APPENDIX A

Notice of Preparation

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PLANNING AND BUILDING
NOTICE OF PREPARATION

DATE: August 29, 2003

TO: FROM: Office of Environmental Coordinator
County of San Luis Obispo
County Government Center, Room 310
San Luis Obispo, CA 93408-2040

SUBJECT: Notice of Preparation of an Environmental Impact Report for the ***Plains Exploration and Production Phase IV Development Plan (D010386D).***

San Luis Obispo County (County) will be the Lead Agency and will prepare an Environmental Impact Report for the project identified above. We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Our agency will need to use the Environmental Impact Report (EIR) prepared by our agency when considering your permit of other approval for the project.

PLEASE provide us the following information at your earliest convenience, but not later than the 30-day comment period, which began with your agency's receipt of the Notice of Preparation (NOP).

1. NAME OF CONTACT PERSON. (Address and telephone number).
2. PERMIT(S) or APPROVAL(S) AUTHORITY. Please provide a summary description of these and send a copy of the relevant sections of legislation, regulatory guidance, etc.
3. ENVIRONMENTAL INFORMATION. What environmental information must be addressed in the Environmental Impact Report to enable your agency to use this documentation as a basis for your permit issuance or approval.
4. PERMIT STIPULATIONS/CONDITIONS. Please provide a list and description of standard stipulations (conditions) that your agency will apply to features of this project. Are there others that have a high likelihood of application to a permit or approval for this project? If so, please list and describe.
5. ALTERNATIVES. What alternatives does your agency recommend be analyzed in equivalent level of detail with those listed above?
6. REASONABLY FORESEABLE PROJECTS, PROGRAMS or PLANS. Please name any future project, programs or plans that you think might have an overlapping influence with the project as proposed.

7. RELEVANT INFORMATION. Please provide references for any available, appropriate documentation you believe may be useful to the County in preparing the Environmental Impact Report.

8. FURTHER COMMENTS. Please provide any further comments or information that will help the County to scope the document and determine the appropriate level of environmental assessment.

9. PUBLIC HEARING. A public hearing on the Draft EIR will be held in the first quarter of 2004 to provide the public an opportunity to comment on the proposed project."

The project description, location, and the probable environmental effects are contained in the attached materials.

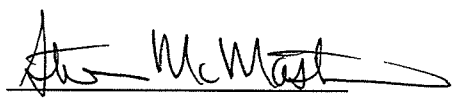
Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but no later than 30 days after receipt of this NOP.

Please send your response to Steve McMasters at the address shown above. We will need the name of a contact person in your agency.

PROJECT TITLE: *Plains Exploration and Production Phase IV Development Plan*

PROJECT APPLICANT: Plains Exploration and Production Company

Responses due by: October 3rd, 2003

Signature 

Steve McMasters
Senior Environment Specialist
Telephone: (805) 781-5096

Attachments

Reference: California Administrative Code, Title 14, Section 15082(a), 15103, 15375

CHAPTER 3.0
PROJECT DESCRIPTION

3.1 INTRODUCTION

The Plains Exploration and Production Phase IV Development Plan has been proposed by Plains Exploration and Production (PXP) to expand its existing operations of the Arroyo Grande Oilfield.

3.2 PROJECT LOCATION

The Arroyo Grande Oilfield is located in Price Canyon about 3 miles northeast of Pismo Beach in San Luis Obispo County, California. The project site is located east and west of Price Canyon Road near its intersection with Ormonde Road, between Highway 101 and Highway 227. Refer to Figure 3-1. The proposed Phase IV project lies within the 264-acre Phase III development project approved by the San Luis Obispo Planning Commission (SLOPC) in Resolution 94-49, Development Permit No. D910026D) which was delineated in the 1994 Shell Western Development Plan EIR (1994 EIR). This site lies primarily within the 320-acre Arroyo Grande Oilfield, which is within the larger 1,480-acre Price Canyon Unit as defined by the California Division of Oil, Gas & Geothermal Resources (DOGGR). Refer to Figures 3-2.

3.3 PROJECT OBJECTIVES

The objective of the Phase IV Project is to increase the amount of marketable gravity crude oil produced using a thermal (steam injection) process. Currently, approximately 1,800-1,900 barrels per day (bbl/dy) (657,000-693,500 bbl/yr) are produced. The Phase IV project is anticipated to increase field production levels to 5,000 bbl/dy barrels of oil per day, or 1,825,000 bbl/yr annually.

Estimates for heavy crude oil production are based on an oil to steam ratio (OSR). The average OSR has been 0.32 for current operations. Table 3.3-1 provides an overview of both the projected steam output for the Phase IV Project and the estimated heavy crude oil that will be produced.

Table 3.3-1
Estimated Quarterly Steam Generation and Crude Production

Development Schedule	Estimated Steam BBL/Day[1]	Estimated Crude Oil Sales BBL/Day[2]
Current Operations	6,000	1,900
Second Quarter 2003	6,000	1,900
Third Quarter 2003	6,800	2,180
Fourth Quarter 2003	7,600	2,430
First Quarter 2004	7,600	2,430
Second Quarter 2004	7,600	2,430
Third Quarter 2004	10,600	3,390
Forth Quarter 2004	10,600	3,390
First Quarter 2005	10,600	3,390
Second Quarter 2005	10,600	3,390
Third Quarter 2005	13,600	4,350
Forth Quarter 2005	13,600	4,350
First Quarter 2006	13,600	4,350
Second Quarter 2006	13,600	4,350
Third Quarter 2006	16,600	5,300
Forth Quarter 2006	16,600	5,300

Note: Post 2006, the three new steam generators, previously reviewed and approved in 1994, will be constructed to provide supplemental cyclic steam and back-up capability to the existing generators. It is not anticipated that construction of generators will overlap drilling or drilling pad construction.

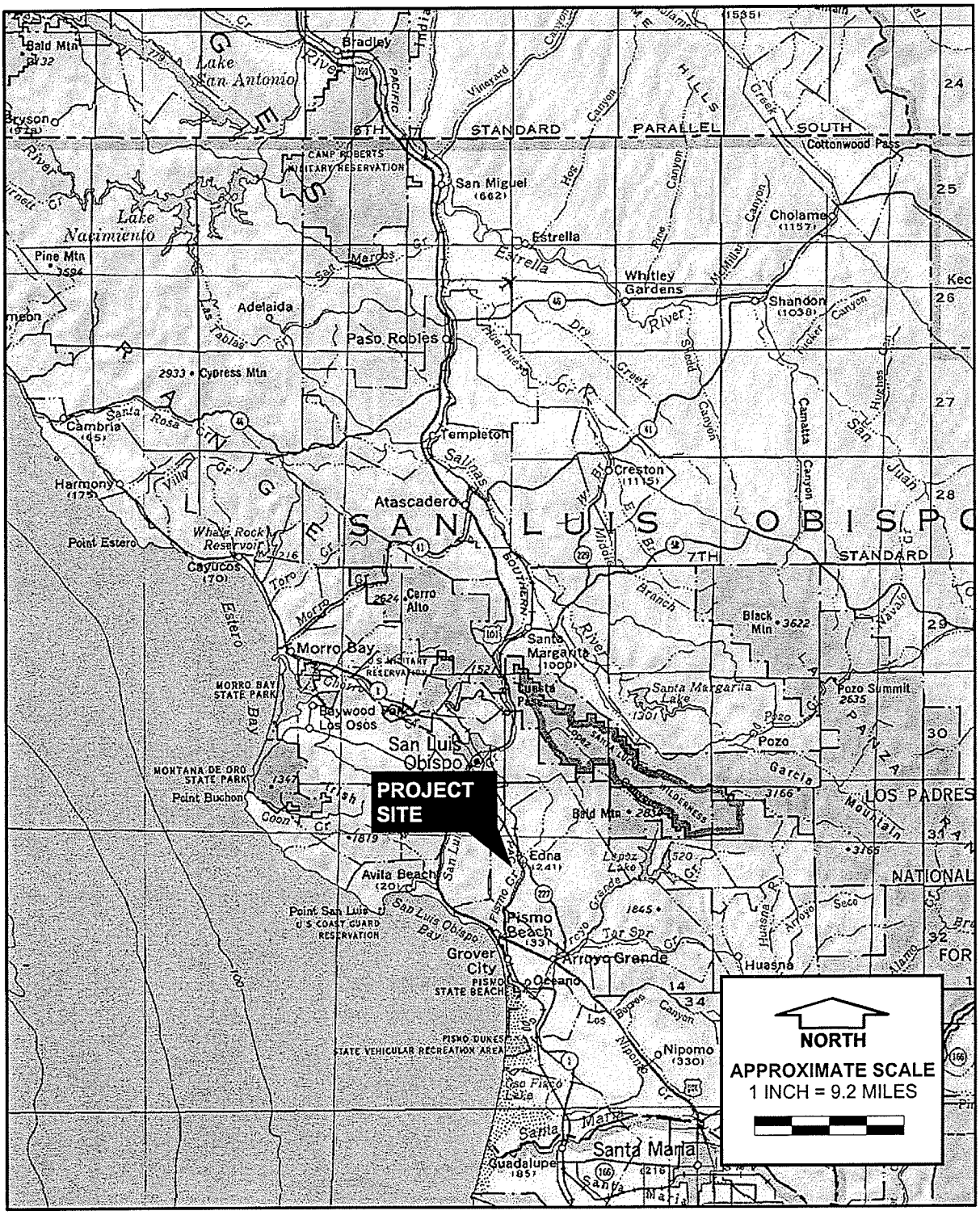
3.4 PROJECT DESCRIPTION

3.4.1 Background

According to unofficial records, the Arroyo Grande Oilfield has been an actively producing field since 1906. DOGGR records officially began recording oil and gas wells in 1919 for the area. Between 1919 and 1980, roughly 129 oil wells were drilled in the field. Previous EIRs have been prepared for past expansion of the oilfield, including *Final Environmental Impact Report for the Proposed Arroyo Grande Thermal Project, Teal Production Company (1978),* and *Arroyo Grande Thermal Project, Phase II Operations (ERCO 1981).* In 1978, Teal Petroleum (Teal) obtained approval from the SLOPC for the expansion of oil field operations (Phase I).

[1] Based on bringing on line existing generators Nos. 2&4 (APCD permitted) the second quarter of 2005 and 2006 for a total of 6 operating steam generators
[2] Assumes an addition of 40 wells in operation during 2004, 40 wells in operation during 2005, and 40 wells in 2006, 5 wells in 2007.

July 2003
Project No.0202-2722



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SITE VICINITY MAP

PXP Phase IV Development Plan EIR

FIGURE 3-1

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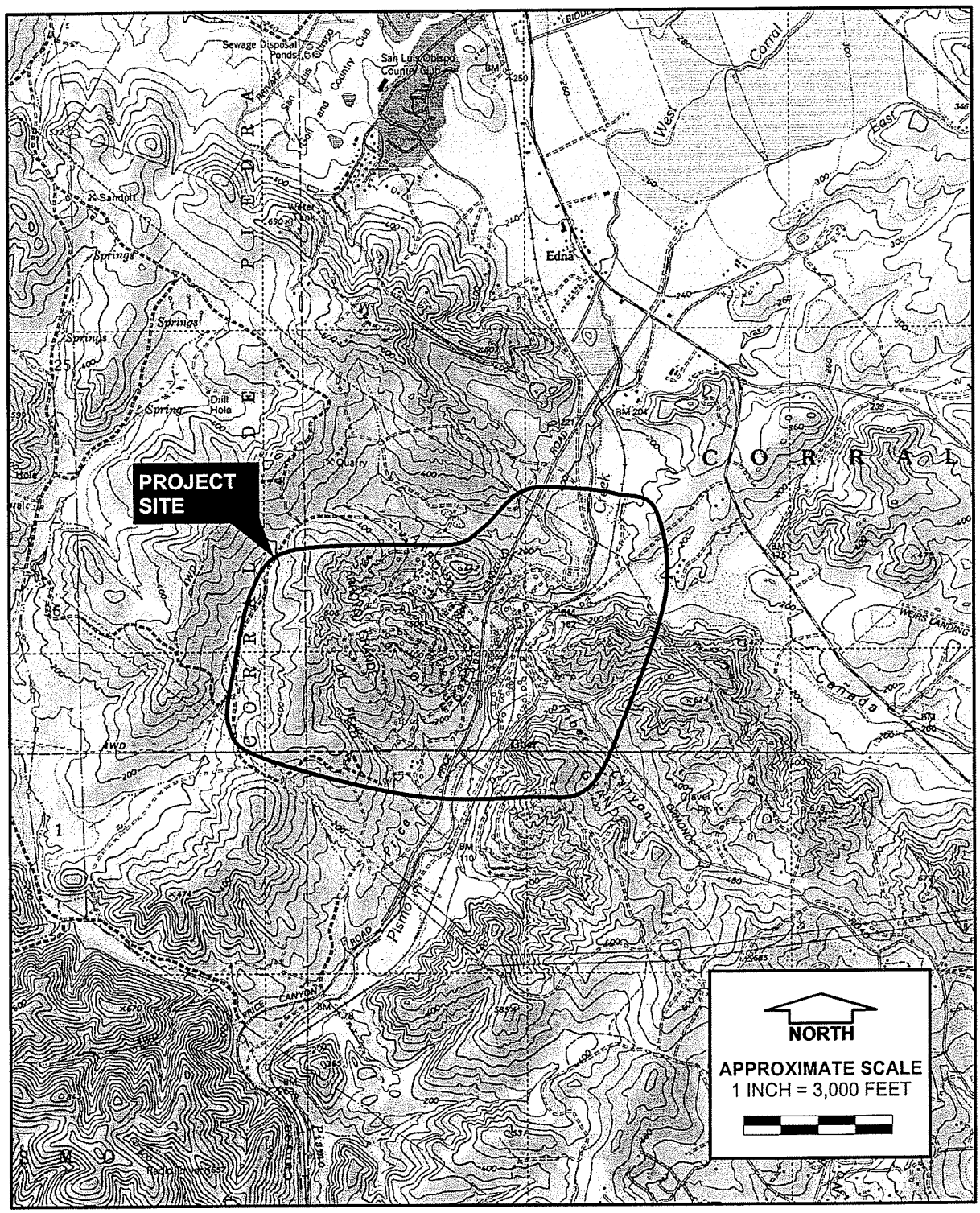

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SITE LOCATION MAP

PXP Phase IV Development Plan EIR

FIGURE 3-2

The permit granted the drilling of 54 wells and the installation of associated equipment. In the event that Teal wanted to drill additional wells, the County required a Development Plan application for each additional well group. Teal Petroleum was absorbed by Grace Petroleum shortly thereafter.

Grace Petroleum proposed a Phase II expansion. The subsequent EIR considered the potential environmental effects of the entire Arroyo Grande Oilfield. In 1982, The County certified the EIR and approved a Phase II Project consisting of 40 wells and 1 steam generator. Under Phase II, individual wells could be constructed and drilled at the rate of no more than 40 producible wells per year. At that time, the County conceptually approved, but did not guarantee, an additional 160 wells and 3 steam generators.

The conceptual approval included a delineation of Phases III, IV, and V and included only the facilities that would be added during each phase; the areas that would be developed during each of these future phases were not designated at that time. Additionally, the 1982 EIR noted that each Development Plan may authorize fewer but no more than the listed facilities and any required accessory equipment. Subsequently, Grace was acquired by Shell Western Petroleum, Inc.

In 1994, Shell Western Exploration and Petroleum, Inc., received approval from the SLOPC for a Development Plan to allow expansion of the oil field by drilling 65 additional producing wells and installing three steam generators and accessory facilities with an extended phasing schedule (Phase III). In 1997, the area was acquired by Stocker Resources, Inc. (Stocker), which currently operates the facility. Stocker recently underwent change of ownership and is now Plains Exploration & Production Company (PXP).

3.4.2 Existing Operations

3.4.2.1 Production

PXP currently produces approximately 1,800-1,900 bbl/dy from about 125 producing wells in the 320-acre Arroyo Grande Oilfield, whose boundary is defined by the DOGGR. The Arroyo Grande Oilfield, and the Price Canyon Unit are shown in Figure 3-3. Many of the existing wells on the property are collocated with steam injection wells, which provide steam for enhanced oil recovery. Other existing production facilities include above-ground pipelines, 6 steam generators (4 west of price Canyon Road; 2 east of the road), "steam headers" (which distribute steam to the steam injection wells), a dehydration facility for the entire field and a gas plant. The dehydration and gas plants are located on the west side of Price Canyon Road. The dehydration plant has several associated facilities, including heater treaters, oil storage tanks, vapor recovery compression, water softening equipment, and sand filters. The gas plant processes about 1.5 million metric standard cubic feet per day (MMSCFD) of associated gas ("casing gas") that contains an average of 25% CO_2, and 5,000 ppm H_2S, which is removed using a patented absorption process. The resulting waste steam is reinjected into designated injection wells. All hydrocarbon pipelines crossing underneath Price Canyon Road and Pismo Creek are contained within "conductor pipelines," which are intended to contain any oil spills that could occur from these pipelines.

3.4.2.2 Steam Injection

The primary method of steam injection utilized at the Arroyo Grande Oilfield is steam flooding (with some associated cyclic steaming). Steam is injected into "injection" wells where it raises the temperature of the oil reservoir, decreases the oil viscosity, and floods or pushes the oil to "producing" wells which surround each injector. Periodically production wells are selected to be cyclic steamed, wherein a relatively "small" volume (relative to injectors) is injected into the well and produced back to enhance its productivity.

The steam injection process increases the temperature of the oil to reduce the characteristically high viscosity of approximately 3,500 centipoises at 90° F. At lower viscosity, the oil flows more easily. Steam is injected at 500 to 800 pounds per square inch gauge (psig). The oil and water is pumped to the surface from the well to the tank battery facility for separation. The reservoir temperature is approximately 90° F and the corresponding viscosity is 3,500 centipoises (cp)

3.4.2.3 Steam Generators

PXP currently has six steam generators located in the Arroyo Grande Oilfield: five (5) 50 million metric British thermal units per Hour (MMBTU/hr) systems and one (1) 20 MMBTU/hr, fueled by natural gas. These units each produce steam at a maximum of 1,500 psig and a temperature of 500°F. Site-produced water is used at a rate of 6,000 bbls per day at 65°F. Fuel consumption for a fully utilized 50 MMBTU/hr steam generator consumes about 1,200 thousand standard cubic feet per day (1,200 MSCF/D) of natural gas with a heat content of 1,000 BTU/SCF.

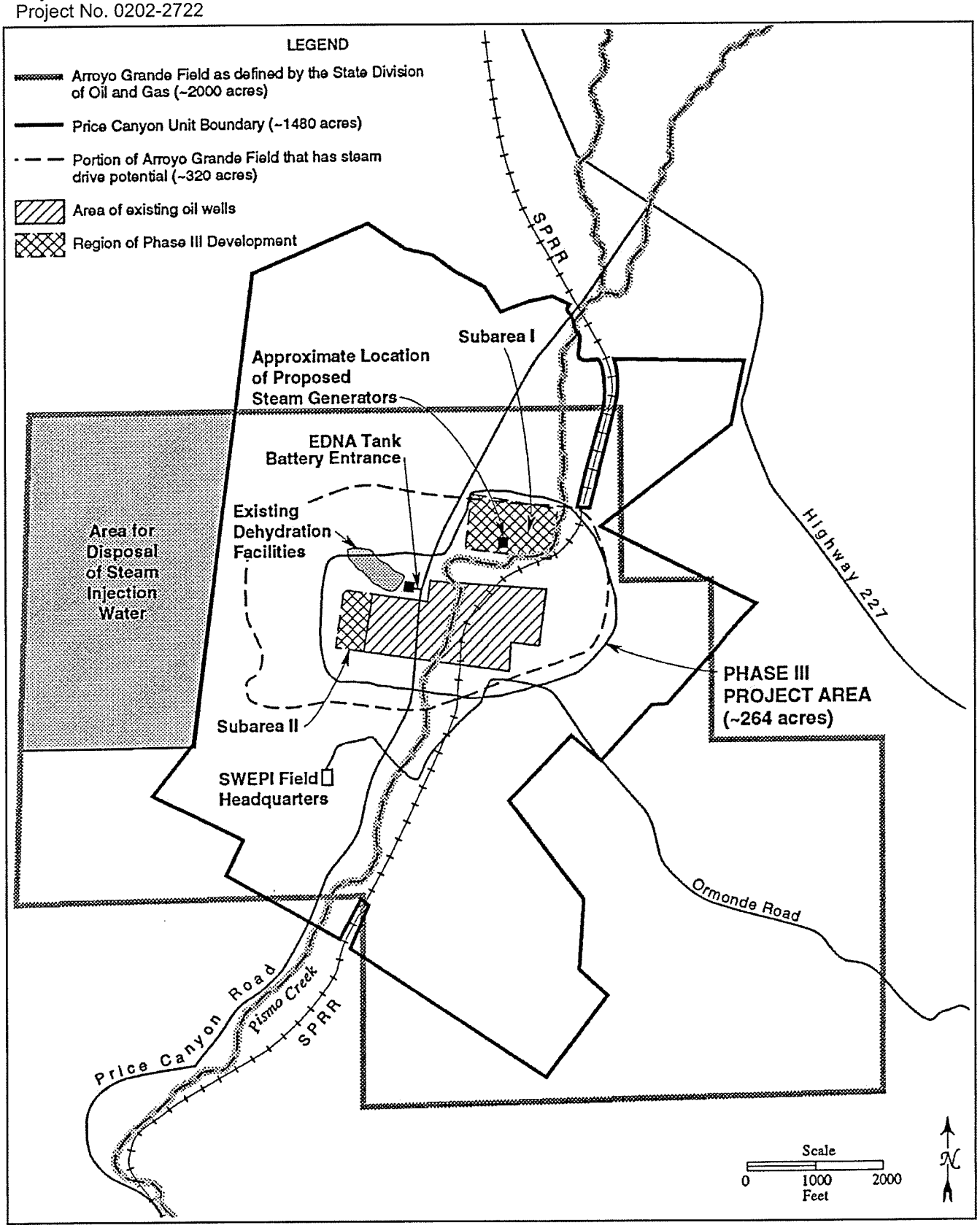
All of the existing steam generators are fueled by pipeline quality natural gas supplied by the gas plant, supplemented with Southern California Gas Company and landfill gases.

All six existing steam generators are connected to the flow line system, and steam will be transported as required through a closed pipeline system to the well heads. All of the six existing steam generators have operating permits issued and enforced by the San Luis Obispo Air Pollution Control District (APCD).

3.4.2.4 Water Reclamation

Producing wells pump water (in emulsion with oil) at a ratio of 8 barrels of water to 1 barrel of oil (water output to oil output)[3]. Approximately 3 barrels of steam are required to produce 1 barrel of oil. Of the approximately 8 barrels of water pumped out of the ground with each barrel of oil, 5 barrels of water recovered per barrel of oil are "formation" water. As such, the water recovered per barrel is actually a combination of the condensed steam pumped into the ground and water located naturally in the reservoir rock with the oil. This recovered water is called "produced water" and when separated from the oil, the produced water is used in the steam generators to produce steam for thermal injection. If necessary, water pumped from existing water wells can be used to augment the water supplied to the generators.

[3] This ratio is the difference of the oil to steam ration (OSR), which is the ratio of oil output to steam or water input. The OSR for current operations is 0.16.



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County of San Luis Obispo

PROPOSED PROJECT SITE
FIGURE 3.3

The produced water and ground water must undergo filtration and processing prior to use in the generators. The existing water reclamation system utilized to accomplish this task is located at the Edna unit. The system includes a water holding tank, flotation cells, sand filters and water softening units. Water entering the reclamation system comes principally from the free water knockout vessels and the heater treaters. Small volumes of water may enter from other sources. The water first passes through the wash tanks and then enters a flotation cell where entrained oil is removed from the produced water. The oil is then returned to the tank battery system and then sent to storage. The water passes through a series of sand filter vessels to remove particulate matter. After the sand filtering, the water passes through a sodium zeolite water softening unit and then is pumped to the steam generators

The produced water not used for steam generators is sent to the flotation cell and sand filters to remove entrained oil and then reinjected through waste water injection wells to approved subsurface disposal zones as per State requirements. This water is not suitable for irrigation or potable use.

Water pumped from groundwater wells is stored in a 30,000-barrel lake lined with a bentonic clay liner. This water is used for steam generator make-up water and irrigation. Table 3.4-1 gives the water quality characteristics of the ground water wells onsite.

3.4.2.5 Tank Battery Facilities

There is one tank battery facility currently operating in the Edna unit. This facility consists of four 1,000-barrel storage tanks and six 2,000-barrel storage tanks, a heater treatment system (including the two free water knockout vessels and two heater treaters) and an emergency produced-water holding pond.

The tank battery facilities are used both to separate the heavy crude oil from produced water (dehydration) and to store the oil until sold. The oil and water mixture pumped from the wells is transported to the battery facilities where it is pumped into the free water knockout vessel. Approximately 80 percent of the produced water is removed from the oil and sent to the water reclamation system. The remaining oil and water mixture flows under pressure to a gas-fired heater treater (a fired heat exchanger used to heat liquid) where the remaining water is removed and pumped to the water reclamation system, while the oil is transferred to the storage tanks. All tank facilities are connected to a vapor recovery system which captures hydrocarbon vapors and sends them to the gas plant for treating prior to use as generator fuel.

Table 3.4-1
Water Quality and Quantity in Vicinity of Arroyo Grande Oilfield

Constituents	Well #1	Well #2	Well #3
Calcium, Ca (Hardness as $CaCO_3$)	50 mg/l	110 mg/l	30 mg/l
Magnesium, Mg (Hardness as $CaCO_3$)	30 mg/l	70 mg/	15 mg/
Total Hardness as $CaCO_3$	80 mg/l	180 mg/l	45 mg/l
Chloride, CL	37.5 mg/l	45 mg/l	32.5 mg/l
Sulfate, SO_4	27.5 mg/l	26 mg/l	29 mg/l

Constituents	Well #1	Well #2	Well #3
Total Dissolved Solids as ppm $CaCO_3$	122 mg/l[1]	210 mg/l	102 mg/L
Iron Fe (total)	0.04 mg/l	0.03 mg/l	0.03 mg/l
Sulfide	0 mg/l	0 mg/l	0 mg/l
ph	6.2	6.6	5.8
Conductivity in Ohm-meters	305 micro ohms/cm	515 micro ohms/cm	225 micro ohms/cm
Turbidity, FTO	12	9	20
Alkalinity as $CaCO_3$, Total	50 ppm[2]	150 ppm	25 ppm
Alkalinity as $CaCO_3$, Pheno	0 ppm	0 ppm	0 ppm
Alkalinity as $CaCO_3$, Metluf Red	50 ppm	150 ppm	25 ppm
Undissolved Solids 45 a+	3.28 ppm	0.68 ppm	1.08 ppm
Pump Rate in gpm	~150 gpm[3]	~150 gpm	~150 gpm

Source: Phase II Operations Arroyo Grande Thermal Project, Grace Petroleum Corporation, Final EIR, June 1981.

1. Milligrams per liter = mg/l
2. Part per million = ppm
3. Gallons per minute = gpm

The vapor recovery system also captures vapors at the oil truck loading rack. The produced oil that is stored in the large onsite tanks is eventually transferred to 160-barrel oil trucks for sales and transportation to market. As the oil is loaded into the trucks (by submerged filling), the rising oil level displaces hydrocarbon vapors in the truck tank. These vapors exit through vents in the top of the truck tank, which are temporarily connected to the vapor recovery system by a hose.

3.4.2.6 Pipeline System, Flow Lines, and Vapor Recovery System

The vapor recovery system is comprised of a closed pipeline and compression system that maintains suction on the well heads, loading rack, tanks and other vessels, maintaining an oxygen free atmosphere on tanks and vessels with the excess being sent to and treated in the gas plant for combustion fuel. This system is designed to collect in excess of 99% of all vapors, remove liquids, and send it to the gas plant where it is processed and used as fuel. The vapor recovery system minimizes hydrocarbon emissions to the atmosphere. Vapors are reinjected into the oil reservoir in the event of a short-term breakdown. A flare system serves as a redundant back-up in case of extended shutdowns.

The flow line pipeline system moves oil, produced water (killwater used to keep wells safe while being worked over) and steam throughout the project site area. The system is controlled by headers that are valving arrangements used for switching the flow of produced water and steam from one well to another and directing the flow of oil to the tank battery. The killwater pipelines are is connected to all wells through the production headers, which can backflow killwater to the wellhead. In most cases existing steam, killwater and production piping is installed above ground. All new piping is installed above ground, laying on the surface, or installed in hangers. Other facilities include pipeline manifolds, blowdown tanks, Automatic well test units (AWTs), and casing vapor recovery compressors. A manifold collects well production lines into a single unit for testing purposes. The blowdown tank is used during starting up or stopping a steam

generator. It holds water temporarily while it is either being heated up to steam quality or while it is cooling down. The casing vapor recovery compressor is used to optimize the performance of the vapor recovery system.

3.4.2.7 Public Utilities

Electricity is provided by the PXP cogeneration unit, supplemented by Pacific Gas & Electric Company (PG&E). Natural gas is provided by Southern California Gas Company (SCGC), supplemented by the gas plant and landfill. The majority of the water needed for thermal injection is produced during oil production. Three onsite groundwater wells located in the northern part of the oilfield will be used for the lake and for makeup water.

3.4.2.8 Employment

There are 30 PXP and contract employees at the Arroyo Grande Oilfield consisting of a supervisor, an office clerk, engineers, and maintenance and operation employees.

3.4.3 Proposed Project

The project would consist of two phases: (1) Construction Phase, and (2) Operational Phase. Construction would include 95 new producer wells and 30 steam injector wells (which are needed to enhance recovery of the heavy crude oil found at the site). Existing ancillary equipment, such as heater treaters, storage tanks and pollution control equipment is adequate to support the proposed project expansion. All of the producing wells will occur within the 264-acre Phase III boundary. The project would include the construction of three steam generators originally approved during the Phase III expansion, but never constructed. The remaining existing pads will require from minimal to moderate grading. The new pads that are required would be accessible from the existing roads; therefore, no new roads are proposed. About seven previously undisturbed acres will be disturbed, to varying degrees, by the proposed expansion. Figure 3.4 shows the Phase IV Development Area.

3.4.3.1 Producer and Injector Wells

Oil production is expected to increase from 1,900 bbls/dy up to 5,000 bbls/dy from the 95 new producer wells. Current drilling technology allows PXP to directionally drill (i.e., slant drill) the new wells at angles of about 3% depending on the particular configuration of the oil reservoir, geology and economics. Therefore, they will utilize existing well pads to the extent possible; thereby minimizing disturbance of new areas. The existing and new well pads, as well as the area of disturbance and the number of new well to be installed are listed in Table 3.4-2. Figure 3-5 shows the locations of the existing and new well pads.

The Phase IV drilling program will require utilization of 31 existing well pads; only 4 new pads will be graded. About 45% of the existing pads will require no additional ground disturbance, other than during well drilling. The proposed project utilizes existing pads for 90% of new wells. The four new well pads, containing 10% of the new wells, will require 2.68 acres of ground disturbance. Minimal to moderate grading is required on 18 existing pads cumulatively totaling about 4.22 acres. By comparison, the 1994 Phase III EIR anticipated up to 66% of the Phase III wells would be newly graded pad locations.

The proposed new pad sites include Maino 16NW, Rock 85A, and Signal 66C, which will be visible to some degree at short intervals from Price Canyon Road, consistent with the analysis of the 1994 EIR

The applicant may construct up to five water injector wells outside of the Phase III and Phase IV boundary area. Every effort would be made to locate these wells on existing graded pads with access by existing roads within the oilfield, which would require only incidental grading and vegetation disturbance. If necessary to optimize production, some or all of the wells may be located in undeveloped areas (new pads). It is anticipated that, if required, these new well pads would not exceed 20,000 square-feet (approximately 0.5 acres) in area per pad. In either case, priority would be given to selecting sites that minimize potential impacts to biological and visual resources of the project area.

Wherever possible, "in fill" drilling or twinning will occur where existing well pads will be used for new well sites so that more than one pumping unit can be safely and economically placed on the pads. Common drilling depths will range from 500 to 1,500 feet.

3.4.3.2 Steam Generators

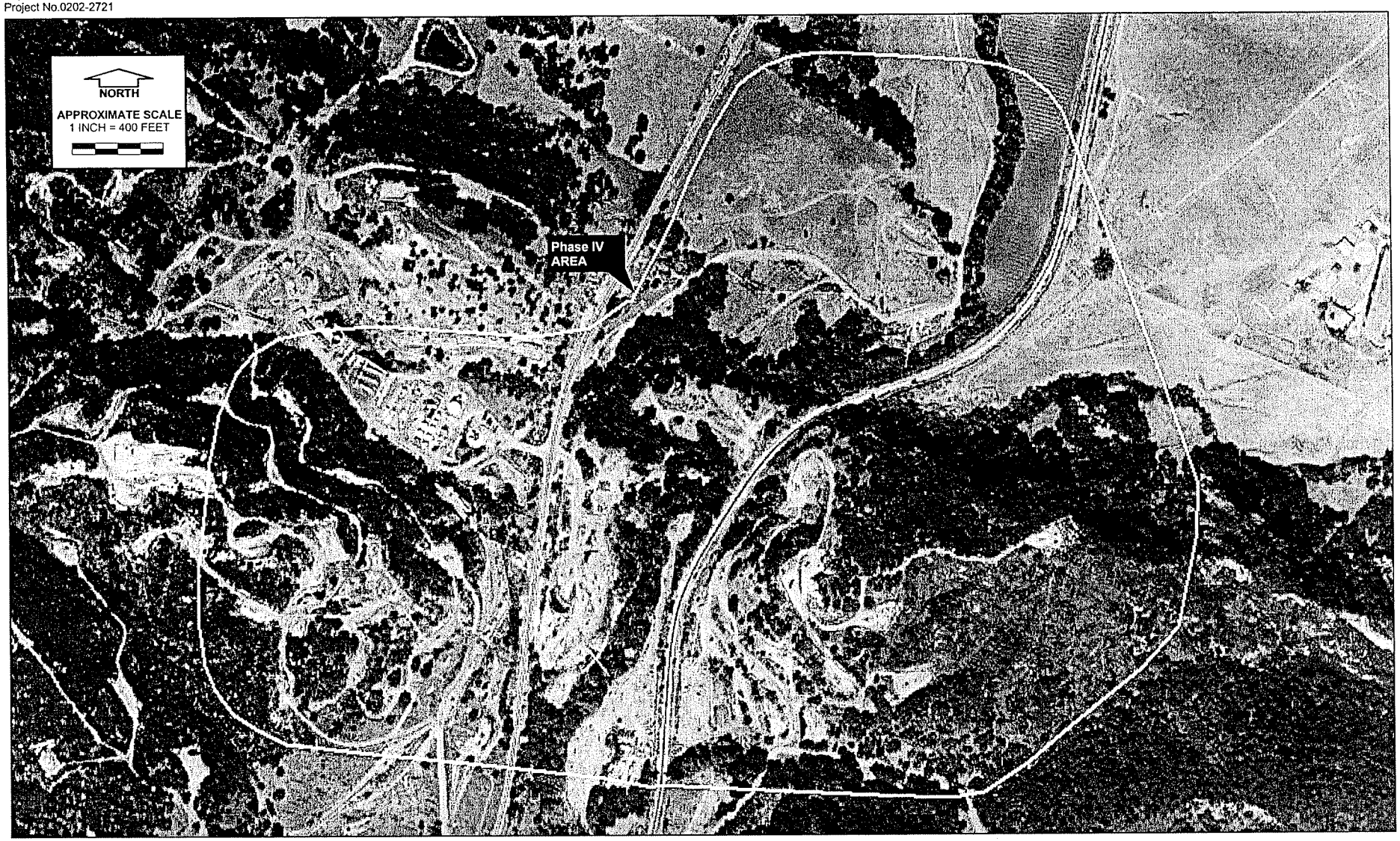
As part of the Phase IV Project, PXP proposes to construct an additional 3 steam generators, previously analyzed in the 1994 EIR and approved by the SLOPC. The generators will not be needed until after the drilling program is complete, and therefore their construction does not overlap the well drilling program, minimizing air emission impacts. These additions will meet SLO APCD New Source Review rules. The new generators will be constructed as needed, and will be grouped into two locations, currently planned to be adjacent to the existing two generator sites. Figure 3-5 shows the locations of the steam generators.

The proposed generators will be fitted with low nitrogen oxide burners, which will effectively reduce nitrogen oxide emissions.

For the new steam generators, there would be a new water line and a utility gas line linking PXP's main facility on the property with the new steam generator site. These two lines would be placed in the existing pipeline corridor that crosses Price Canyon Road. There would also be up to 200 feet of pipeline installed to link the steam generator site to the existing pipeline corridor. Similar the flowlines for the wells, this pipe would be suspended above ground by individual hangers or by group racks to minimize ground disturbance.

3.4.3.3 Water Reclamation

Water for the proposed project would come from existing sources: three groundwater wells on the property, and water recovered during the production of the oil (produced water). Some additional facilities (water softening, water treatment, tankage and appurtenances) will be required to treat the increased amount of produced water. The three fresh water wells currently provide water only for landscaping and plumbing; this practice would not change with the proposed project



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Phase IV Development Area

FIGURE 3-4

Table 3.4-2
Well Pad and Well Information

Well Pad Location	Code	New Existing	Disturbed (AC)	# of New Wells
Hyla 17H	H17H	E	0	6
Hyla 19H/Maino 1	H19H	E	0.26	3
Hyla Island	HI	E	0	5
Maino 16NW	M16NW	N	0.45	4
Maino 17NW	M17NW	E	0	2
Maino 18J	M18J	E	0	5
Maino 18L (Maino 19L01, Maino 18SIL, Maino 15	M18L	E	0.09	2
Maino 19J	M19J	E	0	4
Maino 19L (Maino 19SPL)	M19L	E	0.11	1
Maino 19N	M19N	E	0.34	5
Maino 21J	M21J	E	0.39	2
Maino 21L (Maino 16)	M21L	E	0.52	1
Maino Triangle	MT	E	0	5
Morehouse 303	MH303	E	0.76	20
Rock 4	R4	E	0.08	1
Rock 11N	R11N	E	0	1
Rock 12K	R12K	E	0	2
Rock 12M	R12M	E	0	4
Rock 13L	R13L	E	0	3
Rock 85A	R85A	N	0.84	6
Rock 86	R86	E	0.04	1
Rock 401	R401	E	0.5	2
Rock Island	RI	E	0	5
Signal 10M	S10M	E	0.03	1
Signal 11L	S11L	E	0.3	2
Signal 66C	S66C	N	0.52	2
Signal 101 (Signal 9LI)	S101	E	0.01	1
Signal 102 (PG 406.5)	S1026	E	0.13	1
Signal 102 (PG 408.5)	S1028	E	0.18	1
Signal 105 (Signal 10-5L)	S105	E	0.02	1
Signal 106	S106	E	0	2
Signal 113A	S113A	N	0.87	1
Signal 113D	S113D	E	0.18	7
Signal 150	S150	E	0	10
Signal 151	S151	E	0.28	4
Signal P1-I1	SP1	E	0	2
Total Acres			**6.9**	**125**

Note 1) Injection wells are included in the # new wells column and represent 30 of the total 125 wells being proposed.

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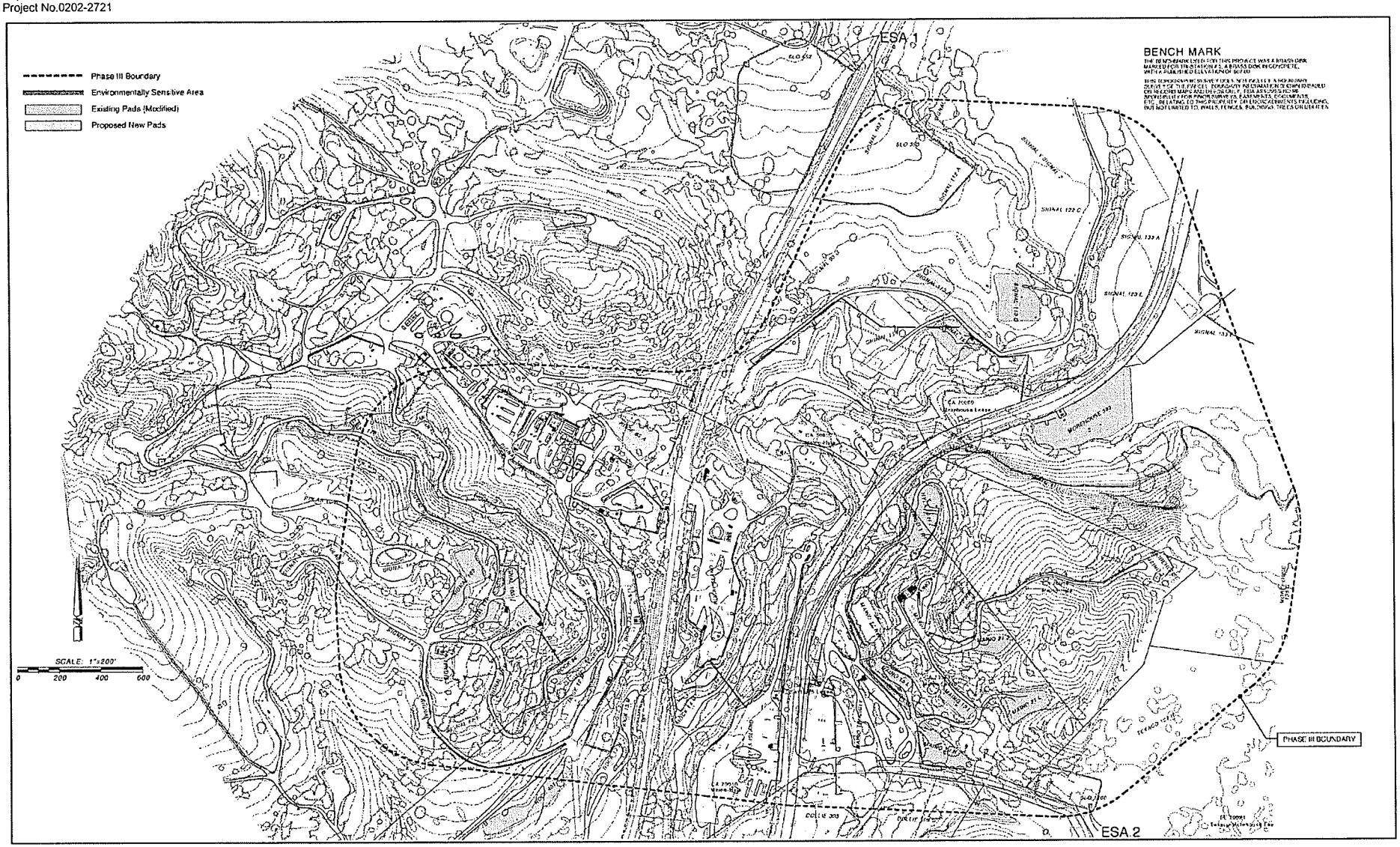

SOURCE: EDA Engineering Development Associates

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EXISTING AND PROPOSED NEW WELL PADS

FIGURE 3-5

3.4.3.4 Tank Battery Facilities

Current tank batteries are sized to accommodate the new production.

3.4.3.5 Vacuum Pipeline System, Flow Lines, and Vapor Recovery System

Wells drilled from new locations (i.e., those not directionally from existing wells) would have new, above-ground, 2-inch oil and gas (casing gas recovery) flowlines that connect the well to the existing pipeline corridors on the property. The length of these flowlines would be approximately 1,000 feet per well. The flowlines would be suspended above ground by individual hangers or by group racks. Consequently, the installation of the flowlines would disturb only a small area, approximately 10 square feet per well. The only disturbed area associated with the flowline installation would be those needed for the pads, for each hanger, or group rack. It is assumed that they would be placed in the same right-of-way as existing and new access roads to the maximum extent feasible.

It should be noted that there would be no new pipeline corridors built for the proposed project (including the new wells). Only the well flowlines, as described above, would be constructed[4]. In addition, no new access roads would be constructed. Instead, existing access roads would be used to the maximum extent feasible.

Production from the new wells would be handled by the existing dehydration facilities located on the west side of Price Canyon Road (see Figure 3.2). Some additional connector pipelines would be necessary to connect new well locations to the existing corridor of conductor pipelines. The location of these connector pipelines will be alongside existing roads and disturbed areas to the extent feasible. No pipeline burials are anticipated for the proposed project.

3.4.3.6 Public Utilities

A cogeneration facility is currently being built which will provide 1.4 Mega Watts (MW) and supplement the expected ultimate electrical demand of 2.8 MW. PG&E will provide the balance of the electrical needs.

3.4.3.7 Employment

Construction of most of the oil facilities is typically contracted to local drilling and construction firms. It is expected that PXP's existing workforce will be adequate to operate and maintain the new wells and facilities. Periodic long-term maintenance and call-out work will be performed by contract help.

3.4.3.8 Oil Transport

Oil will be transported by tanker truck to the Conoco-Philips Battles pump station in Santa Maria. It is estimated that an additional 25 truck trips per day will be required to transport the new production. The Traffic and Circulation Study prepared by Associated Transporation Engineers, (December 2001), evaluates the potential traffic impacts. Based on this analysis, the level of service (LOS) is not anticipated to be impacted.

[4] A "pipeline corridor" is a grouping of several large pipelines that would typically disturb vegetation along the entire pipeline route; well flowlines are not considered pipeline corridors.

3.5 CONSTRUCTION CONSIDERATIONS

3.5.1 Schedule of Completion

Construction would begin in January 2004 and would occur periodically for 36 or more months, with most activity concentrated in the summer months. If PXP drills 40 wells per year, the earliest the project would be completed is summer of 2007, when the last 5 wells would be drilled. The drilling of the new wells may extend beyond that date and depends on rate of production. Currently, each existing well produces about 15 barrels of oil per day, requiring about 50 barrels of steam (assuming an OSR of 0.32), and each generator can produce about 3,000 barrels of steam per day. Each generator is capable of supporting an average of 40 new wells given existing geological formations. Thus, with each incremental increase of 40 wells, a new steam generator will be added.

However, as heat accumulates in the oil produced over the life of the project, two important changes will occur. First, the amount of oil produced from each well will increase. PXP expects that the average well production will increase over time from the current average of 15 bbl/day. The second change will be that the steam required to produce a barrel of oil will drop. This will be observed as an increase in the OSR. The average OSR may increase from the current average of 0.32. As the OSR increases, each steam generator will be capable of supplying a large number of wells with steam.

3.5.2 Land Preparation

Land preparation for increased production will entail clearing and grading for four new well pad sites, construction of berms or dikes around the pads for emergency oil containment, and cleanup and landscaping. The proposed project utilizes existing pads for 90% of new wells. The four new pads will require 2.68 acres of ground disturbance. Minimal to moderate grading is required on the 17 existing pads cumulatively totaling about 4.22 acres. Existing generator sites will be used for the three new steam generators. No new access roads or ancillary equipment sites will be required.

3.5.3 Order of Construction

As a worst-case scenario, it is assumed that all construction and drilling activities would overlap (i.e., occur simultaneously), with the exception of the construction of the three new steam generators as previously noted. This overlap would be the most rigorous construction schedule, and thus represents a high estimate for motor vehicle trips generated during construction.

3.5.4 Equipment and Usage

Construction of well pads, flowlines and other appurtenances would occur during four 10-hr days from 7:00 a.m. to 4:00 p.m. Construction crews would be departing the premises during the p.m. peak hour (see *Traffic and Circulation Study*, 2001). Construction related deliveries (e.g., pipe, concrete, etc.) are estimated at a maximum of two per day. Construction of the additional steam generators will occur outside the peak construction period (Traffic and Circulation Study assumes no generator construction which is consistent with construction occurring outside of the peak period). The construction crew would consist of up to 22 people.

Table 3.5-1b[1]

Equipment	Fuel Type	Power Rating1	Number Active	Load Factor1	Hours Used per Day	Total Days of Construct.
Steam Generator Site Preparation[2]						
Welding Truck	D					
Truck Engine	D	185	4	--	1	103
Welding Machine	D	70	4	.7	8	103
HydroCrane	D	185	1	.5	8	103
580 Cat Backhoe	D	55	1	.7	3	103
Pickup Truck	G	185	3	--	1	103

Notes:

1. 3 Steam Generators permitted in Development Permit No. D910026D, but not yet built. They will be constructed after 2006, outside of peak construction period.
2. Power Rating and Load Factors: Same as 1994 EIR, Table A-1

POTENTIAL ENVIRONMENTAL EFFECTS

During the Initial Study process, several issues were identified as having potentially significant environmental effects. Each section of the Environmental Impact Report (EIR) will have a setting, impact analysis, cumulative impact analysis, and proposed mitigation measures (where necessary). Pertinent issues for the project area will be described in each section.

Aesthetics

The project entails expansion of an existing oil field development that can be seen from Price Canyon Road. The project site is located within a County of San Luis Obispo (County) designated "Energy and Extractive Resource" area and is therefore, subject to various specific policies regarding visual impacts, circulation and regional compatibility. The area adjacent to the project site is generally rural and supports agricultural use; however, some residences do also exist.

The project would result in the construction of four new well pads and modification of 31 additional pads, some of which may be visible from Price Canyon Road. While the applicant's proposal includes construction of these additional features, much of the project area has already been disturbed by the construction of the existing pads and wells, thus, the potential to impact the visual character of the area is considered minimal.

A field analysis will be conducted to determine the visual character of the land associated with the project in the environmental context, identify the subjective visual quality of the overall attractiveness of the area and its capability of preservation, and determine the visual sensitivity level or the public's concern and viewing expectations. Based upon the field analysis, the impacts will be identified. The potential impacts from lights and glare will also be analyzed. Such impacts may include degradation of the scenic quality of Price Canyon Road due to the placement of new pads and wells within view from motorists traveling on the road. This analysis will include preparation of a map showing major visual features, on and off-site viewing coordinators, and locations of the new wells and pads.

Mitigation. Potential and feasible mitigation measures to reduce project impacts will be identified. Such mitigation measures may include relocation of pads and wells so that are not as visible from Price Canyon Road, and use of visual screening techniques and compatible colors to reduce impacts. In some cases, alternative-pad sites will be suggested if necessary. Description of any mitigation measures proposed for the project will include a description of landscaping materials, berms and revegetation.

Air Quality

The impact analysis will include an assessment of the potential for exposure to airborne asbestos due to well pad grading and other proposed earth disturbance. An analysis of the project's consistency with the Air Pollution Control Board (ACPD) 2001 Clean Air Plan will be provided. This analysis will focus on the inclusion of project-related emissions (steam generators and fugitive hydrocarbons) in the emissions inventory.

Mitigation. Development of mitigation measures will focus on reducing construction-related fugitive dust and emissions from drilling equipment. Potential measures may include operating equipment in tune per manufacturer's specifications, use of an Air Resources Board (ARB) certified motor vehicle diesel fuel in all portable and off-road diesel powered equipment, oxidation catalysts or catalyzed diesel particulate filters on diesel engines, use of 1996 model year or later heavy equipment, use of compressed natural gas (CNG)-fired engines on drill rigs, limitations on simultaneous drilling more than one well, standard dust control methods, and off-site mitigation. Off-site mitigation measures will be developed in coordination with the APCD, and will include review of the existing program (financial contribution to bike path construction).

The primary methods of emission reduction are compliance with APCD Rules 417 and 430, which will be assumed in preparation of the emissions inventory. Additional reductions will be investigated in coordination with the APCD, including off-site mitigation such as replacement of stationary agricultural engines, old car scrapping programs, fleet vehicle CNG conversion, bus or garbage truck CNG conversion and marine vessel engine retrofits.

Biological Resources

This section of the EIR will include peer review of existing information regarding the presence and distribution of special-status species and sensitive habitats identified within the project site. Field surveys will be completed as required to fully document the biological resources of the site. A list of potential significance thresholds for use in evaluating the effects of the project on biological resources will be developed. The thresholds will be based on California Environmental Quality Act (CEQA) Guidelines (Appendix G) issued by the California Office of Planning and Research (1999), and other locally derived standards established by the County. These specific significance thresholds will be utilized to analyze the significance of potential impacts to biological resources from project implementation. Project impact discussions will include, but will not be limited to the following issue areas:

1. Result in a substantial adverse effect on any species identified as a candidate, sensitive, or special-status, either directly (due to construction activities) or through habitat modifications (e.g., Pismo clarkia, Well's manzanita, black-flowered figwort, etc.);

2. Result in a substantial adverse effect on any habitat or other sensitive natural community through fragmentation and/or direct loss (i.e., coast live oak woodland);

3. Interfere substantially with the movement of any wildlife species associated with the project site and surrounding areas; and,

4. Result in any potential secondary impacts to the water quality and habitat of nearby Pismo Creek and associated native resident or migratory fish or wildlife species (e.g., southern steelhead, California red-legged frog, southwestern pond turtle, etc.).

Mitigation. In coordination with the County, potential mitigation measures consistent with the goal of avoiding or reducing project impacts on biological resources to less than significant levels will be developed. In an effort to be efficient and consistent, existing mitigation contained within these documents will be utilized where applicable. As necessary existing measures may be modified and new measures may be developed to further minimize potential impacts to biological resources to less than significant levels.

Cultural Resources

Various cultural resource investigations of the property conducted over the last thirty years have identified four prehistoric, and one historic archaeological site. These sites are located in the vicinity of the project, but apparently do not directly underlie the project site. All previously mapped archaeological sites within the vicinity of the Phase III expansion area will be reviewed and verified accordingly. Upon completion of the peer review of existing cultural resources surveys and mapping of all previously recorded archaeological sites, short-term, long-term, and secondary impacts to cultural resources due to project implementation will be identified.

Mitigation. Mitigation measures will be developed to reduce potential adverse impacts to cultural resources, to the extent feasible, to a less than significant level. Mitigation measures may include, but would not be limited to a pre-construction workshop to educate site workers on the sensitivity of cultural resources located within the vicinity of the work areas.

Paleontological Resources

A review of records of known paleontological sites held by the Natural History Museum of Santa Barbara, the Museum of Paleontology of UC Berkeley, and the Los Angeles County Museum of Natural History will be performed. Geological and paleontological maps and publications will be consulted for information on local formations and fossils. Any information available from geological core studies will also be reviewed. The literature review and record searches will determine the existence of previously recorded paleontological resources within the project boundaries plus a one-mile radius.

The project area has not been previously surveyed for paleontological resources. As such, a thorough survey of all major surface exposures of rock units will be performed. Exposed paleontological resources located during the survey will be photographed in-situ, with a scale bar, and the location recorded by hand onto a project map and by recording the UTM with a hand-held GPS unit. In addition, photographs will be taken of any exposures of geological formations and the extent of formations informally noted on the project map. Only fossils in imminent danger of destruction will be collected.

An analysis of impacts to paleontological resources due to the proposed 264-acre project implementation will be prepared. The project's cumulative impacts on County paleontological resources shall also be identified and discussed.

Mitigation. Mitigation measures to reduce potential adverse impacts to a less than significant level will be developed.

Geology and Soils

Existing information and documents will be utilized to the maximum possible extent when analyzing drainage, erosion, and sedimentation issues. Evaluation of a conceptual grading plan will be performed to determine if the project will significantly increase storm water runoff, contribute to existing drainage problems, or alter existing waterways.

Determination of any significant increases in erosion or sedimentation as a result of short-term or long-term project impacts will be made. The EIR will also determine if the project may create or contribute to any surface water pollution.

Mitigation. The EIR will identify and analyze feasible mitigation measures for the impacts caused by the project as determined by a conceptual grading and drainage plan. Any residual or secondary impacts will also be identified and discussed.

Hazards/Hazardous Materials

The EIR will include a discussion of potential hazards that may be encountered during well construction and operations. The potential hazards that could be encountered during implementation of the proposed project include explosive gases, hydrogen sulfide gas, well blowouts resulting in potential spills/releases, and steaming operations. The objective of the hazards/risk of upset section will be to analyze the potential hazards to workers, the public, and the environment from the proposed project and to include mitigation measures that will reduce those impacts to less than significant levels.

Noise

The proposed project will include construction, drilling, and operations (production). The applicant has indicated that these activities may overlap. Noise levels associated with

pad grading and well drilling will be estimated based on the equipment to be used and proposed hours of operation. A construction noise worksheet model will be used based on noise reference levels in Bolt, Beranek and Newman (1971), and geometric divergence and ground attenuation. However, noise reference levels obtained from actual noise measurements of equipment will be used if available. The distance between noise sources and sensitive receptors will be determined based on aerial photographs. The noise analysis will address the noise reduction effects of any natural or artificial barriers.

Drilling operations may generate 22 heavy-duty truck trips per day, which would increase traffic noise levels along Price Canyon Road and State Route 227. Padre will model drilling-related noise level increases at up to 5 residences located within 100 feet of these roadways, using the Caltrans LeqV2 noise model. Existing traffic volumes on affected roadways will be obtained from the County Transportation Department.

