
3 MRCA
4 CRPD
5 NPS
6 RSRPD
7 Bribal Path HOA
8 Oakbrook Park Indian Corp

MWH

AUGUST 2009

SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA

PROPOSED SAMPLING AREA

FIGURE 1

EXHIBIT "C"

Department of Toxic Substances Control

Linda S. Adams
Secretary for
Environmental Protection

Maziar Movassaghi
Acting Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806

Arnold Schwarzenegger
Governor

August 12, 2009

Ms. Rorie A. Skei, Chairperson
Conejo Open Space Conservation Agency Board of Directors
Administrative Offices
City Hall - Civic Arts Plaza
2100 Thousand Oaks Boulevard
Thousand Oaks, California 91362

CHEMICAL BACKGROUND STUDY - SANTA SUSANA FIELD LABORATORY
CONEJO OPEN SPACE CONSERVATION AGENCY LANDS – THOUSAND OAKS, CALIFORNIA

Dear Ms. Skei:

As you know, the Department of Toxic Substances Control (DTSC) is the lead regulatory agency responsible for overseeing the clean up of chemical and radiological contamination at the Santa Susana Field Laboratory (SSFL) in the Simi Hills, Ventura County. In connection with that obligation, DTSC is conducting a chemical background study around SSFL. To be scientifically defensible, the background study must take place in areas of geologic formation similar to those that underlie SSFL. The proposed chemical and radiological background studies are critical in that they will form the basis for important decisions on the clean up of SSFL.

After months of research and reconnaissance for suitable locations, the COSCA lands are proposed for the chemical background study because they are least likely to have been impacted by chemicals from prior activities at SSFL and are underlain by the same geologic formations that exist at the SSFL site. Both are key conditions not available at other lands around SSFL.

Mr. Douglas Sheeks of my staff has been in conversation with COSCA's Manager, Ms. Kristin Foord, about the study's components in an effort to secure permitted access to the COSCA-managed land where the study is proposed to be conducted. Ms. Foord has requested that DTSC provide additional descriptive information about the study in advance of the COSCA Board Meeting scheduled for September 9, 2009. Mr. Sheeks

is working to provide the requested information and will be available, as needed, to answer any questions. Meanwhile, Mr. Sheeks provided Ms. Foord a brief, summary description of the proposed study on COSCA lands that included the following points:

- Following temporary staking (expected to be completed within two work weeks), maps showing the proposed sample locations on COSCA lands will be submitted to COSCA for review and comment.
- A total of about 94 samples would be collected from 47 locations located within two separate areas.
- The samples would be collected from surface/near surface (0 to 6 inches deep) and subsurface (no deeper than 10 feet below surface or auger refusal, whichever is shallower).
- The samples will be collected by hand auger, no fuel-driven or mechanized equipment will used to either advance the borings or collect the samples.
- Each final sample is approximately 300 grams.
- All fieldwork will be conducted in a manner consistent with COSCA's mission to preserve and protect the cultural and/or biological resources under its management and DTSC will work with the COSCA staff to ensure that the impacts are minimized and the sample locations are returned as nearly as possible to their conditions prior to the proposed work.
- Sampling on COSCA lands is expected to be completed within two work weeks.

DTSC will work closely with COSCA to ensure that the natural resources under COSCA management remain protected. I respectfully request your support of DTSC's effort to obtain permission to conduct the aforementioned work. My staff and I would be more than happy to meet with you and your staff to discuss this matter before the board meeting on September 9, 2009. I can be reached by phone at (916) 327-8642.

