

APPENDIX D
BIOLOGICAL SURVEYS

Appendix D – Biological Surveys

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1. C. Dunn, Padre Associates, Inc., 2011. ISRA AP/STP-1E Pre-construction Biological Survey, Email to A. Payne, MWH, A. Fischl, MWH, S. Valenzuela, MWH, M. Milman-Barris, MWH, and G. Fuentes, Boeing. June 23.
2. Padre Associates, Inc., 2011. Santa Susana Field Laboratory Outfall 009 ISRA Biological Survey and Construction Monitoring Report – March 2011 to June 2011. June 27.
3. C. Dunn, Padre Associates, Inc., 2011. ISRA AP/STP Biological Surveying, Email to A. Payne, MWH. August 30.
4. C. Dunn, Padre Associates, Inc., 2012. Biological Field Survey Form, OF008 Plantings. April 26.
5. C. Dunn, Padre Associates, Inc., 2012. AP/STP Biological Survey Results, Email to A. Lenox, Boeing and A. Payne, MWH. September 4.
6. Padre Associates, Inc., 2012. Soil Excavation Beneath Oaks at NASA ISRA Areas AP/STP-1C-1 and AP/STP-1C-2. October 1.
7. C. Dunn, Padre Associates, Inc., 2013. NASA ISRA ELV Biological Survey Results, Email to A. Payne, MWH, G. Fuentes, Boeing, and A. Lenox, Boeing. February 14.
8. C. Dunn, Padre Associates, Inc., 2013. Biological Field Survey Form, ELV Asphalt Drainage Rehabilitation. April 25 and May 14.
9. C. Dunn, Padre Associates, Inc., 2013. NASA ISRA (LOX, AP, ELV) Biological Survey, Email to A. Payne, MWH, A. Lenox, Boeing, and G. Fuentes, Boeing. June 25.
10. Padre Associates, Inc., 2013. NASA ISRA Biological Surveys, Email to A. Lenox, Boeing, A. Payne, MWH, G. Fuentes, Boeing, and A. Fischl, MWH. September 11.
11. Padre Associates, Inc., 2013. Ash Pile Power line Tree Pruning, Email to A. Lenox, Boeing and W. Gruener, Boeing. September 30.

Allison Ruotolo-Lo

From: Chris Dunn <cdunn@PADREINC.com>
Sent: Thursday, June 23, 2011 5:17 PM
To: Andrew Payne; Alexander Fischl; Shelby Valenzuela; Margaret Milman-Barris; Fuentes, Gilbert L
Cc: randy.dean@ch2m.com; jhickle@mpenviro.com; 'arthur.j.lenox@west.boeing.com'; Taege, Deborah A; Glenn Jaffe
Subject: RE: ISRA - AP/STP Activities - Contractor Site Walk - Update
Attachments: IMG_6991.JPG; IMG_6998.JPG; IMG_7002.JPG

Hi all,

I conducted my pre-construction biological survey today at 1E-1 and 1E-3 (and briefly at 1E-2 due to its proximity to the others). Two issues to consider are:

1) 2 oak trees each at 1E-1 and 1E-2 will require some minor pruning (and deadwooding). I recommend that I oversee this trimming by MPE staff. They'll need a saw and a ladder.

2) An Anna's hummingbird is nesting in an oak tree about 40 feet west of 1E-1 (the next tree over from one that will require trimming, middle-left side of photo 7002). The female was sitting on the nest, so assuming there are eggs in the nest, it takes 14 to 19 days until they hatch, and another 18 to 23 days until the nestlings fledge (total nesting time 32 to 42 days). This species is protected by the federal Migratory Bird Treaty Act when nesting, and the CDFG Agreement requires a protective buffer, so it's debatable whether 40 feet is sufficient to make sure no disturbance occurs (i.e., effects to their behavior, potentially forcing them to stay off the nest or abandon it entirely). 100 feet is probably the safe distance, which is about the distance to 1E-3. I recommend activities start at 1E-3 instead to allow for the birds to finish nesting and fledge next to 1E-1. Alternatively, we could correspond with CDFG and US Fish & Wildlife to get their recommendations, but according to the laws they need to enforce, they will likely require a protective buffer.

Also, I directed a two-striped garter snake (a California Species of Special Concern) off of Service Area Road. I'd like to take this time to reiterate the importance of all vehicle operators to pay attention to any wildlife crossing the road, and slow down accordingly.

Thanks,

Chris Dunn
Project Manager/Biologist

Padre Associates, Inc.
1861 Knoll Drive
Ventura, CA 93003
805.644.2220 x 12 (office)
805.644.2050 (fax)
805.218.2658 (cell)



ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

June 27, 2011

Project No. 1102-0161

The Boeing Company
5800 Woolsey Canyon Road
Canoga Park, CA 91304

Attention: Mr. Art Lenox

Subject: Santa Susana Field Laboratory Outfall 009 ISRA Biological Survey and Construction Monitoring Report – March 2011 to June 2011

Dear Mr. Lenox:

Padre Associates, Inc. (Padre) is pleased to provide The Boeing Company (Boeing) with the following letter-report documenting our findings during biological survey and monitoring activities conducted at the Santa Susana Field Laboratory (SSFL) Outfall 009 Interim Source Removal Action (ISRA) Areas and Soil Borrow Area from March 2011 through June 2011. Past documentation for this project include the *Biological Resources Study for the Interim Source Removal Action Areas for Outfall 009 – Santa Susana Field Laboratory* (“Study”, Padre, June 2010), and associated *Addendum to Biological Resources Study for ISRA Outfall 009 – Pre-Activity Biological Survey Results for Proposed Soil Borrow Area adjacent to RD-47* (“Addendum”, Padre, August 2010). These reports provided specific data and background information on biological resources known to occur or potentially occur at the subject project sites, a brief evaluation of the potential impacts on biological resources, and conservation measures for minimization of impacts to biological resources.

Biological survey and monitoring activities were initially performed and documented in the *Outfall 009 ISRA Biological Survey and Construction Monitoring Report – June 2010 to February 2011* (Padre, February 2011). ISRA activities were then resumed in March 2011 through June 2011, and this report acts as a follow-up document to the February 2011 report, providing biological surveying and monitoring data for the subject time period, at the locations listed in Table 1 below.

Table 1. Interim Source Removal Action (ISRA) Areas for Outfall 009 Watershed (March 2011 through June 2011)

Historical Operations Areas	ISRA Areas	Watershed	Property Owner/SSFL or Other Area
B1	B1-1A, B1-1B, B1-1C, B1-1D, B1-2	009	Boeing/Area I
IEL	IEL-2	009	Boeing/Area I
CTL-1	CTL1-1A, CTL1-1B	009	Boeing/Area I

Permit Compliance Summary

Work activities for the subject project were conducted as directed by the Cleanup and Abatement Order (Order) adopted by the Los Angeles Regional Water Quality Control Board (LARWQCB) on December 3, 2008, requiring the evaluation, selection, and implementation of cleanup activities at areas within Outfall 009. Work activities were also conducted in compliance with California Department of Fish and Game (CDFG) Streambed Alteration Agreement (SAA) No. 1600-2003-5052-R5 (and associated extensions and amendments), which requires the completion of pre-construction, concurrent biological surveys and monitoring, and post-construction reporting. Biological survey and monitoring results for the subject project are provided below.

Personnel

Biological surveys and monitoring were conducted by Chris Dunn, Padre Project Biologist throughout a majority of the project duration, with back-up assistance by Matt Ingamells, Padre Senior Biologist. Mr. Dunn and Mr. Ingamells have a combined 35 years experience conducting biological surveys and monitoring, including over 14 combined years at SSFL.