Significance thresholds for noise impacts will be taken from Section 22.06.044 of the County Land Use Ordinance (Exterior Noise Level Standards: 50 dBA Leq daytime, 45 dBA Leq nighttime) and the Caltrans Noise Abatement Criteria (67 dBA Leq, traffic noise only). However, construction activities are specifically exempted from Section 22.06.044

Mitigation. In coordination with the County, Padre will identify potential mitigation measures consistent with the goal of avoiding or reducing project noise impacts to less than significant levels. This task will include a peer review of the measures proposed in the existing 1994 SEIR, the 2001 traffic and circulation study, and past mitigation monitoring and reporting program reports prepared by Firma. In an effort to be efficient and consistent, existing mitigation contained within these documents will be utilized where applicable. Mitigation measures may include restricting nighttime drilling near residences (if any) and limiting heavy-duty truck trips during peak hour.

Transporation/Circulation

The EIR will include a discussion for traffic impacts that may be encountered during well construction and operations. The potential impacts that could be encountered during implementation of the proposed project include traffic congestion, increased vehicular trips, and a reduction in the level of service on Price Canyon Road and associated intersecting roads. The objective of the traffic section will be to analyze the potential impacts to the public, and the environment from the proposed project and to include mitigation measures that will reduce those impacts to less than significant levels.

The EIR will include a review of calculated average daily, A.M. and P.M peak hour trip generation estimates for the project, and the assigned project-generated peak hour traffic to the study area intersections based on distribution and assignment patterns. It will also examine the existing + peak hour levels of service at the study area intersections, which will be used to determine the traffic and circulation impacts.

Mitigation. Potential mitigation measures that may be implemented to maintain the County's desired level of service at study area intersections with existing + project traffic will be developed. In addition, forecasted General Plan Buildout traffic volumes and General Plan Buildout peak hour levels of service at study area intersections + project peak hours levels of service at study area intersections will be reviewed to determine project-generated impacts. If necessary, additional mitigation measures to maintain the County's desired level of service with General Plan Buildout + project traffic will be developed.

Land Use

The determination of the project's impact on existing land uses will include thresholds of significance for land use consistency impacts. The impact analysis will focus on whether the proposed project complies with adopted plans, ordinances, and policies. The impact analysis will also discuss the potential for the project to impact existing land uses in addition to adjacent agricultural and recreational land uses. Each alternative will be analyzed equally in the impact analysis section.

Mitigation. Mitigation measures will be identified to reduce the project's impact on existing land uses. Any residual or secondary impacts will also be identified and discussed.

Cumulative Effects

The EIR will address cumulative effects within each area of analysis, and identify and discuss relevant cumulative impacts of the project in relation to the project area. These effects will be analyzed to the point where further inquiry becomes speculative. Relevant issues include:

- Traffic from outside the area on major roads;
- Interruption of animal migration routes; and,
- Basin-wide air quality.

Growth Inducement and Other Required CEQA Sections

The EIR will evaluate and discuss the potential of the proposed project to foster growth within the project area. This section will briefly describe significant irreversible environmental changes that would take place as a result of the project as well as the relationship between local short-term uses of the environment and enhancement of long-term productivity, as required by CEQA.

ALTERNATIVES

Project alternatives will be discussed in less detail than the proposed project, but in detail sufficient to allow the reviewer to compare the impacts of each alternative to those of the proposed project. This section will include a matrix which provides a graphic comparison of the environmental impacts. The alternatives will be analyzed for impacts to aesthetics, air quality, biological resources, cultural resources, paleontological resources, geology and soils, hazards/hazardous materials, noise, transportation/circulation, and land use. Discussion and evaluation of project alternatives will include the following:

No Project. Operations at the project site will remain unchanged.

Reduced Disturbance. This alternative will not involve construction of the four new well pads. All of the proposed 95 production wells and injection will be developed on existing pads.

Reduced Scope. The alternative will involve development of only 45 production wells, 10 injection wells, and only 1 steam generator.

Alternative Energy. This alternative will examine the development of a renewable energy source in lieu of expansion of the oil field.

APPENDIX B

Notice of Preparation Responses

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

SEP 11 2003

151422SWR03PR10364:APS

Steve McMasters
Office of the Environmental Coordinator
County of San Luis Obispo
County Government Center, Room 310
San Luis Obispo, California 93408

Dear Mr. McMasters:

The National Marine Fisheries Service (NOAA Fisheries) reviewed the Notice of Preparation of an Environmental Impact Report for the Plans Exploration and Production Phase IV. As you requested, NOAA Fisheries provides the following information to assist The County of San Luis Obispo (County) for preparing the environmental document.

NAME OF CONTACT PERSON. Anthony Spina will be the principal contact for this specific project. Correspondence can be sent to him at the above address; you can reach him by telephone at 562-980-4045.

PERMIT OR APPROVAL AUTHORITY. NOAA Fisheries' jurisdiction involves marine mammals, marine fish, and anadromous fish (steelhead and salmon) and their habitat. The agency reviews proposed actions for the purposes of determining whether these species or their habitat are likely to be adversely affected, and of recommending measures to avoid, minimize, and offset negative effects. Review of projects involving anadromous fish, i.e., steelhead, is typically performed in the context of either section 7 or section 10 of the Endangered Species Act of 1973, as amended. Section 7 is the appropriate review path when a federal action (any action authorized, funded, or carried out) is associated with a project. Review under section 10 applies when no federal nexus exists. The end result of a review could involve either a Biological Opinion or Incidental Take Permit, depending on whether a federal action is associated with the proposed action.

ENVIRONMENTAL INFORMATION. The environmental document should clearly identify and describe the proposed action including interrelated and interdependent actions to the extent that NOAA Fisheries could develop an understanding of the potential effects (offsite, onsite, direct, indirect, temporary, permanent) of the action on steelhead and their habitat.

PERMIT STIPULATIONS/CONDITIONS. Specifying conditions would be premature at this time. Special conditions or reasonable and prudent measures or alternatives might be identified when NOAA Fisheries formally reviews the proposed action.

ALTERNATIVES. NOAA Fisheries has no recommendation at this time, but may identify an alternative as the proposed action unfolds.

REASONABLY FORESEEABLE PROJECTS, PROGRAMS OR PLANS. At this time NOAA Fisheries is unaware of any future project that may overlap with the proposed project action.

NOAA Fisheries appreciates the opportunity to provide the County with information to support preparation of the environmental document, and looks forward to formal review of the proposed action. Please contact Anthony Spina at (562) 980-4045 if you have a question concerning this letter or if you would like additional information.

Sincerely,

Rodney R McInnis

Rodney R. McInnis
Acting Regional Administrator

9/29/03

To: Office of Environmental Coordinator
County of San Luis Obispo
County Government Center, Room 310
San Luis Obispo, CA. 93408-2040

From: The San Luis Obispo County Chumash Council (SLOCCC)
M. Vigil Chumash Cultural Resources
1030 Ritchie Rd., Grover Beach, CA 93433

Subject: Plains Exploration and Production Phase IV Development Plan (D010386D)

Dear Steve,

Thank you for the notice of information on this proposed project. We are sorry that we have not been responding to much of the information that your department has been sending lately, but due to medical problems we have been unable to respond for quite some time.

1. Contact person(s): Chief Mark Vigil Sr. or Rhonda Vigil of the (SLOCCC).
Address: 1030 Ritchie Rd., Grover Beach, CA. 93433
Ph#(805) 481-2461—Fax#(805)474-4729

2.Members on the MLD contact list with the Native American Heritage Commission: Owner and Chief with M. Vigil Chumash Cultural Resources: Native American Council (SLOCCC): Enrollment #'s: State, County and City recognition: Ancestral ties in this County (territory).

3. Our concerns are for all the wildlife species (impacts?): Plant life safety (impacts ?), Cultural Resources, Native American Sites

4. Require Native American Monitoring by an (Obispeno Chumash) for all ground disturbance.

5. Other than no impact at all, the only thing we would require is Native American Monitoring for all ground disturbance.

6. No comments at this time.

7. You already have information on the sensitivity of this land. Cal Trans new detailed study results on the territorial lines for this County. Other than a small gray area near Cayucas, this County has been found, once again to be Obispeno Chumash as earlier studies indicated. We ask that Obispeno Chumash monitors be involved with projects in this county due to differences in traditional ceremonies and treatment of sacred burials.

8. As said before, this area is of great concern to us and we feel that it must be monitored in any ground disturbing areas. This is separate from Archaeological monitoring as our beliefs and interests are completely different. Also as found to be fact in the past, many archaeologists miss or recommend incorrect or different plans than the Native American monitors. We would like to request that the County add this as a requirement on all proposed projects with ground disturbing activity to protect our religious and traditional beliefs. The same rights as the Archaeologists have, currently. We think that doing so would give us the respect we have been asking for, so that we may insure protection of our sacred sites or potential sensitive areas.
Currently, only archaeologists go out on many of the surface surveys and other related studies, (Phase I, II, and III's.) TOO many times we have found that due to error in judgement from Archaeologists recommendations, our sacred burials and sites are disturbed and destroyed. We believe that by adding this in your requirements these types of horrible mishaps would cease.

It has been too long since the laws or requirements were written for the county and we believe it is time to update these requirements to include Native American monitors on this project as well as ALL projects with ground disturbance which could have the potential of disturbing our sites. We know that it is not a law, but nor is there a law that prevents the County from including Native American monitoring on such projects. We think it would prevent many appeals, lawsuits, unnecessary disturbance, etc. and would show the respect that our ancestors deserve. It could also save the builders money and trouble by avoiding appeals and disagreements. Many of the Cities and Counties already do this and we would like to say that our County also shows this respect.

So once again, for this project as well as others we recommend Native American Monitoring.

Faithfully,

Chief Mark Vigil Sr. and the San Luis Obispo County Chumash Council

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN LUIS OBISPO

DATE: October 3, 2003

TO: Steve McMasters, Senior Environmental Specialist
San Luis Obispo County Department of Planning and Building

FROM: Heather Tomley, Air Quality Specialist III AAG for HAT
San Luis Obispo County Air Pollution Control District

SUBJECT: Notice of Preparation for the Plains Exploration Phase IV Development Plan (D010386D)

Thank you for including the APCD in the environmental review process. The following information is provided to assist you in the development of the Environmental Impact Report for the Plains Exploration Phase IV Expansion of the Price Canyon Oil Field.

1. NAME OF CONTACT PERSON

Heather Tomley
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401
(805) 781-4654

Post-it® Fax Note 7671	Date 10-3-03	# of pages ▶ 3
To Steve McMasters	From APCD	
Co./Dept. SLO City Plan/Dept	Co. H. Tomley	
Phone #	Phone #	
Fax # 788-2413 12:42	Fax #	

2. PERMIT(S) OR APPROVAL(S) AUTHORITY:

Plains Exploration and Production (PXP) holds several APCD permits for equipment operating at the Arroyo Grande Oil Field. Expansion of operations at this facility will require review and an Authority to Construct issued by the APCD. For more information on these requirements, contact Dean Carlson with the APCD Engineering Division at 805-781-5912.

3. ENVIRONMENTAL INFORMATION:

A complete air quality analysis should be included in the DEIR to adequately evaluate the new air quality impacts associated with the proposed project. This analysis should address both short-term and long-term emissions impacts from the project. The following is an outline of items that should be included in the analysis:

a) A description of existing air quality and emissions in the impact area, including the attainment status of the District relative to State Air Quality Standards and any existing regulatory restrictions to development. The most recent Clean Air Plan (CAP) should be consulted for applicable information.

b) A thorough emissions analysis should be performed on all relevant emission sources, using emission factors from the EPA document AP-42 "Compilation of Air Pollutant Emission Factors", EMFAC2000, or other approved sources. The emissions analysis should include calculations for estimated emissions of all criteria pollutants and toxic substances released from the anticipated land use mix on a quarterly and yearly basis. Documentation of emission factors and all assumptions (i.e. anticipated land uses, average daily trip rate from trip generation studies, etc.) should be documented in the appendix to the DEIR.

c) The DEIR should include a range of alternatives to the proposed project that could effectively minimize air quality impacts. A thorough emissions analysis should be conducted for each of the proposed alternatives identified. The DEIR author should contact the District if additional information and guidance is required. All calculations and assumptions used should be fully documented in an appendix to the DEIR.

d) A cumulative impact analysis should be performed to evaluate the combined air quality impacts of this project and impacts from existing and proposed future construction in the area. This should encompass all planned construction activities within 1 mile of the project.

e) The data analyses requested above should address local and regional impacts with respect to maintaining applicable air quality standards at build out. Authors should consult the District to determine if a modeling analysis should be performed and included in the EIR.

f) Temporary construction impacts, such as fugitive dust and combustion emissions from construction and grading activities, should be quantified and mitigation measures proposed. In addition, naturally occurring asbestos may exist at the site. A geological survey is required for the site, and if naturally occurring asbestos is found, the EIR should indicate that a plan will be developed to comply with the requirements listed in the Air Resources Board's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. For more information on these requirements, contact Karen Brooks of the APCD Compliance Division at 805-781-5912.

g) Mitigation measures should be recommended, as appropriate, following the guidelines presented in Sections 5 and 6 of the District's "CEQA Air Quality Handbook".

4. PERMIT STIPULATIONS/CONDITIONS:

The CEQA Air Quality Handbook provides various significance thresholds that should be referenced in the EIR for determining the significance of impacts and the level of mitigation necessary. The Handbook breaks the impacts into construction phase (Section 6) and operational phase (Section 2) emissions, with separate significance thresholds for each. The level of mitigation necessary will be based upon the new emissions emitted from the project.

5. ALTERNATIVES:

Any alternatives described in the DEIR should involve the same level of air quality analysis as described in bullet items 3.b and 3.c listed above.

6. REASONABLY FORSEEABLE PROJECTS, PROGRAMS OR PLANS:

An important component of an EIR is a consistency analysis of a proposed project with respect to pertinent planning and environmental guidance documents (i.e. general and specific plans, clean air plans, etc.). The District's CAP is such a document and contains land use policies designed to lessen automobile dependence through greater pedestrian access, increased transit access, mixed use and compact zoning, and a balance of jobs and housing. Projects, with potential size and character to impact the assumptions made in the CAP, can impede the District's attempts to achieve the State ozone standard. Therefore, the consistency analysis obtained through the DEIR process is very important from a decision-

making standpoint. Please refer to the District's CEQA Air Quality Handbook, Section 2.2, for additional instructions on performing the consistency evaluation.

7. RELEVANT INFORMATION:

As mentioned earlier, the Handbook should be referenced in the EIR for determining the significance of impacts and level of mitigation recommended. Additionally, emission factors from AP-42, EMFAC2000, or other approved sources should be used when performing emission calculations.

8. FURTHER COMMENTS:

No further comments.

Again, thank you for the opportunity to assist in the development of the EIR for this project. If you have any questions, or would like to receive an electronic version of this letter, please feel free to contact me at 781-5912.

HAT/sll

cc: Dean Carlson, Engineering Division
Karen Brooks, Compliance Division

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APPENDIX C

2001 Traffic and Circulation Study

STOCKER RESOURCES ARROYO GRANDE OIL FIELD PHASE IV PROJECT
SAN LUIS OBISPO, CALIFORNIA

TRAFFIC AND CIRCULATION STUDY

December 12, 2001 **ATE Project # 01086**

Prepared For:

David Foote
firma
849 Monterey St., Ste 205
San Luis Obispo, CA 93401

ASSOCIATED TRANSPORTATION ENGINEERS
100 North Hope Avenue, Suite 4, Santa Barbara, CA 93110-1686 • (805) 687-4418 • FAX (805) 682-8509

ASSOCIATED TRANSPORTATION ENGINEERS
100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509

Maynard Keith Franklin, P.E.
Richard L. Pool, P.E.
Scott A. Schell, AICP

December 12, 2001

Davis Foote
firma
849 Monterey St., Ste 205
San Luis Obispo, CA 93401

TRAFFIC AND CIRCULATION STUDY FOR THE STOKER RESOURCES ARROYO GRANDE OIL FIELD PHASE IV PROJECT, SAN LOUIS OBISPO COUNTY

Associated Transportation Engineers (ATE) is pleased to submit the following traffic and circulation study for the Stoker Resources Arroyo Grande Oil Field Phase IV Project, proposed in the County of San Louis Obispo. The study addresses potential traffic impacts associated with development of the project and identifies mitigation measures where appropriate. It is our understanding that the results of the study will be incorporated into the SEIR being prepared for the project.

We appreciate the opportunity to assist you with the project.

Associated Transportation Engineers

Scott A. Schell, AICP
Principal Transportation Planner

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TABLES

FIGURES

INTRODUCTION

The following report contains an analysis of the traffic and circulation impacts associated with the proposed Stocker Resources Arroyo Grande Oil Field Phase IV Project, located adjacent to Price Canyon Road in San Luis Obispo County. The report provides information relative to existing and future traffic conditions within the study area adjacent to the project site, and evaluates traffic impacts related to both the construction and ongoing operations phases of the project.

PROJECT DESCRIPTION

As currently proposed, the Phase IV Project of the would introduce 95 oil wells and 30 injection wells within an existing oil field site located adjacent to Price Canyon Road, approximately 2.5 miles northeast of the City of Pismo Beach. All construction would occur within the Phase III boundaries. The oil would be trucked from the site during the operations phase. Figure 1 illustrates the location of the project site. Construction of the wells would occur at a rate of 40 wells per year over a three-year period. The site would be accessed through the existing road extending west from Price Canyon Road, opposite the Ormonde Road intersection.

ENVIRONMENTAL SETTING

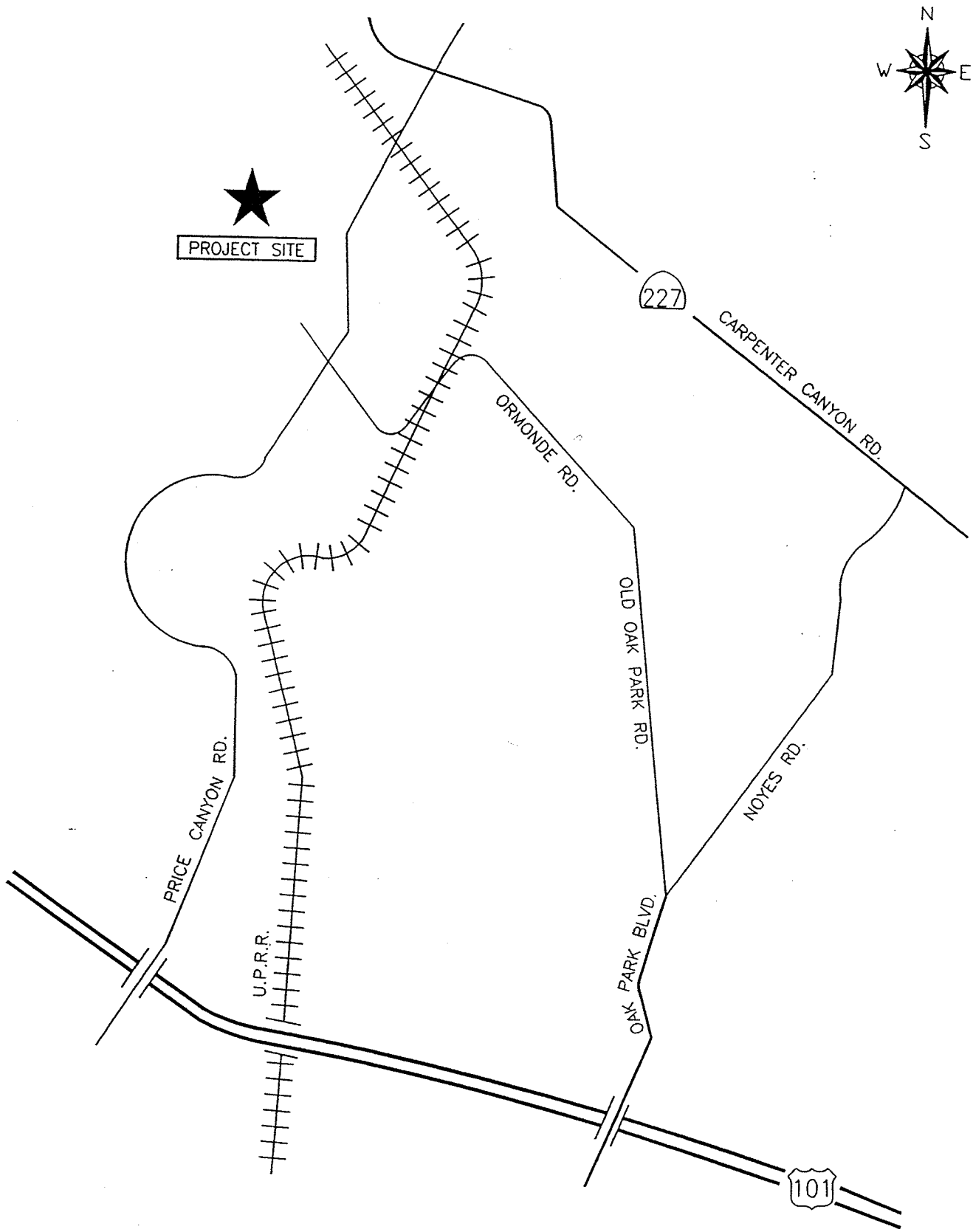
Existing Roadway Network

Regional access to the project site is provided by State Route 227, Price Canyon Road and Ormonde Road, as illustrated in Figure 1. The following text briefly describes the study-area roadway network.

State Route 227 is a two-lane rural highway which extends between the Cities of Arroyo Grande on the southeast and San Luis Obispo on the northwest. The segment of State Route 227 south of Price Canyon Road is generally narrow with no shoulders and a curvilinear alignment. North of Price Canyon Road, the roadway becomes straighter and widens out to provide shoulders. Access to the project site from State Route 227 is provided via the Price Canyon Road connection. The SR 227/Price Canyon Road intersection is signalized.

Price Canyon Road is a north-south improved two-lane County road which extends from the City of Pismo Beach on the south to State Route 227 on the north. Price Canyon Road bisects the Arroyo Grande oil field site and provides direct access to the site at the entrance located opposite Ormonde Road. The Price Canyon Road/Ormonde Road intersection is controlled by stop signs on Ormonde Road.

Ormonde Road is an east-west two-lane County road which crosses the Arroyo Grande oil field site and connects to Price Canyon Road. This road provides access to the oil fields located east of Price Canyon Road and extends easterly, eventually connecting with Noyes Road.



ASSOCIATED TRANSPORTATION ENGINEERS

Existing Street Network/Project Site Location

FIGURE 1

Existing Traffic Volumes and Levels of Service

Roadways. The operational characteristics of the roadway segments within the study area were analyzed based on standard engineering roadway design capacities, which are summarized in the Technical Appendix to this report. In rating the operating condition of a roadway segment with existing or future traffic volumes, "Level of Service" (LOS) grades A through F are assigned, with LOS A indicating very good operation and LOS F indicating poor operation (more complete definitions of levels of service are contained in the Technical Appendix). The County of San Luis Obispo has adopted LOS C as the minimum standard for rural roadway operations.

Existing average daily traffic (ADT) volumes for the street segments in the study area were obtained from machine counts completed in August 2001 by ATE for this study and from Caltrans.[1] Figure 2 illustrates the existing ADT volumes within the study area. Comparison of the existing ADT volumes and the corresponding design capacity for each roadway segment shows that all of the study-area roadways currently operate acceptably in the LOS A-C range.

Intersections. Because traffic flow on urban street networks is most constrained at intersections, detailed traffic flow analyses focus on the operating conditions of critical intersections during peak travel periods. The LOS A to LOS F grading system discussed previously for roadway segments is also used to rate intersection operations. The County has established LOS C has the minimum acceptable service level for rural intersections.

ATE conducted volume counts and delay studies at the study-area intersections in August, 2001. Figure 2 shows the Existing intersection traffic volumes.

Table 1 lists the Existing level of service for each intersection. Levels of service for the signalized intersections were calculated using the operations method outlined in the Highway Capacity Manual.[2] Level of service calculation worksheets are contained in the Technical Appendix for reference.

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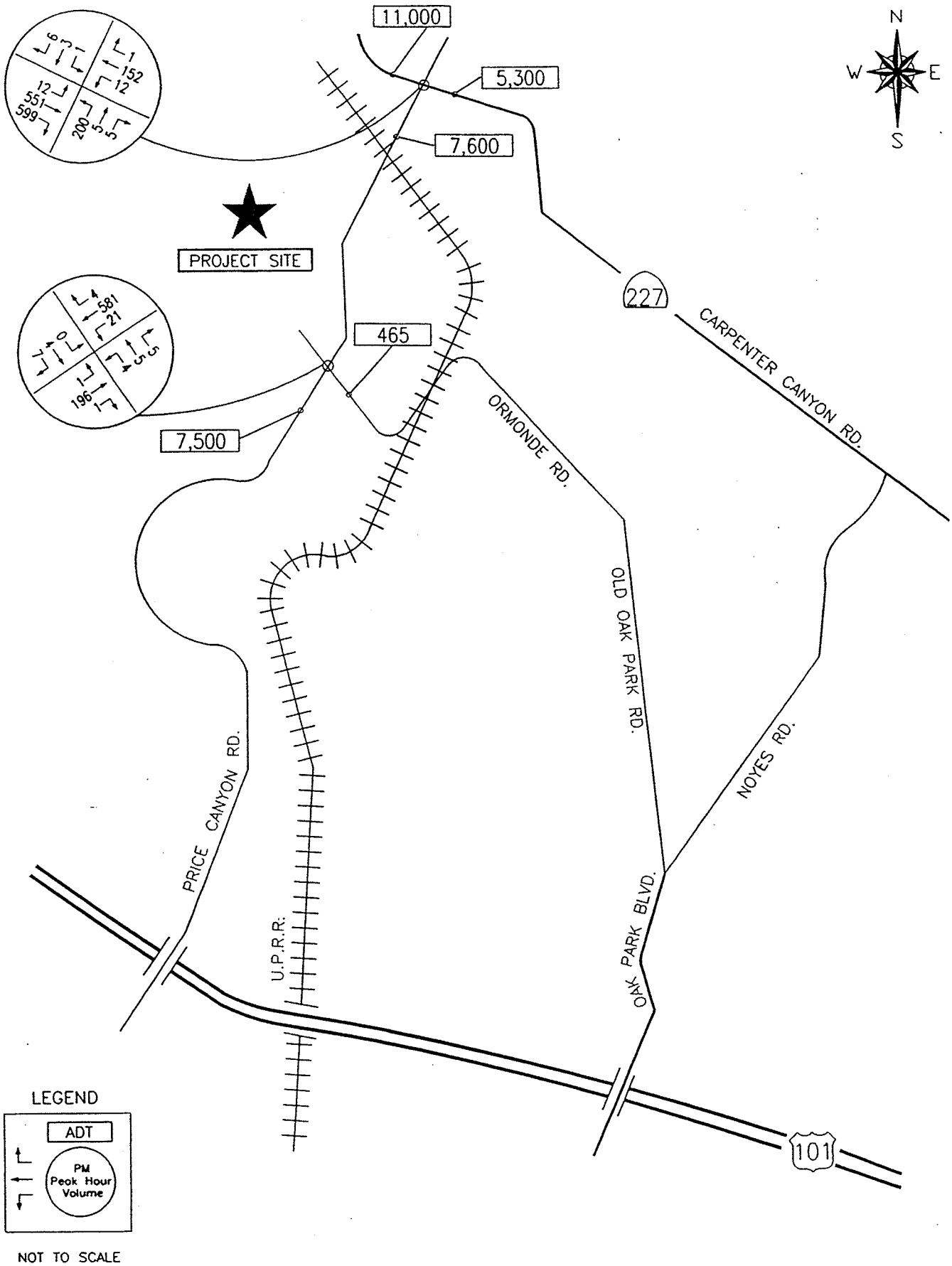
1 2000 Traffic Volumes on California State Highway, California Department of Transportation, June 2001.

2 Highway Capacity Manual, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 2000.



ASSOCIATED TRANSPORTATION ENGINEERS

Existing Traffic Volumes

FIGURE 2

Table 1
Existing P.M. Intersection Levels of Service

Intersection	Control Type	Existing Delay / LOS
Price Canyon Road/Ormonde Road	2-Way Stop	8.3 sec. / LOS A
Price Canyon Road/Hwy 227	Signalized	6.6 sec. / LOS A

The data presented in Table 1 show that the study-area intersections currently operate in the LOS A range, which is considered a good service level.

PROJECT-SPECIFIC ANALYSIS

Project Trip Generation

The development of the project would occur in three phases; the construction phase, the drilling phase and the operations phase. The applicant has provided construction and operational data indicating that construction, drilling activities and operation (production) activities could overlap. The project trip generation estimates therefore assume a "worst case" scenario, with a maximum overlap of these activities. Table 2 shows trip generation estimates for the combined activities, incorporating the following employee and delivery schedules:

- Construction personnel would work four 10-hour days from 7:00 A.M. to 4:00 P.M. Thus, construction personnel would depart the premises during the P.M. peak hour.

- Construction related deliveries (pipe, concrete etc.) are estimated at a maximum of two per day. No new steam generator above and beyond that proposed and reviewed in the previous EIR will be added. Therefore construction of additional, new steam generators is not planned.

- Drilling personnel would comprise three 8-hour shifts with four workers per shift. Shift changes would occur at 8:00 A.M., 4:00 P.M., and midnight. Thus, one shift change would occur during the P.M. peak hour.

- The high estimate for drilling related deliveries is 22 per day. This estimate is for days when conductor pipes would be cemented (one load each for three conductors at one time), gravel would be delivered for site use (three drilling sites per day with six loads per site), and mud would be transported off-site (one load per day).

- No new employees would be required for the operational phase of the project. Current production is 1,800 bbl/day and is estimated to increase to 5,000 bbl/day. Data indicates that 25 additional transport trucks are needed for daily off-site transportation.

- No new main access roads will be constructed within the project boundaries. Any minor access roads will be handled with normal operations' equipment.

Table 2
Project Trip Generation Estimates
with Overlapping Schedules

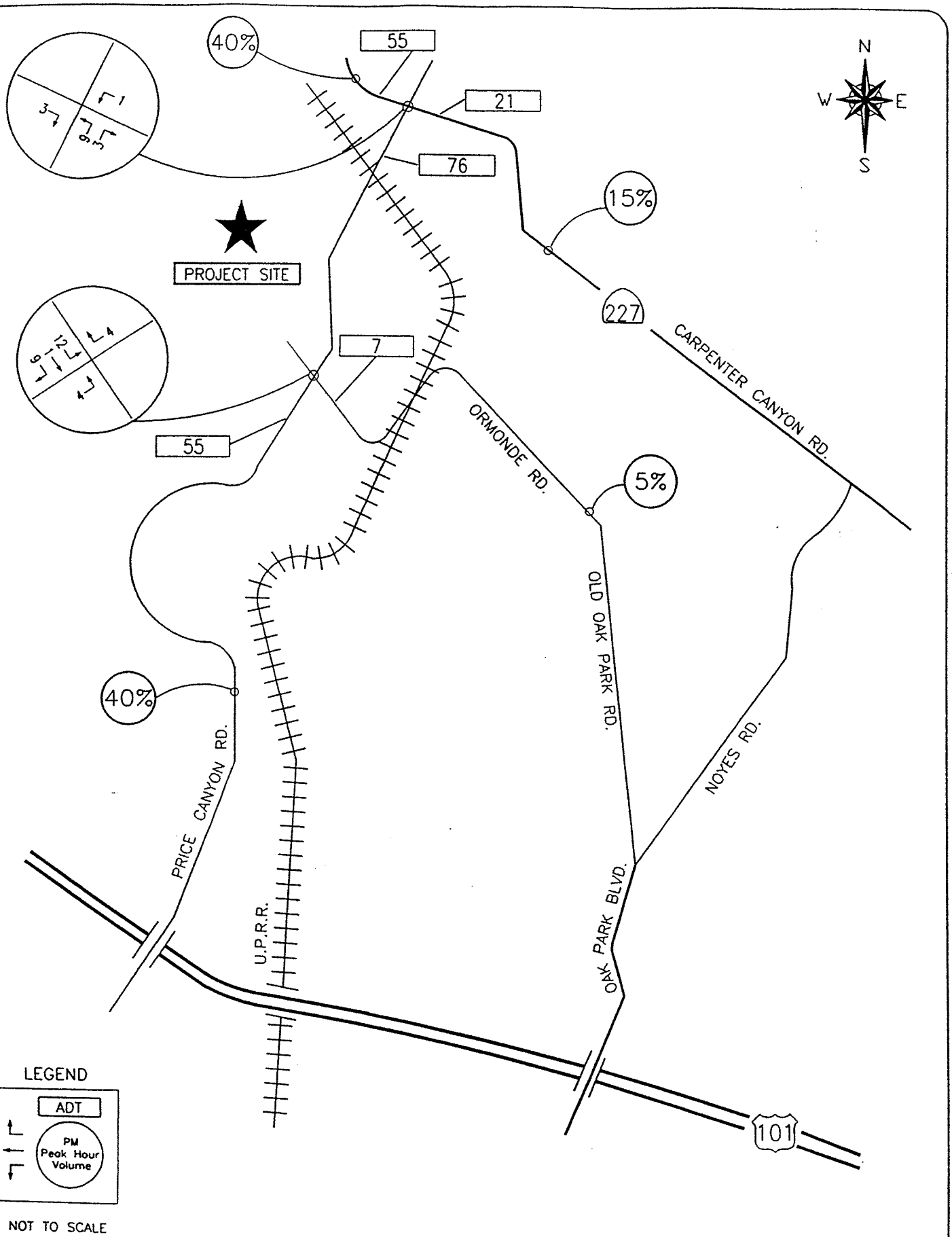
Component	Personnel	Vehicles	Daily Trips			P.M. Peak Hour Trips		
			Arrivals	Departures	Total	Arrivals	Departures	Total
Construction								
Well Locations	8	4	4	4	8	0	4	4
Conductor Pipe	4	2	2	2	4	0	2	2
Steam Generator	NA	NA	NA	NA	NA	NA	NA	NA
Piping & Other	8	6	6	6	12	0	6	6
Inspection	2	2	2	2	4	0	2	2
Deliveries(a)	2	2	2	2	4	1	1	2
Drilling								
Drill Crew	12	6	6	6	12	2	2	4
Deliveries(b)	NA	22	22	22	44	2	2	4
Operations								
Employees	NA	NA	NA	NA	NA	NA	NA	NA
Transport Trucks(b)	NA	25	25	25	50	3	3	6
Totals			**69**	**69**	**138**	**8**	**22**	**30**

NA = Not Appliclable
(a) Assumes 1 trip during P.M. peak hour.
(b) Assumes 10% of delivery trips during P.M. peak hour.

Table 2 indicates that the Phase IV Project would generate 138 average daily trips and 30 P.M. peak hour trips. This assumes "worst case" overlapping of construction, drilling and operations.

Project Trip Distribution and Assignment

The daily and peak hour trips which would be generated at the site during the project construction and operation phases were distributed onto the study-area roadway network according to the percentages listed in Table 3. Once distributed, project-generated traffic volumes were assigned to the study-area roadway segments, as illustrated in Figure 3.



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Project Trip Distribution Percentages/ Project-Added Traffic Volumes

FIGURE 3

Table 3
Trip Distribution Percentages

Origin/Destination	Direction	Percent
State Route 227(a)	North	40%
State Route 227(a)	South	15%
Price Canyon Road	South	40%
Ormonde Road	East	5%
Total		**100%**

(a) Via Price Canyon Road

Once assigned, the project-generated volumes were added to the Existing volumes. Figure 4 shows the Existing + Project traffic volumes for the study-area roadways and intersections.

PROJECT-SPECIFIC IMPACTS

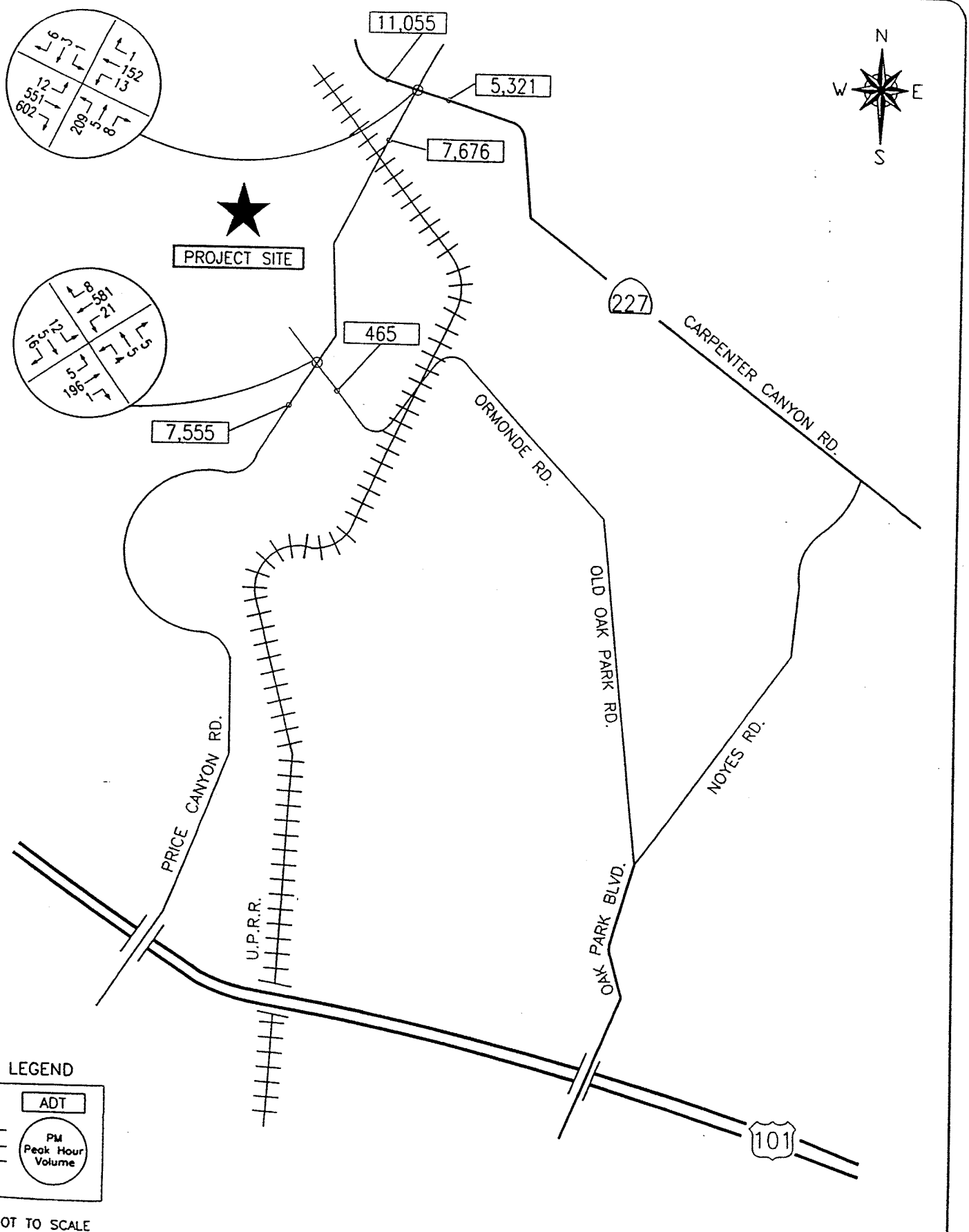
Roadways. The operational characteristics of the roadway segments within the study-area were analyzed assuming the Existing + Project ADT volumes shown on Figure 4. Based on the roadway design capacities discussed previously, it was determined the roadway segments in the study-area would continue to operate in the LOS A-C range with Existing + Project volumes.

Intersections. Levels of service were calculated for the study-area intersections assuming the Existing + Project P.M. peak hour volumes shown in Figure 4. Table 4 presents the results of calculations. Worksheets showing the level of service calculations are contained in the Technical Appendix for reference.

Table 4
Existing + Project P.M. Intersection Levels of Service

Intersection	Control Type	Existing + Project Delay / LOS
Price Canyon Road/Ormonde Road	2-way stop	8.1 sec. / LOS A
Price Canyon Road/Hwy 227	Signalized	6.7 sec. / LOS A

Table 4 indicates that under Existing + Project conditions the study-area intersections would continue to operate at LOS A, which is considered acceptable based on the County's LOS C standard.



ASSOCIATED TRANSPORTATION ENGINEERS

Existing + Project Traffic Volumes

FIGURE 4

Site Access And Circulation

The construction of 95 oil wells and 30 injection wells would occur in the northeast corner of the Arroyo Grande Oilfield, within the Phase III boundaries. The new oil wells would be served by the existing internal road network. All traffic related to the Phase IV expansion would use the existing access road on Price Canyon Road opposite Ormonde Road. When full overlap of activities is assumed, a total of 10 trucks would be used for transport of equipment and deliveries during the construction/drilling phase. An additional 25 transport trucks would be needed for off-site transportation of oil. Entering and exiting of these trucks would constrain Northbound and Southbound traffic on Price Canyon Road during the A.M. and P.M. peak hour, thus it is recommended that these vehicles (transport and hauling trucks) avoid these time periods (7:00 to 9:00 A.M. and 4:00 to 6:00 P.M.). In addition warning signs should be placed on Price Canyon Road to notify through traffic that truck traffic is entering and leaving the site.

CUMULATIVE CONDITIONS

Baseline Cumulative Volumes

Growth factors were used to forecast Cumulative traffic volumes for the Year 2021(20 year design period). The growth factors were developed using traffic counts documented in the area over the last 10 years. Table 5 shows the Year 2021 ADT forecasts for each roadway segment.

Table 5
Year 2021 ADT Forecasts

Roadway Segment	Annual Rate	20-Year Growth Rate	Year 2001 ADT	Year 2021 ADT
SR 227 - n/o Price Canyon Rd	2.0%	40%	11,000	15,400
SR 227 - s/o Price Canyon Rd	5.0%	100%	5,300	10,600
Price Canyon Rd - n/o Ormonde Rd	4.4%	88%	7,600	14,300
Price Canyon Rd - s/o Ormonde Rd	4.4%	88%	7,500	14,100
Ormonde Rd - e/o Price Canyon Rd	7.3%	146%	465	680

Roadways. Figure 5 shows the Cumulative average daily traffic volumes forecast for the study-area roadways. Both the State Route 227 and Price Canyon Road would operate in the LOS C range which is within the County's acceptable threshold. Ormonde Road is forecast to operate at LOS A.

Intersections. Growth factors derived from historical traffic counts discussed earlier were applied to the existing volumes to forecast Cumulative intersection traffic volumes. Because no historical growth rate data was available for Price Canyon Road north of State Route 227, ATE assumed a growth factor of 4.4% per year for this road segment. This is the same as the growth factor south of State Route 227. Figure 5 shows the Cumulative P.M. intersection traffic volumes.

Cumulative + Project Volumes

Project traffic was added to the year 2021 traffic forecasts to develop Cumulative + Project traffic volumes. The Cumulative + Project traffic volumes are shown in Figure 6.

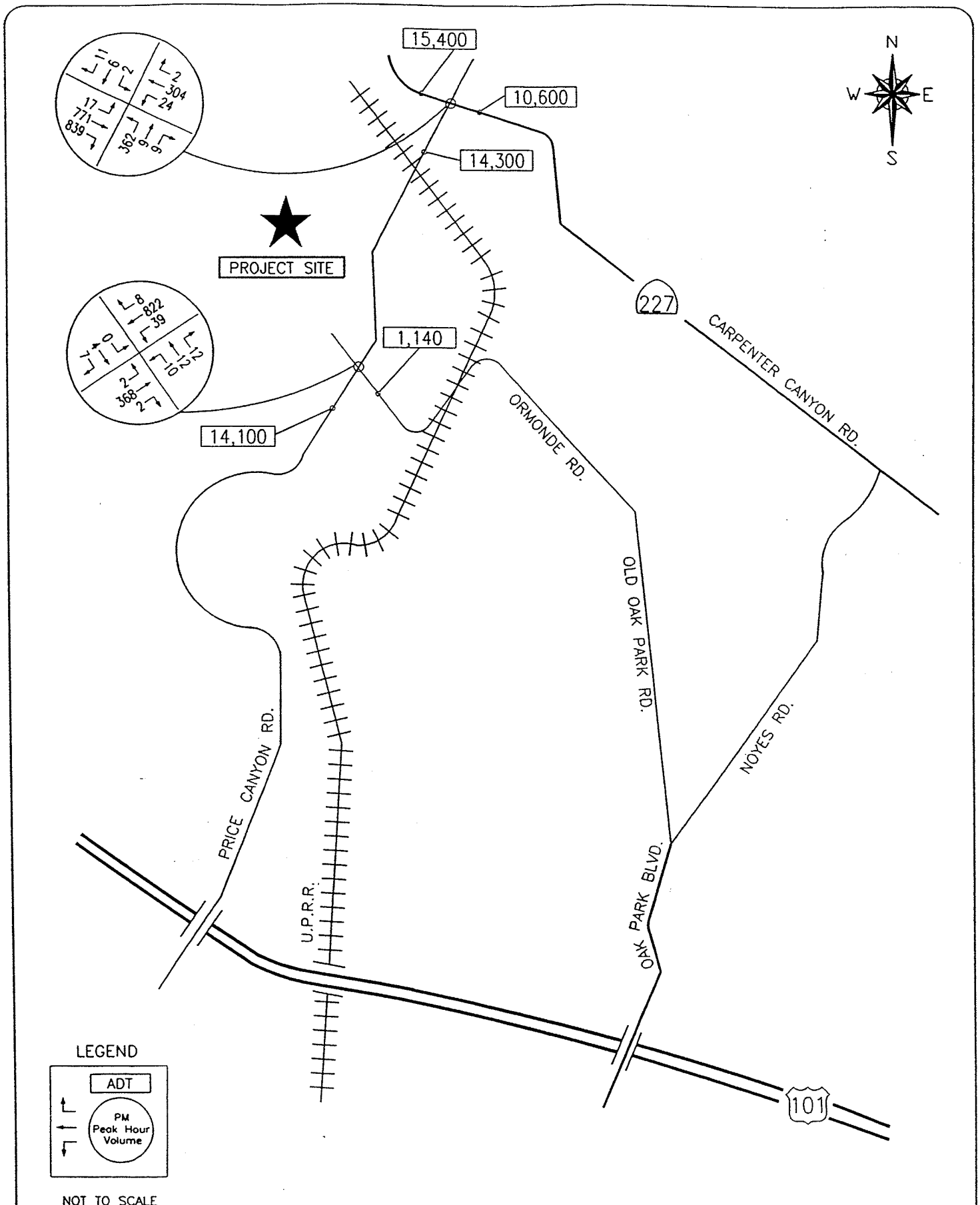
Roadways. Based on design capacity standards discussed previously it was determined that State Route 227 and Price Canyon Road would continue to operate at LOS C, and Ormonde Road would continue to operate at LOS A. The roadway traffic additions generated by the project would not significantly the study-area street system under cumulative conditions.

Intersections. Table 6 lists the P.M. peak hour levels of service for the study-area intersections. Worksheets showing the level of service calculations are provided in the Technical Appendix.

Table 6
Cumulative and Cumulative + Project P.M. Intersection Levels of Service

Intersection	Cumulative Delay / LOS	Cumulative + Project Delay / LOS
Price Canyon Road/Ormonde Road	9.2 sec. / LOS A	9.1 sec. / LOS A
Price Canyon Road/Hwy 227	10.6 sec. / LOS B	11.2 sec. / LOS B

The data presented in Table 6 indicates that under Cumulative and Cumulative + Project conditions, the study-area intersections would operate at LOS A or LOS B, within the County's threshold of LOS C standard for rural intersections.



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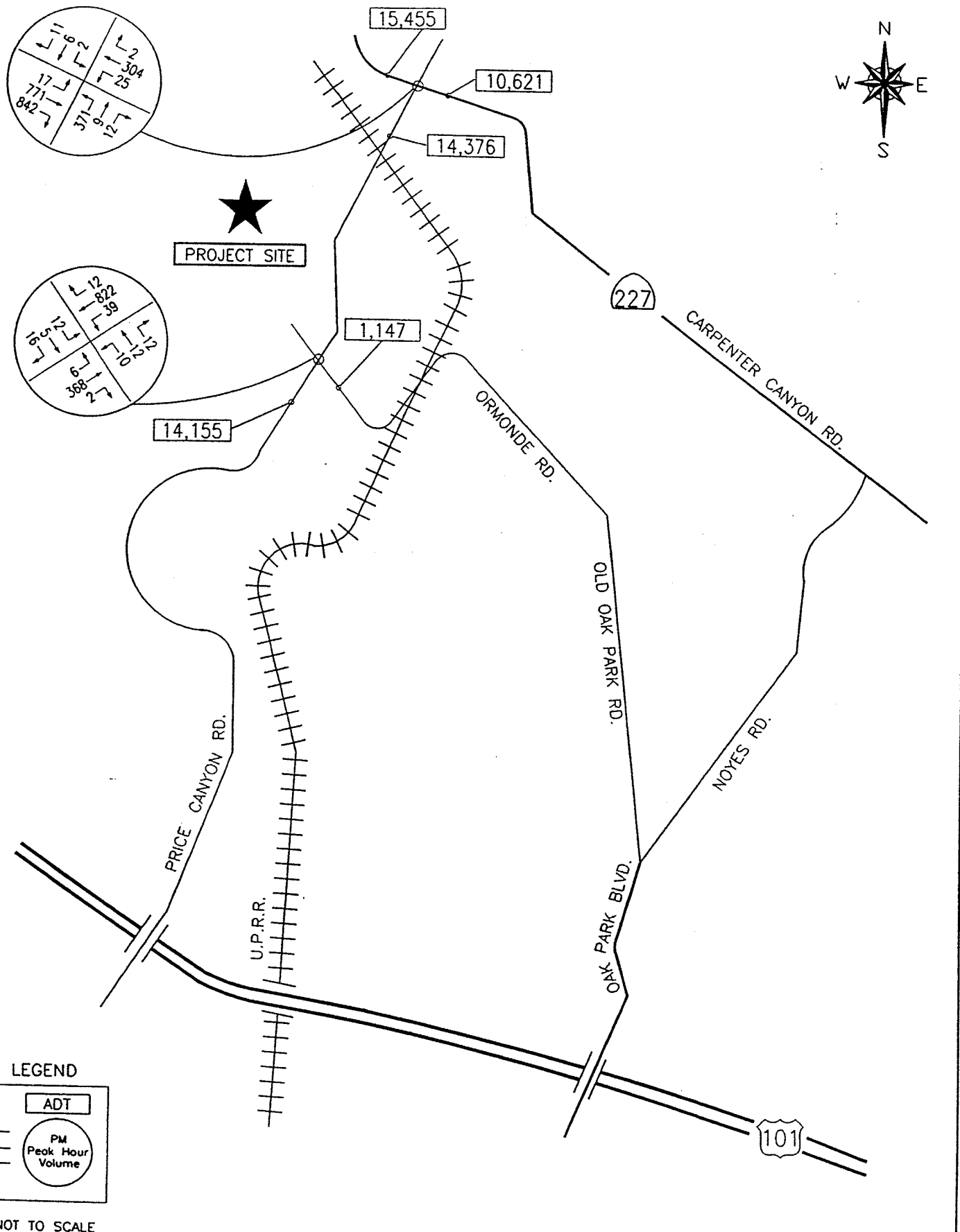
Cumulative Traffic Volumes

FIGURE 5



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Cumulative + Project Traffic Volumes

FIGURE 6

Roadways. Figure 5 shows the Cumulative average daily traffic volumes forecast for the study-area roadways. Both the State Route 227 and Price Canyon Road would operate in the LOS C range which is within the County's acceptable threshold. Ormonde Road is forecast to operate at LOS A.

Intersections. Growth factors derived from historical traffic counts discussed earlier were applied to the existing volumes to forecast Cumulative intersection traffic volumes. Because no historical growth rate data was available for Price Canyon Road north of State Route 227, ATE assumed a growth factor of 4.4% per year for this road segment. This is the same as the growth factor south of State Route 227. Figure 5 shows the Cumulative P.M. intersection traffic volumes.

Cumulative + Project Volumes

Project traffic was added to the year 2021 traffic forecasts to develop Cumulative + Project traffic volumes. The Cumulative + Project traffic volumes are shown in Figure 6.

Roadways. Based on design capacity standards discussed previously it was determined that State Route 227 and Price Canyon Road would continue to operate at LOS C, and Ormonde Road would continue to operate at LOS A. The roadway traffic additions generated by the project would not significantly the study-area street system under cumulative conditions.

Intersections. Table 6 lists the P.M. peak hour levels of service for the study-area intersections. Worksheets showing the level of service calculations are provided in the Technical Appendix.

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Cumulative and Cumulative + Project P.M. Intersection Levels of Service

Intersection	Cumulative Delay / LOS	Cumulative + Project Delay / LOS
Price Canyon Road/Ormonde Road	9.2 sec. / LOS A	9.1 sec. / LOS A
Price Canyon Road/Hwy 227	10.6 sec. / LOS B	11.2 sec. / LOS B

The data presented in Table 6 indicates that under Cumulative and Cumulative + Project conditions, the study-area intersections would operate at LOS A or LOS B, within the County's threshold of LOS C standard for rural intersections.

MITIGATION MEASURES

Project-Specific Measures

The data provided in this report indicates that the Phase IV Expansion Project would not generate any impacts on the roadways and intersection within the study-area. It was recommended that trucks (delivery, hauling and transportation trucks) be scheduled outside the A.M. and P.M. peak period (7:00 to 9:00 A.M. and 4:00 to 6:00 P.M.) to the extent feasible and that warning signs be placed on Price Canyon Road to notify through traffic of trucks entering and exiting the site.

Cumulative Measures

It was determined that the project would not generate significant impacts under Cumulative conditions, thus no mitigations are required

■ ■ ■

REFERENCES AND PERSONS CONTACTED

Associated Transportation Engineers

Scott A. Schell, AICP, Principal Transportation Planner
Dennis Lammers, Transportation Technician

References

Traffic Volumes on California State Highways, California Department of Transportation, 2001.

Highway Capacity Manual, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 2000.

Persons Contacted

Steven P. Rusch, Stocker Resources, Inc.
Kurt Koerner, Stocker Resources, Inc.

TECHNICAL APPENDIX

CONTENTS:

ROADWAY DESIGN CAPACITIES

ENGINEERING ROADWAY DESIGN CAPACITIES

TYPE OF ROADWAY	# OF LANES	LOS A		LOS B		LOS C		LOS D		LOS E	
		Low	High	Low	High	Low	High	Low	High	Low	High
Arterial	2 Lanes	8,100	12,000	9,400	14,000	10,800	16,000	12,100	18,000	13,500	20,000
Arterial	4 Lanes	16,100	23,900	18,900	27,900	21,600	31,900	24,300	35,900	27,000	39,900
Major	2 Lanes	6,500	9,600	7,500	11,200	8,600	12,800	9,700	14,400	10,800	16,000
Major	4 Lanes	12,900	19,200	15,100	22,300	17,200	25,500	19,400	28,700	21,600	31,900
Collector	- -	4,600	7,100	5,400	8,200	6,200	9,400	6,900	10,600	7,700	11,800

The roadway capacities listed above are "rule of thumb" figures only. Some factors which affect these capacities are intersections (numbers and configuration), degrees of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, level of truck and bus traffic and level of pedestrian and bicycle traffic.

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LEVEL OF SERVICE DEFINITIONS/DISCUSSION

Signalized Intersection Level of Service Definitions

LOS	Delay[a]	V/C Ratio	Definition
A	< 10.0	< 0.60	Progression is extremely favorable. Most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	10.1 - 20.0	0.61 - 0.70	Good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20.1 - 35.0	0.71 - 0.80	Only fair progression, longer cycle lengths, or both, result in higher cycle lengths. Cycle lengths may fail to serve queued vehicles, and overflow occurs. Number of vehicles stopped is significant, though many still pass through intersection without stopping.
D	35.1 - 55.0	0.81 - 0.90	Congestion becomes more noticeable. Unfavorable progression, long cycle lengths and high v/c ratios result in longer delays. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 - 80.0	0.91 - 1.00	High delay values indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent
F	> 80.0	> 1.00	Considered unacceptable for most drivers, this level occurs when arrival flow rates exceed the capacity of lane groups, resulting in many individual cycle failures. Poor progression and long cycle lengths may also contribute to high delay levels.

[a] Average control delay per vehicle in seconds.

Unsignalized Intersection Level of Service Definitions

The HCM[1] uses *control delay* to determine the level of service at unsignalized intersections. Control delay is the difference between the travel time actually experienced at the control device and the travel time that would occur in the absence of the traffic control device. Control delay includes deceleration from free flow speed, queue move-up time, stopped delay and acceleration back to free flow speed.