Sincerely,

Norman E. Riley
SSFL Project Director

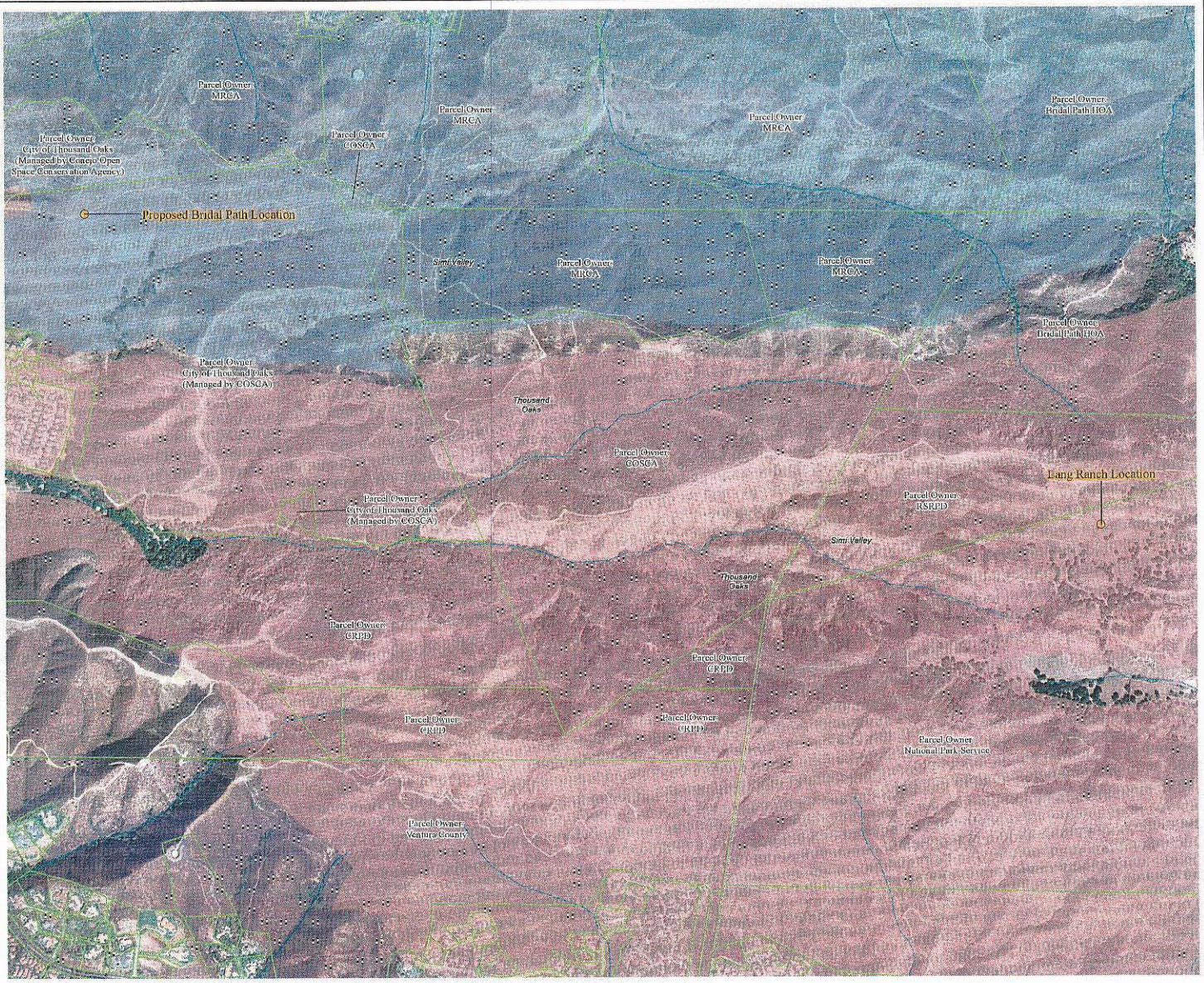
cc: See next page

cc: Mr. Maziar Movassaghi
Acting Director
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Ms. Nancy Long
Senior Staff Counsel
Office of Legal Affairs
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Mr. Jim Pappas, Chief
Northern California Permitting and Corrective Action Branch
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Mr. Douglas Sheeks
Brownfields and Environmental Restoration
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806



HGL—Sampling and Analysis Plan,
Santa Susana Field Laboratory Site—Simi Valley, California

Bridal Path & Lang Ranch Radiological Background Reference Areas

U.S. EPA Region 9

Legend

- Radiological Background Reference Area
- Soil Sampling Location
- Intermittent Stream
- Parcel Boundary
- Local Political Boundary

Geology

- Chatsworth Formation
- Santa Susana Formation

Parcel Owner Acronyms
COSCA: Conejo Open Space Conservation Authority
CRPD: Conejo Recreation and Park District
MRCA: Mountains Recreation Conservation Authority
(a division of the Santa Monica Mountains Conse
RSRPD: Rancho Simi Recreation and Park District

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0 500 1000 2000
Scale In Feet

EXHIBIT "D"

Filepath: X:/EPA010/Santa_Susana_Field_Lab/Maps/Parcel&Topo/BridalPath_LangRanch_Map.mxd
Project: L10921
Created: CLanoges 20090708
Revised: CLanoges 20090709
Source: USGS, September 2007

HGL HydroGeologic, Inc

Figure 1.3
Bridal Path Radiological Background Reference Area Conceptual Sampling Grid

U.S. EPA Region 9

Legend

- Bridal Path Background Location
- Soil Sampling Location
- Approximate Location of Radiological Background Reference Area
- Parcel Boundary
- Local Political Boundary
- Intermittent Stream

Notes:
Inset depicts conceptual sampling grid. Each point is equidistant (31.7 feet) from the other.

