



## Staff Report to the Zoning Administrator

Application Number: **101070**

**Applicant:** Jason Osborne/ Crown Castle  
**Owner:** Eugene & Marie Rocha  
**APN:** 110-191-10

**Agenda Date:** 12/03/2010  
**Agenda Item #:** 3  
**Time:** After 10:00 a.m.

**Project Description:** Proposal to replace 2 antennas and install 6 new antennas on an existing 37-foot monopole at an existing cellular communications facility. Six new coaxial cables are proposed between the new antennas and an existing 240 square foot ground-level equipment cabinet.

**Location:** Property is located 1 mile along Vanoni Road, 0.1 miles north of the intersection of Highway 129 and Vanoni Road, at 1000 Vanoni Road.

**Supervisory District:** 4th District (District Supervisor: Tony Campos)

**Permits Required:** Amendment to Commercial Development Permit 94-0776 and as amended by 02-0519.

**Technical Reviews:** RF electromagnetic radiation analysis (pursuant to FCC guidelines) by Hammett & Edison, Inc., Consulting Engineers.

### Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 101070, based on the attached Findings and Conditions.

### Exhibits

- |   |   |
|---|---|
| A. Project plans                              |   |
| B. Findings                                   | E. Assessor's, Location, Zoning and General Plan Maps             |
| C. Conditions                                 |   |
| D. Categorical Exemption (CEQA determination) | F. RF radiation analysis report by Hammett & Edison, dated 9/7/10 |

### Parcel Information

Parcel Size:	907.7 acres
Existing Land Use - Parcel:	Agriculture
Existing Land Use - Surrounding:	Commercial Agriculture, Timber Resources
Project Access:	From driveway off of Vanoni Road.

Planning Area: Salsipuedes  
Land Use Designation: A (Agriculture)

Zone District: CA-P (Commercial Agriculture- Agricultural Preserve overlay district)

Coastal Zone: ☐ Inside ☒ Outside  
Appealable to Calif. Coastal Comm. ☐ Yes ☒ No

### Environmental Information

Geologic Hazards: Not mapped/no physical evidence on site  
Soils: N/A  
Fire Hazard: Yes, portion  
Slopes: N/A  
Env. Sen. Habitat: Portion mapped; no ground disturbance proposed  
Grading: No grading proposed  
Tree Removal: No trees proposed to be removed  
Scenic: Not a mapped resource  
Drainage: Existing drainage adequate  
Archeology: Portion mapped; no ground disturbance proposed.

### Services Information

Urban/Rural Services Line: ☐ Inside ☒ Outside  
Water Supply: Private well  
Sewage Disposal: Private septic  
Fire District: Aromas Fire  
Drainage District: Zone 7

### History

Development Permit 94-0776 was approved on September 15, 1995 for construction of a 27-foot monopole with a panel antenna, emergency generator, a 240 square foot equipment building and perimeter fencing at the project site. A Mitigated Negative Declaration dated July 31, 1995 was prepared and adopted for the project. Amendment 02-0519 was approved on October 22, 2003 to authorize the replacement of the 27-foot monopole with a 37-foot monopole, the addition of 6 new panel antennas and three equipment cabinets.

### Project Setting

The telecommunications facility is located close to the center of a 907-acre parcel in an open area far from any property lines and residential development. The site is zoned for Commercial Agriculture, and is not easily visible from public roads.

### Analysis

The current application includes an analysis by Hammett & Edison, Inc., Consulting Engineers, dated September 7, 2010, that evaluates the maximum potential RF radiation exposure from the facility, pursuant to FCC-specific guidelines. The maximum ambient RF exposure level that could result from the proposed new equipment by itself at ground level is conservatively calculated to be 3.8% of the applicable public exposure limit. The maximum cumulative level of RF radiation exposure, if the existing and the proposed equipment at the project site were all operating

simultaneously, is calculated to be at 15% of the public exposure limit. The nearest residence is located approximately 2,000 feet from the facility, and Hammett & Edison state that the maximum calculated cumulative level at the second-floor elevation of this residence would be 0.098% of the public exposure limit.

### **Zoning & General Plan Consistency**

The subject property is a parcel located in the CA-P (Commercial Agriculture- Agricultural Preserve overlay) zone district, a designation that allows commercial uses. The proposed cell tower antennas are a permitted use within the zone district and the zoning is consistent with the site's (A) Agriculture General Plan designation.

### **Design Review**

The proposed cell tower antennas complies with the requirements of the County Design Review Ordinance, in that the proposed new equipment is to be located on an existing facility on a large rural agriculturally-zoned parcel, and the new equipment will blend in with the existing monopole and the look of the existing equipment will not be significantly changed. The proposed project also does not have significant visual impacts on surrounding land uses or from public viewing areas such as Highway 129 due to distance and topography.

### **Environmental Review**

A Mitigated Negative Declaration dated July 31, 1995 was prepared and adopted for the construction of the existing cellular communications facility under 94-0776, in compliance with the requirements of the California Environmental Quality Act (CEQA).