LOS	Control Delay Seconds per Vehicle
A	< 10.0
B	10.1 - 15.0
C	15.1 - 25.0
D	25.1 - 35.0
E	35.1 - 50.0
F	> 50.0

[1] Highway Capacity Manual, National Research Board, 2000

TRAFFIC COUNTS

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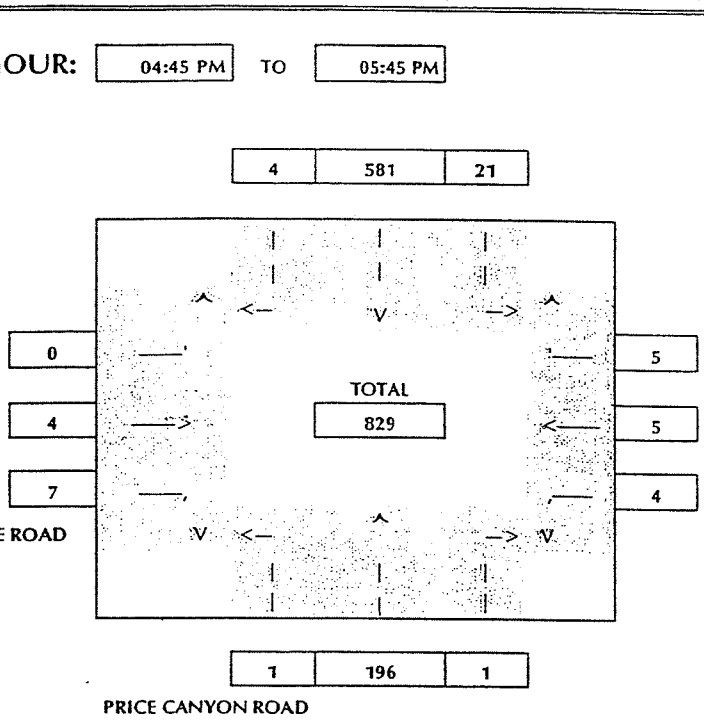
INTERSECTION TURNING MOVEMENT SUMMARY

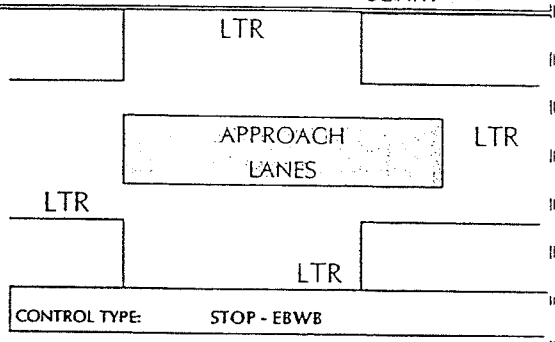
PROJECT: STOKER RESOURCES INC. PROJECT #: 01086 COUNT DATE: 8-14-01 FILE NAME: 01PM

N-S Approach: PRICE CANYON ROAD COUNT TIME: 4:00 PM TO 6:00 PM

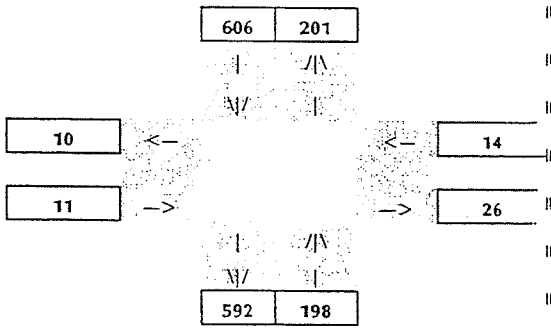
E-W Approach: ORMONDE ROAD CITY: PISMO BEACH AREA WEATHER: SUNNY

PEAK HOUR: 04:45 PM TO 05:45 PM





ARRIVAL / DEPARTURE VOLUMES



COUNT DATA

TIME PERIOD From	— To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUMES
04:00 PM	04:15 PM	0	47	0	2	114	1	0	0	2	0	2	1	169
04:15 PM	04:30 PM	0	91	1	3	196	2	3	1	3	0	3	1	304
04:30 PM	04:45 PM	2	136	1	8	330	3	5	2	4	1	3	4	499
04:45 PM	05:00 PM	2	180	2	12	450	3	5	3	5	2	4	5	673
05:00 PM	05:15 PM	2	223	2	13	611	3	5	4	5	4	6	7	885
05:15 PM	05:30 PM	2	288	2	20	780	5	5	4	6	5	7	8	1132
05:30 PM	05:45 PM	3	332	2	29	911	7	5	6	11	5	8	9	1328
05:45 PM	06:00 PM	3	372	2	31	995	8	6	6	13	6	8	10	1460

TOTAL BY PERIOD

04:00 PM	04:15 PM	0	47	0	2	114	1	0	0	2	0	2	1	169
04:15 PM	04:30 PM	0	44	1	1	82	1	3	1	1	0	1	0	134
04:30 PM	04:45 PM	2	45	0	5	134	1	2	1	1	1	0	3	195
04:45 PM	05:00 PM	0	44	1	4	120	0	0	1	1	1	1	1	174
05:00 PM	05:15 PM	0	43	0	1	161	0	0	1	0	2	2	2	212
05:15 PM	05:30 PM	0	65	0	7	169	2	0	0	1	1	1	1	247
05:30 PM	05:45 PM	1	44	0	9	131	2	0	2	5	0	1	1	196
05:45 PM	06:00 PM	0	40	0	2	84	1	1	0	2	1	0	1	132

HOURLY TOTALS

04:00 PM	05:00 PM	2	180	2	12	450	3	5	3	5	2	4	5	673
04:15 PM	05:15 PM	2	176	2	11	497	2	5	4	3	4	4	6	716
04:30 PM	05:30 PM	2	197	1	17	584	3	2	3	3	5	4	7	827
04:45 PM	05:45 PM	1	196	1	21	581	4	0	4	7	4	5	5	829
05:00 PM	06:00 PM	1	192	0	19	545	5	1	3	8	4	4	5	787

02PM

STOKER RESOURCES 01086

INTERSECTION DELAY WORKSHEET

COUNT DATE: 08-14-01

PM PEAK HOUR: 4:45 - 5:45 PM

PRICE CYN RD - ORMONDE RD

15 SECOND INTERVALS

APPROACH: WB-LTR

Time Ending	Vehicles in Queue																				Total Approach
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:25 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:35 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Subtotal:	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	14

Total Vehicles in Queue: 4

Total Delay = 4 vehicles x 15 seconds = 60 seconds

Average Delay Per Vehicle = 60 seconds / 14 vehicles = *4.3* *seconds per vehicle*

Control Delay= 4.3 sec/veh + 5 sec/veh = **9.3 sec/veh**

STOKER RESOURCES 01086 02PM

INTERSECTION DELAY WORKSHEET

COUNT DATE: 08-14-01
PM PEAK HOUR: 4:45 - 5:45 PM
PRICE CYN RD - - ORMONDE RD
15 SECOND INTERVALS
APPROACH: EB-LTR

Time Ending	Vehicles in Queue																				Total Approach
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:35 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Subtotal:	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11

Total Vehicles in Queue: 2

Total Delay = 2 vehicles x 15 seconds = 30 seconds

Average Delay Per Vehicle = 30 seconds / 11 vehicles = 2.7 *seconds per vehicle*

Control Delay= 2.7 sec/vel + 5 sec/veh = **7.7 sec/veh**

ASSOCIATED TRANSPORTATION ENGINEERS

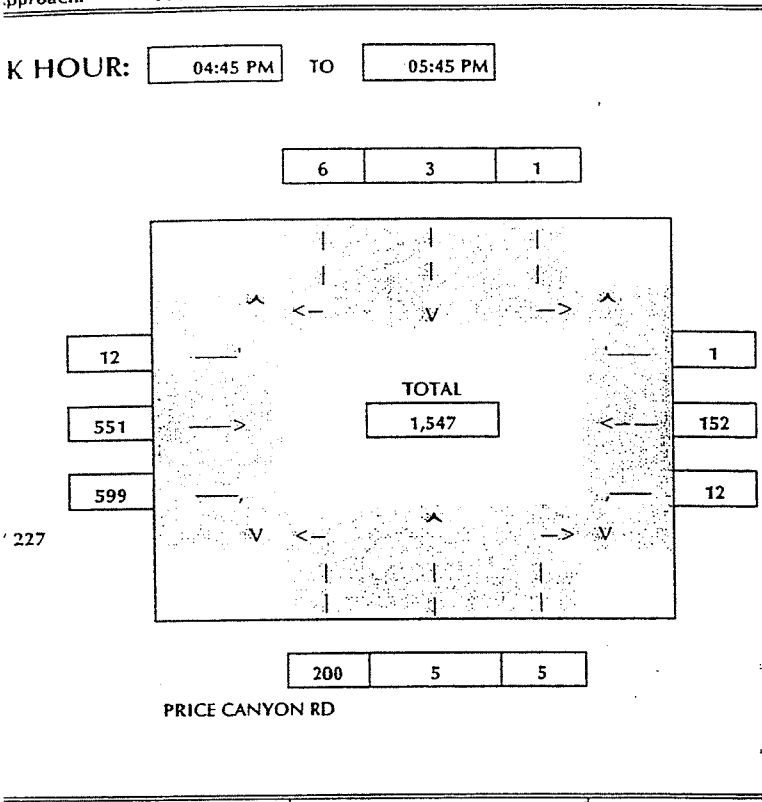
INTERSECTION TURNING MOVEMENT SUMMARY

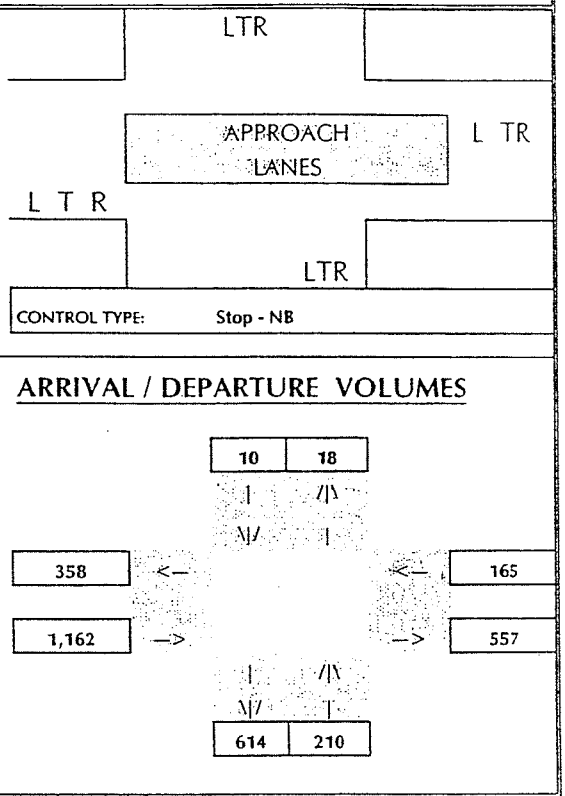
JECT: STOKER RESOURCES | PROJECT #: 01086 | COUNT DATE: 8-21-01 | FILE NAME: 02PM

pproach: PRICE CANYON RD | COUNT TIME: 4:00 PM TO 6:00 PM

pproach: HWY 227 | CITY: PISMO BEACH AREA | WEATHER: SUNNY

K HOUR: 04:45 PM TO 05:45 PM





TIME PERIOD From	—	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUMES
COUNT DATA															
:00 PM	—	04:15 PM	36	0	2	0	4	1	3	102	129	2	34	1	314
:15 PM	—	04:30 PM	87	0	2	0	6	4	5	199	258	4	69	1	635
:30 PM	—	04:45 PM	126	0	4	0	7	6	6	269	429	11	102	1	961
:45 PM	—	05:00 PM	181	1	4	0	7	7	8	394	545	13	135	1	1296
:00 PM	—	05:15 PM	232	2	7	0	8	9	14	545	725	15	175	1	1733
:15 PM	—	05:30 PM	271	4	8	1	9	10	16	718	904	18	218	2	2179
:30 PM	—	05:45 PM	326	5	9	1	10	12	18	820	1028	23	254	2	2508
:45 PM	—	06:00 PM	367	5	10	3	12	12	20	912	1119	23	274	2	2759
TOTAL BY PERIOD															
4:00 PM	—	04:15 PM	36	0	2	0	4	1	3	102	129	2	34	1	314
4:15 PM	—	04:30 PM	51	0	0	0	2	3	2	97	129	2	35	0	321
4:30 PM	—	04:45 PM	39	0	2	0	1	2	1	70	171	7	33	0	326
4:45 PM	—	05:00 PM	55	1	0	0	0	1	2	125	116	2	33	0	335
5:00 PM	—	05:15 PM	51	1	3	0	1	2	6	151	180	2	40	0	437
5:15 PM	—	05:30 PM	39	2	1	1	1	1	2	173	179	3	43	1	446
5:30 PM	—	05:45 PM	55	1	1	0	1	2	2	102	124	5	36	0	329
5:45 PM	—	06:00 PM	41	0	1	2	2	0	2	92	91	0	20	0	251
HOURLY TOTALS															
4:00 PM	—	05:00 PM	181	1	4	0	7	7	8	394	545	13	135	1	1296
4:15 PM	—	05:15 PM	196	2	5	0	4	8	11	443	596	13	141	0	1419
4:30 PM	—	05:30 PM	184	4	6	1	3	6	11	519	646	14	149	1	1544
4:45 PM	—	05:45 PM	200	5	5	1	3	6	12	551	599	12	152	1	1547
5:00 PM	—	06:00 PM	186	4	6	3	5	5	12	518	574	10	139	1	1463

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

Reference 1 - Highway 227/Price Canyon Rd
Reference 2 - Price Canyon Rd/Ormonde Rd

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	02_CUM_PR	Intersection	PRICE CANYON/ORMONDE
Agency/Co.	ATE	Jurisdiction	CUMULATIVE+PROJECT VOLUMES
Date Performed	;'PIOJ8/17/2001	Analysis Year	2001
Analysis Time Period	PM CUMULATIVE VOLUMES	Project ID	01086 STOKER RESOURCES

East/West Street: ORMONDE ROAD	North/South Street: PRICE CANYON ROAD
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	6	368	2	39	822	12
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	6	368	2	39	822	12
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	10	12	12	12	5	16
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	10	12	12	12	5	16
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (vph)	6	39		34			33	
C (m) (vph)	791	1178		634			1222	
v/c	0.01	0.03		0.05			0.03	
95% queue length	0.02	0.10		0.17			0.08	
Control Delay	9.6	8.2		11.0			8.0	
LOS	A	A		B			A	
Approach Delay	--	--	11.0			8.0		
Approach LOS	--	--	B			A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	02_CUM	Intersection	PRICE CANYON/ORMONDE
Agency/Co.	ATE	Jurisdiction	CUMULATIVE VOLUMES
Date Performed	8/17/2001	Analysis Year	2001
Analysis Time Period	PM CUMULATIVE VOLUMES	Project ID	01086 STOKER RESOURCES

East/West Street: ORMONDE ROAD	North/South Street: PRICE CANYON ROAD
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	2	368	2	39	822	8
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	2	368	2	39	822	8
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	10	12	12	0	4	7
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	10	12	12	0	4	7
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (vph)	2	39		34			11	
C (m) (vph)	793	1178		641			1277	
v/c	0.00	0.03		0.05			0.01	
95% queue length	0.01	0.10		0.17			0.03	
Control Delay	9.6	8.2		10.9			7.8	
LOS	A	A		B			A	
Approach Delay	--	--	10.9			7.8		
Approach LOS	--	--	B			A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	02_EX_PR	Intersection	PRICE CANYON/ORMONDE
Agency/Co.	ATE	Jurisdiction	EXISTING+PROJECT VOLUMES
Date Performed	8/17/2001	Analysis Year	2001
Analysis Time Period	PM	Project ID	01086 STOKER RESOURCES

East/West Street: ORMONDE ROAD	North/South Street: PRICE CANYON ROAD
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	5	196	1	21	581	8
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	5	196	1	21	581	8
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	4	5	5	12	5	16
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	4	5	5	12	5	16
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (vph)	5	21		14			33	
C (m) (vph)	977	1364		767			1408	
v/c	0.01	0.02		0.02			0.02	
95% queue length	0.02	0.05		0.06			0.07	
Control Delay	8.7	7.7		9.8			7.6	
LOS	A	A		A			A	
Approach Delay	--	--	9.8			7.6		
Approach LOS	--	--	A			A		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	02_EX
Agency/Co.	ATE
Date Performed	8/17/2001
Analysis Time Period	PM

Site Information

Intersection	PRICE CANYON/ORMONDE
Jurisdiction	EXISTING VOLUMES
Analysis Year	2001
Project ID	01086 STOKER RESOURCES

East/West Street: ORMONDE ROAD | North/South Street: PRICE CANYON ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	1	196	1	21	581	4
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	1	196	1	21	581	4
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	4	5	5	0	4	7
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	4	5	5	0	4	7
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

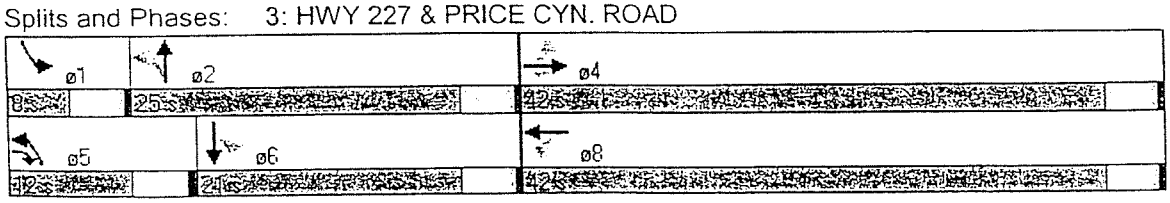
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (vph)	1	21		14			11	
C (m) (vph)	980	1364		774			1438	
v/c	0.00	0.02		0.02			0.01	
95% queue length	0.00	0.05		0.06			0.02	
Control Delay	8.7	7.7		9.7			7.5	
LOS	A	A		A			A	
Approach Delay	--	--	9.7			7.5		
Approach LOS	--	--	A			A		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1863	1583	1770	1861	0	0	1772	0	0	1711	0
Flt Permitted	0.496			0.105				0.722			0.987	
Satd. Flow (perm)	924	1863	1583	196	1861	0	0	1340	0	0	1697	0
Satd. Flow (RTOR)			915		1			2			12	
Volume (vph)	17	771	842	25	304	2	371	9	12	2	6	11
Lane Group Flow (vph)	18	838	915	27	332	0	0	426	0	0	21	0
Turn Type	Perm		pm+ov	Perm			pm+pt			pm+pt		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Total Split (s)	42.0	42.0	12.0	42.0	42.0	0.0	12.0	25.0	0.0	8.0	21.0	0.0
Act Effct Green (s)	31.3	31.3	42.6	31.3	31.3			19.8			12.6	
Actuated g/C Ratio	0.53	0.53	0.72	0.53	0.53			0.33			0.19	
v/c Ratio	0.04	0.85	0.66	0.26	0.34			0.85			0.06	
Uniform Delay, d1	6.7	11.9	0.0	7.6	7.9			17.4			9.3	
Delay	6.6	13.6	0.3	9.0	8.0			32.6			11.1	
LOS	A	B	A	A	A			C			B	
Approach Delay		6.7			8.1			32.6			11.1	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)	3	244	0	5	64			141			0	
Queue Length 95th (ft)	11	#410	22	22	108			#328			1	
Internal Link Dist (ft)		2656			2928			2328			2328	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 59.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 11.2 Intersection LOS: B
Intersection Capacity Utilization 81.1% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: HWY 227 & PRICE CYN. ROAD

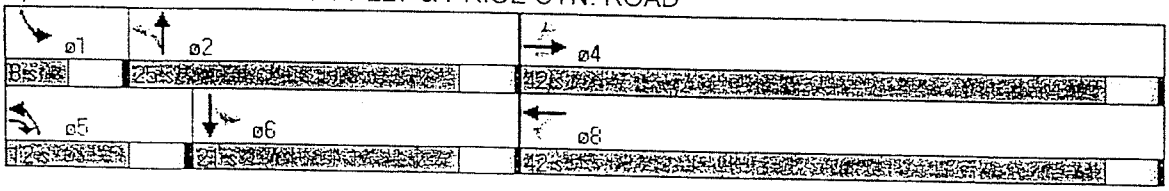


Lane Groups	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1863	1583	1770	1861	0	0	1774	0	0	1711	0
Flt Permitted	0.496			0.105				0.721			0.987	
Satd. Flow (perm)	924	1863	1583	196	1861	0	0	1339	0	0	1697	0
Satd. Flow (RTOR)			912		1			2			12	
Volume (vph)	17	771	839	24	304	2	362	9	9	2	6	11
Lane Group Flow (vph)	18	838	912	26	332	0	0	413	0	0	21	0
Turn Type	Perm		pm+ov	Perm			pm+pt			pm+pt		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Total Split (s)	42.0	42.0	12.0	42.0	42.0	0.0	12.0	25.0	0.0	8.0	21.0	0.0
Act Effct Green (s)	31.1	31.1	42.4	31.1	31.1			19.5			12.3	
Actuated g/C Ratio	0.53	0.53	0.72	0.53	0.53			0.33			0.18	
v/c Ratio	0.04	0.85	0.65	0.25	0.34			0.83			0.07	
Uniform Delay, d1	6.6	11.7	10.0	7.4	7.8			17.2			9.3	
Delay	6.6	13.5	0.3	8.9	7.9			30.0			11.1	
LOS	A	B	A	A	A			C			B	
Approach Delay		6.6			8.0			30.0			11.1	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)	3	244	0	5	64			136			0	
Queue Length 95th (ft)	11	#410	21	21	108			#314			1	
Internal Link Dist (ft)		2656			2928			2328			2328	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 58.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 80.3% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: HWY 227 & PRICE CYN. ROAD

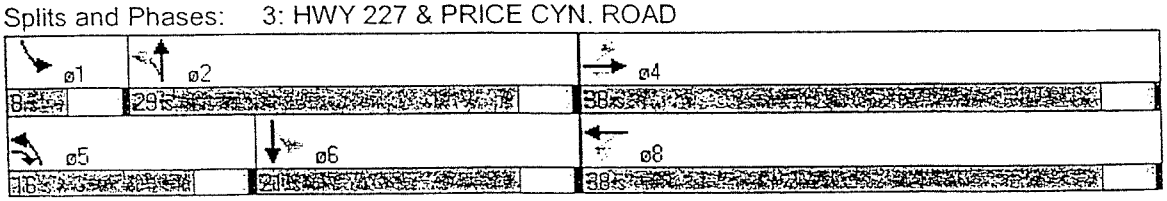


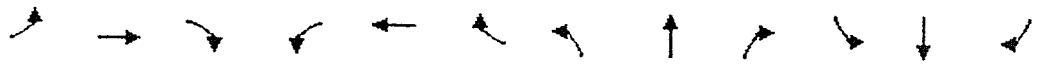
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1863	1583	1770	1861	0	0	1770	0	0	1694	0
Flt Permitted	0.649			0.226				0.731			0.994	
Satd. Flow (perm)	1209	1863	1583	421	1861	0	0	1355	0	0	1692	0
Satd. Flow (RTOR)			654		1			3			7	
Volume (vph)	12	551	602	13	152	1	209	5	8	1	3	6
Lane Group Flow (vph)	13	599	654	14	166	0	0	241	0	0	11	0
Turn Type	Perm		pm+ov	Perm			pm+pt			pm+pt		
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Total Split (s)	38.0	38.0	16.0	38.0	38.0	0.0	16.0	29.0	0.0	8.0	21.0	0.0
Act Effct Green (s)	19.4	19.4	30.4	19.4	19.4			17.5			10.7	
Actuated g/C Ratio	0.43	0.43	0.67	0.43	0.43			0.39			0.20	
v/c Ratio	0.03	0.75	0.51	0.08	0.21			0.41			0.03	
Uniform Delay, d1	7.3	10.7	0.0	7.5	7.9			9.5			5.9	
Delay	7.2	10.9	0.3	7.8	7.9			12.3			9.3	
LOS	A	B	A	A	A			B			A	
Approach Delay		5.4			7.9			12.3			9.3	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	2	110	0	2	22			36			1	
Queue Length 95th (ft)	9	250	21	11	60			115			1	
Internal Link Dist (ft)		2656			2928			2328			2328	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 45.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 6.7 Intersection LOS: A
Intersection Capacity Utilization 58.3% ICU Level of Service A

Splits and Phases: 3: HWY 227 & PRICE CYN. ROAD



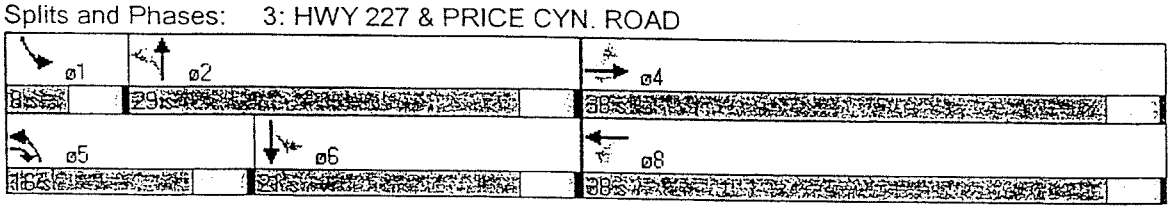


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1863	1583	1770	1861	0	0	1772	0	0	1694	0
Flt Permitted	0.649			0.226				0.728			0.994	
Satd. Flow (perm)	1209	1863	1583	421	1861	0	0	1352	0	0	1692	0
Satd. Flow (RTOR)			651		1			2			7	
Volume (vph)	12	551	599	12	152	1	200	5	5	1	3	6
Lane Group Flow (vph)	13	599	651	13	166	0	0	227	0	0	11	0
Turn Type	Perm		pm+ov	Perm			pm+pt		pm+pt			
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Total Split (s)	38.0	38.0	16.0	38.0	38.0	0.0	16.0	29.0	0.0	8.0	21.0	0.0
Act Effct Green (s)	19.4	19.4	30.4	19.4	19.4			17.4			10.5	
Actuated g/C Ratio	0.43	0.43	0.67	0.43	0.43			0.38			0.20	
v/c Ratio	0.03	0.75	0.51	0.07	0.21			0.39			0.03	
Uniform Delay, d1	7.2	10.6	0.0	7.5	7.8			9.5			5.9	
Delay	7.1	10.8	0.3	7.5	7.7			12.4			9.4	
LOS	A	B	A	A	A			B			A	
Approach Delay		5.4			7.7			12.4			9.4	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	2	110	0	2	22			33			1	
Queue Length 95th (ft)	9	242	20	10	58			109			1	
Internal Link Dist (ft)		2656			2928			2328			2328	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 45.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 6.6 Intersection LOS: A
Intersection Capacity Utilization 57.5% ICU Level of Service A

Splits and Phases: 3: HWY 227 & PRICE CYN. ROAD



APPENDIX D

Air Quality

PXP PHASE IV EIR
CONSTRUCTION EMISSIONS

Scenario	Number per Peak Quarter	Equipment	Load Factor (%)	BHP	Emission Factors (lb/BHP-hr)			Hours per peak day	Days per Peak Quarter	Emissions (lb/day)			Emission (ton/quarter)		
					NOx	ROG	PM10			NOx	ROG	PM10	NOx	ROG	PM10
Pad grading	4 pads	Tracked tractor	64	285	0.023	0.002	0.001	8	4	33.6	2.9	1.5	0.07	0.01	0.00
		Motor grader	61	150	0.021	0.003	0.001	8	4	15.4	2.2	0.7	0.03	0.00	0.00
		Compactor	59	200	0.02	0.002	0.001	4	4	9.4	0.9	0.5	0.02	0.00	0.00
Well drilling & installation	10 production, 3 injection	Draw works	75	215	0.024	0.003	0.0015	24	43	92.9	11.6	5.8	2.00	0.25	0.12
		Mud pump	70	225	0.018	0.002	0.001	24	43	68.0	7.6	3.8	1.46	0.16	0.08
		Generator	74	205	0.018	0.002	0.001	24	43	65.5	7.3	3.6	1.41	0.16	0.08
		Mud cleaner	75	56	0.018	0.002	0.001	24	43	18.1	2.0	1.0	0.39	0.04	0.02
		Backhoe	55	70	0.023	0.002	0.0015	18	43	15.9	1.4	1.0	0.34	0.03	0.02
		Conductor winch	75	100	0.018	0.002	0.001	12	43	16.2	1.8	0.9	0.35	0.04	0.02
Piping installation	same as well drilling	Welder	45	63	0.018	0.002	0.001	8	43	4.1	0.5	0.2	0.09	0.01	0.00
		Crane	43	230	0.023	0.003	0.0015	8	43	18.2	2.4	1.2	0.39	0.05	0.03
		Backhoe	55	70	0.023	0.002	0.0015	8	43	7.1	0.6	0.5	0.15	0.01	0.01
SUM										**364.5**	**41.2**	**20.7**	**6.7**	**0.8**	**0.4**

Notes:
Days per peak quarter based on 1 day per pad, 4 days per producing well, 1 day per injection well

HEAVY CONSTRUCTION PARTICULATE EMISSIONS ESTIMATE

Project: PXP Phase IV EIR
Date: 10/13/03

	Debris	Soil
Silt Content (%)	30	15
Moisture Content (%)	2	3.4

	Volume (cf/day)	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Building Demolition	0	0.0	0	0

E (lb/day) = cf * 0.00042 (SCAQMD CEQA Handbook, 1993)

	Wind Speed (mph)	Emissions (lb/ton)	Total Tons/day	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Debris Loading	12	0.0035	0	0.0	0	0

E (lb/ton) = 0.35 * 0.0032 * (wind speed/5)^1.3/(moisture/2)^1.4 (Section 13.2.4, EPA, 1995)

	Emissions (lb/hr)	No. Units x Hours/day	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Land Clearing	7.85	8	62.8	4	0.13

E (lb PM10/hr) = 0.75 *silt^1.2/moisture^1.4 (Table 11.9.2, EPA, 1995)

	TSP lb/VMT	% PM10	Emissions lb PM10/VMT	Total VMT/day	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Scraper soil removal	20.2	50	10.1	3	30.3	4	0.06

E (lb PM10/VMT) = 20.2 * %PM10 (Table 13.2.3-1, EPA, 1995)

	Weight (tons)	Emissions (lb PM10/VMT)	Total VMT/day	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Scraper travel	67	6.0570	15	90.9	4	0.18

E (lb PM10/VMT) = 0.6 * 6.2E-6 * silt^1.4 * weight^2.5 (Table 11.9.2, EPA, 1995)

	Wind Speed (mph)	Emissions (lb/ton)	Total Tons/day	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Scraper soil dumping	12	0.0017	1000	1.7	4	0.00

E (lb/ton) = 0.35 * 0.0032 * (wind speed/5)^1.3/(moisture/2)^1.4 (Section 13.2.4, EPA, 1995)

	Speed (mph)	Emissions lb PM10/VMT	Total VMT/day	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Motor grading	5	0.7650	5	3.8	4	0.01

E (lb PM10/VMT) = 0.6 * 0.051 * speed^2 (Table 11.9.2, EPA, 1995)

	Speed (mph)	Weight (tons)	Number Wheels	Days Rain per Year	Emissions lb PM10/VMT	Total VMT/day	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Unpaved Roads	15	30	10	40	9.37	5	46.8	4	0.09

E (lb PM10/VMT) = 0.36 * 5.9 * silt/12 * speed/30 * (weight/3)^0.7 * (wheels/4)^0.5* (365-days rain)/365 (Section 13.2.2, EPA, 1995)

	Area (ac)	Emissions (lb/acre/day)	Emissions (lb/day)	Days per Quarter	Emissions (ton/quarter)
Wind Erosion	3	26.4	79.2	90	3.56

E (lb/day) = acres * 26.4 (SCAQMD CEQA Handbook, 1993)

TOTAL Demolition Emissions (lb/day):	**0.00**
TOTAL Demolition Emissions (ton/quarter):	**0.00**
TOTAL Construction Emissions (lb/day):	**315.51**
TOTAL Construction Emissions (ton/quarter):	**4.04**
MITIGATED Construction Emissions (lb/day):	**245.47**
MITIGATED Construction Emissions (ton/quarter)	**2.19**

Mitigation based on watering: 65% reduction for unpaved roads and 50% reduction for wind erosion

PXP Phase IV EIR FUGITIVE HYDROCARBON EMISSIONS

Component Service	Valves			Fittings			TOTAL
	ROG Emission Factor (lb/day-well)	ROG Emissions (lb/day)	Controlled ROG Emissions (lb/day)	ROG Emission Factor (lb/day-well)	ROG Emissions (lb/day)	Controlled ROG Emissions (lb/day)	Controlled ROG Emissions (lb/day)
Gas	1.736000	164.920	64.319	2.566000	243.770	95.070	
Liquid	0.000087	0.008	0.003	0.000000	0.000	0.000	
Mixture	0.024740	2.350	0.917	0.011870	1.128	0.440	
Condensate	0.000000	0.000	0.000	0.000025	0.002	0.001	
SUM		167.279	65.239		244.900	95.511	160.75

Notes:

Estimates based on 95 new production wells

Emission factors from ARB Section 4.2 Emission Inventory guidance model 6 (wells>50, GOR>500)

Inspection & maintenance control efficiency assumed 61% from 1995 EPA Protocol

Plains Exploration and Production

Arroyo Grande Phase IV Development Plan
Health Risk Assessment

Background

In December 2002, PXP provided the District with a health risk assessment (HRA) for a turbine generator project at the Arroyo Grande facility. This 2002 HRA utilized the ACE model for the analysis of health impacts of the project. In response to comments on the EIR for the current Arroyo Grande Phase IV Development Plan, an updated HRA was completed to demonstrate potential health impacts from the Phase IV project. Pursuant to discussion with the San Luis Obispo County Air Pollution Control District (SLOCAPCD) and the San Luis Obispo Fire Department staff, it was determined that the updated HRA should utilize the HARP model for the analysis of the health impacts for the project. The HARP model was recently developed by the California Air Resources Board (CARB) and has been identified by SLOCAPCD as the preferred model for health risk assessments. In addition, it was discovered that meteorological data (provided by the SLOCAPCD) for the 2002 HRA contained input errors. SLOCAPCD provided PXP with a corrected meteorological data set for 1994 that was then utilized in the updated Arroyo Grande Phase IV Development Plan HRA.

Health Risk Assessment Results

HARP modeling was performed utilizing the 1994 corrected meteorological data set for the following scenarios:

- Case 1: Existing Conditions (i.e., emissions for existing sources).
- Case 2: Existing Conditions plus Proposed Well Build-out (i.e., emissions for existing sources with existing well emissions doubled).
- Case 3: Existing Conditions plus Proposed Full Facility Build-out (i.e., emissions for all existing sources doubled thus simulating post-2006 conditions with all steam generators in operation).

Modeling output files for all three cases are attached to this summary. The table below summarizes the results of the modeling studies.

Modeling Case	Cancer Risk		Chronic Risk		Acute Risk	
	Regulatory Limit	***Model Estimate***	***Regulatory Limit***	***Model Estimate***	***Regulatory Limit***	***Model Estimate***
Case 1	1.0E-06	7.55E-08	1.0	<0.1	1.0	<0.1
Case 2		9.43E-08	1.0	<0.1	1.0	<0.1
Case 3		1.51E-07	1.0	<0.1	1.0	0.2

The regulatory limit for cancer risk is 1.0E-06. The modeling results above demonstrate cancer risk values well below the cancer risk threshold by a factor of 10-20. In addition, all acute and chronic risks are well below the SLOCAPCD Rule 219.E.3 and 219.E.4 risk factor threshold of 1.0 for sources with Toxics Best Available Control Technology (T-BACT).

HARP Model Input Parameters

Toxic Emissions – Gas Turbine

Substance Name	Annual Average lbs/yr	Hourly Maximum lbs/hr
Acetaldehyde	2.89E+01	3.30E-03
Acrolein	4.62E+00	5.28E-04
Ammonia	9.02E+03	1.03E+00
Benzene	8.64E+00	9.86E-04
Ethyl Benzene	2.31E+01	2.64E-03
Formaldehyde	5.13E+02	5.85E-02
Hexane	0.00E+00	0.00E+00
Hydrogen Sulfide	0.00E+00	0.00E+00
Methanol	0.00E+00	0.00E+00
Naphthalene	9.42E-01	1.08E-04
PAHs	1.59E+00	1.81E-04
Propylene	2.10E+01	2.39E-03
Toluene	9.42E+01	1.08E-02
Xylenes	4.62E+01	5.26E-03

Toxic Emissions – Steam Generators

Substance Name	Annual Average lbs/yr	Hourly Maximum lbs/hr
Acetaldehyde	1.93E+00	2.20E-04
Acrolein	1.68E+00	1.92E-04
Benzene	3.60E+00	4.12E-04
Ethyl Benzene	4.29E+00	4.90E-04
Formaldehyde	7.64E+00	8.73E-04
Hexane	2.86E+00	3.26E-04
Hydrogen Sulfide	0.00E+00	0.00E+00
Methanol	0.00E+00	0.00E+00
Naphthalene	1.86E-01	2.13E-05
PAHs	6.22E-02	7.09E-07
Propylene	3.29E+02	3.76E-02
Toluene	1.65E+01	1.88E-03
Xylenes	1.22E+01	1.40E-03

Toxic Emissions – Wells

Substance Name	Annual Average lbs/yr	Hourly Maximum lbs/hr
Benzene	6.87E-01	7.84E-05
Ethyl Benzene	3.16E+00	3.60E-04
Hydrogen Sulfide	3.11E+01	3.55E-03
Toluene	2.55E+00	2.92E-04
Xylenes	2.22E+00	2.54E-04

Toxic Emissions – Tanks

Substance Name	Annual Average lbs/yr	Hourly Maximum lbs/hr
Benzene	5.43E-03	6.19E-07
Ethyl Benzene	7.37E-03	8.42E-07
Hydrogen Sulfide	4.36E+01	4.97E-03
Toluene	2.69E-01	3.07E-05
Xylenes	1.45E+00	1.65E-04

Toxic Emissions – Fugitives

Substance Name	Annual Average lbs/yr	Hourly Maximum lbs/hr
Benzene	8.13E-01	9.28E-05
Ethyl Benzene	3.74E+00	4.27E-04
Hydrogen Sulfide	3.68E+01	4.20E-03
Toluene	3.02E+00	3.45E-04
Xylenes	2.63E+00	3.01E-04

Toxic Emissions – Gas Plant

Substance Name	Annual Average lbs/yr	Hourly Maximum lbs/hr
Benzene	1.07E-01	1.22E-05
Ethyl Benzene	4.91E-01	5.60E-05
Hydrogen Sulfide	2.15E+02	2.46E-02
Toluene	3.97E-01	4.53E-05
Xylenes	3.46E-01	3.95E-05

Toxic Emissions – Solvents

Substance Name	Annual Average lbs/yr	Hourly Maximum lbs/hr
Benzene	1.19E+00	1.36E-04
Methanol	2.40E+00	2.74E-04
Xylenes	5.95E+00	6.79E-04

Area Source Input Parameters

Source Name	UTM E SW Corner	UTM N SW Corner	X Length (m)	Y Length (m)	Angle
Wells	716200	3895600	1000	1000	0
Tanks	716600	3896600	100	100	0
Fugitive	716200	3895600	1000	1000	0
Solvents	716200	3895600	1000	1000	0
Gasplant	716400	3896800	100	100	0

Point Source Input Parameters

Source Name	UTM E	UTM N	Stack Height (m)	Temperature (°K)	Exit Velocity (m/s)	Stack Diameter (m)
Generator	717000	3896400	10.4	464.6	11.7	0.9
Turbine	717000	3896500	12.2	532.9	15.53	1.52

Note that the emission summaries provided above reflect Case 1 - Existing Conditions. Well-related emissions were doubled for Case 2 - Existing Conditions plus Proposed Well Build-out. All emissions were doubled for Case 3 - Existing Conditions plus Proposed Full Facility Build-out.

HARP MODEL OUTPUT

PXP Arroyo Grande

Case 1 - Existing Conditions

RECEPTORS WITH HIGHEST CANCER RISK

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
488	CENSUS	7.55E-08	7.75E-03	5.44E-02	716870	3896065	10
456	SENSITIVE	7.46E-08	7.57E-03	5.00E-02	716700	3895950	10
108	GRID	7.45E-08	8.56E-03	5.92E-02	716700	3896100	10
455	SENSITIVE	7.33E-08	9.29E-03	6.85E-02	716760	3896225	10
454	SENSITIVE	6.53E-08	1.10E-02	9.46E-02	716830	3896450	10
457	SENSITIVE	6.32E-08	5.94E-03	3.88E-02	716610	3895660	10
122	GRID	4.95E-08	4.84E-03	3.56E-02	716700	3895600	10
109	GRID	4.55E-08	4.64E-03	4.64E-02	717200	3896100	10
492	CENSUS	3.83E-08	5.84E-03	6.20E-02	717168	3896569	10
123	GRID	3.73E-08	3.66E-03	3.25E-02	717200	3895600	10
107	GRID	3.67E-08	4.65E-03	5.78E-02	716200	3896100	10
3	PATHWAY	3.36E-08	3.65E-03	3.37E-02	716810	3895543	10
453	SENSITIVE	2.16E-08	8.43E-03	8.46E-02	716950	3896660	10
458	SENSITIVE	2.12E-08	2.75E-03	3.18E-02	716575	3895450	10
121	GRID	2.11E-08	2.55E-03	3.52E-02	716200	3895600	10
95	GRID	1.84E-08	4.26E-03	5.93E-02	717200	3896600	10
323	BOUNDARY	1.54E-08	1.97E-03	2.55E-02	717251	3895352	10
325	BOUNDARY	1.54E-08	1.96E-03	2.47E-02	717183	3895279	10
324	BOUNDARY	1.54E-08	1.97E-03	2.41E-02	717217	3895315	10
322	BOUNDARY	1.53E-08	1.95E-03	2.57E-02	717285	3895388	10
326	BOUNDARY	1.52E-08	1.95E-03	2.37E-02	717149	3895242	10
327	BOUNDARY	1.52E-08	1.94E-03	2.22E-02	717137	3895230	10
477	CENSUS	1.50E-08	2.02E-03	2.47E-02	716771	3895200	10
321	BOUNDARY	1.50E-08	1.94E-03	2.59E-02	717320	3895425	10
320	BOUNDARY	1.47E-08	1.92E-03	2.67E-02	717354	3895461	10
319	BOUNDARY	1.42E-08	1.90E-03	2.61E-02	717388	3895498	10

328	BOUNDARY	1.42E-08	1.84E-03	2.14E-02	717159	3895185	10
318	BOUNDARY	1.36E-08	1.86E-03	2.62E-02	717422	3895534	10
329	BOUNDARY	1.34E-08	1.75E-03	2.08E-02	717180	3895140	10
475	CENSUS	1.33E-08	1.79E-03	2.98E-02	717506	3895790	10
317	BOUNDARY	1.31E-08	1.79E-03	2.64E-02	717457	3895570	10
136	GRID	1.29E-08	1.81E-03	2.35E-02	716700	3895100	10
330	BOUNDARY	1.28E-08	1.67E-03	2.03E-02	717202	3895095	10
1	PATHWAY	1.28E-08	1.78E-03	2.28E-02	716717	3895080	10
137	GRID	1.28E-08	1.68E-03	2.04E-02	717200	3895100	10
316	BOUNDARY	1.25E-08	1.73E-03	2.60E-02	717491	3895607	10
331	BOUNDARY	1.22E-08	1.60E-03	1.98E-02	717223	3895050	10
315	BOUNDARY	1.20E-08	1.66E-03	2.69E-02	717525	3895643	10
332	BOUNDARY	1.17E-08	1.53E-03	1.93E-02	717245	3895004	10
314	BOUNDARY	1.15E-08	1.60E-03	2.67E-02	717559	3895680	10
333	BOUNDARY	1.12E-08	1.48E-03	1.88E-02	717266	3894959	10
478	CENSUS	1.12E-08	1.48E-03	1.98E-02	717278	3894987	10
313	BOUNDARY	1.11E-08	1.56E-03	2.70E-02	717594	3895716	10
334	BOUNDARY	1.08E-08	1.42E-03	1.83E-02	717288	3894914	10
312	BOUNDARY	1.08E-08	1.53E-03	2.70E-02	717628	3895753	10
110	GRID	1.05E-08	1.82E-03	3.03E-02	717700	3896100	10
311	BOUNDARY	1.04E-08	1.53E-03	2.68E-02	717662	3895789	10
335	BOUNDARY	1.04E-08	1.37E-03	1.78E-02	717310	3894869	10
151	GRID	1.03E-08	1.32E-03	1.58E-02	717200	3894600	10
336	BOUNDARY	1.01E-08	1.33E-03	1.73E-02	717331	3894824	10
310	BOUNDARY	1.01E-08	1.54E-03	2.62E-02	717696	3895826	10
487	CENSUS	1.01E-08	1.48E-03	2.02E-02	716565	3894925	10
309	BOUNDARY	9.90E-09	1.58E-03	2.65E-02	717730	3895862	10
337	BOUNDARY	9.86E-09	1.29E-03	1.69E-02	717353	3894779	10
308	BOUNDARY	9.84E-09	1.61E-03	2.66E-02	717765	3895898	10
307	BOUNDARY	9.79E-09	1.61E-03	2.60E-02	717799	3895935	10
306	BOUNDARY	9.69E-09	1.59E-03	2.53E-02	717833	3895971	10
338	BOUNDARY	9.61E-09	1.25E-03	1.65E-02	717374	3894734	10
305	BOUNDARY	9.57E-09	1.57E-03	2.57E-02	717867	3896008	10
353	BOUNDARY	9.48E-09	1.15E-03	1.38E-02	717147	3894280	10
2	PATHWAY	9.48E-09	1.24E-03	1.53E-02	716847	3894476	10

304	BOUNDARY	9.47E-09	1.56E-03	2.56E-02	717902	3896044	10
354	BOUNDARY	9.45E-09	1.15E-03	1.35E-02	717104	3894306	10
361	BOUNDARY	9.43E-09	1.25E-03	1.55E-02	716805	3894488	10
360	BOUNDARY	9.43E-09	1.23E-03	1.52E-02	716848	3894462	10
352	BOUNDARY	9.43E-09	1.14E-03	1.35E-02	717189	3894254	10
285	BOUNDARY	9.39E-09	2.34E-03	4.02E-02	717513	3896505	10
339	BOUNDARY	9.38E-09	1.22E-03	1.61E-02	717396	3894689	10
355	BOUNDARY	9.37E-09	1.15E-03	1.35E-02	717061	3894332	10
303	BOUNDARY	9.37E-09	1.55E-03	2.49E-02	717936	3896081	10
362	BOUNDARY	9.36E-09	1.25E-03	1.56E-02	716762	3894514	10
359	BOUNDARY	9.36E-09	1.21E-03	1.43E-02	716890	3894436	10
150	GRID	9.34E-09	1.29E-03	1.67E-02	716700	3894600	10
356	BOUNDARY	9.30E-09	1.16E-03	1.45E-02	717018	3894358	10
124	GRID	9.30E-09	1.33E-03	2.40E-02	717700	3895600	10
350	BOUNDARY	9.29E-09	1.13E-03	1.32E-02	717237	3894236	10
351	BOUNDARY	9.29E-09	1.12E-03	1.30E-02	717232	3894228	10
358	BOUNDARY	9.28E-09	1.19E-03	1.46E-02	716933	3894410	10
349	BOUNDARY	9.27E-09	1.14E-03	1.32E-02	717264	3894278	10
286	BOUNDARY	9.26E-09	2.23E-03	3.82E-02	717559	3896486	10
284	BOUNDARY	9.26E-09	2.44E-03	4.22E-02	717466	3896524	10
357	BOUNDARY	9.25E-09	1.17E-03	1.48E-02	716976	3894384	10
363	BOUNDARY	9.24E-09	1.26E-03	1.58E-02	716720	3894540	10
348	BOUNDARY	9.23E-09	1.15E-03	1.36E-02	717290	3894320	10
302	BOUNDARY	9.20E-09	1.54E-03	2.49E-02	717970	3896117	10
347	BOUNDARY	9.18E-09	1.16E-03	1.36E-02	717317	3894363	10
340	BOUNDARY	9.18E-09	1.19E-03	1.57E-02	717418	3894644	10
346	BOUNDARY	9.13E-09	1.16E-03	1.43E-02	717344	3894405	10
287	BOUNDARY	9.11E-09	2.13E-03	3.62E-02	717605	3896467	10
165	GRID	9.10E-09	1.07E-03	1.25E-02	717200	3894100	10
364	BOUNDARY	9.10E-09	1.26E-03	1.65E-02	716677	3894566	10
345	BOUNDARY	9.08E-09	1.16E-03	1.45E-02	717371	3894447	10
283	BOUNDARY	9.08E-09	2.54E-03	4.47E-02	717420	3896543	10
344	BOUNDARY	9.03E-09	1.15E-03	1.46E-02	717397	3894489	10
341	BOUNDARY	9.00E-09	1.16E-03	1.53E-02	717439	3894599	10
343	BOUNDARY	8.97E-09	1.15E-03	1.41E-02	717424	3894532	10

365	BOUNDARY	8.97E-09	1.26E-03	1.67E-02	716634	3894592	10

RECEPTORS WITH HIGHEST CHRONIC HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
454	SENSITIVE	6.53E-08	1.10E-02	9.46E-02	716830	3896450	10
455	SENSITIVE	7.33E-08	9.29E-03	6.85E-02	716760	3896225	10
108	GRID	7.45E-08	8.56E-03	5.92E-02	716700	3896100	10
453	SENSITIVE	2.16E-08	8.43E-03	8.46E-02	716950	3896660	10
488	CENSUS	7.55E-08	7.75E-03	5.44E-02	716870	3896065	10
456	SENSITIVE	7.46E-08	7.57E-03	5.00E-02	716700	3895950	10
457	SENSITIVE	6.32E-08	5.94E-03	3.88E-02	716610	3895660	10
492	CENSUS	3.83E-08	5.84E-03	6.20E-02	717168	3896569	10
122	GRID	4.95E-08	4.84E-03	3.56E-02	716700	3895600	10
107	GRID	3.67E-08	4.65E-03	5.78E-02	716200	3896100	10
109	GRID	4.55E-08	4.64E-03	4.64E-02	717200	3896100	10
95	GRID	1.84E-08	4.26E-03	5.93E-02	717200	3896600	10
452	SENSITIVE	7.82E-09	4.25E-03	6.82E-02	717075	3896850	10
123	GRID	3.73E-08	3.66E-03	3.25E-02	717200	3895600	10
65	GRID	6.47E-09	3.66E-03	5.17E-02	716200	3897600	10
3	PATHWAY	3.36E-08	3.65E-03	3.37E-02	716810	3895543	10
491	CENSUS	5.51E-09	3.30E-03	5.97E-02	717199	3896819	10
458	SENSITIVE	2.12E-08	2.75E-03	3.18E-02	716575	3895450	10
451	SENSITIVE	3.82E-09	2.66E-03	5.61E-02	717200	3897040	10
497	CENSUS	6.32E-09	2.65E-03	4.66E-02	716419	3897733	10
443	BOUNDARY	5.76E-09	2.58E-03	4.03E-02	716075	3897798	10
121	GRID	2.11E-08	2.55E-03	3.52E-02	716200	3895600	10
444	BOUNDARY	5.85E-09	2.55E-03	4.05E-02	716123	3897814	10
283	BOUNDARY	9.08E-09	2.54E-03	4.47E-02	717420	3896543	10
447	BOUNDARY	5.95E-09	2.47E-03	3.97E-02	716264	3897864	10
445	BOUNDARY	5.91E-09	2.46E-03	4.06E-02	716170	3897831	10
442	BOUNDARY	5.68E-09	2.46E-03	4.05E-02	716028	3897781	10
448	BOUNDARY	6.02E-09	2.45E-03	3.94E-02	716311	3897881	10
284	BOUNDARY	9.26E-09	2.44E-03	4.22E-02	717466	3896524	10
446	BOUNDARY	5.92E-09	2.43E-03	4.03E-02	716217	3897848	10

285	BOUNDARY	9.39E-09	2.34E-03	4.02E-02	717513	3896505	10
282	BOUNDARY	8.15E-09	2.34E-03	4.31E-02	717446	3896575	10
441	BOUNDARY	5.63E-09	2.30E-03	4.06E-02	715981	3897764	10
449	BOUNDARY	6.09E-09	2.28E-03	3.93E-02	716358	3897898	10
81	GRID	3.53E-09	2.24E-03	5.53E-02	717200	3897100	10
286	BOUNDARY	9.26E-09	2.23E-03	3.82E-02	717559	3896486	10
440	BOUNDARY	5.60E-09	2.17E-03	4.03E-02	715934	3897748	10
281	BOUNDARY	7.28E-09	2.16E-03	4.25E-02	717478	3896614	10
287	BOUNDARY	9.11E-09	2.13E-03	3.62E-02	717605	3896467	10
450	BOUNDARY	6.08E-09	2.08E-03	3.85E-02	716405	3897914	10
288	BOUNDARY	8.96E-09	2.03E-03	3.49E-02	717651	3896449	10
280	BOUNDARY	6.30E-09	2.03E-03	4.16E-02	717509	3896653	10
477	CENSUS	1.50E-08	2.02E-03	2.47E-02	716771	3895200	10
434	BOUNDARY	5.23E-09	2.02E-03	4.80E-02	715859	3897500	10
433	BOUNDARY	5.11E-09	2.00E-03	5.00E-02	715853	3897450	10
228	BOUNDARY	6.03E-09	2.00E-03	3.66E-02	716430	3897923	10
439	BOUNDARY	5.53E-09	1.98E-03	3.95E-02	715887	3897731	10
324	BOUNDARY	1.54E-08	1.97E-03	2.41E-02	717217	3895315	10
323	BOUNDARY	1.54E-08	1.97E-03	2.55E-02	717251	3895352	10
325	BOUNDARY	1.54E-08	1.96E-03	2.47E-02	717183	3895279	10
435	BOUNDARY	5.34E-09	1.95E-03	4.43E-02	715865	3897549	10
322	BOUNDARY	1.53E-08	1.95E-03	2.57E-02	717285	3895388	10
326	BOUNDARY	1.52E-08	1.95E-03	2.37E-02	717149	3895242	10
438	BOUNDARY	5.53E-09	1.94E-03	3.90E-02	715883	3897698	10
321	BOUNDARY	1.50E-08	1.94E-03	2.59E-02	717320	3895425	10
327	BOUNDARY	1.52E-08	1.94E-03	2.22E-02	717137	3895230	10
289	BOUNDARY	8.82E-09	1.93E-03	3.36E-02	717698	3896430	10
229	BOUNDARY	5.92E-09	1.93E-03	3.87E-02	716477	3897905	10
320	BOUNDARY	1.47E-08	1.92E-03	2.67E-02	717354	3895461	10
279	BOUNDARY	5.39E-09	1.92E-03	4.00E-02	717541	3896692	10
319	BOUNDARY	1.42E-08	1.90E-03	2.61E-02	717388	3895498	10
476	CENSUS	2.37E-09	1.89E-03	4.34E-02	717475	3896964	10
437	BOUNDARY	5.50E-09	1.88E-03	4.17E-02	715877	3897648	10
51	GRID	5.68E-09	1.87E-03	3.18E-02	716200	3898100	10
436	BOUNDARY	5.43E-09	1.87E-03	4.43E-02	715871	3897599	10

432	BOUNDARY	5.03E-09	1.86E-03	5.15E-02	715847	3897400	10
318	BOUNDARY	1.36E-08	1.86E-03	2.62E-02	717422	3895534	10
96	GRID	7.82E-09	1.85E-03	3.48E-02	717700	3896600	10
290	BOUNDARY	8.71E-09	1.85E-03	3.23E-02	717744	3896411	10
328	BOUNDARY	1.42E-08	1.84E-03	2.14E-02	717159	3895185	10
110	GRID	1.05E-08	1.82E-03	3.03E-02	717700	3896100	10
230	BOUNDARY	5.72E-09	1.82E-03	3.98E-02	716523	3897888	10
136	GRID	1.29E-08	1.81E-03	2.35E-02	716700	3895100	10
278	BOUNDARY	4.62E-09	1.80E-03	3.77E-02	717572	3896731	10
475	CENSUS	1.33E-08	1.79E-03	2.98E-02	717506	3895790	10
317	BOUNDARY	1.31E-08	1.79E-03	2.64E-02	717457	3895570	10
1	PATHWAY	1.28E-08	1.78E-03	2.28E-02	716717	3895080	10
291	BOUNDARY	8.63E-09	1.78E-03	3.08E-02	717790	3896392	10
329	BOUNDARY	1.34E-08	1.75E-03	2.08E-02	717180	3895140	10
430	BOUNDARY	4.97E-09	1.75E-03	5.41E-02	715835	3897301	10
431	BOUNDARY	4.99E-09	1.74E-03	5.28E-02	715841	3897351	10
429	BOUNDARY	4.90E-09	1.73E-03	5.65E-02	715829	3897251	10
316	BOUNDARY	1.25E-08	1.73E-03	2.60E-02	717491	3895607	10
292	BOUNDARY	8.57E-09	1.71E-03	2.96E-02	717837	3896373	10
277	BOUNDARY	3.97E-09	1.68E-03	3.62E-02	717604	3896769	10
137	GRID	1.28E-08	1.68E-03	2.04E-02	717200	3895100	10
231	BOUNDARY	5.47E-09	1.67E-03	3.93E-02	716570	3897870	10
330	BOUNDARY	1.28E-08	1.67E-03	2.03E-02	717202	3895095	10
315	BOUNDARY	1.20E-08	1.66E-03	2.69E-02	717525	3895643	10
293	BOUNDARY	8.53E-09	1.65E-03	2.83E-02	717883	3896354	10
66	GRID	5.55E-09	1.64E-03	5.07E-02	716700	3897600	10
308	BOUNDARY	9.84E-09	1.61E-03	2.66E-02	717765	3895898	10
307	BOUNDARY	9.79E-09	1.61E-03	2.60E-02	717799	3895935	10
331	BOUNDARY	1.22E-08	1.60E-03	1.98E-02	717223	3895050	10
314	BOUNDARY	1.15E-08	1.60E-03	2.67E-02	717559	3895680	10
294	BOUNDARY	8.49E-09	1.60E-03	2.69E-02	717929	3896335	10

