

**UNIVERSITY OF CALIFORNIA SANTA CRUZ, MARINE SCIENCE CAMPUS COASTAL
LONG RANGE DEVELOPMENT PLAN**

2014 ANNUAL REPORT

March 2015

1 Introduction

Pursuant to Section 8.8 of the Coastal Long Range Development Plan (CLRDP), this annual CLRDP report includes a cumulative and calendar-year summary of the compliance of development projects authorized under the CLRDP with the terms and conditions of their authorizations; a description of development excluded from the development review procedures in Sections 8.1.4, 8.2 and 8.4 of the CLRDP by virtue of Section 8.3; authorizations for emergency development pursuant to Section 8.10; enforcement of the provisions of the CLRDP pursuant to Section 8.9; annual monitoring reports required under the CLRDP; the status of CLRDP-required improvements and other University commitments; and any comments received on CLRDP implementation.

A record of the CLRDP annual report is maintained in the offices of UCSC Physical Planning & Construction and is available for public review by appointment. A copy of the annual report will be submitted to the Executive Director of the California Coastal Commission.

2 Project Compliance

This section summarizes the compliance of development projects that were authorized under the CLRDP in 2014 with the terms and conditions of their authorization, and of continuing obligations from authorizations in previous years.

NOID 7 (14-1), Mammal Pool Expansion and Renovation. Authorized on May 14, 2014. The Coastal Commission determined that the proposed development project is consistent with the CLRDP, with no conditions. The project includes a mitigation monitoring and reporting program that was adopted by the University in conjunction with project approval in March 2014. A copy of the mitigation monitoring checklist is included in Appendix C.

In 2014, the Campus continued to comply with continuing obligations from four projects that were authorized in previous years:

NOID 2 (10-1), Public Access to and within the Younger Lagoon Reserve. Authorized on March 12, 2010. The Coastal Commission determined that the proposed development project is consistent with the CLRDP, with no conditions. The project is being implemented on an ongoing basis. NOID 10-1 requires that the public have access to Younger Lagoon Reserve beach through controlled visits, and that a monitoring program be created and implemented to document effect on native flora and fauna within Younger Lagoon and its beach. A report of activities carried out under NOID 10-1 in 2013, including results of the monitoring program, is included in Appendix B.

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NOID 3 (10-2), Younger Lagoon Reserve Terrace Lands Phase 1A Restoration. Authorized on September 15, 2010. The Coastal Commission determined that the proposed development project is consistent with the CLRDP, with no conditions. The project is being implemented over a seven-year period. Activities carried out in 2014 under NOID 10-2 are described in Section 7.2, below.

NOID 5 (12-2), Public Coastal Access Overlooks. Authorized on August 10, 2012. The Coastal Commission determined that the proposed development is consistent with the CLRDP, with no conditions. Project construction began in October 2012 and was completed in March 2013, with the exception of interpretive panels to be placed at the overlooks, which will be installed in 2015. The project includes a mitigation monitoring and reporting program that was adopted by the University in conjunction with project approval in January 2011. A copy of the mitigation monitoring checklist is included in Appendix C.

NOID 6 (13-1), Coastal Biology Building and Associated Development, Sign Program, and Parking Program. Authorized on October 10, 2013. The Coastal Commission determined that the proposed development is consistent with the CLRDP, with the following conditions: 1) modifications to the design of fencing proposed for the utility and storage yards, for McAllister Way, and for Overlook E; 2) limitation of parking fees to no more than \$1.50 per hour on non-State holiday weekdays between 8:00 AM and 5:00 PM; and 3) revisions to the proposed design of parking signs. During 2013, the Campus completed the design of the proposed development and began the bidding process. The Campus submitted revised fencing plans to the Commission on July 10, 2014. Commission staff approved the revised fencing design on August 28, 2014. Construction is scheduled to begin in March 2015. The project includes a mitigation monitoring and reporting program that was adopted by the University in conjunction with project approval in January 2012. A copy of the mitigation monitoring checklist is included in Appendix C.

3 Development Excluded from Development Review Procedures

This section describes development undertaken in 2014 that is excluded from the development review procedures in CLRDP sections 8.1.4, 8.2., and 8.4 by virtue of Section 8.3.

In 2014, the University carried out a variety of small repair and maintenance activities. These projects did not result in an addition to, or enlargement or expansion of the facilities.

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4 Emergency Authorizations

This section describes development undertaken in 2014 pursuant to emergency authorizations by the UCSC Chancellor or the California Coastal Commission pursuant to CLRDP Section 8.10. No emergency authorizations were approved in 2014.

5 Enforcement

This section describes actions taken to enforce the provisions of the CLRDP and the Coastal Act which are enforceable pursuant to Chapter 9 of California Public Resources Code Division 20. No enforcement actions were taken in 2014.

6 CLRDP-Required Annual Monitoring Reports

The CLRDP requires the following annual monitoring reports:

- **Water Quality Report.** The annual water quality report is to be prepared following each storm season (typically post-April 15th) and the report completed by mid-summer. The annual water quality report for the 2013-14 storm season is presented in Appendix A of this document.
- **Resource Management Plan Reporting.** The Resource Management Plan (CLRDP Appendix A) requires the submission of annual reports of the results of monitoring activities provided for in the Specific Resource Plan (SRP) that will be prepared for each phase of habitat restoration. The third annual report, which covers monitoring activities carried out in FY2013-14, is presented in Appendix B of this document.

7 Status of University Commitments

This section summarizes the status of the capital improvements identified in CLRDP Chapter 9 and in other sections of the CLRDP, including measures to protect and enhance habitat, public access policies and procedures, and transportation demand management.

7.1 Capital Improvement Program

As a result of the unanticipated and unprecedented decline in revenue, and associated reductions in funding and staff time, over the past four years, the Campus has not been able to meet all of the schedule requirements of the CLRDP Capital Improvement Program. In March 2012, to comply with CLRDP Policy 1.2, which contains a provision that allows for relief of CLRDP requirements, the Campus notified Commission staff of the manner in which the University proposes to remedy the defaults and proposed a schedule for monitoring and reporting progress on correcting the deficiency. That schedule was discussed and agreed to with Commission staff. Table 1 summarizes the status of the capital improvements identified in CLRDP Chapter 9, including the revised schedule proposed by the Campus.

Table 1
Status of Capital Improvements Required by the CLRDP

Category	Improvement	Status
<i>Public access improvements</i>	Trails	
	<i>Group 1</i>	Not triggered. Included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	<i>Group 2</i>	Not triggered. Included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	<i>Group 3</i>	Not triggered. Included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	Overlooks	
	<i>Overlook A</i>	Construction completed in 2013, under NOID 5 (12-2).
	<i>Overlook B</i>	Completed in 2010, under NOID 09-1.
	<i>Overlook C</i>	Construction completed in 2013, under NOID 5 (12-2).
	<i>Overlook D</i>	Construction completed in

Category	Improvement	Status
		2013, under NOID 5 (12-2).
	<i>Overlook E</i>	Construction completed in 2013, under NOID 5 (12-2).
	<i>Overlook F</i>	Construction completed in 2013, under NOID 5 (12-2).
	Parking	
	<i>Lower terrace public coastal access</i>	Campus submitted a NOID to the Commission in March 2012. Based on subsequent discussions with Commission staff, this project is now included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	<i>Lower terrace dual use</i>	Campus submitted a NOID to the Commission in March 2012. Based on subsequent discussions with Commission staff, this project is now included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	<i>Middle terrace public coastal access</i>	Not triggered. Included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.

Category	Improvement	Status
	<i>Campus Entrance</i>	Not triggered. Included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	<i>Updated signs and information-public access parking</i>	New signs were installed in 2011 as part of the Outdoor Research Yard Expansion and Public Access Improvements Project (NOID-09-1). Additional signs will be installed in conjunction with the designation of lower terrace public coastal access parking spaces after the sign program is approved.
	<i>Parking program</i>	Campus submitted a NOID to the Commission in March 2012. Based on subsequent discussions with Commission staff, this project is now included in NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015 with installation of signs after the sign program is approved.
	<i>Identification of Access Facilities</i>	(CLRDP section 9.1.4) Informational signs are scattered throughout the site at public visitor destinations, showing public access trail map. Brochures about research activities, educational opportunities, planned events, and

Category	Improvement	Status
		participation opportunities are available at the Seymour Center entry area, the Seymour Center administrative office, and at the Long Marine Lab main administrative office.
<i>Habitat enhancements</i>	Natural areas restoration	See Section 7.2, below.
	Remove/restore parking area west of McAllister Way	The Campus plans to construct this improvement under NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
<i>Circulation Improvements</i>	Shaffer Rd. Improvements	Not triggered. The Campus plans to construct this improvement under NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	Realigned Main Campus Street	Not triggered. The Campus plans to construct this improvement under NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	Shaffer/Delaware Intersection	Not triggered. The Campus plans to construct this improvement under NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction

Category	Improvement	Status
		in spring 2015.
<i>Drainage System Improvements</i>	De Anza Mobile Home Park drainage pipe	Based on field visits by a civil engineer and wetland scientist, the Campus has determined that the drainage pipe from wetland W4 functions adequately and that this pipe does not need to be replaced.
	Outfall west of NOAA	The Campus plans to construct this improvement under NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.
	Middle terrace percolation trench and berm	The Campus plans to construct this improvement under NOID 6 (13-1), which was approved in October 2013. Campus plans to begin construction in spring 2015.

7.2 Habitat Enhancement and Protection

On July 24, 2008 the University of California Natural Reserve System (UCNRS) and UCSC Campus Administration signed an agreement incorporating the approximately 47 ac (19 ha) of natural areas outside of the development zones on the Marine Science Campus into the University of California Natural Reserve System (UCNRS) as part of the Younger Lagoon Reserve (YLR). The agreement outlines the commitment by the NRS and campus to comply with restoration, management, and research on all YLR lands.

The Chancellor of UCSC appointed a Scientific Advisory Committee (SAC) to guide the creation of a Specific Resource Plan (SRP) on January 30, 2009. During 2009, Reserve staff drafted an SRP for Phase 1 of the restoration and management of the Terrace Lands, in consultation with the SAC and other technical professionals. The Campus submitted a NOID for the SRP Phase 1A, which was authorized by the Coastal Commission in September 2010.

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Restoration activities that were initiated on the Younger Lagoon Reserve Terrace Lands in 2009 continued in 2014. This work was performed largely by undergraduate students and community volunteers. Reserve staff conducted weed patrols of the entire terrace, continued removing ice plant from the coastal bluffs, removed all Jubata grass and French Broom re-sprouts from the terrace, and removed all Cape Ivy re-sprouts from the west arm of the lagoon. In the summer and fall of 2014, Reserve staff collected seeds for restoration growing. These seeds were propagated at the UCSC Teaching Greenhouse in the fall and winter of 2014. With the assistance of hundreds of volunteers and student interns, Reserve staff continued to plant native seedlings in areas along the beach cliff formerly covered with ice plant and upland areas. Vegetation surveys for restoration compliance monitoring of planted areas on the Terrace Lands were conducted in the spring of 2014. The YLR annual report for FY2013-14 is included in this report as Appendix G.

7.3 Public Access Policies and Procedures

Consistent with the provisions of the CLRDP, the Marine Science Campus is open to the public during daylight hours. Access to the Marine Science Campus is free except that a fee is charged for admission to the Seymour Marine Discovery Center. The Center held six community free days in 2014. Organized tours offer controlled access to some research areas, research buildings, and parts of the lagoon portion of the Younger Lagoon Reserve; these areas are otherwise not open to the public. All parking on the campus during 2014 was free and on a first-come-first-serve basis. The Seymour Center is open seven days a week during July and August and six days a week during the rest of the year.

Supervised site tours of parts of Long Marine Lab, as well as the Seymour Center exhibit halls and outdoor areas are offered four times a day when the Seymour Center is open. Tours of marine mammal research areas are offered twice a month. The Seymour Center also offers a variety of field trips for K-12 school classes and community college groups, including hands-on lab activities.

Since 2010, the Reserve has offered 90-minute tours of the original Younger Lagoon Reserve twice a month. Access to other part of the Younger Lagoon Reserve, on the terrace lands, is not controlled at this time.

7.4 Transportation Demand Management

Santa Cruz Metropolitan Transit District (SMTD) UC Westside Route 20 bus provides hourly service to Delaware Avenue and Natural Bridges Drive weekdays from 7:30 a.m. until 8:30 p.m. (until 10:30 during the UCSC school terms), and weekends from 8:30 a.m. until 8:30 p.m.. Supplemental bus service is provided on weekdays during the UCSC school term to handle overload on this route. SMTD route 3 also serves the MSC with hourly service 7:10 p.m. to 6:10 p.m. to the west end of Delaware Avenue, adjacent to the campus entrance.

Through an agreement between the University and the SCMTD, students who display a valid UCSC ID card do not have to pay a fare to ride SCMTD buses. SCMTD service for students is funded through the Student Transit Fee. Faculty and staff may obtain a SCMTD bus pass for \$8.75 per month, or \$105 annually, which provides UCSC's Transportation and Parking Services

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(TAPS) with funding for payments to the SCMTD to accommodate faculty and staff transit ridership.

The Campus' Long Marine Lab Shuttle was discontinued in Fall 2009, as ridership levels continued to decline for the third year in a row. With a total ridership for 2008-09 of only 741 passengers, the cost of the shuttle was more than \$56 per ride, and the shuttle was determined not to be a cost effective means of reducing trips to the campus.