N

0 250 500 1000
Scale In Feet

EXHIBIT "E"

Filepath: X:\EPA010\Santa_Susana_Field_Lab\Maps\SAP (Jpg\BridalPath_Map.mxd
Project: E10921
Created: CLanagan 20070607
Revised: CLanagan 20090612
Source: USGS, September 2007

HGL HydroGeoLogic, Inc

EXHIBIT "F"

DRAFT
SAMPLING AND ANALYSIS PLAN
RADIOLOGICAL BACKGROUND STUDY
FIELD SAMPLING PLAN
SANTA SUSANA FIELD LABORATORY
SIMI VALLEY, CALIFORNIA

Prepared for:

U.S. Environmental Protection Agency Region 9
75 Hawthorne Street
San Francisco, CA 94105
Contact:
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(415) 972-3012
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Prepared by:

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Northway 10 Executive Park, 313 Ushers Road
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Contact:
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(518) 877-0390
eevans@hgl.com

April 2009

SAMPLING PLAN SUMMARY
CONEJO OPEN SPACE CONSERVATION AGENCY
BRIDLE PATH LOCATION
SIMI VALLEY, CALIFORNIA

1.0 RADIOLOGICAL BACKGROUND STUDY PROGRAM SUMMARY

The U.S. Environmental Protection Agency (EPA) is conducting a radiological background study for the Santa Susana Field Laboratory (SSFL), located near Simi Valley. The primary objective of this study is to determine background radionuclide concentrations within surface and subsurface soils overlying the two geologic formations that are present at the SSFL (Chatsworth and Santa Susana Formation).

As part of this study, surface soil samples and subsurface soil samples will be collected at three radiological background reference areas (RBRAs) and analyzed for a targeted list of radionuclides. In addition, a surface gamma scanning survey will also be conducted at each of these sites. The proposed RBRAs are illustrated on Figure 1.2.

The proposed property within Bridle Path (Figure 1.3) was selected for collection of soil data, because this location is in the same geological formation as the SSFL (Santa Susana Formation) and it will allow us to determine radiological concentrations in natural, undisturbed soils that have not been impacted by releases from the SSFL. In addition, soils at this property appear to be undisturbed. The planned location is at 34^0 13' 15.00" North latitude and 118^0 41' 48.61" West longitude. This brief sampling plan describes the sampling process design, and field methods and procedures that will be employed to accomplish the radiological background study objectives at the Bridle Path Location. These field activities will be performed in a manner that will minimize disturbances to the property.

1.1 SUMMARY OF ACTIVITIES

During this phase of the background study, the following activities will be conducted:

- Conduct a gross gamma scanning survey of surface soils at the RBRAs to identify potential anomalies.
- Collect surface soil samples for laboratory analysis.
- Collect subsurface soil samples for laboratory analysis.
- Conduct borehole gamma logging.

The steps listed below summarize the investigative approach.

1.2 INVESTIGATIVE APPROACH

Listed below is the step-by-step process we plan to follow to conduct gamma scanning and collect soil samples at the Bridle Path RBRA. These activities will be conducted over the 1-acre area shown in Figure 1.3 over approximately 4 days. However, if we are required to use hand auger drilling techniques instead of a drill rig, the sampling could take as long as 6 days. Please note that this 1-acre area can be moved, split-up, or modified based on field conditions or requests from the Conejo Open Space Conservation Agency (COSCA).

Site Access

1. We estimate there will be approximately 3 vehicles on-site per day. These vehicles will include personnel from Hydrogeologic, Inc. (HGL), personnel from the EPA, the drilling company, and members of the community. The number of vehicles will be minimized throughout the project. The vehicles will enter the site in the morning and will leave only at the end of the day.
2. The site will be accessed using the dirt track from the Lang Ranch Trailhead at the corner of North Westlake Boulevard and Autumn Ridge Drive in Thousand Oaks, California.

Surface Gamma Scanning Survey

Once the site has been accessed, the following steps will be taken to complete the surface gamma scanning survey over the 1-acre RBRA.