RECEPTORS WITH HIGHEST ACUTE HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE

454	SENSITIVE	6.53E-08	1.10E-02	9.46E-02	716830	3896450	10
453	SENSITIVE	2.16E-08	8.43E-03	8.46E-02	716950	3896660	10
455	SENSITIVE	7.33E-08	9.29E-03	6.85E-02	716760	3896225	10
452	SENSITIVE	7.82E-09	4.25E-03	6.82E-02	717075	3896850	10
492	CENSUS	3.83E-08	5.84E-03	6.20E-02	717168	3896569	10
491	CENSUS	5.51E-09	3.30E-03	5.97E-02	717199	3896819	10
422	BOUNDARY	4.40E-09	1.45E-03	5.96E-02	715787	3896904	10
425	BOUNDARY	4.52E-09	1.32E-03	5.95E-02	715805	3897053	10
95	GRID	1.84E-08	4.26E-03	5.93E-02	717200	3896600	10
108	GRID	7.45E-08	8.56E-03	5.92E-02	716700	3896100	10
420	BOUNDARY	4.23E-09	1.20E-03	5.90E-02	715775	3896805	10
424	BOUNDARY	4.48E-09	1.37E-03	5.90E-02	715799	3897003	10
426	BOUNDARY	4.59E-09	1.31E-03	5.89E-02	715811	3897102	10
423	BOUNDARY	4.46E-09	1.51E-03	5.89E-02	715793	3896954	10
107	GRID	3.67E-08	4.65E-03	5.78E-02	716200	3896100	10
428	BOUNDARY	4.79E-09	1.57E-03	5.77E-02	715823	3897202	10
427	BOUNDARY	4.68E-09	1.38E-03	5.76E-02	715817	3897152	10
419	BOUNDARY	4.21E-09	1.22E-03	5.75E-02	715769	3896755	10
418	BOUNDARY	4.20E-09	1.22E-03	5.69E-02	715763	3896705	10
429	BOUNDARY	4.90E-09	1.73E-03	5.65E-02	715829	3897251	10
416	BOUNDARY	4.09E-09	1.19E-03	5.63E-02	715751	3896606	10
451	SENSITIVE	3.82E-09	2.66E-03	5.61E-02	717200	3897040	10
421	BOUNDARY	4.30E-09	1.25E-03	5.60E-02	715781	3896854	10
417	BOUNDARY	4.18E-09	1.22E-03	5.59E-02	715757	3896656	10
81	GRID	3.53E-09	2.24E-03	5.53E-02	717200	3897100	10
415	BOUNDARY	3.96E-09	1.19E-03	5.45E-02	715745	3896556	10
488	CENSUS	7.55E-08	7.75E-03	5.44E-02	716870	3896065	10
430	BOUNDARY	4.97E-09	1.75E-03	5.41E-02	715835	3897301	10
414	BOUNDARY	3.85E-09	1.21E-03	5.39E-02	715739	3896507	10
92	GRID	3.69E-09	1.07E-03	5.28E-02	715700	3896600	10
431	BOUNDARY	4.99E-09	1.74E-03	5.28E-02	715841	3897351	10
413	BOUNDARY	3.75E-09	1.19E-03	5.21E-02	715733	3896457	10
78	GRID	3.81E-09	1.05E-03	5.19E-02	715700	3897100	10
65	GRID	6.47E-09	3.66E-03	5.17E-02	716200	3897600	10
432	BOUNDARY	5.03E-09	1.86E-03	5.15E-02	715847	3897400	10

66	GRID	5.55E-09	1.64E-03	5.07E-02	716700	3897600	10
412	BOUNDARY	3.65E-09	1.15E-03	5.06E-02	715727	3896408	10
433	BOUNDARY	5.11E-09	2.00E-03	5.00E-02	715853	3897450	10
456	SENSITIVE	7.46E-08	7.57E-03	5.00E-02	716700	3895950	10
411	BOUNDARY	3.57E-09	1.15E-03	4.94E-02	715721	3896358	10
434	BOUNDARY	5.23E-09	2.02E-03	4.80E-02	715859	3897500	10
410	BOUNDARY	3.50E-09	1.16E-03	4.70E-02	715715	3896308	10
497	CENSUS	6.32E-09	2.65E-03	4.66E-02	716419	3897733	10
109	GRID	4.55E-08	4.64E-03	4.64E-02	717200	3896100	10
409	BOUNDARY	3.45E-09	1.18E-03	4.57E-02	715709	3896259	10
283	BOUNDARY	9.08E-09	2.54E-03	4.47E-02	717420	3896543	10
436	BOUNDARY	5.43E-09	1.87E-03	4.43E-02	715871	3897599	10
435	BOUNDARY	5.34E-09	1.95E-03	4.43E-02	715865	3897549	10
408	BOUNDARY	3.41E-09	1.20E-03	4.42E-02	715703	3896209	10
476	CENSUS	2.37E-09	1.89E-03	4.34E-02	717475	3896964	10
489	CENSUS	2.05E-09	8.90E-04	4.31E-02	717373	3897301	10
282	BOUNDARY	8.15E-09	2.34E-03	4.31E-02	717446	3896575	10
281	BOUNDARY	7.28E-09	2.16E-03	4.25E-02	717478	3896614	10
407	BOUNDARY	3.38E-09	1.21E-03	4.22E-02	715697	3896159	10
284	BOUNDARY	9.26E-09	2.44E-03	4.22E-02	717466	3896524	10
437	BOUNDARY	5.50E-09	1.88E-03	4.17E-02	715877	3897648	10
238	BOUNDARY	4.37E-09	9.83E-04	4.16E-02	716898	3897746	10
241	BOUNDARY	3.42E-09	7.03E-04	4.16E-02	717038	3897693	10
280	BOUNDARY	6.30E-09	2.03E-03	4.16E-02	717509	3896653	10
234	BOUNDARY	5.09E-09	1.32E-03	4.14E-02	716711	3897817	10
106	GRID	3.40E-09	1.19E-03	4.13E-02	715700	3896100	10
233	BOUNDARY	5.14E-09	1.42E-03	4.12E-02	716664	3897835	10
406	BOUNDARY	3.35E-09	1.18E-03	4.11E-02	715691	3896110	10
236	BOUNDARY	4.95E-09	1.15E-03	4.09E-02	716804	3897782	10
235	BOUNDARY	5.05E-09	1.20E-03	4.09E-02	716757	3897799	10
243	BOUNDARY	2.90E-09	6.33E-04	4.08E-02	717132	3897658	10
237	BOUNDARY	4.72E-09	1.12E-03	4.08E-02	716851	3897764	10
242	BOUNDARY	3.14E-09	6.66E-04	4.07E-02	717085	3897676	10
441	BOUNDARY	5.63E-09	2.30E-03	4.06E-02	715981	3897764	10
445	BOUNDARY	5.91E-09	2.46E-03	4.06E-02	716170	3897831	10

444	BOUNDARY	5.85E-09	2.55E-03	4.05E-02	716123	3897814	10
442	BOUNDARY	5.68E-09	2.46E-03	4.05E-02	716028	3897781	10
440	BOUNDARY	5.60E-09	2.17E-03	4.03E-02	715934	3897748	10
443	BOUNDARY	5.76E-09	2.58E-03	4.03E-02	716075	3897798	10
446	BOUNDARY	5.92E-09	2.43E-03	4.03E-02	716217	3897848	10
285	BOUNDARY	9.39E-09	2.34E-03	4.02E-02	717513	3896505	10
279	BOUNDARY	5.39E-09	1.92E-03	4.00E-02	717541	3896692	10
230	BOUNDARY	5.72E-09	1.82E-03	3.98E-02	716523	3897888	10
405	BOUNDARY	3.31E-09	1.14E-03	3.97E-02	715685	3896060	10
447	BOUNDARY	5.95E-09	2.47E-03	3.97E-02	716264	3897864	10
64	GRID	4.44E-09	1.45E-03	3.96E-02	715700	3897600	10
439	BOUNDARY	5.53E-09	1.98E-03	3.95E-02	715887	3897731	10
448	BOUNDARY	6.02E-09	2.45E-03	3.94E-02	716311	3897881	10
449	BOUNDARY	6.09E-09	2.28E-03	3.93E-02	716358	3897898	10
231	BOUNDARY	5.47E-09	1.67E-03	3.93E-02	716570	3897870	10
438	BOUNDARY	5.53E-09	1.94E-03	3.90E-02	715883	3897698	10
240	BOUNDARY	3.70E-09	7.45E-04	3.89E-02	716991	3897711	10
457	SENSITIVE	6.32E-08	5.94E-03	3.88E-02	716610	3895660	10
229	BOUNDARY	5.92E-09	1.93E-03	3.87E-02	716477	3897905	10
450	BOUNDARY	6.08E-09	2.08E-03	3.85E-02	716405	3897914	10
286	BOUNDARY	9.26E-09	2.23E-03	3.82E-02	717559	3896486	10
244	BOUNDARY	2.69E-09	6.02E-04	3.81E-02	717178	3897640	10
247	BOUNDARY	2.06E-09	4.96E-04	3.77E-02	717319	3897587	10
278	BOUNDARY	4.62E-09	1.80E-03	3.77E-02	717572	3896731	10
404	BOUNDARY	3.29E-09	1.10E-03	3.76E-02	715679	3896010	10
276	BOUNDARY	3.44E-09	1.56E-03	3.75E-02	717635	3896808	10

HARP MODEL OUTPUT

PXP Arroyo Grande

Case 2 - Existing Conditions plus Proposed Well Build-out

RECEPTORS WITH HIGHEST CANCER RISK

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
488	CENSUS	9.43E-08	1.00E-02	5.58E-02	716870	3896065	10
456	SENSITIVE	9.33E-08	9.82E-03	5.13E-02	716700	3895950	10
108	GRID	9.32E-08	1.08E-02	6.04E-02	716700	3896100	10
455	SENSITIVE	9.19E-08	1.15E-02	6.98E-02	716760	3896225	10
454	SENSITIVE	8.18E-08	1.30E-02	9.61E-02	716830	3896450	10
457	SENSITIVE	7.87E-08	7.81E-03	4.03E-02	716610	3895660	10
122	GRID	6.14E-08	6.27E-03	3.71E-02	716700	3895600	10
109	GRID	5.68E-08	6.01E-03	4.79E-02	717200	3896100	10
492	CENSUS	4.79E-08	7.00E-03	6.36E-02	717168	3896569	10
107	GRID	4.59E-08	5.76E-03	5.92E-02	716200	3896100	10
123	GRID	4.57E-08	4.67E-03	3.41E-02	717200	3895600	10
3	PATHWAY	4.11E-08	4.56E-03	3.49E-02	716810	3895543	10
453	SENSITIVE	2.67E-08	9.04E-03	8.58E-02	716950	3896660	10
121	GRID	2.61E-08	3.16E-03	3.68E-02	716200	3895600	10
458	SENSITIVE	2.59E-08	3.32E-03	3.28E-02	716575	3895450	10
95	GRID	2.29E-08	4.80E-03	6.09E-02	717200	3896600	10
323	BOUNDARY	1.81E-08	2.29E-03	2.64E-02	717251	3895352	10
324	BOUNDARY	1.81E-08	2.28E-03	2.50E-02	717217	3895315	10
322	BOUNDARY	1.80E-08	2.28E-03	2.67E-02	717285	3895388	10
325	BOUNDARY	1.79E-08	2.26E-03	2.55E-02	717183	3895279	10
326	BOUNDARY	1.77E-08	2.24E-03	2.44E-02	717149	3895242	10
321	BOUNDARY	1.77E-08	2.27E-03	2.70E-02	717320	3895425	10
327	BOUNDARY	1.76E-08	2.23E-03	2.29E-02	717137	3895230	10
477	CENSUS	1.76E-08	2.33E-03	2.54E-02	716771	3895200	10
320	BOUNDARY	1.74E-08	2.25E-03	2.78E-02	717354	3895461	10
319	BOUNDARY	1.69E-08	2.22E-03	2.71E-02	717388	3895498	10

328	BOUNDARY	1.64E-08	2.10E-03	2.21E-02	717159	3895185	10
318	BOUNDARY	1.63E-08	2.17E-03	2.71E-02	717422	3895534	10
475	CENSUS	1.60E-08	2.13E-03	3.07E-02	717506	3895790	10
317	BOUNDARY	1.56E-08	2.10E-03	2.73E-02	717457	3895570	10
329	BOUNDARY	1.54E-08	1.99E-03	2.15E-02	717180	3895140	10
136	GRID	1.50E-08	2.06E-03	2.42E-02	716700	3895100	10
316	BOUNDARY	1.49E-08	2.02E-03	2.69E-02	717491	3895607	10
1	PATHWAY	1.48E-08	2.03E-03	2.34E-02	716717	3895080	10
137	GRID	1.46E-08	1.90E-03	2.11E-02	717200	3895100	10
330	BOUNDARY	1.46E-08	1.89E-03	2.09E-02	717202	3895095	10
315	BOUNDARY	1.43E-08	1.95E-03	2.77E-02	717525	3895643	10
331	BOUNDARY	1.38E-08	1.80E-03	2.04E-02	717223	3895050	10
314	BOUNDARY	1.38E-08	1.88E-03	2.74E-02	717559	3895680	10
313	BOUNDARY	1.33E-08	1.82E-03	2.77E-02	717594	3895716	10
332	BOUNDARY	1.32E-08	1.72E-03	1.99E-02	717245	3895004	10
312	BOUNDARY	1.28E-08	1.78E-03	2.77E-02	717628	3895753	10
478	CENSUS	1.27E-08	1.66E-03	2.04E-02	717278	3894987	10
333	BOUNDARY	1.26E-08	1.65E-03	1.94E-02	717266	3894959	10
311	BOUNDARY	1.24E-08	1.77E-03	2.75E-02	717662	3895789	10
110	GRID	1.23E-08	2.04E-03	3.09E-02	717700	3896100	10
334	BOUNDARY	1.21E-08	1.58E-03	1.89E-02	717288	3894914	10
310	BOUNDARY	1.20E-08	1.77E-03	2.68E-02	717696	3895826	10
309	BOUNDARY	1.17E-08	1.79E-03	2.71E-02	717730	3895862	10
335	BOUNDARY	1.17E-08	1.52E-03	1.84E-02	717310	3894869	10
487	CENSUS	1.16E-08	1.67E-03	2.08E-02	716565	3894925	10
308	BOUNDARY	1.15E-08	1.82E-03	2.72E-02	717765	3895898	10
307	BOUNDARY	1.14E-08	1.81E-03	2.66E-02	717799	3895935	10
336	BOUNDARY	1.13E-08	1.47E-03	1.79E-02	717331	3894824	10
151	GRID	1.13E-08	1.44E-03	1.63E-02	717200	3894600	10
306	BOUNDARY	1.12E-08	1.78E-03	2.59E-02	717833	3895971	10
305	BOUNDARY	1.10E-08	1.75E-03	2.63E-02	717867	3896008	10
285	BOUNDARY	1.10E-08	2.54E-03	4.10E-02	717513	3896505	10
283	BOUNDARY	1.10E-08	2.77E-03	4.56E-02	717420	3896543	10
284	BOUNDARY	1.10E-08	2.65E-03	4.31E-02	717466	3896524	10
124	GRID	1.09E-08	1.52E-03	2.47E-02	717700	3895600	10

337	BOUNDARY	1.09E-08	1.42E-03	1.74E-02	717353	3894779	10
286	BOUNDARY	1.08E-08	2.42E-03	3.90E-02	717559	3896486	10
304	BOUNDARY	1.08E-08	1.73E-03	2.62E-02	717902	3896044	10
303	BOUNDARY	1.07E-08	1.70E-03	2.54E-02	717936	3896081	10
287	BOUNDARY	1.06E-08	2.30E-03	3.70E-02	717605	3896467	10
338	BOUNDARY	1.06E-08	1.37E-03	1.70E-02	717374	3894734	10
302	BOUNDARY	1.04E-08	1.68E-03	2.54E-02	717970	3896117	10
150	GRID	1.04E-08	1.42E-03	1.72E-02	716700	3894600	10
360	BOUNDARY	1.04E-08	1.34E-03	1.57E-02	716848	3894462	10
361	BOUNDARY	1.04E-08	1.36E-03	1.60E-02	716805	3894488	10
288	BOUNDARY	1.04E-08	2.19E-03	3.56E-02	717651	3896449	10
2	PATHWAY	1.04E-08	1.35E-03	1.58E-02	716847	3894476	10
362	BOUNDARY	1.03E-08	1.37E-03	1.60E-02	716762	3894514	10
339	BOUNDARY	1.03E-08	1.33E-03	1.66E-02	717396	3894689	10
359	BOUNDARY	1.03E-08	1.32E-03	1.48E-02	716890	3894436	10
363	BOUNDARY	1.02E-08	1.38E-03	1.63E-02	716720	3894540	10
353	BOUNDARY	1.02E-08	1.24E-03	1.42E-02	717147	3894280	10
355	BOUNDARY	1.02E-08	1.25E-03	1.39E-02	717061	3894332	10
289	BOUNDARY	1.02E-08	2.10E-03	3.43E-02	717698	3896430	10
354	BOUNDARY	1.02E-08	1.24E-03	1.39E-02	717104	3894306	10
352	BOUNDARY	1.02E-08	1.23E-03	1.39E-02	717189	3894254	10
358	BOUNDARY	1.02E-08	1.30E-03	1.50E-02	716933	3894410	10
301	BOUNDARY	1.01E-08	1.66E-03	2.43E-02	718004	3896154	10
364	BOUNDARY	1.01E-08	1.38E-03	1.70E-02	716677	3894566	10
357	BOUNDARY	1.01E-08	1.28E-03	1.52E-02	716976	3894384	10
356	BOUNDARY	1.01E-08	1.26E-03	1.49E-02	717018	3894358	10
340	BOUNDARY	1.01E-08	1.30E-03	1.62E-02	717418	3894644	10
351	BOUNDARY	1.00E-08	1.21E-03	1.35E-02	717232	3894228	10
349	BOUNDARY	1.00E-08	1.23E-03	1.37E-02	717264	3894278	10
350	BOUNDARY	1.00E-08	1.21E-03	1.36E-02	717237	3894236	10
290	BOUNDARY	9.99E-09	2.01E-03	3.29E-02	717744	3896411	10
365	BOUNDARY	9.98E-09	1.38E-03	1.72E-02	716634	3894592	10
348	BOUNDARY	9.98E-09	1.24E-03	1.40E-02	717290	3894320	10
347	BOUNDARY	9.94E-09	1.25E-03	1.41E-02	717317	3894363	10
346	BOUNDARY	9.91E-09	1.25E-03	1.47E-02	717344	3894405	10

RECEPTORS WITH HIGHEST CHRONIC HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
454	SENSITIVE	8.18E-08	1.30E-02	9.61E-02	716830	3896450	10
455	SENSITIVE	9.19E-08	1.15E-02	6.98E-02	716760	3896225	10
108	GRID	9.32E-08	1.08E-02	6.04E-02	716700	3896100	10
488	CENSUS	9.43E-08	1.00E-02	5.58E-02	716870	3896065	10
456	SENSITIVE	9.33E-08	9.82E-03	5.13E-02	716700	3895950	10
453	SENSITIVE	2.67E-08	9.04E-03	8.58E-02	716950	3896660	10
457	SENSITIVE	7.87E-08	7.81E-03	4.03E-02	716610	3895660	10
492	CENSUS	4.79E-08	7.00E-03	6.36E-02	717168	3896569	10
122	GRID	6.14E-08	6.27E-03	3.71E-02	716700	3895600	10
109	GRID	5.68E-08	6.01E-03	4.79E-02	717200	3896100	10
107	GRID	4.59E-08	5.76E-03	5.92E-02	716200	3896100	10
95	GRID	2.29E-08	4.80E-03	6.09E-02	717200	3896600	10
123	GRID	4.57E-08	4.67E-03	3.41E-02	717200	3895600	10
3	PATHWAY	4.11E-08	4.56E-03	3.49E-02	716810	3895543	10
452	SENSITIVE	9.60E-09	4.47E-03	6.91E-02	717075	3896850	10
65	GRID	7.51E-09	3.78E-03	5.22E-02	716200	3897600	10
491	CENSUS	6.77E-09	3.45E-03	6.06E-02	717199	3896819	10
458	SENSITIVE	2.59E-08	3.32E-03	3.28E-02	716575	3895450	10
121	GRID	2.61E-08	3.16E-03	3.68E-02	716200	3895600	10
283	BOUNDARY	1.10E-08	2.77E-03	4.56E-02	717420	3896543	10
451	SENSITIVE	4.60E-09	2.76E-03	5.68E-02	717200	3897040	10
497	CENSUS	7.24E-09	2.76E-03	4.70E-02	716419	3897733	10
443	BOUNDARY	6.61E-09	2.68E-03	4.07E-02	716075	3897798	10
444	BOUNDARY	6.71E-09	2.66E-03	4.10E-02	716123	3897814	10
284	BOUNDARY	1.10E-08	2.65E-03	4.31E-02	717466	3896524	10
442	BOUNDARY	6.52E-09	2.57E-03	4.09E-02	716028	3897781	10
447	BOUNDARY	6.79E-09	2.57E-03	4.02E-02	716264	3897864	10
445	BOUNDARY	6.76E-09	2.56E-03	4.10E-02	716170	3897831	10
285	BOUNDARY	1.10E-08	2.54E-03	4.10E-02	717513	3896505	10
448	BOUNDARY	6.84E-09	2.54E-03	3.98E-02	716311	3897881	10
446	BOUNDARY	6.77E-09	2.53E-03	4.08E-02	716217	3897848	10

282	BOUNDARY	9.77E-09	2.53E-03	4.40E-02	717446	3896575	10
286	BOUNDARY	1.08E-08	2.42E-03	3.90E-02	717559	3896486	10
441	BOUNDARY	6.46E-09	2.40E-03	4.10E-02	715981	3897764	10
449	BOUNDARY	6.89E-09	2.38E-03	3.97E-02	716358	3897898	10
477	CENSUS	1.76E-08	2.33E-03	2.54E-02	716771	3895200	10
81	GRID	4.25E-09	2.33E-03	5.60E-02	717200	3897100	10
281	BOUNDARY	8.65E-09	2.32E-03	4.34E-02	717478	3896614	10
287	BOUNDARY	1.06E-08	2.30E-03	3.70E-02	717605	3896467	10
323	BOUNDARY	1.81E-08	2.29E-03	2.64E-02	717251	3895352	10
324	BOUNDARY	1.81E-08	2.28E-03	2.50E-02	717217	3895315	10
322	BOUNDARY	1.80E-08	2.28E-03	2.67E-02	717285	3895388	10
321	BOUNDARY	1.77E-08	2.27E-03	2.70E-02	717320	3895425	10
325	BOUNDARY	1.79E-08	2.26E-03	2.55E-02	717183	3895279	10
440	BOUNDARY	6.41E-09	2.26E-03	4.08E-02	715934	3897748	10
320	BOUNDARY	1.74E-08	2.25E-03	2.78E-02	717354	3895461	10
326	BOUNDARY	1.77E-08	2.24E-03	2.44E-02	717149	3895242	10
327	BOUNDARY	1.76E-08	2.23E-03	2.29E-02	717137	3895230	10
319	BOUNDARY	1.69E-08	2.22E-03	2.71E-02	717388	3895498	10
288	BOUNDARY	1.04E-08	2.19E-03	3.56E-02	717651	3896449	10
318	BOUNDARY	1.63E-08	2.17E-03	2.71E-02	717422	3895534	10
450	BOUNDARY	6.86E-09	2.17E-03	3.89E-02	716405	3897914	10
280	BOUNDARY	7.46E-09	2.17E-03	4.25E-02	717509	3896653	10
434	BOUNDARY	6.11E-09	2.13E-03	4.85E-02	715859	3897500	10
475	CENSUS	1.60E-08	2.13E-03	3.07E-02	717506	3895790	10
433	BOUNDARY	6.01E-09	2.11E-03	5.06E-02	715853	3897450	10
328	BOUNDARY	1.64E-08	2.10E-03	2.21E-02	717159	3895185	10
289	BOUNDARY	1.02E-08	2.10E-03	3.43E-02	717698	3896430	10
317	BOUNDARY	1.56E-08	2.10E-03	2.73E-02	717457	3895570	10
228	BOUNDARY	6.80E-09	2.09E-03	3.71E-02	716430	3897923	10
439	BOUNDARY	6.31E-09	2.08E-03	4.00E-02	715887	3897731	10
136	GRID	1.50E-08	2.06E-03	2.42E-02	716700	3895100	10
435	BOUNDARY	6.20E-09	2.05E-03	4.48E-02	715865	3897549	10
438	BOUNDARY	6.34E-09	2.04E-03	3.95E-02	715883	3897698	10
279	BOUNDARY	6.38E-09	2.04E-03	4.08E-02	717541	3896692	10
110	GRID	1.23E-08	2.04E-03	3.09E-02	717700	3896100	10

1	PATHWAY	1.48E-08	2.03E-03	2.34E-02	716717	3895080	10
229	BOUNDARY	6.68E-09	2.02E-03	3.92E-02	716477	3897905	10
316	BOUNDARY	1.49E-08	2.02E-03	2.69E-02	717491	3895607	10
290	BOUNDARY	9.99E-09	2.01E-03	3.29E-02	717744	3896411	10
329	BOUNDARY	1.54E-08	1.99E-03	2.15E-02	717180	3895140	10
436	BOUNDARY	6.28E-09	1.98E-03	4.48E-02	715871	3897599	10
437	BOUNDARY	6.32E-09	1.97E-03	4.22E-02	715877	3897648	10
96	GRID	8.84E-09	1.97E-03	3.54E-02	717700	3896600	10
432	BOUNDARY	5.95E-09	1.97E-03	5.21E-02	715847	3897400	10
476	CENSUS	2.85E-09	1.95E-03	4.42E-02	717475	3896964	10
315	BOUNDARY	1.43E-08	1.95E-03	2.77E-02	717525	3895643	10
51	GRID	6.37E-09	1.95E-03	3.22E-02	716200	3898100	10
291	BOUNDARY	9.86E-09	1.93E-03	3.14E-02	717790	3896392	10
278	BOUNDARY	5.46E-09	1.91E-03	3.85E-02	717572	3896731	10
230	BOUNDARY	6.47E-09	1.91E-03	4.02E-02	716523	3897888	10
137	GRID	1.46E-08	1.90E-03	2.11E-02	717200	3895100	10
330	BOUNDARY	1.46E-08	1.89E-03	2.09E-02	717202	3895095	10
314	BOUNDARY	1.38E-08	1.88E-03	2.74E-02	717559	3895680	10
430	BOUNDARY	5.92E-09	1.87E-03	5.47E-02	715835	3897301	10
431	BOUNDARY	5.92E-09	1.85E-03	5.33E-02	715841	3897351	10
292	BOUNDARY	9.75E-09	1.85E-03	3.02E-02	717837	3896373	10
429	BOUNDARY	5.87E-09	1.84E-03	5.72E-02	715829	3897251	10
308	BOUNDARY	1.15E-08	1.82E-03	2.72E-02	717765	3895898	10
313	BOUNDARY	1.33E-08	1.82E-03	2.77E-02	717594	3895716	10
307	BOUNDARY	1.14E-08	1.81E-03	2.66E-02	717799	3895935	10
331	BOUNDARY	1.38E-08	1.80E-03	2.04E-02	717223	3895050	10
309	BOUNDARY	1.17E-08	1.79E-03	2.71E-02	717730	3895862	10
293	BOUNDARY	9.66E-09	1.79E-03	2.88E-02	717883	3896354	10
306	BOUNDARY	1.12E-08	1.78E-03	2.59E-02	717833	3895971	10
312	BOUNDARY	1.28E-08	1.78E-03	2.77E-02	717628	3895753	10

RECEPTORS WITH HIGHEST ACUTE HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
454	SENSITIVE	8.18E-08	1.30E-02	9.61E-02	716830	3896450	10

453	SENSITIVE	2.67E-08	9.04E-03	8.58E-02	716950	3896660	10
455	SENSITIVE	9.19E-08	1.15E-02	6.98E-02	716760	3896225	10
452	SENSITIVE	9.60E-09	4.47E-03	6.91E-02	717075	3896850	10
492	CENSUS	4.79E-08	7.00E-03	6.36E-02	717168	3896569	10
95	GRID	2.29E-08	4.80E-03	6.09E-02	717200	3896600	10
491	CENSUS	6.77E-09	3.45E-03	6.06E-02	717199	3896819	10
108	GRID	9.32E-08	1.08E-02	6.04E-02	716700	3896100	10
422	BOUNDARY	5.36E-09	1.57E-03	6.03E-02	715787	3896904	10
425	BOUNDARY	5.51E-09	1.44E-03	6.02E-02	715805	3897053	10
420	BOUNDARY	5.16E-09	1.31E-03	5.98E-02	715775	3896805	10
424	BOUNDARY	5.46E-09	1.49E-03	5.97E-02	715799	3897003	10
426	BOUNDARY	5.57E-09	1.43E-03	5.96E-02	715811	3897102	10
423	BOUNDARY	5.43E-09	1.63E-03	5.96E-02	715793	3896954	10
107	GRID	4.59E-08	5.76E-03	5.92E-02	716200	3896100	10
428	BOUNDARY	5.76E-09	1.68E-03	5.83E-02	715823	3897202	10
427	BOUNDARY	5.65E-09	1.50E-03	5.83E-02	715817	3897152	10
419	BOUNDARY	5.13E-09	1.33E-03	5.82E-02	715769	3896755	10
418	BOUNDARY	5.11E-09	1.33E-03	5.76E-02	715763	3896705	10
429	BOUNDARY	5.87E-09	1.84E-03	5.72E-02	715829	3897251	10
416	BOUNDARY	4.97E-09	1.30E-03	5.70E-02	715751	3896606	10
451	SENSITIVE	4.60E-09	2.76E-03	5.68E-02	717200	3897040	10
421	BOUNDARY	5.25E-09	1.36E-03	5.67E-02	715781	3896854	10
417	BOUNDARY	5.08E-09	1.33E-03	5.66E-02	715757	3896656	10
81	GRID	4.25E-09	2.33E-03	5.60E-02	717200	3897100	10
488	CENSUS	9.43E-08	1.00E-02	5.58E-02	716870	3896065	10
415	BOUNDARY	4.82E-09	1.29E-03	5.52E-02	715745	3896556	10
430	BOUNDARY	5.92E-09	1.87E-03	5.47E-02	715835	3897301	10
414	BOUNDARY	4.69E-09	1.32E-03	5.46E-02	715739	3896507	10
92	GRID	4.47E-09	1.16E-03	5.35E-02	715700	3896600	10
431	BOUNDARY	5.92E-09	1.85E-03	5.33E-02	715841	3897351	10
413	BOUNDARY	4.56E-09	1.28E-03	5.28E-02	715733	3896457	10
78	GRID	4.61E-09	1.15E-03	5.26E-02	715700	3897100	10
65	GRID	7.51E-09	3.78E-03	5.22E-02	716200	3897600	10
432	BOUNDARY	5.95E-09	1.97E-03	5.21E-02	715847	3897400	10
412	BOUNDARY	4.45E-09	1.25E-03	5.13E-02	715727	3896408	10

456	SENSITIVE	9.33E-08	9.82E-03	5.13E-02	716700	3895950	10
66	GRID	6.44E-09	1.74E-03	5.12E-02	716700	3897600	10
433	BOUNDARY	6.01E-09	2.11E-03	5.06E-02	715853	3897450	10
411	BOUNDARY	4.34E-09	1.25E-03	5.01E-02	715721	3896358	10
434	BOUNDARY	6.11E-09	2.13E-03	4.85E-02	715859	3897500	10
109	GRID	5.68E-08	6.01E-03	4.79E-02	717200	3896100	10
410	BOUNDARY	4.26E-09	1.25E-03	4.77E-02	715715	3896308	10
497	CENSUS	7.24E-09	2.76E-03	4.70E-02	716419	3897733	10
409	BOUNDARY	4.19E-09	1.27E-03	4.63E-02	715709	3896259	10
283	BOUNDARY	1.10E-08	2.77E-03	4.56E-02	717420	3896543	10
435	BOUNDARY	6.20E-09	2.05E-03	4.48E-02	715865	3897549	10
408	BOUNDARY	4.13E-09	1.29E-03	4.48E-02	715703	3896209	10
436	BOUNDARY	6.28E-09	1.98E-03	4.48E-02	715871	3897599	10
476	CENSUS	2.85E-09	1.95E-03	4.42E-02	717475	3896964	10
282	BOUNDARY	9.77E-09	2.53E-03	4.40E-02	717446	3896575	10
489	CENSUS	2.44E-09	9.37E-04	4.37E-02	717373	3897301	10
281	BOUNDARY	8.65E-09	2.32E-03	4.34E-02	717478	3896614	10
284	BOUNDARY	1.10E-08	2.65E-03	4.31E-02	717466	3896524	10
407	BOUNDARY	4.09E-09	1.29E-03	4.28E-02	715697	3896159	10
280	BOUNDARY	7.46E-09	2.17E-03	4.25E-02	717509	3896653	10
437	BOUNDARY	6.32E-09	1.97E-03	4.22E-02	715877	3897648	10
241	BOUNDARY	3.95E-09	7.67E-04	4.21E-02	717038	3897693	10
106	GRID	4.12E-09	1.28E-03	4.20E-02	715700	3896100	10
238	BOUNDARY	4.99E-09	1.06E-03	4.20E-02	716898	3897746	10
234	BOUNDARY	5.80E-09	1.41E-03	4.18E-02	716711	3897817	10
233	BOUNDARY	5.86E-09	1.51E-03	4.17E-02	716664	3897835	10
406	BOUNDARY	4.04E-09	1.26E-03	4.17E-02	715691	3896110	10
236	BOUNDARY	5.62E-09	1.23E-03	4.14E-02	716804	3897782	10
235	BOUNDARY	5.74E-09	1.28E-03	4.13E-02	716757	3897799	10
237	BOUNDARY	5.37E-09	1.20E-03	4.13E-02	716851	3897764	10
242	BOUNDARY	3.64E-09	7.27E-04	4.12E-02	717085	3897676	10
243	BOUNDARY	3.37E-09	6.89E-04	4.12E-02	717132	3897658	10
441	BOUNDARY	6.46E-09	2.40E-03	4.10E-02	715981	3897764	10
445	BOUNDARY	6.76E-09	2.56E-03	4.10E-02	716170	3897831	10
444	BOUNDARY	6.71E-09	2.66E-03	4.10E-02	716123	3897814	10

285	BOUNDARY	1.10E-08	2.54E-03	4.10E-02	717513	3896505	10
442	BOUNDARY	6.52E-09	2.57E-03	4.09E-02	716028	3897781	10
446	BOUNDARY	6.77E-09	2.53E-03	4.08E-02	716217	3897848	10
440	BOUNDARY	6.41E-09	2.26E-03	4.08E-02	715934	3897748	10
279	BOUNDARY	6.38E-09	2.04E-03	4.08E-02	717541	3896692	10
443	BOUNDARY	6.61E-09	2.68E-03	4.07E-02	716075	3897798	10
405	BOUNDARY	4.00E-09	1.22E-03	4.03E-02	715685	3896060	10
457	SENSITIVE	7.87E-08	7.81E-03	4.03E-02	716610	3895660	10
447	BOUNDARY	6.79E-09	2.57E-03	4.02E-02	716264	3897864	10
230	BOUNDARY	6.47E-09	1.91E-03	4.02E-02	716523	3897888	10
64	GRID	5.14E-09	1.54E-03	4.01E-02	715700	3897600	10
439	BOUNDARY	6.31E-09	2.08E-03	4.00E-02	715887	3897731	10
448	BOUNDARY	6.84E-09	2.54E-03	3.98E-02	716311	3897881	10
449	BOUNDARY	6.89E-09	2.38E-03	3.97E-02	716358	3897898	10
231	BOUNDARY	6.22E-09	1.76E-03	3.97E-02	716570	3897870	10
438	BOUNDARY	6.34E-09	2.04E-03	3.95E-02	715883	3897698	10
240	BOUNDARY	4.26E-09	8.13E-04	3.93E-02	716991	3897711	10
229	BOUNDARY	6.68E-09	2.02E-03	3.92E-02	716477	3897905	10
286	BOUNDARY	1.08E-08	2.42E-03	3.90E-02	717559	3896486	10
450	BOUNDARY	6.86E-09	2.17E-03	3.89E-02	716405	3897914	10
244	BOUNDARY	3.13E-09	6.55E-04	3.86E-02	717178	3897640	10
278	BOUNDARY	5.46E-09	1.91E-03	3.85E-02	717572	3896731	10
404	BOUNDARY	3.97E-09	1.19E-03	3.83E-02	715679	3896010	10
276	BOUNDARY	4.07E-09	1.64E-03	3.83E-02	717635	3896808	10
247	BOUNDARY	2.42E-09	5.39E-04	3.82E-02	717319	3897587	10

HARP MODEL OUTPUT

PXP Arroyo Grande

Case 3 - Existing Conditions plus Proposed Full Facility Build-out

RECEPTORS WITH HIGHEST CANCER RISK

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
488	CENSUS	1.51E-07	1.55E-02	1.09E-01	716870	3896065	10
456	SENSITIVE	1.49E-07	1.51E-02	9.99E-02	716700	3895950	10
108	GRID	1.49E-07	1.71E-02	1.18E-01	716700	3896100	10
455	SENSITIVE	1.47E-07	1.86E-02	1.37E-01	716760	3896225	10
454	SENSITIVE	1.31E-07	2.20E-02	1.89E-01	716830	3896450	10
457	SENSITIVE	1.26E-07	1.19E-02	7.76E-02	716610	3895660	10
122	GRID	9.90E-08	9.68E-03	7.12E-02	716700	3895600	10
109	GRID	9.11E-08	9.29E-03	9.28E-02	717200	3896100	10
492	CENSUS	7.65E-08	1.17E-02	1.24E-01	717168	3896569	10
123	GRID	7.45E-08	7.31E-03	6.50E-02	717200	3895600	10
107	GRID	7.34E-08	9.31E-03	1.16E-01	716200	3896100	10
3	PATHWAY	6.73E-08	7.31E-03	6.73E-02	716810	3895543	10
453	SENSITIVE	4.31E-08	1.69E-02	1.69E-01	716950	3896660	10
458	SENSITIVE	4.24E-08	5.51E-03	6.35E-02	716575	3895450	10
121	GRID	4.21E-08	5.10E-03	7.04E-02	716200	3895600	10
95	GRID	3.68E-08	8.51E-03	1.19E-01	717200	3896600	10
324	BOUNDARY	3.09E-08	3.93E-03	4.82E-02	717217	3895315	10
323	BOUNDARY	3.08E-08	3.93E-03	5.11E-02	717251	3895352	10
325	BOUNDARY	3.07E-08	3.91E-03	4.94E-02	717183	3895279	10
322	BOUNDARY	3.05E-08	3.91E-03	5.14E-02	717285	3895388	10
326	BOUNDARY	3.05E-08	3.89E-03	4.73E-02	717149	3895242	10
327	BOUNDARY	3.04E-08	3.89E-03	4.44E-02	717137	3895230	10
477	CENSUS	3.00E-08	4.04E-03	4.94E-02	716771	3895200	10
321	BOUNDARY	3.00E-08	3.88E-03	5.19E-02	717320	3895425	10
320	BOUNDARY	2.93E-08	3.85E-03	5.35E-02	717354	3895461	10
328	BOUNDARY	2.85E-08	3.68E-03	4.28E-02	717159	3895185	10

319	BOUNDARY	2.84E-08	3.80E-03	5.23E-02	717388	3895498	10
318	BOUNDARY	2.73E-08	3.72E-03	5.23E-02	717422	3895534	10
329	BOUNDARY	2.69E-08	3.50E-03	4.15E-02	717180	3895140	10
475	CENSUS	2.65E-08	3.59E-03	5.97E-02	717506	3895790	10
317	BOUNDARY	2.61E-08	3.59E-03	5.28E-02	717457	3895570	10
136	GRID	2.58E-08	3.62E-03	4.71E-02	716700	3895100	10
137	GRID	2.57E-08	3.36E-03	4.08E-02	717200	3895100	10
1	PATHWAY	2.56E-08	3.56E-03	4.55E-02	716717	3895080	10
330	BOUNDARY	2.55E-08	3.34E-03	4.05E-02	717202	3895095	10
316	BOUNDARY	2.50E-08	3.45E-03	5.20E-02	717491	3895607	10
331	BOUNDARY	2.43E-08	3.20E-03	3.95E-02	717223	3895050	10
315	BOUNDARY	2.39E-08	3.33E-03	5.39E-02	717525	3895643	10
332	BOUNDARY	2.33E-08	3.07E-03	3.86E-02	717245	3895004	10
314	BOUNDARY	2.31E-08	3.21E-03	5.33E-02	717559	3895680	10
478	CENSUS	2.25E-08	2.97E-03	3.95E-02	717278	3894987	10
333	BOUNDARY	2.24E-08	2.95E-03	3.75E-02	717266	3894959	10
313	BOUNDARY	2.23E-08	3.11E-03	5.39E-02	717594	3895716	10
334	BOUNDARY	2.16E-08	2.85E-03	3.66E-02	717288	3894914	10
312	BOUNDARY	2.15E-08	3.06E-03	5.40E-02	717628	3895753	10
110	GRID	2.10E-08	3.65E-03	6.06E-02	717700	3896100	10
335	BOUNDARY	2.09E-08	2.75E-03	3.56E-02	717310	3894869	10
311	BOUNDARY	2.08E-08	3.05E-03	5.37E-02	717662	3895789	10
151	GRID	2.06E-08	2.63E-03	3.16E-02	717200	3894600	10
336	BOUNDARY	2.03E-08	2.66E-03	3.46E-02	717331	3894824	10
487	CENSUS	2.02E-08	2.97E-03	4.04E-02	716565	3894925	10
310	BOUNDARY	2.01E-08	3.08E-03	5.23E-02	717696	3895826	10
309	BOUNDARY	1.98E-08	3.15E-03	5.30E-02	717730	3895862	10
308	BOUNDARY	1.97E-08	3.22E-03	5.31E-02	717765	3895898	10
337	BOUNDARY	1.97E-08	2.58E-03	3.37E-02	717353	3894779	10
307	BOUNDARY	1.96E-08	3.22E-03	5.19E-02	717799	3895935	10
306	BOUNDARY	1.94E-08	3.18E-03	5.06E-02	717833	3895971	10
338	BOUNDARY	1.92E-08	2.50E-03	3.30E-02	717374	3894734	10
305	BOUNDARY	1.91E-08	3.15E-03	5.14E-02	717867	3896008	10
353	BOUNDARY	1.90E-08	2.29E-03	2.75E-02	717147	3894280	10
2	PATHWAY	1.90E-08	2.48E-03	3.06E-02	716847	3894476	10

304	BOUNDARY	1.89E-08	3.12E-03	5.12E-02	717902	3896044	10
361	BOUNDARY	1.89E-08	2.49E-03	3.11E-02	716805	3894488	10
352	BOUNDARY	1.89E-08	2.27E-03	2.70E-02	717189	3894254	10
354	BOUNDARY	1.89E-08	2.30E-03	2.70E-02	717104	3894306	10
360	BOUNDARY	1.89E-08	2.47E-03	3.05E-02	716848	3894462	10
285	BOUNDARY	1.88E-08	4.69E-03	8.03E-02	717513	3896505	10
339	BOUNDARY	1.88E-08	2.44E-03	3.22E-02	717396	3894689	10
150	GRID	1.87E-08	2.58E-03	3.34E-02	716700	3894600	10
303	BOUNDARY	1.87E-08	3.10E-03	4.98E-02	717936	3896081	10
362	BOUNDARY	1.87E-08	2.51E-03	3.11E-02	716762	3894514	10
359	BOUNDARY	1.87E-08	2.43E-03	2.86E-02	716890	3894436	10
355	BOUNDARY	1.87E-08	2.31E-03	2.69E-02	717061	3894332	10
351	BOUNDARY	1.86E-08	2.25E-03	2.61E-02	717232	3894228	10
124	GRID	1.86E-08	2.66E-03	4.80E-02	717700	3895600	10
356	BOUNDARY	1.86E-08	2.32E-03	2.90E-02	717018	3894358	10
358	BOUNDARY	1.86E-08	2.38E-03	2.92E-02	716933	3894410	10
350	BOUNDARY	1.86E-08	2.25E-03	2.64E-02	717237	3894236	10
286	BOUNDARY	1.85E-08	4.47E-03	7.65E-02	717559	3896486	10
284	BOUNDARY	1.85E-08	4.88E-03	8.44E-02	717466	3896524	10
349	BOUNDARY	1.85E-08	2.28E-03	2.65E-02	717264	3894278	10
363	BOUNDARY	1.85E-08	2.52E-03	3.17E-02	716720	3894540	10
348	BOUNDARY	1.85E-08	2.30E-03	2.71E-02	717290	3894320	10
357	BOUNDARY	1.85E-08	2.34E-03	2.96E-02	716976	3894384	10
302	BOUNDARY	1.84E-08	3.07E-03	4.97E-02	717970	3896117	10
340	BOUNDARY	1.84E-08	2.37E-03	3.14E-02	717418	3894644	10
347	BOUNDARY	1.84E-08	2.31E-03	2.73E-02	717317	3894363	10
346	BOUNDARY	1.83E-08	2.32E-03	2.85E-02	717344	3894405	10
165	GRID	1.82E-08	2.15E-03	2.50E-02	717200	3894100	10
283	BOUNDARY	1.82E-08	5.08E-03	8.94E-02	717420	3896543	10
287	BOUNDARY	1.82E-08	4.25E-03	7.25E-02	717605	3896467	10
345	BOUNDARY	1.82E-08	2.31E-03	2.90E-02	717371	3894447	10
364	BOUNDARY	1.82E-08	2.53E-03	3.30E-02	716677	3894566	10
344	BOUNDARY	1.81E-08	2.30E-03	2.93E-02	717397	3894489	10
341	BOUNDARY	1.80E-08	2.31E-03	3.06E-02	717439	3894599	10
343	BOUNDARY	1.79E-08	2.29E-03	2.81E-02	717424	3894532	10

288	BOUNDARY	1.79E-08	4.05E-03	6.97E-02	717651	3896449	10

RECEPTORS WITH HIGHEST CHRONIC HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
454	SENSITIVE	1.31E-07	2.20E-02	1.89E-01	716830	3896450	10
455	SENSITIVE	1.47E-07	1.86E-02	1.37E-01	716760	3896225	10
108	GRID	1.49E-07	1.71E-02	1.18E-01	716700	3896100	10
453	SENSITIVE	4.31E-08	1.69E-02	1.69E-01	716950	3896660	10
488	CENSUS	1.51E-07	1.55E-02	1.09E-01	716870	3896065	10
456	SENSITIVE	1.49E-07	1.51E-02	9.99E-02	716700	3895950	10
457	SENSITIVE	1.26E-07	1.19E-02	7.76E-02	716610	3895660	10
492	CENSUS	7.65E-08	1.17E-02	1.24E-01	717168	3896569	10
122	GRID	9.90E-08	9.68E-03	7.12E-02	716700	3895600	10
107	GRID	7.34E-08	9.31E-03	1.16E-01	716200	3896100	10
109	GRID	9.11E-08	9.29E-03	9.28E-02	717200	3896100	10
452	SENSITIVE	1.56E-08	8.51E-03	1.36E-01	717075	3896850	10
95	GRID	3.68E-08	8.51E-03	1.19E-01	717200	3896600	10
65	GRID	1.29E-08	7.31E-03	1.03E-01	716200	3897600	10
123	GRID	7.45E-08	7.31E-03	6.50E-02	717200	3895600	10
3	PATHWAY	6.73E-08	7.31E-03	6.73E-02	716810	3895543	10
491	CENSUS	1.10E-08	6.60E-03	1.19E-01	717199	3896819	10
458	SENSITIVE	4.24E-08	5.51E-03	6.35E-02	716575	3895450	10
451	SENSITIVE	7.63E-09	5.32E-03	1.12E-01	717200	3897040	10
497	CENSUS	1.26E-08	5.30E-03	9.31E-02	716419	3897733	10
443	BOUNDARY	1.15E-08	5.15E-03	8.05E-02	716075	3897798	10
444	BOUNDARY	1.17E-08	5.11E-03	8.11E-02	716123	3897814	10
121	GRID	4.21E-08	5.10E-03	7.04E-02	716200	3895600	10
283	BOUNDARY	1.82E-08	5.08E-03	8.94E-02	717420	3896543	10
447	BOUNDARY	1.19E-08	4.95E-03	7.94E-02	716264	3897864	10
442	BOUNDARY	1.14E-08	4.93E-03	8.09E-02	716028	3897781	10
445	BOUNDARY	1.18E-08	4.92E-03	8.12E-02	716170	3897831	10
448	BOUNDARY	1.20E-08	4.89E-03	7.88E-02	716311	3897881	10
284	BOUNDARY	1.85E-08	4.88E-03	8.44E-02	717466	3896524	10
446	BOUNDARY	1.18E-08	4.86E-03	8.07E-02	716217	3897848	10

285	BOUNDARY	1.88E-08	4.69E-03	8.03E-02	717513	3896505	10
282	BOUNDARY	1.63E-08	4.68E-03	8.61E-02	717446	3896575	10
441	BOUNDARY	1.13E-08	4.59E-03	8.11E-02	715981	3897764	10
449	BOUNDARY	1.22E-08	4.57E-03	7.85E-02	716358	3897898	10
81	GRID	7.07E-09	4.49E-03	1.11E-01	717200	3897100	10
286	BOUNDARY	1.85E-08	4.47E-03	7.65E-02	717559	3896486	10
440	BOUNDARY	1.12E-08	4.33E-03	8.07E-02	715934	3897748	10
281	BOUNDARY	1.46E-08	4.31E-03	8.50E-02	717478	3896614	10
287	BOUNDARY	1.82E-08	4.25E-03	7.25E-02	717605	3896467	10
450	BOUNDARY	1.22E-08	4.16E-03	7.69E-02	716405	3897914	10
280	BOUNDARY	1.26E-08	4.06E-03	8.33E-02	717509	3896653	10
434	BOUNDARY	1.05E-08	4.05E-03	9.60E-02	715859	3897500	10
288	BOUNDARY	1.79E-08	4.05E-03	6.97E-02	717651	3896449	10
477	CENSUS	3.00E-08	4.04E-03	4.94E-02	716771	3895200	10
433	BOUNDARY	1.02E-08	4.00E-03	1.00E-01	715853	3897450	10
228	BOUNDARY	1.21E-08	3.99E-03	7.33E-02	716430	3897923	10
439	BOUNDARY	1.11E-08	3.96E-03	7.91E-02	715887	3897731	10
324	BOUNDARY	3.09E-08	3.93E-03	4.82E-02	717217	3895315	10
323	BOUNDARY	3.08E-08	3.93E-03	5.11E-02	717251	3895352	10
325	BOUNDARY	3.07E-08	3.91E-03	4.94E-02	717183	3895279	10
322	BOUNDARY	3.05E-08	3.91E-03	5.14E-02	717285	3895388	10
435	BOUNDARY	1.07E-08	3.90E-03	8.86E-02	715865	3897549	10
326	BOUNDARY	3.05E-08	3.89E-03	4.73E-02	717149	3895242	10
327	BOUNDARY	3.04E-08	3.89E-03	4.44E-02	717137	3895230	10
321	BOUNDARY	3.00E-08	3.88E-03	5.19E-02	717320	3895425	10
438	BOUNDARY	1.11E-08	3.88E-03	7.81E-02	715883	3897698	10
289	BOUNDARY	1.76E-08	3.87E-03	6.72E-02	717698	3896430	10
229	BOUNDARY	1.18E-08	3.86E-03	7.75E-02	716477	3897905	10
320	BOUNDARY	2.93E-08	3.85E-03	5.35E-02	717354	3895461	10
279	BOUNDARY	1.08E-08	3.84E-03	7.99E-02	717541	3896692	10
319	BOUNDARY	2.84E-08	3.80E-03	5.23E-02	717388	3895498	10
476	CENSUS	4.73E-09	3.79E-03	8.69E-02	717475	3896964	10
436	BOUNDARY	1.09E-08	3.75E-03	8.85E-02	715871	3897599	10
437	BOUNDARY	1.10E-08	3.75E-03	8.34E-02	715877	3897648	10
51	GRID	1.14E-08	3.73E-03	6.36E-02	716200	3898100	10

432	BOUNDARY	1.01E-08	3.72E-03	1.03E-01	715847	3897400	10
318	BOUNDARY	2.73E-08	3.72E-03	5.23E-02	717422	3895534	10
290	BOUNDARY	1.74E-08	3.70E-03	6.45E-02	717744	3896411	10
96	GRID	1.56E-08	3.69E-03	6.96E-02	717700	3896600	10
328	BOUNDARY	2.85E-08	3.68E-03	4.28E-02	717159	3895185	10
110	GRID	2.10E-08	3.65E-03	6.06E-02	717700	3896100	10
230	BOUNDARY	1.14E-08	3.64E-03	7.96E-02	716523	3897888	10
136	GRID	2.58E-08	3.62E-03	4.71E-02	716700	3895100	10
278	BOUNDARY	9.24E-09	3.61E-03	7.55E-02	717572	3896731	10
317	BOUNDARY	2.61E-08	3.59E-03	5.28E-02	717457	3895570	10
475	CENSUS	2.65E-08	3.59E-03	5.97E-02	717506	3895790	10
1	PATHWAY	2.56E-08	3.56E-03	4.55E-02	716717	3895080	10
291	BOUNDARY	1.73E-08	3.55E-03	6.16E-02	717790	3896392	10
430	BOUNDARY	9.95E-09	3.51E-03	1.08E-01	715835	3897301	10
329	BOUNDARY	2.69E-08	3.50E-03	4.15E-02	717180	3895140	10
431	BOUNDARY	9.98E-09	3.48E-03	1.06E-01	715841	3897351	10
429	BOUNDARY	9.81E-09	3.46E-03	1.13E-01	715829	3897251	10
316	BOUNDARY	2.50E-08	3.45E-03	5.20E-02	717491	3895607	10
292	BOUNDARY	1.71E-08	3.42E-03	5.92E-02	717837	3896373	10
277	BOUNDARY	7.95E-09	3.36E-03	7.25E-02	717604	3896769	10
137	GRID	2.57E-08	3.36E-03	4.08E-02	717200	3895100	10
330	BOUNDARY	2.55E-08	3.34E-03	4.05E-02	717202	3895095	10
231	BOUNDARY	1.09E-08	3.34E-03	7.86E-02	716570	3897870	10
315	BOUNDARY	2.39E-08	3.33E-03	5.39E-02	717525	3895643	10
293	BOUNDARY	1.71E-08	3.31E-03	5.65E-02	717883	3896354	10
66	GRID	1.11E-08	3.27E-03	1.01E-01	716700	3897600	10
308	BOUNDARY	1.97E-08	3.22E-03	5.31E-02	717765	3895898	10
307	BOUNDARY	1.96E-08	3.22E-03	5.19E-02	717799	3895935	10
314	BOUNDARY	2.31E-08	3.21E-03	5.33E-02	717559	3895680	10
294	BOUNDARY	1.70E-08	3.20E-03	5.37E-02	717929	3896335	10
331	BOUNDARY	2.43E-08	3.20E-03	3.95E-02	717223	3895050	10

RECEPTORS WITH HIGHEST ACUTE HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE

454	SENSITIVE	1.31E-07	2.20E-02	1.89E-01	716830	3896450	10
453	SENSITIVE	4.31E-08	1.69E-02	1.69E-01	716950	3896660	10
455	SENSITIVE	1.47E-07	1.86E-02	1.37E-01	716760	3896225	10
452	SENSITIVE	1.56E-08	8.51E-03	1.36E-01	717075	3896850	10
492	CENSUS	7.65E-08	1.17E-02	1.24E-01	717168	3896569	10
425	BOUNDARY	9.05E-09	2.65E-03	1.19E-01	715805	3897053	10
95	GRID	3.68E-08	8.51E-03	1.19E-01	717200	3896600	10
491	CENSUS	1.10E-08	6.60E-03	1.19E-01	717199	3896819	10
422	BOUNDARY	8.80E-09	2.90E-03	1.19E-01	715787	3896904	10
426	BOUNDARY	9.18E-09	2.63E-03	1.18E-01	715811	3897102	10
108	GRID	1.49E-07	1.71E-02	1.18E-01	716700	3896100	10
424	BOUNDARY	8.96E-09	2.74E-03	1.18E-01	715799	3897003	10
420	BOUNDARY	8.46E-09	2.39E-03	1.18E-01	715775	3896805	10
423	BOUNDARY	8.92E-09	3.02E-03	1.18E-01	715793	3896954	10
107	GRID	7.34E-08	9.31E-03	1.16E-01	716200	3896100	10
428	BOUNDARY	9.58E-09	3.13E-03	1.15E-01	715823	3897202	10
427	BOUNDARY	9.35E-09	2.76E-03	1.15E-01	715817	3897152	10
419	BOUNDARY	8.42E-09	2.44E-03	1.15E-01	715769	3896755	10
418	BOUNDARY	8.41E-09	2.44E-03	1.14E-01	715763	3896705	10
416	BOUNDARY	8.18E-09	2.38E-03	1.13E-01	715751	3896606	10
429	BOUNDARY	9.81E-09	3.46E-03	1.13E-01	715829	3897251	10
417	BOUNDARY	8.36E-09	2.44E-03	1.12E-01	715757	3896656	10
421	BOUNDARY	8.59E-09	2.49E-03	1.12E-01	715781	3896854	10
451	SENSITIVE	7.63E-09	5.32E-03	1.12E-01	717200	3897040	10
81	GRID	7.07E-09	4.49E-03	1.11E-01	717200	3897100	10
415	BOUNDARY	7.93E-09	2.38E-03	1.09E-01	715745	3896556	10
488	CENSUS	1.51E-07	1.55E-02	1.09E-01	716870	3896065	10
430	BOUNDARY	9.95E-09	3.51E-03	1.08E-01	715835	3897301	10
414	BOUNDARY	7.70E-09	2.43E-03	1.08E-01	715739	3896507	10
92	GRID	7.38E-09	2.14E-03	1.06E-01	715700	3896600	10
431	BOUNDARY	9.98E-09	3.48E-03	1.06E-01	715841	3897351	10
413	BOUNDARY	7.50E-09	2.37E-03	1.04E-01	715733	3896457	10
78	GRID	7.61E-09	2.10E-03	1.04E-01	715700	3897100	10
65	GRID	1.29E-08	7.31E-03	1.03E-01	716200	3897600	10
432	BOUNDARY	1.01E-08	3.72E-03	1.03E-01	715847	3897400	10

412	BOUNDARY	7.31E-09	2.30E-03	1.01E-01	715727	3896408	10
66	GRID	1.11E-08	3.27E-03	1.01E-01	716700	3897600	10
433	BOUNDARY	1.02E-08	4.00E-03	1.00E-01	715853	3897450	10
456	SENSITIVE	1.49E-07	1.51E-02	9.99E-02	716700	3895950	10
411	BOUNDARY	7.14E-09	2.30E-03	9.89E-02	715721	3896358	10
434	BOUNDARY	1.05E-08	4.05E-03	9.60E-02	715859	3897500	10
410	BOUNDARY	7.01E-09	2.32E-03	9.40E-02	715715	3896308	10
497	CENSUS	1.26E-08	5.30E-03	9.31E-02	716419	3897733	10
109	GRID	9.11E-08	9.29E-03	9.28E-02	717200	3896100	10
409	BOUNDARY	6.90E-09	2.36E-03	9.13E-02	715709	3896259	10
283	BOUNDARY	1.82E-08	5.08E-03	8.94E-02	717420	3896543	10
435	BOUNDARY	1.07E-08	3.90E-03	8.86E-02	715865	3897549	10
436	BOUNDARY	1.09E-08	3.75E-03	8.85E-02	715871	3897599	10
408	BOUNDARY	6.82E-09	2.40E-03	8.83E-02	715703	3896209	10
476	CENSUS	4.73E-09	3.79E-03	8.69E-02	717475	3896964	10
489	CENSUS	4.09E-09	1.78E-03	8.62E-02	717373	3897301	10
282	BOUNDARY	1.63E-08	4.68E-03	8.61E-02	717446	3896575	10
281	BOUNDARY	1.46E-08	4.31E-03	8.50E-02	717478	3896614	10
284	BOUNDARY	1.85E-08	4.88E-03	8.44E-02	717466	3896524	10
407	BOUNDARY	6.76E-09	2.41E-03	8.43E-02	715697	3896159	10
437	BOUNDARY	1.10E-08	3.75E-03	8.34E-02	715877	3897648	10
280	BOUNDARY	1.26E-08	4.06E-03	8.33E-02	717509	3896653	10
241	BOUNDARY	6.84E-09	1.41E-03	8.33E-02	717038	3897693	10
238	BOUNDARY	8.74E-09	1.97E-03	8.32E-02	716898	3897746	10
106	GRID	6.81E-09	2.38E-03	8.27E-02	715700	3896100	10
234	BOUNDARY	1.02E-08	2.65E-03	8.27E-02	716711	3897817	10
233	BOUNDARY	1.03E-08	2.85E-03	8.25E-02	716664	3897835	10
406	BOUNDARY	6.69E-09	2.36E-03	8.21E-02	715691	3896110	10
236	BOUNDARY	9.91E-09	2.30E-03	8.18E-02	716804	3897782	10
235	BOUNDARY	1.01E-08	2.40E-03	8.17E-02	716757	3897799	10
237	BOUNDARY	9.45E-09	2.24E-03	8.16E-02	716851	3897764	10
243	BOUNDARY	5.79E-09	1.27E-03	8.15E-02	717132	3897658	10
242	BOUNDARY	6.27E-09	1.33E-03	8.14E-02	717085	3897676	10
445	BOUNDARY	1.18E-08	4.92E-03	8.12E-02	716170	3897831	10
441	BOUNDARY	1.13E-08	4.59E-03	8.11E-02	715981	3897764	10

444	BOUNDARY	1.17E-08	5.11E-03	8.11E-02	716123	3897814	10
442	BOUNDARY	1.14E-08	4.93E-03	8.09E-02	716028	3897781	10
440	BOUNDARY	1.12E-08	4.33E-03	8.07E-02	715934	3897748	10
446	BOUNDARY	1.18E-08	4.86E-03	8.07E-02	716217	3897848	10
443	BOUNDARY	1.15E-08	5.15E-03	8.05E-02	716075	3897798	10
285	BOUNDARY	1.88E-08	4.69E-03	8.03E-02	717513	3896505	10
279	BOUNDARY	1.08E-08	3.84E-03	7.99E-02	717541	3896692	10
230	BOUNDARY	1.14E-08	3.64E-03	7.96E-02	716523	3897888	10
405	BOUNDARY	6.62E-09	2.28E-03	7.94E-02	715685	3896060	10
447	BOUNDARY	1.19E-08	4.95E-03	7.94E-02	716264	3897864	10
64	GRID	8.88E-09	2.91E-03	7.92E-02	715700	3897600	10
439	BOUNDARY	1.11E-08	3.96E-03	7.91E-02	715887	3897731	10
448	BOUNDARY	1.20E-08	4.89E-03	7.88E-02	716311	3897881	10
231	BOUNDARY	1.09E-08	3.34E-03	7.86E-02	716570	3897870	10
449	BOUNDARY	1.22E-08	4.57E-03	7.85E-02	716358	3897898	10
438	BOUNDARY	1.11E-08	3.88E-03	7.81E-02	715883	3897698	10
240	BOUNDARY	7.40E-09	1.49E-03	7.78E-02	716991	3897711	10
457	SENSITIVE	1.26E-07	1.19E-02	7.76E-02	716610	3895660	10
229	BOUNDARY	1.18E-08	3.86E-03	7.75E-02	716477	3897905	10
450	BOUNDARY	1.22E-08	4.16E-03	7.69E-02	716405	3897914	10
286	BOUNDARY	1.85E-08	4.47E-03	7.65E-02	717559	3896486	10
244	BOUNDARY	5.37E-09	1.20E-03	7.63E-02	717178	3897640	10
247	BOUNDARY	4.12E-09	9.93E-04	7.55E-02	717319	3897587	10
278	BOUNDARY	9.24E-09	3.61E-03	7.55E-02	717572	3896731	10
404	BOUNDARY	6.58E-09	2.21E-03	7.53E-02	715679	3896010	10
276	BOUNDARY	6.88E-09	3.12E-03	7.51E-02	717635	3896808	10

APPENDIX E

Biological Resources

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

In Reply Refer To: PAS 520.557.688

October 16, 2003

Jon M. Claxton, Staff Biologist
Padre Associates, Inc.
1012 Pacific Street, Suite A
San Luis Obispo, California 93401

Subject: Species List for the Proposed Installation of Additional Oil Wells within the Plains Exploration and Production Oil Field, San Luis Obispo County, California

Dear Mr. Claxton:

This letter is in response to your request of May 5, 2003, and received in our office on May 8, 2003, for information on listed and proposed threatened or endangered species which may be present in the vicinity of the subject project. You are making this request on behalf of the San Luis Obispo Planning and Building Department. We have enclosed a species list for the subject action area.

The U.S. Fish and Wildlife Service's (Service) responsibilities include administering the Endangered Species Act of 1973, as amended (Act), including sections 7, 9, and 10. Section 9 of the Act prohibits the taking of any federally listed endangered or threatened species. Section 3(18) of the Act defines take to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Service regulations (50 CFR 17.3) define harm to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harassment is defined by the Service as an intentional or negligent action that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. The Act provides for civil and criminal penalties for the unlawful taking of listed species.

Exemptions to the prohibitions against take may be obtained through coordination with the Service through interagency consultation for projects with Federal involvement pursuant to section 7 or through the issuance of an incidental take permit under section 10(a)(1)(B) of the Act. If the subject project is to be funded, authorized, or carried out by a Federal agency and may affect a listed species, the Federal agency must consult with the Service, pursuant to section 7(a)(2) of the Act. If a proposed project does not involve a Federal agency but may result in the take of a listed animal species, the project proponent should apply for an incidental take permit,

pursuant to section 10(a)(1)(B) of the Act. Once you have determined if the proposed project will have a lead Federal agency, we can provide you with more detailed information regarding the section 7 or 10(a)(1)(B) permitting process.

Only listed species receive protection under the Act. However, other sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Game's (CDFG) Natural Diversity Data Base and that you contact the CDFG at (916) 324-3812 for information on other species of concern that may occur in this area.

If you have any questions, please contact Steve Henry of my staff at (805) 644-1766.

Sincerely,

for Christopher Kofron
Division Chief, San Luis Obispo County

Enclosure

ENDANGERED, THREATENED, PROPOSED, AND CANDIDATE SPECIES WHICH MAY OCCUR IN THE VICINITY OF THE PROPOSED INSTALLATION OF ADDITIONAL OIL WELLS WITHIN THE PLAINS EXPLORATION AND PRODUCTION OIL FIELD SAN LUIS OBISPO COUNTY, CALIFORNIA

Mammals		
Southern sea otter	*Enhydra lutris nereis*	T
Birds		
California least tern	*Sterna antillarum browni*	E
Brown pelican	*Pelecanus occidentalis*	E
Western snowy plover	*Charadrius alexandrinus nivosus*	T, CH
Yellow-billed cuckoo	*Coccyzus americanus*	C
Amphibians		
California red-legged frog	*Rana aurora draytonii*	T
California tiger salamander	*Ambystoma californiense*	PT
Fish		
Tidewater goby	*Eucyclogobius newberryi*	E
Steelhead trout*	*Oncorhynchus mykiss*	*T, CH
Invertebrates		
Morro shoulderband snail (=banded dune snail)	*Helminthoglypta walkeriana*	E, CH
Longhorn fairy shrimp	*Branchinecta longiantenna*	E, CH
Vernal pool fairy shrimp	*Branchinecta lynchi*	T, CH
Plants		
Morro manzanita	*Arctostaphylos morroensis*	T
Indian Knob mountainbalm	*Eriodictyon altissimum*	E
Gambel's watercress	*Rorippa gambellii*	E
La Graciosa thistle	*Cirsium loncholepis*	E, PCH
Marsh sandwort	*Arenaria paludicola*	E
Nipomo Mesa lupine	*Lupinus nipomensis*	E
Pismo clarkia	*Clarkia speciosa* ssp. *immaculata*	E
Chorro Creek bog thistle	*Cirsium fontinale* var. *obispoense*	E

Key:

E - Endangered T - Threatened CH - Critical Habitat
PD - Proposed to be delisted PT - Proposed Threatened
PCH - Critical habitat which has been proposed
C - Candidate species for which the Fish and Wildlife Service has on file sufficient information on the biological vulnerability and threats to support proposals to list as endangered or threatened.

* Species for which the National Marine Fisheries Service has responsibility. For more information, call the Santa Rosa Field Office at 707-575-6050 or go to http://swr.ucsd.edu/.

Vascular Plant Flora of the Plains Exploration and Production Expansion Sites, San Luis Obispo County, California

Scientific Name	Common Name	Habit	Wetland Indicator Status	Family	Habitat AG	CS	OW	WM	D
Adenostoma fasciculatum	Chamise	S	.	Rosaceae				X	
*Aira caryophyllea**	Silver European hair-grass	AG	.	Poaceae	X				
Ambrosia psilostachya	Western ragweed	PH	FAC	Asteraceae	X				X
Anagallis arvensis *	Scarlet pimpernel	AH	FAC	Primulaceae	X				X
*Anthemis cotula**	Mayweed	AH	FACU	Asteraceae	X				
Arctostaphylos wellsii	Wells manzanita	S	.	Ericaceae				X	
Artemisia californica	California sagebrush	S	.	Asteraceae	X	X		X	
Artemisia douglasiana	Mugwort	PH	FACW	Asteraceae	X				
Avena barbata *	Slender wild oat	AG	.	Poaceae	X				X
Baccharis pilularis [B.p. var. consanguinea]	Coyote brush	S	.	Asteraceae		X		X	X
Baccharis salicifolia [B. viminea; B. glutinosa]	Mule fat, seep-willow	S	FACW	Asteraceae	X				
*Brachypodium distachyon**	False brome	AG	.	Poaceae					X
Brassica nigra *	Black mustard	AH	.	Brassicaceae	X	X			X
*Briza minor**	Quaking grass	AG	.	Poaceae	X				
Bromus carinatus	California brome	AG	.	Poaceae	X				
Bromus diandrus *	Ripgut grass	AG	.	Poaceae	X	X			X
Bromus hordeaceus *	Soft chess	AG	FACU-	Poaceae	X	X			
Bromus madritensis ssp. rubens *	Red brome	AG	NI	Poaceae	X	X			X
Calystegia macrostegia ssp. cyclostegia [Convolvulus c.]	Morning-glory	PV	.	Convolvulaceae	X	X			
*Carduus pycnocephalus**	Italian thistle	AH	.	Asteraceae	X				X
*Carpobrotus edulis**	Hotten-tot fig (ice plant)	PV	.	Aizoaceae					X
Castilleja attenuata	Valley tassels	AH	.	Scrophulariaceae	X				
Castilleja exserta ssp. exserta [Orthocarpus purpurascens vars. p. & pallidus]	Purple owl's clover	AH	.	Scrophulariaceae	X				
Centaurea melitensis *	Tocalote	AH	.	Asteraceae	X				X
Cercocarpus betuloides var. betuloides [C. montanus var. glaber]	Birchleaf mountain mahogany	S	.	Rosaceae		X			
*Chamaesyce maculata**	Spotted spurge	AH	.	Euphorbiaceae					X
*Chamomilla suaveolens**	Pineapple weed	AH	.	Asteraceae					X
Chorizanthe staticoides	Turkish rugging	AH	.	Polygonaceae	X				
Clarkia epilobioides [Godetia e.]	Willow herb godetia	AH	.	Onagraceae	X				
Clarkia purpurea ssp. quadrivulnera	Four-spotted purple clarkia	AH	.	Onagraceae	X				X
Clarkia speciosa ssp. immaculata	Pismo clarkia	AH	.	Onagraceae	X		X		
Clarkia unguiculata [C. elegans]	Elegant clarkia	AH	.	Onagraceae	X	X			X
Conium maculatum *	Poison hemlock	BH	FACW	Apiaceae	X				X
*Convolvulus arvensis**	Bind weed	PV	.	Convolvulaceae					X
Conyza canadensis [var. canadensis]	Horseweed	AH	FAC	Asteraceae	X				X
Cordylanthus rigidus ssp. rigidus	Birds beak	AH	.	Scrophulariaceae	X				
*Cortaderia selloana**	Pampas grass	PG	.	Poaceae	X				
*Cotula coronopifolia**	Brass buttons	PH	OBL	Asteraceae					X
Crassula connata	Pygmy weed	AH	FAC	Crassulaceae	X				
Croton californicus	California croton	S	.	Euphorbiaceae	X				
Cryptantha clevelandii	Clevelands forget-me-not	AH	.	Boraginaceae	X				
*Cupressus macrocarpa**	Monterey cypress	T	.	Cupressaceae					
Cynodon dactylon *	Bermuda grass	PG	FAC	Poaceae	X				X
Cyperus eragrostis	Tall flatsedge	AH	FACW	Cyperaceae	X				
*Datura stramonium**	Jimson weed	AH	.	Solanaceae	X				
Dichelostemma capitatum ssp. capitatum [D. pulchella]	Blue dicks	PH	.	Amaryllidaceae	X				
Deinandra congesta ssp. luzulifolia [Hemizonia congesta ssp. luzulifolia]	Hayfield tarweed	AH	.	Asteraceae	X				
Deinandra increscens ssp. foliosa [Hemizonia increscens ssp. foliosa]	Tarplant	AH	.	Asteraceae	X	X			
Dudleya lanceolata	Lanceleaf live-forever	PH	.	Crassulaceae	X				
*Ehrharta calycina**	Veldt grass	PG	.	Poaceae	X	X			X
Eremocarpus setigerus	Dove weed	AH	.	Euphorbiaceae	X				
Eriophyllum confertiflorum var. confertiflorum [vars. discoideum & laxiflorum]	Golden yarrow	PH	.	Asteraceae	X	X			

Vascular Plant Flora of the Plains Exploration and Production Expansion Sites, San Luis Obispo County, California

Scientific Name	Common Name	Habit	Wetland Indicator Status	Family	Habitat AG	CS	OW	WM	D
*Erodium botrys**	Storks bill	AH	.	Geraniaceae	X				X
Erodium cicutarium *	Redstem filaree	AH	.	Geraniaceae					X
*Eucalyptus corynocalyx**	Sugar gum	T	.	Myrtaceae					X
Filago californica	California filago	AH	.	Asteraceae	X				X
Foeniculum vulgare *	Sweet fennel	PH	FACU	Apiaceae	X				X
Galium angustifolium ssp. angustifolium	Chaparral bedstraw	S	.	Rubiaceae		X	X		
*Galium aparine**	Goose grass, catchweed bedstraw	AH	FACU	Rubiaceae			X		
*Geranium dissectum**	Geranium	AH	.	Geraniaceae	X				
Gnaphalium bicolor	Two-tone everlasting	BH	.	Asteraceae	X	X			
Gnaphalium californicum	Green everlasting	A/BH	.	Asteraceae	X	X			
Gnaphalium canescens	White everlasting	BH	.	Asteraceae	X				
Gnaphalium luteo-album *	Cudweed everlasting	AH	FACW-	Asteraceae	X				X
Gnaphalim purpureum	Purple everlasting	AH	.	Asteraceae	X				X
Helianthemum scoparium	Peak rush-rose	S	.	Cistaceae	X	X			
Heteromeles arbutifolia [var. macrocarpa]	Toyon	S	.	Rosaceae		X	X	X	
Heterotheca grandiflora	Telegraph weed	PH	.	Asteraceae	X				X
*Hirschfeldia incana**	Summer mustard	BH	.	Brassicaceae	X	X			X
*Hordeum marinum**	Mediteranean barley	AG	FAC	Poaceae	X				
Hordeum murinum ssp. leporinum *	Hare barley	AG	NI	Poaceae	X				X
Horkelia cuneata ssp. cuneata	Horkelia	PH	.	Rosaceae				X	
*Hypochaeris glabrata**	Smooth cats ear	AH	.	Asteraceae	X				X
Isocoma menziesii var. menziesii	Coastal goldenbush	S	.	Asteraceae	X	X			
Juncus bufonius var. bufonius	Toad rush	AH	FACW	Juncaceae	X				X
Keckiella cordifolia [Penstemon cordifolius]	Heart-leaved bush penstemon	S	.	Scrophulariaceae			X		
Lactuca serriola *	Prickly wild lettuce	AH	FAC	Asteraceae	X				X
*Lamarckia aurea**	Golden top	AG	.	Poaceae	X				
Layia playglossa	Tidy-tips	AH	.	Asteraceae	X				
Lessingia filaginifolia var. filaginifolia [Corethrogyne f. vars.]	Cudweed-aster	PH	.	Asteraceae	X				
Linaria canadensis	Blue toad flax	AH	.	Scrophulariaceae	X				
*Lobularia maritima**	Sweet alyssum	PH	.	Brassicaceae	X				
*Lolium multiflorum**	Italian ryegrass	AG	FAC	Poaceae	X				
Lotus purshianus var. pushianus [var. glaber	Purshs lotus	AH	.	Fabaceae	X				X
Lotus scoparius var. [ssp.] scoparius	Deerweed, California broom	PH	.	Fabaceae	X	X			
Lotus strigosus var. strigosus	Strigose lotus or Hosackia	AH	.	Fabaceae	X	X			
Lupinus arboreus	Yellow bush lupine	S	.	Fabaceae	X				
Lupinus bicolor [sspp.& vars.; L. congdonii; L. polycarpus; L. micranthus]	Bicolored or miniature lupine	AH	.	Fabaceae	X	X			X
Lupinus hirsutissimus	Stinging lupine	AH	.	Fabaceae	X				X
Lupinus nanus	Lupine	AH	.	Fabaceae	X				
Lupinus truncatus	Truncate-leaved lupine	AH	.	Fabaceae	X				X
*Lythrum hyssopifolium**	Loosestrife	AH	FACW	Lythraceae	X				
Madia sativa	Coast tarweed	AH	.	Asteraceae	X				
Malacothrix saxatilis	Cliff-aster	PH	.	Asteraceae	X				X
*Malva parviflora**	Cheese weed	AH	.	Malvaceae	X				X
Marah macrocarpus var. macrocarpus	Large-fruited man-root	PV	.	Cucurbitaceae	X	X			
*Medicago polymorpha**	Bur clover	AH	.	Fabaceae	X				X
Melica imperfecta	Coast melic grass	PG	.	Poaceae		X	X		
Melilotus alba *	White sweetclover	A/BH	FACU+	Fabaceae	X				
Melilotus indica *	Sourclover	AH	FAC	Fabaceae	X				X
Mimulus aurantiacus [Diplacus a.; D. longiflorus ssp. l.]	Bush monkeyflower	S	.	Scrophulariaceae		X	X	X	
Nassella pulchra [Stipa p.]	Purple needlegrass	PG	.	Poaceae	X				
Navarretia atractyloides	Navarretia	AH	.	Polemoniaceae	X				X
Nicotiana glauca *	Tree tobacco	S	FAC	Solanaceae	X	X			X

Vascular Plant Flora of the Plains Exploration and Production Expansion Sites, San Luis Obispo County, California

Scientific Name	Common Name	Habit	Wetland Indicator Status	Family	Habitat AG	CS	OW	WM	D
*Oxalis corniculata**	Oxalis	PH	.	Oxalidaceae					X
Pellaea mucronata var. mucronata	Birds-foot cliffbrake	PF	.	Pteridaceae			X		
*Pennisetum clandestinum**	Kikuyu grass	PG	FACU+	Poaceae	X				
Pentagramma triangularis var. triangularis [Pityrogramma t. var. t.]	Goldenback fern	PF	.	Pteridaceae			X		
Phacelia cicutaria var. hispida	Hispid caterpillar phacelia	AH	.	Hydrophyllaceae	X	X			
*Phalaris aquatica**	Harding grass	PG	FAC+	Poaceae	X				
Pholistoma auritum	Fiesta flower	PH	.	Hydrophyllaceae			X		
*Picris echioides **	Bristly ox-tongue	AH	FAC*	Asteraceae	X				
Pinus muricata	Bishop pine	T	.	Pinaceae				X	
*Pinus radiata**	Monterey pine	T	.	Pinaceae					X
Plantago erecta [ssp. rigidior; P. hookeriana var. californica; P. bigelovii ssp. c.]	Erect plantain	AH	.	Plantaginaceae	X	X			
*Plantago lanceolata **	Narrowleaf or English plantain	PH	FAC-	Plantaginaceae	X				X
Platanus racemosa	Western sycamore	T	FACW	Plantanaceae	X				
*Poa annua**	Annual blue grass	AG	FACW-	Poaceae	X				X
*Polygonum arenastrum **	Common knotweed, doorweed	AH	FAC	Polygonaceae	X				X
*Polypogon monspeliensis**	Rabbitsfoot or annual beard grass	AG	FACW+	Poaceae	X				
Pterostegia drymarioides	Thread-stem	AH	.	Polygonaceae	X				
Quercus agrifolia var. agrifolia	Coast live oak	T	.	Fagaceae	X		X	X	
Rhamnus californica	California coffee-berry	S	.	Rhamnaceae			X		
Rhamnus crocea	Spiny redberry	S	.	Rhamnaceae		X	X		
Rubus ursinus	California blackberry	PV	FACW*	Rosaceae			X		
*Rumex acetosella**	Sheep sorrel	PH	FAC-	Polygonaceae	X				
*Rumex crispus **	Curly dock	PH	FACW-	Polygonaceae	X				
Rumex salicifolius	Willow dock	PH	OBL	Polygonaceae	X				
Salix lasiolepis [vars. bracelinae & sandbergii; S. lutea var. nivaria; S. tracyi]	Arroyo willow	T	FACW	Salicaceae	X		X		
Salvia mellifera	Black sage	S	.	Lamiaceae	X	X			
Salvia spathaceae	Pitcher sage	PH	.	Lamiaceae			X		
Satureja douglasii	Yerba buena	PH	.	Lamiaceae		X			
*Schinus molle**	Peruvian pepper tree	T	.	Anacardiaceae					X
*Silene gallica **	Windmill pink	AH	.	Caryophyllaceae	X	X			X
*Silybum marianum**	Milk thistle	AH	.	Asteraceae	X				X
*Sisymbrium orientale**	Sisymbrium	AH	.	Brassicaceae					X
Sisyrinchium bellum [S. eastwoodiae; S. greenei; S. hesperium]	Blue eyed grass	PH	FAC	Iridaceae	X				
Solanum douglasii	Douglas' nightshade	PH	.	Solanaceae	X				
*Sonchus asper**	Prickly sow thistle	AH	FAC	Asteraceae					X
*Sonchus oleraceus**	Common sow thistle	AH	NI*	Asteraceae	X				X
*Spergula arvensis**	Stickwort	AH	.	Caryophyllaceae	X				
*Spergularia rubra**	Sand spurrey	AH	FAC-	Caryophyllaceae	X				X
Thysanocarpus laciniatus	Fringe-pod	AH	.	Brassicaceae	X				
Toxicodendron diversilobum [Rhus diversiloba]	Poison oak	S/V	.	Anacardiaceae		X	X	X	
Trifolium albopurpureum var. dichotum	Rancheria clover	AH	.	Fabaceae	X				
*Trifolium fragiferum**	Strawberry clover	AH	.	Fabaceae	X				
Trifolium gracilentum var. gracilentum	Pin-point clover	AH	.	Fabaceae	X				
*Trifolium hirtum**	Rose clover	AH	.	Fabaceae	X				X
Trifolium wildenovii	Tom cat clover	AH	.	Fabaceae	X	X			
*Triticum aestivum**	Beardless wheat	AG	.	Poaceae					X
Urtica dioca ssp. holosericea	Giant nettle	PH	FACW	Urticaceae		X			
*Vicia benghalensis**	Purple vetch	AV	.	Fabaceae	X				X
*Vicia sativa ssp. nigra**	Narrow-leaf vetch	AV	FACU	Fabaceae	X				
*Vinca major**	Greater periwinkle	PV	.	Apocynaceae	X		X		
*Vulpia myuros var. hirsuta **	Foxtail fescue	AG	FACU*	Poaceae	X				X
Xanthium strumarium [sspp./vars. canadense & glabratum]	Cocklebur	AH	FAC+	Asteraceae	X				

Vascular Plant Flora of the Plains Exploration and Production Expansion Sites, San Luis Obispo County, California

Scientific Name	Common Name	Habit	Wetland Indicator Status	Family	Habitat AG	CS	OW	WM	D

Notes: Scientific nomenclature follows Hickman (1993) and Skinner and Pavlik (1994) for native taxa and Bailey and Bailey (1976).
Common names follow Abrams and Ferris (1960), Neihaus and Ripper (1976), and DeGarmo (1980).
An "*" indicates non-native species which have become naturalized or persist without cultivation.

Habit definitions:
AF = annual fern or fern ally.
AG = annual grass.
AH = annual herb.
BH = biennial herb.
PF = perennial fern or fern ally.
PG = perennial grass.
PH = perennial herb.
PV = perennial vine.
S = shrub.
T = tree.

Habitat Definitions:
AG = Annual grassland
CS = Coyote brush scrub
OW = Coast live oak woodland
WM = Wells manzanita scrub
D = Disturbed areas

Wetland indicator status (Reed 1988): OBL = obligate wetland species, occurs almost always in wetlands (>99% probability)
FACW = facultative wetland species, usually found in wetlands (67-99% probability).
FAC = facultative species, equally likely to occur in wetlands or nonwetlands (34-67% probability).
FACU = facultative upland species, usually occur in nonwetlands (67-99% probability).
+ or - symbols are modifiers that indicate greater or lesser affinity for wetland habitats.
NI = no indicator has been assigned due to a lack of information to determine indicator status.
* = a tentative assignment to that indicator status by Reed (1988).
A period "." indicates that no wetland indicator status has been given in Reed (1988).
Parentheses around an indicator status indicates the wetland status as suggested by David Magney.

APPENDIX E

WILDLIFE SPECIES OBSERVED OR LIKELY TO OCCUR IN THE VICINITY OF THE PLAINS EXPLORATION AND PRODUCTION OIL FACILITY, SAN LUIS OBISPO, CALIFORNIA

Common Name	*Scientific Name*	Residence Status	Protected Status	Habitat
Fishes				
South-central California coast steelhead*	*Oncorhynchus mykiss irideus*	R	FT, CSC	A
Tidewater goby	*Eucyclogobius newberryi*	R	FE, CSC	A
Speckled dace	*Rhinichthys osculus*	R	--	A
Threespine stickleback	*Gasterosteus aculeatus*	R	--	A
Amphibians				
California tiger salamander	*Ambystoma californiense*	R	FC, CSC	A,R
Ensatina	*Ensatina eschscholtzii*	R	--	R,G,P
Western toad	*Bufo boreas*	R	--	A,R
Pacific treefrog*	*Hyla regilla*	R	--	A,R
California red-legged frog	*Rana aurora draytonii*	R	FT, CSC	A,R
Bullfrog*	*Rana catesbeiana*	R	--	A,R
Reptiles				
Southwestern pond turtle	*Clemmys marmorata pallida*	R	FSC, CSC	A,R
Western fence lizard*	*Sceloporus occidentalis*	R	--	G,D,P,M
Sagebrush lizard	*Sceloporus graciosus*	R	--	G,P
Coast horned lizard	*Phrynosoma coronatum frontale*	R	FSC, CSC	G,P
Western skink	*Eumeces skiltonianus*	R	--	G
Western whiptail*	*Cnemidophorus tigris*	R	--	G,P
Southern alligator lizard*	*Gerrhonotus multicarinatus*	R	--	A,R,G
Common kingsnake	*Lampropeltis getulus*	R	--	A,R,P,M
Ringneck snake	*Diadophis punctatus*	R	--	R,G,P
Racer	*Coluber constrictor*	R	--	G
Gopher snake	*Pituophis melanoleucus*	R	--	R,G,P
Common garter snake	*Thamnophis sirtalis*	R	--	R,G,P
Terrestrial garter snake	*Thamnophis elegans*	R	--	R,G,P
Western aquatic garter snake	*Thamnophis couchi*	R	--	A,R
Western rattlesnake	*Crotalus viridis*	R	--	R,G,P
Birds				
Black-crowned night-heron	*Nycticorax nycticorax*	R	M	W,G,R
Green heron	*Butorides virescens*	R	M	W,G,R
Snowy egret	*Egretta thula*	W	M	W,G,R
Great egret	*Ardea alba*	R	M	W,G,R
Great blue heron	*Ardea herodias*	R	M	W,G,R
Mallard	*Anas platyrhynchos*	R	M	W,G,R
Turkey vulture*	*Cathartes aura*	R	M	R,G,P
Osprey	*Pandion haliaetus*	W	M, CSC (nesting)	A,W
White-tailed kite	*Elanus leucurus*	R	M, FSC (nesting), FP	G,P
Northern harrier	*Circus cyaneus*	R	M, CSC (wintering)	W,G
Golden eagle	*Aquila chrysaetos*	R	M, CSC (nesting and wintering), CFP	R,G,P
Sharp-shinned hawk	*Accipiter striatus*	W	M, CSC (nesting)	P,R,G
Cooper's hawk*	*Accipiter cooperii*	R	M, CSC (nesting)	R,G
Red-shouldered hawk*	*Buteo lineatus*	R	M	R,G
Red-tailed hawk*	*Buteo jamaicensis*	R	M	R,G

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Common Name	*Scientific Name*	Residence Status	Protected Status	Habitat
Ferruginous hawk	*Buteo regalis*	W	FSC (wintering), CSC (wintering), M	R,G
American kestrel*	*Falco sparverius*	R	M	R,G,P
Merlin	*Falco columbarius*	W	M, CSC (wintering)	R,G,P
Prairie falcon	*Falco mexicanus*	W	M, CSC (nesting)	G
American peregrine falcon*	*Falco peregrinus*	R	SE, FSC (nesting), FP, M	R,G,P
Wild turkey	*Meleagris gallopavo*	R	--	P
California quail*	*Cillipepla californica*	R	--	R,P
Mountain quail	*Oreotyx pictus*	R	M	P
Killdeer	*Charadrius vociferus*	R	M	W,G
Band-tailed pigeon	*Columba fasciata*	R	M	R
Rock dove	*Columba livia*	R	--	D
Mourning dove*	*Zenaida macroura*	R	M	R,G
Barn owl	*Tyto alba*	R	M	R,G,P
Short-eared owl	*Asio flammeus*	W	CSC (nesting), M	R,P,W
Long-eared owl	*Asio otus*	R	CSC (nesting), M	R,P,W
Great horned owl*	*Bubo virginianus*	R	M	R,G,P
Western screech-owl	*Otus kennicottii*	R	M	R,G,P
Northern pygmy-owl	*Glaucidium gnoma*	R	M	R
Northern saw-whet owl	*Aegolius acadicus*	R	M	R,G,P
White throated swift	*Aeronautes saxatalis*	R	M	R,G,P
Black-chinned hummingbird	*Archilochus alexandri*	B	M	R,G,P
Costa's hummingbird	*Calypte costae*	B	FSC (nesting), CSC (nesting), M	R,G,P
Anna's hummingbird*	*Calypte anna*	R	M	R,G,P
Allen's hummingbird	*Selasphorus sasin*	B	FSC (nesting), M	R,G,P
Belted kingfisher	*Ceryle alcyon*	R	M	R,A
Acorn woodpecker*	*Melanerpes formicivorous*	R	M	P
Lewis's woodpecker	*Melanerpes lewis*	W	FSC (nesting), M	P
Northern flicker*	*Colaptes auratus*	R	M	R,P
Red-breasted sapsucker*	*Sphyrapicus ruber*	B	FSC (nesting), M	R,P
Nuttall's woodpecker	*Picoides nuttallii*	R	M	R,P
Downy woodpecker	*Picoides pubescens*	R	M	R,P
Hairy woodpecker*	*Picoides villosus*	R	M	P
Olive-sided flycatcher	*Contopus cooperi*	B	FSC (nesting), M	R,P
Western wood-pewee	*Contopus sordidulus*	B	M	R,P
Southwestern willow flycatcher	*Empidonax trailli extimus*	B	SE (nesting), M	R,G,P
Pacific-slope flycatcher	*Empidonax difficilis*	B	M	R,G,P
Black phoebe	*Sayornis nigricans*	R	M	R,G,P
Say's phoebe*	*Sayornis saya*	R	M	G
Ash-throated flycatcher*	*Myiarchus cinerascens*	B	M	R,G,P
Western kingbird*	*Tyrannus verticalis*	B	M	G
Cassin's kingbird	*Tyrannus vociferans*	B	M	G
Loggerhead shrike	*Lanius ludovicianus*	R	FSC (nesting) CSC (nesting), M	M
Hutton's vireo	*Vireo huttoni*	R	M	W,R
Cassin's vireo	*Vireo cassinii*	B	M	W,R

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Common Name	*Scientific Name*	Residence Status	Protected Status	Habitat
Steller's jay*	*Cyanocitta stelleri*	R	M	R,G
Western scrub-jay*	*Aphelocoma c. californica*	R	M	R,G,P
Yellow-billed magpie	*Pica nuttalli*	R	M	W,G
American crow*	*Corvus brachyrhynchos*	R	M	M
Common raven	*Corvus corax*	R	M	M
Tree swallow	*Tachycineta bicolor*	R	M	R,G
Violet-green swallow	*Tachycineta thalassina*	R	M	R,G
Purple martin	*Progne subis*	B	CSC (nesting), M	R,G
Cliff swallow*	*Hirundo pyrrhonota*	B	M	R,G
Northern rough-winged swallow	*Stelgidopteryx serripennis*	B	M	R,G
Barn swallow*	*Hirundo rustica*	B	M	R,G
Wrentit	*Chamaea fasciata*	R	--	R
Oak titmouse*	*Baeolophus inornatus*	R	M	R,P
Chestnut-backed chickadee*	*Parus rufescens*	R	M	R,P
Bushtit*	*Psaltriparus minimus*	R	M	P
Brown creeper	*Certhia americana*	R	M	W,R,P
White-breasted nuthatch*	*Sitta carolinensis*	R	M	P
Red-breasted nuthatch	*Sitta canadensis*	W	M	P
House wren	*Troglodytes aedon*	R	M	R,G
Bewick's wren*	*Thryomanes bewickii*	R	M	R,G
Canyon wren	*Catherpes mexicanus*	R	M	R,G
Marsh wren	*Cistothorus palustris*	R	M	R,P
Golden-crowned kinglet	*Regulus satrapa*	W	M	R
Ruby-crowned kinglet	*Regulus calendula*	W	M	P
Blue-gray gnatcatcher*	*Polioptila caerulea*	B	M	R,G
Western bluebird*	*Sialia mexicana*	R	M	R
Swainson's thrush	*Catharus ustulatus*	B	M	P
Hermit thrush	*Catharus guttatus*	W	M	R,G
Varied thrush	*Ixoreus naevius*	W	M	P
American robin*	*Turdus migratorius*	R	M	P,G
Northern mockingbird	*Mimus polyglottos*	R	M	R
California thrasher*	*Toxostoma redivivum*	R	FSC, M	W,G
European starling*	*Sturnus vulgaris*	R	--	R,P
American pipit	*Anthus rubescens*	W	M	M
Cedar waxwing	*Bombycilla cedrorum*	W	M	G,W
Orange-crowned warbler	*Vermivora celata*	R	M	G,P
Yellow-rumped warbler	*Dendroica coronata*	B	M	G,P
Black-throated gray warbler*	*Dendroica nigrescens*	B	M	G,P
Townsend's warbler	*Dendroica townsendi*	W	M	P
Hermit warbler	*Dendroica occidentalis*	W	FSC (nesting), M	P
Yellow warbler	*Dendroica petechia*	B	CSC (nesting), M	R
MacGillivray's warbler	*Oporonis tolmiei*	B	M	W,R
Wilson's warbler	*Wilsonia pusilla*	B	M	W,R
Common yellowthroat	*Geothlypis trichas*	R	M	W,R
Yellow-breasted chat	*Icteria virens*	B	CSC (nesting), M	R
Western tanager	*Piranga ludoviviana*	B	M	P

APPENDIX E

WILDLIFE SPECIES OBSERVED OR LIKELY TO OCCUR IN THE VICINITY OF THE PLAINS EXPLORATION AND PRODUCTION OIL FACILITY, SAN LUIS OBISPO, CALIFORNIA

Common Name	*Scientific Name*	Residence Status	Protected Status	Habitat
California towhee*	*Pipilo crissalis*	R	M	R,P
Spotted towhee*	*Pipilo maculatus*	R	M	R,P
Rufous-crowned sparrow	*Aimophila ruficeps*	R	M	G
Lark sparrow	*Chondestes grammacus*	B	FSC (nesting), M	G
Sage sparrow	*Amphispiza b. belli*	R	FSC, CSC, M	G,W
Fox sparrow	*Passerella iliaca*	W	M	G,W
Savannah sparrow	*Passerculus sandwichensis*	R	M	G
Lincoln's sparrow	*Melospiza lincolnii*	W	M	W,R
Song sparrow	*Melospiza melodia*	R	M	G,W
White-crowned sparrow	*Zonotrichia leucophrys*	R	M	R,W,G
Golden-crowned sparrow	*Zonotrichia atricapilla*	W	M	W,R
Dark-eyed junco*	*Junco hyemalis*	R	M	R,W,G
Black-headed grosbeak*	*Pheucticus melanocephalus*	B	M	R,P
Blue grosbeak	*Guiraca caerulea*	B	M	R,W,G
Lazuli bunting	*Passerina amoena*	B	M	R,W,G
Western meadowlark	*Sturnella neglecta*	R	M	W
Red-winged blackbird*	*Agelaius phoeniceus*	R	M	R
Tricolored blackbird	*Agelaius tricolor*	R	FSC, CSC, M	W
Great-tailed grackle	*Quiscalus mexicanus*	R	M	M
Brewer's blackbird*	*Euphagus cyanocephalus*	R	M	R,W,G
Brown-headed cowbird	*Molothrus ater*	R	M	R,W,G
Hooded oriole	*Icterus cucullatus*	B	M	M
Bullock's oriole*	*Icterus bullockii*	B	M	R,P
Purple finch	*Carpodacus purpureus*	R	M	R,G,P
House finch*	*Carpodacus mexicanus*	R	M	R,G,P
Pine siskin*	*Carduelis pinus*	W	M	R,P
American goldfinch	*Carduelis tristis*	R	M	R,P
Lesser goldfinch	*Carduelis psaltria*	B	M	R,P
Lawrence's goldfinch	*Carduelis lawrencei*	R	M	R,P
House sparrow	*Passer domesticus*	R	--	D
Mammals				
Virginia opossum	*Didelphis virginiana*	R	--	R,P
Broad-footed mole	*Scapanus latimanus*	R	--	R,G
California myotis	*Myotis californicus*	R	--	P
Yuma myotis bat	*Myotis yumanensis*	R	FSC	R
Small-footed myotis	*Myotis ciliolabrum*	R	FSC	R,P
Long-eared myotis bat	*Myotis evotis*	R	FSC	R,P
Long-legged myotis bat	*Myotis volans*	R	FSC	P
Red bat	*Lasiurus borealis*	R	--	M
Fringed myotis bat	*Myotis thysanodes*	R	FSC	P
Hoary bat	*Lasiurus cinereus*	R	--	M
Big brown bat	*Episticus fuscus*	R	--	M
Townsend's big-eared bat	*Plecotus townsendii*	R	FSC, CSC	M
Pallid bat	*Antrozous pallidus*	R	CSC	M
Brazilian free-tailed bat	*Tadarida brasiliensis*	R	--	R,P,G
Western mastiff bat	*Eumops perotis*	R	FSC, CSC	M

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WILDLIFE SPECIES OBSERVED OR LIKELY TO OCCUR IN THE VICINITY OF THE PLAINS EXPLORATION AND PRODUCTION OIL FACILITY, SAN LUIS OBISPO, CALIFORNIA

Common Name	*Scientific Name*	Residence Status	Protected Status	Habitat
Desert cottontail	*Sylvilagus audubonii*	R	--	G
Brush rabbit	*Sylvilagus bachmani*	R	--	R
Black-tailed jackrabbit*	*Lepus californicus*	R	--	P,G
Merriam's chipmunk	*Tamias merriami*	R	--	G
California ground squirrel	*Spermophilus beecheyi*	R	--	G
Western gray squirrel	*Sciurus griseus*	R	--	R,P
Botta's pocket gopher	*Thomomys bottae*	R	--	R,G,P
California pocket mouse	*Chaetodipus californicus*	R	--	M
Beaver	*Castor canadensis*	R	--	A,R
Western harvest mouse	*Reithrodontomys megalotis*	R	--	G
Brush mouse	*Peromyscus boylii*	R	--	G
California mouse	*Peromyscus californicus*	R	--	G
Deer mouse	*Peromyscus maniculatus*	R	--	M
Dusky-footed woodrat*	*Neotoma fuscipes*	R	CSC	R,P
California vole*	*Microtus californicus*	R	--	R,G,W
Norway rat	*Rattus norvegicus*	R	--	D
Black rat	*Rattus rattus*	R	--	M
House mouse	*Mus musculus*	R	--	D
Domestic dog	*Canis familiaris*	R	--	D
Coyote*	*Canis latrans*	R	--	M
Gray fox*	*Urocyon cinereoargenteus*	R	--	M
Black bear	*Ursus americanus*	R	--	R,P,G
Ringtail	*Bassariscus astutus*	R	--	R
Raccoon*	*Procyon lotor*	R	--	M
Long-tailed weasel	*Mustela frenata*	R	--	M
American badger	*Taxidea taxus*	R	--	M
Western spotted skunk	*Spilogale gracilis*	R	--	R
Striped skunk	*Mephitis mephitis*	R	--	R,G
Domestic cat	*Felis catus*	R	--	M
Mountain lion	*Felis concolor*	R	--	R,P
Bobcat*	*Lynx rufus*	R	--	R
Mule deer*	*Odocoileus hemionus*	R	--	R,G

*Observed and/or signs (e.g., scat, tracks, vocalization, etc.) detected during field surveys conducted by Padre.

Residence Status	**Protected Status**	**Typical Habitat**
R = Permanent resident	FE – Federal endangered species	A – Freshwater aquatic
W = Winter resident	FT -- Federal threatened species	D – Developed areas
B = Summer resident	FC – Federal candidate species	G – Grassland
	FSC – Federal species of concern	M – Multiple habitats
	M – Migratory Bird Treaty Act	P – Woodland
	SE – State endangered species	R – Riparian
	ST – State threatened species	W - Wetland
	CSC – California Species of Special Concern	
	CFP – California Fully Protected Species	

Ambystoma californiense
California tiger salamander
Element Code: AAAAA01140

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2G3	CDFG Status: SC
State: None	State: S2S3	

Habitat Associations
General: VERNAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA AND SONOMA COUNTIES ONLY.
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Occurrence No: 49 Map Index:48640
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: FIELD MUSEUM NATURAL HISTORY 2002 (MUS).
Quad Summary: TAR SPRING RIDGE (3512024/220B)*, ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: BIDDLE REGIONAL COUNTY PARK AT THE SOUTHERN END OF LOPEZ CANYON. SOUTHEAST OF SAN LUIS OBISPO.

Dates Last Seen: Element: XXXX-XX-XX Site: XXXX-XX-XX
Lat/Long: 35°12'31" / 120°28'31"
UTM: Zone-10 N3898900 E729814
Precision: NON-SPECIFIC
Symbol Type: POLYGON
Area: 9,830.2 ac

Township: 31S
Range: 14E
Section: 21 Qtr XX
Meridian: M
Elevation:

Comments
Distribution: THE ONLY INFORMATION GIVEN IS "COUNTY PARK, LOPEZ CANYON"
Ecological:
Threat:
General: FIELD MUSEUM OF NATURAL HISTORY #84781-84783 COLLECTED BY CLARK HUBBS & C. LIMBAUGH. NO DATE GIVEN.
Owner/Manager: SLO COUNTY, OTHER

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Rana aurora draytonii
California red-legged frog
Element Code: AAABH01022

List Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G4T2T3	CDFG Status: SC
State: None	State: S2S3	

Habitat Associations
General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.
Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.

Occurrence No. 148 Map Index:33271
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: MULLEN, E. 1995 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: JUST WEST OF THE INTERSECTION OF HUASNA ROAD AND BRANCH MILL ROAD, ARROYO GRANDE.

Dates Last Seen: Element: 1995-07-12 Site: 1995-07-12
Lat/Long: 35°08'32" / 120°31'50"
UTM: Zone-10 N3891415 E724971
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 4.0 ac

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 200 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF TWO AGRICULTURAL IMPOUNDMENTS (APPROX 4 FEET DEEP), WHICH ARE SPARSELY VEGETATED; SURROUNDED BY AGRICULTURAL FIELDS AND GRAZED GRASSLAND.
Threat: THREATENED BY REGULAR DRAINING FOR FARMING ACTIVITIES.
General: 6 JUVENILE FROGS OBSERVED ON 12 JULY 1995.
Owner/Manager: UNKNOWN

Occurrence No. 258 Map Index:39777
Occ Rank: Poor
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HARKER, M. 1998 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: GRAGG CANYON, 0.7 MILE EAST OF HWY 101, EAST OF AVILA BEACH.

Dates Last Seen: Element: 1998-09-06 Site: 1998-09-06
Lat/Long: 35°10'34" / 120°41'02"
UTM: Zone-10 N3894841 E710894
Precision: SPECIFIC
Symbol Type: POINT
Radius: 80 meters

Township: 32S
Range: 12E
Section: 04 Qtr XX
Meridian: M
Elevation: 175 ft

Comments
Distribution: ADULT FROGS WERE OBSERVED IN A SPRING LOCATED ACROSS FROM THE PROPOSED VISITOR CENTER
Ecological: HABITAT CONSISTS OF A SPRING WITHIN A GRASSLAND AREA
Threat: CURRENTLY THREATENED BY CATTLE GRAZING (RIPARIAN COVER HAS BEEN ELIMINATED); SITE PROPOSED FOR DEVELOPMENT.
General: 2 ADULT FROGS OBSERVED DURING A NIGHT SURVEY ON 5 SEP 1996; 3 ADULT FROGS OBSERVED DURING A NIGHT SURVEY ON 6 SEP 1998.
Owner/Manager: PVT

Occurrence No. 303 Map Index:41232
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: SIEMENS, M. 1998 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: AVILA BEACH GOLF COURSE, 5 MILES SSW OF SAN LUIS OBISPO.

Dates Last Seen: Element: 1998-12-06 Site: 1998-12-06
Lat/Long: 35°11'09" / 120°43'54"
UTM: Zone-10 N3895835 E706534
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 3/5 mile

Township: 31S
Range: 12E
Section: 31 Qtr XX
Meridian: M
Elevation: 30 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF A SMALL, FLOWING STREAM WITH INTERMITTENT RIPARIAN, DOMINATED BY SYCAMORES AND WILLOWS, ALONG THE GOLF COURSE FAIRWAYS. SURROUNDING HILLSIDES ARE DOMINATED BY OAK WOODLAND. EMERGENT VEGETATION FOUND ALONG STREAM CHANNEL.
Threat: THREATS INCLUDE GOLF COURSE MAINTENANCE ACTIVITIES, NEARBY DEVELOPMENT, AND PROXIMITY OF HIGH POPULATIONS OF BULLFROGS.
General: 1 ADULT RLF OBSERVED ON 6 DEC 1998.
Owner/Manager: AVILA BEACH GOLF COURSE

Rana aurora draytonii (cont.)
California red-legged frog
Element Code: AAABH01022

List Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G4T2T3	CDFG Status: SC
State: None	State: S2S3	

Occurrence No. 119 Map Index:41844 — Dates Last Seen — Lat/Long: 35°07'44" / 120°33'16" Township: 32S
Occ Rank: Excellent Element: 1999-09-12 UTM: Zone-10 N3889881 E722822 Range: 13E
Origin: Natural/Native occurrence Site: 1999-09-12 Precision: NON-SPECIFIC Section: 23 Qtr XX
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 29.7 ac Elevation: 140 ft
Main Source: MORRO GROUP, 1999 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: ARROYO GRANDE CREEK, 1 MILE EAST OF THE INTERSECTION OF CORBIT CANYON ROAD AND UPPER ARROYO GRANDE ROAD, ARROYO GRANDE

— Comments —
Distribution:
Ecological: HABITAT CONSISTS OF RIPARIAN, <45% OF STREAM BANK VEGETATED BY WILLOW, COTTONWOOD, POISON OAK, BLACKBERRY, NETTLE, AND SEDGES. STREAM INHABITED BY STEELHEAD (SOUTH/CENTRAL ESU)
Threat:
General: 1 ADULT OBSERVED ON 12 SEP 1999; MANY MORE EXPECTED TO BE IN THE AREA
Owner/Manager: PVT

Occurrence No. 418 Map Index:44705 — Dates Last Seen — Lat/Long: 35°08'03" / 120°34'08" Township: 32S
Occ Rank: Good Element: 2000-10-20 UTM: Zone-10 N3890447 E721483 Range: 13E
Origin: Natural/Native occurrence Site: 2000-10-20 Precision: SPECIFIC Section: 22 Qtr NW
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 80 meters Elevation: 140 ft
Main Source: MORRO GROUP, 2000 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: CORBIT CANYON CREEK (AKA TALLY HO CREEK), AT THE JUNCTION OF CORBIT CANYON AND POORMAN CANYON, ARROYO GRANDE

— Comments —
Distribution: 3-FT DEEP POOL UNDER HIGHWAY 227 BRIDGE, 40 FEET EAST OF TALLY HO ROAD.
Ecological: HABITAT CONSISTS OF A FRESHWATER MARSH, DOMINATED BY SEDGES; MANY ESCAPED ORNAMENTALS PRESENT.
Threat: THREATENED BY THE PRESENCE OF NON-NATIVE PREDATORS (CATS, SUNFISH) AND POOR WATER QUALITY.
General: 1 INDIVIDUAL OBSERVED ON 20 OCT 2000.
Owner/Manager: UNKNOWN

Occurrence No. 459 Map Index:45816 — Dates Last Seen — Lat/Long: 35°07'48" / 120°34'18" Township: 32S
Occ Rank: Good Element: 2002-08-02 UTM: Zone-10 N3889980 E721244 Range: 13E
Origin: Natural/Native occurrence Site: 2002-08-02 Precision: SPECIFIC Section: 22 Qtr XX
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 16.9 ac Elevation: 150 ft
Main Source: BALLANTYNE, K. 1999 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: TALLY HO CREEK, NEAR THE ENDS OF MAY STREET AND PASEO STREET, ARROYO GRANDE

— Comments —
Distribution: BULLFROGS PRESENT IN AN UPSTREAM POOL/DEVELOPMENT.
Ecological: HABITAT CONSISTS OF 3 DEEP POOLS IN TALLY HO CREEK, SURROUNDED BY A WILLOW RIPARIAN CORRIDOR, WITH WILLOW BRANCHES HANGING INTO THE POOLS AND KIKUYU GRASS ON THE BANKS.
Threat: THREATENED BY FERAL CATS, EROSION/SEDIMENTATION, BULLFROGS, AND DEVELOPMENT.
General: ADULT FROGS OBSERVED IN 1999, 2000, AND 2001. 1 ADULT AND 10 JUVENILE FORGS OBSERVED ON 2 AUG 2002.
Owner/Manager: PVT

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Rana aurora draytonii (cont.)
California red-legged frog
Element Code: AAABH01022

List Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G4T2T3	CDFG Status: SC
State: None	State: S2S3	

Occurrence No. 567 Map Index:48755 — Dates Last Seen — Lat/Long: 35°10'05" / 120°31'15" Township: 32S
Occ Rank: Fair Element: 2002-09-03 UTM: Zone-10 N3894299 E725792 Range: 14E
Origin: Natural/Native occurrence Site: 2002-09-03 Precision: NON-SPECIFIC Section: 06 Qtr XX
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1/10 mile Elevation: 525 ft
Main Source: HANDEL, C. ET. AL. 2002 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: EAST OF THE NORTH END OF ARROYO GRANDE VALLEY. 0.5 MILE SE OF ORCUTT RD LOPEZ DR INTERSECTION.