Survey and Monitoring Dates

Biological surveys and construction monitoring, job walks with Boeing, Contractor and Agency staff, and planting oversight and inspections were conducted at one or more of the subject sites on the days listed in Table 2 below:

Table 2. Biological Survey and Monitoring Days

Location(s)	Personnel	Activity	Date(s)
Hydrogen Lab (plant nursery)	Dunn	Container plant inspections	3/11/11
B1-1, B1-2	Dunn	Planting oversight & inspections	3/17/11, 3/21/11, 4/5/11, 4/8/11, 5/5/11, 5/16/11, 5/25/11, 6/1/11
CTL-1	Dunn	Planting oversight & inspections	3/17/11, 3/21/11, 4/5/11, 4/8/11, 5/5/11, 5/16/11, 5/25/11, 6/1/11
IEL-2	Dunn, Ingamells	Pre-activity surveys	9/23/10, 4/20/11*
IEL-2	Dunn	Construction monitoring & follow-up survey	5/5/11, 5/16/11, 5/23/11, 6/1/11, 6/22/11

*Biological field survey report provided to MWH on 4/21/11 (see Appendix A).

Biological Survey Methods and Results

Each project area and adjacent areas were surveyed by walking transects of opportunity throughout all vegetation types. Vegetation types were quantified, and a plant species list was compiled for all of the ISRA Areas. Presence/absence surveys were also conducted at the time for special-status plant species including, but not limited to Santa Susana tarplant (SSTP, *Deinandra minthornii*, a State Rare and California Native Plant Society [CNPS] List 1B.2 species), Braunton's milk-vetch (*Astragalus brauntonii*, a federal endangered and CNPS List 1B.1 species), San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*, a federal candidate, State endangered, and CNPS List 1B.1 species), ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*, a CNPS List 4 species), Plummer's mariposa lily (*Calochortus plummerae*, a CNPS List 1B.2 species), coast live oak (*Quercus agrifolia*, a Ventura County protected tree species) and southern California black walnut (*Juglans californica* var. *californica*, a CNPS List 4 species), and special-status wildlife species including, but not limited to coastal western whiptail (a CDFG Special Animal), coast horned lizard (a California Species of Special Concern), silvery legless lizard (a California Species of Special Concern), San Bernardino ring-neck snake (a U.S. Forest Service Sensitive Species), Cooper's hawk (a CDFG Watch List species when nesting), southern California rufous-crowned sparrow (a CDFG Watch List species), and yellow warbler (a California Species of Special Concern when nesting).

Special-status plants observed within or immediately adjacent to the subject sites and access routes were flagged with fluorescent pink tape to alert workers of their presence and to later have them fenced as an avoidance measure (discussed below). All wildlife species observed at or near the survey area were noted through direct observation or with the use of 10x42 binoculars. Breeding bird activity (e.g., courting behavior, carrying nesting material, and food deliveries to nests) was also noted, if observed.

Initial biological surveys for the ISRA Areas were conducted by Chris Dunn or Matt Ingamells in March, April, June and August 2010, and were summarized in the aforementioned June 2010 Study and August 2010 Addendum. Please refer to these documents for specific survey results.

For the June 2010 to February 2011 ISRA activities, pre-activity biological surveys were conducted by Chris Dunn in June, July, September and October 2010 prior to work activities progressing to each site. Surveys were conducted in similar fashion as described above, and included the addition of flagging of special-status plants, where necessary. A job walk was also conducted at each of the sites to alert the project staff of any sensitive issues. Please refer to the February 2011 report for specific survey results.

For the subject March 2011 to June 2011 ISRA activities, one (1) pre-activity biological survey was conducted by Matt Ingamells in April 2011, and was provided in a Biological Field Survey Form report to MWH staff on April 21, 2011. Based on the planned work activity, the pre-activity biological survey was limited to IEL-2. Please refer to Appendix A for the full report, but survey data are summarized as follows:

Vegetation. The IEL-2 ISRA area was disturbed in 2009 during removal of above-ground structures and related facilities, and had subsequently been hydroseeded with a native seed mix. The site consisted of two terraces with a slope in between stabilized with erosion

control fabric. Dominant native plant species included California bush sunflower (*Encelia californica*) and deerweed (*Lotus scoparius*), and non-native plants including summer mustard (*Hirschfeldia incana*) and annual grasses (*Bromus madritensis*, *B. tectorum*, and *Vulpia myuros*). A total of approximately 50 plant species were found within the site and 30-foot buffer. Special-status plants were not observed onsite or in rock outcrops located south of the site.

Wildlife Observations. Wildlife observed during April 2011 pre-activity biological survey included American crow, California quail, California towhee, common raven, house finch, mourning dove, oak titmouse, and western scrub jay. Nesting activity was not observed onsite. Mammal observations included Audubon's cottontail (scat), black-tailed deer (tracks and scat), coyote (tracks and scat), pocket gopher (burrows), and raccoon (tracks). Reptiles and amphibians were limited to western fence lizard (trail drags). No fish or suitable habitat for fish was observed. No special-status wildlife species were observed.

Biological Monitoring Activities

Padre Biologist Chris Dunn completed periodic construction monitoring duties requested by Boeing to ensure that permit conditions described in the CDFG SAA were upheld. The duration of work activities at IEL-2 were from April 2011 to June 2011. The monitor's duties included the following items, in no particular order:

- Advising Boeing (and its contractors) on conditions outlined in the project's SAA, and facilitating compliance with each SAA condition.
- Participating in job walks at each site to provide information to contractors on sensitive biological resources (if present).
- Conducting environmental sensitivity training sessions for contractor personnel on subjects relating to protection of special-status plant and wildlife species and other SAA compliance issues.
- Re-flagging of special-status plants to alert workers of their presence and need for avoidance.
- Ensuring that the contractor had clearly defined the limits of the project, including the placement of water hoses across adjacent areas that potentially contain special-status plants.
- Ensuring that the contractor had installed and maintained protective fencing around special-status plants within or adjacent to each project site throughout the project duration.
- Photodocumentation of project activities (selected photographs provided in Appendix B).
- Completion of field observations sheets (can be provided upon request).
- Monitoring for any wildlife species (including special-status species) that may enter the site, and if necessary, informing Boeing so that CDFG would be notified.
- Conducting relocations (if necessary) of captured wildlife (i.e., reptiles or amphibians) within the project site, and establishment of suitable habitat relocation areas according to the CDFG-approved wildlife relocation plan (established via email correspondence in 2008).

- If special-status wildlife species were encountered, completion of California Native Species Field Survey Forms and submittal to the CDFG Natural Diversity Data Base (CNDDDB) for observations of special status species.
- Noting any required native tree or shrub removals for future mitigation purposes.
- Providing supervision for the installation of containerized plantings through coordination with WRA Environmental Consultants (the Project's Landscape Architect).

Special-Status Plant Protection. As described above, no special-status plants were observed at IEL-2. Therefore, no specific protection strategies were required or implemented at the site.

Wildlife Observations and Relocations. Many of the birds observed during the pre-activity survey were observed throughout the duration of the project, in addition to several other species common to the region, but observed in adjacent (offsite) areas within SSFL. Western fence lizard and side-blotched lizard, and mammal tracks, scat or burrows of Audubon's cottontail, black-tailed deer, coyote and ground squirrel were periodically observed at or near the site.

No wildlife relocations were required, and no evidence of any wildlife mortality or substantial disturbance to wildlife was observed throughout the duration of the project.

Vegetation Impacts. Based on the previously disturbed condition of the IEL-2 site, vegetation removal activities were minimal, and were limited to the prescribed work area. No impacts to special-status plants or native trees occurred as a result of the project.

Revegetation Plan Implementation. According to the project's Revegetation Plan and Expert Panel Recommendations for Erosion Control Hydroseeding Methods, hydroseeding with a native seedmix and installation of containerized plantings were completed at appropriate locations within the ISRA Areas. As-built Revegetation Plans were completed by WRA Environmental Consultants, documenting the final tally for total planting amounts and locations (please refer to Appendix C). In summary, hydroseeding materials included Flexterra High Performance-Flexible Growth Medium™ with a seed application of native grasses and shrubs known to commonly occur at SSFL on all exposed areas. Some containerized plants were installed prior to the March 2011 to June 2011 ISRA activity, and were then added to during the subject time period. A final tally of containerized plantings for B1-1, B1-2 and CTL-1 areas included 142 mulefat, 282 coyote brush, 101 mugwort (*Artemisia douglasiana*), 431 creeping wild rye (*Leymus triticoides*), and 33 Mexican elderberry (*Sambucus mexicana*). The seedmix and container plants were chosen for their ability to provide both rapid colonization and sediment holding capacity, and for long-term shrubby cover. Ongoing monitoring of these planting areas are underway to ensure a high success rate, rapid recovery, and minimization of erosion, but are not required to obtain the success criteria described in the SAA based on their location outside of CDFG jurisdiction, and primary use only as an erosion control mechanism. Other Best Management Practices (BMPs) including straw wattles, earthen and gravel water bars, rock rip rap, silt fencing, and straw bales were also installed for erosion control purposes at appropriate locations.