1. A technician will set up the gamma scanning equipment in the staging area (on the dirt track).
2. The technician will walk to the sampling area and hold the gamma scanning detector (picture in Appendix A) above the surface at a fixed height of six inches above the ground surface.
3. The technician will then walk the 1-acre site in order to complete the gamma scanning.
4. This scanning will only require one pass across the site.

Surface Soil Sampling

Following the gamma survey, 50 surface soil samples will be collected over the 1-acre Bridle Path RBRA using a stainless steel shovel or spade to retrieve a discrete sample from 0 to 6 inches below ground surface. A conceptual surface soil sampling grid is shown in Figure 1.3. The following steps will be completed at each surface soil sampling location.

1. Two technicians will walk from the staging area to the surface sampling location
2. A garden spade will be used to dig a hole approximately 6-inches deep and 1-foot in diameter. A maximum of two kilograms of soil will be removed (approximately 1-gallon).
3. The soil sample will be placed directly in to an appropriate sample container, properly labeled, and sealed.
4. After the sample containers have been filled, any excess soil will be placed back in the hole and the hole will be filled to grade with native soil from the surrounding area. Any vegetation removed during the sampling will be returned to its original location.
5. The location will be recorded using a GPS system.
6. The technicians will walk back to the staging area.

Subsurface Soil Sampling (Drill Rig Option)

Following the surface soil sampling, 20 subsurface soil samples will be collected using direct push technology (DPT) over the 1-acre Bridle Path RBRA. The following steps will be completed at each subsurface soil sampling location.

1. The drilling company (Environmental Support Technologies, Inc.) will drive their drill-rig (a Ford F-350 truck, picture in Appendix A) from the staging area (or previous sampling location) to the sampling site. Their drill rig will be the only vehicle to drive off the dirt track staging area.
2. Once at the sampling location, the drill rig will drill a hole approximately 4 inches in diameter and 10 feet deep.
3. The drillers will walk the drill cuttings from the rig to the HGL personnel stationed at the staging area.
4. The soil sample will be logged and placed directly into an appropriate sample container, properly labeled, and sealed.

Subsurface Soil Sampling (Hand auger Option)

An alternative to using a DPT rig would be to conduct the surface soil sampling with a hand auger. If a hand auger is used, the following steps will be completed at each subsurface soil sampling location.

1. Technicians will walk the hand auger from the staging area (or previous sampling location) to the sampling site. No vehicle will leave the staging area.
2. Once at the sampling location, the technicians will hand auger a hole approximately 4 inches in diameter and 10 feet deep.
3. The technicians will walk the drill cuttings from the sampling location to the HGL personnel stationed at the staging area.
4. The soil sample will be logged and placed directly in to an appropriate sample container, properly labeled, and sealed.

Borehole Gamma Logging

After the subsurface soil sample is collected, we will conduct borehole gamma logging at each subsurface soil sampling location. The following steps will be completed.

1. The drilling company will place a clean Schedule 40 PVC pipe down the hole they just completed.
2. A technician will walk from the staging area to the location carrying the borehole gamma logger.
3. The gamma logging probe will be lowered into the PVC pipe slowly at a rate of approximately 1-inch per second while observing the count rate. The meter will be stopped at each 6-inch interval and a one-minute static integrated measurement will be taken.
4. The PVC pipe will be removed from the borehole after the measurements have been completed.
5. Each subsurface soil boring will be sealed with high-solids bentonite grout chips (clay) after completion of activities at each location. Each borehole will be patched at the

surface with native soil from the surrounding area. The abandonment will comply with all local, state, and Federal regulations.

Site Precautions

HGL will take the following precautions at the sampling area to minimize disturbance or damage to the natural habitat:

1. Work at the site can be monitored by a certified archeological monitor if requested by the COSCA.
2. No smoking will be allowed at the site.
3. Any vehicle driven off-road to drill boreholes will be allowed to cool completely on the roadbed before travelling off-road.
4. Prior to entering the property, vehicles will have their undercarriage and tires washed to make sure no non-native invasive plants are brought onto the site.
5. HGL will minimize the number of people that will step off the road. Non-essential personnel will be restricted to the road.