The currently proposed project is eligible for exemption from further environmental review pursuant to CEQA Section 15302, Existing Facilities, which exempts replacement and reconstruction work on an existing telecommunications facility with negligible expansion of capacity.

### **Conclusion**

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Zoning Ordinance and General Plan/LCP. Please see Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

### **Staff Recommendation**

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- **APPROVAL** of Application Number **101070**, based on the attached findings and conditions.

**Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Department, and are hereby made a part of the administrative record for the proposed project.**

**The County Code and General Plan, as well as hearing agendas and additional information are available online at: [www.co.santa-cruz.ca.us](http://www.co.santa-cruz.ca.us)**

Application #: 101070  
APN: 110-191-10  
Owner: Eugene & Marie Rocha

Page 4

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## Wireless Communication Facility Use Permit Findings

1. The development of the proposed wireless communications facility as conditioned will not significantly affect any designated visual resources, environmentally sensitive habitat resources (as defined in the Santa Cruz County General Plan/LCP Sections 5.1, 5.10, and 8.6.6.), and/or other significant County resources, including agricultural, open space, and community character resources; or there are no other environmentally equivalent and/or superior and technically feasible alternatives to the proposed wireless communications facility as conditioned (including alternative locations and/or designs) with less visual and/or other resource impacts and the proposed facility has been modified by condition and/or project design to minimize and mitigate its visual and other resource impacts.

This finding can be made, in that the proposed modifications to an existing cellular wireless communication facility will not impact visual or sensitive habitat resources in that the previously-approved existing facility is located on a large private ranch far from any residential or other development that would be visually impacted by the project, and the project is not located in an identified biotic resource area.

2. The site is adequate for the development of the proposed wireless communications facility and, for sites located in one of the prohibited and/or restricted areas set forth in Sections 13.10.661(b) and 13.10.661 (c), that the applicant has demonstrated that there are not environmentally equivalent or superior and technically feasible: (1) alternative sites outside the prohibited and restricted areas; and/or (2) alternative designs for the proposed facility as conditioned.

This finding can be made, in that the proposed replacement of two antennas and addition of 6 new antennas on an existing monopole are proposed for an existing cellular wireless communications facility that was approved under Commercial Development Permit 94-0776. The site is not located in one of the prohibited and/or restricted areas set forth in Sections 13.10.661(b) and 13.10.661 (c).

3. The subject property upon which the wireless communications facility is to be built is in compliance with all rules and regulations pertaining to zoning uses, subdivisions and any other applicable provisions of this title (County Code 13.10.660) and that all zoning violation abatement costs, if any, have been paid.

This finding can be made, in that the project site is located within a property located in the CA-P (Commercial Agriculture- Agricultural Preserve overlay) zone district, a designation that allows commercial uses. The proposed cell tower antennas are a permitted use within the zone district and the zoning is consistent with the site's (A) Agriculture General Plan designation. No zoning violation abatement fees are applicable to the subject property.

4. The proposed wireless communication facility as conditioned will not create a hazard for aircraft in flight.

This finding can be made, in that the proposed new equipment for an existing wireless

Application #: 101070  
APN: 110-191-10  
Owner: Eugene & Marie Rocha

communications facility would be located on an existing 37-foot high monopole, and this elevation is too low to interfere with an aircraft in flight.

5. The proposed wireless communication facility as conditioned is in compliance with all FCC and California PUC standards and requirements.

This finding can be made, in that an analysis was performed by Hammett & Edison, Inc., Consulting Engineers, dated September 7, 2010, that evaluates the maximum potential RF radiation exposure from the facility, pursuant to FCC-specific guidelines. According to the analysis, the maximum cumulative level of RF radiation exposure, if the existing and the proposed equipment at the project site were all operating simultaneously, is calculated to be at 15% of the public exposure limit. The nearest residence is located approximately 2,000 feet from the facility, and Hammett & Edison state that the maximum calculated cumulative level at the second-floor elevation of this residence would be 0.098% of the public exposure limit.

6. For wireless communication facilities in the coastal zone, the proposed wireless communication facility as conditioned is consistent with all applicable requirements of the Local Coastal Program.

This finding is not applicable, as the proposed project is not in the coastal zone.

## Development Permit Findings

1. That the proposed location of the project and the conditions under which it would be operated or maintained will not be detrimental to the health, safety, or welfare of persons residing or working in the neighborhood or the general public, and will not result in inefficient or wasteful use of energy, and will not be materially injurious to properties or improvements in the vicinity.

This finding can be made, in that the project is located in an area designated for commercial uses and there are no physical constraints to the proposed development. Construction will comply with prevailing building technology, the California Building Code, and the County Building ordinance to insure the optimum in safety and the conservation of energy and resources.

The project would not result in harmful levels of RF radiation exposure, as the maximum cumulative level of RF radiation exposure, if the existing and the proposed equipment at the project site were all operating simultaneously, is calculated to be at 15% of the public exposure limit. The nearest residence is located approximately 2,000 feet from the facility, and the analysis prepared by consultants Hammett & Edison states that the maximum calculated cumulative level at the second-floor elevation of this residence would be 0.098% of the public exposure limit.