TAPS coordinates a vanpool program that is open to faculty, staff and students. Zimride, a Facebook-based application, provides ride matching (on a regular or occasional basis) to members of the UCSC community. TAPS also has several programs to support the use of bicycles as a means of transportation: classes on bicycle safety, free bicycle licensing, a no-interest bike loan program, an emergency-ride-home program, and bicycle maintenance and repair clinics on the main campus.

TAPS' website provides detailed information about all of the Campus' alternative transportation programs and links to the SCMTD website.

7.5 *Removal of Existing Non-Conforming Facilities*

The temporary small-scale desalinization research facility in Subarea #13 was converted into a fenced outdoor research yard under NOID 09-1, in 2010. The Campus plans to remove the existing non-conforming greenhouses in Subarea #6 and ground-level storage area in Subareas #6 and #7 under NOID 6 (13-1), which was approved in October 2013.

7.6 *CLRDP EIR Mitigation Monitoring Program*

The CLRDP EIR Annual Mitigation Monitoring Report is presented in Appendix C.

8 *Comments Received on CLRDP Implementation*

No comments on implementation of the CLRDP were received in 2014.

9 *Appendices*

Appendix A: Annual Water Quality Report

Appendix B: Younger Lagoon Reserve Annual Report

Appendix C: Annual Mitigation Monitoring Report

Appendix A

Annual Water Quality Report

UC SANTA CRUZ, COASTAL LONG RANGE DEVELOPMENT PLAN

2014 ANNUAL WATER QUALITY REPORT

March 2015

1 Introduction

As specified in Section B.6.3 of the UC Santa Cruz Coastal Long Range Development Plan (CLRDP), this annual water quality report includes: 1) the results of the Drainage Monitoring and Maintenance Program described in Fig. B.22 of the CLRDP; 2) the results of any water quality monitoring requirements emanating from individual development projects; 3) any monitoring or other related information applicable to other Campus discharges (such as NPDES requirements associated with seawater discharges); 4) recommendations for any modifications to Campus drainage system components that are necessary to achieve CLRDP water quality performance standards.

The annual water quality report is prepared following each storm season (typically post-April 15th) and the report completed by mid-summer to allow any necessary changes to be implemented prior to the next storm season (i.e., by October 15th). Annual water quality reports are maintained in the offices of UC Santa Cruz Physical Planning and Construction, and are available for public review and shall be made readily available to researchers investigating the performance of water quality “best management practices” (BMPs).

2 Drainage Monitoring and Maintenance Program

This section summarizes the results of the Drainage Monitoring and Maintenance Program, including the assessment of source control BMP efficacy and the required monitoring and maintenance for treatment BMPs. The Drainage Monitoring and Maintenance Program includes monitoring and maintenance requirements for source control BMPs and treatment BMPs.

2.1.1 Source Control BMPs

Table 1 summarizes the results of the Campus’ annual assessment of source control BMPs, as specified in Section B.6.1 of the CLRDP.

Table 1

Annual Assessment of Source Control BMPs

Minimum Performance Standard	Status
That the Campus is providing adequate and convenient means for the recycling/disposal of commercial and household hazardous wastes. The performance standard to be achieved is that all commercial and household hazardous wastes that can be recycled are being recycled, and that all such wastes that cannot be recycled are being properly disposed of.	Currently, the caretaker’s residence is the only residence on the Marine Science Campus. All campus employees who handle hazardous waste are required to receive hazardous waste training and to follow the hazardous waste handling procedures established by UCSC Environmental Health and Safety (EH&S). EH&S collects all hazardous wastes generated on the campus for proper disposal. EH&S maintains online recycling and disposal guidelines that help members of the campus community identify which materials can be

UCSC CLRDP, 2014 Annual Water Quality Report

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Minimum Performance Standard	Status
	recycled and which must be disposed of as hazardous waste. A recycling bin for used batteries is kept in the Center for Ocean Health mail room.
That less toxic alternatives to commercial and household hazardous chemicals (such as lubricants, pesticides, solvents, acids, alkalis and paints) are being used where possible, and that all such chemicals are appropriately stored and sparingly used. The performance standard to be achieved is that all commercial and household hazardous chemicals are stored in a manner designed to contain all spills, that information on less-toxic alternatives has been provided to potential Campus users, and that chemicals are used sparingly, per their intended application, and in a manner designed to minimize the potential for such chemicals to be applied outside target application areas.	The Campus' in-person hazardous waste training has been converted to a web based training accessed through the campus Learning Management System. Training topics include the UCSC Waste Management website, where training participants learn how to navigate the site, find and use the fact sheets and the waste minimization webpage, hazardous waste determination and classification guidelines, the online hazardous waste tracking system, a new recycling and disposal guide, and a link to the Green Alternatives Wizard, a database that provides information on alternatives to hazardous chemicals or processes.
That all roads, parking lots, and other paved surfaces are being vacuum swept with a regenerative-air sweeper designed to control litter, dust, dirt, and other potential pollutants to the maximum extent feasible. The performance standard to be achieved is that all paved surfaces are vacuum swept at least one time per month and that all regenerative-air sweepers used are maintained in good working order per the manufacture's recommendations.	The Campus began using a regenerative air sweeper in February 2014. Since that time, the roads and parking lots at the Marine Science have been swept once a month, with the exception of May 2014. Before February 2014, a broom sweeper was used.
That all landscaping uses native plants with low nutrient, water, and pesticide/rodenticide requirements. The performance standard to be achieved is that all Campus landscaping meets this criterion.	Landscaping consistent with this requirement was installed in conjunction with the improvements to Overlook B, which were implemented in 2010 under NOID 09-1. Areas disturbed for construction of the improvements to overlooks A, C, D, and E (NOID 5 [12-2]) were planted with native, low-water-use plants.
That the University is providing Marine Science Campus users with convenient recycling and yard waste programs, and that Campus users are fully utilizing the University's recycling and yard waste programs. The performance standard to be achieved is that 100 percent of recyclable materials are recycled and that 100 percent of yard wastes are mulched/reused.	Mixed recycling containers are staged at the Center for Ocean Health, Seymour Marine Discovery Center, the Boat Yard, the green house area and at the California Fish & Game Facility. All of these facilities also have centralized indoor office-paper recycling centers, generally in the copy rooms. Two cardboard dumpsters service the same group of facilities. Additionally, yard waste is put into cubic yard carts that are emptied into a large debris box that is green-wasted at the City Recycle Center. Finally, Physical Plant

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Minimum Performance Standard	Status
	provides a separate debris box for all Natural Reserve and Site Stewardship 'yard waste'.

2.1.2 Treatment BMPs

No treatment BMPs have been installed since the CLRDP was approved.

3 Project Water Quality Monitoring

This section describes the results of any individual water quality monitoring requirements emanating from individual development projects. There were no water quality monitoring requirements emanating from individual development projects in 2014.

4 Monitoring Applicable to Other Campus Discharges

This section describes monitoring or other related information applicable to other Campus discharges (such as NPDES requirements associated with seawater discharges). Discharges of seawater from the Campus are subject to the monitoring requirements of the General Permit for Discharges from Aquaculture and Aquariums (NPDES Permit No. CAG993003). A copy of the 2014 Annual Report and Fourth Quarter Monitoring Report is attached. For all four monitoring periods of 2014 the Long Marine Lab discharge was in full compliance in all aspects of the permit.

5 Recommendations

This section presents recommendations for any modifications to Campus drainage system components that are necessary to achieve CLRDP water quality performance standards. No new development projects were completed in 2014 and no drainage system components have been constructed under the CLRDP.

Attachment: Long Marine Laboratory Annual Report 2014, NPDES General Permit No.CAG993003, and Monitoring and Reporting Program No. R3-2013-041.



DIVISION OF PHYSICAL & BIOLOGICAL SCIENCES
OFFICE OF THE DEAN

SANTA CRUZ, CALIFORNIA, 95064

January 23, 2015

Sheila M. Soderberg, P.G.
DoD/NPDES Program Manager
Central Coast Water Board
895 Areovista Place, Suite 101
San Luis Obispo, CA 93401

Long Marine Laboratory
Annual Report 2014
General Permit No. CAG993003
Order No. R3-2013-0041

Dear Ms. Soderberg:

Please accept this letter and attachments in satisfaction of our Annual Report requirement for 2014 in accordance with the requirements of the above referenced General Permit and Order. Included is a one-page tabular summary of observations and sample analysis results by constituent for the individual quarters of the year. Also included for each sampling quarter are the laboratory quantitative chemical analysis reports and the Chain of Custody sheets for samples.

The following statements are intended to satisfy specific requirements of our permit for annual reporting:

For 2014 the chemical analyses of the sampled ocean discharge from Long Marine Lab indicated full compliance with the permit. No corrective actions are indicated.

Discharge flows from Long Marine Lab have been consistent for several years. We do not foresee any significant increase in discharge flows for 2015, further, we project that discharge flows in 2015 will be well within the capacity of our system.

The name of the laboratory that we used to analyze discharge samples is: Soil Control Lab, a division of Control Laboratories Inc., 42 Hangar Way, Watsonville, California 95076, an analytical laboratory approved by the State of California.

Chemical Usage: Hypochlorite solution in the form of household bleach is used for routine pool and tank cleaning on a weekly basis. In our marine mammal holding pools hypochlorite solution generated by electrolysis from seawater is added to re-circulating seawater to maintain a maximum residual of 0.5 ppm on a continuous basis. In both cases, as this chlorinated water is added to the discharge stream it is diluted significantly with non-chlorinated seawater effluent, and de-chlorinated with liquid sodium bisulfite solution when necessary to meet limits at the point of discharge to the ocean.

We certify that we have not added substances to the waste stream that are listed in Table B of the California Ocean Plan or 40 CFR Section 131.38 with the exception of residual chlorine as noted above.

Exotic Species: The NOAA Fisheries Laboratory, one of the partner agencies on the General Permit for the Long Marine Lab discharge, is holding sheepshead minnows (*Cyprinodon variegatus*), an Atlantic Ocean

species, derived from eggs that were imported under a California Department of Fish and Wildlife Standard Importation Permit, issued 12/13/2011, Permit No. 1920. These fish are held in a closed seawater system in the lab. The seawater from this system is discharged into a quarantine sump, treated with chlorine, chlorine neutralized, then passed through a UV sterilizer before entering the general seawater discharge. The facility was inspected by CDFW before and after construction of the closed holding and discharge system, and the discharge protocol was approved. This species is expected to remain at the NOAA facility until approximately Fall 2015, at which time the work with this species and the remaining fish are terminated.

Each of the three agencies that oversee seawater operations related to this discharge permit (UCSC Long Marine Lab, NOAA Fisheries Laboratory, and CDFW Marine Wildlife Center) have reviewed and/or updated their individual Best Management Practices Plans for 2015. These BMPs include operational protocols with regard to any substance that may enter the discharge stream.

In accordance with the Standard Provisions and Reporting Requirements, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision following a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my knowledge of the person(s) who manage the system, or those directly responsible for data gathering, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

This report is being transmitted via email. If you should have any questions regarding this report or about the Long Marine Laboratory seawater system/ocean discharge operations, please contact Steve Davenport, Managing Director of LML, at (831) 459-4771 or sldaven@ucsc.edu.

Respectfully submitted,



Paul Koch, Dean
UCSC Physical and Biological Sciences

Cc: Steve Davenport, Managing Director
UCSC Long Marine Laboratory

Steve Lindley, Director
NOAA Southwest Fisheries Science Center

Laird Henkel, Director
Calif. Dept. Fish and Wildlife, Marine Wildlife Center

Deirdre Whalen, Government and Community Relations Coordinator
NOAA Monterey Bay National Marine Sanctuary

LONG MARINE LABORATORY
ANNUAL REPORT SUMMARY
2014
General Permit No. CAG993003
Order No. R3-2013-0041

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Sample Collection/Observation Dates	March 18, 2014	June 26, 2014	Sept. 9, 2014	Nov. 17, 2014
Influent Analysis				
Temperature (degrees C)	15.0	16.0	18.0	15.5
pH Value (units)	7.7	8.1	8.0	8.0
Turbidity (NTU)	2.5	3.0	2.5	1.6
Total Suspended Solids (mg/L)	2.0	6.9	2.5	20.0
Effluent Analysis				
Temperature (degrees C)	14.0	16.0	17.5	16.0
pH Value (units)	7.8	7.9	7.9	7.9
Turbidity (NTU)	1.2	0.75	0.72	1.0
Total Suspended Solids (mg/L)	ND	ND	1.7	ND
Settleable Solids (mg/L)	ND	ND	ND	ND
Grease & Oil (mg/L)	ND	ND	ND	ND
Estimated Flow (MGD)	0.9	0.8	0.9	1.1
Receiving Water Observations (for the area 100' upcoast and downcoast of the discharge point)				
Floating or suspended matter	absent	absent	absent	absent
Discoloration	absent	absent	absent	absent
Visible films, sheens, coatings	absent	absent	absent	absent
Objectionable growths	absent	absent	absent	absent
Potential nuisance conditions	absent	absent	absent	absent

SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4030534
Reporting Date: April 3, 2014

Date Received: March 18, 2014
Project # / Name: None / LML Quarterly Ocean Discharge Monitoring
Sample Identification: Influent/ Grab, sampled 3/18/2014 2:20:00PM
Sampler Name / Co.: Randolph Skrovon / UCSC Long Marine Lab
Matrix: Seawater
Laboratory #: 4030534-01

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	7.7	pH Units	0.1	SM4500-H+ B	03/18/14	
Turbidity	2.5	NTU	0.10	SM 2130B	03/18/14	
Total Suspended Solids	2.0	mg/L	1.1	SM 2540D	03/20/14	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

42 HANGAR WAY
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UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4030534
Reporting Date: April 3, 2014