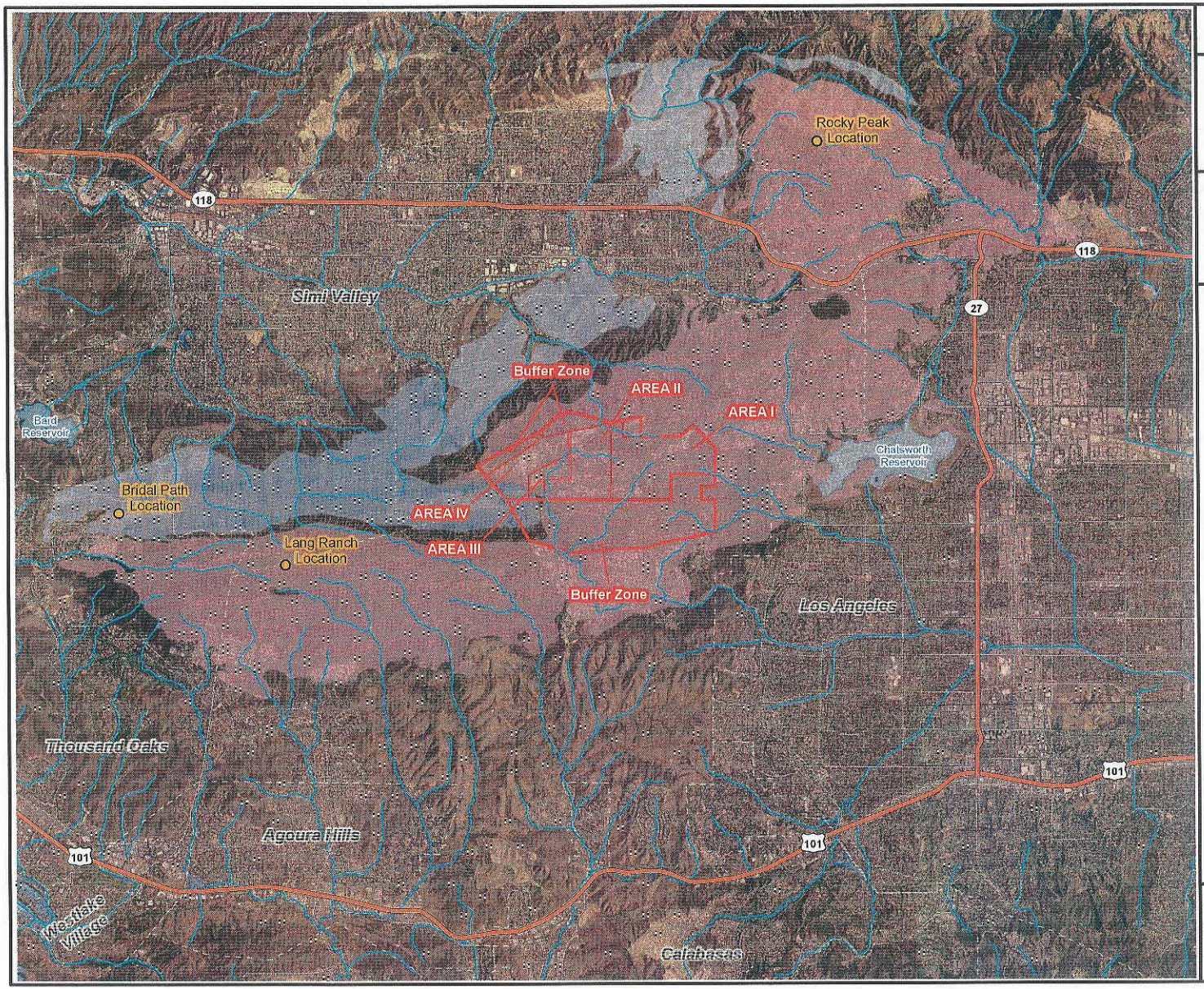


Figure 1.2
Radiological Background Reference Area Locations

U.S. EPA Region 9

United States Environmental Protection Agency

Legend

- Background Locations
- Santa Susana Field Laboratory Property Boundary
- Surface Water