Because of its distance from other development, the proposed cell tower antennas and new coaxial cables will not deprive adjacent properties of light, air, or open space.

2. That the proposed location of the project and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the zone district in which the site is located.

This finding can be made, in that the proposed location of the cell tower antennas and the conditions under which they would be operated and maintained will be consistent with all pertinent County ordinances for telecommunications facilities and the purpose and allowable uses of the CA-P (Commercial Agriculture- Agricultural Preserve overlay district) zone district.

3. That the proposed use is consistent with all elements of the County General Plan and with any specific plan which has been adopted for the area.

This finding can be made, in that the proposed commercial use is consistent with the use and density requirements specified for the Agriculture (A) land use designation in the County General Plan.

The proposed cell tower antennas will not adversely impact the light, solar opportunities, air, and/or open space available to other structures or properties, and meets all current site and development standards for the zone district as specified in Policy 8.1.3 (Residential Site and Development Standards Ordinance), and the cell tower antennas will not adversely shade adjacent properties and will meet current setbacks for the zone district that ensure access to light, air, and open space in the vicinity.

The proposed cell tower antennas will not be improperly proportioned to the parcel size or the

character of the neighborhood as specified in General Plan Policy 8.6.1 (Maintaining a Relationship Between Structure and Parcel Sizes), and the proposed cell tower antennas will comply with the site standards for the CA-P zone district (including setbacks and height) and will result in a telecommunications facility that remains consistent with a design that could be approved on any similarly sized parcel.

A specific plan has not been adopted for this portion of the County.

4. That the proposed use will not overload utilities and will not generate more than the acceptable level of traffic on the streets in the vicinity.

This finding can be made, in that the proposed cell tower antennas and cables are to be added to an existing developed telecommunications facility. There is no reason to anticipate that the proposed project will result in an increase of traffic to the facility or adversely impact existing roads and intersections in the surrounding area.

5. That the proposed project will complement and harmonize with the existing and proposed land uses in the vicinity and will be compatible with the physical design aspects, land use intensities, and dwelling unit densities of the neighborhood.

This finding can be made, in that the existing facility to which antennas and cables are proposed to be added is located within a very large (907 acre) agriculturally-zoned parcel. The proposed new antennas would not increase the density of development on the subject property, and will not create a visual impact, as there are no residences or public viewing areas from which the proposed project could be readily seen. While additional antennas are proposed, they will be of similar design and mounted in a similar way to the antennas that are already mounted on the existing monopole.

6. The proposed development project is consistent with the Design Standards and Guidelines (sections 13.11.070 through 13.11.076), and any other applicable requirements of this chapter.

This finding can be made, in that the proposed cell tower antennas will be of a scale and design that will blend in with the existing telecommunications facility and will not reduce or have a visual impact upon available open space in the surrounding area.



## Conditions of Approval

Exhibit A: Project plans, 5 pages, dated August 8, 2010, by Omni Design Group

- I. This permit authorizes the replacement of 2 cell tower antennas and the installation of 6 new antennas and 6 new coaxial cables on an existing monopole at an existing telecommunications facility. This approval does not confer legal status on any existing structure(s) or existing use(s) on the subject property that are not specifically authorized by this permit. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:
  - A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof. All conditions of Commercial Development Permit 94-0776 and Amendment 02-0519 are incorporated herein by reference and are also conditions of this approval.
  - B. Obtain a Building Permit from the Santa Cruz County Building Official.
    1. Any outstanding balance due to the Planning Department must be paid prior to making a Building Permit application. Applications for Building Permits will not be accepted or processed while there is an outstanding balance due.
  - C. Submit proof that these conditions have been recorded in the official records of the County of Santa Cruz (Office of the County Recorder) within 30 days from the effective date of this permit.
- II. Prior to issuance of a Building Permit the applicant/owner shall:
  - A. Submit final architectural plans for review and approval by the Planning Department. The final plans shall be in substantial compliance with the plans marked Exhibit "A" on file with the Planning Department. Any changes from the approved Exhibit "A" for this development permit on the plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes not properly called out and labeled will not be authorized by any Building Permit issued for the proposed development.
    1. Identify color and finish of exterior materials on plans.
    2. Details showing compliance with fire department requirements.
  - B. Submit four copies of the approved Discretionary Permit with the Conditions of Approval attached.
  - C. Meet all requirements and pay any applicable plan check fee to the Aromas Fire Department.

III. All construction shall be performed according to the approved plans for the building permit. Prior to final building inspection, the applicant/owner must meet the following conditions:

- A. All site improvements shown on the final approved Building Permit plans shall be installed.
- B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.