Date Received: March 18, 2014
Project # / Name: None / LML Quarterly Ocean Discharge Monitoring
Sample Identification: Effluent/ Grab, sampled 3/18/2014 2:25:00PM
Sampler Name / Co.: Randolph Skrovn / UCSC Long Marine Lab
Matrix: Seawater
Laboratory #: 4030534-02

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	7.8	pH Units	0.1	SM4500-H+ B	03/18/14	
Oil & Grease (total)	ND	mg/L	5.9	EPA 1664	03/31/14	
Turbidity	1.2	NTU	0.10	SM 2130B	03/18/14	
Total Settleable Solids	ND	mL/L	0.10	SM2540F	03/20/14	
Total Suspended Solids	ND	mg/L	1.3	SM 2540D	03/20/14	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

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UCSC Long Marine Lab
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Attn: Steve Davenport

Work Order #: 4030534
Reporting Date: April 3, 2014

*** DEFAULT GENERAL METHOD *** - Quality Control

Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch PC40328 - Default Prep GenChem

Blank (PC40328-BLK1)

Prepared & Analyzed: 31-Mar-14

Oil & Grease (total) ND 5.0 mg/L

Reference (PC40328-SRM1)

Prepared & Analyzed: 31-Mar-14

Oil & Grease (total) 36.30 5.0 mg/L 41.0 88.6 80-120

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4030534
Reporting Date: April 3, 2014

Classical Chemistry Parameters - Quality Control Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch PC40193 - Default Prep GenChem											
Duplicate (PC40193-Dup1)			Source: 4030535-01			Prepared & Analyzed: 18-Mar-14					
pH	7.63		0.1	pH Units		7.56			0.922	20	
Reference (PC40193-SRM1)			Prepared & Analyzed: 18-Mar-14								
pH	7.31		0.1	pH Units	7.31		100	80-120			
Batch PC40199 - Default Prep GenChem											
Blank (PC40199-BLK1)			Prepared & Analyzed: 18-Mar-14								
Turbidity	ND		0.10	NTU							
Duplicate (PC40199-Dup1)			Source: 4030494-01			Prepared & Analyzed: 18-Mar-14					
Turbidity	1.380		0.10	NTU		1.440			4.26	20	
Batch PC40216 - Default Prep GenChem											
Blank (PC40216-BLK1)			Prepared & Analyzed: 20-Mar-14								
Total Suspended Solids	ND		2.0	mg/L							
Duplicate (PC40216-Dup1)			Source: 4030616-02			Prepared & Analyzed: 20-Mar-14					
Total Suspended Solids	146.4		8.0	mg/L		125.9			15.0	20	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.

Mike Galloway

Soil Control Lab

42 Hangar Way : Watsonville, CA 95076
 Phone: (831) 724-5422
 Fax: (831) 724-3188

CHAIN-OF-CUSTODY

LML Quarterly Samples

4030534

Page 1 of 1

Client/Company Name: UCSC Long Marine Lab	Comments/Special Instructions: Sea water
Attn: Steve Davenport	
Address: 100 Shaffer Road	
Santa Cruz CA 95060	
Phone: (831) 459-4771	
Fax: (831) 459-3383	
E-mail: sldaven@ucsc.edu	
Project Name: LML Ocean Discharge Monitoring	Send Invoice To:
Project Number:	P.O. / Contract No:

Analyses Requested										Lab Use Only:		
TSS / Turbidity	pH	Settleable Solids	Oil and Grease							Storage Location:		
										Freezer #:		
											Refrigerator #:	
											Shelf #:	
											Sample Condition	

Lab Use Only ID Number	Client Sample Identification	Sample Information			Bottle or Container Information				TSS / Turbidity	pH	Settleable Solids	Oil and Grease			Sample Condition
		Sampling Date	Sampling Time	Matrix	Sample Preservative	Bottle Type	Bottle Size	No. of Bottles							
	influent/grab	3/12/14	14:20	Seawater	none	HDPE	250ml	1		X					
	influent/grab		14:20		none	HDPE	1 L	1	X					C1	
	effluent/grab		14:25		none	HDPE	1 L	1			X				
	effluent/grab				none	HDPE	1 L	1	X						
	effluent/grab				none	HDPE	250ml	1		X				C2	
	effluent/grab				H ₂ SO ₄	AG	1 L	1				X			

Sampler's Signature and Printed Name:

Relinquished By (Signature and Printed Name):	Date	Time	Transported By:	Received By (Signature and Printed Name):	Date:	Time:
<i>Randy Skovron</i> Randy Skovron	3/12/14	15:00	<i>JS</i>	<i>JURAN</i> JURAN USSIER	3/18/14	16:00

SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4060928
Reporting Date: July 13, 2014

Date Received: June 26, 2014
Project # / Name: None / LML Ocean Discharge Monitoring
Sample Identification: Influent / Grab, sampled 6/26/2014 1:40:00PM
Sampler Name / Co.: Randolph Skrovon / UCSC Long Marine Lab
Matrix: Water
Laboratory #: 4060928-01

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	8.1	pH Units	0.1	SM4500-H+ B	06/26/14	
Turbidity	3.0	NTU	0.10	SM 2130B	06/26/14	
Total Suspended Solids	6.9	mg/L	1.3	SM 2540D	07/03/14	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
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UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4060928
Reporting Date: July 13, 2014

Date Received: June 26, 2014
Project # / Name: None / LML Ocean Discharge Monitoring
Sample Identification: Effluent / Grab, sampled 6/26/2014 1:45:00PM
Sampler Name / Co.: Randolph Skrovon / UCSC Long Marine Lab
Matrix: Water
Laboratory #: 4060928-02

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	7.9	pH Units	0.1	SM4500-H+ B	06/26/14	
Oil & Grease (total)	ND	mg/L	4.7	EPA 1664	07/02/14	
Turbidity	0.75	NTU	0.10	SM 2130B	06/26/14	
Total Settleable Solids	ND	mL/L	0.10	SM2540F	06/27/14	
Total Suspended Solids	ND	mg/L	1.3	SM 2540D	07/03/14	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

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UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4060928
Reporting Date: July 13, 2014

*** DEFAULT GENERAL METHOD *** - Quality Control

Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch PG40006 - Default Prep GenChem

Blank (PG40006-BLK1)

Prepared & Analyzed: 02-Jul-14

Oil & Grease (total)	ND		5.0	mg/L							
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Reference (PG40006-SRM1)

Prepared & Analyzed: 02-Jul-14

Oil & Grease (total)	18.60		5.0	mg/L	41.0		45.4	80-120			
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RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

42 HANGAR WAY
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UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4060928
Reporting Date: July 13, 2014

Classical Chemistry Parameters - Quality Control Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch PF40270 - Default Prep GenChem											
Duplicate (PF40270-Dup1) Source: 4060890-01 Prepared & Analyzed: 26-Jun-14											
pH	8.15		0.1	pH Units		8.14			0.123	20	
Duplicate (PF40270-Dup2) Source: 4060936-01 Prepared & Analyzed: 26-Jun-14											
pH	7.83		0.1	pH Units		7.86			0.382	20	
Reference (PF40270-SRM1) Prepared & Analyzed: 26-Jun-14											
pH	6.33		0.1	pH Units	6.30		100	80-120			
Batch PF40276 - Default Prep GenChem											
Blank (PF40276-BLK1) Prepared & Analyzed: 26-Jun-14											
Turbidity	ND		0.10	NTU							
Duplicate (PF40276-Dup1) Source: 4060913-05 Prepared & Analyzed: 26-Jun-14											
Turbidity	3.770		0.10	NTU		3.540			6.29	20	
Batch PG40038 - Default Prep GenChem											
Blank (PG40038-BLK1) Prepared & Analyzed: 03-Jul-14											
Total Suspended Solids	ND		2.0	mg/L							
Duplicate (PG40038-Dup1) Source: 4070059-01 Prepared & Analyzed: 03-Jul-14											
Total Suspended Solids	59.84		8.2	mg/L		60.64			1.33	20	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.

Mike Galloway

Soil Control Lab

42 Hangar Way : Watsonville, CA 95076
 Phone: (831) 724-5422
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CHAIN-OF-CUSTODY

LML Quarterly Samples

4060928

Client/Company Name: UCSC Long Marine Lab		Comments/Special Instructions: <u>Sea water</u>
Attn: Steve Davenport		
Address: 100 Shaffer Road Santa Cruz CA 95060		
Phone: (831) 459-4771		
Fax: (831) 459-3383		
E-mail: sldaven@ucsc.edu		
Project Name: LML Ocean Discharge Monitoring		Send Invoice To:
Project Number:		P.O. / Contract No: PO488308

Analyses Requested										Lab Use Only:	
TSS/Turbidity	pH	Settleable Solids	Oil and Grease	<input type="checkbox"/>	Storage Location:						
				<input type="checkbox"/>	Freezer #:						
				<input type="checkbox"/>	Refrigerator #:						
				<input type="checkbox"/>	Shelf #:						
				<input type="checkbox"/>	Sample Condition						

Lab Use Only ID Number	Client Sample Identification	Sample Information			Bottle or Container Information				TSS/Turbidity	pH	Settleable Solids	Oil and Grease	Sample Condition
		Sampling Date	Sampling Time	Matrix	Sample Preservative	Bottle Type	Bottle Size	No. of Bottles					
201	influent/grab	6/26/14	13:40	Seawater	none	HDPE	250ml	1		X			
↓	influent/grab		13:40		none	HDPE	1 L	1	X				
02	effluent/grab		13:45		none	HDPE	1 L	1		X			
↓	effluent/grab				none	HDPE	1 L	1	X				
↓	effluent/grab				none	HDPE	250ml	1		X			
↓	effluent/grab				H ₂ SO ₄	AG	1 L	1			X		

Sampler's Signature and Printed Name:

Relinquished By (Signature and Printed Name):	Date	Time	Transported By:	Received By (Signature and Printed Name):	Date:	Time:
<i>Jefferson Randolph Skowron</i>	6/26/14	15:20	<i>JS</i>	<i>Yume Nagaoka</i> YUME NAGAOKA	6/26/14	1520

SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4090294
Reporting Date: September 23, 2014

Date Received: September 9, 2014
Project # / Name: None / LML Ocean Discharge Monitoring- Quarterly
Sample Identification: Influent/ Grab, sampled 9/9/2014 2:20:00PM
Sampler Name / Co.: Randolph Skrovon / UCSC Long Marine Lab
Matrix: Seawater
Laboratory #: 4090294-01

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	8.0	pH Units	0.1	SM4500-H+ B	09/09/14	
Turbidity	2.5	NTU	0.10	SM 2130B	09/09/14	
Total Suspended Solids	2.5	mg/L	1.2	SM 2540D	09/16/14	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
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UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4090294
Reporting Date: September 23, 2014

Date Received: September 9, 2014
Project # / Name: None / LML Ocean Discharge Monitoring- Quarterly
Sample Identification: Effluent/ Grab, sampled 9/9/2014 2:30:00PM
Sampler Name / Co.: Randolph Skrovn / UCSC Long Marine Lab
Matrix: Seawater
Laboratory #: 4090294-02

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	7.9	pH Units	0.1	SM4500-H+ B	09/09/14	
Oil & Grease (total)	ND	mg/L	5.9	EPA 1664	09/15/14	
Turbidity	0.72	NTU	0.10	SM 2130B	09/09/14	
Total Settleable Solids	ND	mL/L	0.10	SM2540F	09/09/14	
Total Suspended Solids	1.7	mg/L	1.4	SM 2540D	09/16/14	

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SOIL CONTROL LAB

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WATSONVILLE
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UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4090294
Reporting Date: September 23, 2014

*** DEFAULT GENERAL METHOD *** - Quality Control

Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch PI40128 - Default Prep GenChem

Blank (PI40128-BLK1)

Prepared & Analyzed: 15-Sep-14

Oil & Grease (total) ND 5.0 mg/L

Reference (PI40128-SRM1)

Prepared & Analyzed: 15-Sep-14

Oil & Grease (total) 37.70 5.0 mg/L 41.0 92.1 80-120

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4090294
Reporting Date: September 23, 2014

Classical Chemistry Parameters - Quality Control Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch PI40079 - Default Prep GenChem											
Duplicate (PI40079-Dup1)		Source: 4090292-01			Prepared & Analyzed: 09-Sep-14						
pH	8.06		0.1	pH Units		7.98			0.998	20	
Reference (PI40079-SRM1)		Prepared & Analyzed: 09-Sep-14									
pH	6.39		0.1	pH Units	6.30		101	80-120			
Batch PI40085 - Default Prep GenChem											
Blank (PI40085-BLK1)		Prepared & Analyzed: 09-Sep-14									
Turbidity	ND		0.10	NTU							
Duplicate (PI40085-Dup1)		Prepared & Analyzed: 09-Sep-14									
Turbidity	0.2700		0.10	NTU						20	
Batch PI40140 - Default Prep GenChem											
Blank (PI40140-BLK1)		Prepared & Analyzed: 16-Sep-14									
Total Suspended Solids	ND		2.0	mg/L							
Blank (PI40140-BLK2)		Prepared & Analyzed: 16-Sep-14									
Total Suspended Solids	ND		2.0	mg/L							
Duplicate (PI40140-Dup1)		Source: 4090401-01			Prepared & Analyzed: 16-Sep-14						
Total Suspended Solids	193.4		5.5	mg/L		204.4			5.52	20	
Duplicate (PI40140-Dup2)		Source: 4090436-02			Prepared & Analyzed: 16-Sep-14						
Total Suspended Solids	12.29		4.2	mg/L		12.90			4.88	20	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.