Geology

- Chatsworth Formation
- Santa Susana Formation

N

0 0.5 1 2

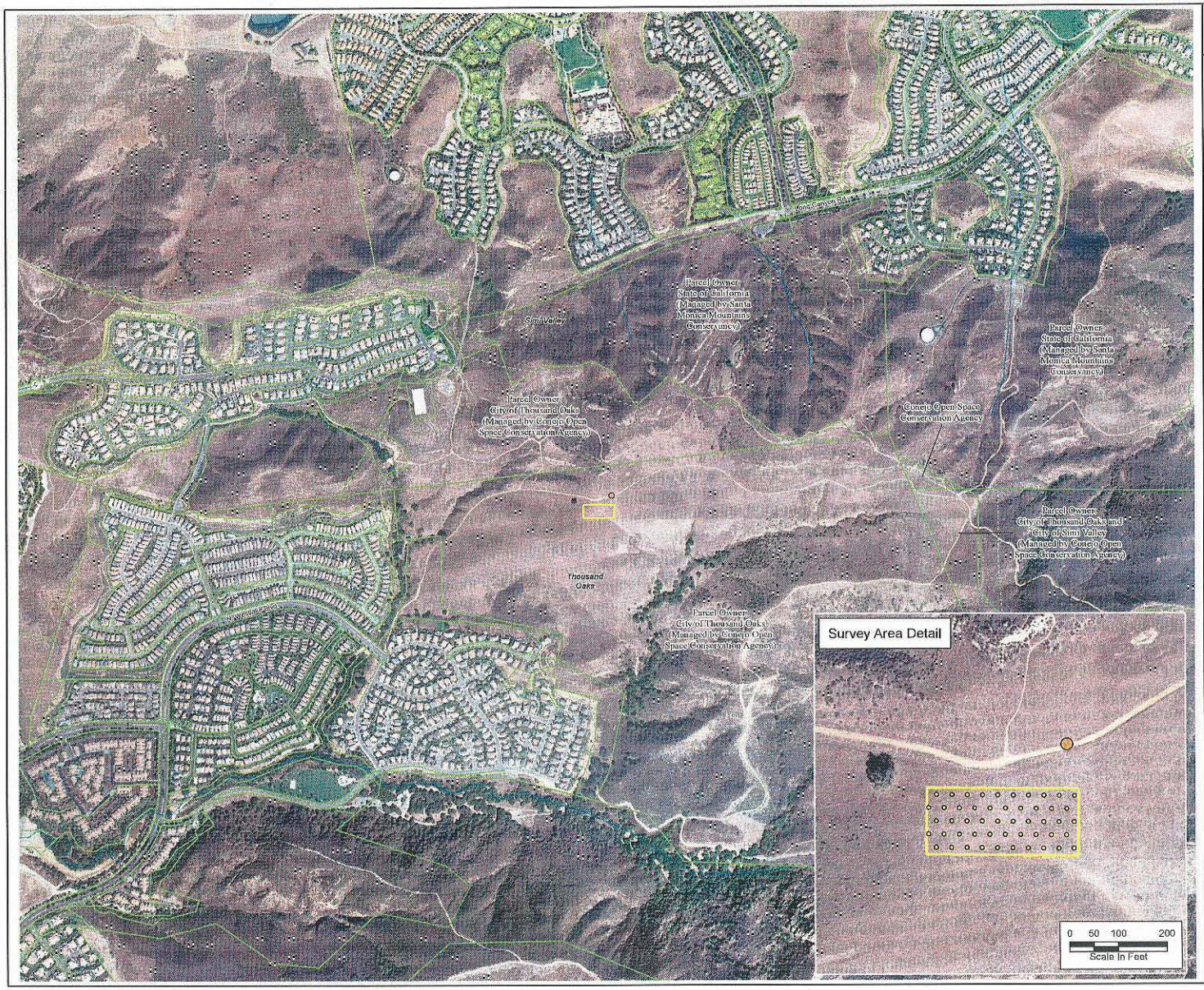
Scale In Miles

Filepath: X:/EPA010/Santa_Susana_Field_Lab/Maps/SAP (2)Backgrnd_Locs_Map.mxd
Project: E10021
Created: CLimoges 20090421
Revised: CLimoges 20090605
Source: CaSil, NAIP 2005

HGL HydroGeoLogic, Inc.

Figure 1.3
Bridal Path Radiological Background Reference Area Conceptual Sampling Grid

U.S. EPA Region 9



Legend

- Bridal Path Background Location
- Soil Sampling Location
- Approximate Location of Radiological Background Reference Area
- Parcel Boundary
- Local Political Boundary
- Intermittent Stream

Notes:
Inset depicts conceptual sampling grid. Each point is equidistant (31.7 feet) from the other.

N

0 250 500 1000
Scale In Feet

Filepath: X:\EPA010\Santa_Susana_Field_Lab\Maps\SAP (9)BridalPath_Map.mxd
Project: E10021
Created: CLanuges 20090607
Revised: CLanuges 20090612
Source: USGS, September 2007

HGL HydroGeoLogic, Inc.