Follow-up Site Visits

IEL-2. Work activities for the IEL-2 ISRA Area was completed in June 2011, and a follow-up site visit and inspection was subsequently conducted. No sensitive issues were identified at the site. Hydroseeding of all exposed areas will be completed upon receipt of soil analytical results and confirmation of the absence of affected soils. No containerized plantings are prescribed for IEL-2.

CTL-1. Periodic site inspections of the plantings occurred during the subject time period and are ongoing. Approximately 90 to 95 percent of the plantings are alive and support new growth. A small amount of erosion created an 8-inch deep rill and has been repaired with rock rip rap. A small amount of weed infestation is present, mainly by summer mustard. A total of six (6) additional Santa Susana tarplant seedlings were observed during a June 2011 site visit at the upper end of the ISRA area; likely derived from seed dispersed from a mature plant nearby into exposed areas of low plant competition.

B1. Periodic site inspections of the plantings occurred during the subject time period and are ongoing. Approximately 80 to 90 percent of the plantings are alive and support new growth. Some erosion (rilling at B1-1, and an alluvial fan at B1-2) has occurred as a result of late winter 2011 storms, but plantings such as mulefat appeared able to survive growing through any accumulated sediment.

Conservation Recommendations

Conservation recommendations previously provided to Boeing in the June 2010 Study, August 2010 Addendum, and February 2011 Report were followed to the extent feasible, resulting in no impacts to sensitive biological resources. It is recommended these measures continue to be followed during future activities to ensure impacts to sensitive biological resources are minimized or avoided.

Should you have any questions regarding our survey and monitoring results, please contact me at (805) 644-2220, ext. 12.

Sincerely,

PADRE ASSOCIATES, INC.



Chris Dunn
Project Manager/Biologist

Cc: Shelby Valenzuela & Andrew Payne, MWH Global

Attach:

- Appendix A. Pre-Activity Biological Field Survey Form (IEL-2, April 20, 2011)
- Appendix B. Photographic Documentation
- Appendix C. As-Built Planting Plan, March 2011



 ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

**APPENDIX A. PRE-ACTIVITY BIOLOGICAL FIELD SURVEY
FORM (IEL-2, April 20, 2011)**

BIOLOGICAL FIELD SURVEY FORM

Job No.: 1102-0161	Date: 4/20/11	M	T	W	T	F	S	S	
Client: The Boeing Company/MWH	Project Site: Outfall 009 ISRA Area IEL-2								
Location: SSFL Area I	Weather: overcast, ~62oF								
Observer: Matt Ingamells 	Observation Period:		Start: 0915		Stop: 1030				
<p><u>Site/Project Description:</u></p> <p>Excavation of cadmium, copper, mercury, lead and dioxin-affected soils is planned within the IEL-2 area, located approximately 130 feet southwest of Building 436. Area IEL-2 is approximately 60 feet wide by 90 feet long, with an adjacent soil borrow area of about 50 feet by 160 feet.</p>									
<p><u>Vegetation Types and/or Notable Plant Species:</u></p> <p>The project site was disturbed in 2009 during removal of above-ground structures and related facilities. The site (Area IEL-2 and borrow area) had been hydroseeded with a native seed mix at some time in 2010. The site consists of a lower terrace along Area I Road, and an upper terrace to the south of the upper terrace. The slope between the terraces had been stabilized with erosion control fabric. Dominant plant species of the lower terrace included California bush sunflower (<i>Encelia californica</i>), summer mustard (<i>Hirschfeldia incana</i>) and non-native annual grasses (<i>Bromus madritensis</i>, <i>B. tectorum</i>, <i>Vulpia myuros</i>). The vegetation of the upper terrace was somewhat sparse, and dominated by California bush sunflower and deer weed (<i>Lotus scoparius</i>). Approximately 50 plant species were found within the site, including a 30 foot buffer. Santa Susana tarplant (<i>Deinandra minthornii</i>), Braunton's milk-vetch (<i>Astragalus brauntonii</i>) or other special-status plants were not observed on site, or in rock outcrops located south of the site. Oak trees protected under County ordinance are located along Area I Road, but not within the site.</p>									
<p><u>Wildlife Observations:</u></p> <p>Birds observed included house finch, mourning dove, titmouse, California quail, American crow, raven, California towhee and scrub jay. Nesting activity was not observed at the site. However, it appeared house finches were attempting to nest within the garage of the adjacent fire station.</p> <p>Mammals observed included Audubon's cottontail (scat), pocket gopher (burrows), coyote (tracks and scat), black-tailed deer (tracks and scat) and raccoon (tracks).</p> <p>Reptiles or amphibians observed included fence lizard (tail drags). No special-status reptiles such as silvery legless lizard, coast horned lizard or coastal western whiptail were observed.</p> <p>No fish were observed onsite.</p>									
<p><u>Applicable Regulatory Constraints:</u></p> <ol style="list-style-type: none"> Ventura County Oak Tree Protection Guidelines (1 oak immediately adjacent). Federal and Calif. Endangered Species Acts, Calif. Native Plant Society [CNPS] & Calif. Environmental Quality Act [CEQA] rare, threatened or endangered species (BRMV and SSTP, none observed, but known to occur in close proximity to the site). Animal species of special concern to the California Department of Fish and Game [CDFG] (none observed, unlikely to be present onsite). Animals listed on the CDFG Special Animals list (none observed, unlikely to be present onsite). Migratory Bird Treaty Act [MBTA] of 1918 (all of the bird species listed above are protected by the MBTA when nesting). 									
							Page <u>1</u> of <u>2</u>		

BIOLOGICAL FIELD SURVEY FORM



Job No.: 1102-0161	Date: 4/20/11	M	T	W	T	F	S	S
Client: The Boeing Company/MWH	Project Site: Outfall 009 ISRA Area IEL-2							
<p><u>Conservation Recommendations:</u></p> <p>1. Avoid or minimize heavy equipment activity within 5 feet of the oak tree canopy dripline. Any pruning of live limbs greater than 3 inches in diameter should be overseen by a certified arborist or biologist experienced in tree protection & care. Any tree removal in excess of 3 inches in diameter, or pruning of greater than 20% of the tree's canopy or roots will require a County permit.</p> <p>2. No active bird nests were observed during the field surveys; however, any observed active bird nests should be avoided and provided with a buffer (50 to 500 feet depending on the species and maturity of nestlings). Observation of an active bird nest (or nests) should immediately be brought to the attention of a qualified biologist who can determine the species and timing of the nesting cycle, and provide further conservation recommendations to ensure compliance with the MBTA.</p>								
Photographs: Yes_ _ No <u>X</u>								
						Page <u>2</u> of <u>2</u>		



APPENDIX B. PHOTOGRAPHIC DOCUMENTATION



Figure B1. View of CTL-1A with substantial growth of plantings and germinated hydroseed. Photograph is toward the south, taken on June 1, 2011.



Figure B2. View of CTL-1B with substantial growth of plantings and some summer mustard infestation. Photograph is toward the north, taken on June 1, 2011.



Figure B3. View of B1-1A planting area on May 25, 2011.



Figure B4. View of B1-2 planting area on March 21, 2011. Plantings were installed, and slope was covered in jute netting and hydroseeded.



Figure B5. View of IEL-2 on September 23, 2010, prior to ISRA activities. Photograph is toward the southwest.



Figure B6. View of IEL-2 on June 22, 2011, subsequent to ISRA activities. Photograph is toward the northeast. Hydroseeding will be completed upon receipt of soil analytical results.