— Comments —
Distribution:
Ecological: HABITAT CONSISTS OF A RESERVOIR, SURROUNDED BY DISTURBED GRASSLANDS, DOMINATED BY NON-NATIVE GRASSES/ANNUAL HERBS. DOMINANTS ALONG THE BANK INCLUDE HEMIZONIA SPP, HIRSCHFELDIA INCANA, ARTEMISIA CALIFORNICA; SCIRPUS SPP DOMINATES POND EDGE.
Threat: THREATENED BY LANDOWNER'S PLANS TO DRAIN AND FILL THE RESERVOIR.
General: 1 ADULT AND 20 JUVENILES OBSERVED ON 3 SEP 2002.
Owner/Manager: PVT

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Charadrius alexandrinus nivosus western snowy plover Element Code: [illegible]	—List Status— Federal: Threatened State: None	—NDDB Element Ranks— Global: G4T3 State: S2	—Other Lists— CDFG Status: SC

—Habitat Associations—
General: NESTING: FEDERAL LISTING APPLIES ONLY TO THE PACIFIC COASTAL POPULATION.
Micro: SANDY BEACHES, SALT POND LEVEES & SHORES OF LARGE ALKALI LAKES. NEEDS SANDY, GRAVELLY OR FRIABLE SOILS FOR NESTING.

Occurrence No. [illegible] Map Index: 12874
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown
Main Source: WESTBERG, B. 1965 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:

—Dates Last Seen—
Element: 1965-04-26
Site: 1978-XX-XX

Lat/Long: 35°08'31" / 120°38'38"
UTM: Zone-10 N3891134 E714631
Precision: NON-SPECIFIC
Symbol Type: POLYGON
Area: 30.9 ac

Township: 32S
Range: 12E
Section: 13 Qtr XX
Meridian: M
Elevation: 120 ft

Location: PISMO STATE BEACH, 500 YARDS EAST OF OCEAN, 800 YARDS WNW OF CAMPGROUND

—Comments—
Distribution:
Ecological: DURING A 1978 SURVEY THE HABITAT WAS DEEMED NO LONGER SUITABLE DUE TO DEVELOPMENT AND/OR HUMAN ACTIVITY.
Threat:
General: 3 EGGS SEEN ON EACH OF TWO NESTS ON SAND DUNES IN 1965. DURING A MAY TO JULY 1978 SURVEY NO BIRDS WERE OBSERVED.
Owner/Manager: DPR-PISMO SB

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Oncorhynchus mykiss irideus steelhead - south/central California coast Element Code: AFCHA0209H	—List Status— Federal: Threatened State: None	—NDDB Element Ranks— Global: G5T2 State: S2	—Other Lists— CDFG Status:

—Habitat Associations—
General: FED LISTING REFERS TO RUNS IN COASTAL BASINS FROM THE PAJARO RIVER SOUTH TO, BUT NOT INCLUDING, THE SANTA MARIA RIVER
Micro: None for this Element

Occurrence No. 12 Map Index: 34105
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: TITUS, R. & D. ERMAN 1994 (LIT)
Quad Summary: ARROYO GRANDE NE (3512025/221A)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:

—Dates Last Seen—
Element: 1974-XX-XX
Site: 1974-XX-XX

Lat/Long: /
UTM:
Precision:
Symbol Type:
Radius:

Township:
Range:
Section: Qtr
Meridian:
Elevation:

Location: PISMO CREEK & TRIBUTARY, WEST CORRAL DE PIEDRA CREEK, PRICE CANYON, BETWEEN EDNA & PISMO BEACH.

—Comments—
Distribution: FROM LOWER MIDDLE PISMO CREEK TO THE LOWERMOST PORTION OF WEST CORRAL DE PIEDRA CREEK.
Ecological: 1972: SPAWNING GRAVELS PRESENT BUT NOT ABUNDANT, & NO FISH OF ANY KIND OBSERVED FROM MOUTH TO EDNA. IN 1974 STEELHEAD OBSERVED IN SUMMER & FALL IN ELECTROFISHING SURVEYS IN UPPER HALF OF PISMO CREEK & LOWERMOST WEST CORRAL DE PIEDRA CREEK.
Threat: SILTATION, CHEMICAL POLLUTION, 1 METER HIGH DIVERSION DAM, DEVELOPMENT
General: BASED ON 1990 DFG FILE DOCUMENTS, STEELHEAD APPARENTLY STILL ENTER PISMO CREEK.
Owner/Manager: PVT, DPR-PISMO SB

Occurrence No. 17 Map Index: 36721
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: ALLEY, D. 1997 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)*, OCEANO (3512015/221D), TAR SPRING RIDGE (3512024/220B)
County Summary: SAN LUIS OBISPO
SNA Summary:

—Dates Last Seen—
Element: 1999-09-12
Site: 1999-09-12

Lat/Long: 35°08'06" / 120°32'46"
UTM: Zone-10 N3890582 E723569
Precision: NON-SPECIFIC
Symbol Type: POLYGON
Area: 830.0 ac

Township: 32S
Range: 13E
Section: 14 Qtr XX
Meridian: M
Elevation: 200 ft

Location: ARROYO GRANDE CREEK, ARROYO GRANDE VALLEY.

—Comments—
Distribution: FROM MOUTH AT PACIFIC OCEAN IN PISMO STATE BEACH (NEAR OCEANO AND HWY 1) TO BELOW LOPEZ DAM (UPPER EXTENT OF STEELHEAD DISTRIBUTION COULD NOT BE PRECISELY DETERMINED FROM SOURCE DOCUMENT).
Ecological: HABITAT CONSISTS OF POOLS (25-50CM DEEP), RIFFLES, AND GLIDES, WITH OVERHANGING VEGETATION. SURROUNDED BY RURAL RESIDENTIAL/GRAZED GRASSLANDS. CALIFORNIA RED-LEGGED FROG ALSO OCCURS IN THIS STREAM.
Threat:
General: SAMPLED 9/24 AND 9/27/96, WITH A TOTAL OF 116 FISH COLLECTED. FISH ABUNDANCE RANGED FROM LOW (MOST COMMON) TO MODERATE. 10-15 JUVENILES OBSERVED ON 12 SEP 1999 NEAR ARROYO GRANDE.
Owner/Manager: PVT, DPR-PISMO SB

Eucyclogobius newberryi
tidewater goby
Element Code: AFCQN04010

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G3	CDFG Status: SC
State: None	State: S2S3	

Habitat Associations
General: BRACKISH WATER HABITATS ALONG THE CALIF COAST FROM AGUA HEDIONDA LAGOON, SAN DIEGO CO. TO THE MOUTH OF THE SMITH RIVER.
Micro: FOUND IN SHALLOW LAGOONS AND LOWER STREAM REACHES. THEY NEED FAIRLY STILL BUT NOT STAGNANT WATER & HIGH OXYGEN LEVELS.

Occurrence No: 53 Map Index: 12654 — Dates Last Seen — Lat/Long: 35°11'04" / 120°42'12" Township: 31S
Occ Rank: Unknown Element: 1995-XX-XX UTM: Zone-10 N3895713 E709132 Range: 12E
Origin: Natural/Native occurrence Site: 1995-XX-XX Precision: NON-SPECIFIC Section: 31 Qtr XX
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 200.7 ac Elevation: 20 ft
Main Source: SWIFT, C. ET AL 1986 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: SAN LUIS OBISPO CREEK, FROM MOUTH TO 2.5 MILES UPSTREAM, 1.5 MILES ENE OF POINT SAN LUIS.

Comments
Distribution: SITE OCCUPIES ABOUT 50 ACRES.
Ecological:
Threat:
General: CAS SU 653. GOBIES WERE FOUND HERE IN 1894 AND 1916. THEY WERE NOT FOUND AGAIN UNTIL 1989 (LACM 44824-1) DESPITE COLLECTING BY MANY INDIVIDUALS IN THE INTERVENING YEARS. LAST COLLECTED IN 1995.
Owner/Manager: UNKNOWN

Occurrence No: 54 Map Index: 12877 — Dates Last Seen — Lat/Long: 35°08'22" / 120°38'05" Township: 32S
Occ Rank: Unknown Element: 1996-02-13 UTM: Zone-10 N3890875 E715496 Range: 12E
Origin: Natural/Native occurrence Site: 1996-02-13 Precision: NON-SPECIFIC Section: 13 Qtr XX
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 71.0 ac Elevation: 10 ft
Main Source: SWIFT, C. ET AL 1986 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PISMO CREEK (PRICE CANYON), FROM MOUTH TO 1.0 MILE UPSTREAM, PISMO BEACH.

Comments
Distribution: SITE OCCUPIES 7.5-10 ACRES. 2/13/96, 13 FISH RELOCATED OUT OF CONSTRUCTION ZONE.
Ecological:
Threat:
General: LACM 36673-3, COLLECTED 6/16/77. POPULATION PRESUMED EXTANT IN 1990 BY SWIFT. 2280 COLLECTED IN 1995. 347 COLLECTED FROM SEVERAL SAMPLE DATES IN 1996
Owner/Manager: CPN PISMO SB, PVT

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Clemmys marmorata pallida
southwestern pond turtle
Element Code: ARAAD02032

List Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G3G4T2	CDFG Status: SC
State: None	State: S2	

Habitat Associations
General: INHABITS PERMANENT OR NEARLY PERMANENT BODIES OF WATER IN MANY HABITAT TYPES; BELOW 6000 FT ELEV.
Micro: REQUIRE BASKING SITES SUCH AS PARTIALLY SUBMERGED LOGS, VEGETATION MATS, OR OPEN MUD BANKS. NEED SUITABLE NESTING SITE:

* SENSITIVE *
Occurrence No: 76 Map Index: — Dates Last Seen — Lat/Long: / Township:
Occ Rank: Unknown Element: XXXX-XX-XX UTM: Range:
Origin: Natural/Native occurrence Site: XXXX-XX-XX Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:
Main Source: HOLLAND, D. 1988 (PERS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: *SENSITIVE* Location information suppressed.

Comments
Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
Ecological:
Threat:
General:
Owner/Manager:

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* SENSITIVE *
Occurrence No: 202 Map Index: — Dates Last Seen — Lat/Long: / Township:
Occ Rank: Good Element: 1995-03-30 UTM: Range:
Origin: Natural/Native occurrence Site: 1995-03-30 Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:
Main Source: MULLEN, E. 1995 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: *SENSITIVE* Location information suppressed.

Comments
Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
Ecological: HABITAT CONSISTS OF FAST-MOVING WATER WITH LARGE BOULDERS & FALLEN-TREE TRUNKS, WHICH CREATE NUMEROUS POOLS; SURROUNDED BY WILLOW RIPARIAN VEGETATION, WITH A HEAVY UNDERSTORY.
Threat: POSSIBLY THREATENED BY DUMPING FROM BRANCH MILL ROAD.
General:
Owner/Manager:

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* SENSITIVE *
Occurrence No: 217 Map Index: — Dates Last Seen — Lat/Long: / Township:
Occ Rank: Good Element: 1992-05-14 UTM: Range:
Origin: Natural/Native occurrence Site: 1992-05-14 Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:
Main Source: HANSON, M. 1992 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: *SENSITIVE* Location information suppressed.

Comments
Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
Ecological: FARM POND AND A SMALL CREEK ABOUT 3 TO 6 FEET ACROSS; VARIABLE WATER DEPTH FROM SHALLOW TO DEEP POOLS; RIPARIAN MAINLY OF WILLOWS.
Threat: POTENTIAL THREAT: LOSS OF UPLAND NESTING SITES BY DEVELOPMENT OF ADJACENT LANDS TO GOLF COURSE & RESIDENTIAL AREAS.
General:
Owner/Manager:

Clemmys marmorata pallida (cont.)
southwestern pond turtle
Element Code: ARAAD02032

List Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G3G4T2	CDFG Status: SC
State: None	State: S2	

* SENSITIVE *
Occurrence No: 21b Map Index: —Dates Last Seen— Lat/Long: / Township:
Occ Rank: Fair Element: 1992-04-05 UTM: Range:
Origin: Natural/Native occurrence Site: 1992-04-05 Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:
Main Source: HANSON, M. 1992 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: *SENSITIVE* Location information suppressed.

—Comments—
Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
Ecological: PERMANENT CREEK BORDERED BY GRASSLAND AND IN A FEW PLACES, WILLOWS; WIDTH VARIES FROM 4 TO 7 FEET; DEPTH VARIABLE FROM INCHES TO A COUPLE OF FEET.
Threat: CATTLE GRAZING ALONG CREEK; PROPOSED DEVELOPMENT WITH POTENTIAL LOSS OF NESTING SITES.
General:
Owner/Manager:

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* SENSITIVE *
Occurrence No: 21d Map Index: —Dates Last Seen— Lat/Long: / Township:
Occ Rank: Unknown Element: 1987-11-30 UTM: Range:
Origin: Natural/Native occurrence Site: 1987-11-30 Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:
Main Source: BRATTSTROM, B. 1990 (PERS) 1990
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: *SENSITIVE* Location information suppressed.

—Comments—
Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
Ecological: POND.
Threat:
General:
Owner/Manager:

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Central Foredunes
Element Code: CTT21220CA

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G1	
State: None	State: S1.2	

—Habitat Associations—
General: None for this Element
Micro: None for this Element

Occurrence No: 5 Map Index:20582 —Dates Last Seen— Lat/Long: 35°07'01" / 120°37'54" Township: 32S
Occ Rank: Poor Element: 1980-10-10 UTM: Zone-10 N3888387 E715832 Range: 12E
Origin: Natural/Native occurrence Site: 1980-10-10 Precision: SPECIFIC Section: XX Qtr XX
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 26.0 ac Elevation: 40 ft
Main Source: DEPT. OF FISH & GAME 1976 (LIT)
Quad Summary: OCEANO (3512015/221D);*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Nipomo Dunes
Location: DUE WEST OF GRAND AVE IN GROVER CITY AND EXTENDING ONE MILE IN BOTH THE NORTH AND SOUTH DIRECTIONS.

—Comments—
Distribution: AREA BORDERED BY THE BEACH TO THE WEST AND DUNE SCRUB TO THE EAST.
Ecological: ABRONIA LATIFOLIA, A. MARITIMA, MALACOTHRIX INCANA, CAKILE CARPROBROTUS, CALYSTEGIA SOLDANELLA, AMBROSIA CHAMISSONIS.
Threat: HEAVY RECREATIONAL AND ORV USE.
General: THIS WAS OCC #005 OF CTT21220CA.
Owner/Manager: UNKNOWN

Central Maritime Chaparral

Element Code: CTT37C20CA

List Status: Federal: None; State: None
NDDB Element Ranks: Global: G2; State: S2.2
Other Lists:

Habitat Associations
General: None for this Element
Micro: None for this Element

Occurrence No: 2 Map Index: 12791
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: GRIGGS, T. 1980 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Indian Knob
Location: INDIAN KNOB TAR SANDS, ABOUT 4 MILES NORTH OF PISMO BEACH, SOUTH OF SAN LUIS OBISPO.

Dates Last Seen:
Element: 1980-XX-XX
Site: 1980-XX-XX

Lat/Long: 35°11'52" / 120°39'24"
UTM: Zone-10 N3897293 E713342
Precision: NON SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 31S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 750 ft

Comments
Distribution:
Ecological: DOMINATED BY ARCTOSTAPHYLOS PILOSULA. OTHER RARE SPECIES INCLUDE ERIODICTYON ALTISSIMUM, CALOCHORTUS OBISPOENSIS, AND AGROSTIS HOOVERI. VEGETATION ASSOCIATED WITH EDNA TAR SANDS DEPOSITS.
Threat: AREA TO BE MINED VIA INDIVIDUAL OIL PUMPS.
General: MORE ECOLOGICAL INFO AND OWNERSHIP INFO IN NC ELF. VAN80R01. THIS WAS OCC #002 OF CTT37C20CA.
Owner/Manager: UNKNOWN

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Coastal and Valley Freshwater Marsh

Element Code: CTT52410CA

List Status: Federal: None; State: None
NDDB Element Ranks: Global: G3; State: S2.1
Other Lists:

Habitat Associations
General: None for this Element
Micro: None for this Element

Occurrence No. 10 Map Index:12905
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOOD, L. 1977 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)*, ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PISMO LAKE, N OF GROVER CITY.

Dates Last Seen:
Element: 1975-10-XX
Site: 1975-10-XX

Lat/Long: 35°07'58" / 120°37'31"
UTM: Zone-10 N3890147 E716326
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 54.9 ac

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 10 ft

Comments
Distribution:
Ecological: SCIRPUS SPP & TYPHA SPP.
Threat: SURROUNDED BY HOUSING; RECENTLY DEGRADED BY SILTATION.
General: THIS WAS OCC #030 OF CTT52410CA.
Owner/Manager: DFG

Danaus plexippus
monarch butterfly
Element Code: IILEPP2010

List Status: Federal: None; State: None
NDDB Element Ranks: Global: G4; State: S3
Other Lists: CDFG Status:

Habitat Association
General: WINTER ROOST SITES EXTEND ALONG THE COAST FROM NORTHERN MENDOCINO TO BAJA CALIFORNIA, MEXICO.
Micro: ROOSTS LOCATED IN WIND PROTECTED TREE GROVES (EUCALYPTUS, MONTEREY PINE, CYPRESS), WITH NECTAR AND WATER SOURCES NEARBY.

Occurrence No: 127 Map Index:12891
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Stable
Main Source: SAKAI, K. 1989 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: NORTH BEACH CAMPGROUND, NEAR MEADOW CREEK, PISMO STATE BEACH, NW OF GROVER BEACH
Dates Last Seen: Element: 1998-01-19; Site: 1998-01-19
Lat/Long: 35°07'46" / 120°37'53"
UTM: Zone-10 N3889779 E715820
Precision: SPECIFIC
Symbol Type: POINT
Radius: 80 meters
Township: 32S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 20 ft

Comments
Distribution: GROVE OCCURS ALONG THE CREEK, ADJACENT TO THE HIGHWAY, NEAR THE RANGER STATION.
Ecological: CLUSTER TREES ARE A WINDROW OF EUCALYPTUS, PINE, CYPRESS, AND OAKS.
Threat: THREATENED BY GRADUAL LOSS OF ROOST TREES, WITHOUT REPLACEMENT.
General: 120K OBSERVED IN 1987 88. 15K OBSERVED ON 20 JAN 90. 200K WINTERED IN 90-91 (LARGEST IN CA). 20K OBSERVED IN JAN 93. 17K OBSERVED IN 93-94. 12K OBSERVED IN 94-95. 150K OBSERVED ON 3 JAN 96. 80-120K OBSERVED BETWEEN NOV 97 AND 29 JAN 98
Owner/Manager: DPR-PISMO SB

Occurrence No: 128 Map Index:12892
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: SAKAI, K. 1989 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)*, OCEANO (3512015/221D)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PISMO DUNES STATE VEHICLAR RECREATION AREA DISTRICT OFFICE, WEST OF GROVER CITY
Dates Last Seen: Element: 1997-11-28; Site: 1998-01-07
Lat/Long: 35°07'31" / 120°37'52"
UTM: Zone-10 N3889306 E715861
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile
Township: 32S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 25 ft

Comments
Distribution: CLUSTERS NORMALLY BREAK UP, BUT PERSISTED DURING THE 1987-88 SEASON. ORIGINAL SITE EXTIRPATED (BEHIND DISTRICT OFFICE.; SITE HAS NOT BEEN USED SINCE 1992-93. TWO OTHER SITES USED ARE A EUCALYPTUS ROW AND AN AREA BEHIND A RESIDENCE.
Ecological: HABITAT CONSISTED OF A LINEAR GROVE OF MONTEREY PINES PARALLELING THE HIGHWAY PRIOR TO TREE-TRIMMING. A EUCALYPTUS WINDROW ALONG MEADOW CREEK WAS USED ALTERNATELY THEREAFTER.
Threat: SITE THREATENED (AND EVENTUALLY DESTROYED) BY TREE-TRIMMERS DURING THE 1987-88 SEASON.
General: 50 OBSERVED ON 11 FEB 87. 5000 CLUSTERED IN OCT 90 (EUCALYPTUS WINDROW); 10K CLUSTERED (MONTEREY PINES) IN NOV 90. NONE OBSERVED IN NOV 92; 3000 OBSERVED IN JAN 93. NONE FOUND IN 93-94, 94-95, OR 95-96. 700 OBSERVED ON 28 NOV 97 (EUC ROW).
Owner/Manager: DPR-PISMO DUNES SVRA

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Helminthoglypta walkeriana
Morro shoulderband (=banded dune) snail
Element Code: IMGASC2510

List Status: Federal: Endangered; State: None
NDDB Element Ranks: Global: G1; State: S1
Other Lists: CDFG Status:

Habitat Associations
General: RESTRICTED TO THE COASTAL STRAND AND COASTAL SAGE SCRUB HABITATS IN THE IMMEDIATE VICINITY OF MORRO BAY.
Micro: INHABITS THE DUFF BENEATH HAPLOPAPPUS, SALVIA, DUDLEYA, AND MESEMBRYANTHEMUM.

Occurrence No: 11 Map Index:49665
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: WALGREN, M. 2002 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: BETWEEN HIGHWAY 101 AND CALLE QUOQUIN (ROAD), SOUTH END OF SAN LUIS OBISPO
Dates Last Seen: Element: 2002-11-15; Site: 2002-11-15
Lat/Long: 35°14'22" / 120°41'04"
UTM: Zone-10 N3901885 E710693
Precision: SPECIFIC
Symbol Type: POINT
Radius: 80 meters
Township: 31S
Range: 12E
Section: 09 Qtr XX
Meridian: M
Elevation: 120 ft

Comments
Distribution: DITCH IS SANDWICHED BETWEEN THE HIGHWAY 101, CALLE QUOQUIN, AND FARMLAND, ALONG THE COUNTY RIGHT-OF-WAY.
Ecological: HABITAT CONSISTS OF A ROAD-SIDE DITCH WITH CLAY SOIL AND EXOTIC ANNUAL VEGETATION, DOMINATED BY OXALIS SP., PHILARIS SP, AND ANNUAL GRASSES.
Threat: THREATENED BY DITCH MAINTENANCE AND AGRICULTURAL TILLING
General: 1 OLD, FADED ADULT SHELL OBSERVED WITH INCISED GROOVES & PAPILLATION ON 15 NOV 2002.
Owner/Manager: SLO COUNTY

Cirsium fontinale var. obispoense
Chorro Creek bog thistle
Element Code: PDAST2E162

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2T1	CNPS List: 1B
State: Endangered	State: S1.2	R-E-D Code: 3-2-3

Habitat Associations
General: CHAPARRAL, CISMONTANE WOODLAND ENDEMIC TO SAN LUIS OBISPO COUNTY.
Micro: SERPENTINE SEEPS. 35-365M.

Occurrence No. 9 Map Index:12730 — Dates Last Seen — Lat/Long: 35°14'52" / 120°41'09" Township: 31S
Occ Rank: Fair Element: 1992-XX-XX UTM: Zone-10 N3902771 E710567 Range: 12E
Origin: Natural/Native occurrence Site: 1992-XX-XX Precision: SPECIFIC Section: 09 Qtr XX
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 80 meters Elevation: 120 ft
Main Source: KEIL, D. 1987 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Froom Creek
Location: FROOM CREEK, FROOM RANCH, W OF LOS OSOS VALLEY RD, S OF SAN LUIS OBISPO.

Comments
Distribution: USING "VIRTUAL" SURVEY, EO IS IN FAR NE 1/4 OF SECTION 9.
Ecological: ON SERPENTINE SOIL ALONG CREEK SURROUNDED BY GRASSLAND, COASTAL SCRUB, CHAPARRAL, AND OAK WOODLAND. WITH SOLIDAGO GUIRADONIS, CAREX SPP, JUNCUS SPP, AND MIMULUS GUTTATUS.
Threat: AREA PLANNED FOR DEVELOPMENT.
General: ABOUT 15 PLANTS SEEN IN 1987, 10 IN 1992.
Owner/Manager: PVT

Occurrence No. 6 Map Index:27718 — Dates Last Seen — Lat/Long: 35°14'34" / 120°41'39" Township: 31S
Occ Rank: Good Element: 1993-XX-XX UTM: Zone-10 N3902193 E709823 Range: 12E
Origin: Natural/Native occurrence Site: 1993-XX-XX Precision: SPECIFIC Section: 09 Qtr XX
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 27.1 ac Elevation: 240 ft
Main Source: KEIL, D. 1987 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Froom Creek
Location: APPROX. 1 AIRMI E OF MINE HILL, W OF HWY 101, SW OF FROM CREEK.

Comments
Distribution: ADDITIONAL SITE INFORMATION FOUND AT CNDDB IN 1994 REPORT BY D. CHIPPING (CHI94R01).
Ecological: ON SERPENTINE SOIL IN RAVINE, SPRING, AND BOGGY SEEP. SURROUNDED BY GRASSLAND, COASTAL SCRUB, CHAPARRAL, AND OAK WOODLAND.
Threat: AREA PLANNED FOR DEVELOPMENT.
General: UNKNOWN HOW MANY PLANTS SEEN IN 1987, 250 IN 1993 IN SEVERAL SUBPOPULATIONS.
Owner/Manager: PVT

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Cirsium rhothophilum
Surf thistle
Element Code: PDAST2E2J0

List Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G2	CNPS List: 1B
State: Threatened	State: S2.2	R-E-D Code: 2-2-3

Habitat Associations
General: COASTAL DUNES, COASTAL BLUFF SCRUB. ENDEMIC TO SANTA BARBARA AND SAN LUIS OBISPO COUNTIES.
Micro: OPEN AREAS IN CENTRAL DUNE SCRUB; USUALLY IN COASTAL DUNES. 3-60M.

Occurrence No. 15 Map Index:12880 — Dates Last Seen — Lat/Long: 35°07'32" / 120°38'06" Township: 32S
Occ Rank: None Element: XXXX-XX-XX UTM: Zone-10 N3889328 E715505 Range: 12E
Origin: Natural/Native occurrence Site: 1998-XX-XX Precision: NON-SPECIFIC Section: XX Qtr XX
Presence: Extirpated Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1 mile Elevation: 20 ft
Main Source: HOOVER, R. 1970 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)*, OCEANO (3512015/221D), ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PISMO BEACH.

Comments
Distribution:
Ecological:
Threat:
General: MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS SITE NAME NOTED IN "VASCULAR PLANTS OF SLO COUNTY" BY R.F. HOOVER. LIKELY TO HAVE BEEN EXTIRPATED LONG AGO ACCORDING TO M. MCLEOD (1986). SEARCHED FOR BUT NOT SEEN IN 1998 (J. CHESNUT).
Owner/Manager: UNKNOWN

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[illegible]

——List Status——	——NDDB Element Ranks——	——Other Lists——
Federal: Species of Concern	Global: G4?T1	CNPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3

——Habitat Associations——
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: ALKALINE SOILS. SOMETIMES DESCRIBED AS HEAVY WHITE CLAY. 1-230M.

Occurrence No. 14 Map Index:12691
Occ Rank: [illegible]
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: [illegible] #11553 CAS (HERB)
Quad Summary: SAN LUIS OBISPO (3512036/246C)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: LAGUNA, NEAR SAN LUIS OBISPO.

—Dates Last Seen— Element: 1969-08-25 Site: 1969-08-25
Lat/Long: 35°15'49" / 120°41'31" UTM: Zone-10 N3904506 E709954 Precision: NON-SPECIFIC Symbol Type: POINT Radius: 1 mile
Township: 30S Range: 12E Section: XX Qtr XX Meridian: M Elevation: 350 ft

——Comments——
Distribution:
Ecological:
Threat:
General: OTHER COLLECTIONS FROM "SOUTH END OF LAGUNA DE SAN LUIS OBISPO" AND "LAGOON AT SAN LUIS OBISPO".
Owner/Manager: UNKNOWN

Occurrence No. 55 Map Index:49061
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: DINGUS, D. 2001 (OBS)
Quad Summary: SAN LUIS OBISPO (3512036/246C)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: FROOM RANCH, NORTH OF FROOM CREEK, 0.5 MILE NNW OF JUNCTION OF LOS OSOS VALLEY ROAD AND US 101, SAN LUIS OPISBO.

—Dates Last Seen— Element: 2001-05-11 Site: 2001-05-11
Lat/Long: 35°15'02" / 120°41'10" UTM: Zone-10 N3903090 E710523 Precision: SPECIFIC Symbol Type: POINT Radius: 80 meters
Township: 31S Range: 12E Section: 04 Qtr SE Meridian: M Elevation: 210 ft

——Comments——
Distribution: PLANT OCCURS IN SWALES AROUND THE HOME DEPOT CONSTRUCTION SITE.
Ecological: PLANT OCCURS IN SWALES CREATED BY THE CONSTRUCTION PROCESS. SWALES ARE TO BE MAINTAINED AS PART OF THE SITE DRAINAGE PLAN.
Threat: CONSTRUCTION OF HOME DEPOT. SWALE HAVING THE LARGEST POPULATION OF PLANTS IS SCHEDULED TO BE FILLED.
General: 150 PLANTS OBSERVED IN 2001.
Owner/Manager: PVT

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Deinandra increscens ssp. foliosa
leafy tarplant
Element Code: PDAST4R0U4

——List Status——	——NDDB Element Ranks——	——Other Lists——
Federal: None	Global: G4G5T2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-2-3

——Habitat Associations——
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: 300-500M.

Occurrence No. 1 Map Index:46211
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: BALDWIN, B. 1999 (PERS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: ARROYO GRANDE-POZO RD.

—Dates Last Seen— Element: 1998-XX-XX Site: 1998-XX-XX
Lat/Long: 35°10'31" / 120°31'31" UTM: Zone-10 N3895106 E725348 Precision: NON-SPECIFIC Symbol Type: POLYGON Area: 72.2 ac
Township: 32S Range: 13E Section: 01 Qtr XX Meridian: M Elevation:

——Comments——
Distribution: IMMEDIATELY NE OF LOPEZ RESERVOIR, ON RANCHITA PROPERTY AND THE AREA BEING SUBDIVIDED FOR RANCHETTES ADJACENT TO THE RANCHITA.
Ecological: SANDY SOILS, OPEN GRASSLAND AND OAK WOODLAND.
Threat: DEVELOPMENT.
General: NEEDS FIELDWORK. SUPPOSEDLY COMMON ON SANDY SOILS IN THIS REGION.
Owner/Manager: PVT?

Layia jonesii
Jones's layia
Element Code: PDAST5N090

List Status: Federal: Species of Concern; State: None
NDDB Element Ranks: Global: G1; State: S1.1
Other Lists: CNPS List: 1B; R-E-D Code: 3-2-3

Habitat Associations
General: CHAPARRAL, VALLEY AND FOOTHILL GRASSLAND. KNOWN ONLY FROM MONTEREY AND SAN LUIS OBISPO COUNTIES.
Micro: CLAY SOILS AND SERPENTINE OUTCROPS. 5-155M.

Occurrence No: 3 Map Index: 12691
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: JORGENSEN, P. #736 UC (HERB)
Quad Summary: SAN LUIS OBISPO (3512036/246C)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: 1.75 MILE SOUTHWEST OF SAN LUIS OBISPO.
Dates Last Seen: Element: 1936-03-22; Site: 1936-03-22
Lat/Long: 35°15'49" / 120°41'31"
UTM: Zone-10 N3904506 E709954
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile
Township: 30S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 350 ft
Comments
Distribution:
Ecological:
Threat:
General: NONE
Owner/Manager: PVT

Occurrence No: 4 Map Index: 12703
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: LEE, N. #528 UC (HERB)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: 0.75 MILE SOUTHEAST OF MINE HILL, SOUTH OF SAN LUIS OBISPO.
Dates Last Seen: Element: 1936-03-27; Site: 1936-03-27
Lat/Long: 35°13'59" / 120°41'49"
UTM: Zone-10 N3901121 E709583
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile
Township: 31S
Range: 12E
Section: 16 Qtr NW
Meridian: M
Elevation: 500 ft
Comments
Distribution:
Ecological:
Threat:
General:
Owner/Manager: PVT

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Dithyrea maritima
beach spectaclepod
Element Code: PDBRA10020

List Status: Federal: Species of Concern; State: Threatened
NDDB Element Ranks: Global: G2; State: S2.1
Other Lists: CNPS List: 1B; R-E-D Code: 3-3-2

Habitat Associations
General: COASTAL DUNES, COASTAL SCRUB. FORMERLY MORE WIDESPREAD IN COASTAL HABITATS IN SO. CALIF.
Micro: SEA SHORES, ON SAND DUNES, AND SANDY PLACES NEAR THE SHORE. 3-50M.

Occurrence No: 13 Map Index: 12880
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown
Main Source: THOMPSON, H. #1090 DS (HERB)
Quad Summary: PISMO BEACH (3512026/221B)*, OCEANO (3512015/221D), ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PISMO STATE BEACH, 1.5 MILES SOUTH OF PISMO BEACH, 3 MILES WEST OF ARROYO GRANDE.
Dates Last Seen: Element: 1950-04-27; Site: 1998-XX-XX
Lat/Long: 35°07'32" / 120°38'06"
UTM: Zone-10 N3889328 E715505
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile
Township: 32S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 20 ft
Comments
Distribution:
Ecological: ON STABILIZED DUNE OF OCEAN BEACH.
Threat: THREATENED BY ORVS AND AMMOPHILA ARENARIA AND CARPOBROTUS EDULIS.
General: PLANTS WITHIN THE ACTIVE RIDING AREA HAVE BEEN EXTIRPATED (J. CHESNUT 1998).
Owner/Manager: UNKNOWN

Arctostaphylos pajaroensis
Pajaro manzanita
Element Code: PDERI04010

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G1	CNPS List: 1B
State: Endangered	State: S1.1	R-E-D Code: 3-3-2

Habitat Associations
General: MARSHES AND SWAMPS. HIST. FROM SCATTERED COLL. IN CA AND IN WA; NOW KNOWN FROM ONE SITE IN SLO & APPAR. ALSO IN MEXICO.
Micro: GROWING OF THROUGH DENSE MATS OF TYPHA, JUNCUS, SCIRPUS, ETC. IN FRESHWATER MARSH. 10-170M.

Occurrence No: 12 Map Index:12880
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HARDHAM #12697 SBBG (HERB)
Quad Summary: PISMO BEACH (3512026/221B)*, OCEANO (3512015/221D), ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PISMO BEACH, SAN LUIS OBISPO COUNTY.

Dates Last Seen:
Element: 1965-04-21
Site: 1965-04-21

Lat/Long: 35°07'32" / 120°38'06"
UTM: Zone-10 N3889328 E715505
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 32S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 20 ft

Comments
Distribution: EXACT LOCATION UNKNOWN, MAPPED IN GENERAL VICINITY OF PISMO BEACH BY CNDDB.
Ecological: ON SLIGHTLY DAMP SITES NEAR SPRING.
Threat:
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1965 COLLECTION BY HARDHAM. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

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Dudleya blochmaniae ssp. blochmaniae
Blochman's dudleya
Element Code: PDCRA04051

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2T2	CNPS List: 1B
State: None	State: S2.1	R-E-D Code: 2-3-2

Habitat Associations
General: COASTAL SCRUB, COASTAL BLUFF SCRUB, VALLEY AND FOOTHILL GRASSLAND.
Micro: OPEN, ROCKY SLOPES; OFTEN IN SHALLOW CLAYS OVER SERPENTINE OR IN ROCKY AREAS W/LITTLE SOIL. 5-450M.

Occurrence No: 18 Map Index:17814
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: KEIL, D. 1987 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Froom Creek
Location: FROOM RANCH. WEST OF INTERSECTION OF LOS OSOS VALLEY ROAD AND US 101, JUST OUTSIDE CITY LIMITS OF SAN LUIS OBISPO.

Dates Last Seen:
Element: 1987-09-26
Site: 1987-09-26

Lat/Long: 35°14'35" / 120°41'17"
UTM: Zone-10 N3902245 E710356
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 2.7 ac

Township: 31S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 150 ft

Comments
Distribution:
Ecological: IN DRY SHALLOW CLAY SOILS OVERLYING SERPENTINE. WITH SHORT GRASSES AND OTHER HERBS.
Threat: OFFICE COMPLEX DEVELOPMENT THREATENED THE SITE IN 1987.
General: LESS THAN 100 PLANTS SEEN IN 1987.
Owner/Manager: PVT

Arctostaphylos luciana
Santa Lucia manzanita
Element Code: PDERI040N0

List Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-2-3

Habitat Associations
General: CHAPARRAL. ENDEMIC FROM SAN LUIS OBISPO COUNTY.
Micro: ON SHALE OUTCROPS, ON SLOPES, IN CHAPARRAL. 350-850M.

Occurrence No. 5 Map Index:28435
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: LEE, H. #576 UC #M109658 (HERB)
Quad Summary: ARROYO GRANDE NE (3512025/221A)*, LOPEZ MTN. (3512035/246D)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: 1.75 MILES NNE OF SLIDE HILL, EAST OF SAN LUIS OBISPO.

Dates Last Seen
Element: 1936-04-25
Site: 1936-04-25
Lat/Long: 35°14'44" / 120°31'11"
UTM: Zone-10 N3902909 E725684
Precision: NON SPECIFIC
Symbol Type: POINT
Radius: 2/5 mile

Township: 31S
Range: 14E
Section: 07 Qtr NW
Meridian: M
Elevation: 2500 ft

Comments
Distribution: MAPPED ABOUT 1 MILE WNW OF BALD MOUNTAIN.
Ecological: GROWING IN WOODLAND-CHAMISE.
Threat:
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY H.C. LEE.
Owner/Manager: UNKNOWN

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Arctostaphylos morroensis
Morro manzanita
Element Code: PDERI040S0

List Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-3-3

Habitat Associations
General: CHAPARRAL, CISMONTANE WOODLAND, COASTAL DUNES (PRE-FLANDRIAN), COASTAL SCRUB. NARROWLY ENDEMIC TO THE MORRO BAY AREA
Micro: ON BAYWOOD SANDS USUALLY WITH CHAPARRAL ASSOCIATES 5-205M.

Occurrence No. 11 Map Index:12622
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: WOLF, B. #5 OBI (HERB)
Quad Summary: SAN LUIS OBISPO (3512036/246C)*, PISMO BEACH (3512026/221B), PORT SAN LUIS (3512027/222A), MORRO BAY SOUTH (3512037/247D)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: EDGE OF PREFUMO CANYON ROAD IN PREFUMO CANYON, SOUTHWEST OF SAN LUIS OBISPO.

Dates Last Seen
Element: 1970-01-29
Site: 1970-01-29
Lat/Long: 35°15'35" / 120°44'36"
UTM: Zone-10 N3903981 E705301
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 31S
Range: 11E
Section: 01 Qtr NE
Meridian: M
Elevation: 500 ft

Comments
Distribution:
Ecological:
Threat:
General: THIS LOCATION IS BASED ON A SPECIMEN BY WOLF, COLL. IN 1970. IT IS PROBABLY AN OUTLYER AND IS NOT QUITE IN THE RIGHT HABITAT. MOST LIKELY REPRESENTS A SINGLE PLANT.
Owner/Manager: PVT

Arctostaphylos pechoensis
Pecho manzanita
Element Code: PDERI04140

List Status: Federal: Species of Concern; State: None
NDDB Element Ranks: Global: G2; State: S2.2
Other Lists: CNPS List: 1B; R-E-D Code: 2-2-3

Habitat Associations
General: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL SCRUB. NARROWLY ENDEMIC TO COASTAL MTNS OF SLO COUNTY.
Micro: GROWS ON SILICEOUS SHALE WITH OTHER CHAPARRAL ASSOCIATES. 150-850M.

Occurrence No.: 4 Map Index: 28439
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: SCHREIBER, B. #2557 USFS (HERB)
Quad Summary: PORT SAN LUIS (3512027/222A)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: DAVIS CANYON, IRISH HILLS.

Dates Last Seen: Element: 1938-10-07; Site: 1938-10-07
Lat/Long: 35°13'31" / 120°45'03"
UTM: Zone-10 N3900151 E704701
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 2/5 mile

Township: 31S
Range: 11E
Section: 13 Qtr SW
Meridian: M
Elevation: 600 ft

Comments
Distribution: COLLECTED AT 600 FEET ELEVATION. VAGUE COLLECTION FROM "BETWEEN SEA CANYON AND IRISH HILLS" IS INCLUDED AT THIS OCCURRENCE
Ecological:
Threat:
General: VICINITY REPORTED IN TWO COLLECTIONS; SCHREIBER (#2557 USFS) IN 1938 AND SINHEIMER (SP?)(SN CAS) IN 1934.
Owner/Manager: UNKNOWN

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Arctostaphylos pilosula
Santa Margarita manzanita
Element Code: PDERI04160

List Status: Federal: Species of Concern; State: None
NDDB Element Ranks: Global: G2; State: S2.2
Other Lists: CNPS List: 1B; R-E-D Code: 3-2-3

Habitat Associations
General: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL. ENDEMIC TO MONTEREY AND SAN LUIS OBISPO COUNTIES.
Micro: SHALE OUTCROPS & SLOPES; REPORTED GROWING ON DECOMP. GRANITE OR SANDSTONE IN SLO. 170-1100M.

Occurrence No: 14 Map Index: 28510
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: VANDERWIER, J. 1980 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: VICINITY OF INDIAN KNOB, ABOUT 3.5 MILES NNW OF PISMO BEACH, SOUTH OF SAN LUIS OBISPO.

Dates Last Seen: Element: 1980-02-02; Site: 1980-02-02
Lat/Long: 35°11'58" / 120°39'37"
UTM: Zone-10 N3897486 E713011
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile

Township: 31S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 600 ft

Comments
Distribution: ALONG ROADS TO THE NORTH AND SE OF INDIAN KNOB. EXACT LOCATION AND EXTENT OF POPULATION NOT CLEARLY INDICATED IN THE LITERATURE. SITE MAPPED AT CNDDB NEAR SUMMIT RIDGE OF INDIAN KNOB.
Ecological: CENTRAL MARITIME CHAPARRAL WITH PHASES DOMINATED BY ARCTOSTAPHYLOS PILOSULA. A. PILOSULA AND ADENOSTOMA, ADENOSTOMA AND SALVIA MELLIFERA. ASSOCIATED WITH ERIODICTYON ALTISSIMUM, CEANOTHUS SPP., HETEROMELES, DENDROMECON, MIMULUS, ETC.
Threat: CATTLE RANCHING, AGRICULTURE, ROADS, POTENTIAL OIL EXTRACTION.
General: RELATIVE COVER RANGES FROM LOW TO 100%. SEVERAL RARE PLANTS IN AREA INCLUDING ERIODICTYON ALTISSIMUM, AGROSTIS HOOVERI, CALOCHORTUS OBISPOENSIS, SCROPHULARIA ATRATA, ARCTOSTAPHYLOS WELLSII, AND LUPINUS LUDOVICIANUS.
Owner/Manager: PVT

Arctostaphylos wellsii
Wells's manzanita
Element Code: PDER1042B0

List Status: Federal: None; State: None
NDDB Element Ranks: Global: G2; State: S2.1?
Other Lists: CNPS List: 1B; R-E-D Code: 2-3-3

Habitat Associations:
General: CHAPARRAL, CLOSED CONE CONIFEROUS FOREST. ENDEMIC TO SAN LUIS OBISPO COUNTY.
Micro: SANDSTONE OUTCROPS. 30-400M.

Occurrence No. 6 Map Index:28512
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: WIESLANDER, A. #646 UC (HERB)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: 1 MILE SOUTHWEST OF EDNA, NORTH OF ARROYO GRANDE.

Dates Last Seen: Element: 1936-06-26; Site: 1936-06-26
Lat/Long: 35°11'27" / 120°37'05"
UTM: Zone-10 N3896599 E716888
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 2/5 mile

Township: 31S; Range: 13E; Section: XX Qtr XX; Meridian: M; Elevation: 300 ft

Comments:
Distribution: INCLUDES 1936 COLLECTION BY LEE FROM PRICE CANYON.
Ecological: CHAPARRAL. ASSOCIATED WITH ARCTOSTAPHYLOS OBISPOENSIS (7) AND ADENOSTOMA FASCICULATUM. PRICE CANYON COLLECTION GROWING WITH QUERCUS AGRIFOLIA, TOXICODENDRON DIVERSILOBUM, AND SALVIA MELLIFERA.
Threat:
General: VICINITY REPRESENTED IN TWO COLLECTIONS; WIESLANDER (#636 UC) IN 1936 AND LEE (#427 UC) IN 1936.
Owner/Manager: UNKNOWN

Occurrence No. 4 Map Index:28513
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: GANKIN, R. #661 UCD ARBORETUM (HERB)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: HILL NORTH OF SUMMIT OF NOYES ROAD, 0.2 MILE SOUTHWEST OF JUNCTION WITH HIGHWAY 227, NORTH OF ARROYO GRANDE.

Dates Last Seen: Element: 1966-02-17; Site: 1966-02-17
Lat/Long: 35°10'10" / 120°35'07"
UTM: Zone-10 N3894301 E719920
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile

Township: 32S; Range: 13E; Section: XX Qtr XX; Meridian: M; Elevation: 400 ft

Comments:
Distribution:
Ecological:
Threat:
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1966 COLLECTION BY GANKIN.
Owner/Manager: UNKNOWN

Occurrence No. 7 Map Index:37763
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOLLAND, V. & L. OYLER 1995 (LIT)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: MOUTH OF CANYON NO.1 NEAR GROVER CITY, NORTH OF ARROYO GRANDE.

Dates Last Seen: Element: 1995-XX-XX; Site: 1995-XX-XX
Lat/Long: 35°08'41" / 120°36'10"
UTM: Zone-10 N3891530 E718399
Precision: NON-SPECIFIC
Symbol Type: POLYGON
Area: 44.5 ac

Township: 32S; Range: 13E; Section: 17 Qtr XX; Meridian: M; Elevation: 260 ft

Comments:
Distribution: NORTH END OF PROPOSED LOS ROBLES DEL MAR DEVELOPMENT; WEST OF OAK PARK BLVD AT JUNCTION WITH NOYES ROAD.
Ecological: GROWING AMONG COASTAL LIVE OAKS (HOLLAND AND OYLER, 1995) AND IN CHAPARRAL WITH ARTEMISIA CALIFORNICA, RHAMNUS CALIFORNICA, AND BACCHARIS PILULARIS (SCHREIBER, 1938). THE RARE CLARKIA SPECIOSA SSP. IMMACULATA IS FOUND NEARBY.
Threat: DEVELOPMENT THREATENS; PROPOSED MITIGATION WOULD AVOID IMPACTS TO A. WELLSII.
General: 10 PLANTS OBSERVED AT THIS SITE IN 1995. COLLECTION BY B. SCHREIBER IN 1938 IS ALSO ATTRIBUTED TO THIS SITE. THIS SPECIES IS APPARENTLY MORE COMMON ON NEARBY SITES.
Owner/Manager: UNKNOWN

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Arctostaphylos wellsii (cont.)
Wells's manzanita
Element Code: PDER1042B0

List Status: Federal: None; State: None
NDDB Element Ranks: Global: G2; State: S2.1?
Other Lists: CNPS List: 1B; R-E-D Code: 2-3-3

Occurrence No. 8 Map Index:28509
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: WELLS, P. #23 UC (HERB)
Quad Summary: PISMO BEACH (3512026/221B)*, ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: 3 MILES SOUTHWEST OF EDNA, EAST OF PISMO BEACH.

Dates Last Seen: Element: XXXX-XX-XX; Site: XXXX-XX-XX
Lat/Long: 35°10'11" / 120°37'45"
UTM: Zone 10 N3894239 E715910
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 32S; Range: 13E; Section: XX Qtr XX; Meridian: M; Elevation: 300 ft

Comments:
Distribution:
Ecological:
Threat:
General: TYPE LOCALITY. ONLY SOURCE OF INFORMATION FOR THIS SITE IS COLLECTION BY WELLS.
Owner/Manager: UNKNOWN

Occurrence No. 9 Map Index:28510
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOOVER, R. #9867 CAS #475911 (HERB)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: INDIAN KNOB RIDGE, SOUTH OF SAN LUIS OBISPO.

Dates Last Seen: Element: 1966-05-17; Site: 1966-05-17
Lat/Long: 35°11'58" / 120°39'37"
UTM: Zone-10 N3897486 E713011
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 3/5 mile

Township: 31S; Range: 12E; Section: XX Qtr XX; Meridian: M; Elevation: 600 ft

Comments:
Distribution:
Ecological:
Threat:
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1966 COLLECTION BY HOOVER.
Owner/Manager: UNKNOWN

Occurrence No. 10 Map Index:28511
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: LEE, H. #392 UC #M309683 (HERB)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: 1.25 MILES NORTH OF INDIAN KNOB, SOUTH OF SAN LUIS OBISPO.

Dates Last Seen: Element: 1936-02-10; Site: 1936-02-10
Lat/Long: 35°12'57" / 120°39'30"
UTM: Zone-10 N3899289 E711141
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 2/5 mile

Township: 31S; Range: 12E; Section: XX Qtr XX; Meridian: M; Elevation: 250 ft

Comments:
Distribution: IN PROJECTED SECTION 23.
Ecological: IN CHAPARRAL ON SANDY SOIL. ASSOCIATED WITH SAGE, ADENOSTOMA FASCICULATUM, TOXICODENDRON DIVERSILOBUM, AND LOTUS SCOPARIUS.
Threat:
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY LEE.
Owner/Manager: UNKNOWN

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[illegible]
[illegible]
[illegible]

—List Status— Federal: None; State: None
—NDDB Element Ranks— Global: G2; State: S2.1?
—Other Lists— CNPS List: 1B; R-E-D Code: 2-3-3

Occurrence No. [illegible] Map Index: 28508
Occ Rank: [illegible]
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: [illegible], B. #2556 UC #1334941 (HERB)
Quad Summary: [illegible] BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: SYCAMORE SPRINGS, SOUTH OF SAN LUIS OBISPO.

—Dates Last Seen— Element: 1938-09-07; Site: 1938-09-07
Lat/Long: 35°11'11" / 120°42'48"
UTM: Zone-10 N3895910 E708206
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 2/5 mile
Township: 31S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 200 ft

—Comments—
Distribution:
Ecological: GROWING WITH QUERCUS AGRIFOLIA, MIMULUS AURANTIACUS, AND LOTUS SCOPARIUS.
Threat:
General: VICINITY REPORTED IN TWO COLLECTIONS; LEE (#383 UC) IN 1936 AND SCHREIBER (#2556 UC) IN 1938.
Owner/Manager: UNKNOWN

Occurrence No. 14 Map Index: 36552
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: O'NEIL, B. 1997 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: N OF GROVER CITY, W OF CANYON NO. 1, 1.0-1.3 MI NW OF JCT CENTRAL BLVD AND NOYED ROAD.

—Dates Last Seen— Element: 1997-04-15; Site: 1997-04-15
Lat/Long: 35°09'13" / 120°36'58"
UTM: Zone-10 N3892487 E717152
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 7.8 ac
Township: 32S
Range: 13E
Section: 07 Qtr XX
Meridian: M
Elevation: 500 ft

—Comments—
Distribution:
Ecological: W-FACING SLOPE 400-580 FT ELEVATION. COASTAL SCRUB AND COAST LIVE OAK COMMUNITIES; BRIONES-PISMO LOAMY SANDS. CLARKIA SPECIOSA IMMACULATA NEARBY.
Threat: PLANNED FOR DEVELOPMENT.
General: AT LEAST 100 PLANTS IN 1997.
Owner/Manager: PVT

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(Arroyo Grande NE and Pismo Beach 7.5 minute quadrangles)

Lupinus ludovicianus
San Luis Obispo County lupine
Element Code: PDFAB2B2G0

—List Status— Federal: Species of Concern; State: None
—NDDB Element Ranks— Global: G2; State: S2.2
—Other Lists— CNPS List: 1B; R-E-D Code: 3-2-3

—Habitat Associations—
General: CHAPARRAL, CISMONTANE WOODLAND. ENDEMIC TO SAN LUIS OBISPO COUNTY.
Micro: OPEN AREAS IN SANDY SOIL, SANTA MARGARITA FORMATION. 50-525M

Occurrence No. 6 Map Index: 12854
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown
Main Source: MCLEOD, M. 1980 (PERS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: ABOUT 0.8 MILE ENE OF INDIAN KNOB ALONG BOTH SIDES OF DIRT ROAD, NORTH OF PISMO BEACH.

—Dates Last Seen— Element: 1980-XX-XX; Site: 1986-07-07
Lat/Long: 35°12'07" / 120°38'40"
UTM: Zone-10 N3897811 E714423
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 12.5 ac
Township: 31S
Range: 12E
Section: 25 Qtr NW
Meridian: M
Elevation: 320 ft

—Comments—
Distribution: MAPPED ALONG BOTH SIDES OF ROAD WITHIN THE SW 1/4 NW 1/4 SECTION 25.
Ecological: ON SILICEOUS SANDSTONE OF SANTA MARGARITA FORMATION.
Threat: RANCHING WITH GRAZING IN VICINITY.
General: 200 PLANTS SEEN IN 1980; REDUCED TO 60 PLANTS AFTER CATTLE DRIVEN THROUGH SITE. SITE HAS NOT BEEN SEEN SINCE 1980; ACCESS LIMITED.
Owner/Manager: PVT

Occurrence No. 10 Map Index: 13067
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown
Main Source: UNANGST #682 UC (HERB)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: OAK PARK (SCH) ALONG ROAD 1.9 MILES SOUTHEAST OF TIBER SIDING ON SPRR, 2 MILES SOUTH OF EDNA STATION.

—Dates Last Seen— Element: 1906-05-17; Site: 1986-06-01
Lat/Long: 35°10'06" / 120°35'30"
UTM: Zone-10 N3894169 E719340
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile
Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 520 ft

—Comments—
Distribution:
Ecological:
Threat:
General: MALCOLM MCLEOD AND RHONDA RIGIGNS-PIMENTEL HAVE REPEATEDLY SEARCHED AREA, BUT NO PLANTS FOUND. OAK PARK SCHOOL WAS RAZED MANY YEARS AGO AND HOUSE NOW ON SITE.
Owner/Manager: PVT

Occurrence No. 17 Map Index: 12899
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: MCLEOD, M. 1986 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Indian Knob
Location: HILLS N OF PRICE CANYON, N OF PISMO CR, NNE OF PISMO BEACH.

—Dates Last Seen— Element: 1982-04-09; Site: 1982-04-09
Lat/Long: 35°11'50" / 120°37'58"
UTM: Zone-10 N3897294 E715508
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 44.6 ac
Township: 31S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 440 ft

—Comments—
Distribution:
Ecological: PLANTS ON SANTA MARGARITA FORMATION SAND.
Threat:
General: ACCESS DENIED SINCE 1980. PLANTS DO BEST AROUNG GOPHER DIGGINGS.
Owner/Manager: PVT

Eriodictyon altissimum
Indian Knob Mountainbalm
Element Code: PDHYD04010

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2Q	CNPS List: 1B
State: Endangered	State: S2.2	R-E-D Code: 3-3-3

Habitat Associations
General: CHAPARRAL (MARITIME), CISMONTANE WOODLAND ENDEMIC TO SAN LUIS OBISPO COUNTY
Micro: RIDGES IN OPEN, DISTURBED AREAS WITHIN CHAPARRAL ON PISMO SANDSTONE. 80-270M.

Occurrence No. 5 Map Index:12791
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOLLAND & VANDERWIER 1979 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Indian Knob
Location: INDIAN KNOB. ABOUT 4 MI N OF PISMO & 3 MI S OF SAN LUIS OBISPO.

Dates Last Seen: Element: 1980-02-02 Site: 1980-02-02
Lat/Long: 35°12'05" / 120°39'42"
UTM: Zone-10 N3897676 E712887
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 216.7 ac

Township: 31S
Range: 12E
Section: XX Qtr XX
Meridian: M
Elevation: 880 ft

Comments
Distribution:
Ecological: ON LIGHT COLORED PISMO SANDSTONE RIDGES. OFTEN IN DISTURBED AREAS. ASSOCIATED WITH CALOCHORTUS OBISPOENSIS, ARCTOSTAPHYLOS PILOSULA SSP. PISMOENSIS, AGROSTIS HOOVERI, QUERCUS, ADENOSTOMA, & MIMULUS SPP.
Threat: SURFACE MINING OF TAR SANDS CONSIDERED
General: TYPE LOCALITY, LARGEST KNOWN POPULATION.
Owner/Manager: PVT

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(Arroyo Grande NE and Pismo Beach 7.5 minute quadrangles)

Clarkia speciosa ssp. immaculata
Pismo clarkia
Element Code: PDONA05111

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G4T1	CNPS List: 1B
State: Rare	State: S1.1	R-E-D Code: 1-3-3

Habitat Associations
General: CHAPARRAL, CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND. ENDEMIC TO SAN LUIS OBISPO COUNTY.
Micro: ON ANCIENT SAND DUNES NOT FAR FROM THE COAST. SANDY SOILS, OPENINGS. 25-185M.

Occurrence No. 2 Map Index:11007
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Increasing
Main Source: DUNN & MCLEOD 1987 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary: Tiber Canyon
Location: TIBER CANYON; NW SIDE OF ORMONDE RD, ABOUT 1-1.5 MI NE OF JCT W/CENTRAL BLVD.