Appendix A

Photographs

Figure 1: Hand-held gamma scanning device

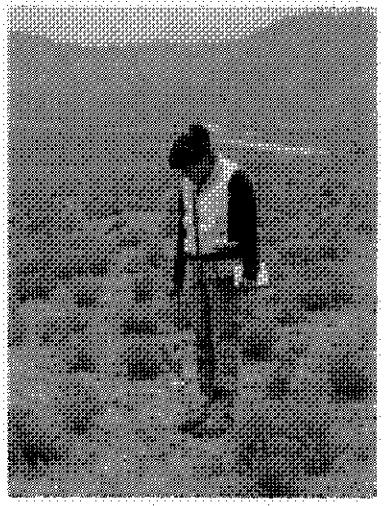


Figure 2: Drill-rig vehicle

EXHIBIT "G"

**AGREEMENT FOR RESEARCH ON OPEN SPACE LAND
OWNED BY THE
CONEJO OPEN SPACE CONSERVATION AGENCY (COSCA),
CITY OF THOUSAND OAKS (City), OR
CONEJO RECREATION AND PARK DISTRICT (CRPD)**

Name of Lead Researcher (Researcher):

Agency or Institutional Affiliation:

Address:

Office Phone: **Cell Phone:**

Fax: **E-mail:**

Researcher: Please summarize the research project below. Supplemental information, including maps, may be attached as Exhibit A.

Subject and purpose of research:

Specific location of proposed fieldwork:

Names and addresses of additional researchers:

Research materials and methods:

Description of any samples that will be collected:

Days and times that research will take place:

Is vehicular access necessary for this project?

Federal, State and Local permits required, if any:

By this Agreement, Researcher agrees to the following:

1. Project Description: The Researcher shall conduct the research as described above and in the attached Exhibit A (if applicable). COSCA shall be advised of, and shall approve, any changes in the research project.

2. Research Report: The Researcher shall provide a copy of the final results of their

research in report format to COSCA.

3. Indemnification and Hold Harmless Agreement: Researcher's institution or agency shall indemnify, defend and hold harmless, COSCA/City/CRPD and their elected officials, appointed boards, officers, agents and employees from any liability for damage or claims for damage for personal injury, including death, as well as claims for property damage which may arise from COSCA/City/CRPD or by any of COSCA/City/CRPD's agents or actions or omissions in complying with the terms of this Agreement, whether such operations by COSCA/City/CRPD or by any one or more persons directly or indirectly employed by, or acting as agent for COSCA/City/CRPD, or any subcontractor or subcontractors.

   Each researcher involved in this project, including students and volunteers, shall sign the COSCA Research Agreement Waiver and Release form, or an equivalent hold harmless agreement provided by COSCA/City/CRPD.

By this Agreement, Researcher and COSCA/City/CRPD agree to the following:

1. Term of Agreement: This Agreement shall commence on _____, and expire on _____ unless Researcher provides a written request prior to the expiration date stating a desire to extend the time for the agreement, and COSCA approves this request.

2. Vehicle Access: ☐ DENIED ☐ APPROVED with limitations and restrictions as stated in Exhibit B.

3. Conditions of Approval: This Agreement is approved subject to a number of Additional Terms and Conditions, contained in Exhibit B.

For COSCA/City:

_____ _____

Kristin Foord
COSCA Manager

Date

For Research Agency or Affiliated Institution:

_____ _____

Name of Researcher:
Title:

Date

H:\common\cosca\agreements\agreement_research_with conditions.doc

EXHIBIT "H"

Photos of EPA's Proposed Sampling Area in Lang Ranch Open Space

Photo taken from Woodflower Street in Woodridge, looking approximately east. Yellow arrow points to EPA's proposed sampling location.

Photo taken from White Cedar Street in Lang Ranch (Eagle Ridge), looking approximately east. Yellow arrow points to EPA's proposed sampling location.

Photo taken immediately adjacent to EPA's proposed sampling location on ridgeline in Lang Ranch Open Space, looking west. The Lang Ranch neighborhood can be seen behind the large oak tree.

EXHIBIT "I"

~~EXHIBIT B~~

Research Agreement
Additional Terms and Conditions

The Conejo Open Space Conservation Agency (COSCA), a joint powers agency of the City of Thousand Oaks (City) and the Conejo Recreation and Park District (CRPD), is entrusted with the responsibility of preserving, protecting, and managing open space throughout the Conejo Valley. COSCA manages the City-owned Lang Ranch Open Space area [and owns the Woodridge Open Space Area].