Mike Galloway

Soil Control Lab

42 Hangar Way : Watsonville, CA 95076
 Phone: (831) 724-5422
 Fax: (831) 724-3188

CHAIN-OF-CUSTODY

LML Quarterly Samples

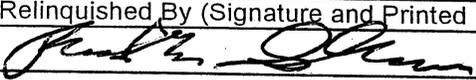
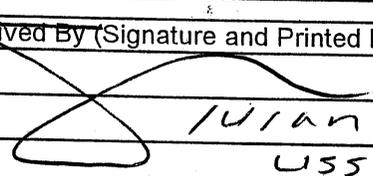
409029 Page 1 of 1

Client/Company Name: UCSC Long Marine Lab		Comments/Special Instructions: Sea water.
Attn: Steve Davenport		
Address: 100 Shaffer Road		
Santa Cruz CA 95060		
Phone: (831) 459-4771		
Fax: (831) 459-3383		
E-mail: sldaven@ucsc.edu		
Project Name: LML Ocean Discharge Monitoring		Send Invoice To:
Project Number:		P.O. / Contract No:

Analyses Requested										Lab Use Only		
TSS/Turbidity	PH	Settleable Solids	Oil and Grease							Storage Location:		
										Freezer #:		
											Refrigerator #:	
											Shelf #:	
											Sample Condition:	

Lab Use Only ID Number	Client Sample Identification	Sample Information			Bottle or Container Information				TSS/Turbidity	PH	Settleable Solids	Oil and Grease	Sample Condition
		Sampling Date	Sampling Time	Matrix	Sample Preservative	Bottle Type	Bottle Size	No. of Bottles					
C1	influent/grab	9/9/14	14:20	Seawater	none	HDPE	250ml	1		X			
	influent/grab		14:20		none	HDPE	1 L	1	X				
C2	effluent/grab		14:30		none	HDPE	1 L	1			X		
	effluent/grab				none	HDPE	1 L	1	X				
	effluent/grab				none	HDPE	250ml	1		X			
	effluent/grab				H ₂ SO ₄	AG	1 L	1				X	

Sampler's Signature and Printed Name:

Relinquished By (Signature and Printed Name): 	Date: 9/9/14	Time: 15:00	Transported By: 	Received By (Signature and Printed Name):  IAN USSIEV	Date: 9/10/14	Time: 16:00
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SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4110450
Reporting Date: December 3, 2014

Date Received: November 17, 2014
Project # / Name: None / LML Ocean Discharge Monitoring
Sample Identification: Influent / Grab, sampled 11/17/2014 1:45:00PM
Sampler Name / Co.: Randolph Skrovn / UCSC Long Marine Lab
Matrix: Water
Laboratory #: 4110450-01

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	8.0	pH Units	0.1	SM4500-H+ B	11/17/14	
Turbidity	1.6	NTU	0.10	SM 2130B	11/17/14	
Total Suspended Solids	20	mg/L	1.2	SM 2540D	11/21/14	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4110450
Reporting Date: December 3, 2014

Date Received: November 17, 2014
Project # / Name: None / LML Ocean Discharge Monitoring
Sample Identification: Effluent / Grab, sampled 11/17/2014 1:50:00PM
Sampler Name / Co.: Randolph Skrovon / UCSC Long Marine Lab
Matrix: Water
Laboratory #: 4110450-02

	<u>Results</u>	<u>Units</u>	<u>RL</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>	<u>Flags</u>
pH	7.9	pH Units	0.1	SM4500-H+ B	11/17/14	
Oil & Grease (total)	ND	mg/L	5.4	EPA 1664	11/26/14	
Turbidity	1.0	NTU	0.10	SM 2130B	11/17/14	
Total Settleable Solids	ND	mL/L	0.10	SM2540F	11/19/14	
Total Suspended Solids	ND	mg/L	1.3	SM 2540D	11/21/14	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

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100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4110450
Reporting Date: December 3, 2014

*** DEFAULT GENERAL METHOD *** - Quality Control

Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch PK40253 - Default Prep GenChem											
Blank (PK40253-BLK1)											
					Prepared: 25-Nov-14 Analyzed: 26-Nov-14						
Oil & Grease (total)	ND		5.0	mg/L							
Duplicate (PK40253-Dup1)											
					Source: 4110001-05		Prepared: 25-Nov-14 Analyzed: 26-Nov-14				
Oil & Grease (total)	2.273		5.7	mg/L		1.959			14.8	20	
Reference (PK40253-SRM1)											
					Prepared: 25-Nov-14 Analyzed: 26-Nov-14						
Oil & Grease (total)	37.00		5.0	mg/L	41.0		90.4	80-120			

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.



SOIL CONTROL LAB

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UCSC Long Marine Lab
100 Shaffer Rd
Santa Cruz, CA 95060
Attn: Steve Davenport

Work Order #: 4110450
Reporting Date: December 3, 2014

Classical Chemistry Parameters - Quality Control Soil Control Lab

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch PK40174 - Default Prep GenChem											
Duplicate (PK40174-Dup1)			Source: 4110450-01			Prepared & Analyzed: 17-Nov-14					
pH	7.94		0.1	pH Units		7.98			0.503	20	
Reference (PK40174-SRM1)			Prepared & Analyzed: 17-Nov-14								
pH	6.33		0.1	pH Units	6.30		100	80-120			
Batch PK40180 - Default Prep GenChem											
Blank (PK40180-BLK1)			Prepared & Analyzed: 17-Nov-14								
Turbidity	ND		0.10	NTU							
Duplicate (PK40180-Dup1)			Source: 4110437-16			Prepared & Analyzed: 17-Nov-14					
Turbidity	0.2500		0.10	NTU		0.2200			12.8	20	
Batch PK40226 - Default Prep GenChem											
Blank (PK40226-BLK1)			Prepared & Analyzed: 21-Nov-14								
Total Suspended Solids	ND		2.0	mg/L							
Duplicate (PK40226-Dup1)			Source: 4110525-01			Prepared & Analyzed: 21-Nov-14					
Total Suspended Solids	154.6		4.6	mg/L		145.4			6.12	20	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.

Mike Galloway

Soil Control Lab

42 Hangar Way : Watsonville, CA 95076
 Phone: (831) 724-5422
 Fax: (831) 724-3188

CHAIN-OF-CUSTODY

LML Quarterly Samples

4110450

Client/Company Name: UCSC Long Marine Lab		Comments/Special Instructions:	
Attn: Steve Davenport		Sea water	
Address: 100 Shaffer Road			
Santa Cruz CA 95060			
Phone: (831) 459-4771			
Fax: (831) 459-3383			
E-mail: sldaven@ucsc.edu		Send Invoice To:	
Project Name: LML Ocean Discharge Monitoring		P.O. / Contract No:	
Project Number:			

Analyses Requested							Lab Use Only:	
TSS/Turbidity	pH	Settleable Solids	Oil and Grease				Storage Location:	
							Freezer #:	
							Refrigerator #:	
							Shelf #:	
							Sample Condition	

Lab Use Only ID Number	Client Sample Identification	Sample Information			Bottle or Container Information				TSS/Turbidity	pH	Settleable Solids	Oil and Grease	Sample Condition
		Sampling Date	Sampling Time	Matrix	Sample Preservative	Bottle Type	Bottle Size	No. of Bottles					
-01	influent/grab	11/17/14	13:45	Seawater	none	HDPE	250ml	1		X			
↓	influent/grab	↓	13:45		none	HDPE	1 L	1	X				
-02	effluent/grab	↓	13:50		none	HDPE	1 L	1			X		
↓	effluent/grab	↓	↓		none	HDPE	1 L	1	X				
↓	effluent/grab	↓	↓		none	HDPE	250ml	1		X			
↓	effluent/grab	↓	↓		H ₂ SO ₄	AG	1 L	1				X	

Sampler's Signature and Printed Name:

Relinquished By (Signature and Printed Name):	Date:	Time:	Transported By:	Received By (Signature and Printed Name):	Date:	Time:
<i>Randy Stroman</i> Randy Stroman	11/17/14	15:37	<i>JD</i>	<i>Gene W. Lynch</i> Gene W. Lynch	11/17/14	15:35

Appendix B

Younger Lagoon Reserve Annual Report

(bound separately)

Appendix C

Annual Mitigation Monitoring Report

UC Santa Cruz Marine Science Campus CLRDP EIR 2014 Annual Mitigation Monitoring Report

Introduction

The California Environmental Quality Act (CEQA) requires that a Lead Agency establish a program to monitor or report on mitigation measures adopted as part of the environmental review process to avoid or reduce the severity and magnitude of potentially significant environmental impacts associated with project implementation. CEQA (Public Resources Code Section 21081.6 (a) (1)) requires that a mitigation monitoring or reporting program be adopted at the time that the agency determines to carry out a project for which an EIR has been prepared to ensure that mitigation measures identified in the EIR are implemented.

The Regents of the University of California (The Regents) approved the Coastal Long Range Development Plan (CLRDP) for the UC Santa Cruz Marine Science Campus and certified the Environmental Impact Report (EIR) in September 2004; a Mitigation Monitoring Program (MMP) for the CLRDP EIR was adopted at the same time. The CLRDP MMP, which is presented in Table 5-1 of the Final EIR, describes monitoring and reporting procedures, monitoring responsibilities, and monitoring schedules for mitigation measures identified in the EIR analysis of the environmental effects of the CLRDP, as well as the measures included in the CLRDP to avoid or minimize environmental effects. Table 5-1 is divided into two sections: Part A describes procedures for the EIR mitigation measures; Part B covers the CLRDP measures.

The MMP includes the following components:

Mitigation Measures: The mitigation measures in the MMP are taken verbatim from the Final EIR, and the numbers assigned the mitigation measures are the same as those presented in the Final EIR.

CLRDP Measures: Individual CLRDP policies and implementation measures in the MMP are taken verbatim from the CLRDP, and the numbers assigned the mitigation measures are the same as those presented in the CLRDP. Other CLRDP measures in the MMP, such as the Drainage Concept Plan, Resource Management Plan, and the Design Guidelines, are summarized.¹

¹ After The Regents certified the CLRDP EIR, approved the September 2004 draft of the CLRDP and adopted the MMP, minor changes were made to the text and numbering of some of the CLRDP measures included in the MMP. The title of Appendix B to the CLRDP, "Stormwater Concept Plan," was also changed to "Drainage Concept Plan." The Regents approved the final CLRDP, including these changes, in December 2008. Additional revisions to the CLRDP were made as part of CLRDP Amendment #1, which was approved by The Regents in January 2012 and by the Coastal Commission in October 2013. In this Annual Report, the text and numbering of the CLRDP measures are consistent with the December 2008 final CLRDP as revised by Amendment #1 and therefore may differ from the MMP as presented in the Final EIR. The Amendment #1 revisions are shown in strikeout/underline format in Table 1.

General versus Project-Specific Measures: The MMP specifies whether the mitigation measure or CLRDP element is a general Campus measure, which is implemented by the Campus on an ongoing basis, or a Project-Specific measure, which is triggered by and implemented in conjunction with the development of individual projects.

Mitigation Timing: Identifies the timing for implementation of each action.

Monitoring and Reporting Responsibility: Identifies the UCSC office responsible for undertaking the required action and monitoring the measure.

As indicated above, the measures included in the MMP are divided into two categories: *general campus measures*, which are implemented by the campus on an ongoing basis, and *project-specific measures*, which are implemented in conjunction with the development of individual campus construction projects. Examples of general campus mitigation measures are: 1) public access policies, and 2) the Campus' transportation demand management (TDM) program, which is designed to reduce the number of vehicle trips to the campus. Examples of project-specific mitigation measures are: 1) the protection of specific biotic resources or cultural resources during construction of a building, and 2) siting and design parameters for new development. In addition to project-specific measures identified in the CLRDP EIR, the mitigation monitoring program for a development project may also include mitigation measures identified in the project-level CEQA document, which apply only to that project.

Monitoring and Reporting Procedures

The responsibilities of mitigation implementation, monitoring and reporting extend to numerous UC Santa Cruz departments and offices. The unit director or department lead officer of the identified unit or department is directly responsible for ensuring that the responsible party complies with the mitigation. Physical Planning and Construction is responsible for the overall administration of the program and for assisting other campus staff with their responsibilities, to ensure that they understand their charge and implement the required measures accurately, completely, and on schedule.

In addition to overseeing the specific procedures identified in the following table for implementation of each mitigation measure, Physical Planning and Construction is responsible for preparing this Annual Mitigation Monitoring Report. The purpose of the Annual Mitigation Monitoring Report is to report on progress of implementation of general campus mitigation measures (that is, those measures that are not tied to specific development projects) and, for each project under development during the preceding period, to identify applicable mitigation measures and document the status of compliance for each project. The Annual Mitigation Monitoring Report is available for review by appointment at the office of Physical Planning and Construction on campus, is posted on the Campus' LRDP website (<http://lrpd.ucsc.edu/>), and is submitted to the Executive Director of the California Coastal Commission as part of the CLRDP Annual Report.

For each general campus measure, a representative of the responsible campus unit provides an annual status report to Physical Planning and Construction staff. For each project, a checklist is prepared for all CLRDP EIR and project-level mitigations applicable to the project. Reporting on the status of project-specific mitigations is the responsibility of each project manager, who updates the checklist on a quarterly basis.

The annual report also provides a description of activity undertaken by each responsible department relative to each mitigation measure and, if applicable, links to detailed reports or other supporting documentation of mitigation activity.

Summary of 2014 Mitigation Activities

General Campus Mitigation Measures

Table 1, *Status of General Campus Measures*, lists all of the general campus measures and describes their status in 2014.