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**APPENDIX C. AS-BUILT CONTAINERIZED PLANTING PLAN,
WRA CONSULTANTS (March 2011)**



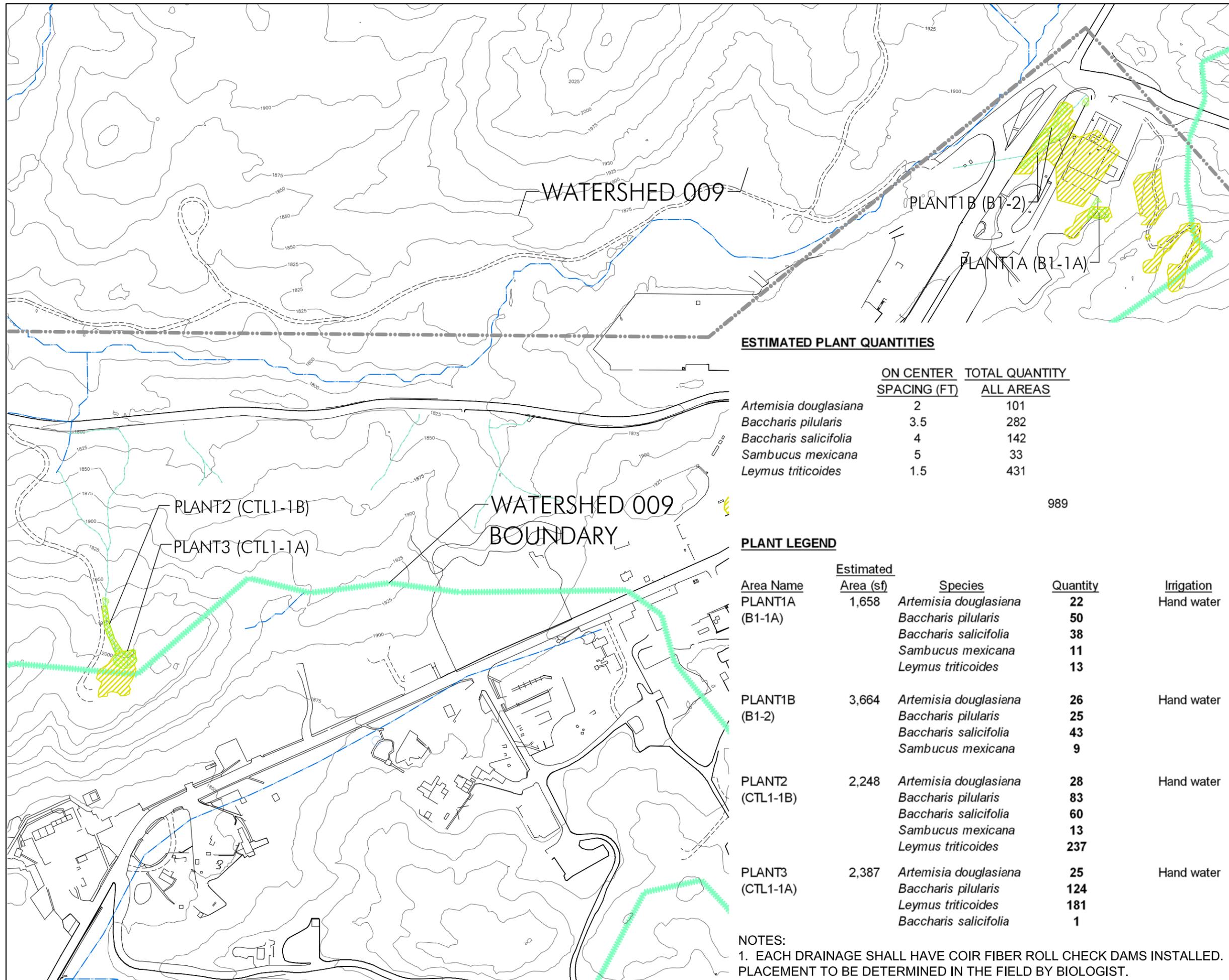
ENVIRONMENTAL CONSULTANTS
 2169-G East Francisco Blvd.
 San Rafael, CA 94901
 (415) 454-8868 Phone
 (415) 454-0129 Fax

Boeing SSFL

East
 Watershed 009

AS-BUILT
Figure 1A
ISRA 2010
Revegetation Areas

Containerized
Planting Plan



ESTIMATED PLANT QUANTITIES

	ON CENTER SPACING (FT)	TOTAL QUANTITY ALL AREAS
<i>Artemisia douglasiana</i>	2	101
<i>Baccharis pilularis</i>	3.5	282
<i>Baccharis salicifolia</i>	4	142
<i>Sambucus mexicana</i>	5	33
<i>Leymus triticoides</i>	1.5	431

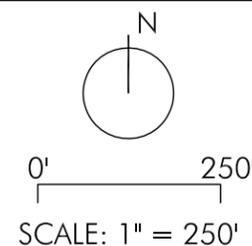
989

PLANT LEGEND

Area Name	Estimated Area (sf)	Species	Quantity	Irrigation
PLANT1A (B1-1A)	1,658	<i>Artemisia douglasiana</i>	22	Hand water
		<i>Baccharis pilularis</i>	50	
		<i>Baccharis salicifolia</i>	38	
		<i>Sambucus mexicana</i>	11	
		<i>Leymus triticoides</i>	13	
PLANT1B (B1-2)	3,664	<i>Artemisia douglasiana</i>	26	Hand water
		<i>Baccharis pilularis</i>	25	
		<i>Baccharis salicifolia</i>	43	
		<i>Sambucus mexicana</i>	9	
PLANT2 (CTL1-1B)	2,248	<i>Artemisia douglasiana</i>	28	Hand water
		<i>Baccharis pilularis</i>	83	
		<i>Baccharis salicifolia</i>	60	
		<i>Sambucus mexicana</i>	13	
		<i>Leymus triticoides</i>	237	
PLANT3 (CTL1-1A)	2,387	<i>Artemisia douglasiana</i>	25	Hand water
		<i>Baccharis pilularis</i>	124	
		<i>Leymus triticoides</i>	181	
		<i>Baccharis salicifolia</i>	1	

NOTES:

1. EACH DRAINAGE SHALL HAVE COIR FIBER ROLL CHECK DAMS INSTALLED. PLACEMENT TO BE DETERMINED IN THE FIELD BY BIOLOGIST.



LEGEND

- PLANTING AREA
- ESTIMATED HYDRO-SEEDING AREAS
- WATERSHED BOUNDARY
- DRAINAGE
- NON-JURISDICTIONAL SURFACE WATER PATHWAY

Allison Ruotolo-Lo

From: Chris Dunn <cdunn@PADREINC.com>
Sent: Tuesday, August 30, 2011 4:08 PM
To: Andrew Payne
Cc: Fuentes, Gilbert L; Alexander Fischl; Allison Ruotolo-Lo; Shelby Valenzuela; Lenox, Arthur J
Subject: RE: ISRA - AP/STP - Scope of Work

I spoke with Art today and my scope is limited to being on call for any wildlife relocations such as legless lizard, oversight of pruning of oak trees if needed, and a follow up inspection. No tarplant issues, and no anticipated bird nest issues. But here are a couple recommendations if not already stated:

- 1) After excavating, lay down jute netting and keep moist beneath the dripline of oaks. Call me for pruning limbs.
- 2) Avoid damaging roots over 1 to 2 inches, and if possible preserve as many of the small absorbing roots too. The main root zone will likely be 4 to 18 inches in depth. Cut any roots you do damage at the edge of the excavation (where it becomes exposed). If the root is exposed but both ends are still in the ground, don't cut it...it'll get covered back up eventually.
- 3) Watch out for legless lizard beneath the duff layer and to a depth of about 4 inches. Keep a 5-gallon bucket with some dirt and leaf litter on hand to place the animal in it. Call me to come record it and relocate it to suitable habitat.
- 4) If anyone does see a nest with young chirping in it, or the adult bringing food back to it, call me so I can identify it and determine how long we need to wait to continue working there, and determine what is a safe distance to keep working, but not affect their behavior.
- 5) Watch out for wildlife on the road, such as snakes crossing.