Staff and contractors of the [California Department of Toxic Substances Control (DTSC)] [United States Environmental Protection Agency (EPA), including staff of Hydrogeologic, Inc.] are the Researchers for this Research Agreement allowing surface and subsurface soil sampling in the Lang Ranch [and Woodridge] Open Space Area[s].

1. Except as permitted under this Research Agreement, Researchers and other designated agents are required to follow and comply with open space rules and regulations, including COSCA Ordinance No. 01-2009. Researchers are responsible for ensuring that all Researchers and their contractors or agents are familiar with these rules and regulations. Violations are subject to citation by COSCA Rangers.

2. Researchers must agree to indemnify and hold COSCA/City/CRPD harmless by executing a COSCA Research Agreement Waiver and Release form or a substitute document approved by COSCA.

3. Researchers shall notify COSCA no less than 24 hours prior to commencement of field work in the open space by phone message to Supervising Ranger Glen Kinney, at (805) 402-9550 and Park Superintendent Matt Kouba at (805) 495-6471. Arrangements for gate locks and subsequent Ranger contacts will be identified at that time. Each time Researchers enter or exit the open space, all gates must be closed and secured.

4. Researchers shall provide temporary signage and/or a fact sheet at sampling work sites to inform trail users about the nature of the research activity and answer any questions that may arise from members of the public.

5. Researchers shall exercise the utmost care to see that no natural, historic, or cultural resources are damaged or injured. After completion of all sampling, areas disturbed during sampling shall be restored to a condition satisfactory to COSCA staff.

6. [EPA CONDITION ONLY] Areas disturbed by the sampling efforts should be re-seeded with one part purple needle grass (*Nasella pulchra*); one part coastal lotus (*Lotus salsuginosus*); and, one part dove lupine (*Lupinus bicolor*), or as

otherwise approved by COSCA staff.

7. Subsurface sampling must be performed using hand-powered augers only. Vehicle-mounted or fuel-driven augers are prohibited.

8. Researchers shall insure that all vehicles and equipment meet all state and federal safety standards and regulations, and take due care to eliminate transport of exotic or invasive species from one location to another.

9. Researchers, in exercising the privileges granted by this Research Agreement shall comply with the municipal, county, and state laws, ordinances, or regulations which are applicable to the area of operations covered by this permit.

10. Researchers shall control all traffic and vehicle use as directed by COSCA staff. Vehicles must keep off natural and planted areas at all times for fire safety and resource protection purposes.

11. Notwithstanding any other provision herein, access for emergency vehicles must be made available at all times.

12. All trails must remain open and accessible to trail users during the course of Researchers' work.

13. Drivers of any vehicles relative to this Research Agreement who drive onto open space fire roads or trails that are otherwise closed to unauthorized vehicle traffic must be employees or agents of Researchers or EPA, or employees of firms under contract with EPA or Researchers; duly licensed and insured.

14. All debris or trash created by Researchers is the responsibility of the Researchers and must be removed from the open space.

15. At the discretion of COSCA staff, Researchers shall hire the services of a qualified Park Ranger or equivalent, at Researchers' expense and subject to approval by COSCA staff, to monitor activities pursuant to this Research Agreement and Additional Terms and Conditions thereof.

16. At the discretion of COSCA staff, Researchers shall provide, at Researchers' expense and subject to approval by COSCA staff, a qualified archaeological monitor to monitor activities approved through this agreement and ensure that no archaeological resources are disturbed by this research.

17. [DTSC CONDITION ONLY] Researchers shall provide, at Researchers' expense and subject to approval by COSCA staff, a qualified biologist to confirm that planned sampling locations are free of sensitive species and cryptogamic soils and to assist Researchers in identifying non-sensitive locations for sampling.

18. Researchers shall maintain at least one functional mobile telephone or radio connection at all times, to ensure the ability to immediately contact emergency services or COSCA Rangers if the need arises.

19. All fire safety precautions shall be observed, including but not limited to prohibition of smoking and precautions to avoid fires caused by vehicles.

20. In event of extreme fire weather conditions ("Red Flag Warning") or other hazardous condition which creates an imminent threat to persons or property, all research activity must be suspended until the Red Flag Warning is no longer in effect or the threat has otherwise been resolved.

21. In the event of rain, research activity must be suspended until COSCA Rangers determine that fire roads and trails are sufficiently dry to ensure that vehicular traffic will not damage the roads.