IV. Operational Conditions

- A. In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.
- B. All noise generated from the approved use shall be contained on the property.
- C. The exterior finish and materials of the wireless communication facility must be maintained on an annual basis to continue to blend with the existing utilities infrastructure. Additional paint and/or replacement materials shall be installed as necessary to blend the wireless communication facility with the existing utilities infrastructure.
- D. The operator of the wireless communication facility must submit within 90 days of commencement of normal operations (or within 90 days of any major modification of power output of the facility) a written report to the Santa Cruz County Planning Department documenting the measurements and findings with respect to compliance with the established Federal Communications Commission (FCC) Non-Ionizing Electromagnetic Radiation (NEIR) exposure standard. The wireless communication facility must remain in continued compliance with the NEIR standard established by the FCC at all times. Failure to submit required reports or to remain in continued compliance with the NEIR standard established by the FCC will be a violation of the terms of this permit.
- E. If, in the future, the pole based utilities are relocated underground at this location, the operator of the wireless communication facility must abandon the facility and be responsible for the removal of all permanent structures and the restoration of the site as needed to re-establish the area consistent with the character of the surrounding natural landscape.
- F. If, as a result of future scientific studies and alterations of industry-wide standards resulting from those studies, substantial evidence is presented to Santa Cruz County that radio frequency transmissions may pose a hazard to human health and/or safety, the Santa Cruz County Planning Department shall set a public hearing and in its sole

discretion, may revoke or modify the conditions of this permit.

- G. If future technological advances would allow for reduced visual impacts resulting from the proposed telecommunication facility, the operator of the wireless communication facility must make those modifications which would allow for reduced visual impact of the proposed facility as part of the normal replacement schedule. If, in the future, the facility is no longer needed, the operator of the wireless communication facility must abandon the facility and be responsible for the removal of all permanent structures and the restoration of the site as needed to re-establish the area consistent with the character of the surrounding natural landscape.
- H. Any modification in the type of equipment shall be reviewed and acted on by the Planning Department staff. The County may deny or modify the conditions at this time, or the Planning Director may refer it for public hearing before the Zoning Administrator.
- I. The access road shall be permanently maintained to allow access to emergency vehicles at all times. Any obstruction of the access road, as a result of neglect or lack of maintenance, will be in violation of the conditions of this permit.
- J. The equipment cabinet area must be locked at all times except when authorized personnel are present. The antennas must not be accessible to the public.
- K. All site, building and security lighting shall be directed onto the lease site and away from adjacent properties. The site shall be unlit except when authorized personnel are present at night.
- L. Transfer of Ownership: In the event that the original permittee sells its interest in the permitted wireless communications facility, the succeeding carrier shall assume all responsibilities concerning the project and shall be held responsible to the County for maintaining consistency with all project conditions of approval, including proof of liability insurance. Within 30-days of a transfer of ownership, the succeeding carrier shall provide a new contact name to the Planning Department.
- V. As a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys' fees), against the COUNTY, its officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.
  - A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify the Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend,

indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.

- B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:
1. COUNTY bears its own attorney's fees and costs; and
  2. COUNTY defends the action in good faith.
- C. Settlement. The Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the County.
- D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor(s) in interest, transferee(s), and assign(s) of the applicant.
- E. Within 30 days of the issuance of this development approval, the Development Approval Holder shall record in the office of the Santa Cruz County Recorder an agreement that incorporates the provisions of this condition, or this development approval shall become null and void

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In accordance with Chapter 18.10 of the County Code, minor variations to this permit that do not affect the overall concept or density may be approved by the Planning Director at the request of the applicant or staff.

**Please note: This permit expires three years from the effective date listed below unless a building permit (or permits) is obtained. Failure to exercise the building permit and to complete all of the construction under the building permit, resulting in the expiration of the building permit, will void the development permit, unless there are special circumstances as determined by the Planning Director.**

Approval Date: \_\_\_\_\_

Effective Date: \_\_\_\_\_

Expiration date: \_\_\_\_\_

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Steven Guiney  
Deputy Zoning Administrator

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Alice Daly  
Project Planner

Appeals: Any property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination of the Zoning Administrator, may appeal the act or determination to the Planning Commission in accordance with chapter 18.10 of the Santa Cruz County Code.

# CALIFORNIA ENVIRONMENTAL QUALITY ACT

## NOTICE OF EXEMPTION

The Santa Cruz County Planning Department has reviewed the project described below and has determined that it is exempt from the provisions of CEQA as specified in Sections 15061 - 15332 of CEQA for the reason(s) which have been specified in this document.

Application Number: 101070

Assessor Parcel Number: 110-191-10

Project Location: 1000 Vanoni Road

**Project Description:** replace two antennas and install 6 new antennas on an existing monopole.

**Person or Agency Proposing Project:** Jason Osborne/ Crown Castle

**Contact Phone Number:** 415-559-2121

- A. \_\_\_\_\_ The proposed activity is not a project under CEQA Guidelines Section 15378.  
B. \_\_\_\_\_ The proposed activity is not subject to CEQA as specified under CEQA Guidelines Section 15060 (c).  
C. \_\_\_\_\_ **Ministerial Project** involving only the use of fixed standards or objective measurements without personal judgment.  
D. \_\_\_\_\_ **Statutory Exemption** other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).

Specify type:

E.   X   **Categorical Exemption**

Specify type: Class 2 - Existing Facilities (Section 15302)

F. **Reasons why the project is exempt:**

Replacement and reconstruction of an existing telecommunications facility involving negligible expansion of capacity.

In addition, none of the conditions described in Section 15300.2 apply to this project.

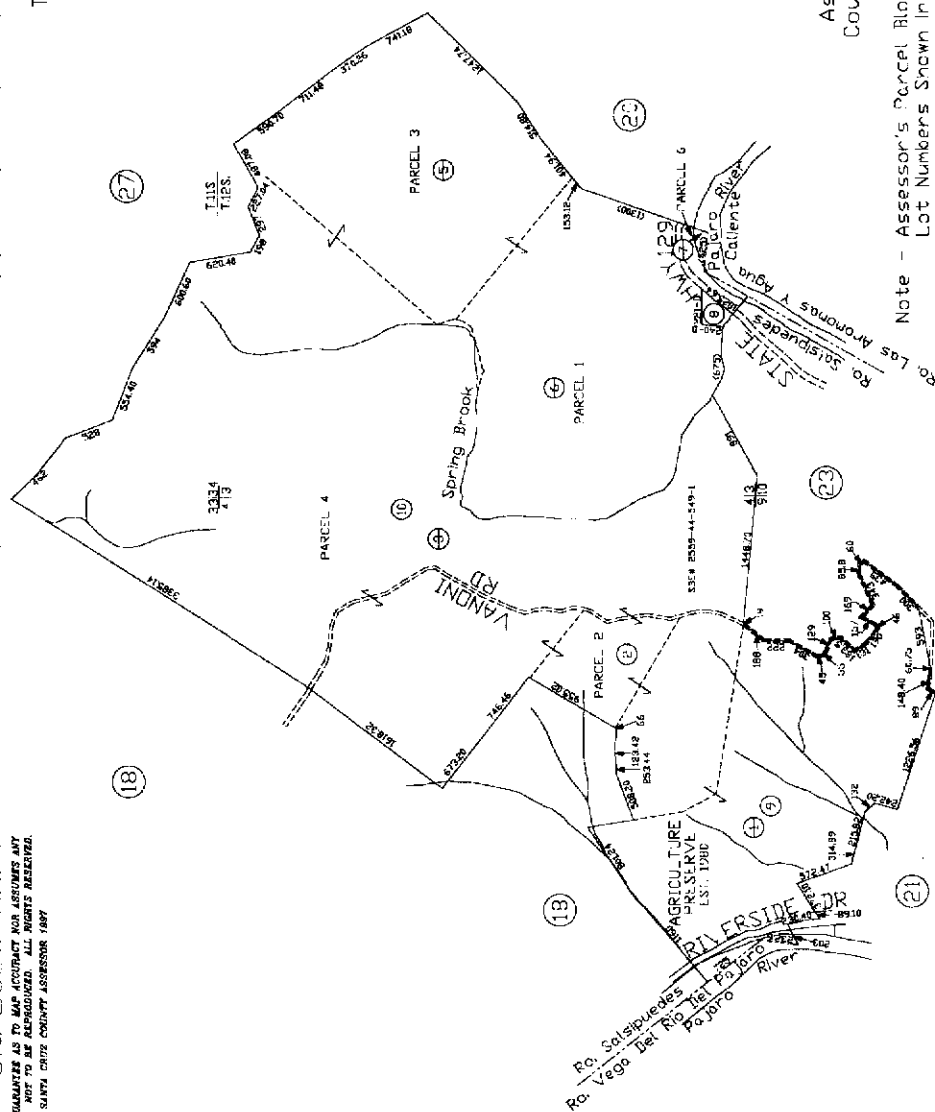
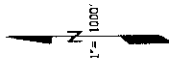
\_\_\_\_\_  
Alice Daly, Project Planner

Date: \_\_\_\_\_

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 THE ASSESSOR MAKES NO GUARANTEE AS TO MAP ACCURACY NOR ASSUMES ANY  
 LIABILITY FOR OTHER USES. NOT TO BE REPRODUCED. ALL RIGHTS RESERVED.  
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SALSIPUEDES RANCHO  
 POR. SECS. 33 & 34, T11S., & POR. SECS. 34,9 & 10, T12S., R3E., M.D.B. & M 110-19

Tax Area Code  
 55-000

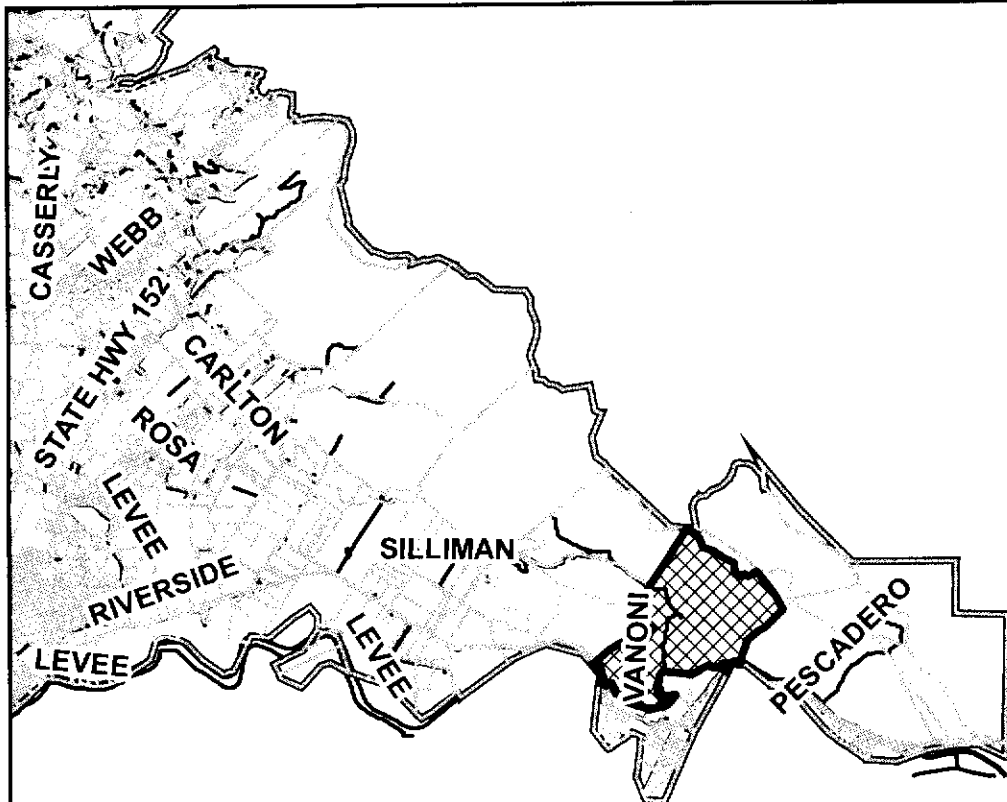


Assessor's Map No 110-19  
 County of Santa Cruz, Calif.  
 Sep. 1997






Note - Assessor's Parcel Block &  
 Lot Numbers Shown in Circles.

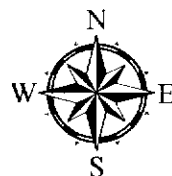


# Location Map



## LEGEND

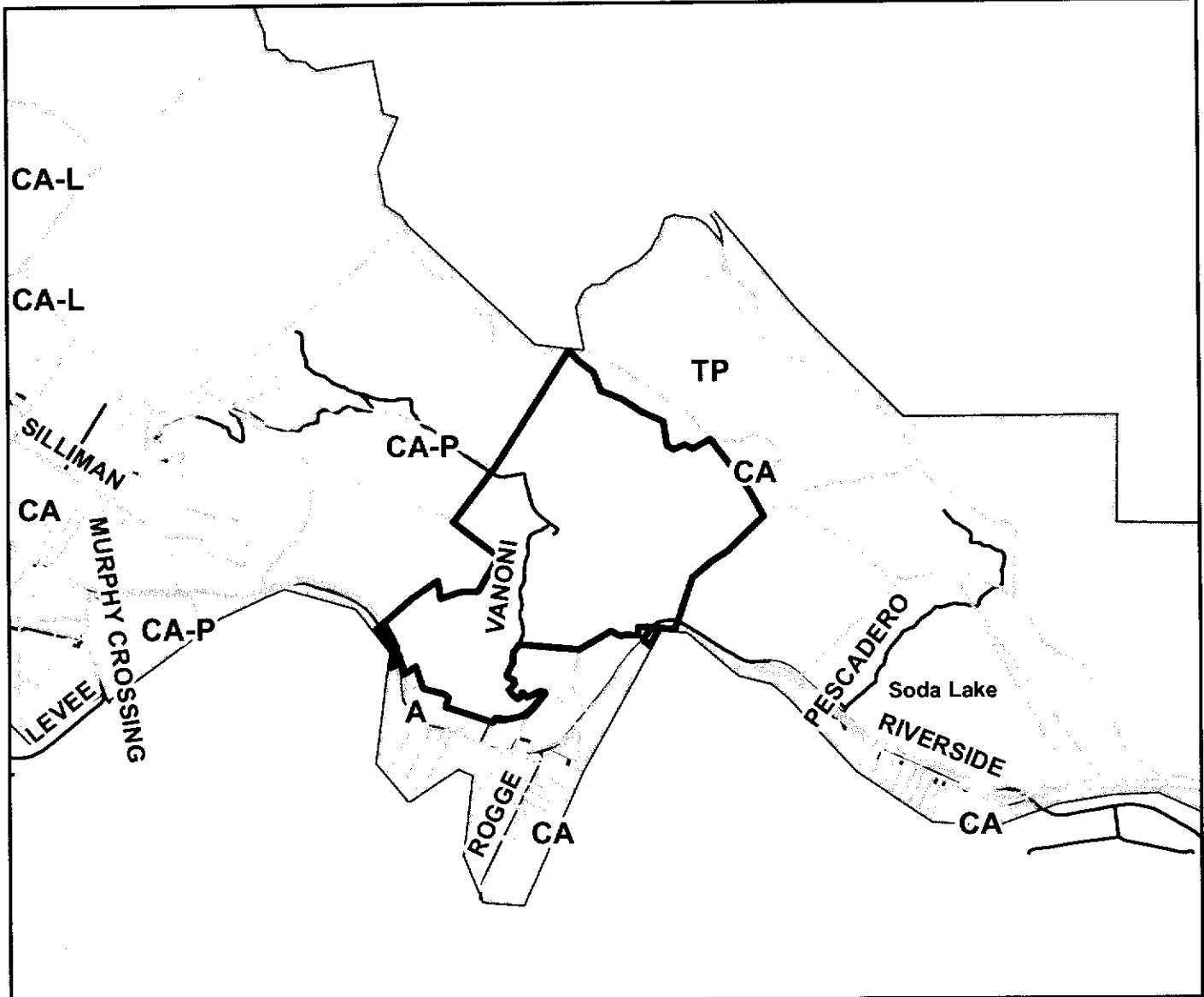
-  APN: 110-191-10
-  Assessors Parcels
-  Streets
-  State Highways
-  County Boundary








Map Created by  
County of Santa Cruz  
Planning Department  
November 2010

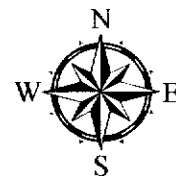


# Zoning Map



## LEGEND

-  APN: 110-191-10
-  Assessors Parcels
-  Streets
-  Lakes
-  County Boundary
- AGRICULTURE COMMERCIAL
- AGRICULTURE
- TIMBER PRODUCTION

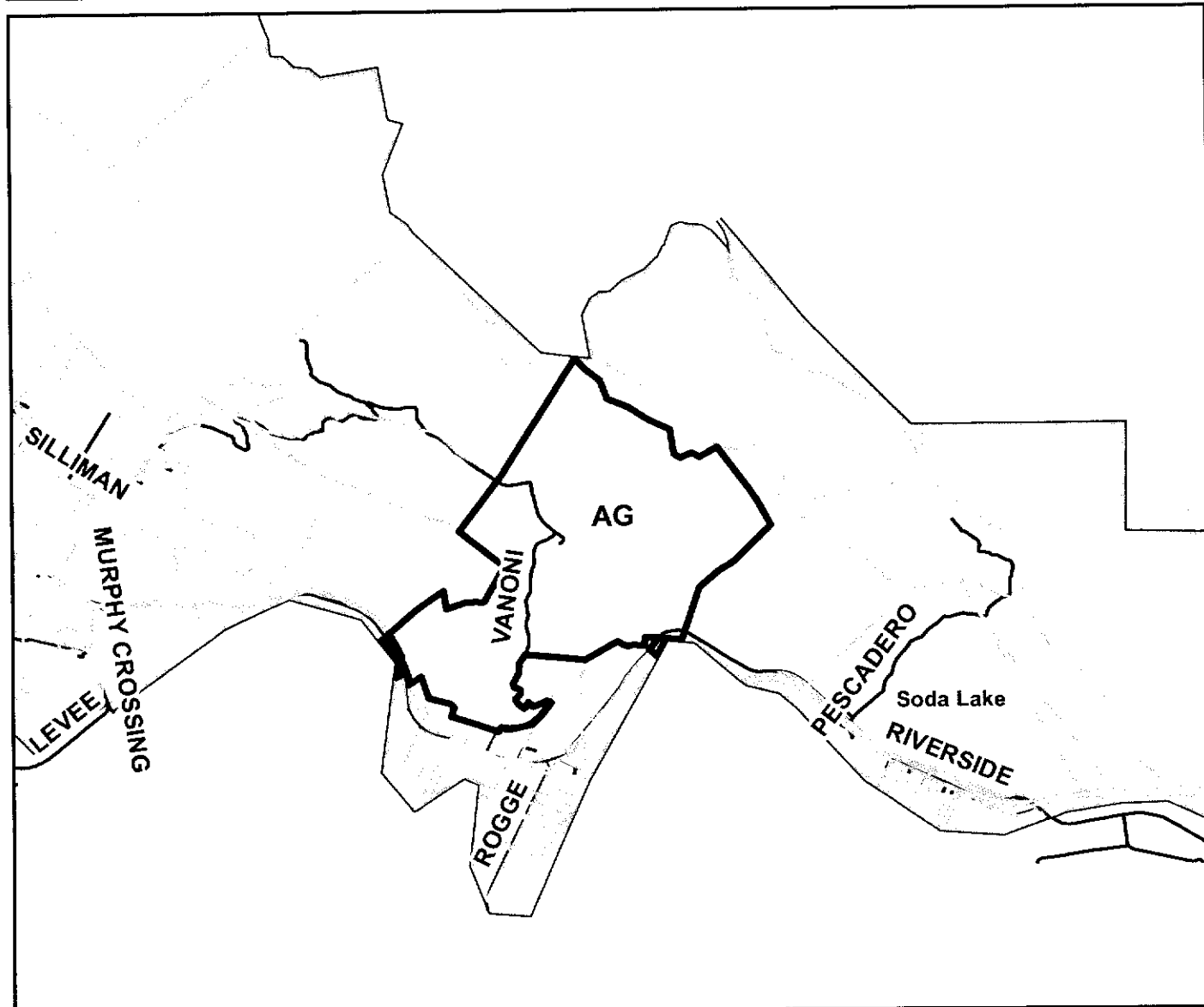


Map Created by  
County of Santa Cruz  
Planning Department  
November 2010









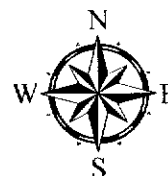


# General Plan Designation Map



## LEGEND

-  APN: 110-191-10
-  Assessors Parcels
-  Streets
-  Lakes
-  County Boundary
-  Agriculture



Map Created by  
County of Santa Cruz  
Planning Department  
November 2010

**Verizon Wireless • Base Station (Site No. 115318 "Pajaro Gap")  
2351 Riverside Drive • Watsonville, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate proposed modifications to its existing base station (Site No. 115318 "Pajaro Gap") located at 2351 Riverside Drive in Watsonville, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

**Prevailing Exposure Standards**

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5-80,000 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
BRS (Broadband Radio)	2,600	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.35	0.47
[most restrictive frequency range]	30-300	1.00	0.20

**General Facility Requirements**

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, this means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

**Verizon Wireless • Base Station (Site No. 115318 "Pajaro Gap")  
2351 Riverside Drive • Watsonville, California**

**Computer Modeling Method**

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 attached describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

**Site and Facility Description**

Based upon information provided by Verizon, including construction drawings by Omni Design Group, dated 26 July, 2010, that carrier presently has six Andrew directional panel antennas – three Model DB854DG65ESX and three Model 931LG65VTE-0 – installed on the existing 37-foot steel pole sited on a hill located at 2351 Riverside Drive in Watsonville. It is proposed to install three Antel Model BXA-70063/4CF directional panel antennas next to the existing antennas, mounted with up to 6° downtilt at an effective height of about 25 feet above ground and oriented in groups of three (one of each) toward 100°T, 180°T, and 270°T. The maximum effective radiated power in any direction would be 3,900 watts, representing simultaneous operation at 650 watts for PCS, 1,980 watts for cellular, and 1,270 watts for 700 MHz.

Presently at the top of the pole are similar antennas for use by AT&T Mobility. For the limited purpose of this study, the transmitting facilities of that carrier are assumed to be as follows:

<u>Operator</u>	<u>Service</u>	<u>Maximum ERP</u>	<u>Antenna Model</u>	<u>Beamtilt</u>	<u>Height</u>
AT&T	PCS	1,500 watts	Kathrein 742-264	6°	35 ft
	Cellular	1,500			

**Study Results**

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed Verizon operation by itself is calculated to be 0.026 mW/cm<sup>2</sup>, which is 3.8% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of both carriers, is 15% of the public exposure limit. The maximum calculated cumulative level at the second-floor elevation of any nearby residence\* is 0.098% of the public exposure limit. Figure 3 attached provides the data required under the Santa Cruz County submittal policy, for reporting the

\* Located at least 2,000 feet away, based on aerial photographs from Google Maps.

**Verizon Wireless • Base Station (Site No. 115318 "Pajaro Gap")  
2351 Riverside Drive • Watsonville, California**

analysis of RF exposure conditions. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels.

**No Recommended Mitigation Measures**

Due to their mounting locations, the Verizon antennas are not accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that both carriers will, as FCC licensees, take adequate steps to ensure that their employees or contractors comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

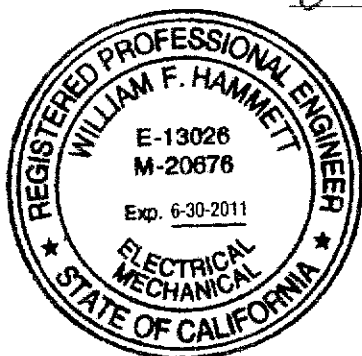
**Conclusion**

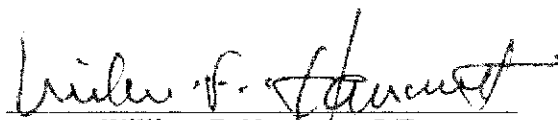
Based on the information and analysis above, it is the undersigned's professional opinion that the proposed operation of the Verizon Wireless base station located at 2351 Riverside Drive in Watsonville, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2011. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

September 7, 2010



  
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