Project Mitigation Monitoring

In 2014, the Campus implemented the mitigation monitoring programs for NOID 10-2, Specific Resource Plan Phase 1A; NOID 12-2, Coastal Access Overlooks; and NOID 13-1, Marine Science Campus Projects and Public Access Improvements. The annual mitigation monitoring reports for these three projects are attached.

SRP Phase 1A Mitigation Monitoring Program					Monitoring and Reporting Checklist						
Measure #	Measure Text	Monitoring and Reporting Procedure	Monitoring and Reporting Responsibility	Timing	2010 PM – Elizabeth Howard, Field Manager, YLR	2011 PM – Elizabeth Howard, Field Manager, YLR	2012 PM – Elizabeth Howard, Manager, YLR	2013 PM – Elizabeth Howard, Manager, YLR	2014 PM – Elizabeth Howard, Manager, YLR	2015	2016
CLRDP Policy 3.2	Protection and Restoration of Habitat Areas: The biological productivity and the quality of coastal waters, streams, and wetlands, appropriate to maintain the optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through among other means minimizing adverse effects of wastewater discharges, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural watercourses. Campus natural areas (i.e., areas outside of defined development zones) shall be protected, restored, enhanced, and managed as high-quality open space and natural habitat areas.	Implemented through development of this SRP and, for SRP, through implementation of MM 4.4-1, 4.4-2 and 4.5-1, below; reporting as described in specific mitigation measures, below.	PP&C	Prior to and during construction	NOID 10-2, The SRP, was approved by the CCC in September 2010. Protection and restoration activities on the Terrace Lands in 2010 include baseline monitoring, Priority 1 weed removal, seed collection, and native plantings.	Protection and restoration activities on the Terrace Lands in 2011 under the SRP include baseline monitoring, Priority 1, 2 and 3 weed removal/control, seed collection, and native plantings.	Protection and restoration activities on the Terrace Lands in 2012 under the SRP include compliance monitoring, Priority 1, 2 and 3 weed removal/control, seed collection, and native plantings.	Protection and restoration activities on the Terrace Lands in 2013 under the SRP include compliance monitoring, Priority 1, 2 and 3 weed removal/control, seed collection, and native plantings.	Protection and restoration activities on the Terrace Lands in 2014 under the SRP include compliance monitoring, Priority 1, 2 and 3 weed removal/control, seed collection, and native plantings.		
CLRDP MM 4.4-1	CA Red-legged Frog: For all projects proposed in the upper terrace under the CLRDP, the University will implement the following: A preconstruction survey for CRLF will be conducted of all areas proposed for grading and construction by a qualified biologist, approved by the USFWS. If CRLF are observed, grading activities shall be postponed and USFWS shall be consulted to determine appropriate actions to avoid impact. Consultation with the USFWS will result in either a determination of the need to obtain a permit or in the identification of measures to avoid take of the individual(s). The biological monitor shall also conduct meetings with the contractor(s) and other key construction personnel to describe the importance of the species, the need to restrict work to designated areas, and to discuss procedures for avoiding harm or harassment of wildlife encountered during construction.	Conduct survey. Document results. If CRLF are observed, consult with USFWS. Conduct meetings with contractor(s) and construction personnel. Include mitigation specifications in construction contract.	PP&C	Prior to construction, of projects in upper terrace Prior to construction, if CRLF are observed Before beginning construction	The campus conducted annual fire break mowing along the southern and eastern perimeter of the upper terrace two times in 2010. USFWS was consulted prior to the mow and supported the campus approach to mowing, which required a staff member to walk the area prior to mowing in order to check for wildlife. If a frog (any kind) was seen the staff member was to contact Gage Dayton, or another permitted biologist, to determine whether the frog is a CRLF. No frogs of any kind were observed prior to mowing. The same protocol was followed for mowing elsewhere on the reserve and for soil scraping of five experimental restoration plots on the	The campus conducted annual fire break mowing along the southern and eastern perimeter of the upper terrace two times in 2011. Staff followed the mowing protocol developed with USFWS in 2010. This protocol requires a staff member to walk the area prior to mowing in order to check for wildlife. If a frog (any kind) was seen the staff member was to contact Gage Dayton, or another permitted biologist, to determine whether the frog is a CRLF. No frogs of any kind were observed prior to mowing. The same protocol was followed for mowing elsewhere on the reserve.	The campus conducted annual fire break mowing along the southern and eastern perimeter of the upper terrace two times in 2012. Staff followed the mowing protocol developed with USFWS in 2010. This protocol requires that a staff member walk the area prior to mowing in order to check for wildlife. If a frog (any kind) was seen the staff member was to contact Gage Dayton, or another permitted biologist, to determine whether the frog is a CRLF. No frogs of any kind were observed prior to mowing. The same protocol was followed for mowing elsewhere on the reserve.	The campus conducted annual fire break mowing along the southern and eastern perimeter of the upper terrace two times in 2013. Staff followed the mowing protocol developed with USFWS in 2010. This protocol requires that a staff member walk the area prior to mowing in order to check for wildlife. If a frog (any kind) was seen the staff member was to contact Gage Dayton, or another permitted biologist, to determine whether the frog is a CRLF. No frogs of any kind were observed prior to mowing. The same protocol was followed for mowing elsewhere on the reserve.	The campus conducted annual fire break mowing along the southern and eastern perimeter of the upper terrace two times in 2014. Staff followed the mowing protocol developed with USFWS in 2010. This protocol requires that a staff member walk the area prior to mowing in order to check for wildlife. If a frog (any kind) was seen the staff member was to contact Gage Dayton, or another permitted biologist, to determine whether the frog is a CRLF. No frogs of any kind were		

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist

Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
Agricultural Resources					
CLRDP EIR General Mitigation Measure 4.2-1	<ul style="list-style-type: none"> UCSC will install a four-foot-high landscaped fence along the Younger Ranch property line that will extend from the bend in the existing access road, northward along the property line. The fence will be sited and constructed to have a uniform gap of 16 inches between a smooth wire defining the bottom of the fence and the ground. This will assure that wildlife passage can continue to occur through the fence. UCSC will install tree and shrub landscaping approximately 25 feet inside the fence (to minimize shading effects on Younger Ranch crops), consisting of an indigenous, drought-resistant mosaic of mid-level shrubs and taller trees to help dissipate dust generation from the west. Tree and shrub choices will be made in conjunction with the landscape architect experienced in the use of native plants and vegetation. Trees and shrubs will be selected for non-invasive character. Native blackberries are recommended, as they would serve as an access barrier. UCSC will install the fence and landscaping prior to groundbreaking of any CLRDP project components. 	Consult with adjacent land owner on fence design and ensure that fence is installed as required.	PP&C AND YLR Manager	Prior to groundbreaking for Overlooks construction	Work Complete by Grounds Services
Air Quality					
CLRDP EIR Project Specific Mitigation Measure 4.3-1	<p>The University shall require construction contractors to implement a dust abatement program to reduce the contribution of project construction to local respirable particulate matter concentrations. Elements of this program shall include the following as appropriate for each project:</p> <ul style="list-style-type: none"> Water all active construction areas at least twice daily. Frequency shall be based on the type of operation, soil, and wind exposure. Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). Pave, apply water two times daily, or apply non-toxic soil stabilizers to all unpaved access roads, parking areas, and construction staging areas. Sweep daily with water sweepers any paved access roads, parking areas, and staging areas at construction sites. Sweep streets daily with water sweepers if visible soil material is carried onto adjacent public streets. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas or previously graded areas left inactive for ten days or more. Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.). Limit traffic speeds on unpaved roads to 15 miles per hour. 	<p>Select measures appropriate to Overlooks Project and include in construction contract specifications.</p> <p>Monitor throughout construction to verify implementation.</p>	PM PM	Prior to issuance of contract Throughout construction	Part of contract documents and contractor performed throughout contract. Section 01500, 1.13.

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist					
Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
Biological Resources					
CLRDP IM 3.2.11	CRLF Protection. Surveys for California red-legged frog shall be conducted prior to authorization of any development project within 100 meters of an identified wetland resource. All authorized development shall include construction and post-construction safe passage and other mitigation measures (e.g., barriers along development perimeters) as appropriate.	CRLF survey conducted and reported in this IS Additional identification and exclusion measures set forth in BIO-2, below	PP&C/ Biologist	Prior to project approval	Performed prior to project approval.
CLRDP IM 3.2.12	USFWS Consultation Required. Development project authorizations shall include either (1) evidence of authorization by the U.S. Fish and Wildlife Service, including but not limited to a Habitat Conservation Plan/incidental take permit; or (2) evidence from the USFWS that no authorization is required.	Consult with USFWS Include recommended CRLF avoidance/protection measures in project and implement during construction and/or obtain Incidental Take permit as necessary	PP&C PP&C/ PM	Prior to project approval During construction	Performed prior to work and throughout construction. Concurrence letter from USFWS dated Sept. 23, 2010.
CLRDP IM 3.2.14	Non-Invasive Native Plant Species Required. All landscaping and vegetation on the Campus (including restoration and enhancement plantings, screening vegetation, storm water system plantings, ornamental plantings, and all other plant material) shall be limited to non-invasive native plant species that are appropriate to the habitat and region and that are grown from seeds or vegetative materials obtained from local natural habitats so as to protect the genetic makeup of natural populations. Horticultural varieties shall not be used. Except for the planting of Monterey cypress, only locally collected seed, cuttings, and/or other propagules shall be used for landscaping. If feasible, materials should be collected from coastal habitats that are located within approximately one mile of the Campus and seaward of Highway 1 similar habitats along the coast of western Santa Cruz county and southern San Mateo County (first and lower reaches of the second marine terraces). ¹	Ensure that Overlooks Project construction contract specifies that project will include only native plantings as specified. Monitor landscaping work to ensure that plantings are acquired and used as specified	PM PM	Prior to issuing construction contract During landscape planting and restoration	Specification included in contract documents and contractor collaborated with UCNRS staff during construction.
CLRDP IM 3.3.1	Pre-development Evaluation of Wetland Conditions. An evaluation of the development area shall be conducted prior to each development project. The evaluation shall include any changed site conditions that could affect wetland values protected by this CLRDP. A wetland evaluation shall be completed in the proposed development area (i.e., the proposed development footprint and a surrounding 200-foot buffer area) in consultation with the Executive Director, using the Coastal Act 30121 wetland definition. To the extent wetland areas are identified during this process that are not already designated Resource Protection on Figure 5.2, the Resource Protection designation shall be applied to the newly identified wetland area and uses and development limited in accordance with that designation (see Section 5.2.2, Resource Protection). For any newly identified wetland area, an appropriate buffer shall be established, based upon site-specific conditions in accordance with Implementation Measure 3.2.9.	Study carried out in summer 2010 as required. No further monitoring needed.			
CLRDP IM 3.4.3	Noise Intrusion into YLR. YLR shall not be exposed to noise generated by human activity on the terrace portion of the	See Noise section, below			

¹ Changes suggested by YLR Field Manager

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist					
Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
	Marine Science Campus in excess of 60 dBA CNEL, as measured at the boundary of the YLR. For the purposes of this measure, "dBA CNEL" means a 24-hour energy equivalent level derived from a variety of single noise events, with weighting factors of 5 and 10 dBA applied to the evening (7pm to 10pm) and nighttime (10pm to 7am) periods, respectively, to allow for the greater sensitivity to noise during these hours.				
CLRDP IM 3.4.4	Pre-development Evaluation of ESHA Conditions. An evaluation of the development area shall be conducted prior to each development project. The evaluation shall include changed site conditions that may affect ESHA values and new information that was not known at the time of the original ESHA determination. To the extent ESHA areas are identified during this process that are not already designated Resource Protection on Figure 5.2, the Resource Protection designation shall be applied to the newly identified ESHA and uses and development limited in accordance with that designation (see section 5.2.2, Resource Protection). For any newly identified ESHA area, an appropriate buffer shall be established, based on site-specific biological evaluation, and designated as Resource Protection Buffer.	Study carried out as required in summer 2010. No further monitoring needed.			
CLRDP IM 4.3.1	Visual Intrusion into YLR. Development adjacent to YLR shall be sited and designed so that activity and direct light will not be visible from within YLR.	Ensure that final design for Overlooks D and E maximizes topographic and vegetal screening	PM	Prior to approval of final design	Design was reviewed prior to finalization and screening was incorporated
CLRDP IM 4.3.2	Visual Intrusion into Terrace ESHA and Other Areas Outside of Development Zones. Development shall be sited and designed so that activity and direct light that may be visible from outside of development zones is limited to the maximum extent feasible, and so that any activity and/or direct light that is unavoidably visible is minimized in its intensity. In determining the measures needed to limit visual intrusion to the maximum extent feasible, the University shall consult with the manager of Younger Lagoon Reserve and the California Department of Fish and Game.	Ensure that final design of Overlook A maximizes vegetal screening from terrace ESHA W5; consult with CDFG and YLR Manager to determine whether additional screening is needed; include additional screening as needed	PM	Prior to approval of final design	Design was reviewed prior to finalization and design was approved by UCNRS staff.
Overlooks Project-Specific Mitigation Measure BIO-1	<p>A qualified botanist will conduct a focused plant survey for special-status plant species on and within 100 feet of all areas of ground disturbance during the spring-summer blooming period immediately prior to the construction period. If no special-status plant species are observed during the focused survey, no additional mitigation is necessary.</p> <p>If any special status plants are observed on any of the project sites, the biologist will map and quantify the population will be and a suitable buffer zone will be established based on species requirements, proximity to the work area, and other site-specific factors. The identified population or individuals will be protected during construction by minor footprint modification, exclusion fencing or other protective measures.</p> <p>If protection of the sensitive areas in this manner would preclude construction, and the population therefore cannot be</p>	<p>Ensure that survey is conducted as specified.</p> <p>Delineate and avoid/ protect plants as specified</p> <p>If avoidance is infeasible, consult with CDFG/ USFWS and/ or CCC to identify</p>	<p>PP&C PM/ Botanist</p> <p>PM/ Botanist</p> <p>PP&C PM / Botanist</p>		Work area was surveyed by UCNRS staff and confirmed not special-status plants would be impacted