Dates Last Seen: Element: 1996-07-19 Site: 1996-07-19
Lat/Long: 35°10'35" / 120°36'24"
UTM: Zone-10 N3895040 E717963
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 39.1 ac

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 400 ft

Comments
Distribution: PLANTS ALONG ROAD SHOULDER AND IN OPEN AREAS AWAY FROM ROAD.
Ecological: IN SMALL, OPEN, GRASSY AREA; SOMEWHAT WEEDY. WITH AVENA BARBATA, CROTON CA. ARCTOSTAPHYLOS WELLSII SEEN NEARBY.
Threat: POTENTIAL THREAT FROM ROAD MAINTENANCE. PAMPAS GRASS INVADING EAST END OF SITE. PROPOSED DEVELOPMENT (1996)
General: 2000+ PLANTS IN SEVERAL SUBPOPULATIONS IN 1987, 1000 PLANTS SEEN IN 1990, 200 PLANTS IN 1993 (A BAD YEAR), 1000 IN 1996.
Owner/Manager: PVT, SLO COUNTY

Occurrence No. 3 Map Index:12935
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: LEWIS, H. 1977 (LIT)
Quad Summary: ARROYO GRANDE NE (3512025/221A)*, PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Upper Price Canyon
Location: PRICE CANYON, 3 MI S OF EDNA.

Dates Last Seen: Element: 1928-06-17 Site: 199X-XX-XX
Lat/Long: 35°10'29" / 120°37'18"
UTM: Zone-10 N3894812 E716590
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 120 ft

Comments
Distribution: AREA NEAR LONG HAIRPIN CURVE ON PRICE CANYON ROAD.
Ecological: DRY GRAVELLY SLOPE AT EDGE OF CHAPARRAL.
Threat: AREA PROPOSED FOR DEVELOPMENT (MCLEOD 1996 PERS. COMM.). UNKNOWN EXACTLY WHEN HE SEARCHED FOR PLANTS, ASSUME 1990'S.
General: SEARCHED FOR IN 1983 BUT SSP. NOT FOUND.
Owner/Manager: PVT

Occurrence No. 4 Map Index:13104
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing
Main Source: DUNN & MCLEOD 1987 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary: Upper Carpenter Canyon
Location: HIGHWAY 227 AT SUMMIT OF CARPENTER CANYON, AT SIDE ROAD WITH GATE 3.8 MI S OF EDNA SCHOOL (NOW GONE).

Dates Last Seen: Element: 1987-05-23 Site: 1987-05-23
Lat/Long: 35°09'57" / 120°34'35"
UTM: Zone-10 N3893925 E720738
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 600 ft

Comments
Distribution:
Ecological: IN GRASSY DISTURBED AREA AT MARGIN OF CHAPARRAL WITH MIMULUS SP. AND ARCTOSTAPHYLOS SP.
Threat: PLANTS ADJACENT TO ROAD; VEHICLE DISTURBANCE THREATENS.
General: TYPE LOCALITY. LESS THAN 50 PLANTS IN 1983, ABOUT 30 PLANTS IN 1987, ALL WITHIN 10 FEET OF ROAD.
Owner/Manager: CALTRANS

Clarkia speciosa ssp. immaculata (cont.)
Pismo clarkia
Element Code: PDONA05111

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G4T1	CNPS List: 1B
State: Rare	State: S1.1	R-E-D Code: 3-3-3

Occurrence No. 5 Map Index:12961
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: LEWIS, H. 1977 (LIT)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary: Upper Price Canyon
Location: PRICE CANYON, 1 MILE SOUTH OF EDNA.

Dates Last Seen: Element: 1996-XX-XX Site: 1996-XX-XX
Lat/Long: 35°11'26" / 120°37'01"
UTM: Zone-10 N3896587 E716988
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 47.3 ac

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 300 ft

Comments:
Distribution:
Ecological: OAK WOODLAND WITH QUERCUS AGRIFOLIA ON SANDSTONE/TAR SAND.
Threat: OCCURRENCE BISECTED BY PRICE CANYON ROAD AND GRAZED BY CATTLE
General: 4 POPULATIONS, LESS THAN 1000 PLANTS, SEEN IN 1983. OIL CO ACTIVITY NOT IN THIS IMMEDIATE VICINITY. 2000+ PLANTS IN 1987. POPULATION IN GOOD COND 1987. 1 SUBPOP IS LARGEST KNOWN. POPULATION SEEN BY MCLEOD IN 1996 SAME SIZE AS IN PAST YEARS.
Owner/Manager: SLO COUNTY

Occurrence No. 6 Map Index:12971
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing
Main Source: DUNN & MCLEOD 1987 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary: Margarita St. East
Location: GROVER CITY, E & W SIDE OF 12TH ST AT MARGARITA ST.

Dates Last Seen: Element: 1987-05-23 Site: 1987-05-23
Lat/Long: 35°07'47" / 120°36'44"
UTM: Zone-10 N3889840 E717570
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: S
Elevation: 80 ft

Comments:
Distribution: INCLUDES 1928 COLLECTIONS FROM, "BETWEEN PISMO & ARROYO GRANDE".
Ecological: COASTAL SCRUB/OAK WOODLAND IN SAND WITH ERICAMERIA ERICOIDES.
Threat: EHRHARTA TAKING OVER.
General: 4 POPULATIONS SEEN IN 1983. DISTURBED AREA WITH TRAILS. ABOUT 100 PLANTS SEEN IN 1987 IN AN AREA THAT IS MOWED REGULARLY. PORTION OF OCCURRENCE WEST OF 12TH STREET IS NOW EXTIRPATED.
Owner/Manager: PVT

Occurrence No. 8 Map Index:13014
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HICKSON, D. & D. HILLYARD 1997 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: 1 MILE NE OF JCT OF HWY 101 AND N. OAK PARK BLVD, AT THE JUNCTION OF JAMES WAY AND LA CANADA, NORTH OF HWY 101

Dates Last Seen: Element: 1997-08-07 Site: 1997-08-07
Lat/Long: 35°08'12" / 120°35'22"
UTM: Zone-10 N3890674 E719625
Precision: SPECIFIC
Symbol Type: POINT
Radius: 80 meters

Township: 32S
Range: 13E
Section: 16 Qtr XX
Meridian: M
Elevation: 120 ft

Comments:
Distribution: GREATER PLANT DENSITIES IN OPENINGS IN OAK WOODLAND TO EAST OF OAKS (SHADED AREAS).
Ecological: COAST LIVE OAK WITH ANNUAL GRASS UNDERSTORY.
Threat: POPULATION IS IN A PRESERVED AREA OF THE RANCHO GRANDE DEVELOPMENT.
General: 12 PLANTS IN 1997, BUT MAY BE 100'S OF PLANTS HERE; NEED FIELD SURVEY FORMS AT CNDDB. OWNED BY LAS JOLLAS DE RANCHO GRANDE HOMEOWNERS ASSOCIATION.
Owner/Manager: PVT

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(Arroyo Grande NE and Pismo Beach 7.5 minute quadrangles)

Clarkia speciosa ssp. immaculata (cont.)
Pismo clarkia
Element Code: PDONA05111

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G4T1	CNPS List: 1B
State: Rare	State: S1.1	R-E-D Code: 3-3-3

Occurrence No. 9 Map Index:13067
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown
Main Source: MCLEOD, M. 1987 (PERS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: OAK PARK SCHOOL (ABANDONED) AT JUNCTION OF OAK PARK ROAD AND ORMONDE ROAD, NORTHWEST OF ARROYO GRANDE.

Dates Last Seen: Element: XXXX-XX-XX Site: XXXX-XX-XX
Lat/Long: 35°10'06" / 120°35'30"
UTM: Zone-10 N3894169 E719340
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile

Township: 32S
Range: 13E
Section: XX Qtr XX
Meridian: M
Elevation: 520 ft

Comments:
Distribution:
Ecological:
Threat:
General: HISTORIC OCCURRENCE ACCORDING TO MCLEOD. ONLY STEPS REMAIN OF OLD SCHOOL. LUPINUS LUDOVICIANUS (OCCURRENCE #10) WAS AT THIS LOCATION ALSO.
Owner/Manager: PVT

Occurrence No. 11 Map Index:36462
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: KEIL, D. 1992 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: BETWEEN ORMONDE ROAD AND HWY 227, SW SLOPES OF CANADA VERDE.

Dates Last Seen: Element: 1992-05-28 Site: 1992-05-28
Lat/Long: 35°10'47" / 120°35'52"
UTM: Zone-10 N3895408 E718762
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 13.4 ac

Township: 31S
Range: 13E
Section: 32 Qtr XX
Meridian: M
Elevation: 200 ft

Comments:
Distribution: NEAR FATCHETT ROAD.
Ecological: GRASSY FRINGE OF COASTAL SCRUB AND COASTAL LIVE OAK WOODLAND IN SANDY SOIL.
Threat: POTENTIAL DEVELOPMENT OF SITE.
General: LESS THAN 1000 PLANTS SEEN IN 1992.
Owner/Manager: PVT

Occurrence No. 12 Map Index:36551
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: O'NEIL, B. 1997 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: N OF GROVER CITY; 1.3 MI NW OF JCT CENTRAL BLVD AND NOYES ROAD.

Dates Last Seen: Element: 1997-04-15 Site: 1997-04-15
Lat/Long: 35°09'12" / 120°37'06"
UTM: Zone-10 N3892445 E716948
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 4.1 ac

Township: 32S
Range: 13E
Section: 07 Qtr XX
Meridian: M
Elevation: 350 ft

Comments:
Distribution:
Ecological: N-FACING SLOPE ALONG MARGIN OF COAST LIVE OAK AND VALLEY GRASSLAND HABITATS (UPPER EDGE OF OAK WOODLAND CANOPY). SANTA LUCIA SHALY CLAY LOAM. ARCTOSTAPHYLOS WELLSII NEARBY.
Threat: PLANNED FOR DEVELOPMENT. GRAZING ALSO OCCURS.
General: 20 PLANTS ESTIMATED IN 1997.
Owner/Manager: PVT

Clarkia speciosa ssp. immaculata (cont.)
Pismo Clarkia
Element Code: PDONA05111

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G4T1	CNPS List: 1B
State: Rare	State: S1.1	R-E-D Code: 3-3-3

Occurrence No. 11 Map Index:37762
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOVEN/TEMS ANALYSIS 1993 (LIT)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: NORTHERN SLOPES OF GRAGG CANYON.

—Dates Last Seen—
Element: 1993-XX-XX
Site: 1993-XX-XX

Lat/Long: 35°10'41" / 120°40'58"
UTM: Zone-10 N3895058 E711028
Precision: NON-SPECIFIC
Symbol Type: POLYGON
Area: 27.7 ac

Township: 31S
Range: 12E
Section: 33 Qtr XX
Meridian: M
Elevation: 250 ft

—Comments—
Distribution: PLANTS IN ISOLATED AREAS OF GRAZED PASTURE. MAPPED AS THREE NONSPECIFIC POLYGONS AT CNDDB.
Ecological:
Threat: SURVEYED AS PART OF PISMO VALLEY PLANNED COMMUNITY PROJECT, BUT PROJECT MAY HAVE FALLEN THROUGH.
General: SEVERAL THOUSAND PLANTS IN CLUSTERS IN 1993. MAP DETAIL NEEDED; MAPPED FROM INFO RECEIVED IN 1997 FROM CLIFTON AND [illegible] (THEIR RECOLLECTIONS OF WHERE PLANTS WERE SEEN IN 1993). CLIFTON REMEMBERS FEWER THAN 1000 PLANTS.
Owner/Manager: OTHER

Occurrence No. 12 Map Index:37763
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOLLAND, V. & L. OYLER 1995 (LIT)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: NW OF ARROYO GRANDE; 0.8-1.1 MI N OF HWY 101, W SIDE OF OLD OAK PARK ROAD (MAPPED FROM JUST W TO 0.4 MI W).

—Dates Last Seen—
Element: 1995-06-11
Site: 1995-06-11

Lat/Long: 35°08'41" / 120°36'10"
UTM: Zone-10 N3891530 E718399
Precision: NON-SPECIFIC
Symbol Type: POLYGON
Area: 44.5 ac

Township: 32S
Range: 13E
Section: 17 Qtr XX
Meridian: M
Elevation: 260 ft

—Comments—
Distribution: MAPPED LOCALITY DELINEATES HABITAT WITHIN WHICH THE CLARKIA WAS FOUND; MAPPED AS NON-SPECIFIC POLYGON. BETTER LOCATION INFO NEEDED FOR THIS POPULATION. PART OF LOS ROBLES DEL MAR DEVELOPMENT.
Ecological: PLANTS ALONG THE EDGE OF THE OAK WOODLAND THROUGH THE CHAPARRAL, AND IN GRASSLAND. WITH NASSELLA PULCHARA AND AVENA BARBATA. ARCTOSTAPHYLOS WELLSII AND CALOCHORTUS OBISPOENSIS ALSO REPORTED FROM THIS SITE. 160-360 FT ELEVATION.
Threat: PROPOSED LOS ROBLES DEL MAR RESIDENTIAL DEVELOPMENT WOULD IMPACT PLANTS FOUND HERE.
General: APPROX. 3000 PLANTS OBSERVED DURING MAY 11, 14, AND JUNE 11 CENSUS.
Owner/Manager: CITY OF PISMO BEACH

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(Arroyo Grande NE and Pismo Beach 7.5 minute quadrangles)

Chorizanthe breweri
Brewer's spineflower
Element Code: PDPGN04050

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 3-1-3

—Habitat Associations—
General: CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB, CLOSED CONE CONIFEROUS FOREST.
Micro: ROCKY OR GRAVELLY SERPENTINE SITES; USUALLY IN BARREN AREAS. 45-800M.

Occurrence No. 8 Map Index:13111
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: CALLOWAY, R. & P. RYAN 1987 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: ABOUT 1.5 MILES EAST OF BIDDLE RANCH ROAD (ORCUTT ROAD), NORTH OF EAST CORRAL DE PIEDRA CREEK AND SE OF SAN LUIS OBISPO.

—Dates Last Seen—
Element: 1987-05-21
Site: 1987-05-21

Lat/Long: 35°13'47" / 120°34'26"
UTM: Zone-10 N3901048 E720790
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 20.9 ac

Township: 31S
Range: 13E
Section: 15 Qtr XX
Meridian: M
Elevation: 750 ft

—Comments—
Distribution: ON WEST FACING SLOPE DUE EAST OF RAYMOND BALL HOUSE. MAPPED ALONG RIDGE BETWEEN EAST CORRAL DE PIEDRA CREEK AND SOUTH BRANCH OF WEST CORRAL DE PIEDRA CREEK.
Ecological: GROWING WITH DUDLEYA ABRAMSII SSP. MURINA AND ANNUAL GRASSES ON SERPENTINE ROCK AND SOIL.
Threat: POSSIBLE GRAZING THREAT.
General: 200+ PLANTS OBSERVED IN 1987.
Owner/Manager: PVT

Occurrence No. 14 Map Index:12729
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: KEIL, D. 1987 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Froom Creek
Location: FROOM RANCH, ABOUT 0.3 MILE WSW OF LOS OSOS VALLEY ROAD AT HIGHWAY 101, JUST SW OF SAN LUIS OBISPO CITY LIMITS.

—Dates Last Seen—
Element: 1987-09-26
Site: 1987-09-26

Lat/Long: 35°14'40" / 120°41'10"
UTM: Zone-10 N3902409 E710523
Precision: SPECIFIC
Symbol Type: POLYGON
Area: 2.4 ac

Township: 31S
Range: 12E
Section: 09 Qtr NE
Meridian: M
Elevation: 150 ft

—Comments—
Distribution: TWO COLONIES MAPPED JUST WEST OF FROOM CREEK ALONG LOWER SLOPES OF MINE HILL.
Ecological: IN GRASSLAND AND COASTAL SCRUB ON DRY SERPENTINE SLOPES, SOMETIMES PURE SERPENTINE.
Threat: AREA WAS PLANNED FOR DEVELOPMENT IN 1987
General: FEWER THAN 1000 PLANTS OBSERVED IN 1987. KEIL SAYS THERE ARE A FEW LOCATIONS OF THIS PLANT IN VICINITY OF THIS OCCURRENCE.
Owner/Manager: PVT

Occurrence No. 15 Map Index:39800
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: IMPER #82 OBI (HERB)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PRICE CANYON ROAD ABOUT 1 MILE SOUTHWEST OF HIGHWAY 227, SOUTH OF SAN LUIS OBISPO.

—Dates Last Seen—
Element: 1977-03-21
Site: 1977-03-21

Lat/Long: 35°11'18" / 120°36'59"
UTM: Zone-10 N3896353 E717028
Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile

Township: 31S
Range: 13E
Section: 31 Qtr XX
Meridian: M
Elevation: 200 ft

—Comments—
Distribution:
Ecological:
Threat:
General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS 1977 COLLECTION BY IMPER CITED BY REVEAL AND HARDHAM (PHYTOLOGIA, 1989).
Owner/Manager: UNKNOWN

Castilleja densiflora ssp. obispoensis
Obispo Indian paintbrush
Element Code: PDSCR0D453

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G5T2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-2-3

Habitat Associations
General: VALLEY AND FOOTHILL GRASSLAND
Micro: [illegible]

Occurrence No. 1 Map Index:47407
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: CONDIT, I. SN UC #454805 (HERB)
Quad Summary: PISMO BEACH (3512026/221B)*, PORT SAN LUIS (3512027/222A), MORRO BAY SOUTH (3512037/247D)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: SEE CANYON.
Dates Last Seen — Element: 1936-05-22 Site: 1936-05-22
Lat/Long: 35°13'29" / 120°43'54" UTM: Zone-10 N3900140 E706439 Precision: NON-SPECIFIC Symbol Type: POLYGON Area: 397.3 ac
Township: 31S Range: 12E Section: 18 Qtr XX Meridian: M Elevation: 175 ft
Comments
Distribution: LOCATION INFORMATION IS VAGUE. MAPPED ALONG LENGTH OF SEE CANYON; WHERE ARE THE PLANTS EXACTLY?
Ecological: SLOPE 12 [DEGREES].
Threat:
General: NEEDS FIELDWORK. COLLECTION FROM "0.6 MILES NORTH-NORTHEAST OF SYCAMORE SPRINGS" (N. CARLSON #208) ALSO ATTRIBUTED TO THIS LOCATION
Owner/Manager: UNKNOWN

Occurrence No. 2 Map Index:47408
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: MUNZ, P. #10744 POM (HERB)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PISMO BEACH.
Dates Last Seen — Element: XXXX-XX-XX Site: XXXX-XX-XX
Lat/Long: 35°08'32" / 120°38'22" UTM: Zone-10 N3891185 E715039 Precision: NON-SPECIFIC Symbol Type: POINT Radius: 3/5 mile
Township: 32S Range: 12E Section: 13 Qtr XX Meridian: M Elevation:
Comments
Distribution:
Ecological:
Threat:
General: NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Scrophularia atrata
black-flowered figwort
Element Code: PDSCR1S010

List Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-2-3

Habitat Associations
General: CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL DUNES, COASTAL SCRUB, RIPARIAN SCRUB.
Micro: SAND, DIATOMACEOUS SHALES, AND SOILS DERIVED FROM OTHER PARENT MATERIAL; AROUND SWALES AND IN SAND DUNES. 10-250M.

Occurrence No. 29 Map Index:29110
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: MCLEOD, M. 1984 (PERS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: INDIAN KNOB, SOUTH OF SAN LUIS OBISPO AND NORTH OF PISMO BEACH.
Dates Last Seen — Element: 198X-XX-XX Site: 198X-XX-XX
Lat/Long: 35°12'04" / 120°39'34" UTM: Zone-10 N3897660 E713076 Precision: SPECIFIC Symbol Type: POLYGON Area: 6.3 ac
Township: 31S Range: 12E Section: XX Qtr XX Meridian: M Elevation: 640 ft
Comments
Distribution: MAPPED ALONG ROAD ABOUT 0.25 MILE NORTHWEST OF 887' BENCHMARK.
Ecological: THE RARE ERIODICTYON ALTISSIMUM, CALOCHORTUS OBISPOENSIS, AND LUPINUS LUDOVICIANUS OCCUR NEARBY.
Threat:
General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS MAP DETAIL PROVIDED BY MCLEOD. COLLECTION FROM "HILLS BORDERING SAN LUIS V. ON THE SOUTH, W OF EDNA" (HOOVER #9872 OBI); ALSO INCLUDED IN THIS SITE.
Owner/Manager: UNKNOWN

Occurrence No. 30 Map Index:29111
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOOVER, R. #8205 CAS (HERB)
Quad Summary: PISMO BEACH (3512026/221B)*, ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: PRICE CANYON, NORTH OF PISMO BEACH.
Dates Last Seen — Element: 1950-05-12 Site: 1959-05-12
Lat/Long: 35°09'32" / 120°37'55" UTM: Zone-10 N3893040 E715693 Precision: NON-SPECIFIC Symbol Type: POINT Radius: 1 mile
Township: 32S Range: 12E Section: XX Qtr XX Meridian: M Elevation: 200 ft
Comments
Distribution:
Ecological: IN SANDY SOIL.
Threat:
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1959 COLLECTION BY HOOVER AND NOTE FROM MCLEOD IN 1980 RE: CNPS MAPPING OF SITE.
Owner/Manager: UNKNOWN

Occurrence No. 31 Map Index:29109
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: SULLIVAN, M. 1990 (PERS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: MALLAGH LANDING, EAST OF AVILA BEACH ALONG CAVE LANDING ROAD.
Dates Last Seen — Element: 1990-03-31 Site: 1990-03-31
Lat/Long: 35°10'33" / 120°42'32" UTM: Zone-10 N3894759 E708632 Precision: SPECIFIC Symbol Type: POLYGON Area: 27.9 ac
Township: 32S Range: 12E Section: XX Qtr XX Meridian: M Elevation: 150 ft
Comments
Distribution:
Ecological: COASTAL SCRUB.
Threat: DEVELOPMENT PROPOSED FOR SITE.
General: 14+ PLANTS OBSERVED IN 1991.
Owner/Manager: PVT

Calochortus obispoensis
San Luis mariposa lily
Element Code: PMLIL0D110

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2	CNPS List: 1B
State: None	State: S2.1	R-E-D Code: 2-2-3

Habitat Associations
General: CHAPARRAL, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND.
Micro: often in serpentine grassland. 75-665m.

Occurrence No. 6 Map Index:13111
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOOVER, R. #6190 CAS (HERB)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary: Upper Carpenter Canyon
Location: SUMMIT AT HEAD OF CARPENTER CANYON, NORTH OF ARROYO GRANDE.
Dates Last Seen — Element: 1946-06-23 Site: 1988-07-05
Lat/Long: 35°09'50" / 120°34'22" UTM: Zone-10 N3893708 E721070 Precision: NON-SPECIFIC Symbol Type: POINT Radius: 1/5 mile
Township: 32S Range: 13E Section: XX Qtr XX Meridian: M Elevation: 600 ft

Comments
Distribution:
Ecological: FOUND ON SANDSTONE OUTCROP AT TOP OF BURNED-OVER HILL.
Threat:
General: SCARCE IN 1946. M. MCLEOD HAS BEEN TO SITE OFTEN TO SURVEY CLARKIA SPECIOSA SSP. IMMACULATA AND HAS NEVER SEEN C. OBISPOENSIS AT THIS SITE. HE THINKS IT WOULD BE MORE VISIBLE AFTER A FIRE, AS IN 1946.
Owner/Manager: PVT

Occurrence No. 9 Map Index:13763
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOLLAND, V. & L. OYLER 1995 (LIT)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: MOUTH OF CANYON NO.1 NEAR GROVER CITY, NORTH OF ARROYO GRANDE.
Dates Last Seen — Element: 1995-XX-XX Site: 1995-XX-XX
Lat/Long: 35°08'41" / 120°36'10" UTM: Zone-10 N3891530 E718399 Precision: NON-SPECIFIC Symbol Type: POLYGON Area: 44.5 ac
Township: 32S Range: 13E Section: 17 Qtr XX Meridian: M Elevation: 260 ft

Comments
Distribution: NORTH END OF PROPOSED LOS ROBLES DEL MAR DEVELOPMENT; WEST OF OAK PARK BLVD AT JUNCTION WITH NOYES ROAD.
Ecological: GROWING AMONG CHAMISE CHAPARRAL (HOLLAND AND OYLER, 1995) WITH ARTEMISIA CALIFORNICA, RHAMNUS CALIFORNICA, AND BACCHARIS PILULARIS (SCHREIBER, 1938). THE RARE CLARKIA SPECIOSA SSP. IMMACULATA AND ARCTOSTAPHYLOS HELLSII ARE FOUND NEARBY.
Threat: DEVELOPMENT MAY THREATEN PLANTS AT THIS SITE.
General: 5 PLANTS OBSERVED AT THIS SITE IN 1995. COLLECTION BY M.A. KING (SN UC) IN 1895 FROM ARROYO GRANDE IS ALSO ATTRIBUTED TO THIS SITE.
Owner/Manager: UNKNOWN

Occurrence No. 17 Map Index:12776
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: MCLEOD, M. 1985 (PERS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Indian Knob
Location: WESTERN RIDGE OF INDIAN KNOB, ABOUT 4 MILES NORTH OF PISMO BEACH.
Dates Last Seen — Element: 1980-02-02 Site: 1980-02-02
Lat/Long: 35°11'57" / 120°39'55" UTM: Zone-10 N3897458 E712549 Precision: SPECIFIC Symbol Type: POLYGON Area: 13.9 ac
Township: 31S Range: 12E Section: 26 Qtr XX Meridian: M Elevation: 800 ft

Comments
Distribution: MAPPED ALONG RIDGETOPWEST OF INDIAN KNOB, ALONG ROAD JUST NORTH OF 859' BENCHMARK.
Ecological: FOUND ON LIGHT-COLORED PISMO SANDSTONE. ASSOCIATED WITH ERIODICTYON ALTISSIMUM, ARCTOSTAPHYLOS PILULOSA SSP PISMOENSIS, AND AGROSTIS HOOVERI.
Threat: SURFACE MINING OF TAR SANDS CONSIDERED IN 1979 AND POSSIBLY AGAIN IN FUTURE. OIL DEVELOPMENT.
General: OBSERVED IN 1980 SURVEY OF CENTRAL MARITIME CHAPARRAL (J. VANDERWIER). MAP PROVIDED BY M. MCLEOD (1985); UNKNOWN WHEN SEEN MY MCLEOD.
Owner/Manager: PVT

California Department of Fish and Game
Natural Diversity Data Base

Full Condensed Report - Multiple Records per Page
Plains Resources and Production EIR
(Arroyo Grande NE and Pismo Beach 7.5 minute quadrangles)

Calochortus obispoensis (cont.)
San Luis mariposa lily
Element Code: PMLIL0D110

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2	CNPS List: 1B
State: None	State: S2.1	R-E-D Code: 2-2-3

Occurrence No. 18 Map Index:12716
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Increasing
Main Source: HADEN, J. ET AL 1988 (OBS)
Quad Summary: PISMO BEACH (3512026/221B)
County Summary: SAN LUIS OBISPO
SNA Summary: Froom Creek
Location: FROOM RANCH, ABOUT 0.5 MILE WSW OF LOS OSOS VALLEY ROAD AT HIGHWAY 101, JUST SW OF SAN LUIS OBISPO CITY LIMITS.
Dates Last Seen — Element: 1988-05-24 Site: 1988-05-24
Lat/Long: 35°14'32" / 120°41'33" UTM: Zone-10 N3902156 E709940 Precision: SPECIFIC Symbol Type: POLYGON Area: 9.8 ac
Township: 31S Range: 12E Section: 09 Qtr XX Meridian: M Elevation: 250 ft

Comments
Distribution: TWO COLONIES MAPPED ALONG THE SOUTHERN BRANCH OF FROOM CREEK ALONG LOWER SLOPES OF MINE HILL.
Ecological: SERPENTINE GRASSLAND HILLSIDE BELOW ECOTONE WITH COASTAL SCRUB/CHAPARRAL, WITH CHORIZANTHE BREWERI, CALOCHORTUS CLAVATUS CLAVATUS, DUDLEYA ABRAMSII MURINA, AND PERIDERIDIA PRINGLEI. SEASONALLY MOIST CLAYEY SOILS W/ HIGH SERPENTINE CONTENT.
Threat: OFFICE COMPLEX DEVELOPMENT PLANNED FOR ADJACENT SITE. GRAZING ALSO THREATENS.
General: 200-400 PLANTS SEEN OVER SEVERAL ACRES IN 1988.
Owner/Manager: PVT

Occurrence No. 19 Map Index:39709
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: CALLOWAY, R. & P. RYAN 1987 (OBS)
Quad Summary: ARROYO GRANDE NE (3512025/221A)
County Summary: SAN LUIS OBISPO
SNA Summary:
Location: ABOUT 1.5 MILES EAST OF BIDDLE RANCH ROAD (ORCUTT ROAD), NORTH OF EAST CORRAL DE PIEDRA CREEK AND SE OF SAN LUIS OBISPO.
Dates Last Seen — Element: 1987-05-21 Site: 1987-05-21
Lat/Long: 35°13'41" / 120°34'25" UTM: Zone-10 N3900840 E720818 Precision: SPECIFIC Symbol Type: POLYGON Area: 26.0 ac
Township: 31S Range: 13E Section: 15 Qtr XX Meridian: M Elevation: 750 ft

Comments
Distribution: ON WEST FACING SLOPE DUE EAST OF RAYMOND BALL HOUSE. MAPPED ALONG RIDGE BETWEEN EAST CORRAL DE PIEDRA CREEK AND SOUTH BRANCH OF WEST CORRAL DE PIEDRA CREEK.
Ecological: GROWING WITH DUDLEYA ABRAMSII MURINA, ANNUAL GRASSES, AND YUCCA WHIPPLEI ON SERPENTINE ROCK-SOIL.
Threat: POSSIBLE GRAZING THREAT.
General: ABOUT 50 PLANTS OBSERVED IN 1987.
Owner/Manager: PVT

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC

PAD - Rock 4

Tree No. 1

Canopy Measurements (ft):
North: 14
East: ~~12~~ 12
South: 20
West: 13

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 2
Diameter @ b.h. ("): 11
Height (ft): 18

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot ~~✓~~
Notes: ROTTING ON BRANCH

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

Tree No. 2

Canopy Measurements (ft):
North: 29
East: 33
South: 29
West: 25

Pests:
Borers
Termites
Ants ✓
Woodpeckers ✓
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: MULTIPLE
Diameter @ b.h. ("): 31 19 14 14
Height (ft): 60

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD JMC

PAD - Rock 4

Tree No. 3

Canopy Measurements (ft):
North: 18
East: 21
South: 22
West: 10

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: MULTIPLE
Diameter @ b.h. ("): 21 9 14 18
Height (ft): ~~35~~ 35

Vigor:
Chlorosis 4
Wilt
Dieback ✓ - MINOR
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

Tree No. 4

Canopy Measurements (ft):
North: 16
East: 15
South: 10
West: 12

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks:
Diameter @ b.h. ("): 11
Height (ft): 23

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes: LOWER BRANCHES EXFOLIATED

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BMD JMC

PAD - Rock 4

Tree No. 5

Canopy Measurements (ft):	
North:	25
East:	20
South:	25
West:	20

Pests:	
Borers	
Termites	
Ants	
Woodpeckers	
Galls	
Pit-scale	
Oak moth	
Bees	
Parasites	
Mistletoe	
Poison oak	✓

Notes:

Species:	*Quercus agrifolia*
Appearance (A-F):	B
Number of trunks:	MULTIPLE
Diameter @ b.h. ("):	18, 14, 8
Height (ft):	30

Vigor:	
Chlorosis	
Wilt	
Dieback	✓
Deadwood	
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	
Lesions	
Exudations	✓
Heart rot	

Notes:

Structure:	
Broken branches	
Poor pruning	
Mechanical injury	
Wire/nails	✓ - cable
Torn branch scars	
Sharp branch angle	✓
Low branching	
Water trap	
Cavity-trunk	
Cavity-branch	✓
Lopsided canopy	✓
Excess horiz growth	
Decay/rot	✓
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	
Poor drainage	
Undermining erosion	

Tree No. 6

Canopy Measurements (ft):	
North:	15
East:	25
South:	25
West:	18

Pests:	
Borers	
Termites	
Ants	✓
Woodpeckers	
Galls	✓
Pit-scale	
Oak moth	
Bees	
Parasites	
Mistletoe	
Poison oak	

Notes:

Species:	*Quercus agrifolia*
Appearance (A-F):	C
Number trunks:	MULTIPLE
Diameter @ b.h. ("):	18, 15, 16
Height (ft):	30

Vigor:	
Chlorosis	
Wilt	✓
Dieback	
Deadwood	
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	
Lesions	
Exudations	
Heart rot	✓

Notes:

Structure:	
Broken branches	
Poor pruning	
Mechanical injury	
Wire/nails	
Torn branch scars	
Sharp branch angle	
Low branching	
Water trap	
Cavity-trunk	✓
Cavity-branch	✓
Lopsided canopy	✓
Excess horiz growth	
Decay/rot	✓
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	
Poor drainage	
Undermining erosion	

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BMD JMC

PAD - Rock 4

Tree No. 7

Canopy Measurements (ft):	
North:	13
East:	20
South:	28
West:	20

Pests:	
Borers	
Termites	
Ants	✓
Woodpeckers	
Galls	✓
Pit-scale	
Oak moth	✓
Bees	
Parasites	
Mistletoe	
Poison oak	✓

Notes: MAJESTIC, HEALTHY

Species:	*Quercus agrifolia*
Appearance (A-F):	B
Number of trunks:	3
Diameter @ b.h. ("):	23, 23, 16
Height (ft):	40

Vigor:	
Chlorosis	
Wilt	
Dieback	
Deadwood	✓
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	
Lesions	
Exudations	✓
Heart rot	

Notes:

Structure:	
Broken branches	✓
Poor pruning	
Mechanical injury	
Wire/nails	
Torn branch scars	✓
Sharp branch angle	
Low branching	
Water trap	
Cavity-trunk	
Cavity-branch	✓
Lopsided canopy	
Excess horiz growth	
Decay/rot	✓
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	✓
Poor drainage	
Undermining erosion	

Tree No. 8

Canopy Measurements (ft):	
North:	10
East:	10
South:	4
West:	10

Pests:	
Borers	
Termites	
Ants	✓
Woodpeckers	
Galls	✓
Pit-scale	
Oak moth	✓
Bees	
Parasites	
Mistletoe	
Poison oak	✓

Notes:

Species:	*Quercus agrifolia*
Appearance (A-F):	
Number trunks:	MULTIPLE
Diameter @ b.h. ("):	13, 8, 11
Height (ft):	20

Vigor:	
Chlorosis	
Wilt	
Dieback	
Deadwood	✓
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	✓
Lesions	
Exudations	
Heart rot	

Notes:

Structure:	
Broken branches	✓
Poor pruning	
Mechanical injury	
Wire/nails	
Torn branch scars	✓
Sharp branch angle	
Low branching	✓
Water trap	
Cavity-trunk	
Cavity-branch	
Lopsided canopy	
Excess horiz growth	
Decay/rot	✓
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	✓
Poor drainage	
Undermining erosion	

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/13
Inspector: BGD, JMC

PAD - Rock 86

Tree No. #9

Canopy Measurements (ft):
North: 10'
East: 8' 15'
South: 8'
West: 10'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: ONE
Diameter @ b.h. ("): 13"
Height (ft): 12'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes: SMALL TREE; POOR SPECIMEN

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

Tree No. #10

Canopy Measurements (ft):
North: 20'
East: 20'
South: 23'
West: 15'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: ONE
Diameter @ b.h. ("): 27"
Height (ft): +50'

Vigor: * LARGE, MODERATE
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes: IMPACTED BY SUNNY ACTIVITY

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/13
Inspector: BGD, JMC

PAD = ~~Rock 110~~ Rock 86

Tree No. #11

Canopy Measurements (ft):
North: 25'
East: 13'
South: 15'
West: 16'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: ~~1~~ 16" 2
Diameter @ b.h. ("): 25" 16"
Height (ft): +40'
— ON WAY OUT !

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening ?
Roots exposed
Hazardous condition
Notes:
* NEST IN TRUNK (RED)

Environment:
Change in grade
Poor drainage
Undermining erosion

PAD = Rock 110

Tree No. #12

Canopy Measurements (ft):
North: 18'
East: 12'
South: 15'
West: 20'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: 4
Diameter @ b.h. ("): 16", 18", 6", 11"
Height (ft): 25'
— GOOD HEALTH

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes: Ø

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC

PAD = Rock IIN

Tree No. #13

Canopy Measurements (ft):
North: 18'
East: 10'
South: 25'
West: 15'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 14" + 11"
Height (ft): +30'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes: Ø

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (DOWN SLOPE)
Poor drainage
Undermining erosion ✓ (MINOR)

PAD = Rock IIN

Tree No. #14

Canopy Measurements (ft):
North: 15'
East: 8'
South: 10'
West: 8'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: THREE
Diameter @ b.h. ("): 6" + 11" + 11"
Height (ft): 20'

Vigor: * (FINE CONDITION)
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening ✓
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC

PAD = Rock IIN

Tree No. #15

Canopy Measurements (ft):
North: 9'
East: 4'
South: 6'
West: 6'

Pests:
Borers
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): F
Number of trunks: ONE
Diameter @ b.h. ("): 11"
Height (ft): 12'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓
* MOST IS DEAD.

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening ✓ ?
Roots exposed
Hazardous condition
Notes: VERY POOR STRUCTURE

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD = Rock IIN

Tree No. #16

Canopy Measurements (ft):
North: 24'
East: 17'
South: 19'
West: 15'

Pests:
Borers
Termites
Ants ✓
Woodpeckers ✓
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: TWO
Diameter @ b.h. ("): 12" + 7"
Height (ft): +40'
* HEALTHY TREE

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch ✓
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓ (MINIMAL)
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (DOWN SLOPE)
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/07
Inspector: GAD, JMC

PAD - SIGNAL 10M (DOWNSLOPE)

Tree No. #17

Canopy Measurements (ft):
North: 25'
East: 19'
South: 28'
West: 12'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: TWO
Diameter @ b.h. ("): 19", 17"
Height (ft): ±45'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes: Ø

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓ (MINIMAL)
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE)
Poor drainage
Undermining erosion

PAD - SIGNAL 10M (DOWNSLOPE)

Tree No. #18

Canopy Measurements (ft):
North: 10'
East: 4'
South: 14'
West: 14'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: ONE
Diameter @ b.h. ("): 13"
Height (ft): ±35'
* POOR CONDITION

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE)
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date:
Inspector:

PAD: SIGNAL 10M (DOWNSLOPE)

Tree No. #19

Canopy Measurements (ft):
North: 11'
East: 8'
South: 9'
West: 11'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): E
Number of trunks: TWO
Diameter @ b.h. ("): 9", 6"
Height (ft): 25'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE)
Poor drainage
Undermining erosion

Tree No. #20

Canopy Measurements (ft):
North: 17'
East: 17'
South: 15'
West: 14'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 17"
Height (ft): ±40'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓ (MINIMAL)

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓ (MINIM)
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE)
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC

PAD – SIGNAL 10M

Tree No. #21

Canopy Measurements (ft):
North: 12'
East: 10'
South: 10'
West: 9'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: ONE
Diameter @ b.h. ("): 9"
Height (ft): +20'

Vigor: Good
Chlorosis
Wilt
Dieback Ø
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations Ø
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (SLOPE)
Poor drainage
Undermining erosion

Tree No.
Canopy Measurements (ft):
North:
East:
South:
West:

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: ONE
Diameter @ b.h. ("): 9"
Height (ft): +20'

Vigor: Good
Chlorosis
Wilt Ø
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC

SIGNAL 10-M

Tree No. 22

Canopy Measurements (ft):
North: 18
East: 15
South: 11
West: 3

Pests:
Borers
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 3
Diameter @ b.h. ("): 6, 7, 5
Height (ft): 19

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

Tree No. 23

Canopy Measurements (ft):
North: 6
East: 17
South: ~~16~~ 20
West: 15

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: 5
Diameter @ b.h. ("): 6, 10, 10, 9, 9
Height (ft): 23

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC SIGNAL 11L

Tree No. # 24

Canopy Measurements (ft):
North: 9
East: 7
South: 8
West: 10

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 1
Diameter @ b.h. ("): 7
Height (ft): 24

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ - ABOVE
Poor drainage
Undermining erosion

Tree No. #25

Canopy Measurements (ft):
North: 20
East: 17
South: 16
West: 15

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): A or C
Number trunks: 2
Diameter @ b.h. ("): 12, 11
Height (ft):

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓ - ABOVE
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC SIGNAL 11H

Tree No. 26

Canopy Measurements (ft):
North: 9
East:
South:
West:

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: 5
Diameter @ b.h. ("): 10, 11, 11, 9, 11
Height (ft): 30

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. 27

Canopy Measurements (ft):
North: 15
East: 14
South: 16
West: 11

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: 1
Diameter @ b.h. ("): 25
Height (ft): 30

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ - ABOVE (FILL)
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BAD/JMC

SIGNAL II L

Tree No. 28

Canopy Measurements (ft):
North: 11
East: 12
South: 15
West: 6

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:
BARK BEETLE?

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 3
Diameter @ b.h. ("): 6, 9, 8
Height (ft): 20

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #29

Canopy Measurements (ft):
North: 8
East: 3
South: 13
West: 10

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B, D
Number trunks: 2
Diameter @ b.h. ("): 5, 6
Height (ft): 12

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BAD/JMC

SIGNAL II L

Tree No. 30

Canopy Measurements (ft):
North: 15
East: 18
South: 15
West: 12

Pests:
Borers ✓
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:
WOODRAT NESTING

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: 1
Diameter @ b.h. ("): 13
Height (ft): 28

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ - ABOVE (FILL)
Poor drainage
Undermining erosion

Tree No. 31

Canopy Measurements (ft):
North: 10
East: 0
South: 13
West: 0

Pests:
Borers ✓
Termites
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): E
Number trunks: 1
Diameter @ b.h. ("): 9
Height (ft): 14

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD, JMC

PAD – Slope 105

Tree No. #32

Canopy Measurements (ft):
North: 14'
East: 7'
South: 12'
West: 8'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species:
Appearance (A-F): C
Number of trunks: FOUR
Diameter @ b.h. ("): 5", 6", 5", 5"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes: * Lots of leaves

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (upslope)
Poor drainage
Undermining erosion

PAD – Slope 105

Tree No. #33

Canopy Measurements (ft):
North: 20'
East: 10'
South: 12'
West: 9'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species:
Appearance (A-F): B
Number trunks: FOUR
Diameter @ b.h. ("): 13", 13", 12", 10"
Height (ft): 24'
← Overall thinning appearance.

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓ (minor)

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (minor)
Poor drainage
Undermining erosion

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Date: 8/15/03
Inspector: BGD, JMC

PAD - Slope 105

Tree No. #34

Canopy Measurements (ft):
North: 19'
East: 16'
South: 14'
West: 6'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species:
Appearance (A-F): C
Number of trunks: THREE
Diameter @ b.h. ("): 10", 7", 9"
Height (ft): 21'
" Slim trunk "

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

Tree No. #35

Canopy Measurements (ft):
North:
East:
South:
West:

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe ✓
Poison oak
Notes:

Species:
Appearance (A-F): C
Number trunks: TWO
Diameter @ b.h. ("): 9", 19"
Height (ft): 22'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓ (slight)
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

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Date: 8/15/03
Inspector: BGD, JMC

PAD - Stanza 101

Tree No. #38

Canopy Measurements (ft):
North: 17'
East: 22'
South: 15'
West: 17'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: THREE
Diameter @ b.h. ("): 13", 13", 12"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE)
Poor drainage
Undermining erosion

Tree No. #39

Canopy Measurements (ft):
North: 12'
East: 24'
South: 22'
West: 24'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: TWO
Diameter @ b.h. ("): 20", 22"
Height (ft): 30'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap ✓
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE)
Poor drainage
Undermining erosion

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Date: BGD/JMC
Inspector: 8/15/03

PAD - Stanza 105

Tree No. #36

Canopy Measurements (ft):
North: 6'
East: 8'
South: 8'
West: 6'

Pests:
Borers
Termites
Ants
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe ✓
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 5", 7"
Height (ft): 13'

* VERY YOUNG TREE

Vigor:
Chlorosis
Wilt ✓
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot ∅
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓ (MINOR)
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:
* SMALL NEST MOSS!

Environment:
Change in grade ✓ (SLIGHT GRADE)
Poor drainage
Undermining erosion

PAD - Stanza 101

Tree No. #37

Canopy Measurements (ft):
North: 8'
East: 7'
South: 10'
West: 9'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe ✓
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FIVE
Diameter @ b.h. ("): 8", 7", 11", 6", 11"
Height (ft): 18'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

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Date: 8/15/03
Inspector: BGD, JMC

PAD - Signal 101

Tree No. #40

Canopy Measurements (ft):
North: 24'
East: 24'
South: 19'
West: 16'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: FIVE
Diameter @ b.h. ("): 13", 12", 14", 13", 11"
Height (ft): 30'

Vigor: — UNDER MATURE TREE
Chlorosis
Wilt
Dieback ✓ (Minor)
Deadwood
Thinning crown ✓ (Minor)
— Vigor Good

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (Minor)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (ABOVE)
Poor drainage
Undermining erosion

PAD - Signal 101

Tree No. #41

Canopy Measurements (ft):
North: 11'
East: 13'
South: 17'
West: 13'

Pests:
Borers
Termites
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FIVE
Diameter @ b.h. ("): 9", 7", 8", 7"
Height (ft): +40'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓ (MINOR)
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (ABOVE)
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
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Date: 8/15/03
Inspector: BGD, JMC

PAD - Signal 101

Tree No. #42

Canopy Measurements (ft):
North: 11'
East: 18'
South: 17'
West: 16'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: ONE
Diameter @ b.h. ("): 17"
Height (ft): +30'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches Ø
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PAD - Signal 66C

Tree No. #43

Canopy Measurements (ft):
North: 11'
East: 15'
South: 17'
West: 12'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: 1
Diameter @ b.h. ("): 13
Height (ft): 30

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓ -1
Heart rot
Notes:

Structure:
Broken branches - MINOR ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓ - SLIGHT
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ - ABOVE
Poor drainage
Undermining erosion

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Date: 8/15/03
Inspector: BGD/JMC

SIGNAL 66C

Tree No. #44

Canopy Measurements (ft):
North: 15
East: 12
South: 14
West: 15

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 1
Diameter @ b.h. ("): 14
Height (ft): 20

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #45

SIGNAL 66C

Canopy Measurements (ft):
North: 21
East: 20
South: 18
West: 19

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B C
Number trunks: 3 4
Diameter @ b.h. ("): 8, 9, 12, 8
Height (ft):

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 8/15/03
Inspector: BGD/JMC

SIGNAL 66C

Tree No. #46

Canopy Measurements (ft):
North: 16
East: 10
South: 10
West: 10

Pests:
Borers
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F):
Number of trunks:
Diameter @ b.h. ("): 8, 8, 4, 4
Height (ft): 25

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:
SUFFERING FROM COMP

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓ - MANY
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No.

Canopy Measurements (ft):
North:
East:
South:
West:

Pests:
Borers
Termites
Ants
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F):
Number trunks:
Diameter @ b.h. ("):
Height (ft):

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 8/15/03
Inspector: BGD/JMC

SIGNAL LOG C

Tree No. #47

Canopy Measurements (ft):
North: 9
East: 16
South: 12
West: 15

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:
WOODRAT NESTS

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 5
Diameter @ b.h. ("): 6, 10, 7, 6, 7
Height (ft): 20

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes: COMPETITION

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #48

Canopy Measurements (ft):
North: 18
East: 16
South: 15
West: 16

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: 3
Diameter @ b.h. ("): 10, 10, 11
Height (ft): 22

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/15/03
Inspector: BGD/JMC

SIGNAL LOG C

Tree No. 49

Canopy Measurements (ft):
North: 12
East: 17
South: 16
West: 15

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 1
Diameter @ b.h. ("): 10
Height (ft): 23

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓ - MINOR
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #50

PAR - SIGNAL 102 (PG 406 S)

Canopy Measurements (ft):
North: 3
East: 20'
South: 20'
West: 10'

Pests:
Borers ✓
Termites ✓ (POST-OAK)
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: FOUR
Diameter @ b.h. ("): 11", 11", 11", 10"
Height (ft): ± 20'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 5/15/03
Inspector: GGD, TMC

PAD - Sigwn 102 (406.5)

Tree No. #S1

Canopy Measurements (ft):
North: 15'
East: 5'
South: 13'
West: 18'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species:
Appearance (A-F): E
Number of trunks: THREE
Diameter @ b.h. ("): 7", 5", 5"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (DOWNSLOPE)
Poor drainage
Undermining erosion

PAD - Sigwn 102 (408.5)

Tree No. #S2

Canopy Measurements (ft):
North: 5'
East: 12'
South: 12'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species:
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 8+
Height (ft): 18'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (SEVERAL VISIBLE)
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

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Date: ~~GGD~~ 8/15/03
Inspector: GGD, TMC

Sigwn 102 (408.5)

Tree No. #S3

Canopy Measurements (ft):
North: 17'
East: 18'
South: 18'
West: 17'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species:
Appearance (A-F): C
Number of trunks: ONE
Diameter @ b.h. ("): 11"
Height (ft): 24'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (VISIBLE)
Poor drainage
Undermining erosion

Sigwn 102 (408.5)

Tree No. #S4

Canopy Measurements (ft):
North: 13'
East: 18'
South: 20'
West: 14'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species:
Appearance (A-F): D
Number trunks: THREE
Diameter @ b.h. ("): 6", 11", 10"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (VISIBLE)
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

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Date: 9/15/03
Inspector: RGG, JMC

PAD - Sheet 102 (PG 408.5)

Tree No. #55

Canopy Measurements (ft):
North: 20'
East: 27'
South: 14'
West: 13'

Pests:
Borers
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites ✓ (LIGHW)
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: ONE
Diameter @ b.h. ("): 14"
Height (ft): 24'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓ (SLIGHT)

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes: — MANY LICHEN

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE) GRADING
Poor drainage
Undermining erosion

PAD - SHEET 102 (PG 408.5)

Tree No. #56

Canopy Measurements (ft):
North: 16'
East: 5'
South: 12'
West: 11'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites ✓ (LICHEN)
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: TWO
Diameter @ b.h. ("): 9" 8"
Height (ft): 21'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes: — LICHEN MANY

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE) GRADING
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

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Date: 9/15/03
Inspector: BGD, JMC

PAD - Sheet 102 (PG 408.5)

Tree No. #57

Canopy Measurements (ft):
North: 14'
East: 15'
South: 17'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites ✓ (LICHEN)
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: THREE
Diameter @ b.h. ("): 11" 9" 11"
Height (ft): 28'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE) GRADING
Poor drainage
Undermining erosion

PAD - SHEET 102 (PG 408.5)

Tree No. #58

Canopy Measurements (ft):
North: 20'
East: 20'
South: 15'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites ✓ (LICHEN)
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: FOUR
Diameter @ b.h. ("): 9", 10", 11", 9"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE) GRADING
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

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Date: 9/15/03
Inspector: BGD, JMC

PAD - Blown 102 (408.5)

Tree No. #59

Canopy Measurements (ft):
North: 7'
East: 9'
South: 15'
West: 11'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites ✓ (Lichen)
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: THREE
Diameter @ b.h. ("): 4" 7" 8"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE GRADING)
Poor drainage
Undermining erosion

PAD - S. A. ABOVE

Tree No. #60

Canopy Measurements (ft):
North: 8'
East: 7'
South: 7'
West: 6'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 7"
Height (ft): 15'
– Small tree

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓ (MINOR)
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (DOWNSLOPE CUT)
Poor drainage
Undermining erosion

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Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: GBD, JMC

PAD - Rock BSA

Tree No. #61

Canopy Measurements (ft):
North: 10'
East: 26'
South: 22'
West: 8'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: FIVE
Diameter @ b.h. ("): 19" 3" 7" 14" 6"
Height (ft): 32'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion ✓
* NEXT to DRAINAGE SWALE

Tree No. #62

Canopy Measurements (ft):
North: 0'
East: 20'
South: 32'
West: 0'

Pests:
Borers
Termites
Ants
Woodpeckers ✓
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 19"
Height (ft): 28'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
* Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:
* NEXT to DRAINAGE SWALE

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

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Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

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Date: 6/29/03
Inspector: GGD, JMC

PAD - Row 95A

Tree No. #63

Canopy Measurements (ft):
North: 7'
East: 5'
South: 15'
West: 16'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers ✓
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): E
Number of trunks: ONE
Diameter @ b.h. ("): 19"
Height (ft): 30'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition ✓
Notes: Severely damaged limbs

Environment:
Change in grade
Poor drainage
Undermining erosion ✓
* Swale

Tree No. #64

Canopy Measurements (ft):
North: 0'
East: 30'
South: 0'
West: 0'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): E
Number trunks: ONE
Diameter @ b.h. ("): 13"
Height (ft): 35'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch
* Lopsided canopy ✓ (SEVERE)
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 6/29/03
Inspector: GGD, JMC

PAD - Row 95A

Tree No. #65

Canopy Measurements (ft):
North: 10'
East: 12'
South: 0'
West: 0'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: ONE
Diameter @ b.h. ("): 11"
Height (ft): 28'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot
Fire/lightening ✓
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion ✓
* Swale severe

Tree No. #66

Canopy Measurements (ft):
North: 25'
East: 15'
South: 10'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers ✓
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: TWO
Diameter @ b.h. ("): 13", 8"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening ✓
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion ✓
* Swale severe

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Date: 8/29/05
Inspector: BGD, JMC

PRD - Rock 95A

Tree No. #67

Canopy Measurements (ft):
North: 25'
East: 15'
South: 0'
West: 33'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: ONE
Diameter @ b.h. ("): 21"
Height (ft): 30'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓ (SLIGHT)
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:
* NUMBER SWALE

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

Tree No. #68

Canopy Measurements (ft):
North: 0'
East: 0'
South: 20'
West: 25'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 14"
Height (ft): 15'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
* Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed ✓ (SLIGHT)
Hazardous condition
Notes:
* NUMBER SWALE

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/05
Inspector: BGD, JMC

PRD - Rock 95A

Tree No. #69

Canopy Measurements (ft):
North: 15'
East: 15'
South: 24'
West: 5'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: ONE
Diameter @ b.h. ("): 19"
Height (ft): 30'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:
* (NUMBER SWALE)

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

Tree No. #70

Canopy Measurements (ft):
North: 20'
East: 18'
South: 24'
West: 20'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓ (SLIGHT)
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): A
Number trunks: ONE
Diameter @ b.h. ("): 21"
Height (ft): 31'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓ (SLIGHT)
Thinning crown
* VERY HEAVY IN APPEARANCE

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening ✓
Roots exposed ✓
Hazardous condition
Notes: * (NUMBER SWALE)

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: GEO, TMC

PAD – MAIN 18L

Tree No. #71

Canopy Measurements (ft):
North: 9'
East: 4'
South: 4'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): F
Number of trunks: TWO
Diameter @ b.h. ("): 7", 2"
Height (ft): 12'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion
* Stump Cut

Tree No. #72

Canopy Measurements (ft):
North: 6'
East: 7'
South: 13'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: TWO
Diameter @ b.h. ("): 7", 5"
Height (ft): 20

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: GEO, TMC

PAD – MAIN 18L

Tree No. #73

Canopy Measurements (ft):
North: 10'
East: 0'
South: 6'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: ONE
Diameter @ b.h. ("): 6"
Height (ft): 12'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #74

Canopy Measurements (ft):
North: 12'
East: 12'
South: 3'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: FIVE
Diameter @ b.h. ("): 5", 3", 4", 3"
Height (ft): 15'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion ✓ (BACK SIDE)

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/29/05
Inspector: BGD, JMC

PAD = MAIN 18L

Tree No. #75

Canopy Measurements (ft):
North: 11'
East: 20'
South: 25'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes: + 100% LEAF GROWTH ON SIDES OF TREE

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: SIX
Diameter @ b.h. ("): 14", 13", 9", 12", 14", 16"
Height (ft): 34'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation ✓
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap ✓
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE FILL)
Poor drainage ✓
Undermining erosion

PAD: MAIN 18L

Tree No. #76

Canopy Measurements (ft):
North: 9'
East: 10'
South: 12'
West: 9'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FIVE
Diameter @ b.h. ("): 7", 5", 6", 4", 4"
Height (ft): 18'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓ (SLIGHT)

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓ (SLIGHT)

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
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Date: 9/29/05
Inspector: BGD, JMC

PAD = MAIN 18L

Tree No. #77

Canopy Measurements (ft):
North: 6'
East: 5'
South: 8'
West: 5'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: ONE
Diameter @ b.h. ("): 5"
Height (ft): 12'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown
* VERY YOUNG TREE / UNDEVELOPED

Disease:
Leaf scorch Ø
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD: MAIN 18L

Tree No. #78

Canopy Measurements (ft):
North: 10'
East: 9'
South: 15'
West: 9'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 6"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓
* YOUNG TREE

Disease:
Leaf scorch Ø
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓ (SLIGHT)
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed ✓ (SLIGHT)
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/29/07
Inspector: BGD, TMC

PAD: MAINT 19L

Tree No. #79

Canopy Measurements (ft):
North: 9'
East: 7'
South: 10'
West: 10'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: THREE
Diameter @ b.h. ("): 5" + 4" + 3"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓
* YOUNG TREE