Thanks,

Chris Dunn
Project Manager/Biologist

Padre Associates, Inc.
1861 Knoll Drive
Ventura, CA 93003
805.644.2220 x 12 (office)
805.644.2050 (fax)
805.218.2658 (cell)

BIOLOGICAL FIELD SURVEY FORM

Job No.: 1202-0031	Date: Apr. 26, 2012	M	T	W	T	F	S	S
Client: The Boeing Company	Project: OF008 Plantings							
Location: SSFL Area I	Weather: Cloudy, scattered showers, ~65 deg. F							
Observer: Chris Dunn 	Observation Period	Start: 1145	Stop: 1500					

Site/Project Description:

The following information is a summary of spring 2012 estimated percent cover and live/dead planting data for native plant restoration activities conducted in 2009 and 2010. Qualitative descriptions are provided for the planting areas, as natural recolonization of native vegetation is considered in the success of the revegetation effort. Photographs are provided at the end of this report. According to as-built drawings (WRA, September 2010), planting efforts included the installation of 1,229 plants throughout 11 separate planting areas. Planting activities were successful throughout nearly all of the Outfall 008 areas, resulting in healthy, mature thickets of mostly native vegetation (by high survival of plantings in combination with natural regeneration subsequent to the 2005 Simi Fire). No further actions, aside from removal of any remnant irrigation system parts are recommended at this time in regards to plantings.

Survey Findings:

HVS-2A: Mulefat (*Baccharis salicifolia*) plants in excess of the 127 plantings were tallied, and observed as mature and flowering. Plant cover within the planting area exceeds 100 percent, with the understory being comprised of creeping wild rye (*Leymus triticoides*) in excess of the 100 individuals planted, and other natives such as purple needlegrass (*Nassella pulchra*). No blue elderberry (*Sambucus mexicana*) plants were observed (4 originally planted), but this may be due to the thick cover obscuring their presence. The adjacent hydroseeded area was estimated at 85 percent overall cover, and is maturing into coastal sage scrub vegetation comprised mainly of native species including yerba santa (*Eriodictyon crassifolium*), coyote brush (*Baccharis pilularis*), California bush sunflower (*Encelia californica*), deerweed (*Lotus scoparius*), golden yarrow (*Eriophyllum confertifolium*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and laurel sumac (*Malosma laurina*). Prevalent non-native species includes summer mustard (*Hirschfeldia incana*). Three (3) previously absent Santa Susana tarplants (*Deinandra minthornii*, a State Rare species) were observed growing in the swale and the adjacent hydroseeded area.

HVS-3: Mulefat plants are mature and constitute 100 percent cover, despite the tally of approximately 50 plants (73 originally planted). Blue elderberry plants are present and beginning to flower at an intermediate height. A total of 11 elderberry plants were counted (25 originally planted), but additional plants may be obscured by the thick cover. Creeping wild rye is present in rhizomatous mats throughout the planting area, exceeding the number of plants originally planted (30). Adjacent hydroseeded areas have become successfully colonized in excess of 80 percent overall cover, exhibiting species including coyote brush, bush sunflower, purple sage, and deerweed. Prevalent non-native species include summer mustard and tocalote (*Centaurea melitensis*).

HV-PLANT1: This steep, former unpaved access road exhibits extremely shallow soils (with exposed bedrock), but has attained a high level of survival and approximately 60 percent cover in comparison to previously bare ground, and in spite of difficult growing conditions. A total of 80 coyote brush were tallied (85 originally planted), and 9 mulefat (11 originally planted). Creeping wild rye is present as a result of plantings, but in low concentration. Other natives occupying the planting area include California aster (*Lessingia filaginifolia*), telegraph weed (*Heterotheca grandiflora*), black sage, deerweed, yerba santa, and a total of eight Santa Susana tarplant (1 mature, along with 7 seedlings previously not observed).

HV-PLANT2: Subsequent to former (separate) planting activities in 2002, and the recent subject plantings of coyote brush and creeping wild rye, this planting area has matured to approximately 100 percent cover including these species, along with purple needlegrass, mulefat, black sage, and bush sunflower.

HV-PLANT3: This planting area now supports a thicket of mugwort (*Artemisia douglasiana*) and scattered blue elderberry resulting in approximately 90 percent cover. Other native species colonizing the edges of the planting area include coyote brush and purple needlegrass, and has a partial canopy of coast live oak (*Quercus agrifolia*).

HV-PLANT4: This planting area is surrounded by an existing thicket and narrow riparian corridor with a coast live oak overstory. Each species of plantings (mulefat, blue elderberry, and mugwort) are present within the planting area but were indistinguishable from naturally occurring vegetation and were therefore not tallied.

HV-PLANT5: This planting area is composed of a mature mulefat thicket with an understory of creeping wildrye, and edges supporting yerba santa. Native plant cover is approximately 95 percent. Non-natives also occupying the understory also include summer mustard, tocalote, scarlet pimpernel (*Anagallis arvensis*), Italian thistle, (*Carduus pycnocephalus*), and milk thistle (*Silybum marianum*).

BIOLOGICAL FIELD SURVEY FORM

Job No.: 1202-0031	Date: Apr. 26, 2012	M	T	W	T	F	S	S
Client: The Boeing Company	Project: OF008 Plantings							

HV-PLANT6: This small planting area (measuring approximately 40 feet in length and 15 feet wide) supports at least five mulefat plantings, but is occupied mainly by non-native summer mustard. Native species along the margins include coyote brush and blue elderberry. This planting area is the least successful of all the areas, but also one of the smallest.

HV-PLANT7 & 8: These planting areas are conjoined; located in the western fork of the OF008 drainage, immediately upstream of the OF008 flume. The planting areas exhibited approximately 100 percent cover, due both to the presence of plantings including mulefat, blue elderberry and creeping wild rye, but also due to the presence of naturally colonized species (existing prior to and after planting activities) including laurel sumac, hairy-leaved ceanothus (*Ceanothus oliganthus*), and buckbrush (*Ceanothus cuneatus*).

HV-PLANT9: This planting area exhibits approximately 90 percent cover by combination of plantings and existing natural vegetation. A substantial number of mulefat plantings were tallied (at least 55), along with naturally occurring species including buckbrush, black sage, chamise (*Adenostoma fasciculatum*), coyote brush, and non-native summer mustard.

Photographs: Yes X No (All photos taken on April 26, 2012. Additional photos can be provided upon request).



Views of HVS-2A and HVS-3, respectively, with plantings mainly on left side and hydroseeding on the right side of each photo.



Views of HV-PLANT1 and HV-PLANT2, respectively, exhibiting colonization in remnant unpaved roadways.

BIOLOGICAL FIELD SURVEY FORM

Job No.: 1202-0031	Date: Apr. 26, 2012	M	T	W	T	F	S	S
Client: The Boeing Company	Project: OF008 Plantings							



Views of HV-PLANT3 and HV-PLANT5, respectively, of mugwort and mulefat-dominated thickets.

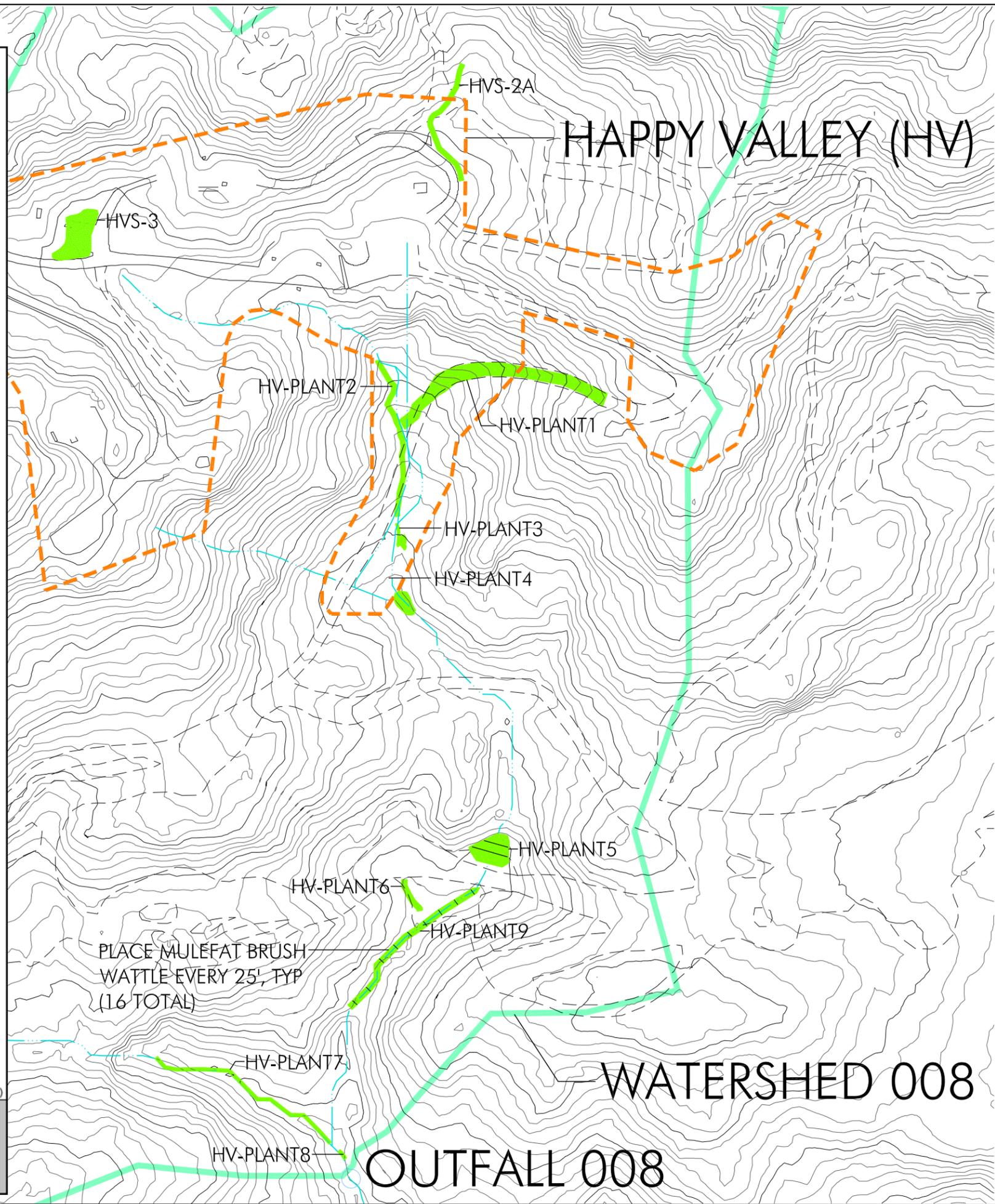


Views of HV-PLANT7 and HV-PLANT9, respectively, of mulefat colonization mixed with natural scrub regeneration.

HAPPY VALLEY PLANT LEGEND

Area Name	Estimated Area (sf)	Recommended Species	Recommended Quantity	Irrigation
HVS-2A	1092	<i>Bacchans pilularis</i>	0	Hard pipe from fire line Spray or Drip
		<i>Bacchans salicifolia</i>	127	
		<i>Sambucus mexicana</i>	4	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	100	
HVS-3		<i>Bacchans pilularis</i>	0	Hard pipe from fire line Spray or Drip
		<i>Bacchans salicifolia</i>	73	
		<i>Sambucus mexicana</i>	25	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	30	
HV-PLANT 1	2979	<i>Bacchans pilularis</i>	85	Hard pipe from fire line Spray or Drip
		<i>Bacchans salicifolia</i>	11	
		<i>Sambucus mexicana</i>	0	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	20	
HV-PLANT 2	1334	<i>Bacchans pilularis</i>	123	Hard pipe from fire line Spray
		<i>Bacchans salicifolia</i>	0	
		<i>Sambucus mexicana</i>	0	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	30	
HV-PLANT 3	222	<i>Bacchans pilularis</i>	0	Hard pipe from fire line Spray or Drip
		<i>Bacchans salicifolia</i>	0	
		<i>Sambucus mexicana</i>	4	
		<i>Artemisia douglasiana</i>	40	
		<i>Leymus triticoides</i>	0	
HV-PLANT 4	233	<i>Bacchans pilularis</i>	0	Hard pipe from ex. spray Spray or Drip
		<i>Bacchans salicifolia</i>	15	
		<i>Sambucus mexicana</i>	2	
		<i>Artemisia douglasiana</i>	10	
		<i>Leymus triticoides</i>	0	
HV-PLANT 5	2759	<i>Bacchans pilularis</i>	0	Hard pipe from ex. spray Drip
		<i>Bacchans salicifolia</i>	203	
		<i>Sambucus mexicana</i>	8	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	60	
HV-PLANT 6	330	<i>Bacchans pilularis</i>	0	Hard pipe from ex. spray Spray or Drip
		<i>Bacchans salicifolia</i>	22	
		<i>Sambucus mexicana</i>	0	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	0	
HV-PLANT 7	985	<i>Bacchans pilularis</i>	0	Hard pipe from ex. spray Spray or Drip
		<i>Bacchans salicifolia</i>	65	
		<i>Sambucus mexicana</i>	4	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	30	
HV-PLANT 8	50	<i>Bacchans pilularis</i>	0	Hard pipe from ex. spray Spray or Drip
		<i>Bacchans salicifolia</i>	3	
		<i>Sambucus mexicana</i>	0	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	0	
HV-PLANT 9	1904	<i>Bacchans pilularis</i>	0	Hard pipe from ex. spray Spray or Drip
		<i>Bacchans salicifolia</i>	125	
		<i>Sambucus mexicana</i>	0	
		<i>Artemisia douglasiana</i>	0	
		<i>Leymus triticoides</i>	0	
TOTAL				
		<i>Bacchans pilularis</i>	213	3.25"
		<i>Bacchans salicifolia</i>	649	4
		<i>Sambucus mexicana</i>	47	5
		<i>Artemisia douglasiana</i>	50	1.5
		<i>Leymus triticoides</i>	270	1
			1229	

ON CENTER SPACING (FT)



ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

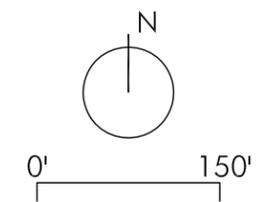
Boeing SSFL

Watershed 008

AS-BUILT

Figure 1

**Happy Valley
Containerized
Planting Areas**



LEGEND

- PLANTING AREA
- WATERSHED
- RFI BOUNDARY
- STREAMS
- MULEFAT WATTLES

Allison Ruotolo-Lo

From: Chris Dunn <cdunn@PADREINC.com>
Sent: Tuesday, September 04, 2012 4:26 PM
To: Arthur J Lenox; Gilbert L Fuentes; Andrew Payne
Subject: AP/STP bio survey results

Hi all, I completed the precon biosurvey today. You can expect a full report at the end of the project but in the meantime:

No sensitive reptiles, nesting birds or special status plants were observed. It's recommended that the largest elderberry trees that were protected in place last year be left alone again for wildlife habitat.

If feasible, further excavation beneath oak trees should be minimized, leaving large roots intact. If there is any source of backfill material (biofilter?), the excavations beneath the oak drip lines should be at least partially backfilled (even 6 inches will help). Tree impacts can be delayed so we may not immediately see any effects from the excavations. But providing a substrate for the trees to regenerate the small absorptive roots would be prudent.

The crew should be aware of the potential for legless lizard and horned lizard. They should keep a 5 gallon bucket with a few inches of soil and leaf litter on hand to place each animal in it, in the shade, until I can come onsite to document it and relocate it to suitable habitat.

Chris Dunn
Padre Associates, Inc.
Sent from my iPhone



ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

MEMORANDUM

October 1, 2012
Project No. 1202-1671

The Boeing Company
5800 Woolsey Canyon Road
Canoga Park, CA 91304

Attention: Mr. Art Lenox

Subject: Soil Excavation Beneath Oaks at NASA ISRA Areas AP/STP-1C-1 and AP/STP-1C-2

Dear Mr. Lenox:

Padre Associates, Inc. (Padre) is pleased to provide you with the following letter report documenting our findings during tree assessment activities conducted on September 12, 2012 at the subject Interim Source Removal Action (ISRA) areas, located at Santa Susana Field Laboratory. The assessment was performed as part of our established work scope to provide biological monitoring, and guidance when working in close proximity to coast live oak (*Quercus agrifolia*) trees. Coast live oak is protected by Section 8107.25 et seq. of the Ventura County Non-Coastal Zoning Ordinance (Tree Protection Regulations, or TPRs), which normally requires activities that will alter, fell or remove a protected tree to be done in accordance with the provisions set forth in these Sections. However, due to the location of the activity on Federal land (administered by the National Aeronautics and Space Administration, or NASA), the TPRs do not apply to the subject activity. Nonetheless, NASA has elected to follow the TPRs at the ISRA areas to the furthest extent feasible for the long-term preservation of these trees.

Based on our site observations, it is our professional recommendation that additional soil removal be curtailed in the excavation areas within the dripline of the oak trees located within or overhanging the two subject ISRA areas. Currently, it is evident that there are significant exposed roots and further depth of soil removal will not only expose roots, but also potentially cause instability of the major tree support structure. Continued root removal will cause a lack of absorptive transport of water and nutrients to the canopy branch and foliage structure, and thereby can cause the decline and potential demise of the trees. The presence of depressions around the base of certain trees may also result in excessive ponding of water beneath the trees, potentially introducing oak root fungus disease. Attached are example photographs of the existing site conditions beneath the tree canopies.

It is also our recommendation that a source of clean soil material be selected to provide backfill material for areas beneath the trees' canopies. Re-establishment of the original contours is ideal, but even the placement of at least 6 inches of soil will help to provide stability, provide a substrate for the regeneration of the trees' absorptive roots, reduce ground temperatures, reduce the potential for ponding, and restore habitat for silvery legless lizard (*Anniella pulchra pulchra*), a special-status fossorial (burrowing) reptile known to rarely occur beneath oak trees at SSFL.

Should you have any questions regarding our assessment results, please contact me at (805) 644-2220, ext. 12 or cdunn@padreinc.com.

Sincerely,

PADRE ASSOCIATES, INC.



Chris Dunn
Project Manager/Biologist
ISA Certified Arborist #WE9525-A

PHOTOGRAPHIC APPENDIX



Figure 1. Excavation area beneath oak trees located along the western margin of AP/STP-1C-1. View is toward the west.



Figure 2. Excavation area beneath oak trees located within the western section of AP/STP-1C-2. View is toward the east.



Figure 3. Excavation area beneath oak trees located within the middle section of AP/STP-1C-2. View is toward the south.

Allison Ruotolo-Lo

From: Chris Dunn <cdunn@PADREINC.com>
Sent: Thursday, February 14, 2013 4:39 PM
To: Andrew Payne; gilbert.l.fuentes@boeing.com; arthur.j.lenox@boeing.com
Subject: NASA ISRA ELV bio survey results

Here's a summary of our biological survey results for ELV.

February 13, 2013, 1230-1400, sunny, 70 deg. F

Work is planned for two focused areas within ELV-1C. CH2M Hill and MWH staff were onsite simultaneously flagging ELV-1D, so I surveyed it also. However, if work there is planned at a later date, a follow-up survey is recommended prior to start of work.

One excavation area (westernmost) at ELV-1C is bare of vegetation and covered with black viscous. Vegetation is present within the second excavation at ELV-1C and at ELV-1D, composed of mixed coastal sage scrub and chaparral. Native species included laurel sumac (*Malosma laurina*), yerba santa (*Ericameria crassifolia*), deerweed (*Acmispon glaber*), bush monkeyflower (*Mimulus aurantiacus*), California sagebrush (*Artemisia californica*), mulefat (*Baccharis salicifolia*), coyote brush (*Baccharis pilularis*), branching phacelia (*Phacelia ramosissima*), black sage (*Salvia mellifera*), blue elderberry (*Sambucus mexicana*), holly-leaved cherry (*Prunus ilicifolia*), chamise (*Adenostoma fasciculatus*), and California aster (*Corethrogyne filaginifolia*). Non-native species included fountaingrass (*Pennisetum setaceum*), red brome (*Bromus madritensis ssp. rubens*), totalote (*Centaurea melitensis*), slender wild oats (*Avena barbata*), summer mustard (*Hirschfeldia incana*), milk thistle (*Silybum marianum*), and tree tobacco (*Nicotiana glauca*). Rubble is interspersed within the vegetation, and sandstone rock outcrops and exposed bedrock are present in portions of the work area. No special-status plant species including Santa Susana tarplant (*Deinandra minthornii*) or Braunton's milkvetch (*Astragalus brauntonii*) were observed within the ISRA area. Santa Susana tarplant is present on nearby slopes within the helipad area (such as next to Bldg. 206), but would not be affected by project activities.

Wildlife species observed within the ISRA area or on adjacent slopes (i.e., within earshot) included California towhee, yellow-rumped warbler, Anna's hummingbird, common raven, western scrub jay, California thrasher, white-crowned sparrow, turkey vulture, spotted towhee, wrentit, Nuttall's woodpecker, woodrat sp. (scat, nesting material nearby), coyote (scat), white-tailed deer (tracks, scat), ground squirrel (burrows), and bobcat (tracks). No bird breeding or nesting activity was observed at or adjacent to the ISRA area.

Based on our survey findings, no sensitive biological issues are present that would preclude the start of work activities. Note, however that any delays of over a week (especially initial vegetation clearing) should likely require follow up survey(s).



ELV-1C excavation within ribbon boundary (beneath visqueen).



ELV-1C second excavation atop slope (within ribbon), and access route to ELV-1D.



ELV-1D excavation area (general limits of former detention pond).

Chris Dunn
Project Manager/Biologist

Padre Associates, Inc.
1861 Knoll Drive
Ventura, CA 93003
805.644.2220 x 12 (office)
805.644.2050 (fax)
805.813.0798 (cell)
cdunn@padreinc.com

BIOLOGICAL FIELD SURVEY FORM

Job No.: 1202-1672	Date(s): Apr. 25 & May 14, 2013	M	T	W	T	F	S	S
Client: The Boeing Company/ NASA (CH2MHill, R. Dean)	Project: ELV Asphalt Drainage Rehabilitation							
Location: SSFL NASA Area II	Weather: Sunny, ~75 deg. F							
Observer: Chris Dunn, Biologist/Certified Arborist WE-9525A 	Observation Period	Start: 1045	Stop: 1200					
<p>Start: 0800 Stop: 0900</p> <p>Site/Project Description:</p> <p>An asphalt drainage ditch below the south facing slope of ELV is proposed for rehabilitation. The 300-foot long (approximate) ditch was initially inspected by the project biologist and Randy Dean of CH2MHill. During the morning hours of April 25, 2013 and May 14, 2013, transects of opportunity were then walked through all vegetation types, and multiple vantage points were selected to view the presence or absence of wildlife activity (including any breeding/nesting bird activity), and special status plants or native trees along the drainage. If present, special-status plants located within or adjacent to the work areas (including access routes) were flagged with fluorescent pink ribbon to alert workers of their need to avoid impacts to these plants. It is anticipated that vegetation removal will be required along the drainage to provide a sufficient work area, and will likely require the removal of several small oak trees.</p>								
<p>Vegetation Types and/or Notable Plant Species:</p> <p>The subject area exhibits some evidence of past disturbances including the original construction of the drainage ditch, and a former unpaved access road that winds its way up to a former detention basin located at the ELV ISRA area and the Helipad. Vegetation has recolonized the entire area, including along the margins or through the cracks of the drainage ditch. Native species that are prevalent throughout the survey area included coyote brush (<i>Baccharis pilularis</i>), yerba santa (<i>Eriodictyon crassifolium</i>), mulefat (<i>Baccharis salicifolia</i>), black sage (<i>Salvia mellifera</i>), laurel sumac (<i>Malosma laurina</i>), branching phacelia (<i>Phacelia ramosissima</i>), telegraph weed (<i>Heterotheca grandiflora</i>), holly-leaved cherry (<i>Prunus ilicifolia</i>), California aster (<i>Corethrogyne filaginifolia</i>), poison oak (<i>Toxicodendron diversilobum</i>), blue elderberry (<i>Sambucus nigra</i>), California brickellbush (<i>Brickellia californica</i>), bush monkeyflower (<i>Mimulus aurantiacus</i>), white chaparral currant (<i>Ribes indecorum</i>), four-spot (<i>Clarkia purpurea ssp. quadrivulnera</i>), our lord's candle (<i>Hesperoyucca whipplei</i>), and telegraph weed (<i>Heterotheca grandiflora</i>). Coast live oak (<i>Quercus agrifolia</i>) trees are also present along both margins of the drainage. Non-native species are present mainly in the understory or gaps including riggut brome (<i>Bromus diandrus</i>), red brome (<i>Bromus madritensis ssp. rubens</i>), and yellow sweet clover (<i>Melilotus indicus</i>).</p> <p>No special-status plants including, but not limited to Santa Susana tarplant (<i>Deinandra minthornii</i>), a State Rare species, or Braunton's milkvetch (<i>Astragalus brauntonii</i>), a Federal Endangered species were observed onsite. Coast live oak is a County-protected tree, and it is our understanding that NASA will implement tree protections where feasible. Based on our assessment of the Site, it is our estimation that three (3) coast live oaks measuring 4 inches, 5 inches, and 3 inches in diameter at breast height, respectively will require removal to complete the proposed activity. Five (5) coast live oaks appear to be located in areas where they could be protected in place and measure 12 inches, 6 & 8 inches (multi-trunk), 3, 3, 3, & 3 inches (multi-trunk), 9 inches, and 2, 2, 2, & 2 inches (multi-trunk) in diameter at breast height.</p>								
<p>Wildlife Observations:</p> <p>Wildlife observed during one or both survey days included Anna's hummingbird, acorn woodpecker, spotted towhee, California towhee, California thrasher, canyon wren, oak titmouse, wren, house finch, American crow, bushtit, and western scrub jay. Lazuli bunting has also been observed in this area in the past. Bird activity was moderate, especially in adjacent areas (across the road in oak woodlands of AP/STP) but no active bird breeding or nesting was observed at the Site. Two abandoned (likely previous year's) nests, likely from scrub jay or a similar-sized bird were observed and removed. Reptile observations were limited to western fence lizard. No sensitive reptiles or amphibians known to occur at SSFL including coast horned lizard, silvery legless lizard, two-striped garter snake, western spadefoot, coast patch-nosed snake, or coastal western whiptail were observed within the survey area. Mammal observations were limited to dusky-footed woodrat (nest), but black-tailed deer frequently inhabit the oak woodland area across the road, but other mammals common to the region (e.g., coyote, cottontail, and ground squirrel) are expected to occur at the Site.</p>								

BIOLOGICAL FIELD SURVEY FORM

Job No.: 1202-1672	Date(s): Apr. 25 & May 14, 2013	M	<input checked="" type="checkbox"/>	W	<input checked="" type="checkbox"/>	F	S	S
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Client: The Boeing Company/ NASA (CH2MHill, R. Dean)	Project: ELV Asphalt Drainage Rehabilitation
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Applicable Regulatory Constraints:

1. Animal Species of Special Concern to the California Department of Fish and Wildlife [CDFW] (two species previously observed in the vicinity with similar habitat characteristics).
2. Animals listed on the CDFW Special Animals list (one species observed in vicinity with similar habitat characteristics).
3. Migratory Bird Treaty Act [MBTA] of 1918 (all of the bird species listed above are protected by the MBTA when nesting; typically from March 1 to August 15). No nesting bird activity was observed at the Site at this time.

Recommended Biological Resource Protection Strategies:

1. A special-status species placard display should be placed at the Site to remind workers of the potential presence of these species; or at a minimum, the placards should be kept with field crews and periodically reviewed during morning tailgate meetings.
2. Observation of any special-status reptiles or amphibians should be brought to the attention of a qualified biologist, who can properly capture, identify and document, and release the animals to suitable nearby habitat.
3. Observation of any nesting bird activities in vegetation or on the ground should be given ample space until a biologist can identify the bird species and determine an appropriate buffer.
4. Protection in place of as many coast live oak trees as feasible is recommended to stay consistent with conservation measures and the long-term restoration goals set forth for SSFL.

Photographs: Yes No .



Views of the overgrown ELV drainage ditch from its downstream and upstream ends, respectively.

Allison Ruotolo-Lo

From: Chris Dunn <cdunn@PADREINC.com>
Sent: Tuesday, June 25, 2013 5:17 PM
To: Andrew Payne; Arthur J Lenox; Gilbert L Fuentes
Subject: NASA ISRA (LOX, AP, ELV) Bio survey 062513

I surveyed the LOX sites, AP/STP go-back sites, and ELV sites (including the remnant access path from Service Area Road/Helipad Road intersection up to ELV-1D) today, and the only notable issue that would preclude the start of work at this time is the presence of a Cooper's hawk nest directly above the eastern tip of AP/STP 1C-1 (the orange-fenced area). Two juvenile Cooper's hawks were present part-time in the nest or in the surrounding trees. So, they've fledged the nest, but are technically not fully independent of the nest. Based on past, similar issues CDFW typically requires that no activities occur in close proximity to the nest so as to not disrupt normal activity by the fledglings. They looked almost ready to become independent and set out for new territory, so it shouldn't be more than a few weeks until it's ok to go in there, barring any other summer nesters in the area.

I recommend that we revisit the site in a couple or few weeks to see if they've fully left the nest before beginning work activities.

Also, LOX formerly had at least one tarplant (beneath coyote brush at LOX 1B-3) in past years, but it is now absent (assumed dead of natural causes, no evidence indicating otherwise). One could make the argument that a potential tarplant seedbank could still be present in the soil, but since it was only one straggler, this doesn't appear to be an issue to me.

Finally, AP/STP sites are beneath oak trees, so careful excavations to the shallowest acceptable depth are recommended.

Please forward this information onto whomever else you see fit.

Thanks,

Chris Dunn
Padre Associates, Inc.

Alexander Fischl

From: Chris Dunn <cdunn@PADREINC.com>
Sent: Wednesday, September 11, 2013 2:37 PM
To: Lenox, Arthur J; Andrew Payne; Fuentes, Gilbert L; Alexander Fischl
Subject: RE: NASA ISRA Bio Surveys

Hi all,

I completed a follow up survey of ELV (and possible access route up the hill from Helipad/Area II Road intersection) and AP/STP today. I didn't survey at LOX due to the exclusionary signage and there's not much to see there currently, but I can survey it if you provide any needed access clearance on Friday if need be.

No sensitive issues were observed today to preclude the start of work. The Cooper's hawk in the tree above AP/STP 1C-1 was inactive, and based on the timing no other breeding bird activity is anticipated. No tarplants are present in the work areas. Wildlife observed today included wrenit, Ca quail, lesser goldfinch, western scrub jay, Ca towhee, Anna's hummingbird, house finch, acorn woodpecker, spotted towhee, Ca thrasher, cottontail (scat and remains at a coyote's kill), ground squirrel (burrows), black-tailed deer (young adult buck at AP/STP 1-B), coyote (scat), bobcat (tracks), and western fence lizard.

Excavation at AP/STP 1C-1 beneath the oak canopy should follow past methods where the depth is limited to 1 foot if possible by handcrews only, and all large roots are protected in place.

It goes without saying, but the small oak trees along the margins of ELV-1C are worth preserving if possible for long term restoration efforts.

Please let me know if you have any questions

Chris Dunn

Padre Associates, Inc.

Allison Ruotolo-Lo

From: Chris Dunn <cdunn@PADREINC.com>
Sent: Monday, September 30, 2013 1:16 PM
To: arthur.j.lenox@boeing.com; Gruener, William R (william.r.gruener@boeing.com)
Subject: Ash Pile power line tree pruning
Attachments: IMG_1875after.JPG

Art,

Per Bill's direction, I monitored the pruning of two coast live oak trees at Ash Pile on Saturday to clear a 3-foot radius around a power line that terminates at the new water filtering tanks. The electrician's staff conducted the pruning in a manlift and was equipped with a brand new chainsaw. He took direction well as to which branches to cut and where so we could achieve the 3-foot clear radius around the wires but not cut too much. Removal of material from both trees' canopies was substantially less than 20 percent, and both trees are not expected to be affected by the pruning. The cut material was piled in the understory for wildlife habitat.

Thanks,

Chris Dunn
Project Manager/Biologist
ISA Certified Arborist WE-9525A

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