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist

Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
	<p>avoided by the project, a qualified botanist will quantify impacts to the population, and the campus will consult with regulatory agencies (California Coastal Commission, California Department of Fish and Game, and/or U.S. Fish and Wildlife Service, as appropriate) for guidance, and additional measures, such as transplanting, or seed or plant start collection and cultivation for restoration in a protected area, will be identified and implemented to ensure that the special status plant population is preserved.</p>	<p>additional mitigation measures, such as restoration. Implement the additional measures.</p>			
<p>Overlooks Project-Specific Mitigation Measure BIO-2 (modifies CLRDP EIR Project-Specific MM 4.4-1)</p>	<p>For Overlook sites D and E, the University will implement the following:</p> <ul style="list-style-type: none"> • Prior to commencement of project activities, a qualified biologist will conduct a training session for all construction personnel. Such training will include: a description of the California red-legged frog and its habitat; the general requirements of the Endangered Species Act and avoidance of ESA penalties, the boundaries within which construction will be accomplished; and the specific measures to be implemented in conjunction with the Overlooks project to avoid take CRLF during construction. Each individual that will be working at the project site must undergo this training prior to beginning work at the project site. • Ground disturbing work will be limited to the period from April 15 through October 15. If work must continue after October 15, the Campus will request from USFWS, in writing, an extension, to conduct further ground-disturbing work. • Immediately prior to vegetation removal for each of the construction sites, a qualified biologist approved by the USFWS will perform a preconstruction survey for CRLF. Vegetation will be hand cleared, with a hand-carried chainsaw as needed, to a height of 3-6 inches, and the biologist will then repeat the pre-construction survey before any additional ground disturbance at each of the sites. If during pre-construction survey or during the course of construction CRLF are observed in an area that would be impacted, irrespective of whether the biologist is present, work will cease and the Campus will notify USFWS within one working day. Neither the biologist nor any other individual will handle a CRLF. • If no CRLF are identified within the work areas during preconstruction surveys, these areas will be surrounded with 3-foot-high, high grade nylon silt fencing with pre-attached wooden stakes every eight feet, buried 6 inches, to temporarily exclude frogs from the construction site. A cover-board (4 by 4-foot 1/2-inch square of plywood) shall be placed at approximately 100-foot intervals outside the exclusion fence, to provide predator protection for small animals that encounter the fence. Each cover-board shall be elevated approximately two inches using two attached six- 	<p>Provide training as specified</p> <p>Ensure CRLF training, biological monitoring coordination, stop work and avoidance requirements included in construction contract specifications</p> <p>Schedule construction as specified and include schedule restrictions in project specifications..</p> <p>Conduct surveys as specified and monitor vegetation removal</p> <p>If CRLF detected, consult with USFWS to determine appropriate actions</p> <p>Ensure that contractor installs exclusion fencing and coverboards and maintains throughout construction</p>	<p>PP&C/ PM/ Biologist</p> <p>PM</p> <p>PP&C/ PM</p> <p>Biologist/ PM</p> <p>PP&C/ Biologist/ PM</p> <p>PM/ Biologist</p>		<p>Work was performed by qualified biologists throughout construction and documented in biological monitoring report dated Feb. 2, 2013.</p>

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist

Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
	<p>inch wooden blocks. The elevated edge of each cover-board shall be placed flush against the outside of the exclusion fence. The cover-boards will be labeled with signage to ensure they are not disturbed and each shall be regularly inspected by the biological monitor.</p> <ul style="list-style-type: none"> • Prior to work activities each morning, the qualified biologist will inspect the integrity of the exclusion fencing and survey around and under construction equipment, materials stockpiles and other work area for CRLF. If no CRLF are observed, work may proceed. • Prior to or during construction, if a CRLF, or a frog believed to be a CRLF, is observed at an area that would be affected, work will cease and the qualified biologist will be notified immediately. Work in that area will cease and the animal will be avoided until it has safely left the area of its own accord. In addition, USFWS will be informed of the observation. • All trash will be removed from the site daily to avoid attracting potential predators to the site. • Additional avoidance, monitoring or other measures will be carried out if recommended by USFWS during any subsequent consultation. 	<p>Biologist to conduct inspections as specified</p> <p>Include requirement in project specifications. If frog observed, stop work, protect and observe CRLF, consult with USFWS as specified</p> <p>Include provision in construction contract specification and inspect regularly for compliance</p> <p>Consult with USFWS in event of discovery and impose additional requirements on project if recommended..</p>	<p>PM/ Biologist</p> <p>PM/ Biologist</p> <p>PP&C PM</p> <p>PP&C PM and Biologist</p>		
<p>Overlooks Project-Specific Mitigation Measure BIO-3</p>	<p>30 to 60 days prior to the start of construction, a biologist will conduct a pre-construction survey for woodrats. The survey will cover of all areas that will be subject to disturbance in the Overlook D and Overlook E development areas. If no active woodrat houses are found at the Overlook E site, no further mitigation is necessary at that location, as the area is small and the potential for undetected nests is limited.</p> <p>Irrespective of whether a nest is found at the Overlook D site during the initial survey, a biological monitor will be present during hand-removal of vegetation at this site, and will direct crews to avoid any houses discovered in the dense cover.</p> <p>If active woodrat houses are found and they can be avoided, an exclusion zone shall be erected, using a temporary fence that does not inhibit the natural movements of wildlife (such as steel T-posts and a single strand of yellow rope or similar materials).</p> <p>If woodrats will be affected by construction and relocation is necessary, biologist and campus will contact CDFG for approval to live-trap and relocate individuals and create one artificial house for each one lost.</p>	<p>Ensure that survey of development footprint is conducted as specified, for sites D and E. I</p> <p>Include woodrat protection measures in construction contract specifications</p> <p>Ensure that biologist is present during hand removal of vegetation to identify nests and alert crews to avoid</p> <p>If nests can be protected in place, ensure exclusion fencing is erected and nests protected throughout construction at Overlook D site.</p> <p>Conduct CDFG consultation as required and live trap and relocate individuals as specified</p>	<p>PM/ Biologist</p> <p>PM</p> <p>PM/ Biologist</p> <p>PM/ Biologist</p> <p>PP&C/ PM/ Biologist</p>		<p>Work was performed by qualified biologists throughout construction and documented in biological monitoring report dated Feb. 2, 2013.</p>
<p>Overlooks Project-Specific Mitigation Measure</p>	<p>UCSC shall ensure that construction activities avoid disturbing nests of raptors special status and non-listed native birds. <u>If feasible, project construction will be scheduled to occur outside of the nesting season.</u></p>	<p>Schedule construction outside of nesting season if feasible.</p> <p>Include potential buffering restrictions in</p>	<p>PM</p> <p>PM</p>	<p>During project schedule planning</p> <p>Prior to issuing</p>	<p>Work was scheduled outside nesting season</p>

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist

Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
BIO-4 (modifies CLRDP Project-Specific Mitigation Measure 4.4-2 to include all native nesting birds)	<p>If ground-disturbing activities are scheduled to occur during the breeding season (February 1 through August 31), the following measures are required <u>will be implemented</u> to avoid potential adverse effects on nesting special-status raptors and other birds:</p> <p>A qualified wildlife biologist will conduct preconstruction surveys of all potential nesting habitat <u>within 300 feet of each work area, within 14 days prior to the start of construction at each site.</u> For burrowing owls, such surveys will follow the most recent CDFG Burrowing Owl Survey Protocol and Mitigation Guidelines.</p> <p>If active <u>avian raptor</u> nests are found during preconstruction surveys, <u>the project biologist will consult with the California Department of Fish and Game (CDFG) to determine an appropriate buffer radius based on site conditions and species potentially affected, and a no-disturbance buffer acceptable in size to CDFG will be created around active raptor nests and nests to protect nesting adults and their young from construction disturbance of any other special-status birds during the breeding season, and maintained until it is determined the project biologist determines that all young have fledged.</u></p> <p>Raptor or other Bird nests initiated during construction are presumed to be unaffected, and no buffer is necessary. However, the “take” of any individuals will be prohibited.</p> <p>If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction/restoration period, no further mitigation is required. Trees and shrubs that have been determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed.</p>	<p>construction contract specifications</p> <p>Conduct survey. Document results.</p> <p>If active nests are found, consult with qualified biologist and CDFG to establish size of no-disturbance buffer.</p> <p>Establish, protect and maintain buffer</p>	<p>PM/ Biologist</p> <p>PM/ Biologist</p> <p>PM, biologist</p>	<p>construction contract</p> <p>At least 14 days prior to construction</p> <p>Before beginning construction</p> <p>From pre-construction, throughout construction until nests are vacated</p>	
Cultural Resources					
CLRDP IM 3.9.1	<p>Cultural Resources Construction Monitoring: Should archaeological and/or paleontological resources be encountered during any construction on the Marine Science Campus, all activity that could damage or destroy these resources shall be temporarily suspended until qualified archaeologist/ paleontologist and Native American representatives have examined the site and mitigation measures have been developed that address and proportionately offset the impacts of the project on archaeological and/or paleontological resources. Development shall incorporate measures to address issues and impacts identified through any archaeologist/ paleontologist and/ or Native American consultation.</p>	<p>Include in construction contract specifications the requirement that work be suspended if archaeological resources are disclosed.</p> <p>In the event of a discovery, contract with qualified archaeologist/ Native American consultant/ paleontologist to develop and implement appropriate mitigation measures.</p>	<p>PM</p> <p>PP&C</p>	<p>Before issuing contract</p> <p>Immediately upon a discovery</p>	<p>Included in contract documents. No discovery during construction. Section 01100, 1.02A.</p>
CLRDP EIR Project-Specific Mitigation Measure 4.5-1	<p>Human Remains: If human remains are discovered during the construction of a development project under the CLRDP, the University and/or its employees shall notify the Santa Cruz County Coroner’s Office immediately. Upon determination by the County Coroner that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission, pursuant to subdivision (c) of Section 7050.5 of</p>	<p>Include requirement in construction contract specifications to notify UCSC upon construction discovery of suspected human bone.</p> <p>Contact archaeologist and County Coroner in the event of discovery of suspected human bone. Contact</p>	<p>PP&C PM</p> <p>PP&C PM</p>	<p>Before issuing construction contract</p> <p>Throughout construction</p>	<p>Included in contract documents. Section 01100, 1.02B.</p>

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist

Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
	the Health and Safety Code, and the County Coordinator of Indian Affairs and appropriate Native American consultation shall be conducted, as outlined by PRC 5097.98. Implementation Measure 3.9.1, Construction Monitoring, as identified in the CLRDP, shall also apply. UCSC will be responsible for implementing this mitigation measure.	California Native American Heritage Commission and conduct Native American consultation if Coroner determines the remains are Native American.			
Hazardous Materials					
CLRDP IM 3.10.1	Use, Containment and Cleanup of Hazardous Materials. The University, through the Office of Environmental Health and Safety, will manage the use, and in the event of spillage, the containment and cleanup of, hazardous materials and petroleum on the UCSC Marine Science Campus in compliance with federal and state regulations related to the storage, disposal, and transportation of hazardous substances.	Specify USCS hazardous materials handling, protection and cleanup provisions in construction contract Monitor implementation during construction	PM PM	Prior to issuing construction contract Throughout construction	Included in contract documents. No hazardous materials observed. Section 01100, 1.03.
Hydrology and Water Quality					
CLRDP IM 7.1.1	Management of Stormwater and Other Runoff. The stormwater and other runoff drainage system on the Marine Science Campus shall be sited and designed using a combination of good site planning, source control, and filtration/treatment best management practices (including engineered storm water treatment systems) to achieve water quality objectives, as detailed in the Drainage Concept Plan (Appendix B). Low Impact Development (LID) BMP strategies and techniques shall be used in all system design (e.g., maximizing infiltration in BMP design, reducing the hydraulic connectivity of impervious surfaces, etc.). The drainage system shall be designed to filter and treat (i.e., to remove typical and expected urban runoff pollutants) all site runoff prior to its use for on-site habitat enhancement, infiltration, and/or landscape irrigation, and/or prior to its discharge otherwise. The drainage system shall be sized to accommodate the volume of runoff produced from all applied water (such as for irrigation) and from each and every storm and/or precipitation event up to and including the 85th percentile 24-hour runoff event for volume-based BMPs. Drainage shall be directed to vegetated stormwater basins through vegetated filter strips and swales to further improve water quality prior to its discharge to receiving areas. The drainage system for equipment/vehicle use areas (i.e., parking lots, maintenance and laydown areas, etc.) shall also include engineered treatment systems and/or equivalent systems designed to filter and treat contaminants expected to be present in the runoff relating to the specific type of equipment/vehicle use.	Confirm that project specifications include LID elements and BMP measures as noted in project description	PM	Prior to issuing construction contract	Project included storm water runoff and site infiltration elements.
CLRDP IM 7.1.13	Permeable Hardscape. Hardscape development (such as roads, parking areas, paths, patios, etc.), where appropriate for water quality protection purposes, shall include permeable materials (e.g., permeable pavement/concrete, turfblock, etc.) to maximize infiltration. At a minimum, all parking areas shall be surfaced with porous/permeable materials.	Specify the use of permeable materials for platform and trail surfacing in construction contract specifications	PM	Prior to issuing construction contract	Permeable material was used.
Noise					

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist

Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
CLRDP EIR Project-Specific Mitigation Measure 4.11-4	<p>Prior to the initiation of construction, the University shall approve a construction noise mitigation program including but not limited to the following:</p> <ul style="list-style-type: none"> • The University shall require that construction activities be limited to a schedule that minimizes disruption to noise-sensitive uses on the project site and in the vicinity through implementation of the following: <ul style="list-style-type: none"> ○ Construction activities during daytime and evening hours (7:00 AM to 10:00 PM) shall not occur within 150 feet of sensitive receptors, when feasible. Construction activities within 500 feet of sensitive receptors activities shall not occur during nighttime hours (10:00 PM to 7:00 AM). ○ Whenever possible, academic and administrative staff, as well as residents who will be subject to construction noise, shall be informed one week before the start of each construction project. ○ Loud construction activity as described above within 150 feet of an academic or residential use shall, to the extent feasible, be scheduled during holidays, spring break, or summer break. • To reduce noise impacts from construction, the University shall require that construction contractors muffle or otherwise control noise from construction equipment through implementation of the measures below. The effectiveness of these measures is quantified in Table 4.11-4 above. <ul style="list-style-type: none"> ○ Internal combustion engines used for any purpose at the construction sites shall be equipped with a muffler of a type recommended by the manufacturer. ○ Equipment used for construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds, wherever feasible); ○ Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. Such mufflers can lower noise levels from the exhaust as much as 10 dBA. External jackets on the tools themselves shall be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures such as using drilling equipment rather than impact equipment shall be implemented whenever feasible. ○ Stationary noise sources shall be located as far from sensitive receptors as feasible. If they must be located near sensitive receptors, they shall be muffled to the extent feasible and/or, where practicable, enclosed 	<p>Include requirement for approved noise mitigation program, with relevant specifications below at minimum, in construction contract specifications</p> <p>Monitor construction to ensure that specifications are implemented</p>	<p>PM</p> <p>PM</p>	<p>Prior to issuing construction contract</p> <p>Throughout construction</p>	<p>Construction documents included the requirements of noise mitigations and low noise equipment and the contractor maintained that equipment throughout the construction. Section 01500, 1.11B.</p>

Public Coastal Access Overlooks Project: Mitigation Monitoring Checklist

Measure #	Measure Text	Monitoring Procedure	Monitoring and Reporting Responsibility	Timing	Implementation (describe how and when measure was implemented, list relevant documentation in project file)
	<p>within temporary sheds.</p> <ul style="list-style-type: none"> The University shall require that a temporary wooden wall be placed around construction activity areas that are within 150 feet of sensitive receptors to provide additional noise attenuation, where feasible. The wall should impede the direct line of site between the noise sources and sensitive receptors. The University shall require that construction-related material haul trips access the campus via Natural Bridges Drive and Delaware Avenue in order to minimize noise exposure to residential land uses. The University shall identify potential noise impacts related to construction of long-term projects proposed under the CLRDP, and develop project-specific noise mitigation measures as may be necessary. The University shall take into account the location of the five campus facilities that will have been developed in the near-term as well as off-campus developments nearby. The analysis shall also take into account the sequence in which long-term projects are to be constructed and shall identify appropriate mitigation, as may be required. These future facilities may be sensitive receptors or may act as barriers to noise approaching other sensitive receptors. 				
Overlooks Project-Specific Mitigation NOIS-1	<p>The least noisy construction equipment capable of carrying out the required work will be used for brush clearing, grading and excavation necessary for construction of overlooks A, D and E. Smaller and efficiently-muffled equipment will be used whenever feasible. In addition, work shall be done in a fashion that minimizes the number of times noisy equipment must be started up and the duration of operation of noisy construction equipment.</p>	<p>Contract specifications will include requirements for contractor to identify least noisy equipment in his bid and to operate it as specified in the mitigation measure.</p> <p>Campus inspector will confirm that specified equipment is used and that its use is minimized to the extent possible.</p>	<p>PP&C and PM</p> <p>PM</p>	<p>Prior to contract award and throughout construction.</p>	<p>Construction documents included the requirements of noise mitigations and low noise equipment and the contractor maintained that equipment throughout the construction. Section 01500, 1.11B.</p>

SRP Phase 1A Mitigation Monitoring Program					Monitoring and Reporting Checklist						
Measure #	Measure Text	Monitoring and Reporting Procedure	Monitoring and Reporting Responsibility	Timing	2010 PM – Elizabeth Howard, Field Manager, YLR	2011 PM – Elizabeth Howard, Field Manager, YLR	2012 PM – Elizabeth Howard, Manager, YLR	2013 PM – Elizabeth Howard, Manager, YLR	2014 PM – Elizabeth Howard, Manager, YLR	2015	2016
					lower terrace. (20'x20' plots, scraped 2-3" with tractor mounted blade).				observed prior to mowing. The same protocol was followed for mowing elsewhere on the reserve.		
CLRDP MM 4.4-2	<p>Nesting Birds: UCSC shall ensure that construction activities avoid disturbing nests of raptors (and other special-status birds). If ground-disturbing activities are scheduled to occur during the breeding season (February 1 through August 31), the following measures are required to avoid potential adverse effects on nesting special-status raptors and other birds:</p> <p>A qualified wildlife biologist will conduct preconstruction surveys of all potential nesting habitat. For burrowing owls, such surveys will follow the most recent CDFG Burrowing Owl Survey Protocol and Mitigation Guidelines.¹</p> <p>If active raptor nests are found during preconstruction surveys, a no-disturbance buffer acceptable in size to CDFG will be created around active raptor nests and nests of any other special-status birds during the breeding season, and maintained until it is determined that all young have fledged. Raptor or other bird nests initiated during construction are presumed to be unaffected, and no buffer is necessary. However, the "take" of any individuals will be prohibited.</p> <p>If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction/restoration period, no further mitigation is required. Trees and shrubs that have been determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed.</p>	<p>Conduct survey. Document results.</p> <p>Create no-disturbance buffer in consultation with qualified biologist. Include mitigation specifications in construction contract.</p>	PP&C	<p>Before beginning construction on each project</p> <p>Before beginning construction, if active raptor nests are found</p>	<p>Scraping of the experimental restoration plots was performed outside the breeding season. No other construction was performed during 2010.</p>	<p>Summer mowing of a restoration area on the south east side of the lower terrace was conducted in June 2011.</p> <p>A survey of the area for nesting birds was performed by Gage Dayton and Elizabeth Howard immediately prior to mowing. No nests (active or inactive) were found prior to mowing.</p> <p>Mechanical trenching (using a Ditch Witch walk behind trencher) of a fence line in order to facilitate the installation of low-key chicken wire fencing to protect restoration plantings and experimental plots from herbivory and trampling was performed on August 17, 2011. No other construction was performed during 2011.</p> <p>A survey of the area for nesting birds was performed by Gage Dayton and Elizabeth Howard immediately prior to trenching. No nests (active or inactive) were found prior to</p>	<p>Summer mowing of a restoration area on the south east side of the lower terrace was conducted in May 2012.</p> <p>A survey of the area for nesting birds was performed by Younger Lagoon Reserve staff members Tim Brown and Ori Chafe immediately prior to mowing. No nests (active or inactive) were found prior to mowing.</p> <p>No ground-disturbing activities occurred during the breeding season.</p>	<p>Summer mowing of restoration areas in the middle and lower terrace was conducted in 2013.</p> <p>A survey of the area for nesting birds was performed by Younger Lagoon Reserve staff member Tim Brown immediately prior to mowing. No nests (active or inactive) were found prior to mowing.</p> <p>No ground-disturbing activities occurred during the breeding season.</p>	<p>Summer mowing of restoration areas in the middle and lower terrace was conducted in 2014.</p> <p>A survey of the area for nesting birds was performed by Younger Lagoon Reserve staff member Tim Brown immediately prior to mowing. No nests (active or inactive) were found prior to mowing.</p> <p>No ground-disturbing activities occurred during the breeding season.</p>		

¹ California Department of Fish and Game, *Staff Report on Burrowing Owl Mitigation*, The Resources Agency, October 17, 1995.

SRP Phase 1A Mitigation Monitoring Program					Monitoring and Reporting Checklist						
Measure #	Measure Text	Monitoring and Reporting Procedure	Monitoring and Reporting Responsibility	Timing	2010 PM – Elizabeth Howard, Field Manager, YLR	2011 PM – Elizabeth Howard, Field Manager, YLR	2012 PM – Elizabeth Howard, Manager, YLR	2013 PM – Elizabeth Howard, Manager, YLR	2014 PM – Elizabeth Howard, Manager, YLR	2015	2016
						mechanical trenching.					
CLRDP MM 4.5-1	Human Remains: If human remains are discovered during the construction of a development project under the CLRDP, the University and/or its employees shall notify the Santa Cruz County Coroner's Office immediately. Upon determination by the County Coroner that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission, pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and the County Coordinator of Indian Affairs and appropriate Native American consultation shall be conducted, as outlined by PRC 5097.98. Implementation Measure 3.9.1, Construction Monitoring, as identified in the CLRDP, shall also apply. UCSC will be responsible for implementing this mitigation measure.	Include in construction contract the requirement that the University be notified if suspected human bone is discovered. Contact archaeologist and County Coroner in the event of discovery of suspected human bone. Contact California Native American Heritage Commission and conduct Native American consultation if Coroner determines the remains are Native American.	PP&C	Before beginning construction During construction	The mechanical scraping of the experimental restoration plots was carried out by UCSC Ground Services. No human remains were discovered during 2010.	The mechanical trenching was carried out by UCSC Ground Services. No human remains were discovered during 2011.	No human remains were discovered during 2012.	No human remains were discovered during 2013.	No human remains were discovered during 2014.		
CLRDP IM 3.9.1	Cultural Resources Construction Monitoring: Should archaeological and/or paleontological resources be encountered during any construction on the Marine Science Campus, all activity that could damage or destroy these resources shall be temporarily suspended until qualified archaeologist/paleontologists and Native American representatives have examined the site and mitigation measures have been developed that address and proportionately offset the impacts of the project on archaeological and/or paleontological resources. Development shall incorporate measures to address issues and impacts identified through any archaeologist/paleontologist and/or Native American consultation.	Include in construction contract the requirement that work be suspended if archaeological resources are disclosed. Contract with qualified archaeologist to develop appropriate mitigation measures.	PP&C	Before beginning construction If archaeological resources are disclosed	The mechanical scraping of the experimental restoration plots was carried out by UCSC Ground Services. No archaeological or paleontological resources were discovered during 2010.	The mechanical trenching was carried out by UCSC Ground Services. No archaeological or paleontological resources were discovered during 2011.	No archaeological or paleontological resources were discovered during 2012.	No archaeological or paleontological resources were discovered during 2013.	No archaeological or paleontological resources were discovered during 2014.		
CLRDP IM 3.10.1	Use, Containment and Cleanup of Hazardous Materials. The University, through the Office of Environmental Health and Safety, will manage the use, and in the event of spillage, the containment and cleanup of, hazardous materials and petroleum on the UCSC Marine Science Campus in compliance with federal and state regulations related to the storage, disposal, and transportation of hazardous substances.	For UC entities, continue to implement UCSC Environmental Health and Safety programs involving oversight of individual units' compliance efforts and advising on improvements in procedures related to storage, disposal, and transportation of hazardous substances.; document activity of relevant EH&S programs	UCSC EH&S	Ongoing, frequency varies with the type and quantity of hazardous materials; document annually	As part of the Younger Lagoon Natural Reserve Restoration effort, herbicide (Round Up Pro) was applied to five 20' x 20' experimental plots in 2010. The application was done by a Grounds Department Employee trained in herbicide use working under the campus' IPC Applicator's License. Younger Lagoon Natural Reserve staff conducted	As part of the Younger Lagoon Natural Reserve Restoration effort, herbicide (Glyphosate Pro) was applied to several restoration areas on the lower terrace in 2011. The applications were done by Grounds Department Employees and UCSC Natural Reserves Staff trained in herbicide use working under the campus' IPC Applicator's License.	As part of the Younger Lagoon Natural Reserve Restoration effort, herbicide (Glyphosate Pro) was applied to several restoration areas on the lower terrace in 2012. The applications were done by Grounds Services Employees and UCSC Natural Reserves Staff trained in herbicide use working under the campus' IPC Applicator's License.	As part of the Younger Lagoon Natural Reserve Restoration effort, herbicide (Glyphosate Pro) was applied to several restoration areas on the lower and middle terrace in 2013. The applications were done by Grounds Services Employees and UCSC Natural Reserves Staff trained in herbicide use working under the campus' IPC Applicator's License.	As part of the Younger Lagoon Natural Reserve Restoration effort, herbicide (Glyphosate Pro) was applied to several restoration areas on the lower and middle terrace in 2014. The applications were done by Grounds Services Employees and UCSC Natural Reserves Staff		

SRP Phase 1A Mitigation Monitoring Program					Monitoring and Reporting Checklist						
Measure #	Measure Text	Monitoring and Reporting Procedure	Monitoring and Reporting Responsibility	Timing	2010 PM – Elizabeth Howard, Field Manager, YLR	2011 PM – Elizabeth Howard, Field Manager, YLR	2012 PM – Elizabeth Howard, Manager, YLR	2013 PM – Elizabeth Howard, Manager, YLR	2014 PM – Elizabeth Howard, Manager, YLR	2015	2016
					a joint clean-up of the upper terrace with Grounds Services and EH&S in July 2010. All persons participating in the clean-up were trained in the basics of hazardous waste disposal. 6020 lbs of refuse/debris were removed from the site, including a small amount of hazardous waste (batteries, used needles, spent fuel containers, etc), which were disposed of through the campus hazardous waste stream.				trained in herbicide use working under the campus' IPC Applicator's License		
CLRDP Policy 7.1	Productivity and Quality of Coastal Waters. The Marine Science Campus shall be developed and used in a manner that shall sustain and, where feasible, enhance and restore, the biological productivity and quality of coastal waters on and adjacent to the Campus through controlling, filtering, and treating runoff and other non-point sources of pollution, preventing depletion of groundwater supplies and substantial interference with surface water flow, encouraging wastewater reclamation, and maintaining natural vegetation buffer areas that protect riparian habitats.	Implement Resource Management Plan as described in this SRP Construction practices consistent with Stormwater Concept Plan	PP&C	Throughout construction	No new development occurred on the MSC in 2010; however, natural vegetation buffer areas that protect riparian habitats were maintained by Younger Lagoon Natural Reserve staff.	No new development occurred on the MSC in 2011; however, natural vegetation buffer areas that protect riparian habitats were maintained by Younger Lagoon Natural Reserve staff.	During construction of the Coastal Access Overlooks Project (NOID 12-2), runoff was controlled, filtered and treated according to the contractor's Water Pollution Control Plan. Natural vegetation buffer areas that protect riparian habitats were maintained by Younger Lagoon Natural Reserve staff.	Natural vegetation buffer areas that protect riparian habitats were maintained by Younger Lagoon Natural Reserve staff.	Natural vegetation buffer areas that protect riparian habitats were maintained by Younger Lagoon Natural Reserve staff.		
CLRDP IM 7.1.8	Irrigation and Use of Chemicals for Landscaping. Any water used for landscape irrigation on the Marine Science Campus shall not be applied in a manner that would cause significant erosion. Any use of chemicals for fertilizer and/or weed and pest control shall be minimized to the degree feasible, including as required by the Drainage Concept Plan, and any chemicals unavoidably used shall not enter habitat areas or the ocean in concentrations sufficient to harm wildlife and/or to degrade habitat.	Establish polices for irrigation and use of chemicals in landscaping to minimize erosion potential and runoff into habitat areas or the ocean.	Physical Plant	Before occupancy of first project developed under the CLRDP	Whenever possible, restoration efforts conducted by Younger Lagoon Natural Reserve were not irrigated. When needed, supplemental water was applied by hand. When supplemental water was needed, application was minimal and targeted to restoration plantings to minimize erosion.	Whenever possible, restoration efforts conducted by Younger Lagoon Natural Reserve were not irrigated. When needed, supplemental water was applied by hand. When supplemental water was needed, application was minimal and targeted to restoration plantings to minimize erosion.	Whenever possible, restoration efforts conducted by Younger Lagoon Natural Reserve were not irrigated. When needed, supplemental water was applied by hand. When supplemental water was needed, application was minimal and targeted to restoration plantings to minimize erosion.	Whenever possible, restoration efforts conducted by Younger Lagoon Natural Reserve were not irrigated. When supplemental water was needed, application was minimal and targeted to restoration plantings to minimize erosion. As part of the Younger Lagoon Natural Reserve	Whenever possible, restoration efforts conducted by Younger Lagoon Natural Reserve were not irrigated. When supplemental water was needed, application was minimal and targeted to		

SRP Phase 1A Mitigation Monitoring Program					Monitoring and Reporting Checklist						
Measure #	Measure Text	Monitoring and Reporting Procedure	Monitoring and Reporting Responsibility	Timing	2010 PM – Elizabeth Howard, Field Manager, YLR	2011 PM – Elizabeth Howard, Field Manager, YLR	2012 PM – Elizabeth Howard, Manager, YLR	2013 PM – Elizabeth Howard, Manager, YLR	2014 PM – Elizabeth Howard, Manager, YLR	2015	2016
					Herbicide (Round Up Pro) was applied to five 20' x 20' experimental restoration plots in 2010. The application was done by a Grounds Department Employee trained in herbicide use working under the campus IPC Applicator's License.	Herbicide (Glyphosate Pro) was applied to several restoration areas on the lower terrace in 2011. The applications were done by Grounds Department Employees and UCSC Natural Reserves Staff trained in herbicide use working under the campus' IPC Applicator's License.	As part of the Younger Lagoon Natural Reserve Restoration effort, herbicide (Glyphosate Pro) was applied to several restoration areas on the lower terrace in 2012. The applications were done by Grounds Department Employees and UCSC Natural Reserves Staff trained in herbicide use working under the campus' IPC Applicator's License.	Restoration effort, herbicide (Glyphosate Pro) was applied to several restoration areas on the lower terrace in 2013. The applications were done by Grounds Department Employees and UCSC Natural Reserves Staff trained in herbicide use working under the campus' IPC Applicator's License.	restoration plantings to minimize erosion. As part of the Younger Lagoon Natural Reserve Restoration effort, herbicide (Glyphosate Pro) was applied to several restoration areas on the lower terrace in 2014. The applications were done by Grounds Department Employees and UCSC Natural Reserves Staff trained in herbicide use working under the campus' IPC Applicator's License.		

**Coastal Biology Building/MSC Infrastructure Project
Annual Mitigation Monitoring Report, 2014
Mitigation Status Summary**

Mitigation/CLRDP Implementation Measure ID	Brief Description	Responsible Unit	2014 Status
CLRDP EIR General Mitigation Measure 4.2-1	Fence at Younger Ranch Boundary	PP&C/UCSC Natural Reserve YLR	Completed
CLRDP Mitigation 4.11-4	Construction noise mitigation	PP&C	Active
CLRDP Mitigation 4.15-1	Fair share, Bay/Mission Intersection	PP&C/EVC PP&C TAPS	Active
CLRDP Mitigation 4.15-2	Fair share contribution, Delaware Av. pedestrian path.	PP&C/EVC PP&C TAPS	Not yet required
CLRDP Mitigation 4.15-6	Fair share, various intersections	PP&C/EVC TAPS PP&C	Active
CLRDP Mitigation 4.16-1a	Water-efficient fixtures.		Active
CLRDP Mitigation 4.2-2	Nesting bird surveys and avoidance	PP&C	Not applicable to project as approved/designed
CLRDP Mitigation 4.3-1	Standard construction dust control measures	PP&C	Not applicable to project as approved/designed
CLRDP Mitigation 4.4-1	CRLF monitoring and avoidance	PP&C	Not applicable to project as approved/designed
CLRDP Mitigation 4.5-1	Discovery of human remains	PP&C	Active
IM 3.10.1	Hazardous Materials Management	EH&S	Active
IM 3.2.12	USFWS Consultation Required	PP&C	Active
IM 3.2.14	Non-Invasive Native Plant Species Required	PP&C	Active
IM 3.8.2	Agreement to Indemnify and Hold Harmless	PP&C	Active
IM 3.9.1	Construction Monitoring— Archaeological/Paleontological Resources		Active
IM 4.3.3	All lighting	PP&C PM Action Needed	Active
IM 7.1.17	Designation of Treatment Train		Active
IM 7.2.1	Drainage System Monitoring and	Physical Plant	Not yet required

**Coastal Biology Building/MSC Infrastructure Project
Annual Mitigation Monitoring Report, 2014
Mitigation Status Summary**

	Maintenance		
IM 7.2.3	Drainage system sampling	Physical Plant PP&C YLR	Not yet required
IM 7.2.4	Long-Term Maintenance of Stormwater System	Physical Plant	Not yet required
IM 7.3.1	Discharge to YLR		Active
IM 7.3.2	Discharge Siting and Design	PP&C	Active
MSC Mitigation Measure TRA-2	Fair share payment, Western Dr./High St. intersection	PP&C/EVC PP&C TAPS	Active
MSC Mitigation Measures LU-1, LU-2A, LU-2B	CLRDP Amendment #1		Completed
MSC Project Mitigation Measure BIO-1	Botanical survey, special-status plant avoidance	PP&C	Completed
MSC Project Mitigation Measure BIO-2c	Staging area, invasive plant assessment	Grounds Services, in consultation with YLR manager YLR Physical Plant	Not yet required
MSC Project Mitigation Measure CULT-2B:	Interpretive sign for Ocean Shore Railroad	PP&C	Active
MSC Projects Mitigation BIO-9B	Woodrat nest relocation	PP&C	Not yet required
MSC Projects Mitigation HYD-2	Hydrologic monitoring W4 and W5	PP&C and YLR YLR PP&C	Active
MSC Projects Mitigation Measure AIR-1	Project-specific dust control requirements.	PP&C	Active
MSC Projects Mitigation Measure BIO-10A	Fencing design and inspection	PP&C	Active
MSC Projects Mitigation Measure BIO-10B	Construction-phase parking limitations	PP&C	Active
MSC Projects Mitigation Measure BIO-10C	Night-time restrictions on construction activity	PP&C	Active

**Coastal Biology Building/MSC Infrastructure Project
Annual Mitigation Monitoring Report, 2014
Mitigation Status Summary**

MSC Projects Mitigation Measure BIO-11	Shades on greenhouses	PP&C	Active
MSC Projects Mitigation Measure BIO-12A	Inspection for erosion in W1 outflow channel	YLR	Not yet required
MSC Projects Mitigation Measure BIO-12B	Silt fence at Delaware Ave. Extension	PP&C	Active
MSC Projects Mitigation Measure BIO-12C	Scope of NOAA outfall improvements	PP&C	Active
MSC Projects Mitigation Measure BIO-12D	Design of DeAnza trail crossing at W4 culvert	PP&C	Active
MSC Projects Mitigation Measure BIO-15	Biological Mitigation Coordinator required	PP&C	Active
MSC Projects Mitigation Measure BIO-2a	Staging area restoration	PP&C Physical Plant YLR	Active
MSC Projects Mitigation Measure BIO-2b	Staging area weed management	Grounds Services, in consultation with YLR manager Physical Plant	Not yet required
MSC Projects Mitigation Measure BIO-3A	Biological resources training, construction crew	PM PP&C	Active
MSC Projects Mitigation Measure BIO-3B	CRLF and western pond turtle exclusion	PP&C	Active
MSC Projects Mitigation Measure BIO-3C	CRLF surveys	PP&C	Active
MSC Projects Mitigation Measure BIO-3D	Daily CRLF surveys during construction	PP&C	Active
MSC Projects Mitigation Measure BIO-3E	Additional CRLF avoidance measures	PP&C	Active
MSC Projects Mitigation Measure BIO-4	Burrowing owls surveys and avoidance	PP&C	Completed
MSC Projects Mitigation Measure BIO-5	Pre-construction surveys, badger dens		Active
MSC Projects Mitigation Measure BIO-6	Exclusion fencing, western pond turtle	PP&C	Active

**Coastal Biology Building/MSC Infrastructure Project
Annual Mitigation Monitoring Report, 2014
Mitigation Status Summary**

MSC Projects Mitigation Measure BIO-7A	Nesting bird survey and buffer	PP&C	Active
MSC Projects Mitigation Measure BIO-7B	Scheduling in Subareas 6 and 7 to protect nesting birds	PP&C	Active
MSC Projects Mitigation Measure BIO-7C	Timing of berm construction, subarea 7	PP&C	Active
MSC Projects Mitigation Measure BIO-7D	Staging in subarea 6	PP&C	Active
MSC Projects Mitigation Measure BIO-8	Bat survey, greenhouses		Active
MSC Projects Mitigation Measure BIO-9A	Pre-construction survey, woodrats	PP&C	Active
MSC Projects Mitigation Measure CULT-2A	Archaeological monitoring at Delaware Ave. Extension	PP&C PM Action Needed	Active
MSC Projects Mitigation Measure HYD-3	Trench plugs required for sewer line	PP&C	Active
MSC Projects Mitigation Measure TRA-1B	Parking utilization surveys	TAPS	Active
MSC Projects Mitigation Measure TRA-1C	Parking demand management	TAPS	Not yet required
MSC Projects Mitigation Measure TRA-5A	Timing of closure of Delaware Ave. Extension	PP&C	Active
MSC Projects Mitigation Measure TRA-5B	Contract requirements to minimize traffic blockage	PP&C	Active
MSC Projects Mitigation Measure TRA-5C	Construction lane closure notifications	PP&C	Active
MSC Projects Mitigation Measure TRA-5D	Contract schedule coordination	PP&C	Active
MSC Projects Mitigation Measure TRA-5E	Construction coordination/communication with off-campus neighbors.	PP&C	Active
MSC Projects Mitigation Measure TRA-5F	Construction impact complaint procedures.	PP&C PM Action Needed	Active
MSC Projects Mitigation Measure UTIL-9	Water efficiency study of existing MSC facilities	Physical Plant	Active

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MSC Projects Mitigation Measures TRA-4C	Railroad caution signs on pedestrian routes	PP&C	Not yet required
MSC Projects Mitigation NOIS-4	Mitigate cumulative construction noise	PP&C	Not yet required
MSC Projects Mitigation TRA-1A	Transportation dissemination information	TAPS	Not yet required
MSC Projects Mitigation TRA-4A	Stop signs at parking lot entrances	PP&C	Active
MSC Projects Mitigation TRA-4B	Stop sign and traffic-calming measures at campus exits.	PP&C TAPS	Active
Policy 5.9	Impacts offset	PP&C TAPS	Active
Policy 8.4	Impacts to City Water and Sewer Systems Offset	PP&C TAPS	Active