Disease:
Leaf scorch Ø
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD: MAINT 19L

Tree No. #80

Canopy Measurements (ft):
North: 4'
East: 6'
South: 8'
West: 2'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: ONE
Diameter @ b.h. ("): 6"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown
* YOUNG TREE

Disease:
Leaf scorch ✓
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed ✓ (MAINT)
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/29/07
Inspector: BGD, TMC

PAD: MAINT 19L

Tree No. #81

Canopy Measurements (ft):
North: 4'
East: 4'
South: 10'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers ✓
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: FIVE
Diameter @ b.h. ("): 6" + 9" + 6" + 6" + 7"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓ (BASE, TRUNK)
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion ✓

PAD: MAINT 19L

Tree No. #82

Canopy Measurements (ft):
North: 6'
East: 20'
South: 2'
West: 120'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: TWO
Diameter @ b.h. ("): 9" + 11"
Height (ft): 12'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: GEO, JMC

PAD: MAINS 19L

Tree No. #83

Canopy Measurements (ft):
North: 10'
East: 3'
South: 9'
West: 9'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: ONE
Diameter @ b.h. ("): 6"
Height (ft): 18'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown ✓
* YOUNG TREE

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches POOR
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD: MAINS 19L

Tree No. #84

Canopy Measurements (ft):
North: 12'
East: 9'
South: 10'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: ONE
Diameter @ b.h. ("): 6"
Height (ft): 30'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: GEO, JMC

PAD: MAINS 19L

Tree No. #85

Canopy Measurements (ft):
North: 2'
East: 16'
South: 15'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 14" 4"
Height (ft): 20'

Vigor:
Chlorosis ✓
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD: MAINS 19L

Tree No. #86

Canopy Measurements (ft):
North: 4'
East: 6'
South: 12'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe ✓
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: TWO
Diameter @ b.h. ("): 9" 9"
Height (ft): 25'

Vigor:
Chlorosis ✓
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/24/03
Inspector: SGD, JMC

PAD: MANO 19L

Tree No. #97

Canopy Measurements (ft):
North: 5'
East: 4'
South: 12'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: FIVE
Diameter @ b.h. ("): 8" 7" 7" 7" 7"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓ (SLIGHT)
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD: MANO 19L

Tree No. #98

Canopy Measurements (ft):
North: 8'
East: 10'
South: 4'
West: 4'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): E
Number trunks: ONE
Diameter @ b.h. ("): 6"
Height (ft): ±20'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/24/03
Inspector: SGD, JMC

PAD: MANO 19L

Tree No. #89

Canopy Measurements (ft):
North: 4'
East: 6'
South: 10'
West: 8'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): E
Number of trunks: ONE
Diameter @ b.h. ("): 9"
Height (ft): ±20'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD: MANO 19L

Tree No. #90

Canopy Measurements (ft):
North: 20
East: 16
South: 12
West: 20

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: 3
Diameter @ b.h. ("): 9, 9, 13
Height (ft): 35

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ UPSLOPE
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: J.CLAXTON/B.DUGAS

MAINO 21J

Tree No. 91

Canopy Measurements (ft):
North: 30 0
East: 17
South: 15
West: 12

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 2
Diameter @ b.h. ("): 9, 6
Height (ft): 32

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap ✓
Cavity-trunk ✓
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ UPSLOPE
Poor drainage
Undermining erosion

Tree No. #92

Canopy Measurements (ft):
North: 16
East: 18
South: 20
West: 19

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: 10
Diameter @ b.h. ("): 9,9,10,12,9,4
Height (ft): 35

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ UPSLOPE
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: J.CLAXTON/B.DUGAS

MAINO 21J

Tree No. #93

Canopy Measurements (ft):
North: 18
East: 20
South: 6
West: 10

Pests:
Borers
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks:
Diameter @ b.h. ("): 7,6,5
Height (ft): 32

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ - UPSLOPE
Poor drainage
Undermining erosion

Tree No. #94

Canopy Measurements (ft):
North: 3
East: 0 20
South: 15
West: 0

Pests:
Borers
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: 2
Diameter @ b.h. ("): 8,6
Height (ft): 30

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ - UPSLOPE
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: B. DUGAS / J. CLAXTON

MAINO 21J

Tree No. #95

Canopy Measurements (ft):	
North:	0
East:	18
South:	28
West:	10

Pests:	
Borers	✓
Termites	✓
Ants	✓
Woodpeckers	
Galls	✓
Pit-scale	
Oak moth	
Bees	
Parasites	
Mistletoe	
Poison oak	

Notes:

Species:	Quercus agrifolia
Appearance (A-F):	C
Number of trunks:	4
Diameter @ b.h. ("):	9, 4, 3, 4
Height (ft):	

Vigor:	
Chlorosis	
Wilt	
Dieback	
Deadwood	✓
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	✓
Lesions	
Exudations	✓
Heart rot	

Notes:

Structure:	
Broken branches	✓
Poor pruning	
Mechanical injury	
Wire/nails	
Torn branch scars	✓
Sharp branch angle	
Low branching	✓
Water trap	
Cavity-trunk	
Cavity-branch	
Lopsided canopy	✓
Excess horiz growth	
Decay/rot	
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	✓ - UPSLOPE
Poor drainage	
Undermining erosion	

Tree No. 96

Canopy Measurements (ft):	
North:	21
East:	23
South:	28
West:	25

Pests:	
Borers	✓
Termites	✓
Ants	✓
Woodpeckers	
Galls	✓
Pit-scale	
Oak moth	
Bees	
Parasites	
Mistletoe	
Poison oak	✓

Notes:

Species:	Quercus agrifolia
Appearance (A-F):	B+
Number trunks:	10
Diameter @ b.h. ("):	9, 10, 10, 12, 19, 8, 11, 13, 14
Height (ft):	30

Vigor:	
Chlorosis	
Wilt	
Dieback	
Deadwood	✓
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	✓
Lesions	
Exudations	
Heart rot	

Notes:

Structure:	
Broken branches	✓
Poor pruning	
Mechanical injury	
Wire/nails	
Torn branch scars	✓
Sharp branch angle	
Low branching	
Water trap	✓
Cavity-trunk	✓
Cavity-branch	✓
Lopsided canopy	
Excess horiz growth	✓
Decay/rot	✓
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	✓ - DOWNSLOPE
Poor drainage	
Undermining erosion	

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: B. DUGAS / J. CLAXTON

MAINO 21J

Tree No. #97

Canopy Measurements (ft):	
North:	15
East:	25
South:	20
West:	24

Pests:	
Borers	✓
Termites	✓
Ants	✓
Woodpeckers	
Galls	✓
Pit-scale	
Oak moth	✓
Bees	
Parasites	
Mistletoe	
Poison oak	✓

Notes:

Species:	Quercus agrifolia
Appearance (A-F):	C
Number of trunks:	10
Diameter @ b.h. ("):	9, 12, 7, 3, 7, 11, 11, 6, 4, 3
Height (ft):	30

Vigor:	
Chlorosis	
Wilt	
Dieback	
Deadwood	✓
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	✓
Lesions	
Exudations	✓
Heart rot	

Notes:

Structure:	
Broken branches	✓
Poor pruning	✓
Mechanical injury	
Wire/nails	
Torn branch scars	✓
Sharp branch angle	
Low branching	✓
Water trap	
Cavity-trunk	✓
Cavity-branch	✓
Lopsided canopy	
Excess horiz growth	✓
Decay/rot	✓
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	✓ - ROAD TO EAST
Poor drainage	
Undermining erosion	

MAINO 21L

Tree No. #98

Canopy Measurements (ft):	
North:	20
East:	12
South:	18
West:	10

Pests:	
Borers	✓
Termites	✓
Ants	✓
Woodpeckers	
Galls	✓
Pit-scale	
Oak moth	
Bees	
Parasites	
Mistletoe	
Poison oak	✓

Notes:

Species:	Quercus agrifolia
Appearance (A-F):	C
Number trunks:	4
Diameter @ b.h. ("):	9, 10, 15, 11
Height (ft):	

Vigor:	
Chlorosis	
Wilt	
Dieback	✓
Deadwood	✓
Thinning crown	

Disease:	
Leaf scorch	
Twig blight	
Exfoliation	✓
Lesions	
Exudations	
Heart rot	

Notes:

Structure:	
Broken branches	✓
Poor pruning	
Mechanical injury	
Wire/nails	✓
Torn branch scars	✓
Sharp branch angle	
Low branching	✓
Water trap	
Cavity-trunk	✓
Cavity-branch	✓
Lopsided canopy	
Excess horiz growth	
Decay/rot	
Fire/lightening	
Roots exposed	
Hazardous condition	

Notes:

Environment:	
Change in grade	✓ - ROAD TOWARDS F
Poor drainage	
Undermining erosion	

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/26/03
Inspector: J. CLAXTON / B. DUEAS MAINO 21L

Tree No. #99

Canopy Measurements (ft):
North: ~~20~~ 20
East: 20
South: 15
West: 15

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ~~✓~~ ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 4
Diameter @ b.h. ("): 14,9,7,6
Height (ft): 35

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ - VSLOPE
Poor drainage
Undermining erosion

Tree No. #100

Canopy Measurements (ft):
North: 0
East: 20
South: 15
West: 0

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: 1
Diameter @ b.h. ("): 10
Height (ft): 32

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/26/03
Inspector: J. CLAXTON / B. DUEAS MAINO 21L

Tree No. #101

Canopy Measurements (ft):
North: 25
East: 20
South: 30
West: 28

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: 4
Diameter @ b.h. ("): 13,10,11,11
Height (ft): 36

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

MAINO 21L

Tree No. 102

Canopy Measurements (ft):
North: [redacted] 0
East: [redacted] 10
South: [redacted] 25
West: [redacted] 3

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: 2
Diameter @ b.h. ("): 11,9,
Height (ft):

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/26/03
Inspector: J. CLAYTON/B. DUGAS

MANO 21L

Tree No. # 103

Canopy Measurements (ft):
North: 13
East: 10
South: 16
West: 14

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B C
Number of trunks: 2
Diameter @ b.h. ("): 16, 8
Height (ft): 30

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes: WOODRAT @ BASE OF TREE

Environment:
Change in grade
Poor drainage
Undermining erosion ✓

Tree No. # 104

Canopy Measurements (ft):
North: 17
East: 10
South: 15
West: 16

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Number trunks: 7
Diameter @ b.h. ("): 4, 6, 8, 8, 5, 7, 4
Height (ft): 23

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot
Fire/lightening ✓
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/26/03
Inspector: J. CLAYTON/BGD

MANO 21L

Tree No. # 105

Canopy Measurements (ft):
North: 25
East: 10
South: 5
West: 8

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 3
Diameter @ b.h. ("): 8, 5, 8,
Height (ft): 25

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap ✓
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage ✓
Undermining erosion

PXP - MANO 21L

Tree No. # 106

Canopy Measurements (ft):
North: 15
East: 20
South: 20
West: 10

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FOUR
Diameter @ b.h. ("): 9", 6", 7", 8"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/07
Inspector: BGD, JMC

PAD: MANO 21L

Tree No. #107

Canopy Measurements (ft):
North: 10
East: 0
South: 0
West: 9

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: THREE
Diameter @ b.h. ("): 9", 4", 7"
Height (ft): 20

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions ✓
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PAD: MANO 21L

Tree No. #108

Canopy Measurements (ft):
North: 18
East: 15
South: 17
West: 17

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FOUR
Mechanical injury
Diameter @ b.h. ("): 10", 11", 8", 7"
Height (ft): 32

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight ✓
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/07
Inspector: BGD, JMC

PAD = MANO 21L

Tree No. #109

Canopy Measurements (ft):
North: 10
East: 5
South: 5
West: 12

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: THREE
Diameter @ b.h. ("): 5", 9", 8"
Height (ft): 32'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓ (SLIGHT)

PAD = MANO 21L

Tree No. #110

Canopy Measurements (ft):
North: 15
East: 12
South: 15
West: 14

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: THREE
Diameter @ b.h. ("): 6", 10", 10"
Height (ft): 35'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/07
Inspector: BGD, JMC

PAD: MAIND 19J

Tree No. #111

Canopy Measurements (ft):
North: 15'
East: 18'
South: 17'
West: 18'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 11", 12"
Height (ft): +35'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown SLIGHT

Disease:
Leaf scorch
Twig blight
Exfoliation SLIGHT
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ UPSLOPE
Poor drainage
Undermining erosion

Tree No. #112 PAD: MAIND 19J

Canopy Measurements (ft):
North: 4'
East: 6'
South: 13'
West: 6'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: ONE
Diameter @ b.h. ("): 11"
Height (ft): 22'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ UPSLOPE
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
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Date: 8/29/07
Inspector: BGD, JMC

PAD = MAIND 19J

Tree No. #113

Canopy Measurements (ft):
North: 12'
East: 16'
South: 3'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers ✓
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 9", 9"
Height (ft): 24'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (UPSLOPE)
Poor drainage
Undermining erosion

Tree No. #114 PAD = MAIND 19J

Canopy Measurements (ft):
North: 12'
East: 9'
South: 0'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: TWO
Diameter @ b.h. ("): 6", 5"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown
* VERY YOUNG TREE

Disease:
Leaf scorch
Twig blight
Exfoliation SLIGHT
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy SLIGHT
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓ (DRAINAGE SWALE)

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Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: GBD, JMC

PAD – MAINO 19J

Tree No. #115

Canopy Measurements (ft):
North: 10'
East: 24'
South: 15'
West: 12'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: TWO
Diameter @ b.h. ("): 17", 12"
Height (ft): 24'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓ UPSLOPE
Poor drainage
Undermining erosion ✓ DOWNSLOPE

PAD – MAINO 19J

Tree No. #116

Canopy Measurements (ft):
North: 8'
East: 15'
South: 12'
West: 14'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: THREE
Diameter @ b.h. ("): 6", 7", 6"
Height (ft): 20'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

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Date: 9/29/03
Inspector: GBD, TMC

PAD: SIGNAL 151

Tree No. #117

Canopy Measurements (ft):
North: 25
East: 24
South: 32
West: 18

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers ✓
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): A
Number of trunks: FOUR
Diameter @ b.h. ("): 16", 11", 8", 19"
Height (ft): ± 50'
* MAJESTIC

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown SLIGHT

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap ✓
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade Ø
Poor drainage
Undermining erosion

Tree No. #118

Canopy Measurements (ft):
North: 22'
East: 38'
South: 25'
West: 31'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): A
Number trunks: ONE
Diameter @ b.h. ("): 27"
Height (ft): ±60'
* MAJESTIC

Vigor:
Chlorosis
Wilt
Dieback SLIGHT
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓ SLIGHT
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 8/29/03
Inspector: GGD, JMC

PAD: SIGNAL 151

Tree No. #119

Canopy Measurements (ft):
North: 6'
East: 5'
South: 5'
West: 7'

Pests:
Borers
Termites
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F):
Number of trunks: ONE
Diameter @ b.h. ("): 7"
Height (ft): 14'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes: PIPE @ BASE OF TREE

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PAD: SIGNAL 113A (NEW)

Tree No. #123

Canopy Measurements (ft):
North: 3'
East: 4'
South: 3'
West: 3'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: ONE
Diameter @ b.h. ("): 5"
Height (ft): 13'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓ YOUNG TREE

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ SLIGHT
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

* CABLE GRATED AREA

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padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 8/29/03
Inspector: GGD, JMC

SIGNAL 113A

Tree No. #121

Canopy Measurements (ft):
North: 10'
East: 6'
South: 9'
West: 7'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: TWO
Diameter @ b.h. ("): 7", 3"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown
* YOUNG TREE

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ SLIGHT
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion
* CABLE GRATED AREA

SIGNAL 113A

Tree No. #122

Canopy Measurements (ft):
North: 12'
East: 14'
South: 10'
West: 10'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: ONE
Diameter @ b.h. ("): 10"
Height (ft): 14'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ SLIGHT
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

* CABLE GRATED AREA

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Date: 8/29/03
Inspector: BGD, JMC

PAD - SIGNAL 113A

Tree No. #123

Canopy Measurements (ft):
North: 9'
East: 10'
South: 6'
West: 12'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: ONE
Diameter @ b.h. ("): 9"
Height (ft): 22'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ SLIGHT
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

* COULD BECOME PROB

PAD - SIGNAL 113D

Tree No. #124

Canopy Measurements (ft):
North: 9'
East: 2'
South: 4'
West: 6'

Pests:
Borers
Termites
Ants
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 8"
Height (ft): 22'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown
* YOUNG TREE

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ SLIGHT
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓ SLIGHT
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 8/29/03
Inspector: BGD, JMC

PAD - SIGNAL 113D

Tree No. #125

Canopy Measurements (ft):
North: 20'
East: 22'
South: 14'
West: 20'

Pests:
Borers ✓
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): A
Number of trunks: THREE
Diameter @ b.h. ("): 19", 18", 10"
Height (ft): 35'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap ✓
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ V/SLOPE
Poor drainage
Undermining erosion

DATE: 9/26/03

PAD - ISLAND 19N

Tree No. #126

Canopy Measurements (ft):
North: 30'
East: 34'
South: 10'
West: 35'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number trunks: FOUR
Diameter @ b.h. ("): 21", 21", 23", 18"
Height (ft): 23'

Vigor:
Chlorosis ✓
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions ✓
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion

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Date: 9/26/03
Inspector: BGD, TMC

PAD: MDNO 19 NW

Tree No. 127

Canopy Measurements (ft):
North: 12'
East: 3'
South: 14'
West: 6'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: ONE
Diameter @ b.h. ("): 10"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed ✓
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion ✓

PAD: MDNO 19 NW

Tree No. 128

Canopy Measurements (ft):
North: 6'
East: 30'
South: 15'
West: 9'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: ONE
Diameter @ b.h. ("): 12"
Height (ft): 20'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, TMC

PAD - MDNO 19N

Tree No. #129

Canopy Measurements (ft):
North: 20'
East: 13'
South: 10'
West: 25'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 13", 14"
Height (ft): 26'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion

PAD - MDNO 19N

Tree No. #130

Canopy Measurements (ft):
North: 18'
East: 4'
South: 2'
West: 2'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: ONE
Diameter @ b.h. ("): 9"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, TMC

PAD - MAIND 19N

Tree No. #131

Canopy Measurements (ft):
North: 20'
East: 23'
South: 20'
West: 25'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: Quercus agrifolia
Appearance (A-F): B
Number of trunks: ONE
Diameter @ b.h. ("): 20"
Height (ft): 35'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury ✓
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage ✓
Undermining erosion

* EXISTING STRUCTURE @ BASE OF TREE FROM DRILLING RPS.

PAD - MAIND 19N

Tree No. #132

Canopy Measurements (ft):
North: 26'
East: 22'
South: 20'
West: 24'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: Quercus agrifolia
Appearance (A-F): A
Number trunks: FIVE
Diameter @ b.h. ("): 9" 12" 15" 15" 11"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch ✓
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓ (SLIGHT)
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26
Inspector: BGD, TMC

PAD - MAIND 19N

Tree No. #133

Canopy Measurements (ft):
North: 16'
East: 16'
South: 15'
West: 15'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: Quercus agrifolia
Appearance (A-F): B
Number of trunks: FIVE
Diameter @ b.h. ("): 6" 7" 11" 6" 6" 20"
Height (ft):

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PAD - MAIND 19N

Tree No. #134

Canopy Measurements (ft):
North: 10'
East: 12'
South: 12'
West: 8'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: Quercus agrifolia
Appearance (A-F): B
Number trunks: TWO
Diameter @ b.h. ("): 10" 9"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓ (BARB-WIRE FENCE)
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap ✓
Cavity-trunk ✓
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/07
Inspector: PAD - MAINO 19N

Tree No. #135

Canopy Measurements (ft):
North: 6'
East: 5'
South: 16'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 15", 6"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion

PAD - MAINO 19N

Tree No. #136

Canopy Measurements (ft):
North: 21'
East: 19'
South: 14'
West: 24'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FIVE
Diameter @ b.h. ("): 10", 5", 4", 4", 7"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓
Torn branch scars
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening ✓
Roots exposed ✓ (PA WF)
Hazardous condition
Notes:

Environment:
Change in grade ✓
Poor drainage
Undermining erosion ✓

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/07
Inspector: GCD, TMC

PAD - MAINO 19N

Tree No. #137

Canopy Measurements (ft):
North: 10'
East: 29'
South: 35'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): A
Number of trunks: TWO
Diameter @ b.h. ("): 31", 20"
Height (ft): 35'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap ✓
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓ (SLIGHT)
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PAD - MAINO 19N

Tree No. #138

Canopy Measurements (ft):
North: 20'
East: 4'
South: 3'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers ✓
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: TWO
Diameter @ b.h. ("): 16", 17"
Height (ft): 25'

Vigor:
Chlorosis ✓
Wilt ✓
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury ✓
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/24/03
Inspector: BGD, TMC

PAD – MAIN 19N

Tree No. #139

Canopy Measurements (ft):
North: 12'
East: 16'
South: 16'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F):
Number of trunks: ONE
Diameter @ b.h. ("): 18"
Height (ft): 24'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade ✓ (DOWNSLOPE)
Poor drainage
Undermining erosion

PAD – MAIN 19N

Tree No. #140

Canopy Measurements (ft):
North: 15'
East: 22'
South: 24'
West: 19'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: 3+X
Diameter @ b.h. ("): 10", 12", 18", 12", 8", 11"
Height (ft): 35'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/20/03
Inspector: BGD, TMC

PAD – MAIN 16NW

Tree No. #141

Canopy Measurements (ft):
North: 10'
East: 15'
South: 10'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: FIVE
Diameter @ b.h. ("): 9", 11", 7", 12"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PAD – MAIN 16NW

Tree No. #142

Canopy Measurements (ft):
North: 3'
East: 5'
South: 9'
West: 4'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: THREE
Diameter @ b.h. ("): 6", 8", 6"
Height (ft): 12'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, JMC

PAD – MAP 16NW

Tree No. #143

Canopy Measurements (ft):
North: 16'
East: 6'
South: 12'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: one
Diameter @ b.h. ("): 10"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #144

Canopy Measurements (ft):
North: 9'
East: 6'
South: 8'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers ✓
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: one
Diameter @ b.h. ("): 5"
Height (ft): 12'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, JMC

PAD – MAP 16NW

Tree No. #145

Canopy Measurements (ft):
North: 17'
East: 17'
South: 14'
West: 16'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: three
Diameter @ b.h. ("): 9" 6" 4"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #146

Canopy Measurements (ft):
North: 6'
East: 5'
South: 12'
West: 16'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: one
Diameter @ b.h. ("): 14"
Height (ft): 12'

Vigor:
Chlorosis ✓
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight ✓
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: SGD, JMC

PAD - MDMD 16NW

Tree No. #147

Canopy Measurements (ft):
North: 15'
East: 17'
South: 15'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: THREE
Diameter @ b.h. ("): 7" 7" 6"
Height (ft): 13'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓ (SLIGHT)
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #148

Canopy Measurements (ft):
North: 15'
East: 14'
South: 24'
West: 6'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: SEVEN
Diameter @ b.h. ("): 8" 7" 7" 9" 5" 7" 8"
Height (ft): 18'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails ✓
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: SGD, JMC

PAD - MDMD 16NW

Tree No. #149

Canopy Measurements (ft):
North: 15'
East: 14'
South: 20'
West: 14'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: SIX
Diameter @ b.h. ("): 9" 11" 12" 9" 14" 11"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #150

Canopy Measurements (ft):
North: 6'
East: 10'
South: 0'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: FOUR
Diameter @ b.h. ("): 5" 7" 8" 7"
Height (ft): 24'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning ✓
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, TMC

PAD – MAINO 16NW

Tree No. #151

Canopy Measurements (ft):
North: 4'
East: 24'
South: 14'
West: 10'

Pests:
Borers ✓
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: SIX
Diameter @ b.h. ("): 11", 6", 9", 4", 10"
Height (ft): 24'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #152

Canopy Measurements (ft):
North: 13'
East: 12'
South: 13'
West: 12'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: TWO
Diameter @ b.h. ("): 8", 16"
Height (ft): 15'

Vigor:
Chlorosis
Wilt ✓
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 9/26/03
Inspector: BGD, TMC

PAD – MAINO 16NW

Tree No. #153

Canopy Measurements (ft):
North: 9'
East: 4'
South: 3'
West: 0'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: THREE
Diameter @ b.h. ("): 5", 3", 7"
Height (ft): 11' (YOUNG ONE)

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓ (SLIGHT)

Disease:
Leaf scorch
Twig blight
Exfoliation ✓ (SLIGHT)
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #154

Canopy Measurements (ft):
North: 15'
East: 15'
South: 14'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: THREE
Diameter @ b.h. ("): 6", 7", 10", 6"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 9/26/03
Inspector: BGD, JMC

PAD - MAINO 16NW

Tree No. #155

Canopy Measurements (ft):
North: 14'
East: 14'
South: 11'
West: 11'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number of trunks: TWO
Diameter @ b.h. ("): 7", 5"
Height (ft): 8'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No.

Canopy Measurements (ft):
North:
East:
South:
West:

Pests:
Borers
Termites
Ants
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F):
Number trunks:
Diameter @ b.h. ("):
Height (ft):

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 9/26/03
Inspector: BGD, JMC

PAD - MAINO 16NW

Tree No. #156

Canopy Measurements (ft):
North: 12'
East: 16'
South: 14'
West: 17'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 9", 16"
Height (ft): 16'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #157

Canopy Measurements (ft):
North: 12'
East: 9'
South: 14'
West: 14'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe ✓
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FOUR
Diameter @ b.h. ("): 6", 8", 6", 9"
Height (ft): 16'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 9/26/03
Inspector: SEO, JMC

PAD – MAIN0 16NW

Tree No. #158

Canopy Measurements (ft):
North: 6'
East: 8'
South: 13'
West: 6'

Pests:
Borers ✓
Termites
Ants ✓
Woodpeckers ✓
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: 1NE
Diameter @ b.h. ("): 7"
Height (ft): 14'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #154

Canopy Measurements (ft):
North: 9'
East: 16'
South: 8'
West: 6'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): D
Number trunks: TW0
Diameter @ b.h. ("): 4" 5"
Height (ft): 12'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 9/26/03
Inspector: SEO, JMC

PAD – MAIN0 16NW

Tree No. #160

Canopy Measurements (ft):
North: 6'
East: 4'
South: 0'
West: 7'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TW0
Diameter @ b.h. ("): 6" 4"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #161

Canopy Measurements (ft):
North: 5'
East: 17'
South: 13'
West: 7'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: Four
Diameter @ b.h. ("): 5" 9" 6" 7"
Height (ft): 16'

Vigor:
Chlorosis
Wilt ✓
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/05
Inspector: BM, JMC

PAD – MAINO 16NW

Tree No. #162

Canopy Measurements (ft):
North: 16'
East: 15'
South: 16'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F):
Number of trunks: Four
Diameter @ b.h. ("): 5", 5", 6", 5"
Height (ft):

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions ✓
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #163

Canopy Measurements (ft):
North: 10'
East: 3'
South: 13'
West: 16'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: Five
Diameter @ b.h. ("): 4", 5", 3", 5", 4"
Height (ft): 14'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 9/26/05
Inspector: BM, JMC

PAD – MAINO 16NW

Tree No. #164

Canopy Measurements (ft):
North: 5'
East: 0'
South: 14'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): F
Number of trunks: Three
Diameter @ b.h. ("): 4", 4", 6"
Height (ft): 21'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy ✓
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #165

Canopy Measurements (ft):
North: 10'
East: 15'
South: 20'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: Two
Diameter @ b.h. ("): 6", 5"
Height (ft): 17'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

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Date: 9/26/03
Inspector: BGW, TMC

PAD - MAIN 16NW

Tree No. #166

Canopy Measurements (ft):
North: 13'
East: 14'
South: 19'
West: 14'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth ✓
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: SEVEN
Diameter @ b.h. ("): 8", 6", 1", 9", 7", 7", 7"
Height (ft): 16'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #167

Canopy Measurements (ft):
North: 17'
East: 14'
South: 12'
West: 10'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓ ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: TWO
Diameter @ b.h. ("): 11", 8"
Height (ft): 18'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk ✓
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGW, TMC

PAD - MAIN 16NW

Tree No. #168

Canopy Measurements (ft):
North: 14'
East: 22'
South: 20'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TEN +
Diameter @ b.h. ("): 9", 7", 1", 7", 7", 5", 7", 7"
Height (ft): 17' (MANY TRUNKS)

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #169

Canopy Measurements (ft):
North: 5'
East: 17'
South: 10'
West: 17'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: TWO
Diameter @ b.h. ("): 9", 6", 11"
Height (ft): 23'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓ (5/16/07)
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, TMC

PAD – MAINO 16NW

Tree No. #170

Canopy Measurements (ft):
North: 5'
East: 16'
South: 16'
West: 6'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: ONE TRU
Diameter @ b.h. ("): 8" 7"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #171

Canopy Measurements (ft):
North: 13'
East: 4'
South: 16'
West: 16'

Pests:
Borers ✓
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: THREE
Diameter @ b.h. ("): 5" 4" 2"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, TMC

PAD – MAINO 16NW

Tree No. #172

Canopy Measurements (ft):
North: 2'
East: 3'
South: 3'
West: 5'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: ONE
Diameter @ b.h. ("): 4" – 5"
Height (ft): 12'
(Young tree)

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #173

Canopy Measurements (ft):
North: 7'
East: 7'
South: 5'
West: 7'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: ONE
Diameter @ b.h. ("): 4" – 5"
Height (ft): 14'
(Young tree)

Vigor:
Chlorosis
Wilt
Dieback
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, JMC

PAD - MAIN 16NW

Tree No. #174

Canopy Measurements (ft):
North: 6'
East: 8'
South: 16'
West: 5'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: FOUR
Diameter @ b.h. ("): 7", 11", 6", 7"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #175

Canopy Measurements (ft):
North: 14'
East: 12'
South: 14'
West: 12'

Pests:
Borers
Termites
Ants ✓
Woodpeckers
Galls
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: THREE
Diameter @ b.h. ("): 10", 8", 5"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BGD, JMC

PAD - MAIN 16NW

Tree No. #176

Canopy Measurements (ft):
North: 16'
East: 20'
South: 15'
West: 16'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. ("): 8", 10"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy ✓
Excess horiz growth ✓
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #177

Canopy Measurements (ft):
North: 10'
East: 16'
South: 22'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FOUR
Diameter @ b.h. ("): 7", 9", 10", 9"
Height (ft): 15'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BAD, JMC

PAD – MAP NO 16 NW

Tree No. #178

Canopy Measurements (ft):
North: 12'
East: 6'
South: 0'
West: 12'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number of trunks: TWO
Diameter @ b.h. (''): 10", 6"
Height (ft): 16'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth ✓
Decay/rot
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #179

Canopy Measurements (ft):
North: 12'
East: 19'
South: 14'
West: 13'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: FIVE
Diameter @ b.h. (''): 5", 3", 6", 7", 6"
Height (ft): 20'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot ✓
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

PXP Oil Field Expansion Project EIR
Price Canyon, San Luis Obispo County, CA
Oak Tree Evaluation Form

padre associates, inc. ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Date: 9/26/03
Inspector: BAD, JMC

PAD – MAP NO 16 NW

Tree No. #180

Canopy Measurements (ft):
North: 22'
East: 27'
South: 25'
West: 25'

Pests:
Borers ✓
Termites ✓
Ants
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): B
Number of trunks: FIVE
Diameter @ b.h. (''): 12", 6", 14", 9", 10"
Height (ft): 37'

Vigor:
Chlorosis
Wilt
Dieback
Deadwood ✓
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations ✓
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars
Sharp branch angle ✓
Low branching
Water trap
Cavity-trunk
Cavity-branch
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

Tree No. #181

Canopy Measurements (ft):
North: 10'
East: 19'
South: 19'
West: 15'

Pests:
Borers ✓
Termites ✓
Ants ✓
Woodpeckers
Galls ✓
Pit-scale
Oak moth
Bees
Parasites
Mistletoe
Poison oak ✓
Notes:

Species: *Quercus agrifolia*
Appearance (A-F): C
Number trunks: SIX
Diameter @ b.h. (''): 6", 9", 5", 6", 5", 5"
Height (ft): 25'

Vigor:
Chlorosis
Wilt
Dieback ✓
Deadwood
Thinning crown ✓

Disease:
Leaf scorch
Twig blight
Exfoliation ✓
Lesions
Exudations
Heart rot
Notes:

Structure:
Broken branches ✓
Poor pruning
Mechanical injury
Wire/nails
Torn branch scars ✓
Sharp branch angle
Low branching ✓
Water trap
Cavity-trunk ✓
Cavity-branch ✓
Lopsided canopy
Excess horiz growth
Decay/rot ✓
Fire/lightening
Roots exposed
Hazardous condition
Notes:

Environment:
Change in grade
Poor drainage
Undermining erosion

APPENDIX F

Paleontological Resources

PALEONTOLOGICAL ASSESSMENT REPORT AND MITIGATION PLAN

This report has been omitted from the Draft EIR because of its sensitive information. It is available upon request from the County of San Luis Obispo.

APPENDIX G

Noise Computation Sheets

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 1

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	4250	43.6	4.7	38.9	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	4250	43.1	4.7	38.4	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	4250	38.6	4.7	33.9	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	43
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 2

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	4280	43.5	4.7	38.8	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	4280	43.0	4.7	38.3	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	4280	38.5	4.7	33.8	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 43

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 3

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	3850	44.5	4.7	39.7	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	3850	44.0	4.7	39.2	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	3850	39.5	4.7	34.7	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	44
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 4

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	3650	44.9	4.7	40.2	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	3650	44.4	4.7	39.7	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	3650	39.9	4.7	35.2	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 44

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 5

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	3530	45.2	4.7	40.5	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	3530	44.7	4.7	40.0	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	3530	40.2	4.7	35.5	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 44

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:
ASSUMED NIGHTTIME AMBIENT: 55
NUMBER OF DAYTIME HOURS OPERATING: 40
NUMBER OF EVENING HOURS OPERATING: 8
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 0
ESTIMATED CNEL: 54
54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 6

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	2850	47.1	4.7	42.4	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	2850	46.6	4.7	41.9	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	2850	42.1	4.7	37.4	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	46
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 7

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	2600	47.9	4.7	43.2	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	2600	47.4	4.7	42.7	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	2600	42.9	4.7	38.2	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 47

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:
ASSUMED NIGHTTIME AMBIENT: 55
NUMBER OF DAYTIME HOURS OPERATING: 40
NUMBER OF EVENING HOURS OPERATING: 8
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 0
ESTIMATED CNEL: 54
54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 8

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	1400	53.2	4.6	48.6	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	1400	52.7	4.6	48.1	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	1400	48.2	4.6	43.6	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	53
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	55
ESTIMATED CNEL:	55

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 9

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	3750	44.7	4.7	39.9	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	3750	44.2	4.7	39.4	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	3750	39.7	4.7	34.9	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 44

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 10

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	2000	50.1	4.7	45.5	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	2000	49.6	4.7	45.0	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	2000	45.1	4.7	40.5	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	49
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING: ,	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 11

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	2200	49.3	4.7	44.6	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	2200	48.8	4.7	44.1	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	2200	44.3	4.7	39.6	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	49
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 12

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	2350	48.7	4.7	44.0	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	2350	48.2	4.7	43.5	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	2350	43.7	4.7	39.0	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 48

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 13

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	2450	48.4	4.7	43.7	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	2450	47.9	4.7	43.2	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	2450	43.4	4.7	38.7	5.0	1.18
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 48

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Pad grading
Receptor: Residence 14

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	100					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	1	0.73	83	5300	41.7	4.8	36.9	0.0	3
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	0	1.00	82	100					
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	100					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	133					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	133					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	90					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	1	0.73	82.5	5300	41.2	4.8	36.4	0.5	2.8
HOE EXCAVATOR (1)	0	0.73	85	100					
JACK HAMMERS (1)	0	0.73	88	60					
966F WHEELED LOADER (std) (4)	1	0.73	78	5300	36.7	4.8	31.9	5.0	1.14
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	41
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 1

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	4250	43.4	4.7	38.7	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 39

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 2

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	4280	43.4	4.7	38.6	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	39
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 3

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	3850	44.3	4.7	39.5	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 40

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 4

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	3650	44.7	4.7	40.0	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	40
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:,	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 5

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	3530	45.0	4.7	40.3	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): **40**

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:
ASSUMED NIGHTTIME AMBIENT: 55
NUMBER OF DAYTIME HOURS OPERATING: 40
NUMBER OF EVENING HOURS OPERATING: 8
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 0
ESTIMATED CNEL: 54
54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 6

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	2850	46.9	4.7	42.2	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	42
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:,	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 7

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	2600	47.7	4.7	43.0	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	43
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 8

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	1400	53.1	4.6	48.4	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): **48**

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: , 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 9

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	3750	44.5	4.7	39.8	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	40
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 10

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	2000	50.0	4.7	45.3	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	45
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 11

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	2200	49.1	4.7	44.4	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): 44

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 12

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	2350	48.6	4.7	43.9	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	44
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 13

NOISE SOURCE (Data Source) A	NUMBER OF UNITS B	ASSUMED USE FACTOR C	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA) D	DISTANCE (Feet) E	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA) F	GROUND ATTENUATION Leq (dBA) G	ATTENUATED NOISE LEVEL Leq (dBA) H	NOISE LEVEL BELOW LOUDEST Leq (dBA) I	ADDITIVE NOISE LEVEL Leq (dBA) J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	2450	48.2	4.7	43.5	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3): **43**

ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION: 55
ASSUMED NIGHTTIME AMBIENT: 40
NUMBER OF DAYTIME HOURS OPERATING: 8
NUMBER OF EVENING HOURS OPERATING: 0
NUMBER OF NIGHTIME HOURS OPERATING: 0
ESTIMATED Ldn: 54
ESTIMATED CNEL: 54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

EQUIPMENT NOISE MODEL

Project: PXP Phase IV EIR
Date: 24-Oct-03
Scenario: Well drilling
Receptor: Residence 14

NOISE SOURCE (Data Source)	NUMBER OF UNITS	ASSUMED USE FACTOR	MAX SOUND PRESSURE LEVEL @ 50 FT (dBA)	DISTANCE (Feet)	DIVERGENCE ATTENUATED NOISE LEVEL Leq (dBA)	GROUND ATTENUATION Leq (dBA)	ATTENUATED NOISE LEVEL Leq (dBA)	NOISE LEVEL BELOW LOUDEST Leq (dBA)	ADDITIVE NOISE LEVEL Leq (dBA)
A	B	C	D	E	F	G	H	I	J
BACKHOE (1)	0	0.73	85	30					
COMPACTOR (1)	0	0.73	83	50					
CONCRETE MIXER (1)	0	0.73	85	50					
CONCRETE PUMP (1)	0	0.73	82	50					
COMPRESSORS (1)	0	0.73	81	50					
CRANE (1)	0	0.16	83	50					
DERRICK (1)	0	0.73	88	50					
D8 DOZER (std) (1)	0	0.73	83	50					
D8 DOZER (enhanced enclosure, est.)	0	0.73	82	50					
DRILL RIG (WATER) (5)	1	1.00	82	5300	41.5	4.8	36.7	0.0	3
DRILL RIG (WATER), WITH STC-25 NOISE BLANKETS (5)	0	1.00	65	50					
ELECTRIC GENERATOR (50 KW, insulated engine cover) (3)	0	1.00	59	50					
ELECTRIC GENERATOR (Non-insulated engine cover) (3)	0	1.00	77	50					
WATER PUMPING PLANT (Motors + outlet splash) (3)	0	1.00	54	50					
GARBAGE TRUCK (COMPACTOR) (1)	0	0.73	90	50					
GENERATOR (1)	0	0.73	78	50					
MOTOR GRADER (4)	0	0.73	82.5	50					
HOE EXCAVATOR (1)	0	0.73	85	50					
JACK HAMMERS (1)	0	0.73	88	50					
966F WHEELED LOADER (std) (4)	0	0.73	78	50					
966F WHEELED LOADER (enhanced enclosure) (4)	0	0.73	77	50					
PAVER (1)	0	0.73	89	50					
PICK-UP TRUCK (1)	0	0.73	79	50					
PICK-UP (2.5 tn) (1)	0	0.73	79	50					
PICK-UP (4-W DRIVE) (1)	0	0.73	79	50					
PILE DRIVER (PEAK) (1)	0	0.73	101	50					
PNEUMATIC TOOLS (1)	0	0.05	86	50					
PUMP (1)	0	1.00	76	90					
ROLLER (1)	0	0.73	74	50					
SAW (1)	0	0.50	78	60					
SCRAPER (3)	0	0.73	82	50					
TUB GRINDER (estimated)	0	0.73	85	50					
SHEEPSFOOT ROLLER (1)	0	0.73	78	50					
SHREDDER (1)	0	0.73	75	50					
TRUCK TRACTOR (1)	0	0.73	82	50					
TRUCK TRACTOR (1)	0	0.73	82	700					
VAN (1)	0	0.73	77	50					
WATER TRUCK (1)	0	0.73	88	700					
WATER WAGON (1)	0	0.73	83	50					

TOTAL Leq DURING NORMAL OPERATIONS (Maximum from column H + Sum of column J - 3):	37
ASSUMED DAYTIME AMBIENT WITHOUT CONSTRUCTION:	55
ASSUMED NIGHTTIME AMBIENT:	40
NUMBER OF DAYTIME HOURS OPERATING:	8
NUMBER OF EVENING HOURS OPERATING:	0
NUMBER OF NIGHTIME HOURS OPERATING:	0
ESTIMATED Ldn:	54
ESTIMATED CNEL:	54

Ground attenuation estimates assume soft sites, average transmission path of 2 meters above the ground

Data Sources:
(1) EPA (1971), Noise From Construction Equipment and Operations, EPA PB 206 717
(2) Harris, C.M. (1991), Handbook of Acoustical Measurements and Noise Control, 3rd. Ed.
(3) Actual measurements by Padre staff
(4) Quinn Company-Caterpillar distributor
(5) Hersh Walker Acoustics (2003), Acoustical Analysis Report, San Roque Water Well

APPENDIX H

Phase I 65-Acre Survey Addendum

PHASE I 65-ACRE SURVEY ADDENDUM

This report has been omitted from the Draft EIR because of its sensitive information. It is available upon request from the County of San Luis Obispo.

APPENDIX I

Results of Groundwater Well Analysis

PLAINS EXPLORATION PRODUCTION CO.

ARROYO GRANDE FIELD

WATER WELL ANALYSIS

Test	Date	80-80	Shell #2
pH	29-Apr-86	6.2	NS
	06-Apr-93	5.6	5.7
	17-Jun-04	5.86	6.2
Electric Conductivity	29-Apr-86	300 unhos/cm	NS
	06-Apr-93	326 unhos/cm	324 unhos/cm
	17-Jun-04	0.33 mS/cm	0.55 mS/cm
As	29-Apr-86	<0.005 mg/L	NS
	06-Apr-93	0.012 mg/L	<0.005 mg/L
	17-Jun-04	0.0339 mg/L	0.0161 mg/L
Ba	29-Apr-86	<0.1 mg/L	NS
	06-Apr-93	<0.05 mg/L	<0.05 mg/L
	17-Jun-04	030167 mg/L	ND
Cd	29-Apr-86	<0.001 mg/L	NS
	06-Apr-93	<0.001 mg/L	<0.001 mg/L
	17-Jun-04	ND	ND
Cr	29-Apr-86	<0.005 mg/L	NS
	06-Apr-93	<0.005 mg/L	<0.005 mg/L
	17-Jun-04	ND	ND
Pb	29-Apr-86	<0.005 mg/L	NS
	06-Apr-93	<0.005 mg/L	<0.005 mg/L
	17-Jun-04	ND	ND
Hg	29-Apr-86	<0.0002 mg/L	NS
	06-Apr-93	<0.0002 mg/L	<0.0002 mg/L
	17-Jun-04	ND	ND
Se	29-Apr-86	<0.005 mg/L	NS
	06-Apr-93	<0.005 mg/L	<0.005 mg/L
	17-Jun-04	ND	ND
Ag	29-Apr-86	<0.01 mg/L	NS
	06-Apr-93	<0.005 mg/L	<0.005 mg/L
	17-Jun-04	ND	ND
NO_3	29-Apr-86	<0.4 mg/L	NS
	06-Apr-93	0.3 mg/L	1.5 mg/L
	17-Jun-04		
TDS	29-Apr-86	250 mg/L	NS
	06-Apr-93	200 mg/L	200 mg/L
	17-Jun-04	240 mg/L	640 mg/L
TPH	29-Apr-86	NS	NS
	06-Apr-93	<0.5 mg/L	<0.5 mg/L
	17-Jun-04	ND	ND

PXP Arroyo Grande Field Water Well Testing

Test Parameter (mg/L)	Well No. 1		Well No. 2		MCLs
	2004	Prior	2003	Prior	
TRPH	ND	-	ND	-	
TDS	240	122	640	210	500-1000
pH	5.86	6.2	6.2	6.6	6.5-8.5
Conductivity (mS/cm)	.32	.30	.55	.52	.90-1.6
Total Nitrogen	ND	-	ND	-	10
Arsenic	0.0339	-	0.0161	-	0.05
Barium	0.0167	-	ND	-	1.0
Copper	ND	-	0.0501		1.3
Molybdenum	0.0605	-	ND	-	None
Thallium	ND	-	0.0164	-	0.002
Zinc	ND	-	0.0599	-	5

Notes: MCL: Maximum Concentration Limit from drinking water regulations (CA/Fed)
ND: Non-Detect
Other parameters tested in 1981, but not tested in 2004

Oilfield Environmental and Compliance
307 Roemer Way Suite 300, Santa Maria, CA 93454
phone: (805) 922-4772 fax: (805) 925-3376

CHAIN OF CUSTODY

6-17-04 (JR)

Page 1 of 1

Company:	Plains Exploration & Production	Project Name:	PRICE CANYON H2O WELLS
Street Address:	1821 Price Canyon Rd.	Site:	PXP / PRICE CANYON / SIGNAL EXTENSION
City:	San Luis Obispo State: CA 93401	Comments	
Telephone:	547-8969 Ext. 11 Fax: 547-8979		
Report To:	Paul Delorenzo Sampler: PETE ALCOCER		

Turnaround Time: ☐ 10 Work Days ☐ 3 Work Days ☐ 1 Work Day ☑ 5 Work Days ☐ 2 Work Days ☐ 2-8 Hours

Lab Sample ID	Date/Time Sampled	Matrix	# of Cont.	Client Sample ID	Comments	Kjeldahl N2	HBC	TDS	pH	Conductivity	Temp	Remarks
04-359-1	6/17/04 @1340	AQUEOUS	4	SIGNAL EXTENSION #1 WELL (ON)	✓	✓	✓	✓	✓	✓	✓	PERFORMED IN FIELD.
-2	" @1355	"	4	SIGNAL EXTENSION #2 WELL (OFF)					✓	✓	✓	

Relinquished By: [signature] Date: 6/17/04 Time: 1445 Received By: [signature] Date: 1445 Time: 6/17/04

Relinquished By: Date: Time: Received By: Date: Time:

Relinquished By: Date: Time: Received By: Date: Time:

Sample integrity upon receipt: GOOD Method of shipment VIA OEC

Samples received cold (y) n Samples received intact (y) n

Custody seals y (n)

Comments

FAX ARROYO GRANDE 805 473 0513 JUN 17 2004 10:33 PAGE 02

OILFIELD ENVIRONMENTAL AND COMPLIANCE, INC.

Client: Plains Exploration & Production 1821 Price Canyon Rd. San Luis Obispo, CA 93401 Attn: Paul Delorenzo	SAMPLE ID: 04-759-2 Date Sampled: 06/17/04 Date Analyzed: 7/06/04-7/07/04 Date Received: 06/17/04
Project: Pice Canyon H_2O Wells	Lab Contact: J. Carstens

Report Of Analytical Results

OEC ID	Client ID	Constituent	Results	Units	Method	PQL
04-759-2	Signal Extension #2 Well (Off)	Total Dissolved Solids	640	mg/L	EPA 160.1	5.0
		TRPH	ND	mg/L	EPA 418.1	0.1

OEC Analytical is certified by CA Department of Health Services: Laboratory # 2438
PQL = Practical Quantitation Limit
Results listed as ND would have been reported if present at or above the listed PQL.

For Julius G. Carstens, Lab Director

OILFIELD ENVIRONMENTAL AND COMPLIANCE, INC.

Date: 6/17/04 Client: PXP

Analyst: Pete Alcocer Location: Price Canyon

Sample Description: Signal Extention #2 Well (off)

H2O Well Log Work Sheet

OEC I.D.	Ph Meter[1]	Conductivity mS/cm	Temperatue °F
04-759-2	6.22	0.56	73.1
	6.19	0.55	74.7
	6.19	0.55	75.5
	6.20	0.55	75.5
	6.20	0.55	75.5

(1) HI 991301 Portable pH/EC/Temperature meter.

(Hanna Intruments)

OILFIELD ENVIRONMENTAL AND COMPLIANCE, INC.

Date: 6/17/04 Client: PXP

Analyst: Pete Alcocer Location: Price Canyon

Sample Description: Signal Extention #1 Well (on)

H2O Well Log Work Sheet

OEC I.D.	Ph Meter[1]	Conductivity mS/cm	Temperatue °F
04-759-1	5.86	0.32	70.6
	5.89	0.33	70.1
	5.86	0.33	70.1
	5.85	0.32	70.0
	5.86	0.33	70.1

(1) HI 991301 Portable pH/EC/Temperature meter.

(Hanna Intruments)

Calscience Environmental Laboratories, Inc.

Analytical Report

Oilfield Environmental and Compliance
307 Roemer Way
Suite 300
Santa Maria, CA 93454-1105

Date Received: 06/18/04
Work Order No: 04-06-1183
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: PXP/Price Canyon H2O Wells

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Signal Extension Well#1 04-759-1	04-06-1183-1	06/17/04	Aqueous	06/21/04	06/21/04	040621L02

Comment(s): Mercury was analyzed on 6/21/2004 5:34:00 PM with batch 040618L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	0.0339	0.0150	1		Molybdenum	0.0605	0.0050	1	
Barium	0.0167	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium (Total)	ND	0.00500	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	ND	0.00500	1		Zinc	ND	0.0100	1	
Lead	ND	0.0100	1						

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Signal Extension Well#2 04-759-2	04-06-1183-2	06/17/04	Aqueous	06/21/04	06/21/04	040621L02

Comment(s): Mercury was analyzed on 6/21/2004 5:43:04 PM with batch 040618L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Mercury	ND	0.000500	1	
Arsenic	0.0161	0.0150	1		Molybdenum	ND	0.00500	1	
Barium	ND	0.0100	1		Nickel	ND	0.00500	1	
Beryllium	ND	0.00100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.00500	1		Silver	ND	0.00500	1	
Chromium (Total)	ND	0.00500	1		Thallium	0.0164	0.0150	1	
Cobalt	ND	0.00500	1		Vanadium	ND	0.00500	1	
Copper	0.0501	0.0050	1		Zinc	0.0599	0.0100	1	
Lead	ND	0.0100	1						

Method Blank	099-04-008-1,538	N/A	Aqueous	06/18/04	06/21/04	040618L04

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Method Blank	097-01-003-3,932	N/A	Aqueous	06/21/04	06/21/04	040621L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Molybdenum	ND	0.00500	1	
Arsenic	ND	0.0150	1		Nickel	ND	0.00500	1	
Barium	ND	0.0100	1		Selenium	ND	0.0150	1	
Beryllium	ND	0.00100	1		Silver	ND	0.00500	1	
Cadmium	ND	0.00500	1		Thallium	ND	0.0150	1	
Chromium (Total)	ND	0.00500	1		Vanadium	ND	0.00500	1	
Cobalt	ND	0.00500	1		Zinc	ND	0.0100	1	
Copper	ND	0.00500	1		Lead	ND	0.0100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Oilfield Environmental and Compliance
307 Roemer Way
Suite 300
Santa Maria, CA 93454-1105

Date Received:	06/18/04
Work Order No:	04-06-1183
Preparation:	N/A
Method:	EPA 351.3

Project: PXP/Price Canyon H2O Wells

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Signal Extension Well#1 04-759-1	04-06-1183-1	06/17/04	Aqueous	N/A	06/23/04	40623TKNB2

Parameter	Result	RL	DF	Qual	Units
Total Kjeldahl Nitrogen	ND	0.50	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Signal Extension Well#2 04-759-2	04-06-1183-2	06/17/04	Aqueous	N/A	06/23/04	40623TKNB2

Parameter	Result	RL	DF	Qual	Units
Total Kjeldahl Nitrogen	ND	0.50	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	099-05-076-1,359	N/A	Aqueous	N/A	06/23/04	40623TKNB2

Parameter	Result	RL	DF	Qual	Units
Total Kjeldahl Nitrogen	ND	0.50	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

OILFIELD ENVIRONMENTAL AND COMPLIANCE, INC.

Client: Plains Exploration & Production 1821 Price Canyon Rd. San Luis Obispo, CA 93401 Attn: Paul Delorenzo	SAMPLE ID: 04-759-1 Date Sampled: 06/17/04 Date Analyzed: 6/22/04-6/28/04 Date Received: 06/17/04
Project: Pice Canyon H_2O Wells	Lab Contact: J. Carstens

Report Of Analytical Results

OEC ID	Client ID	Constituent	Results	Units	Method	PQL
04-759-1	Signal Extension #1 Well (On)	Total Dissolved Solids	240	mg/L	EPA 160.1	5.0
		TRPH	ND	mg/L	EPA 418.1	0.1

OEC Analytical is certified by CA Department of Health Services: Laboratory # 2438
PQL = Practical Quantitation Limit
Results listed as ND would have been reported if present at or above the listed PQL.

For Julius G. Carstens, Lab Director

Calscience Environmental Laboratories, Inc.

Analytical Report

Oilfield Environmental and Compliance
307 Roemer Way
Suite 300
Santa Maria, CA 93454-1105

Project: PXP/Price Canyon H2O Wells

Date Received: 06/18/04
Work Order No: 04-06-1183
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Signal Extension Well#1 04-759-1	04-06-1183-1	06/17/04	Aqueous	06/21/04	06/21/04	040621L02

Comment(s): Mercury was analyzed on 6/21/2004 5:34:00 PM with batch 040618L04

Parameter	MCL	STR	Result	RL	DF	Qual	Parameter		Result	RL	DF	Qual
Antimony			ND	0.0150	1		Mercury		ND	0.000500	1	
Arsenic	0.05		0.0339	0.0150	1		Molybdenum	NONE	0.0605	0.0050	1	
Barium	1.00		0.0167	0.0100	1		Nickel		ND	0.00500	1	
Beryllium			ND	0.00100	1		Selenium		ND	0.0150	1	
Cadmium			ND	0.00500	1		Silver		ND	0.00500	1	
Chromium (Total)			ND	0.00500	1		Thallium		ND	0.0150	1	
Cobalt			ND	0.00500	1		Vanadium		ND	0.00500	1	
Copper			ND	0.00500	1		Zinc		ND	0.0100	1	
Lead	0.015		ND	0.0100	1							

Signal Extension Well#2 04-759-2	04-06-1183-2	06/17/04	Aqueous	06/21/04	06/21/04	040621L02

Comment(s): Mercury was analyzed on 6/21/2004 5:43:04 PM with batch 040618L04

Parameter	MCL	Result	RL	DF	Qual	Parameter		Result	RL	DF	Qual
Antimony		ND	0.0150	1		Mercury		ND	0.000500	1	
Arsenic	0.05	0.0161	0.0150	1		Molybdenum		ND	0.00500	1	
Barium		ND	0.0100	1		Nickel		ND	0.00500	1	
Beryllium		ND	0.00100	1		Selenium		ND	0.0150	1	
Cadmium		ND	0.00500	1		Silver		ND	0.00500	1	
Chromium (Total)		ND	0.00500	1		Thallium	0.002	0.0164	0.0150	1	
Cobalt		ND	0.00500	1		Vanadium		ND	0.00500	1	
Copper	1.30	0.0501	0.0050	1		Zinc	NONE	0.0599	0.0100	1	
Lead		ND	0.0100	1							

Method Blank	099-04-008-1,538	N/A	Aqueous	06/18/04	06/21/04	040618L04

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Method Blank	097-01-003-3,932	N/A	Aqueous	06/21/04	06/21/04	040621L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Molybdenum	ND	0.00500	1	
Arsenic	ND	0.0150	1		Nickel	ND	0.00500	1	
Barium	ND	0.0100	1		Selenium	ND	0.0150	1	
Beryllium	ND	0.00100	1		Silver	ND	0.00500	1	
Cadmium	ND	0.00500	1		Thallium	ND	0.0150	1	
Chromium (Total)	ND	0.00500	1		Vanadium	ND	0.00500	1	
Cobalt	ND	0.00500	1		Zinc	ND	0.0100	1	
Copper	ND	0.00500	1		Lead	ND	0.0100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers