ER 97-25

FINAL
ENVIRONMENTAL IMPACT REPORT
SPECIFIC PLANNING AREA (SPA) #6,
DEER SPRINGS & HARMONY GROVE
CITY OF ESCONDIDO, CALIFORNIA
(SCH 97091078)

Volume 6
Appendices
Valley View Estates Specific Plan

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Related Files: 97-20-PZ/SP/GE / Tract 799 /
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Air Quality Analysis

ESA | Environmental Science Associates

MEMORANDUM

TO • Sonja Itson

FROM • Tom Barnes

DATE • July 19, 2002

SUBJECT • Valley View Estates Air Emissions Calculations

Introduction

The City of Escondido has not adopted local standards, except thresholds to require the preparation of an EIR. The City relies on state and federal standards for significance findings.

The project is located in the San Diego Air Basin (SanDAB). The SanDAB is designated as a serious nonattainment area for ozone under the state and federal standards. The SanDAB is classified as a nonattainment area for PM10 under the state air quality guidelines but is unclassifiable under the federal air quality guidelines. In addition, the SanDAB is in attainment for CO, NOx and ROC under both the state and federal air quality guidelines.

40 CFR Chapter I-Part 93 sets federal conformity standards for non-attainment areas. The thresholds listed in Table 1 are federal de minimus thresholds, below which a project is assumed not to have a significant impact that would necessitate completion of a conformity determination.

TABLE 1: FEDERAL YEARLY STANDARDS OF SIGNIFICANCE

Air Pollutant	Designation	Significance Criteria
ROC	Serious Ozone NAA	50 Tons/year
NO_X	Serious Ozone NAA	50 Tons/year

SOURCE: 40 CFR Chapter I-Part 93

The standards do not give guidance for areas that are in attainment. For this analysis the CO maintenance area designation are utilized. In addition, the SDAPCD is in attainment for the federal PM10 standard and is only in non-attainment for the state standard. For this analysis the federal moderate non-attainment area designation are utilized.

Revised Analysis

The original analysis for the Valley View Estates project compared project emissions with South Coast AQMD thresholds for significance. Conversations with the San Diego Air Pollution Control District indicated that no significance thresholds have been specifically adopted for the San DAB and that federal de minimus thresholds are generally acceptable. As such, this memorandum provides revised significance evaluations based on federal standards.

In summary, construction emissions would not be considered significant under federal thresholds. This would modify the findings in the original analysis that found a significant unavoidable impact for construction emissions. However, the operational emissions and the cumulative emissions would remain significant and unavoidable for NOx.

As shown in Table 4, NOx emissions from operational activities from the Valley View Estates proposed alternative would slightly exceed federal de minimus thresholds. The estimates have been calculated using URBEMIS-7G. However, incorporating mitigation measures identified in the State-approved model reduces projected emissions of NOx below the federal thresholds. The identified mitigation measures include the following:

- Provide complete sidewalk coverage
- Street trees to provide moderate coverage
- Provide moderate number and variety of visually interesting uses within walking distance
- Provide enhanced street safety system on most streets
- Provide high degree of safety from street crime
- Provide moderate level of visually interesting walking routes
- Provide high coverage of interconnected bike pathways
- Provide paved shoulders for some bike routes
- Limit speeds to a safe level on local roadways
- Provide a moderate number of interesting uses within bicycling distance
- Require unprotected bike racks at non residential facilities

The mitigation measures slightly reduce overall emissions and would reduce the impact to less than significant levels. Finally, any contribution to the cumulative condition in a nonattainment area can be seen as significant. The cumulative impact remains significant and unavoidable.

TABLE 2: PHASE ONE AND TWO CONSTRUCTION EMISSIONS VALLEY VIEW ESTATES PROPOSED

Air Pollutant	**Phase One**	**Phase Two**	**Significance Criteria**
ROC	7 Tons/year	3 Tons/year	50 Tons/year
NO_X	41 Tons/year	9 Tons/year	50 Tons/year
PM-10	7 Tons/year	5 Tons/year	100 Tons/year*

* Federal threshold for Moderate PM10 Non-Attainment Area used here as a threshold for State standards

SOURCE: ESA Construction Emission Worksheets

TABLE 3: PHASE ONE AND TWO CONSTRUCTION EMISSIONS VALLEY VIEW ESTATES REDUCED INTENSITY ALTERNATIVE

Air Pollutant	Phase One	Phase Two	Significance Criteria
ROC	4 Tons/year	2 Tons/year	50 Tons/year
NO_X	25 Tons/year	8 Tons/year	50 Tons/year
PM-10	6 Tons/year	7 Tons/year	100 Tons/year*

* Federal threshold for Moderate PM10 Non-Attainment Area used here as a threshold for State standards

SOURCE: ESA Construction Emission Worksheets

TABLE 4: ESTIMATED YEARLY OPERATIONAL EMISSIONS FOR THE PROPOSED PROJECT

	Emissions		
Pollutant	Valley View Estates Proposed	Valley View Estates Reduced Intensity Alternative	Significance Threshold
Without URBEMIS Mitigations			
ROG	24 Tons/year	11 Tons/year	50 Tons/year
NO_X	**53 Tons/year**	18 Tons/year	50 Tons/year
PM-10	28 Tons/year	9 Tons/year	100 Tons/year
With URBEMIS Mitigations			
ROG	22 Tons/year	11 Tons/year	50 Tons/year
NO_X	48 Tons/year	18 Tons/year	50 Tons/year
PM-10	25 Tons/year	9 Tons/year	100 Tons/year

Winter emissions estimates are shown above. Summer emissions estimates are slightly lower.

SOURCE: Environmental Science Associates, 2002.

TABLE 5: ESTIMATED CUMULATIVE DAILY OPERATIONAL EMISSIONS FOR VALLEY VIEW ESTATES, REDUCED INTENSITY ALTERNATIVE, AND RANCHO VISTAMONTE

	Emissions (tons per year)		
Pollutant	**Rancho Vistamonte Only**	**Valley View Estates**	**Reduced Intensity Alternative**
ROG	3	24	11
NO_X	4	53	18
PM-10	1	28	9

SOURCE: Environmental Science Associates, 2002.

URBEMIS 7G For Windows 5.1.0

File Name: C:\Program Files\URBEMIS 7G For Windows\Projects\valley veiw propc
Project Name: Valley View Estates
Project Location: San Diego County

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.57	7.53	3.16	0.01	-
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	27.40	-	-	-	-
TOTALS(lbs/day,unmitigated)	27.97	7.53	3.16	0.01	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	21.41	52.70	216.67	28.66
Apartments low rise	5.67	14.11	58.02	7.67
Condo/townhouse general	8.66	19.73	81.10	10.73
Racquetball/health	2.38	7.28	25.83	3.91
Hotel	12.06	30.88	109.64	16.61
Regnl shop. center < 5700	51.18	159.07	559.94	85.41
TOTAL EMISSIONS (lbs/day)	101.37	283.76	1,051.21	152.99

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.48 trips / dwelling units	304.00	2,881.92
Apartments low rise	10.29 trips / dwelling units	75.00	771.75
Condo/townhouse general	5.96 trips / dwelling units	181.00	1,078.76
Racquetball/health	40.00 trips / 1000 sq. ft.	11.00	440.00
Hotel	7.47 trips / rooms	250.00	1,867.50
Regnl shop. center < 5700	55.91 trips / 1000 sq. ft.	174.24	9,741.76

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center < 570000 sf				2.0	1.0	97.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	20.34	49.66	204.13	27.00
Apartments low rise	5.39	13.30	54.67	7.23
Condo/townhouse general	8.26	18.59	76.41	10.11
Racquetball/health	2.13	6.46	22.94	3.47
Hotel	10.98	27.41	97.37	14.74
Regnl shop. center < 5700	45.52	140.86	495.98	75.64
TOTAL EMISSIONS (lbs/day)	92.61	256.28	951.50	138.20

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.48 trips / dwelling units	304.00	2,881.92
Apartments low rise	10.29 trips / dwelling units	75.00	771.75
Condo/townhouse general	5.96 trips / dwelling units	181.00	1,078.76
Racquetball/health	40.00 trips / 1000 sq. ft.	11.00	440.00
Hotel	7.47 trips / rooms	250.00	1,867.50
Regnl shop. center < 5700	55.91 trips / 1000 sq. ft.	174.24	9,741.76

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center < 570000 sf				2.0	1.0	97.0

ENVIRONMENTAL FACTORS APPLICABLE TO THE PROJECT

Pedestrian Environment

```
 3.0            Side Walks/Paths: Complete Coverage
 1.0            Street Trees Provide Shade: Moderate Coverage
 3.0            Pedestrian Circulation Access: Most Destinations
 3.0            Visually Interesting Uses: Moderate Number and Variety
 2.0            Street System Enhances Safety: Most Streets
 2.0            Pedestrian Safety from Crime: High Degree of Safety
 1.0            Visually Interesting Walking Routes: Moderate Level

15.0    <- Pedestrian Environmental Credit
15.0    /19 =  0.8    <- Pedestrian Effectiveness Factor
```

Transit Service

```
 0.0            Transit Service: Dial-A-Ride or No Transit Service

 0.0    <- Transit Effectiveness Credit
15.0    <- Pedestrian Factor
15.0    <-Total
15.0    /110 =  0.1     <-Transit Effectiveness Factor
```

Bicycle Environment

```
5.0            Interconnected Bikeways: High Coverage
2.0            Bike Routes Provide Paved Shoulders: Some Routes
2.0            Safe Vehicle Speed Limits: Most Major Destinations
0.0            Safe School Routes: No Schools
2.0            Uses w/in Cycling Distance: Moderate Number and Variety
1.0            Bike Parking Ordinance: Requires Unprotected Bike Racks

2.0    <- Bike Environmental Credit
2.0  /20 =  0.6    <- Bike Effectiveness Factor
```

MITIGATION MEASURES SELECTED FOR THIS PROJECT
(All mitigation measures are printed, even if
the selected land uses do not constitute a mixed use.)

Transit Infrastructure Measures

% Trips Reduced	Measure
15.0	Credit for Existing or Planned Community Transit Service
15.0	<- Totals

Pedestrian Enhancing Infrastructure Measures (Residential)

% Trips Reduced	Measure
2.0	Credit for Surrounding Pedestrian Environment
2.0	<- Totals

Pedestrian Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
2.0	Credit for Surrounding Pedestrian Environment
1.0	Mixed Use Project (Commercial Oriented)
1.0	Provide Wide Sidewalks and Onsite Pedestrian Facilities
0.5	Provide Street Lighting
0.5	Project Provides Shade Trees to Shade Sidewalks
0.5	Provide Pedestrian Safety Designs/Infrastructure at Crossings
0.3	Articulated Storefront(s) Display Windows with Visual Interest
0.3	No Long Uninterrupted Walls Along Pedestrian Walkways
6.0	<- Totals

Bicycle Enhancing Infratructure Measures (Residential)

% Trips Reduced	Measure
7.0	Credit for Surrounding Bicycle Environment
7.0	<- Totals

Bike Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
5.0	Credit for Surrounding Area Bike Environment
2.0	Provide Bike Lanes/Paths Connecting to Bikeway System
1.0	Provide Securre Bicycle Parking
8.0	<- Totals

Operational Measures (Applying to Commute Trips)

% Trips Reduced	Measure
1.0	Parking Limited (below minimum)
1.0	<- Totals

Operational Measures (Applying to Employee Non-Commute Trips)

% Trips Reduced	Measure
3.0	Some Frequently Needed Services Provided
3.0	<- Totals

Operational Measures (Applying to Customer Trips)

% Trips Reduced	Measure
0.0	<- Totals

Measures Reducing VMT (Non-Residential)

VMT Reduced		Measure
0.0	<- Totals	

Measures Reducing VMT (Residential)

VMT Reduced		Measure
0.0	<- Totals	

Total Percentage Trip Reduction
with Environmental Factors and Mitigation Measures

Travel Mode	Home-Work Trips	Home-Shop Trips	Home-Other Trips
Pedestrian	0.17	0.69	0.69
Transit	2.05	0.45	0.55
Bicycle	4.20	4.20	4.20
Totals	0.00	0.00	0.00
Travel Mode	Work Trips	Employee Trips	Customer Trips
Pedestrian	0.52	4.74	4.74
Transit	2.05	0.04	2.05
Bicycle	4.80	4.80	4.80
Other	0.02	0.03	0.00
Totals	0.00	0.00	0.00

Changes made to the default values for Construction

Changes made to the default values for Area

The fireplcase option switch changed from on to off.
The percentage of wood stoves changed from 35 to 0.
The fireplace cords of wood burned changed from 1.48 to 0.
The fireplace percentage of residential units changed from 10 to 0.
The landscape year changed from 2000 to 2015.
Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2000 to 2015.
The double counting internal work trip limit changed from to 310.210168.
The double counting shopping trip limit changed from to 155.105084.
The double counting other trip limit changed from to 2437.20145.
The travel mode environment settings changed from both to: residential
The default/nodefault travel setting changed from nodefault to: nodefault
Side Walks/Paths: No Sidewalks
changed to: Side Walks/Paths: Complete Coverage
Street Trees Provide Shade: No Coverage
changed to:Street Trees Provide Shade: Moderate Coverage
Pedestrian Circulation Access: No Destinations
changed to:Pedestrian Circulation Access: Most Destinations
Visually Interesting Uses: No Uses Within Walking Distance
changed to:Visually Interesting Uses: Moderate Number and Variety
Street System Enhances Safety: No Streets
changed to: Street System Enhances Safety: Most Streets
Pedestrian Safety from Crime: No Degree of Safety
changed to:Pedestrian Safety from Crime: High Degree of Safety
Visually Interesting Walking Routes: No Visual Interest
changed to:Visually Interesting Walking Routes: Moderate Level
Interconnected Bikeways: No Bikeway Coverage
changed to: Interconnected Bikeways: High Coverage
Bike Routes Provide Paved Shoulders: No Routes
changed to:Bike Routes Provide Paved Shoulders: Some Routes
Safe Vehicle Speed Limits: No Routes Provided
changed to:Safe Vehicle Speed Limits: Most Major Destinations
Uses w/in Cycling Distance: No Uses w/in Cycling Distance
changed to:Uses w/in Cycling Distance: Moderate Number and Variety
Bike Parking Ordinance: No Ordinance or Unenforceable
changed to:Bike Parking Ordinance: Requires Unprotected Bike Racks
Mitigation measure Mixed Use Project (Commercial Oriented):1
has been changed from off to on.
Mitigation measure Provide Wide Sidewalks and Onsite Pedestrian Facilities:1
has been changed from off to on.
Mitigation measure Provide Street Lighting:0.5
has been changed from off to on.
Mitigation measure Project Provides Shade Trees to Shade Sidewalks:0.5
has been changed from off to on.
Mitigation measure Provide Pedestrian Safety Designs/Infrastructure at Crossings:0.5
has been changed from off to on.
Mitigation measure Articulated Storefront(s) Display Windows with Visual Interest:0.25
has been changed from off to on.
Mitigation measure No Long Uninterrupted Walls Along Pedestrian Walkways:0.25
has been changed from off to on.
Mitigation measure Provide Bike Lanes/Paths Connecting to Bikeway System:2
has been changed from off to on.
Mitigation measure Provide Securre Bicycle Parking:1
has been changed from off to on.

Mitigation measure Parking Limited (below minimum):1
has been changed from off to on.
Mitigation measure Some Frequently Needed Services Provided:3
has been changed from off to on.

3.X AIR QUALITY

Air pollutants can be placed in three general categories: criteria air pollutants, toxic air contaminants, and odorous compounds. This section focuses on criteria air pollutants and does not discuss the latter two types of pollutants because the project site does not lie adjacent to a substantial source of toxic air contaminants or odors, nor would it introduce a substantial source of either type of pollutant to the site. This section evaluates criteria air pollutant impacts on the basis of estimates of emissions and concentrations. "Emissions" refer to emission rates and are typically expressed in terms of pounds per day, and "concentrations" refer to pollutant levels in a given volume of air and are typically expressed in terms of parts per million. Emissions estimates are evaluated through comparison with emissions-based significance criteria and concentrations are evaluated through comparison with ambient air quality standards.

ENVIRONMENTAL SETTING

The project site is located at the eastern boundary of the city of Escondido in an unincorporated portion of San Diego County. Two alternatives to the Valley View Estates project are currently proposed for a 1,150-acre site. The first alternative is the Valley View Estates project, which includes 560 residential units, 250-room resort hotel, an 18-hole golf course with clubhouse and tennis courts, four acres of commercial development, an equestrian center and natural open spaces. The second proposal is the Reduced Intensity Alternative of the Valley View Estates project. This Alternative would build 403 residential units, 250 room resort hotel, an 18 hole golf course, and an equestrian center.

Meteorology/Climate

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, influence the movement and dispersal of pollutants and thereby provide the link between air pollutant emissions and air quality.

The State of California is divided into air basins that are defined partly by their meteorological and topographical characteristics. The project site is located in the San Diego Air Basin (Air Basin). The Air Basin is defined by the boundaries of San Diego County. The Air Basin gradually rises from west to east with mountain ranges in the eastern portion marking the eastern boundary of the Air Basin. The climate of the Air Basin is strongly influenced by the semi-permanent high-pressure system over the Pacific Ocean. The moderating effects of the ocean produce a climate characterized by warm, dry summers and mild winters. Average temperatures in the coastal valley section of the basin range from the 60s and 80s (in degrees Fahrenheit) during the spring and summer months to as low as the middle 40s during the winter. Because of the moderating influence of the ocean, temperature extremes over 100 degrees or below freezing occur infrequently. Rainfall in the Escondido area averages approximately 10 inches per year.

Prevailing winds are westerly to northwesterly and are generally light to moderate. Winter storms moving inland from the ocean and strong northeasterly wind flow (Santa Ana conditions) are usually responsible for infrequent stronger winds in the area. Winds in the project area result mainly from temperature differences between the ocean and the inland areas to the east. Long-term wind records show a very dominant on-shore flow from the west with moderate (8 to 12 miles per hour) speeds. A light (3 to 5 miles per hour) off-shore flow from the southeast occurs more frequently in winter months, though still not as prevalent as the on-shore winds.

While winds control the horizontal transport processes important for air pollution dispersion, temperature inversions control the vertical extent through which pollutants can be mixed. Subsidence inversions occur during the warmer months as descending air, associated with the Pacific high-pressure cell, comes into contact with cool marine air. The boundary between the two layers of air represents a temperature inversion that traps pollutants and prevents them from rising. Radiation inversions develop on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses can trap pollutants. These radiation inversions are strongest in winter when nights are longest and air is coldest. They may lead to stagnation of ground-level pollution from sources such as automobile exhaust near freeways or major parking facilities.

While air quality in a given air basin is usually determined by emission sources within the basin, air quality in some air basins can also be affected by pollutants transported from upwind air basins by prevailing winds. For instance, Santa Ana conditions in the South Coast Air Basin can combine with the prevailing sea breeze to transport emissions generated in the greater Los Angeles metropolitan area into the San Diego Air Basin with subsequent adverse effects on regional air quality. Under certain other meteorological conditions, emissions generated in Mexico can adversely affect air quality in the San Diego Air Basin (California Air Resources Board, 1996).

Existing Air Quality

SDAPCD's regional air quality monitoring network provides information on ambient concentrations of criteria air pollutants. The monitoring station located to the project site is located in Escondido and is approximately 5 miles west of the project site. Table 3.X-2 provides a five-year summary of concentration data recorded at the SDAPCD's Escondido monitoring station. A discussion of existing air quality conditions with respect to specific criteria air pollutants is provided in the following paragraphs.

Regulatory Framework

Regulation of air quality is achieved through national and state ambient air quality standards and emissions limits for individual sources of air pollutants.

Criteria Air Pollutants

The federal Clean Air Act requires the U.S. Environmental Protection Agency (U.S. EPA) to list air pollutant compounds which may endanger public health or welfare; to publish air quality "criteria" describing the latest scientific knowledge on these compounds, their pollutant interactions, and control techniques; and to identify National Ambient Air Quality Standards (national standards) protective of public health and welfare. Currently, U.S. EPA has established national standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter (PM-10 and PM-2.5), and lead. California has adopted more stringent standards for most of the criteria air pollutants (referred to as State Ambient Air Quality Standards, or state standards) and has adopted ambient air quality standards for some pollutants for which there are no corresponding national standards. Both sets of ambient air quality standards (i.e., national and state) are presented in Table 3.X-1.

Attainment/Non-attainment Designations

Under amendments to the federal Clean Air Act, U.S. EPA has classified air basins, or portions thereof, as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the national standards have been achieved. In 1988, the State Legislature passed the California Clean Air Act, which is patterned after the federal Clean Air Act to the extent that areas are designated as "attainment" or "non-attainment," but with respect to the state standards, rather than the national standards. Thus, areas in California have two sets of attainment/non-attainment designations: one set with respect to the national standards and one set with respect to the state standards. San Diego Air Basin is currently a "non-attainment" area for the state and national ozone standards and for the state PM-10 standard, and is either "attainment" or "unclassified" for the other criteria air pollutant standards (California Air Resources Board, 1999).

Regional Air Quality Plans, Policies, and Regulations

Under federal Clean Air Act Amendments, areas designated as "non-attainment" are required to prepare regional air quality plans, which set forth a strategy for bringing an area into compliance with the standards. Air quality plans developed to meet federal requirements are included in an overall program referred to as the State Implementation Plan (SIP).

San Diego's original SIP, known as the *Regional Air Quality Strategy*, was developed in the early to mid-1970s. The focus of this original plan was photochemical smog (the principal component of photochemical smog is ozone). The *Regional Air Quality Strategy* was substantially revised in 1979 (1979 Strategy) to include a comprehensive air resources management program, which included most of the currently adopted control measures.

The 1979 Strategy also expanded its focus to address carbon monoxide, nitrogen dioxide, and particulates, in addition to photochemical smog, since San Diego County was designated as "non-attainment" at that time for those pollutants as well. The 1979 Strategy was updated in 1982 to include additional control measures. Based on the scientific knowledge of ground-level ozone production at that time, the 1979 and 1982 Strategies focused on control and reduction of reactive organic compounds (ROG) emissions (rather than on nitrogen oxides (NO_X)). NO_X control measures were included only to the extent necessary to address non-attainment of the

TABLE 3.X-1: STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	National[a,c]	State of California[b,c]
Ozone	1 hour	0.12 ppm (235 µg/m3)	0.09 ppm (180 µg/m3)
	8 hour	0.08 ppm (160 µg/m3)	NA
Carbon Monoxide	1 hour	35 ppm (40,000 µg/m3)	20 ppm (23,000 µg/m3)
	8 hour	9 ppm (10,000 µg/m3)	9.0 ppm (10,000 µg/m3)
Nitrogen Dioxide	1 hour	NA	0.25 ppm (470 µg/m3)
	Annual	0.053 ppm (100 µg/m3)	NA
Sulfur Dioxide	1 hour	NA	0.25 ppm (655 µg/m3)
	3 hour	0.5 ppm (1,300 µg/m3)	NA
	24 hour	0.14 ppm (365 µg/m3)	0.04 ppm (105 µg/m3)
	Annual	0.03 ppm (80 µg/m3)	NA
Particulate Matter (PM-10)	24 hour	150 µg/m3	50 µg/m3
	Annual	50 µg/m3	30 µg/m3
Particulate Matter (PM-2.5)	24 hour	65 µg/m3	NA
	Annual	15 µg/m3	NA
Sulfates	24 hour	NA	25 µg/m3
Lead	30 day	NA	1.5 µg/m3
	Calendar Quarter	1.5 µg/m3	NA
Hydrogen Sulfide	1 hour	NA	0.03 ppm (42 µg/m3)

a National standards, other than for ozone and particulate matter and those based on annual averages, are not to be exceeded more than once per year. For the one-hour ozone standard, the ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The eight-hour ozone standard is met at a monitoring site when the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration is less than or equal to 0.08 ppm.

b California standards for ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter (PM-10) are values that are not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

c ppm = parts per million by volume; µg/m^3 = micrograms per cubic meter.

NA: Not Applicable.
SOURCE: California Air Resources Board, January 1999.

national nitrogen dioxide standard. The 1982 Strategy was intended to bring San Diego into compliance with the national standards by 1987.

Federal Policies

Under federal Clean Air Act Amendments of 1990, SIPs were required to be revised to meet new requirements for those regions, like San Diego Air Basin, that did not attain the national standards by 1987. By 1990, San Diego County was no longer "non-attainment" for national standards for nitrogen dioxide and particulates, and thus, SIP revisions focus on the pollutants, ozone and carbon monoxide, for which San Diego remained "non-attainment."

With respect to the national ozone standard, federal Clean Air Act Amendments of 1990 distinguished among various categories of "non-attainment," ranging from "marginal" to "extreme." San Diego Air Basin was designated as a "serious" ozone non-attainment area, and as such, SIP revisions were required in 1992, 1993, and 1994, each addressing specific requirements for "serious" non-attainment areas. The 1992 SIP submittal included revised regulations related to Reasonably Available Control Technology (or RACT, which refers to retrofit requirements for "major" existing sources), New Source Review, and Transportation Control Measures. One of the revisions extends RACT requirements to major NO_x sources; prior RACT requirements had focused on ROG. These regulations are administered by the San Diego Air Pollution Control District (SDAPCD). The 1993 SIP submittal addressed Rate-of-Progress requirements, and the 1994 SIP submittal represented the Attainment Demonstration.

With respect to national carbon monoxide standards, U.S. EPA has recently re-designated San Diego Air Basin as "attainment" and has approved a "Maintenance Plan" that shows how the standard would continue to be maintained in the future. This Maintenance Plan represents the current carbon monoxide SIP for the San Diego Air Basin.

In 1997, the U.S. Environmental Protection Agency (EPA) promulgated a 24-hour standard for PM-2.5 (particulate matter less than 2.5 microns in diameter). Because of limited data, EPA has not been able to make findings of attainment status for specific air basins. EPA estimates that sufficient data collection and analysis will be completed by 2002 for states to begin preparation of State Implementation Plans (SIP) for completion by 2005-2008.

California Policies

Under the California Clean Air Act of 1988, air quality plans are required for areas designated as "non-attainment" for the state standards (not including PM-10 non-attainment areas). Thus, just as many areas in California have two sets of attainment/non-attainment designations, they also have parallel sets of air quality plans: one set to meet federal requirements and one set to meet state requirements. In 1991, an air quality plan, the *1991 Regional Air Quality Strategy* (1991 Strategy), was developed to meet the requirements of the California Clean Air Act, and it addressed the "non-attainment" status of the County with respect to state standards for ozone, carbon monoxide, and nitrogen dioxide (San Diego Air Pollution Control District, 1992). Pursuant to the California Clean Air Act, the 1991 Strategy was developed to include every feasible control measure and an expeditious adoption schedule. Also, the 1991 Strategy specifies the level of control for all existing major stationary sources as Best Available Retrofit Control Technology (BARCT). BARCT is equal to or more stringent than RACT, which is required under the federal Clean Air Act.

The California Clean Air Act requires plans, such as the 1991 Strategy, to be updated on a triennial basis. The *Triennial Update for the San Diego Air Basin* (1995 Update), was the first such update (San Diego Air Pollution Control District, 1995). The 1995 Update addressed the status of SDAPCD efforts through 1994 to implement the 1991 Strategy and revised the 1991 Strategy's control measure adoption schedule accordingly. Since San Diego is now "attainment" for the state carbon monoxide and nitrogen dioxide standards, the 1995 Update addressed only ozone non-attainment issues. A second triennial update (1998 Update) was adopted by SDAPCD in June 1998 (San Diego Air Pollution Control District, 1998). The 1995 and 1998 Updates incorporate the various federal SIP revisions, with their updated emissions inventories and emissions projections, by reference, with few exceptions. There are several SDAPCD Rules that would apply to the proposed project. Rule 69.5 establishes NO_X emissions standards for residential and commercial water heaters. Rule 69.6 establishes NO_X emissions standards for residential furnaces.

The California Air Resources Board (CARB) plans to approve PM-2.5 regulations in 2002. However, at this time, California PM-2.5 standards have not been adopted. Since diesel combustion is a primary source for PM-2.5 emissions, new control measures are being evaluated for diesel engines. It is anticipated that proposed engine retrofit programs will substantially reduce PM-2.5 emissions throughout the State.

Local Policies

The Community Open Space and Conservation Element of the City of Escondido General Plan includes two applicable air-quality-related policies (City of Escondido, 1990). The following air resources policies apply to the proposed project:

Policy J1.1(d): The City shall provide, whenever possible, incentive for carpooling, flextime, shortened work weeks, and telecommunications and other means of reducing vehicular miles traveled.

Policy J1.12: The City shall encourage the implementation of passive solar energy for space and water heating.

The proposed Specific Plan does not implement either City policy.

Regulatory Agencies

The California Air Resources Board (CARB) develops and implements the state's motor vehicle pollution control program; administers and coordinates the state's air pollution research program; adopts and updates, as necessary, the state's ambient air quality standards; reviews the operations of the local air pollution control districts (APCDs); and reviews and coordinates preparation of the SIP for achievement of the national standards.

In addition to having primary responsibility for preparing air quality plans to address "non-attainment" pollutants, APCDs are also responsible for regulating stationary sources as well as certain portable sources. Generally, stationary sources are regulated through a permitting process in which applicants must secure an Authority to Construct (ATC) and a Permit to Operate (PTO) from the applicable APCD prior to operation of new or modified equipment that may affect air quality. Stationary sources can also be subject to retrofit requirements imposed by the applicable APCD. The project site lies within the jurisdiction of the APCD of San Diego County (SDAPCD).

Ozone

San Diego County is in serious non-attainment for both federal and state ozone standards. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_X), precursors to ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production. On-road motor vehicles contribute approximately 57 percent to the Basin-wide inventory of ROG and 77 percent to the Basin-wide inventory of NO_X (California Air Resources Board, 1997).

The 1998 Update of the *1991 Regional Air Quality Strategy* indicates that ozone concentrations in the San Diego Air Basin decreased significantly between 1994-1996 and the baseline planning period 1986-1988. Expected peak-day ozone concentrations at the El Cajon and Alpine monitoring stations (where the highest concentrations are typically measured) improved by 11 percent and 14 percent, respectively. Over that same period, the Basin-wide, population-weighted exposure indicator improved by 61 percent. As shown in Table 3.X-2, violations of the state ozone standard have been recorded in Escondido on an average of 11 days per year over the past five years. Ozone causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease. Ozone also damages vegetation and untreated rubber products.

Carbon Monoxide

San Diego County is in attainment for both federal and state carbon monoxide standards. Carbon monoxide is an odorless, invisible gas usually formed as the result of incomplete combustion of organic substances. Ambient carbon monoxide concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Carbon monoxide concentrations also are influenced by wind speed and atmospheric mixing. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area out to some distance from vehicular sources. In the San Diego Air Basin, on-road motor vehicles contribute approximately 86 percent to the Basin-wide inventory of carbon monoxide (California Air Resources Board, 1997). High concentrations of carbon monoxide in respired air can impair the ability of the human body to absorb oxygen into the bloodstream, thereby aggravating cardiovascular disease and causing fatigue, headaches, and dizziness. Table 3.X-2 shows that background carbon monoxide concentrations do not violate ambient standards in Escondido.

TABLE 3.X-2: ESCONDIDO AIR POLLUTANT SUMMARY, 1996-2000[a]

Pollutant	Standard[b]	Concentrations[a] 1996	1997	1998	1999	2000
Ozone						
Highest 1-hour average, ppm[c]	**0.09**	**0.12**	**0.11**	**0.12**	**0.10**	**0.12**
Number of exceedances[d]		12	5	9	1	6
Carbon Monoxide						
Highest 1-hour average, ppm[c]	20.0	11.2	9.3	10.2	9.9	9.3
Number of exceedances		0	0	0	0	0
Highest 8-hour average, ppm[c]	9.0	7.1	4.9	4.5	5.3	4.9
Number of exceedances		0	0	0	0	0
Nitrogen Dioxide						
Highest 1-hour average, ppm[c]	0.25	0.10	0.12	0.09	0.10	0.08
Number of exceedances		0	0	0	0	0
Particulate Matter (PM-10)[e]						
Highest 24-hour average, μg/m[3c]	50	**53**	**63**	**51**	**52**	**65**
Annual Geometric Mean, μg/m[3c]	30	25	27	21	29	28

a Data are from the SDAPCD monitoring station located at Valley Parkway in the City of Escondido.
b State standard, not to be exceeded.
c ppm - parts per million; $\mu g/m^3$ - micrograms per cubic meter.
d Except for ozone, the term, "number of exceedances" refers to the number of measured values above the corresponding standard. For ozone, "number of exceedances" refers to the number of days in a given year during which one or more hourly concentrations exceeded the standard.
e Unlike most of the other pollutants, which are measured continuously, PM-10 is typically measured every sixth day.

NOTE: **Bold** values indicate an excess of applicable standard..
SOURCE: California Air Resources Board, *Air Quality Data Summaries*, 1996, 1997, 1998, 1999, 2000; www.sdapcd.co.san-diego.ca.us/air.

Particulate Matter (PM-10 and PM-2.5)

San Diego County is in non-attainment for the state PM-10 standard and is unclassified for the federal PM-10 standard that means it had once been in non-attainment. PM-10 consists of particulate matter that is 10 microns or less in diameter (a micron is one- millionth of a meter), and PM-2.5 consists of particulate matter 2.5 microns or less in diameter. Both PM-10 and PM-2.5 represent fractions of particulate matter, which can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter is a primary pollutant resulting from many kinds of dust- and fume-producing industrial and agricultural operations as well as fuel combustion. Particulate matter is also a secondary pollutant formed through atmospheric reactions involving NO_X, sulfur dioxide, and ROG. Homes can contribute to local particulate concentrations from wood-burning fireplaces. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Table 3.X-2 indicates that PM-10 concentrations have violated the state 24-hour standard approximately 7 percent of the time over the past five years.

Nitrogen Dioxide and Sulfur Dioxide

San Diego County is in attainment for the federal and state NO_X and SO_X standards. NO_X and SO_X are two gaseous compounds within a larger group of compounds which are products of the combustion of fuel. NO_X and SO_X emission sources can elevate local nitrogen dioxide and sulfur dioxide concentrations, and both are regional precursor compounds to particulate matter. As described above, NO_X is also an ozone precursor compound and can affect regional visibility. NO_X is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. Elevated concentrations of these compounds are associated with increased risk of acute and chronic respiratory disease.

Sensitive Land Uses

Some persons are considered more sensitive than others to air pollutants. Land uses such as schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality. This is because the very young, the old, and the ill are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential land uses are considered sensitive to poor air quality because people are often at home for extended periods. Recreational land uses are moderately sensitive to air pollution, because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Sensitive land uses in the project vicinity include low-density residential land use and recreational land uses associated with the Eagle Crest Golf Course. Additionally, the project would introduce a sensitive land use to the site in the form of residential development.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The project would result in air emissions during construction principally from particulate matter generated by grading, and site preparation activities along with emissions from heavy duty diesel equipment and worker commute. Operational-phase emissions would increase in pace with development of the site from such sources as motor vehicle trips, natural gas combustion, and electricity consumption. Motor vehicle trips would also affect carbon monoxide concentrations at local intersections serving project traffic.

Significance Criteria

The CEQA Guidelines indicate that the project may be deemed significant if it would:

- Conflict or obstruct implementation of the applicable air quality plan;
- Violate any air quality standards or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal and state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutants concentrations; or
- Create objectionable odors affecting a substantial number of people.

The CEQA Guidelines also indicate that any significance criteria established by the local air pollution control district may be relied upon to address the types of impacts listed above. SDAPCD has not established CEQA significance criteria. However, an adjacent air district, the South Coast Air Quality Management District (SCAQMD), has established such criteria. For the purpose of this analysis, we will use the SCAQMD's air pollution significance criteria for reactive organic compounds, nitrogen oxides, and particulate matter, which are shown in Table 3.X-3. Any exceedance of these standards during construction or operation of the proposed project would be considered a significant impact.

Methodology

Construction phase air quality impacts were analyzed quantitatively utilizing construction emissions estimation worksheets. The worksheets follow methodology outlined in the SCAQMD CEQA Air Quality Handbook and utilize emission factors found in the EMFAC-7G air emissions models and CARB Emission Inventory Publication number MO99-32.3. Construction emissions analyses focus on criteria pollutants for which the area is in non-attainment: PM-10 emissions from grading activities, NO_X emissions from heavy-duty diesel engines, and ROG from architectural coatings and asphalt laying operations.

Operational air quality impacts were analyzed utilizing CARB's URBEMIS-7G air emissions model. Operational emissions were broken down into two sources: stationary and mobile sources. Stationary sources of emissions include on-site emissions generated as a result of the combustion of natural gas and off-site emissions resulting from an increased electrical demand. Mobile source emissions are motor vehicle emissions.

TABLE 3.X-3: SCAQMD AIR POLLUTION SIGNIFICANCE CRITERIA

Air Pollutant	Project Construction	Project Operation
ROG	75 lbs. Per day	55 lbs. Per day
NO_X	100 lbs. Per day	55 lbs. Per day
PM-10	150 lbs. Per day	150 lbs. Per day

SOURCE: South Coast Air Quality Management District.

The line-source dispersion model, CALINE4, was used to estimate local carbon monoxide concentrations at roadway intersections at peak traffic periods. This Gaussian dispersion model calculates one-hour concentrations on the basis of peak-hour traffic volumes, roadway configurations, and worst-case meteorological assumptions to assess the potential for CO hotspots. Appendix _ includes emissions worksheets and model results. Traffic analysis was conducted by Katz, Okitsu and Associates.

Impact 3.X-1: Construction of the proposed project would emit criteria pollutants. Estimated daily construction emissions could exceed significance thresholds. This would be considered a significant impact.

Construction of the proposed project would generate air emissions. Construction related emissions would primarily be 1) dust generated from grading; 2) hydrocarbon emissions from paints and asphalt; 3) exhaust emissions from powered construction equipment and; 4) motor vehicle emissions associated with construction activities.

The air emissions calculations for the Valley View Estates assume that construction emissions would last approximately 15 years and would vary day to day depending on the activities being performed. Construction emissions were broken down into two distinct phases. Phase One would last approximately two years and would include site grading and clearance of approximately 80 acres, the construction of approximately 42 estate lots, 24 patio homes, 75 apartments, and a 250-room hotel. In addition, an 18-hole golf course with clubhouse and tennis courts, four acres of commercial development, an equestrian center, and the corresponding street network associated with development will be constructed. Phase Two of construction would last approximately 13 years and include site grading and clearance of approximately 40 acres per year, construction of approximately 21 estate lots and 12 patio homes per year and the corresponding street network associated with development.

Construction of the Reduced Intensity Alternative would last approximately 10 years and would vary day to day depending on the activities being performed. Construction emissions were broken down into two distinct phases. Phase One would last approximately two years and would include site grading and clearance of approximately 120 acres, the construction of approximately

46 estate lots, 33 patio homes, and a 250-room hotel. In addition, an 18-hole golf course with clubhouse and tennis courts, an equestrian center, and the corresponding street network associated with development will be constructed. Phase Two of construction would last approximately eight years and include site grading and clearance of approximately 60 acres per year, construction of approximately 23 estate lots and 18 patio homes per year and the corresponding street network associated with development.

Fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the prevailing weather. Some of the fugitive dust would be larger-diameter particles that would settle out of the atmosphere close to the site. Smaller-diameter dust would remain suspended for longer periods and would include PM-10

In addition to fugitive dust and PM-10, project construction would also result in emissions of other criteria air pollutants, including ROC and NO_X, due to combustion of fuel for heavy equipment operation, truck trips, construction worker trips, and other equipment used for construction (generators, compressors, etc.). Emissions would also be generated from asphalt paving and use of architectural coatings. Construction equipment exhaust emissions would vary substantially from day to day depending upon the level of activity, the number and types of equipment in use, site characteristics, and amount of materials to be transported around the site. Additional exhaust emissions would be associated with the transport of workers and materials.

The following section summarizes emissions calculation assumptions for each phase of construction for both alternatives.

Valley View Estates Proposed

Phase One

During Phase One of construction, it is estimated that 5 bobcats, 3 forklifts, 20 compressors, 3 graders, 2 cranes, 2 backhoes, 4 compactors, 3 rollers, 1 welder, 3 pavers, and 1 rock crusher would operate at the site. The emissions estimates assume an average daily usage for each piece of equipment ranging from 4 to 8 hours per day over a period 50 to 600 days. This total emissions estimate is then averaged over a two-year construction period. Appendix ___ includes the data sheets showing assumptions and emissions calculations for each piece of equipment. It is further assumed that 150 employees and 25 haul trucks would travel 15 miles to and from the job site each day, and that water trucks and dump trucks would travel 30 miles per day at the job site. For the purpose of this analysis, substantial truck trips to deliver or remove soil from the project site are not anticipated.

The portion of the site that would be graded is approximately 80 acres[1] and would be graded over a 200-day period. Fugitive dust emissions were calculated utilizing the SCAQMD CEQA Air Quality Handbook fugitive dust emissions factor of 55.0 pounds per day per acre disturbed. ROG would be emitted during painting or application of any other architectural coatings. In addition, ROG would be emitted during asphalt laying operations. SDAPCD Rule 67.0 states

[1] Source: Project Description Valley View Estates Specific Plan, October 2001

that by 2003, all general coating sold or used in San Diego County must contain no more that 1.3 lbs/gal VOC. Assuming a 400 square foot per gallon application rate of paint, and knowing the average square footage of paint coverage per day, VOC emissions are calculated. An emission factor of 2.62 lbs./acre [2] was used to estimate emissions from street paving. As shown in Table 3.X-4, due to the large amount of heavy equipment, NO_x emissions associated with Phase One of construction would exceed significance criteria. Phase One construction air emissions would be considered a significant impact.

Phase Two

During Phase Two of construction it is estimated that 1 grader, 2 cranes, 2 backhoes, 3 compactors, 1 roller, 1 paver, 2 bobcats, 1 forklift, 3 compressors, and 1 rock crusher would operate at the site. It is further assumed that 80 employees and 10 haul trucks would travel 15 miles to and from the job site each day, and that water trucks and dump trucks would travel 10 miles per day at the job site. (See Appendix ___ for emissions data sheets.) As shown in Table 3.X-4, emissions associated with Phase Two of construction would not exceed significance criteria. Therefore, Phase Two construction impacts would not cause a significant impact to air quality.

TABLE 3.X-4: PHASE ONE AND TWO CONSTRUCTION EMISSIONS VALLEY VIEW ESTATES PROPOSED

Air Pollutant	Phase One	Phase Two	Significance Criteria
ROC	40 lbs/day	18 lbs/day	75 lbs/day
NO_X	225 lbs/day	50 lbs/day	100 lbs/day
PM-10	37 lbs/day	27 lbs/day	150 lbs/day

SOURCE: ESA Construction Emission Worksheets (Appendix__.)

Valley View Estates Preferred Reduced Intensity Alternative

Phase One

During Phase One of construction, it is estimated that 3 bobcats, 2 forklifts, 10 compressors, 3 graders, 1 welder, 1 cranes, 2 backhoes, 3 compactors, 3 rollers, 3 pavers, and 1 rock crusher would operate at the site. It is further assumed that 110 employees and 20 haul trucks would travel 15 miles to and from the job site each day, and that water trucks and dump trucks would travel 20 miles per day at the job site. (See Appendix ___ for emissions data sheets.)

[2] Source: URBEMIS-7G Asphalt Emission Factor.

Approximately 120 acres[3] would be graded over a 200-day period. As shown in Table 3.X-4, due to the large amount of heavy equipment, NO_x emissions associated with Phase One of construction would exceed significance criteria. Phase One construction impacts would be considered a significant impact.

Phase Two

During Phase Two of construction it is estimated that 1 bobcat, 3 compressors, 1 grader, 1 crane, 2 backhoes, 3 compactors, 1 roller, 1 paver, and one rock crusher would operate at the site. It is further assumed that 80 employees and 10 haul trucks would travel 15 miles to and from the job site each day, and that water trucks and dump trucks would travel 10 miles per day at the job site. (See Appendix ___ for emissions data sheets.) As shown in Table 3.X-5, emissions associated with Phase Two of construction would not exceed significance criteria. Therefore, Phase Two construction impacts would not cause a significant impact to air quality.

TABLE 3.X-5: PHASE ONE AND TWO CONSTRUCTION EMISSIONS VALLEY VIEW ESTATES REDUCED INTENSITY ALTERNATIVE

Air Pollutant	Phase One	Phase Two	Significance Criteria
ROC	24 lbs/day	9 lbs/day	75 lbs/day
NO_X	134 lbs/day	41 lbs/day	100 lbs/day
PM-10	32 lbs/day	37 lbs/day	150 lbs/day

SOURCE: ESA Construction Emission Worksheets (Appendix__.)

Sensitive Receptors

It is anticipated that nearby sensitive receptors would be exposed to increased pollutant concentrations during construction. Sensitive receptors in the vicinity of the project site include the Rancho San Pasqual housing development and the Eagle Crest Golf Course, which are located directly west of the project site and the San Diego Wild Animal Park which is located south of the project site. In addition, the Rancho Vistamonte housing development is planned southwest of the proposed project

Summary

For either alternative, Phase One construction emissions would exceed significance threshold for NO_x. Mitigation measures 3.X-2 through 3.X-4 would reduce NO_x emissions, but not below significance thresholds. For either alternative, Phase Two construction emissions would be below the identified thresholds of significance.

[3] Source: Project Description Valley View Estates Specific Plan, October 2001

Mitigation Measures

3.X-1a: Implementation of a Construction Dust Abatement Program.

Construction contractors shall implement a dust abatement program to reduce fugitive-source PM-10 emissions and the associated potential for elevated concentrations of PM-10 in the vicinities of construction sites and along haul roads. Elements of this program shall include the following:

- Water at least twice daily all active construction areas with exposed soil.
- Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Replant vegetation in disturbed areas as quickly as possible.

3.X-2: All equipment shall be properly tuned and maintained.

3.X-3: General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading or unloading queues shall be kept with there engines off, when not in use, to reduce vehicle emissions.

3.X-4: Throughout the construction period, heavy-duty construction equipment shall not be more than 10 years old, unless retrofitted with newer engines with more stringent emissions controls.

3.X-5: Construction activities shall be discontinued in the event of a second-stage smog alert.

Significance after mitigation: Significant and unavoidable.

Impact 3.X-2: Operation of the proposed project would emit criteria pollutants. Estimated daily average emissions would exceed significance thresholds. This would be considered a significant impact.

Operational emissions include stationary and mobile sources of emissions. Stationary sources of emissions include on-site emissions generated as a result of the combustion of natural gas and off-site emissions resulting from an increased electrical energy demand. Stationary source emissions contribute an insignificant amount to local operational emissions when compared to mobile sources of emissions, even so, stationary sources are accounted for in the URBEMIS-7G air emissions computer model. Mobile source emissions are motor vehicle emissions and would be the largest source of pollutants resulting from the implementation of the proposed project.

Project operational emissions were estimated using the URBEMIS-7G computer program developed by the California Air Resources Board. URBEMIS-7G is a computer-modeling program used to estimate emissions from land use projects. URBEMIS-7G estimates motor vehicle trip emissions using EMFAC-7G emissions factors approved for use by the California Air Resources Board. URBEMIS-7G calculates stationary source emissions utilizing internal assumptions based on total size and make up of the land use project being considered. Total operational emissions worksheets are presented an Appendix __. URBEMIS-7G includes CO emissions estimates. Since the air basin is in attainment for CO, CO emissions would not constitute a significant impact.

As shown in Table 3.X-6, operational emissions would exceed significance criteria. Therefore, operational impacts would be considered a significant impact. The URBEMIS-7G model provides for numerous mitigation measures to reduce emissions. The recommended measures include providing bike paths, bus service, pedestrian walkways and cross signals, and night lighting. However, implementation of these measures does not alter the emissions calculations. Even with these types of mitigation measures, the air emissions impact would remain significant and unavoidable.

TABLE 3.X-6: ESTIMATED DAILY OPERATIONAL EMISSIONS FOR THE PROPOSED PROJECT

	Emissions (pounds per day)		
Pollutant	**Valley View Estates Proposed**	**Valley View Estates Reduced Intensity Alternative**	**Significance Threshold**
CO	1,054	384	NA*
ROG	129	60	55
NO_X	292	99	55
PM-10	153	50	150

* Not applicable since the air basin is in attainment for CO.
Winter emissions estimates are shown above. Summer emissions estimates are slightly lower.
SOURCE: Environmental Science Associates, 2002.

Mitigation Measures: None.

Significance After Mitigation. Significant and unavoidable.

Impact 3.X-3 Motor vehicle trips generated by the project would affect carbon monoxide concentrations at intersections in the project vicinity. This would be considered a less than significant impact.

To determine whether the project would create CO hotspots at local intersections, carbon monoxide concentrations under future project conditions are modeled using CALINE4. The model results are compared to state 1-hour carbon monoxide standards of 20.0 parts per million (ppm).

The CALINE-4 dispersion model was developed by the California Department of Transportation (Caltrans). It utilizes peak-hour traffic volumes and worst-case meteorological assumptions to estimate localized worst-case CO concentrations. Worst case meteorological conditions include low wind speed and stable atmospheric conditions. The CALINE-4 model predicts an average concentration at specified receptor locations for this analysis 16 to 20 meters from the roadway on each side of the modeled intersection.

Background carbon monoxide concentrations in the project vicinity were estimated based on data available from the Escondido air monitoring station, located approximately five miles west of the project site. Based on the year 2000 at the Escondido station, existing worst-case background concentrations were estimated to be 9.3 ppm, one-hour average[4]. Regional carbon monoxide emissions and associated background concentrations are expected to decrease in the future due to the continued replacement of older vehicle models with more recent models designed to meet more stringent state and federal emissions standards.

The intersections most affected by the project were the Northbound Interstate 15 on/off ramp at Via Ranch Parkway, Bear Valley Parkway at Sunset Drive, San Pasqual Valley Parkway (State Route 78) at Citrus Road, and San Pasqual Road at Old Pasqual Road. Existing and future traffic volumes were estimated by Katz, Okitsu and Associates. The CALINE-4 model was performed for several intersections for existing conditions and for the year 2020. The CALINE-4 model is equipped with a topographic feature that allows inputs to account for terrain features such as steep mountainsides or canyon walls. For each intersection modeled, the terrain was assumed to be flat except for Rockwood Road at Cloverdale Road where a steep mountainside was assumed on the west side of Cloverdale Road. Modeling results are presented in Table 3.X-7.

As indicated in Table 3.X-7, under the existing and future scenarios, carbon monoxide concentrations would not be above state and national carbon monoxide standards at any of the intersections analyzed. The CO concentrations are lower in the future, despite higher traffic levels, due to the cleaner burning cars and fuels projected by Caltrans to be in use at that time. Appendix___ includes model result printouts.

Mitigation Measures: None required.

Significance After Mitigation. Less than significant.

Impact 3.X-4: The project would contribute air emissions to the region that would add to the cumulative baseline. This would be considered a significant impact.

The CEQA Guidelines require that a project be evaluated with respect to its contribution to the cumulative condition. Currently, the existing ambient air quality baseline is affected by emissions from mobile sources associated with the San Pasqual Housing Development, Eagle

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[4] Source: San Diego County Air Pollution Control District, Carbon Monoxide Max one hour average, Public Information August 2001,

Crest Golf Course, San Pasqual Union Elementary School, the San Diego Wild Animal Park, as well as the City of Escondido. The full buildout condition for the region would include existing development as well as the Valley View Estates project and the proposed nearby Rancho Vistamonte project.

The Rancho Vistamonte project is currently proposed for a 133.1 acre site south west of the project site. The Rancho Vistamonte housing development will consist of 80 residential units. Project emissions for the Rancho Vistamonte Housing Development were calculated utilizing the CARB URBEMIS-7G emission model. Table3.X-8 summarizes future project emissions for the Valley View Estates proposal and the Rancho Vistamonte project.

The San Diego Air Basin (SDAB) Regional Air Quality Strategy (RAQS) is the SDAPCD plan to reach attainment status for the state and federal ozone ambient air quality standard. The SDAB RAQS utilizes population assumptions provided by the San Diego Association of Governments (SANDAG) to project increases in emissions throughout San Diego County. According to SANDAG's "2020 Regionwide Forecast " published in July 1998, regionwide population is

TABLE 3.X-7: EXISTING AND PROJECTED MAXIMUM 1-HOUR CURBSIDE CARBON MONOXIDE CONCENTRATIONS[a]

		Scenarios		
Intersection	**State Standard (ppm)**	**Existing (ppm)**	**Year 2020 Valley View Proposed (ppm)**	**Year 2020 Valley View Preferred Reduced Intensity Alternative (ppm)**
Northbound Interstate 15 on/off ramp at Via Ranch Parkway	20.00	11.8	8.0	8.0
Bear Valley Parkway at Sunset	20.00	11.0	7.6	7.6
San Pasqual Valley Parkway at Citrus Road	20.00	10.5	7.5	7.5
San Pasqual Road at Old Pasqual Road	20.00	10.9	7.7	7.7
Rockwood Road at Cloverdale Road	20.00	9.8	7.5	7.4

a. All values are parts per million (ppm) of carbon monoxide.

NOTE: Local intersection increment based on CALINE4 and the results of the traffic analysis assuming worst-case meteorological conditions. Concentrations correspond to a distance of varying from approximately 16-20 feet from the center of the given intersection.

SOURCE: Environmental Science Associates, 2002; Katz, Okitsu and Associates, *Draft Traffic Analysis for Valley View Estates*, 2002.

TABLE 3.X-8: ESTIMATED DAILY OPERATIONAL EMISSIONS FOR VALLEY VIEW ESTATES, REDUCED INTENSITY ALTERNATIVE, AND RANCHO VISTAMONTE

	Emissions (pounds per day)		
Pollutant	**Rancho Vistamonte Only**	**Valley View Estates**	**Reduced Intensity Alternative**
ROG	14	129	60
NO_X	20	292	99
PM-10	8	153	50

SOURCE: Environmental Science Associates, 2002.

projected to increase 31% between the year 2000 and 2020. These projections are based on local growth projections forecast by municipal general plans. Although a general plan amendment would be required, the proposed project generally conforms to the growth patterns expected for the region as assessed in the RAQS. As shown in Table 3.X-8, the Valley View Proposed project would contribute a major portion of the anticipated new airborne pollutants in the region. Since the basin is in non-attainment this would constitute a significant effect on the cumulative condition. The Reduced Intensity Alternative would contribute substantially less pollutants to the cumulative condition.

The cumulative effect of carbon monoxide emissions was determined utilizing the CALINE-4 dispersion model. Traffic volumes at key intersections are added for both the Valley View Estates alternatives and the Rancho Vistamonte project to determine cumulative carbon monoxide concentrations. The results shown in Table 3.X-9 indicate that there would not be a significant cumulative effect on carbon monoxide concentrations at the four roadway intersections modeled.

Mitigation Measures: None.

Significance After Mitigation. Significant and unavoidable.

TABLE 3.X-9: EXISTING AND PROJECTED CURBSIDE CARBON MONOXIDE CONCENTRATIONS[a]

		Scenarios		
Intersection	State Standard (ppm)	Existing (ppm)	Year 2020 Valley View Proposed and Rancho Vistamonte (ppm)	Year 2020 Valley View Preferred Reduced Intensity Alternative and Rancho Vistamonte (ppm)
Northbound Interstate 15 on/off ramp at Via Ranch Parkway	20.00	11.8	8.0	8.0
Bear Valley Parkway at Sunset	20.00	11.0	7.6	7.6
San Pasqual Valley Parkway at Citrus Road	20.00	10.5	7.5	7.5
San Pasqual Road at Old Pasqual Road	20.00	10.0	7.1	7.1
Rockwood Road at Cloverdale Road	20.00	9.8	7.6	7.5

a. All values are parts per million (ppm) of carbon monoxide.

NOTE: Local intersection increment based on CALINE4 and the results of the traffic analysis assuming worst-case meteorological conditions. Concentrations correspond to a distance of varying from approximately 16-20 feet from the center of the given intersection.

SOURCE: Environmental Science Associates, 2002; Katz, Okitsu and Associates, *Draft Traffic Analysis for Valley View Estates*, 2002.

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ESTIMATED EMISSIONS FROM CONSTRUCTION VALLEY VIEW ESTATES PROPOSED YEAR ONE AND TWO

Construction Inputs

Total days Allowed for Project	600.00
Total Days Allowed for Construction (Days)	600.00
Total Site Acres (Acres)	600.00
Number of Employees	150
Average Trip Length One Way POV (Miles)	15
Total Work Hours Per Day (Hours/Day)	8
Daily Number of Haul and ConcreteTrucks	25
Average Trip Length One Way Haul Trucks (Miles)	15
Total VMT Water Trucks per day (Miles)	30
Total VMT Dump Trucks per day (Miles)	30

Total Number of Each Equipment used for Construction

# of equipment	5	3	20	3	1	2
Hours per Day	6	4	8	4	4	4
Days in Operation	450	300	600	200	50	150
	bobcats diesel	forklift diesel	compressor diesel	grader diesel	welder diesel	crane diesel

# of equipment	2	0	4	3	3	1
Hours per Day	6	0	6	6	6	2
Days in Operation	100	0	175	90	90	50
	back-hoe diesel	crawler dozer diesel	compactor diesel	roller diesel	paver diesel	rock crusher diesel

Assumptions Used in EMFAC7G

Chosen Speed	25	% LDA	66.00%
% Cold Start	75.00%	%LDT	34.00%
% Hot Start	25.00%	Season	summer
Daily VMT LDA & LDT	4560.000	Daily VMT Haul Truck	750

EMFAC7G Inputs

	LDA Grams/Mile	LDT Grams/Mile	HDD Grams/Mile
Carbon Monoxide (CO)	4.2	4.49	9.98
Reactive Organic Compounds (ROC)	0.24	0.29	1.51
Nitrogen Oxides (NOx)	0.44	0.7	9.25
Particulates (PM10)	0		0.59

Source: EMFAC7G

Vehicle Exhaust Emissions from POV, Construction

Construction Workers POV Emissions

	EMFAC7G Emissions Factor. Grams/Mile	Cold Start Emissions Factor. Grams/Trip	Hot Start Emissions Factor. Grams/Trip	Est. Emissions lbs/day

Carbon Monoxide (CO)	4.2986	24.77205	0.52885	59.89
Reactive Organic Compounds (ROC)	0.257	2.2998	0.05255	4.14
Nitrogen Oxides (NOx)	0.5284	1.4394	0.148	6.36
Sulfur Oxides (SOx) *	0	0	0	0
Particulates (PM10)	0	0	0	0

Source: Emission Factors From EMFAC7G at 70 Deg Fahrenheit at Chosen Speed

*Source: Table A9-5-L SCAQMD CEQA Handbook

Haul Truck Emissions

	EMFAC7G Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	9.98	16.49
Reactive Organic Compounds (ROC)	1.51	2.49
Nitrogen Oxides (NOx)	9.25	15.28
Sulfur Oxides (SOx)	NA	0
Particulates (PM10)	0.59	0.97

Source: EMFAC7G

Construction Equipment Emissions

	bobcat 50 hp diesel lbs/hour	forklift 175 hp diesel lbs/hour	compressor 50 hp diesel lbs/hour	grader 175 hp diesel lbs/hour	welder 50 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.07	0.24	0.55	0.24	0.55	0.22	92.6
Reactive Organic Compounds (ROC)	0.04	0.13	0.1	0.12	0.1	0.11	18.4
Nitrogen Oxides (NOx)	0.62	2.24	0.9	2.18	0.9	2.01	184.4
Particulates (PM10)	0.02	0.05	0.05	0.05	0.05	0.05	9.1

	back-hoe 175 hp diesel lbs/hour	crawler dozer 250 hp diesel lbs/hour	compactor 50 hp diesel lbs/hour	roller 175 hp diesel lbs/hour	paver 175 hp diesel lbs/hour	rock crusher 120 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.22	0.31	0.05	0.23	0.24	0.13	1.8
Reactive Organic Compounds (ROC)	0.11	0.16	0.03	0.12	0.13	0.07	1.1
Nitrogen Oxides (NOx)	1.98	2.79	0.49	2.08	2.22	1.15	19.2
Particulates (PM10)	0.05	0.07	0.01	0.05	0.05	0.03	0.4

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

Total PM10 Fugitive Dust Emissions from construction

Air Pollutant	Emission Factor		Est. Emissions (lbs/day)
Particulates (PM10) Grading	55.00	lb/acres	22.00
Particulates (PM10) POV & Haul Truck*	0.42	gm/mile	4.91

Source: Table A9-9 of the CEQA Air Quality Handbook

*Source: ARB Recommended

Volatile Organic Compounds from Architectural Coatings

Square Footage per day	Coating Equivalent	Equivalent Square Footage
2000 ft^2/day	2.7	5400 ft^2/day
Paint Coating Factor	Paint VOC Content	

400 ft²/day	1.03 lb/gal	
	Total Commercial VOC from Architectural Coatings	
	13.9 lb/day VOC	

Source: SCAQMD Recommended

Reactive Organic Compounds From Street Paving		
Asphalt ROC Emission Factor*	2.62	lb/acre
Total Acres Being Paved	7	acres
Total ROC from Paving	0.20	lb/day ROC

*Source: Urbemis 7G Asphalt Emission Factor

Total Air Emissions from Construction Including POV, Fugitive Dust, and Construction Equipment

Air Pollutant	Est. Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Significant?
Carbon Monoxide (CO)	170.75	550.00	NO
Reactive Organic Compounds (ROC)	40.27	75.00	NO
Nitrogen Oxides (NOx)	225.26	100.00	YES
Particulates (PM10)	37.40	150.00	NO

Source: EMFAC7G and SCAQMD CEQA Air Quality Handbook

ESTIMATED EMISSIONS FROM CONSTRUCTION VALLEY VIEW ESTATES PROPOSED YEAR THREE THROUGH TEN

Construction Inputs

Total days Allowed for Project	300.00
Total Days Allowed for Construction (Days)	300.00
Total Site Acres (Acres)	600.00
Number of Employees	80
Average Trip Length One Way POV (Miles)	15
Total Work Hours Per Day (Hours/Day)	8
Daily Number of Haul and ConcreteTrucks	10
Average Trip Length One Way Haul Trucks (Miles)	15
Total VMT Water Trucks per day (Miles)	10
Total VMT Dump Trucks per day (Miles)	10

Total Number of Each Equipment used for Construction

	bobcats diesel	forklift diesel	compressor diesel	grader diesel	welder diesel	crane diesel
# of equipment	2	1	3	1	0	2
Hours per Day	6	4	8	4	0	4
Days in Operation	150	150	250	100	0	100

	back-hoe diesel	crawler dozer diesel	compactor diesel	roller diesel	paver diesel	rock crusher diesel
# of equipment	2	0	3	1	1	1
Hours per Day	6	0	6	2	2	2
Days in Operation	30	0	80	20	20	25

Assumptions Used in EMFAC7G

Chosen Speed	25	% LDA	66.00%
% Cold Start	75.00%	%LDT	34.00%
% Hot Start	25.00%	Season	summer
Daily VMT LDA & LDT	2420.000	Daily VMT Haul Truck	300

EMFAC7G Inputs

	LDA Grams/Mile	LDT Grams/Mile	HDD Grams/Mile
Carbon Monoxide (CO)	4.2	4.49	9.98
Reactive Organic Compounds (ROC)	0.24	0.29	1.51
Nitrogen Oxides (NOx)	0.44	0.7	9.25
Particulates (PM10)	0		0.59

Source: EMFAC7G

Vehicle Exhaust Emissions from POV, Construction

Construction Workers POV Emissions

	EMFAC7G Emissions Factor. Grams/Mile	Cold Start Emissions Factor. Grams/Trip	Hot Start Emissions Factor. Grams/Trip	Est. Emissions lbs/day

Carbon Monoxide (CO)	4.2986	24.77205	0.52885	31.83
Reactive Organic Compounds (ROC)	0.257	2.2998	0.05255	2.20
Nitrogen Oxides (NOx)	0.5284	1.4394	0.148	3.38
Sulfur Oxides (SOx) *	0	0	0	0
Particulates (PM10)	0	0	0	0

Source: Emission Factors From EMFAC7G at 70 Deg Fahrenheit at Chosen Speed

*Source: Table A9-5-L SCAQMD CEQA Handbook

Haul Truck Emissions

	EMFAC7G Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	9.98	6.59
Reactive Organic Compounds (ROC)	1.51	1.00
Nitrogen Oxides (NOx)	9.25	6.11
Sulfur Oxides (SOx)	NA	0
Particulates (PM10)	0.59	0.39

Source: EMFAC7G

Construction Equipment Emissions

	bobcat 50 hp diesel lbs/hour	forklift 175 hp diesel lbs/hour	compressor 50 hp diesel lbs/hour	grader 175 hp diesel lbs/hour	welder 50 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.07	0.24	0.55	0.24	0.55	0.22	12.8
Reactive Organic Compounds (ROC)	0.04	0.13	0.1	0.12	0.1	0.11	3.0
Nitrogen Oxides (NOx)	0.62	2.24	0.9	2.18	0.9	2.01	34.5
Particulates (PM10)	0.02	0.05	0.05	0.05	0.05	0.05	1.4

	back-hoe 175 hp diesel lbs/hour	crawler dozer 250 hp diesel lbs/hour	compactor 50 hp diesel lbs/hour	roller 175 hp diesel lbs/hour	paver 175 hp diesel lbs/hour	rock crusher 120 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.22	0.31	0.05	0.23	0.24	0.13	0.6
Reactive Organic Compounds (ROC)	0.11	0.16	0.03	0.12	0.13	0.07	0.3
Nitrogen Oxides (NOx)	1.98	2.79	0.49	2.08	2.22	1.15	5.5
Particulates (PM10)	0.05	0.07	0.01	0.05	0.05	0.03	0.1

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

Total PM10 Fugitive Dust Emissions from construction

Air Pollutant	Emission Factor		Est. Emissions (lbs/day)
Particulates (PM10) Grading	55.00	lb/acres	22.00
Particulates (PM10) POV & Haul Truck*	0.42	gm/mile	2.52

Source: Table A9-9 of the CEQA Air Quality Handbook

*Source: ARB Recommended

Volatile Organic Compounds from Architectural Coatings

Square Footage per day	Coating Equivalent	Equivalent Square Footage
320 ft^2/day	2.7	864 ft^2/day
Paint Coating Factor	Paint VOC Content	

400 ft²/day	1.03 lb/gal	
	Total Commercial VOC from Architectural Coatings	
	2.2 lb/day VOC	

Source: SCAQMD Recommended

Reactive Organic Compounds From Street Paving		
Asphalt ROC Emission Factor*	2.62	lb/acre
Total Acres Being Paved	3.5	acres
Total ROC from Paving	9.17	lb/day ROC

*Source: Urbemis 7G Asphalt Emission Factor

Total Air Emissions from Construction Including POV, Fugitive Dust, and Construction Equipment

Air Pollutant	Est. Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Significant?
Carbon Monoxide (CO)	51.80	550.00	NO
Reactive Organic Compounds (ROC)	17.87	75.00	NO
Nitrogen Oxides (NOx)	49.45	100.00	NO
Particulates (PM10)	26.45	150.00	NO

Source: EMFAC7G and SCAQMD CEQA Air Quality Handbook

ESTIMATED EMISSIONS FROM CONSTRUCTION VALLEY VIEW ESTATES PREFERRED REDUCED INTENSITY ALTERNATIVE YEAR ONE AND TWO

Construction Inputs

Total days Allowed for Project	600.00
Total Days Allowed for Construction (Days)	600.00
Total Site Acres (Acres)	600.00
Number of Employees	110
Average Trip Length One Way POV (Miles)	15
Total Work Hours Per Day (Hours/Day)	8
Daily Number of Haul and ConcreteTrucks	20
Average Trip Length One Way Haul Trucks (Miles)	15
Total VMT Water Trucks per day (Miles)	20
Total VMT Dump Trucks per day (Miles)	20

Total Number of Each Equipment used for Construction

# of equipment	3	2	10	3	1	1
Hours per Day	6	4	8	4	4	3
Days in Operation	450	300	600	200	50	100
	bobcats	forklift	compressor	grader	welder	crane
	diesel	diesel	diesel	diesel	diesel	diesel

# of equipment	2	0	3	3	3	1
Hours per Day	6	0	6	6	6	2
Days in Operation	100	0	140	90	90	100
	back-hoe	crawler dozer	compactor	roller	paver	rock crusher
	diesel	diesel	diesel	diesel	diesel	diesel

Assumptions Used in EMFAC7G

Chosen Speed	25	% LDA	66.00%
% Cold Start	75.00%	%LDT	34.00%
% Hot Start	25.00%	Season	summer
Daily VMT LDA & LDT	3340.000	Daily VMT Haul Truck	600

EMFAC7G Inputs

	LDA Grams/Mile	LDT Grams/Mile	HDD Grams/Mile
Carbon Monoxide (CO)	4.2	4.49	9.98
Reactive Organic Compounds (ROC)	0.24	0.29	1.51
Nitrogen Oxides (NOx)	0.44	0.7	9.25
Particulates (PM10)	0		0.59

Source: EMFAC7G

Vehicle Exhaust Emissions from POV, Construction

Construction Workers POV Emissions

	EMFAC7G Emissions Factor. Grams/Mile	Cold Start Emissions Factor. Grams/Trip	Hot Start Emissions Factor. Grams/Trip	Est. Emissions lbs/day
Carbon Monoxide (CO)	4.2986	24.77205	0.52885	43.88
Reactive Organic Compounds (ROC)	0.257	2.2998	0.05255	3.03
Nitrogen Oxides (NOx)	0.5284	1.4394	0.148	4.66
Sulfur Oxides (SOx) *	0	0	0	0
Particulates (PM10)	0	0	0	0

Source: Emission Factors From EMFAC7G at 70 Deg Fahrenheit at Chosen Speed

*Source: Table A9-5-L SCAQMD CEQA Handbook

Haul Truck Emissions		
	EMFAC7G Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	9.98	13.19
Reactive Organic Compounds (ROC)	1.51	2.00
Nitrogen Oxides (NOx)	9.25	12.22
Sulfur Oxides (SOx)	NA	0
Particulates (PM10)	0.59	0.78

Source: EMFAC7G

Construction Equipment Emissions							
	bobcat 50 hp diesel lbs/hour	forklift 175 hp diesel lbs/hour	compressor 50 hp diesel lbs/hour	grader 175 hp diesel lbs/hour	welder 50 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.07	0.24	0.55	0.24	0.55	0.22	47.2
Reactive Organic Compounds (ROC)	0.04	0.13	0.1	0.12	0.1	0.11	9.6
Nitrogen Oxides (NOx)	0.62	2.24	0.9	2.18	0.9	2.01	99.4
Particulates (PM10)	0.02	0.05	0.05	0.05	0.05	0.05	4.7

	back-hoe 175 hp diesel lbs/hour	crawler dozer 250 hp diesel lbs/hour	compactor 50 hp diesel lbs/hour	roller 175 hp diesel lbs/hour	paver 175 hp diesel lbs/hour	rock crusher 120 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.22	0.31	0.05	0.23	0.24	0.13	1.7
Reactive Organic Compounds (ROC)	0.11	0.16	0.03	0.12	0.13	0.07	1.0
Nitrogen Oxides (NOx)	1.98	2.79	0.49	2.08	2.22	1.15	18.0
Particulates (PM10)	0.05	0.07	0.01	0.05	0.05	0.03	0.4

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

Total PM10 Fugitive Dust Emissions from construction			
Air Pollutant	Emission Factor		Est. Emissions (lbs/day)
Particulates (PM10) Grading	55.00	lb/acres	22.00
Particulates (PM10) POV & Haul Truck*	0.42	gm/mile	3.64

Source: Table A9-9 of the CEQA Air Quality Handbook

*Source: ARB Recommended

Volatile Organic Compounds from Architectural Coatings

Square Footage per day	Coating Equivalent	Equivalent Square Footage
1150 ft²/day	2.7	3105 ft²/day
Paint Coating Factor	Paint VOC Content	
400 ft²/day	1.03 lb/gal	
	Total Commercial VOC from Architectural Coatings	
	8.0 lb/day VOC	

Source: SCAQMD Recommended

Reactive Organic Compounds From Street Paving		
Asphalt ROC Emission Factor*	2.62	lb/acre
Total Acres Being Paved	10.2	acres
Total ROC from Paving	0.30	lb/day ROC

*Source: Urbemis 7G Asphalt Emission Factor

Total Air Emissions from Construction Including POV, Fugitive Dust, and Construction Equipment

Air Pollutant	Est. Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Significant?
Carbon Monoxide (CO)	105.88	550.00	NO
Reactive Organic Compounds (ROC)	23.99	75.00	NO
Nitrogen Oxides (NOx)	134.25	100.00	YES
Particulates (PM10)	31.56	150.00	NO

Source: EMFAC7G and SCAQMD CEQA Air Quality Handbook

ESTIMATED EMISSIONS FROM CONSTRUCTION VALLEY VIEW ESTATES PREFERRED REDUCED INTENSITY ALTERNATIVE YEAR THREE THROUGH TEN

Construction Inputs

Total days Allowed for Project	300.00
Total Days Allowed for Construction (Days)	300.00
Total Site Acres (Acres)	600.00
Number of Employees	80
Average Trip Length One Way POV (Miles)	15
Total Work Hours Per Day (Hours/Day)	8
Daily Number of Haul and ConcreteTrucks	10
Average Trip Length One Way Haul Trucks (Miles)	15
Total VMT Water Trucks per day (Miles)	10
Total VMT Dump Trucks per day (Miles)	10

Total Number of Each Equipment used for Construction

	bobcats diesel	forklift diesel	compressor diesel	grader diesel	welder diesel	crane diesel
# of equipment	1	0	3	1	0	1
Hours per Day	6	0	8	4	0	2
Days in Operation	100	0	300	100	0	40

	back-hoe diesel	crawler dozer diesel	compactor diesel	roller diesel	paver diesel	rock crusher diesel
# of equipment	2	0	3	1	1	1
Hours per Day	6	0	6	2	2	2
Days in Operation	30	0	80	20	20	25

Assumptions Used in EMFAC7G

Chosen Speed	25	% LDA	66.00%
% Cold Start	75.00%	%LDT	34.00%
% Hot Start	25.00%	Season	summer
Daily VMT LDA & LDT	2420.000	Daily VMT Haul Truck	300

EMFAC7G Inputs

	LDA Grams/Mile	LDT Grams/Mile	HDD Grams/Mile
Carbon Monoxide (CO)	4.2	4.49	9.98
Reactive Organic Compounds (ROC)	0.24	0.29	1.51
Nitrogen Oxides (NOx)	0.44	0.7	9.25
Particulates (PM10)	0		0.59

Source: EMFAC7G

Vehicle Exhaust Emissions from POV, Construction

Construction Workers POV Emissions

	EMFAC7G Emissions Factor. Grams/Mile	Cold Start Emissions Factor. Grams/Trip	Hot Start Emissions Factor. Grams/Trip	Est. Emissions lbs/day
Carbon Monoxide (CO)	4.2986	24.77205	0.52885	31.83
Reactive Organic Compounds (ROC)	0.257	2.2998	0.05255	2.20
Nitrogen Oxides (NOx)	0.5284	1.4394	0.148	3.38
Sulfur Oxides (SOx) *	0	0	0	0
Particulates (PM10)	0	0	0	0

Source: Emission Factors From EMFAC7G at 70 Deg Fahrenheit at Chosen Speed

*Source: Table A9-5-L SCAQMD CEQA Handbook

Haul Truck Emissions

	EMFAC7G Emissions Factor. Grams/Mile	Est. Emissions lbs/day
Carbon Monoxide (CO)	9.98	6.59
Reactive Organic Compounds (ROC)	1.51	1.00
Nitrogen Oxides (NOx)	9.25	6.11
Sulfur Oxides (SOx)	NA	0
Particulates (PM10)	0.59	0.39

Source: EMFAC7G

Construction Equipment Emissions

	bobcat 50 hp diesel lbs/hour	forklift 175 hp diesel lbs/hour	compressor 50 hp diesel lbs/hour	grader 175 hp diesel lbs/hour	welder 50 hp diesel lbs/hour	crane 175 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.07	0.24	0.55	0.24	0.55	0.22	13.7
Reactive Organic Compounds (ROC)	0.04	0.13	0.1	0.12	0.1	0.11	2.7
Nitrogen Oxides (NOx)	0.62	2.24	0.9	2.18	0.9	2.01	26.3
Particulates (PM10)	0.02	0.05	0.05	0.05	0.05	0.05	1.3

	back-hoe 175 hp diesel lbs/hour	crawler dozer 250 hp diesel lbs/hour	compactor 50 hp diesel lbs/hour	roller 175 hp diesel lbs/hour	paver 175 hp diesel lbs/hour	rock crusher 120 hp diesel lbs/hour	Total Emissions lbs/day
Carbon Monoxide (CO)	0.22	0.31	0.05	0.23	0.24	0.13	0.6
Reactive Organic Compounds (ROC)	0.11	0.16	0.03	0.12	0.13	0.07	0.3
Nitrogen Oxides (NOx)	1.98	2.79	0.49	2.08	2.22	1.15	5.5
Particulates (PM10)	0.05	0.07	0.01	0.05	0.05	0.03	0.1

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

Total PM10 Fugitive Dust Emissions from construction

Air Pollutant	Emission Factor		Est. Emissions (lbs/day)
Particulates (PM10) Grading	55.00	lb/acres	33
Particulates (PM10) POV & Haul Truck*	0.42	gm/mile	2.52

Source: Table A9-9 of the CEQA Air Quality Handbook

*Source: ARB Recommended

Volatile Organic Compounds from Architectural Coatings

Square Footage per day	Coating Equivalent	Equivalent Square Footage
275 ft²/day	2.7	742.5 ft²/day
Paint Coating Factor	Paint VOC Content	
400 ft²/day	1.03 lb/gal	
	Total Commercial VOC from Architectural Coatings	
	1.9 lb/day VOC	

Source: SCAQMD Recommended

Reactive Organic Compounds From Street Paving		
Asphalt ROC Emission Factor*	2.62	lb/acre
Total Acres Being Paved	5.1	acres
Total ROC from Paving	0.67	lb/day ROC

*Source: Urbemis 7G Asphalt Emission Factor

Total Air Emissions from Construction Including POV, Fugitive Dust, and Construction Equipment

Air Pollutant	Est. Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Significant?
Carbon Monoxide (CO)	52.72	550.00	NO
Reactive Organic Compounds (ROC)	8.77	75.00	NO
Nitrogen Oxides (NOx)	41.26	100.00	NO
Particulates (PM10)	37.35	150.00	NO

Source: EMFAC7G and SCAQMD CEQA Air Quality Handbook

URBEMIS 7G For Windows 5.1.0

File Name: C:\Program Files\URBEMIS 7G For Windows\Projects\Valley View Prefe
Project Name: Valley View Estates Preferred Alternative
Project Location: San Diego County

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.40	5.16	2.19	0.01	-
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	19.72	-	-	-	-
TOTALS(lbs/day,unmitigated)	20.11	5.16	2.19	0.01	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	26.95	63.73	268.98	34.36
Racquetball/health	1.91	4.86	19.58	2.45
Hotel	10.86	24.74	93.71	12.87
TOTAL EMISSIONS (lbs/day)	39.73	93.34	382.27	49.68

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Temperature (F): 50 Season: Winter

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.27 trips / dwelling units	403.00	3,735.81
Racquetball/health	40.00 trips / 1000 sq. ft.	11.00	440.00
Hotel	7.47 trips / rooms	250.00	1,867.50

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
Hotel				5.0	2.5	92.5

Changes made to the default values for Construction

Changes made to the default values for Area

The wood stove option switch changed from on to off.
The percentage of wood stoves changed from 35 to 0.
The fireplace cords of wood burned changed from 1.48 to 0.
The fireplace percentage of residential units changed from 10 to 0.
The landscape year changed from 2000 to 2015.
Changes made to the default values for Operations

The operational emission year changed from 2000 to 2015.
The operational winter temperature changed from 40 to 50.
The operational summer selection item changed from 7 to 6.
The double counting internal work trip limit changed from to 115.375.
The double counting shopping trip limit changed from to 57.6875.
The double counting other trip limit changed from to 1923.94215.
The travel mode environment settings changed from both to: none

URBEMIS 7G For Windows 5.1.0

File Name: C:\Program Files\URBEMIS 7G For Windows\Projects\Valley View Prefe
Project Name: Valley View Estates Preferred Alternative
Project Location: San Diego County

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.40	5.16	2.19	0.01	-
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.28	0.07	2.87	0.00	0.08
Consumer Prdcts	19.72	-	-	-	-
TOTALS(lbs/day,unmitigated)	20.39	5.22	5.06	0.01	0.08

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	21.59	56.97	198.74	34.36
Racquetball/health	1.49	4.29	14.38	2.45
Hotel	9.07	21.97	70.80	12.87
TOTAL EMISSIONS (lbs/day)	32.14	83.23	283.91	49.68

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.27 trips / dwelling units	403.00	3,735.81
Racquetball/health	40.00 trips / 1000 sq. ft.	11.00	440.00
Hotel	7.47 trips / rooms	250.00	1,867.50

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
Hotel				5.0	2.5	92.5

Changes made to the default values for Construction

Changes made to the default values for Area

The wood stove option switch changed from on to off.
The percentage of wood stoves changed from 35 to 0.
The fireplace cords of wood burned changed from 1.48 to 0.
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The landscape year changed from 2000 to 2015.
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The operational winter temperature changed from 40 to 50.
The operational summer selection item changed from 7 to 6.
The double counting internal work trip limit changed from to 115.375.
The double counting shopping trip limit changed from to 57.6875.
The double counting other trip limit changed from to 1923.94215.
The travel mode environment settings changed from both to: none

URBEMIS 7G For Windows 5.1.0

File Name: C:\Program Files\URBEMIS 7G For Windows\Projects\Valley View Estat
Project Name: Valley View Estates
Project Location: San Diego County

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.57	7.53	3.16	0.01	-
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	27.40	-	-	-	-
TOTALS(lbs/day,unmitigated)	27.97	7.53	3.16	0.01	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	21.41	52.70	216.67	28.66
Apartments low rise	5.67	14.11	58.02	7.67
Condo/townhouse general	8.66	19.73	81.10	10.73
Racquetball/health	2.38	7.28	25.83	3.91
Hotel	12.06	30.88	109.64	16.61
Regnl shop. center < 5700	51.18	159.07	559.94	85.41
TOTAL EMISSIONS (lbs/day)	101.37	283.76	1,051.21	152.99

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.48 trips / dwelling units	304.00	2,881.92
Apartments low rise	10.29 trips / dwelling units	75.00	771.75
Condo/townhouse general	5.96 trips / dwelling units	181.00	1,078.76
Racquetball/health	40.00 trips / 1000 sq. ft.	11.00	440.00
Hotel	7.47 trips / rooms	250.00	1,867.50
Regnl shop. center < 5700	55.91 trips / 1000 sq. ft.	174.24	9,741.76

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center < 570000 sf				2.0	1.0	97.0

Changes made to the default values for Construction

Changes made to the default values for Area

The fireplcase option switch changed from on to off.
The area souce mitigation measure option switch changed from on to off.
The percentage of wood stoves changed from 35 to 0.
The fireplace cords of wood burned changed from 1.48 to 0.
The fireplace percentage of residential units changed from 10 to 0.
The landscape year changed from 2000 to 2015.
Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2000 to 2015.
The double counting internal work trip limit changed from to 310.210168.
The double counting shopping trip limit changed from to 155.105084.
The double counting other trip limit changed from to 2437.20145.
The travel mode environment settings changed from both to: none

URBEMIS 7G For Windows 5.1.0

File Name: C:\Program Files\URBEMIS 7G For Windows\Projects\Valley View Estat
Project Name: Valley View Estates
Project Location: San Diego County

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.57	7.53	3.16	0.01	-
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.32	0.07	3.13	0.00	0.06
Consumer Prdcts	27.40	-	-	-	-
TOTALS(lbs/day,unmitigated)	28.29	7.60	6.29	0.02	0.06

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	18.05	47.03	166.22	28.66
Apartments low rise	4.77	12.59	44.51	7.67
Condo/townhouse general	7.40	17.61	62.22	10.73
Racquetball/health	2.07	6.48	20.85	3.91
Hotel	10.73	27.48	88.50	16.61
Regnl shop. center < 5700	44.49	141.51	453.19	85.41
TOTAL EMISSIONS (lbs/day)	87.51	252.70	835.50	152.99

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.48 trips / dwelling units	304.00	2,881.92
Apartments low rise	10.29 trips / dwelling units	75.00	771.75
Condo/townhouse general	5.96 trips / dwelling units	181.00	1,078.76
Racquetball/health	40.00 trips / 1000 sq. ft.	11.00	440.00
Hotel	7.47 trips / rooms	250.00	1,867.50
Regnl shop. center < 5700	55.91 trips / 1000 sq. ft.	174.24	9,741.76

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center < 570000 sf				2.0	1.0	97.0

Changes made to the default values for Construction

Changes made to the default values for Area

The fireplcase option switch changed from on to off.
The area souce mitigation measure option switch changed from on to off.
The percentage of wood stoves changed from 35 to 0.
The fireplace cords of wood burned changed from 1.48 to 0.
The fireplace percentage of residential units changed from 10 to 0.
The landscape year changed from 2000 to 2015.
Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The operational emission year changed from 2000 to 2015.
The double counting internal work trip limit changed from to 310.210168.
The double counting shopping trip limit changed from to 155.105084.
The double counting other trip limit changed from to 2437.20145.
The travel mode environment settings changed from both to: none

URBEMIS 7G For Windows 5.1.0

File Name: C:\Program Files\URBEMIS 7G For Windows\Projects\Rancho Vis New.ur
Project Name: Rancho Vistamonte Updated
Project Location: San Diego County

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.13	1.67	0.71	0.00	-
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	3.91	-	-	-	-
TOTALS(lbs/day,unmitigated)	4.04	1.67	0.71	0.00	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	9.88	18.14	98.49	8.44
TOTAL EMISSIONS (lbs/day)	9.88	18.14	98.49	8.44

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	10.55 trips / dwelling units	80.00	844.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

Changes made to the default values for Construction

The construction year changed from 2000 to 2005.
The length of construction period changed from 250 to 365.
The site grading max daily acreage estimate changed from to 3.
The site grading annual days earth moving changed from 250 to 125.
The site grading truck: off hwy total vehicles changed from to 2.
The site grading truck: off hwy hours/day changed from 8 to 6.
The site grading scraper total vehicles changed from to 2.
The site grading scraper hours/day changed from 8 to 4.
The site grading wheeled dozer total vehicles changed from to 1.
The site grading wheeled dozer hours/day changed from 8 to 4.
The site grading wheeled loader total vehicles changed from to 2.
The site grading wheeled loader hours/day changed from 8 to 6.
The site grading motor grader total vehicles changed from to 1.
The site grading motor grader hours/day changed from 8 to 6.
The worker construction year changed from 2000 to 2005.
The asphalt acres to be paved changed from 1 to 8.
The asphalt total days of paving changed from 10 to 70.
The stationary equipment equipment units changed from 2 to 16.
The mobile gas fork lift 175 HP total vehicles changed from to 1.
The mobile gas fork lift 175 HP hours/day changed from 8 to 4.
The mobile gas wheeled loader total vehicles changed from to 1.
The mobile gas wheeled loader hours/day changed from 8 to 4.
The mobile gas roller total vehicles changed from to 1.
The mobile gas roller hours/day changed from 8 to 3.
The mobile gas miscellaneous total vehicles changed from to 4.
The mobile gas miscellaneous hours/day changed from 8 to 6.
The mobile diesel miscellaneous total vehicles changed from to 3.
The mobile diesel miscellaneous hours/day changed from 8 to 6.
The coatings number of days of painting changed from 20 to 200.
Mitigation measure Soil Erosion Measures: Water Exposed Surfaces 2x Per Day:0
has been changed from off to on.
Mitigation measure Properly Maintain Equipment: 5
has been changed from off to on.
Mitigation measure Implement Water/Paved Road Measures: Water All Haul Roads 2x Per Day:0
has been changed from off to on.
Mitigation measure Reduce Speeds on Unpaved Roads to 15 mph or less: 0
has been changed from off to on.
Mitigation measure Mobile Equipment: Properly Maintain Equipment: 5
has been changed from off to on.
Mitigation measure Architectural Coatings: Use Low VOC Coatings: 5
has been changed from off to on.
Mitigation measure Asphalt Paving: Use Low VOC Asphalt: 5
has been changed from off to on.
Changes made to the default values for Area

The wood stove option switch changed from on to off.
The fireplcase option switch changed from on to off.
The area souce mitigation measure option switch changed from on to off.
The natural gas residential percentage changed from 60 to 100.
The landscape year changed from 2000 to 2005.
Changes made to the default values for Operations

The pass by trips option switch changed from on to off.
The mitigation option switch changed from on to off.
The operational emission year changed from 2000 to 2010.
The travel mode environment settings changed from both to: none

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: I15 @Via Ranch Parkway existing
     RUN: Hour 1             (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
     U=   1.0 M/S           Z0= 100. CM          ALT=     0. (M)
   BRG= WORST CASE          VD=    .0 CM/S
  CLAS=      7 (G)          VS=    .0 CM/S
  MIXH=  500. M            AMB=   9.3 PPM
 SIGTH=   15. DEGREES     TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	3	-500	3	500	AG	813	16.6	.0	10.0
B. Link B	-3	500	-3	-500	AG	1314	16.6	.0	10.0
C. Link C	-500	-3	500	-3	AG	1662	16.6	.0	10.0
D. Link D	500	3	-500	3	AG	1240	16.6	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	285.	11.8	.3	.4	1.0	.7
2. Recpt 2	255.	11.7	.3	.4	.8	.8
3. Recpt 3	105.	11.8	.3	.5	.8	.8
4. Recpt 4	75.	11.8	.3	.5	1.0	.7

URBEMIS 7G For Windows 5.1.0

File Name: C:\Program Files\URBEMIS 7G For Windows\Projects\Valley View Prefe
Project Name: Valley View Estates Preferred Alternative
Project Location: San Diego County

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.40	5.16	2.19	0.01	-
Wood Stoves	0.00	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	19.72	-	-	-	-
TOTALS(lbs/day,unmitigated)	20.11	5.16	2.19	0.01	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
Single family housing	26.95	63.73	268.98	34.36
Racquetball/health	1.91	4.86	19.58	2.45
Hotel	10.86	24.74	93.71	12.87
TOTAL EMISSIONS (lbs/day)	39.73	93.34	382.27	49.68

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.27 trips / dwelling units	403.00	3,735.81
Racquetball/health	40.00 trips / 1000 sq. ft.	11.00	440.00
Hotel	7.47 trips / rooms	250.00	1,867.50

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
Hotel				5.0	2.5	92.5

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Bear Valley Parkway @ Sunset Drive Exist
     RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S              Z0= 100. CM          ALT=      0. (M)
  BRG= WORST CASE             VD=    .0 CM/S
 CLAS=      7 (G)             VS=    .0 CM/S
 MIXH= 1000. M               AMB=   9.3 PPM
SIGTH=   15. DEGREES        TEMP=  25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-500	2	500	AG	924	16.6	.0	16.0
B. Link B	-3	500	-3	-500	AG	957	16.6	.0	16.0
C. Link C	-500	-2	500	-2	AG	21	16.6	.0	16.0
D. Link D	500	2	-500	2	AG	557	16.6	.0	16.0

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
	COORDINATES (M)		
1. Recpt 1	16	-16	1.8
2. Recpt 2	16	16	1.8
3. Recpt 3	-20	16	1.8
4. Recpt 4	-20	-16	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	347.	11.1	.8	.7	.0	.3
2. Recpt 2	193.	11.2	.8	.7	.0	.3
3. Recpt 3	166.	11.0	.6	.8	.0	.3
4. Recpt 4	14.	11.0	.6	.8	.0	.3

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	11	-11	1.8
2. Recpt 2	11	11	1.8
3. Recpt 3	-11	11	1.8
4. Recpt 4	-11	-11	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	316.	10.3	.0	.8	.2
2. Recpt 2	5.	10.5	.0	.0	1.2
3. Recpt 3	315.	10.5	.0	1.2	.0
4. Recpt 4	17.	10.4	.0	.3	.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: San Pas Rd O Pas Rd Existing Peak
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	500. M	AMB=	9.3 PPM		
SIGTH=	15. DEGREES	TEMP=	25.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-2	500	-500	AG	684	16.6	.0	10.0
B. Link B	-2	2	-500	500	AG	735	16.6	.0	10.0
C. Link C	-2	-1	-500	-10	AG	229	16.6	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	315.	10.9	.8	.7	.0
2. Recpt 2	260.	9.7	.0	.3	.2
3. Recpt 3	315.	10.9	.0	1.6	.0
4. Recpt 4	327.	9.8	.0	.4	.1

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: I15 @VRP Val View Pro 2020
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S            Z0= 100. CM          ALT=     0. (M)
  BRG= WORST CASE           VD=    .0 CM/S
 CLAS=     7 (G)            VS=    .0 CM/S
 MIXH=  500. M             AMB=   6.6 PPM
SIGTH=   15. DEGREES      TEMP=  25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	3	-500	3	500	AG	1551	8.2	.0	10.0
B. Link B	-3	500	-3	-500	AG	1925	8.2	.0	10.0
C. Link C	-500	-3	500	-3	AG	1343	8.2	.0	10.0
D. Link D	500	3	-500	3	AG	894	8.2	.0	10.0

(X1, Y1, X2, Y2 = LINK COORDINATES (M))

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	344.	8.0	.5	.4	.3	.2
2. Recpt 2	195.	7.9	.5	.4	.2	.2
3. Recpt 3	164.	8.0	.4	.6	.2	.2
4. Recpt 4	16.	8.0	.4	.6	.3	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Bear Val @ Sun Val View Pro 2020
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S              Z0= 100. CM         ALT=     0. (M)
  BRG= WORST CASE             VD=    .0 CM/S
  CLAS=      7 (G)            VS=    .0 CM/S
  MIXH=  500. M              AMB=   6.6 PPM
 SIGTH=   15. DEGREES       TEMP=  25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	2	-500	2	500	*	AG	743	8.2	.0	16.0
B. Link B	*	-3	500	-3	-500	*	AG	9	8.2	.0	16.0
C. Link C	*	-500	-2	500	-2	*	AG	1496	8.2	.0	16.0
D. Link D	*	500	2	-500	2	*	AG	344	8.2	.0	16.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	-16	1.8
2. Recpt 2	16	16	1.8
3. Recpt 3	-20	16	1.8
4. Recpt 4	-20	-16	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	283.	7.6	.2	.0	.6	.2
2. Recpt 2	257.	7.5	.2	.0	.5	.2
3. Recpt 3	103.	7.5	.2	.0	.5	.2
4. Recpt 4	77.	7.5	.2	.0	.6	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: San Pas Par Cit Rd Val View Pro 2020
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=   1.0 M/S              Z0= 100. CM            ALT=      0. (M)
 BRG= WORST CASE             VD=    .0 CM/S
CLAS=      7 (G)             VS=    .0 CM/S
MIXH=  500. M               AMB=   6.6 PPM
SIGTH=   15. DEGREES        TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	2	-2	500	-500	*	AG	205	8.2	.0	16.0
B. Link B	*	-2	2	-500	500	*	AG	950	8.2	.0	16.0
C. Link C	*	2	2	100	500	*	AG	1126	8.2	.0	16.0

III. RECEPTOR LOCATIONS

```
        *     COORDINATES (M)
```

RECEPTOR	X	Y	Z
1. Recpt 1	11	-11	1.8
2. Recpt 2	11	11	1.8
3. Recpt 3	-11	11	1.8
4. Recpt 4	-11	-11	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	316.	7.3	.0	.6	.1
2. Recpt 2	3.	7.4	.0	.0	.8
3. Recpt 3	315.	7.5	.0	.9	.0
4. Recpt 4	17.	7.4	.0	.2	.6

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Sa Pa Rd OPR Val View Pro 2020
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S              Z0= 100. CM            ALT=     0. (M)
  BRG= WORST CASE             VD=    .0 CM/S
 CLAS=      7 (G)             VS=    .0 CM/S
 MIXH=  500. M               AMB=   6.6 PPM
SIGTH=   15. DEGREES        TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-2	500	-500	AG	817	8.2	.0	10.0
B. Link B	-2	2	-500	500	AG	1066	8.2	.0	10.0
C. Link C	-2	-1	-500	-10	AG	330	8.2	.0	10.0

III. RECEPTOR LOCATIONS

*   COORDINATES (M)

RECEPTOR	X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM)		
			A	B	C
1. Recpt 1	315.	7.6	.5	.5	.0
2. Recpt 2	259.	6.9	.0	.2	.1
3. Recpt 3	315.	7.7	.0	1.1	.0
4. Recpt 4	328.	6.9	.0	.3	.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: I15 @VRP Val View Pre 2020
     RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S           Z0= 100. CM          ALT=     0. (M)
  BRG= WORST CASE          VD=    .0 CM/S
 CLAS=     7 (G)           VS=    .0 CM/S
 MIXH=  500. M            AMB=   6.6 PPM
SIGTH=   15. DEGREES     TEMP=  25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	3	-500	3	500	AG	1542	8.2	.0	10.0
B. Link B	-3	500	-3	-500	AG	1917	8.2	.0	10.0
C. Link C	-500	-3	500	-3	AG	1339	8.2	.0	10.0
D. Link D	500	3	-500	3	AG	894	8.2	.0	10.0

(X1, Y1, X2, Y2: LINK COORDINATES (M))

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	345.	7.9	.5	.4	.3	.2
2. Recpt 2	195.	7.9	.5	.4	.2	.2
3. Recpt 3	164.	8.0	.4	.6	.2	.2
4. Recpt 4	16.	8.0	.4	.6	.3	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Bear Val @ Sun Val View Pre 2020
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S            Z0= 100. CM          ALT=     0. (M)
  BRG= WORST CASE           VD=    .0 CM/S
 CLAS=     7 (G)            VS=    .0 CM/S
 MIXH=  500. M             AMB=   6.6 PPM
SIGTH=   15. DEGREES      TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	2	-500	2	500	*	AG	741	8.2	.0	16.0
B. Link B	*	-3	500	-3	-500	*	AG	9	8.2	.0	16.0
C. Link C	*	-500	-2	500	-2	*	AG	1494	8.2	.0	16.0
D. Link D	*	500	2	-500	2	*	AG	344	8.2	.0	16.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	-16	1.8
2. Recpt 2	16	16	1.8
3. Recpt 3	-20	16	1.8
4. Recpt 4	-20	-16	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	283.	7.6	.2	.0	.6	.2
2. Recpt 2	257.	7.5	.2	.0	.5	.2
3. Recpt 3	103.	7.5	.2	.0	.5	.2
4. Recpt 4	77.	7.5	.2	.0	.6	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: San Pas Par Cit Rd Val View Pre 2020
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=   1.0 M/S            Z0= 100. CM          ALT=      0. (M)
 BRG= WORST CASE           VD=    .0 CM/S
CLAS=      7 (G)           VS=    .0 CM/S
MIXH=  500. M             AMB=   6.6 PPM
SIGTH=   15. DEGREES      TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	2	-2	500	-500	*	AG	204	8.2	.0	16.0
B. Link B	*	-2	2	-500	500	*	AG	941	8.2	.0	16.0
C. Link C	*	2	2	100	500	*	AG	1114	8.2	.0	16.0

(X1, Y1, X2, Y2 = LINK COORDINATES (M))

III. RECEPTOR LOCATIONS

*   COORDINATES (M)

RECEPTOR	X	Y	Z
1. Recpt 1	11	-11	1.8
2. Recpt 2	11	11	1.8
3. Recpt 3	-11	11	1.8
4. Recpt 4	-11	-11	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	316.	7.3	.0	.6	.1
2. Recpt 2	5.	7.4	.0	.0	.8
3. Recpt 3	315.	7.5	.0	.9	.0
4. Recpt 4	17.	7.4	.0	.2	.6

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Sa Pa Rd OPR Val View Pref 2020
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=   1.0 M/S             Z0= 100. CM          ALT=     0. (M)
 BRG= WORST CASE            VD=    .0 CM/S
CLAS=     7 (G)             VS=    .0 CM/S
MIXH=  500. M              AMB=   6.6 PPM
SIGTH=   15. DEGREES       TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-2	500	-500	AG	815	8.2	.0	10.0
B. Link B	-2	2	-500	500	AG	1063	8.2	.0	10.0
C. Link C	-2	-1	-500	-10	AG	330	8.2	.0	10.0

III. RECEPTOR LOCATIONS

*   COORDINATES (M)

RECEPTOR	X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	315.	7.6	.5	.5	.0
2. Recpt 2	259.	6.9	.0	.2	.1
3. Recpt 3	315.	7.7	.0	1.1	.0
4. Recpt 4	328.	6.9	.0	.3	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I15 @VRP Ran Vis Val View Pref 2020
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	500. M	AMB=	6.6 PPM		
SIGTH=	15. DEGREES	TEMP=	25.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	3	-500	3	500	AG	1549	8.2	.0	10.0
B. Link B	-3	500	-3	-500	AG	1929	8.2	.0	10.0
C. Link C	-500	-3	500	-3	AG	1345	8.2	.0	10.0
D. Link D	500	3	-500	3	AG	894	8.2	.0	10.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	344.	8.0	.5	.4	.3	.2
2. Recpt 2	195.	7.9	.5	.4	.2	.2
3. Recpt 3	164.	8.0	.4	.6	.2	.2
4. Recpt 4	16.	8.0	.4	.6	.3	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Bear Val @ Sun- Ran Vis Val View Pre 20
     RUN: Hour 1             (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S             Z0= 100. CM         ALT=      0. (M)
  BRG= WORST CASE            VD=    .0 CM/S
 CLAS=     7 (G)             VS=    .0 CM/S
 MIXH=  500. M              AMB=   6.6 PPM
SIGTH=   15. DEGREES       TEMP=  25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-500	2	500	AG	743	8.2	.0	16.0
B. Link B	-3	500	-3	-500	AG	9	8.2	.0	16.0
C. Link C	-500	-2	500	-2	AG	1497	8.2	.0	16.0
D. Link D	500	2	-500	2	AG	344	8.2	.0	16.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	-16	1.8
2. Recpt 2	16	16	1.8
3. Recpt 3	-20	16	1.8
4. Recpt 4	-20	-16	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	283.	7.6	.2	.0	.6	.2
2. Recpt 2	257.	7.5	.2	.0	.5	.2
3. Recpt 3	103.	7.5	.2	.0	.5	.2
4. Recpt 4	77.	7.5	.2	.0	.6	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Bear Val @ Sun- Ran Vis Val View Pre 20
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S              Z0= 100. CM             ALT=      0. (M)
  BRG= WORST CASE             VD=   .0 CM/S
 CLAS=      7 (G)             VS=   .0 CM/S
 MIXH=  500. M               AMB=  6.6 PPM
SIGTH=   15. DEGREES        TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-500	2	500	AG	743	8.2	.0	16.0
B. Link B	-3	500	-3	-500	AG	9	8.2	.0	16.0
C. Link C	-500	-2	500	-2	AG	1497	8.2	.0	16.0
D. Link D	500	2	-500	2	AG	344	8.2	.0	16.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	-16	1.8
2. Recpt 2	16	16	1.8
3. Recpt 3	-20	16	1.8
4. Recpt 4	-20	-16	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	283.	7.6	.2	.0	.6	.2
2. Recpt 2	257.	7.5	.2	.0	.5	.2
3. Recpt 3	103.	7.5	.2	.0	.5	.2
4. Recpt 4	77.	7.5	.2	.0	.6	.2

```
         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

             JOB: Sa Pa Rd OPR Ran Vis Val Pre 2020
             RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide

   I.  SITE VARIABLES

        U=   1.0 M/S            Z0= 100. CM            ALT=      0. (M)
      BRG= WORST CASE           VD=    .0 CM/S
     CLAS=      7 (G)           VS=    .0 CM/S
     MIXH=  500. M             AMB=   6.6 PPM
    SIGTH=   15. DEGREES      TEMP= 25.0 DEGREE (C)

  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *                 EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
  ---------------*-------------------------*-----------------------------
  A. Link A      *     2    -2   500  -500 *  AG   461    8.2    .0  10.0
  B. Link B      *    -2     2  -500   500 *  AG   188    8.2    .0  10.0
  C. Link C      *    -2    -1  -500   -10 *  AG   727    8.2    .0  10.0

  III.  RECEPTOR LOCATIONS

              *    COORDINATES (M)
```

RECEPTOR	X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	135.	7.1	.5	.0	.0
2. Recpt 2	256.	6.9	.0	.0	.2
3. Recpt 3	136.	7.0	.2	.1	.0
4. Recpt 4	282.	6.8	.0	.0	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: I15 @ VRP Ran Vis Val View Pro 2020
     RUN: Hour 1             (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S            Z0= 100. CM           ALT=     0. (M)
  BRG= WORST CASE           VD=    .0 CM/S
 CLAS=     7 (G)            VS=    .0 CM/S
 MIXH=  500. M             AMB=   6.6 PPM
SIGTH=   15. DEGREES      TEMP=  25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	3	-500	3	500	AG	1558	8.2	.0	10.0
B. Link B	-3	500	-3	-500	AG	1936	8.2	.0	10.0
C. Link C	-500	-3	500	-3	AG	1348	8.2	.0	10.0
D. Link D	500	3	-500	3	AG	894	8.2	.0	10.0

(X1, Y1, X2, Y2 = LINK COORDINATES (M))

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	344.	8.0	.5	.4	.3	.2
2. Recpt 2	195.	7.9	.5	.4	.2	.2
3. Recpt 3	164.	8.0	.4	.6	.2	.2
4. Recpt 4	16.	8.0	.4	.6	.3	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Bear Val @ Sun- Ran Vis Val View Pro 20
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=   1.0 M/S             Z0= 100. CM            ALT=      0. (M)
 BRG= WORST CASE            VD=    .0 CM/S
CLAS=     7 (G)             VS=    .0 CM/S
MIXH=  500. M              AMB=   6.6 PPM
SIGTH=  15. DEGREES       TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	2	-500	2	500	*	AG	744	8.2	.0	16.0
B. Link B	*	-3	500	-3	-500	*	AG	9	8.2	.0	16.0
C. Link C	*	-500	-2	500	-2	*	AG	1499	8.2	.0	16.0
D. Link D	*	500	2	-500	2	*	AG	344	8.2	.0	16.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	-16	1.8
2. Recpt 2	16	16	1.8
3. Recpt 3	-20	16	1.8
4. Recpt 4	-20	-16	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	283.	7.6	.2	.0	.6	.2
2. Recpt 2	257.	7.5	.2	.0	.5	.2
3. Recpt 3	103.	7.5	.2	.0	.5	.2
4. Recpt 4	77.	7.5	.2	.0	.6	.2

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: San Pas Par Cit Rd Ran Vis Va Vie Pro 20
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
    U=   1.0 M/S              Z0= 100. CM          ALT=      0. (M)
  BRG= WORST CASE             VD=    .0 CM/S
 CLAS=      7 (G)             VS=    .0 CM/S
 MIXH=  500. M               AMB=   6.6 PPM
SIGTH=   15. DEGREES        TEMP= 25.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-2	500	-500	AG	207	8.2	.0	16.0
B. Link B	-2	2	-500	500	AG	959	8.2	.0	16.0
C. Link C	2	2	100	500	AG	1143	8.2	.0	16.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)

RECEPTOR	X	Y	Z
1. Recpt 1	11	-11	1.8
2. Recpt 2	11	11	1.8
3. Recpt 3	-11	11	1.8
4. Recpt 4	-11	-11	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	316.	7.4	.0	.6	.1
2. Recpt 2	3.	7.5	.0	.0	.9
3. Recpt 3	315.	7.5	.0	.9	.0
4. Recpt 4	17.	7.4	.0	.2	.6

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Sa Pa Rd OPR Ran Vis Val Pro 2020
     RUN: Hour 1             (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

     U=   1.0 M/S            Z0= 100. CM          ALT=      0. (M)
   BRG= WORST CASE           VD=    .0 CM/S
  CLAS=      7 (G)           VS=    .0 CM/S
  MIXH=  500. M             AMB=   6.6 PPM
 SIGTH=   15. DEGREES      TEMP=  25.0 DEGREE (C)

 II.  LINK VARIABLES

    LINK       *  LINK COORDINATES (M)   *                EF     H     W
 DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*----------------------------
A. Link A      *    2    -2   500  -500  *  AG   470    8.2     .0  10.0
B. Link B      *   -2     2  -500   500  *  AG   188    8.2     .0  10.0
C. Link C      *   -2    -1  -500   -10  *  AG   739    8.2     .0  10.0

III.  RECEPTOR LOCATIONS

          *    COORDINATES (M)
```

RECEPTOR	X	Y	Z
1. Recpt 1	20	-20	1.8
2. Recpt 2	20	20	1.8
3. Recpt 3	-20	20	1.8
4. Recpt 4	-20	-20	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C
1. Recpt 1	135.	7.1	.5	.0	.0
2. Recpt 2	256.	6.9	.0	.0	.2
3. Recpt 3	136.	7.0	.2	.1	.0
4. Recpt 4	282.	6.8	.0	.0	.2

CANYON/BLUFF RECEPTOR-LINK INFORMATION

NOTE:
COLINEAR LINKS MUST BE ASSIGNED COMPATIBLE CANYON/BLUFF WALL SPECIFICATIONS. THE MODEL CANNOT ACCURATELY HANDLE TRANSITIONS FROM CANYON/BLUFF LINKS TO FLAT TERRAIN, NOR CONVERGING OR DIVERGING WALLS. MODEL RESULTS ARE BASED ON THE FOLLOWING:

```
                *
 RECEPTOR       * A B
-------------*----
 1. Recpt 1     *   O
 2. Recpt 2     *   O
 3. Recpt 3     *   .
 4. Recpt 4     *   .
```

(O) - OMITTED.
WARNING! RECEPTOR IS OUTSIDE OF LINK WALL OR EXTENTION OF WALL. CONCENTRATION FOR THIS LINK AT THIS RECEPTOR HAS BEEN SET TO 0.

(X) - EXTENDED.
CAUTION. CALCULATIONS ASSUME EXTENTION OF LINK WALL(S) TO RECEPTOR. CHECK YOUR GEOMETRY TO VERIFY THAT THIS

```
        ASSUMPTION IS VALID.

  (.) - NORMAL.
        RECEPTOR IS PROPERLY POSITIONED WITHIN CANYON/BLUFF AND
        NO ACTION IS NECESSARY.

  ( ) - N/A
        NO CANYON/BLUFF CALCULATIONS FOR THIS LINK.


         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

             JOB: Rock and Clove Rd 20- Val View Pro & Rv
             RUN: Hour 1
       POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

       U=   1.0 M/S              Z0= 100. CM             ALT=     0. (M)
     BRG= 206.6 DEGREES          VD=    .0 CM/S
    CLAS=     7 (G)              VS=    .0 CM/S
    MIXH= 1000. M               AMB=   6.6 PPM
   SIGTH=   15. DEGREES        TEMP= 25.0 DEGREE (C)

 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *                 EF     H     W
   DESCRIPTION  *   X1     Y1     X2     Y2  * TYPE  VPH  (G/MI)  (M)   (M)
```

```
-----------------*--------------------------*------------------------------
A. Link A        *   -14     2    90   -30 *  AG    513   8.2     .0   9.9
B. Link B        *    30    90   -60   -90 *  AG    878   8.2     .0   9.9

      *   MIXW
      *  L     R
 LINK * (M)   (M)
 -----*----------
  A.  *   0.    0.
  B.  *  15.   15.
```

III. RECEPTOR LOCATIONS

```
             *    COORDINATES (M)
  RECEPTOR   *     X       Y      Z
-------------*---------------------
1. Recpt 1   *     15      12     .5
2. Recpt 2   *      9     -15     .5
3. Recpt 3   *    -18     -15     .5
4. Recpt 4   *     -9      15     .5
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rock and Clove Rd 20- Val View Pro & Rv
RUN: Hour 1

POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	CONC/LINK (PPM) B
1. Recpt 1	6.7	.1	.0
2. Recpt 2	6.6	.0	.0
3. Recpt 3	7.3	.0	.7
4. Recpt 4	7.6	.0	.9

CANYON/BLUFF RECEPTOR-LINK INFORMATION

NOTE:
COLINEAR LINKS MUST BE ASSIGNED COMPATIBLE CANYON/BLUFF WALL SPECIFICATIONS. THE MODEL CANNOT ACCURATELY HANDLE TRANSITIONS FROM CANYON/BLUFF LINKS TO FLAT TERRAIN, NOR CONVERGING OR DIVERGING WALLS. MODEL RESULTS ARE BASED ON THE FOLLOWING:

RECEPTOR	A	B
1. Recpt 1		O
2. Recpt 2		O
3. Recpt 3		.
4. Recpt 4		.

(O) - OMITTED.
WARNING! RECEPTOR IS OUTSIDE OF LINK WALL OR EXTENTION OF WALL. CONCENTRATION FOR THIS LINK AT THIS RECEPTOR HAS BEEN SET TO 0.

(X) - EXTENDED.
CAUTION. CALCULATIONS ASSUME EXTENTION OF LINK WALL(S) TO RECEPTOR. CHECK YOUR GEOMETRY TO VERIFY THAT THIS ASSUMPTION IS VALID.

```
(.) - NORMAL.
      RECEPTOR IS PROPERLY POSITIONED WITHIN CANYON/BLUFF AND
      NO ACTION IS NECESSARY.

( ) - N/A
      NO CANYON/BLUFF CALCULATIONS FOR THIS LINK.


       CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                JUNE 1989 VERSION
                PAGE   1

            JOB: Rock and Clove Rd 20- Val View Pref & Ra
            RUN: Hour 1
      POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

       U=   1.0 M/S             Z0= 100. CM            ALT=      0. (M)
     BRG= 206.6 DEGREES         VD=    .0 CM/S
    CLAS=     7 (G)             VS=    .0 CM/S
    MIXH= 1000. M              AMB=   6.6 PPM
   SIGTH=   15. DEGREES       TEMP=  25.0 DEGREE (C)

 II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)  *                  EF      H     W
  DESCRIPTION   *  X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)   (M)   (M)
----------------*------------------------*-----------------------------------
 A. Link A      *  -14    2    90   -30  *  AG   475    8.2     .0   9.9
```

```
B. Link B          *    30    90   -60   -90 * AG    781   8.2     .0   9.9

      *   MIXW
      *  L     R
 LINK * (M)   (M)
 -----*----------
  A.  *   0.    0.
  B.  *  15.   15.

III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *     X       Y      Z
 -----------*---------------------
1. Recpt 1  *     15      12     .5
2. Recpt 2  *      9     -15     .5
3. Recpt 3  *    -18     -15     .5
4. Recpt 4  *     -9      15     .5


     CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
              JUNE 1989 VERSION
              PAGE   2

         JOB: Rock and Clove Rd 20- Val View Pref & Ra
         RUN: Hour 1
   POLLUTANT: Carbon Monoxide
```

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	CONC/LINK (PPM) B
1. Recpt 1	6.7	.1	.0
2. Recpt 2	6.6	.0	.0
3. Recpt 3	7.2	.0	.6
4. Recpt 4	7.5	.0	.8

```
                 CANYON/BLUFF  RECEPTOR-LINK INFORMATION


   NOTE:
   COLINEAR LINKS MUST BE ASSIGNED COMPATIBLE CANYON/BLUFF
   WALL SPECIFICATIONS.  THE MODEL CANNOT ACCURATELY HANDLE
   TRANSITIONS FROM CANYON/BLUFF LINKS TO FLAT TERRAIN, NOR
   CONVERGING OR DIVERGING WALLS.  MODEL RESULTS ARE BASED
   ON THE FOLLOWING:


                *
  RECEPTOR      * A B
 -------------*----
  1. Recpt 1    *   O
  2. Recpt 2    *   O
  3. Recpt 3    *   .
  4. Recpt 4    *   .

    (O)  - OMITTED.
           WARNING! RECEPTOR IS OUTSIDE OF LINK WALL OR EXTENTION OF
           WALL. CONCENTRATION FOR THIS LINK AT THIS RECEPTOR HAS
           BEEN SET TO 0.

    (X)  - EXTENDED.
           CAUTION. CALCULATIONS ASSUME EXTENTION OF LINK WALL(S) TO
           RECEPTOR. CHECK YOUR GEOMETRY TO VERIFY THAT THIS
```

```
        ASSUMPTION IS VALID.

  (.) - NORMAL.
        RECEPTOR IS PROPERLY POSITIONED WITHIN CANYON/BLUFF AND
        NO ACTION IS NECESSARY.

  ( ) - N/A
        NO CANYON/BLUFF CALCULATIONS FOR THIS LINK.




         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   1

             JOB: Rock and Clove Rd 20- Val View Pref
             RUN: Hour 1
       POLLUTANT: Carbon Monoxide

  I.  SITE VARIABLES

       U=   1.0 M/S           Z0= 100. CM          ALT=     0. (M)
     BRG= 206.6 DEGREES       VD=    .0 CM/S
    CLAS=     7 (G)           VS=    .0 CM/S
    MIXH= 1000. M            AMB=   6.6 PPM
   SIGTH=   15. DEGREES     TEMP=  25.0 DEGREE (C)

  II.  LINK VARIABLES

     LINK     *  LINK COORDINATES (M)  *               EF     H     W
  DESCRIPTION *  X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
```

```
-----------------*--------------------------*-------------------------------
A. Link A        *   -14     2     90    -30 *  AG    456   8.2      .0   9.9
B. Link B        *    30    90    -60    -90 *  AG    739   8.2      .0   9.9

      *   MIXW
      *  L     R
 LINK * (M)   (M)
 -----*----------
  A.  *   0.    0.
  B.  *  15.   15.

III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X       Y      Z
-------------*---------------------
1. Recpt 1   *    15      12     .5
2. Recpt 2   *     9     -15     .5
3. Recpt 3   *   -18     -15     .5
4. Recpt 4   *    -9      15     .5
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Rock and Clove Rd 20- Val View Pref
              RUN: Hour 1
```

POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	CONC/LINK (PPM) B
1. Recpt 1	6.7	.0	.0
2. Recpt 2	6.6	.0	.0
3. Recpt 3	7.2	.0	.6
4. Recpt 4	7.4	.0	.8

CANYON/BLUFF RECEPTOR-LINK INFORMATION

NOTE:
COLINEAR LINKS MUST BE ASSIGNED COMPATIBLE CANYON/BLUFF WALL SPECIFICATIONS. THE MODEL CANNOT ACCURATELY HANDLE TRANSITIONS FROM CANYON/BLUFF LINKS TO FLAT TERRAIN, NOR CONVERGING OR DIVERGING WALLS. MODEL RESULTS ARE BASED ON THE FOLLOWING:

RECEPTOR	A	B
1. Recpt 1		O
2. Recpt 2		O
3. Recpt 3		.
4. Recpt 4		.

(O) - OMITTED.
WARNING! RECEPTOR IS OUTSIDE OF LINK WALL OR EXTENTION OF WALL. CONCENTRATION FOR THIS LINK AT THIS RECEPTOR HAS BEEN SET TO 0.

(X) - EXTENDED.
CAUTION. CALCULATIONS ASSUME EXTENTION OF LINK WALL(S) TO RECEPTOR. CHECK YOUR GEOMETRY TO VERIFY THAT THIS

```
        ASSUMPTION IS VALID.

  (.) - NORMAL.
        RECEPTOR IS PROPERLY POSITIONED WITHIN CANYON/BLUFF AND
        NO ACTION IS NECESSARY.

  ( ) - N/A
        NO CANYON/BLUFF CALCULATIONS FOR THIS LINK.


        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   1

             JOB: Rock and Clove Rd 20- Val View Pro
             RUN: Hour 1
       POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

     U=   1.0 M/S            Z0= 100. CM          ALT=      0. (M)
   BRG= 206.6 DEGREES        VD=   .0 CM/S
  CLAS=     7 (G)            VS=   .0 CM/S
  MIXH= 1000. M             AMB=  6.6 PPM
 SIGTH=   15. DEGREES      TEMP= 25.0 DEGREE (C)

 II.  LINK VARIABLES

    LINK      *  LINK COORDINATES (M)   *                  EF      H      W
 DESCRIPTION  *   X1     Y1     X2     Y2  * TYPE  VPH  (G/MI)   (M)    (M)
```

```
-----------------*---------------------------*-------------------------------
A. Link A        *   -14      2     90    -30 *  AG     495    8.2       .0    9.9
B. Link B        *    30     90    -60    -90 *  AG     836    8.2       .0    9.9

      *   MIXW
      *  L     R
 LINK * (M)   (M)
 -----*----------
  A.  *   0.    0.
  B.  *  15.   15.

III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X        Y       Z
-------------*--------------------
1. Recpt 1   *     15       12     .5
2. Recpt 2   *      9      -15     .5
3. Recpt 3   *    -18      -15     .5
4. Recpt 4   *     -9       15     .5
```

```
        CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                 JUNE 1989 VERSION
                 PAGE   2

            JOB: Rock and Clove Rd 20- Val View Pro
            RUN: Hour 1
```

POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	CONC/LINK (PPM) B
1. Recpt 1	6.7	.1	.0
2. Recpt 2	6.6	.0	.0
3. Recpt 3	7.3	.0	.7
4. Recpt 4	7.5	.0	.9

CANYON/BLUFF RECEPTOR-LINK INFORMATION

NOTE:
COLINEAR LINKS MUST BE ASSIGNED COMPATIBLE CANYON/BLUFF WALL SPECIFICATIONS. THE MODEL CANNOT ACCURATELY HANDLE TRANSITIONS FROM CANYON/BLUFF LINKS TO FLAT TERRAIN, NOR CONVERGING OR DIVERGING WALLS. MODEL RESULTS ARE BASED ON THE FOLLOWING:

```
              *
 RECEPTOR     * A B
-------------*----
 1. Recpt 1   *   O
 2. Recpt 2   *   O
 3. Recpt 3   *   .
 4. Recpt 4   *   .
```

(O) - OMITTED.
WARNING! RECEPTOR IS OUTSIDE OF LINK WALL OR EXTENTION OF WALL. CONCENTRATION FOR THIS LINK AT THIS RECEPTOR HAS BEEN SET TO 0.

(X) - EXTENDED.
CAUTION. CALCULATIONS ASSUME EXTENTION OF LINK WALL(S) TO RECEPTOR. CHECK YOUR GEOMETRY TO VERIFY THAT THIS

```
        ASSUMPTION IS VALID.

   (.) - NORMAL.
         RECEPTOR IS PROPERLY POSITIONED WITHIN CANYON/BLUFF AND
         NO ACTION IS NECESSARY.

   ( ) - N/A
         NO CANYON/BLUFF CALCULATIONS FOR THIS LINK.


          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Existing Rockwood Rd and Cloverdale Rd n
              RUN: Hour 1
        POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

      U=   1.0 M/S             Z0= 100. CM           ALT=     0. (M)
    BRG= 206.6 DEGREES         VD=    .0 CM/S
   CLAS=     7 (G)             VS=    .0 CM/S
   MIXH= 1000. M              AMB=   9.3 PPM
  SIGTH=   15. DEGREES       TEMP= 25.0 DEGREE (C)

 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *                  EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
```

```
----------------*-------------------------*-------------------------------
A. Link A       *   -14      2     90   -30 *  AG     130  16.6      .0    9.9
B. Link B       *    30     90    -60   -90 *  AG     217  16.6      .0    9.9

      *   MIXW
      *  L    R
 LINK * (M)  (M)
 -----*----------
  A.  *   0.   0.
  B.  *  15.  15.
```

III. RECEPTOR LOCATIONS

```
            *    COORDINATES (M)
  RECEPTOR  *    X       Y       Z
------------*---------------------
1. Recpt 1  *     15      12     .5
2. Recpt 2  *      9     -15     .5
3. Recpt 3  *    -18     -15     .5
4. Recpt 4  *     -9      15     .5
```

```
         CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                  JUNE 1989 VERSION
                  PAGE   2

             JOB: Existing Rockwood Rd and Cloverdale Rd n
             RUN: Hour 1
```

POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	CONC/LINK (PPM) B
1. Recpt 1	9.4	.0	.0
2. Recpt 2	9.3	.0	.0
3. Recpt 3	9.7	.0	.4
4. Recpt 4	9.8	.0	.5

Appendix F
Biological Resources Reports

Mooney & Associates
COMMUNITY PLANNING & ENVIRONMENTAL STUDIES

Memo

From: Erin Robbins

To: City of Escondido

Subject: Valley View Estates SP - County Circulation Element Alignment for Rockwood Road

Date: July 11, 2001

The impacts for the new proposed access road alignment are outlined below. I have also included a brief discussion of the habitats and sensitive species observed during the field surveys. Let me know what other information you need to incorporate into your report this week.

Table 1. Access Road Impacts

Habitat Type	**Impacts (acres)***
Urban/Developed	2.16
Agriculture (Orchard and plowed field)	3.19
Ruderal	2.09
Non-native grassland	13.91
Disturbed coastal sage scrub	1.10
Coastal sage scrub	5.31
coastal sage-chaparral scrub	0.38
Coast live oak woodland	0.60
Mule fat scrub	0.36
TOTAL	**29.10**

* planimeter/ cadd

9903 Businesspark Avenue
San Diego, California 92131-1120
www.bfma.com
(858) 578-8964 FAX (858) 578-0573

Methods

A biological survey of the new proposed access road was conducted by Mooney & Associates' biologists E. Robbins and T. Lee on June 22, 2001, between the hours of 7:00 a.m. and 3:00 p.m. The survey was conducted by slowly walking the entire alignment and included vegetation mapping, generalized surveys for sensitive species, and documenting plant and wildlife species on-site. Weather conditions included clear, sunny skies, 1-3 mph winds, and temperatures in the mid-90s (degrees Fahrenheit). Wildlife was identified either with the naked eye or with the aid of binoculars.

Botany

Eight vegetation associations were identified along the proposed alignment: agriculture, ruderal, non-native grassland, disturbed coastal sage scrub, coastal sage scrub, coastal sage–chaparral scrub, coast live oak woodland, and mule fat scrub. Urban/developed areas are also included on the vegetation map.

Areas classified as agriculture include old plowed fields and orange groves. Areas classified as ruderal were vegetated with non-native species including: hottentot fig (*Carpobrotus edulis*), mustard (*Brassica* sp.), star thistle (*Centaurea solstitialis*), horehound (*Marrubium vulgare*), tree tobacco (*Nicotiana glauca*), and non-native grasses.

The non-native grassland located along the alignment is dominated by ripgut grass (*Bromus diandrus*). Other species noted within the habitat include: slender wild oat (*Avena barbata*), mustard, and foxtail chess (*Bromus madritensis*).

The coastal sage scrub located along the alignment is vegetated with California sagebrush (*Artemisia californica*), buckwheat (*Eriogonum fasciculatum*), and white sage (*Salvia apiana*). The disturbed coastal sage scrub is vegetated with similar species but also includes non-native species such as slender wild oat, star thistle, and non-native grasses.

Coastal sage-chaparral scrub communities are a mixture of herbaceous, suffrutescent, and shrubby species that form a habitat with features of both coastal sage scrub and chaparral. In many cases, this habitat is simply an area formerly covered with chaparral, but subjected to disturbance and currently undergoing successional development back to its original habitat type. Some of the first species to germinate in disturbed chaparral areas will be "coastal sage scrub" species, which are gradually succeeded by the original chaparral species. Dominant species within the coastal sage-chaparral scrub on-site include California sagebrush, buckwheat, chamise (*Adenostoma fasciculatum*), and coast live oak (*Quercus agrifolia* var. *agrifolia*).

A segment of the alignment is vegetated with a coast live oak woodland. This area is dominated by coast live oak. Poison oak (*Toxicodendron diversilobum*), laurel sumac (*Malosma laurina*), sugar bush (*Rhus ovata*), wild peony (*Paeonia californica*), and white sage are located within the understory of this habitat.

A segment of the northwestern portion of the alignment crosses a drainage channel vegetated with mule fat scrub. This area is dominated by mule fat (*Baccharis salicifolia*). Other species noted within this habitat include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), elderberry (*Sambucus mexicana*), San Diego sagewort (*Artemisia palmerii*), mugwort (*Artemisia palmeri*), and cottonwood (*Populus fremontii* ssp. *fremontii*).

Sensitive Species

A coastal California gnatcatcher (*Polioptila californica californica*) was observed within the coastal sage scrub located between Old Battlefield Roaad Road and the western half of the alignment. San Diego sage wort, a County of San Diego Group B species and a CNPS List 4 species, was observed on-site within the mule fat scrub. No other sensitive species were observed during the field surveys.

BIOLOGICAL SURVEY REPORT
FOR
VALLEY VIEW ESTATES

Prepared for:

City of Escondido
Planning Division
201 North Broadway
Escondido, CA 92025-2798
Contact: Mr. Jay Petrek

Prepared by:

Mooney & Associates
9903-B Businesspark Avenue
San Diego, CA 92131

May 2002

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I. SUMMARY

A. Proposed Project

The Valley View Estates project is located along the southeastern boundary of the City of Escondido, approximately 2 miles north of State Route 78 (San Pasqual Valley Road) and east of Cloverdale Road. The southern half of the property is located within the County of San Diego's Multiple Species Conservation Program (MSCP) Subarea plan, the northern half of the property is located within the County of San Diego but outside of the MSCP. The proposed project consists of 485 residential units, a 250-unit resort hotel, an 18-hole championship golf course with clubhouse and tennis courts, an equestrian center, neighborhood commercial/mixed use center, and natural open space. In addition, sewer and water line improvements have been proposed. The sewer line improvements are specifically located north of North County Fair shopping mall and within the southwest corner of Kit Carson Park. The proposed water line improvements are located between the intersection of Old Ranch Road and Cloverdale Road north to the Reed Tower. The project also includes an amendment to the City of Escondido's Sphere of Influence, Annexation and Pre-Zoning, a General Plan Amendment, Specific Plan (SP), a Tentative Subdivision Map (TM), as well as a Development Agreement and Pre-Annexation Agreement.

Vegetation communities located on-site include: coastal sage scrub (531 acres), coastal sage-chaparral scrub (30 acres), southern mixed chaparral (448 acres), Engelmann oak/coast live oak woodland (93 acres), oak riparian woodland (38 acres), riparian scrub (1 acre), and mesic meadow (1.2 acres). Vegetation communities located along the sewer/water pipeline alignments include coastal sage scrub, southern coast live oak-riparian forest, non-native grassland, agriculture and developed/landscaped areas.

Sensitive species observed or detected on-site include San Diego horned lizard, orange-throated whiptail, red diamond rattlesnake, cactus wren, yellow-breasted chat, black-shouldered kite, rufous-crowned sparrow, golden eagle and northwestern San Diego pocket mouse. Summer holly, a County of San Diego Group A species, was reported during previous surveys conducted by Collier in 1992; however, this species was not observed during subsequent surveys. One sensitive species, the coastal California gnatcatcher, was observed off-site within the coastal sage scrub located along the sewerline alignment.

The proposed project would impact a total of approximately 850 acres. Impacts consist of 385 acres of coastal sage scrub, 20 acres of coastal sage-chaparral scrub, 346 acres of southern mixed chaparral, 69 acres of Engelmann oak/coast live oak woodland, 14 acres of oak riparian woodland, 1 acre of riparian scrub, 1 acre of mesic meadow, 1 acre of southern coast live oak riparian woodland, 1 acre of non-native grassland, 3 acres of orchard/landscaped areas, and 9 acres of disturbed/developed areas.

Mitigation for project impacts to a total of 850 acres would involve on-site preservation, on-site revegetation, wetland creation, and off-site purchase within a pre-approved mitigation bank. Preserved areas fall into one of two categories: natural open space and revegetated open space. The revegetated open space areas are located within the golf course around each tee, fairway, and green and will focus on restoring the same habitat as impacted. Mitigation land preserved on-site would consist of 150 acres of coastal sage scrub, 10 acres of coastal sage-chaparral scrub, 121 acres of southern mixed chaparral, 24 acres of Engelmann oak/coast live oak woodland, and 24 acres of oak riparian woodland. Wetland creation would include 20 acres of riparian vegetation similar to that impacted by the proposed project. Impacts to wetlands and other jurisdictional waters would also require permits from one or more of the following agencies: Army Corps of Engineers (ACOE), California Department of Fish and Game (CDFG), and Regional Water Quality Control Board (RWQCB). Off-site purchase would consist of 428 acres of coastal sage scrub, 20 acres of coastal sage-chaparral scrub, 225 acres of southern mixed chaparral, 114 acres of Engelmann oak/coast live oak woodland, and 0.50 acre of non-native grassland.

The proposed project is not expected to directly impact the coastal California gnatcatcher observed off-site along the sewerline alignment; however, indirect impacts may occur. In order to avoid potential impacts, direct clearing of coastal sage scrub along the pipeline alignment shall be restricted during the gnatcatcher breeding season (February 15-August 31). In addition, a Habitat Loss Permit (HLP) will be required for impacts to coastal sage scrub located outside of the County of San Diego's MSCP.

Impacts to sensitive species observed on-site and those considered to have potential to occur are not considered significant as the open space proposed includes a significant amount of suitable habitat for these species.

Several raptor species were observed during the field surveys. Raptor nests are considered sensitive and, if established on-site, could be impacted by project activities (noise, human activity, and night lighting). The breeding season varies somewhat between raptor species, although species conduct their nesting cycle at some time between February 1 and August 31. The loss of a nest, whether active or inactive, is considered to have an adverse effect. Therefore, a nest survey shall be conducted prior to clearing of individual oaks and non-native grassland. If active nests are observed, clearing of vegetation within 300 feet of the nest shall be restricted during the raptor breeding season (February 1- August 31).

B. Reduced Intensity and Density Alternative

The Reduced Intensity and Density Alternative will cover the same 1,150 acres as the proposed Valley View Estates SP and will include the same water/sewer line improvements but will reduce the area of development within the property. The SP and TM will provide 403 residential units (82 fewer than the proposed project) consisting of 228 estate lots (0.5 acre or larger) and 175 residential lots. The 250 unit resort hotel with casitas and a golf course will remain as designed in the proposed Valley View Estates SP. The ungraded areas within the golf course lot will be shown as natural open space. No commercial and no apartment development are proposed.

The Reduced Intensity and Density Alternative would impact a total of approximately 600 acres (250 fewer than the proposed project). Impacts consist of 295 acres of coastal sage scrub, 20 acres of coastal sage-chaparral scrub, 188 acres of southern mixed chaparral, 68 acres of Engelmann oak/coast live oak woodland, 13 acres of oak riparian woodland, 1 acre of riparian scrub, 1 acre of mesic meadow, 1 acre of southern coast live oak riparian woodland, 1 acre of non-native grassland, 3 acres of orchard/landscaped areas, and 9 acres of disturbed/developed areas.

Mitigation for project impacts to a total of 600 acres would involve on-site preservation, on-site preservation of revegetated areas, wetland creation, and off-site purchase within a pre-approved mitigation bank. Preserved areas fall into one of two categories: natural open space and revegetated open space. The revegetated open space areas are located within the golf course around each tee, fairway, and green. Mitigation land preserved on-site would consist of 240 acres of coastal sage scrub, 10 acres of coastal sage-chaparral scrub, 260 acres of southern mixed chaparral, 25 acres of Engelmann oak/coast live oak woodland, and 25 acres of oak riparian woodland. Wetland creation would include 19 acres of riparian vegetation similar to that impacted by the proposed project. Impacts to wetlands and other jurisdictional waters would also require permits from one or more of the following agencies: ACOE, CDFG, and RWQCB. Off-site purchase would consist of 203 acres of coastal sage scrub, 20 acres of coastal sage-chaparral scrub, 111 acres of Engelmann oak/coast live oak woodland, and 1 acre of non-native grassland.

The proposed project is not expected to directly impact the coastal California gnatcatcher observed off-site along the sewerline alignment; however, indirect impacts may occur. In order to avoid potential impacts, direct clearing of coastal sage scrub along the pipeline alignment shall be restricted during the gnatcatcher breeding season (February 15-August 31). In addition, a Habitat Loss Permit (HLP) will be required for impacts to coastal sage scrub located outside of the County of San Diego's MSCP.

Impacts to sensitive species observed on-site and those considered to have potential to occur are not considered significant as the open space proposed includes a significant amount of suitable habitat for these species.

Several raptor species were observed during the field surveys. Raptor nests are considered sensitive and, if established on-site, could be impacted by project activities (noise, human activity, and night lighting). The breeding season varies somewhat between raptor species, although species conduct their nesting cycle at some time between February 1 and August 31. The loss of a nest, whether active or inactive, is considered to have an adverse effect. Therefore, a nest survey shall be conducted prior to clearing of individual oaks and non-native grassland. If active nests are observed, clearing of vegetation within 300 feet of the nest shall be restricted during the raptor breeding season (February 1- August 31).

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II. INTRODUCTION

A. Description and Location

The project site covers approximately 1,150 acres located along the southeastern boundary of the City of Escondido, approximately two miles north of State Route 78 (San Pasqual Valley Road) and east of Cloverdale Road (Figure 1). It is located within the unincorporated area of San Diego County with the project's western boundary conterminous with the City of Escondido's planning area boundary. To the west of the project site is the Rancho San Pasqual development within the Escondido city limits and to the south is the San Diego Wild Animal Park within the boundaries of the City of San Diego. The southern half of the project site is located with the County of San Diego's MSCP, while the northern portion is located outside of the MSCP. The project involves the annexation of the entire project site into the City of Escondido.

1. Proposed Project

The Valley View Estates project is proposed to include 485 residential units, a 250-unit resort hotel, an 18-hole championship golf course with clubhouse and tennis courts, an equestrian center, neighborhood commercial/mixed use center, and natural open space. In addition, sewer and water line improvements have been proposed. The sewer line improvements are specifically located north of North County Fair shopping mall and within the southwest corner of Kit Carson Park. The proposed water line improvements are located between the intersection of Old Ranch Road and Cloverdale Road north to the Reed Tower. These infrastructure improvements are located within existing easements and adjacent to existing sewer and water lines. The project also includes an amendment to the City of Escondido's Sphere of Influence, Annexation and Pre-Zoning, a General Plan Amendment, as well as a Development Agreement and Pre-Annexation Agreement.

Access to the project site is proposed from State Route 78 and San Pasqual Road via Cloverdale Road to Rockwood Road. Rockwood Road will be extended less than a quarter of a mile to the east from the Rancho San Pasqual development to the subject property.

2. Reduced Intensity and Density Alternative

The Reduced Intensity and Density Alternative will cover the same 1,150 acres as the proposed Valley View Estates SP and will include the same water/sewer line improvements but will reduce the area of development within the property. The SP and TM will provide 403 residential units including 228 estate lots (0.5 acre or larger) and 175 residential lots. The 250 unit resort hotel with casitas and a golf course will remain as designed in the proposed Valley View Estates SP. The ungraded areas within the golf course lot will be shown as natural open space. No commercial and no apartment development are proposed.

B. Physical Characteristics

The topography on-site consists of moderate to steep slopes with moderately rolling plateaus and three blue-line streams crossing the property in a northeast-southwest direction (Figure 2). There are large boulders and rock outcroppings throughout the site. Elevation ranges from approximately 420 feet above mean sea level (AMSL) in the southern portion of the property to about 1,820 feet AMSL in the northeastern corner of the site. The underlying bedrock on the site ranges from Jurasic/Triasic metavolcanics, Mesozoic granodiorites, adamellites and basic intrusive rocks, to Quartenary alluviums (Rogers 1965). Soils found on the property are primarily Cieneba Fallbrook rocky, sandy loams with 30-65 percent eroded slopes and Cieneba very rocky, coarse, sandy loams with 30-75% slopes (USDA 1973). There are also smaller areas with the following soils: Vista coarse, sandy loams with 15-30% slopes; Vista rocky, coarse, sandy loams with 5-15% slopes; Fallbrook rocky, sandy loam with 9-30% eroded slopes; Vista rocky, coarse, sandy loams with 15-30% slopes; and Vista coarse, sandy loam with 9-15% slopes (USDA 1973).

The project site is currently vacant but was previously used for several home sites and cattle and sheep grazing. Any structures were destroyed in the 1993 Guejito fire. Dirt access roads cross the site. The surrounding land uses include a mix of rural residences and open lands to the north, east, and south; Rancho San Pasqual residential development and Eagle Crest Golf Course to the west; and the San Diego Wild Animal Park to the south.

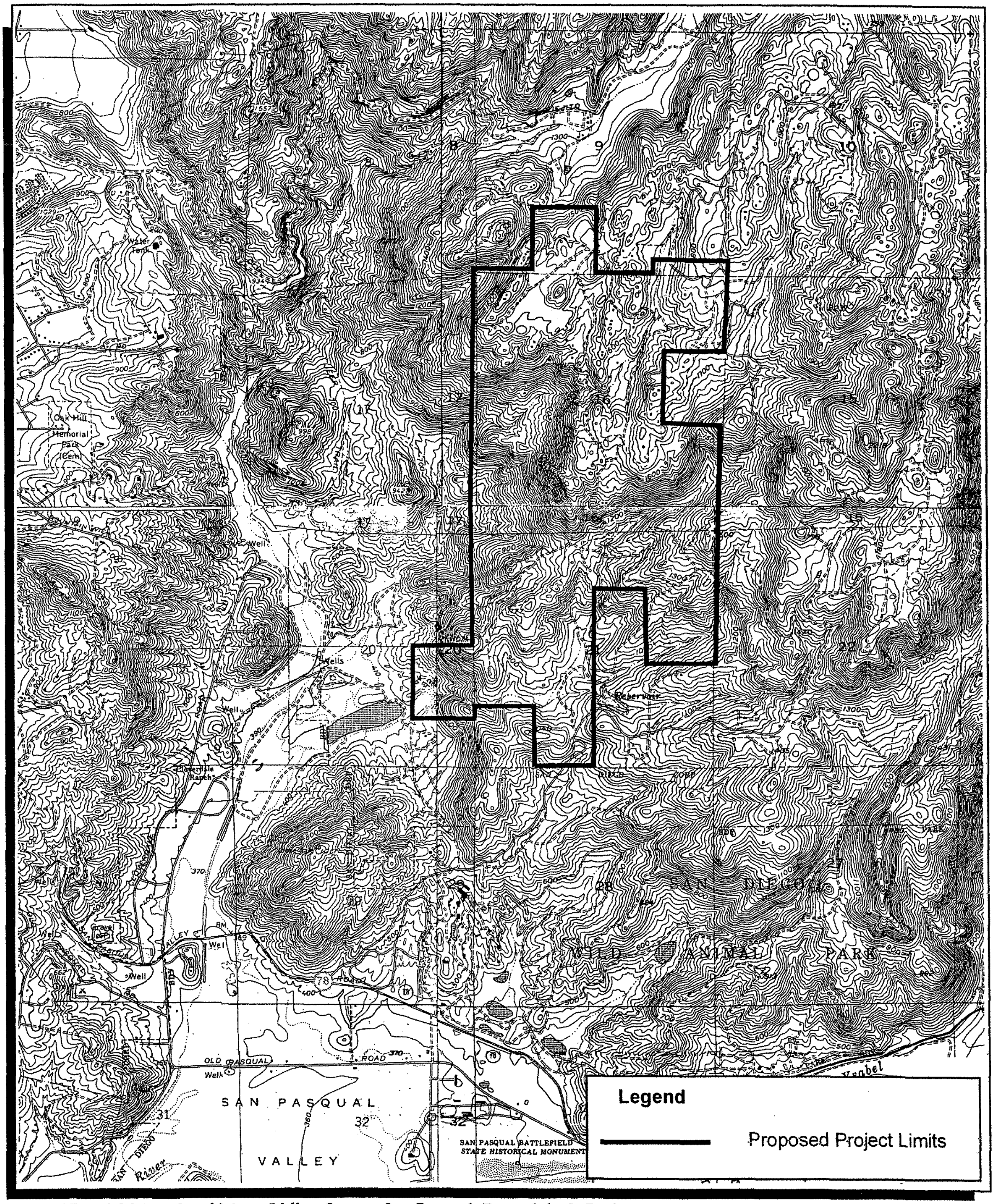
Mooney & Associates

N

0 5 10 miles

Regional Location

figure 1



SOURCE: USGS 7.5' Quad Maps (Valley Center, San Pasqual, Escondido & Rodriguez Mountain)

Mooney & Associates

N

0 1500' 3000'

Vicinity Map

Figure 2

III. METHODS

Mooney & Associates conducted a biological resource inventory and vegetation mapping of the project site from April to July 1998. Resources were mapped on a 1 inch = 300 feet scale topographic map. In addition to a general survey, focused surveys were conducted for the coastal California gnatcatcher (*Polioptila californica californica*) (Attachment 1) and Quino checkerspot butterfly (*Euphydryas editha quino*) (Attachment 2). The subject property was also assessed for the potential presence of Stephens' kangaroo rat (*Dipodomys stephensi*) (Attachment 3).

Surveyors walked trails on all areas of the property to compile the wildlife species list, but the gnatcatcher and plant surveys necessitated surveying within areas without trails. All habitats on-site were surveyed but considerably less time was spent surveying within areas of thick chaparral. The gnatcatcher surveys forced the expenditure of the majority of the survey effort within coastal sage scrub areas.

Gnatcatcher survey techniques followed USFWS survey guidelines, involving three surveys of each area of appropriate habitat separated by at least seven days. As the acreage of appropriate habitat was extensive, surveys were sometimes conducted more often than once per week but not more than once per week in the same location.

The wetlands and jurisdictional mapping involved surveying drainage areas on-site to make a determination of jurisdiction for either the ACOE or CDFG. CDFG boundaries were mapped at the extent of the riparian canopy, or from "bank-to-bank" across ordinary high-water drainages without a well-developed canopy. Corps jurisdiction was mapped at the ordinary high water mark, roughly corresponding to "bank to bank." True wetland delineations, using the Corps wetland delineation manual (1987), were performed within the isolated mesic meadows.

A previous biological study of this property (Collier 1992) was reviewed in preparation for the current study. The survey dates and corresponding environmental conditions of the present biological study are shown in Table 1.

Mooney & Associates conducted a biological survey of the off-site sewer and water pipeline alignments on May 1, 2002. Resources were mapped on a 1 inch = 100 feet scale aerial photograph.

The following references or field guides were used for the biological resource inventory: habitats, Holland 1986 and Oberbauer 1996; flora, Bailey 1924, and Hickman 1993; birds, Binford 1986 and DeBenedictis 1989; mammals, Jones, et al. 1982 and Jameson and Peeters 1988; reptiles, Collins 1997.

Table 1. Biology Survey Details

Date	Time	Survey Type[1]	Surveyors[2]	Conditions
04/11/98	0900-1430	Quino checkerspot	GB	Beginning: cloudy, slight breeze, temperature in mid 60's. End: starting to drizzle, light breeze, temperature dropped to low 60's.
04/17/98	1000-1300	Quino checkerspot	GB	Beginning: sunny, clear skies, no breeze, temperature in mid-high 60's. End: sunny, clear skies, breezy temperature in high 60's to low 70's.
04/20/98	0900-1400	Quino checkerspot	GB	Beginning: sunny, clear skies, no breeze, temperature in mid -high 60's. End: sunny, clear skies, breezy, temperature in mid-high 80's.
04/20/98	0900-1430	CAGN, bio	RE, LC	Temp 68 - 85. No wind. No cloud cover.
04/27/98	0900-1300	Quino checkerspot	GB	Beginning: clear skies, slight breeze, temperature in mid 60's. End: hazy, breezy, temperature in high 70's to low 80's.
04/27/98	0730-1200	CAGN, bio	RE, LC	Temp 60-80. No cloud cover. Wind 0-5 mph.
5/04/98	0900-1200	Quino checkerspot	GB	Beginning: cloudy, slight breeze, temperature in mid 60's. End: partly cloudy, breezy, temperature in mid to high 60's.
05/04/98	0745-1100	CAGN	RE	Temp 62-68. Cloud cover 100-65%. Wind 0-2 mph
05/11/98	0730-1100	CAGN	RE, LC	Temp 50-55. Overcast. Wind 0-8 mph.
05/16/98	0700-1030	CAGN	RE, SD	Temp 58-70. Cloud cover 15-40%. Wind 0-4 mph
05/18/98	0845-1045	CAGN	RE	Temp 60-75. Cloud cover 10-0%. Wind 0-2 mph.
05/20/98	1000-1445	bio	RE, GB	Temp 55-64. Cloud cover 95-10%. Wind 0-8 mph
05/27/98	1100-1430	SKR	RE, PB	Clear & sunny
05/30/98	0730-1030	CAGN	SD	Temp 64-69. Cloud cover 100%-partly cloudy. Light breeze.
06/01/98	0720-1050	CAGN	RE, LC	Temp 58-77. Cloud cover 10-0%. No wind.
06/06/98	0700-1100	CAGN	SD	Temp 68-72. No cloud cover. Light breeze.
06/22/98	0710-1045	CAGN, bio	RE, LC	Temp 56-68. 100-0%. Wind 0-5 mph.
07/27/98	0800-1700	bio	GB	Temp 72-101. No cloud cover. Light breeze.
07/28/98	0800-1700	bio	GB	Temp 72-101. No cloud cover. Light breeze.
07/30/98	0800-1600	bio	GB	Temp 68-86. No cloud cover. Light breeze.
05/01/02	1300-1830	off-site bio	KK	Temp 65. Partly cloudy. <10 mph winds.

(1) CAGN = coastal California gnatcatcher survey, bio = general biological survey, SKR = Stephens' kangaroo rat assessment, QCB = Quino checkerspot butterfly survey

(2) RE = Rick Eisenbart, LC = Lisa Chaddock, GB = Gladys Baird, SD = Shana Dodd, PB = Philip Behrends, KK = Korey Klutz

IV. RESULTS

A. Botany

The project site supports eight native habitat types: Diegan coastal sage scrub/recovering sage scrub, coastal sage-chaparral scrub, southern mixed chaparral, coast live oak woodland, Engelmann oak woodland, oak riparian woodland, riparian scrub, and mesic meadow (Figure 3). Impact areas off-site are vegetated with coastal sage scrub, southern coast live oak-riparian forest, non-native grassland, agriculture and developed/landscaped areas (Figure 4a-b, Figure 5). The nomenclature used to define the habitat types has been modified from Holland 1986 and Oberbauer 1996. In addition to the native habitats, a portion of the area on-site has been disturbed by dirt roads, the remnants of dwellings, and farm structures. Historical clearing of vegetation around the structures has resulted in a cover of ruderal vegetation. There are 8 acres of disturbed areas.

1. Vegetation Communities On-site

Diegan Coastal Sage Scrub/Recovering Coastal Sage Scrub (531 acres). Diegan coastal sage scrub (sage scrub) is typically found on drier, south-facing slopes. Components of the habitat consist of low, soft-woody subshrubs that are often drought-deciduous (Holland 1986). Native species observed on-site include California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), our Lord's candle (*Yucca whipplei*), white sage (*Salvia apiana*) and monkey flower (*Mimulus aurantiacus*).

Sage scrub is considered a sensitive habitat in southern California because of rapid urbanization. In San Diego County it is estimated that approximately 72 percent of the community has been extirpated since Europeans settled in the region in the 1800's (Oberbauer 1991). Sage scrub provides habitat for several sensitive species including the California gnatcatcher, coastal cactus wren, San Diego horned lizard and orange-throated whiptail.

A majority of the on-site sage scrub is recovering from the 1993 Guejito fire. Recovering sage scrub has a higher cover of exotic herbaceous annuals including oats (*Avena fatua* and *A. barbata*), bromes (*Bromus diandrus*, *B. hordaceus*, and *B. madritensis* ssp. *rubens*), and filaree (*Erodium cicutarium* and *E. moschatum*). Laurel sumac and flat-top buckwheat were observed sparsely scattered throughout the habitat. The presence of sage scrub (and its seed bank) in adjacent areas suggests the recovering sage scrub has the potential to fully recover from the effects of the fire.

Coastal Sage-Chaparral Scrub (30 acres). Along the eastern boundary of the site is an area dominated by sage scrub elements including California sage brush, flat-top buckwheat, and white sage. However, also found intermixed with the sage scrub elements are plants more typically found in southern-mixed chaparral: chamise (*Adenostoma fasciculatum*), mountain mahogany (*Cercocarpus minutiflora*), and Ramona lilac (*Ceanothus tomentosus*). The presence of the chaparral plants suggests the area is progressing through post-fire successional stages with southern mixed chaparral as the climax community.

Southern Mixed Chaparral (448 acres). Southern mixed chaparral (chaparral) dominates the northern slopes of the subject property. Typically, the habitat consists of a dense cover of broad-leaved sclerophyllous shrubs with little or no understory vegetation (Holland 1986). The existing canopy cover is slightly more open than normal due to the 1993 fire. The on-site chaparral is dominated by hoary-leaf ceanothus (*Ceanothus crassifolius*), chaparral whitethorn (*Ceanothus leucodermis*), Ramona lilac, chamise, scrub oak (*Quercus berberidifolia*) and mountain mahogany.

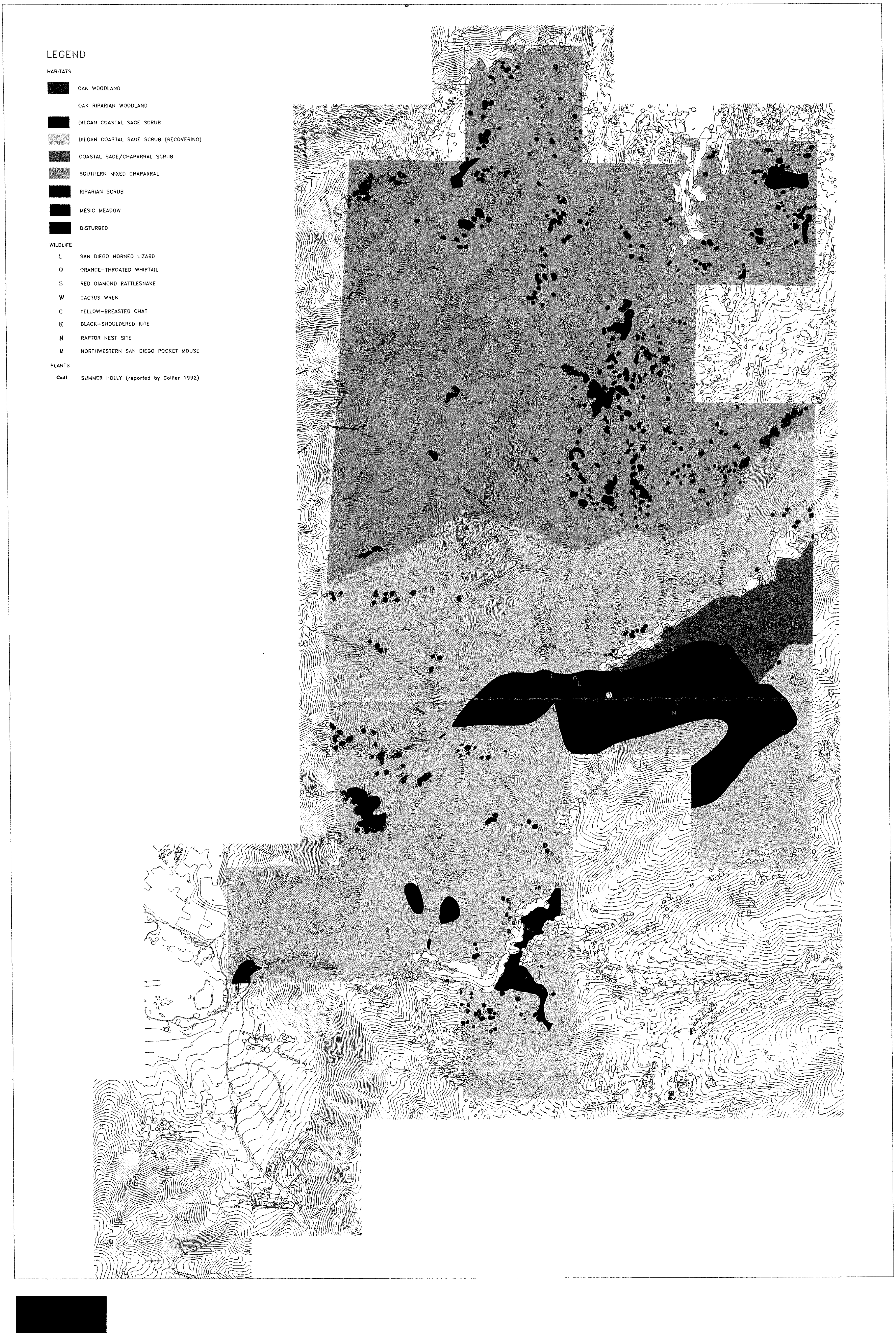
Engelmann Oak/Coast Live Oak Woodland (93 acres). Oak woodlands consisting of coast live oaks (*Quercus agrifolia*) and englemann oaks (*Quercus englemannii*), both isolated and in groups, occur in numerous locations on the subject property. Oak woodlands occur on slopes, within areas of chaparral, and disturbed sage scrub. The oak riparian areas are not included within the oak woodlands. Typically, oak woodland is dominated by one oak species with a poorly developed shrub layer but a continuous herb layer (Holland 1986).

Oak Riparian Woodland (38 acres). Oak riparian woodland is found within several of the drainages that cross the project site. On the Valley View property, the oak riparian woodlands are generally open to locally dense evergreen woodlands dominated by coast live oaks and found along streambanks. Englemann oaks are intermixed with the coast live oaks. Other species observed within this habitat type included California sycamore (*Platanus californicus*), toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), arroyo willow (*Salix lasiolepis*), black willow (*S. gooddingii*), Douglas mugwort (*Artemisia douglasiana*) and western ragweed (*Ambrosia psilostachya*).

Oak woodland is considered a sensitive habitat based on its limited acreage and distribution, the level of impact it has withstood within the County, and its value as wildlife habitat. The extensive canopies and dense foliage of oaks provide excellent perching, roosting, and nesting sites for birds. The dense oak canopies that form along streamsides provide excellent cover and movement corridors for many species of birds and mammals. Cavities in the limbs or trunks of oaks are used as nest and den sites for several birds and mammals. Acorns are an important food source for wildlife, as they are high in caloric density and can be obtained with little energy expenditure.

Riparian Scrub (1 acre). On-site, riparian scrub habitat is limited to an area in the extreme southwest corner and a vernal seep in the north central portion of the property. The riparian scrub occurs as dense thickets of arroyo and black willows and mule-fat (*Baccharis salicifolia*). The stands are dense and have only a minimal amount of understory development.

Mesic Meadow (1.2 acres). Small stands of mesic meadow occur on-site in four areas. These areas are low spots which collect runoff. Several of these areas had saturated soils during early-mid 1998, and qualify as wetlands. Mariposa rush (*Juncus dubius*) and western ragweed are the dominant plant species each of these areas. Deergrass (*Muhlenbergia rigens*) is also present.



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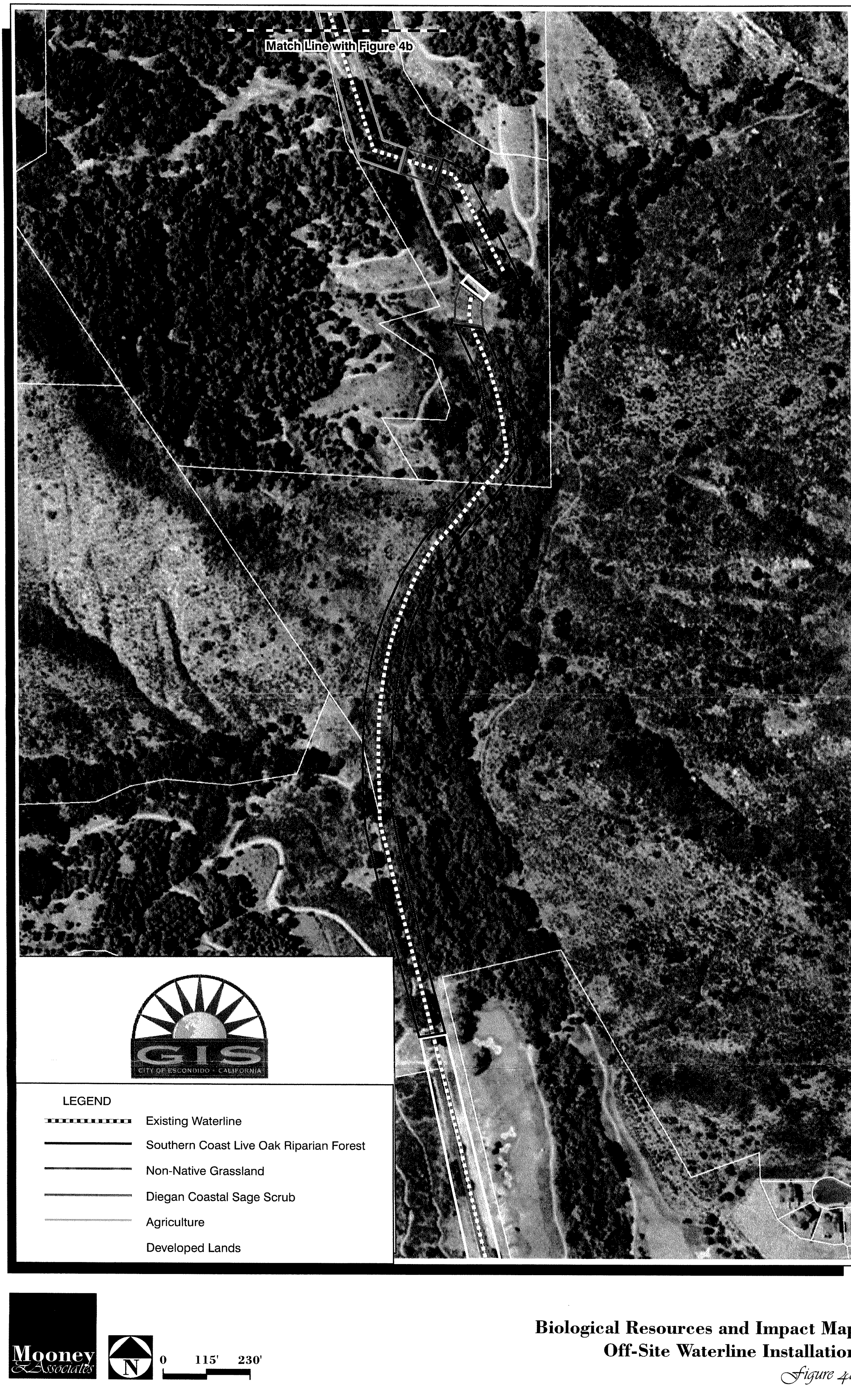
Biological Resources Map

Figure 3



Biological Resources and Impact Map
Off-Site Waterline Installation
Figure 4a

Biological Resources and Impact Map
Off-Site Waterline Installation
Figure 4b

Mooney & Associates

Biological Resources and Impact Map
Off-Site Sewerline Installation
Figure 5

1. Vegetation Communities Off-site

Non-native Grassland. Non-native grassland occurs off-site in areas where emergency access roads or water/sewer pipeline installation is proposed. These areas are dominated by non-native grasses including soft-chess mollis (*Bromus hordeaceus*), rip-gut grass (*Bromus diandrus*), slender wild oat (*Aveena fatua*), and foxtail (*Bromus madritensis*). Other plants observed within the non-native grassland areas include black mustard (*Brassica nigra*), fennel (*Foeniculum vulgare*), filaree (*Erodium* spp.), scarlet pimpernel (*Anagallis arvensis*), tocalote (*Centauria melitensis*), Russian thistle (*Salsola tragus*), horehound (*Marrubium vulgare*) and jimson weed (*Datura meteloides*).

Southern Coast Live Oak-Riparian Forest. Southern coast live oak riparian forest is located along the sewer/water installation alignment. This vegetation community is characterized by a locally dense forest dominated by coast live oak. This community develops along the bottomlands and floodplains of the larger streams in southern California. Co-occurring trees within the coast live oak include California sycamore, red willow (*Salix laevigata*) and elderberry (*Sambucus mexicana*). The understory of the forest is dominated by poison oak and mule-fat. Herbaceous species observed include rip-gut, Douglas mugwort, nettle (*Urtica dioica*) and common plantain (*Plantago major*). Plants observed within stream channel beneath the canopy include evening primrose (*Oenothera elata*), Mexican rush (*Juncus mexicanus*), Persian wireweed (*Polygonum argyrocoleon*), dotted smartweed (*Polygonum puctatum*), San Diego sedge (*Carex spissa*) and English plantain (*Plantago lanceolata*).

Coastal Sage Scrub. Diegan coastal sage scrub is dominated by low, soft-woody shrubs and subshrubs that are typically drought deciduous. Dominant plant species include California sagebrush, California buckwheat, black sage (*Salvia mellifera*), laurel sumac and yucca. Diegan coastal sage scrub is located adjacent to the existing sewer line in the southwest portion of Kit Carson Park.

Flora

A total of approximately 232 plant species (including 55 [24 percent] nonnative species) was detected during the current and previous surveys (Table 2). Due to the time of year the surveys were conducted, some herbaceous annual plants may have bloomed and already died back and, therefore, may have gone undetected.

B. Zoology

The current survey identified a total of 74 wildlife species (Table 3), including 1 amphibian, 10 reptiles, 53 bird, and 10 mammal species. When this total is combined with the results of the summer 1981 and winter/spring 1992 surveys (Collier 1992), a total of 102 wildlife species has been detected on-site: 2 amphibian, 14 reptiles, 73 bird, and 13 mammal species. Among the more numerous species detected during the 1998 surveys on-site were the southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), spotted towhee (*Pipilo maculatus*), wrentit (*Chamaea fasciata*), mourning dove (*Zenaida macroura*), and the coastal whiptail (*Cnemidophorus tigris*). Lazuli bunting (*Passerina amoena*) was also relatively common on this property. The unusual abundance of rufous-crowned sparrows on-site is noteworthy, and is discussed further in the following sensitive species section.

Table 2. Plants Observed at Valley View [1]

Scientific Name[2]	Common Name	Habitat[3]
LYCOPODIAE		
Selaginellaceae	**Spike Moss Family**	
Selaginella bigelovii	Bigelow's spike-moss	MC, SS, Di
FILICAE		
Dryopteridaceae	**Wood Fern Family**	
Dryopteris arguta	coastal woodfern	MC, OW
Polypodiaceae	**Fern Family**	
Polypodium californicum	California polypody	MC, SS, OW
Pteridaceae	**Brake Family**	
Adiantum jordani	California maidenhair	MC, SS
Cheilanthes californica	California lace fern	MC, OW, SS
Pellaea andromedifolia	coffee fern	MC, OW, SS
Pentagramma triangularis ssp. *triangularis*	goldenback fern	MC, OW, MM
DICOTYLEDONEAE		
Aizoaceae	**Carpet-weed Family**	
*Carpobrotus edulis**	hottentot-fig	Di
Anacardiaceae	**Sumac Family**	
Malosma laurina	laurel sumac	MC, SS, SS/MC
Rhus ovata	sugarbush	MC
Toxicodendron diversilobum	poison oak	OR, OW, MC
Apiaceae	**Carrot Family**	
Apiastrum angustifolium	common celery	OR, MC
Daucus pusillus	rattlesnake weed	Di, SS
*Foeniculum vulgare**	sweet fennel	Di
Lomatium dasycarpum ssp. *tomentosum*	woolly-fruit lomatium	MC, SS, Di
Sanicula arguta	sharp-tooth sanicle	SS, Di, MC
Tauschia arguta	pungent wild parsnip	MC
Asteraceae	**Sunflower Family**	
Ambrosia psilostachya	western ragweed	Di, SS, MC, OR
Artemisia californica	California sagebrush	SS, MC, Di
Artemisia douglasiana	Douglas mugwort	OR, MC
Baccharis emoryi	Emory's bacchairs	S
Baccharis salicifolia	mule-fat	OR, WS, MC, Di
Baccharis sarothroides	broom baccharis	Di, MC, SS
Brickellia californica	California brickellbush	SS, Di, MC
*Centaurea melitensis**	tocalote	Di, SS, MC, OW
Chaenactis artemisifolia	white pincushion	OW, MC
Chlorocantha spinosa	slimaster	
Cirsium occidentale var. *californicum*	California thistle	Di, MC, SS, OW
*Cirsium vulgare**	bull thistle	Di, MC, SS
*Conyza canadensis**	common horseweed	Di, SS, MC
Corethrogyne filaginifolia var. glomerata	mountain aster	Di, SS

Scientific Name[2]	Common Name	Habitat[3]
*Crysanthemum coronarium**	Garland or crown daisy	AH
Erigeron foliosus var. *foliosus*	fleabane	Di, SS
Eriophyllum confertiflorum var. *confertiflorum*	golden yarrow	Di, SS, MC
Filago californica	California filago	Di, SS
Gnaphalium bicolor	bicolored cud weed	Di, MC, SS
Gnaphalium californicum	green everlasting	Di, MC, SS
Gnaphalium canescens ssp. *beneolens*	fragrant everlasting	Di, MC, SS
Gutierrezia californica	California matchweed	Ss
Hazardia squarrosus var. *grindelioides*	sawtoothed goldenbush	SS, MC, Di
Hemizonia fasciculata	fascicled tarplant	Di, MC, SS
Heterotheca grandiflora	telegraph weed	Di, MC, SS
*Hypocheris glabra**	smooth cat's ear	Di
Isocoma menziesii var. *vernonioides*	coastal goldenbush	Di, MC, SS
Lessingia filaginifolia	California-aster	Ph, Ss
*Matricaria matricoides**	pineapple weed	Di
Osmadenia tenella	southern calycadenia	Di, MC, SS
Porophyllum gracile	odora	Di, SS
Sonchus asper ssp. *asper**	spiny-leaf sow-thistle	Di
Stephanomeria virgata ssp. *virgata*	virgate wreath plant	Di, SS
Uropappus lindleyi	silver puffs	Di, MC, SS
*Xanthium strumarium**	cocklebur	Di
Boraginaceae	**Carrot Family**	
Amsinckia eastwoodiae	rancher's fiddleneck	Di, SS
Cryptantha intermedia	cryptantha	Di, MC, SS
Cryptantha micromeres	popcorn flower	Di
Plagiobothrys sp.	popcornflower	SS, Di, MC
Plagiobothrys collinus var. *gracilis*	San Diego popcornflower	Di
Brassicaceae	**Mustard Family**	
*Brassica nigra**	black mustard	Di, SS, MC
*Capsella bursa-pastoris**	shepherd's purse	Di, MC, SS
Guillenia lasiophyllum	California mustard	SS, Di
*Hirschfedlia incana**	Shortpod mustard	BH, PH
Lepidium nitidum	peppergrass	Di, SS
*Raphanus sativus**	wild radish	Di
*Rorippa nasturtium-aquaticum**	white water-cress	OR
Caprifoliaceae	**Honeysuckle Family**	
Lonicera subspicata	honeysuckle	MC
Sambucus mexicana	desert elderberry	OW, MC
*Stellaria media**	common chickweed	Di
Symphoricarpos mollis	snowbush	OW
Caryophyllaceae	**Pink Family**	
Silene laciniata	southern pink	Di, SS, MC
Chenopodiaceae	**Goosefoot Family**	
Atriplex lentiformis ssp. *lonchres*	coast locoweed	

Scientific Name[2]	Common Name	Habitat[3]
Atriplex triangularis	spearscale	
*Atriplex semibaccata**	Australian saltbush	Di, SS, MC
*Chenopodium murale**	pigweed	Di, MC, OW
*Salsola iberica**	Russian thistle	Di, SS, MC
Cistaceae	**Rock-Rose Family**	
Helianthemum scoparium	sunrose	MC, SS
Convolvulaceae	**Morning-glory Family**	
Calystegia macrostegia ssp. *intermedia*	chaparral morning-glory	MC, SS, Di
Cuscuta californica	witch's hair	MC, SS
Crassulaceae	**Stonecrop Family**	
Crassula connata	pygmyweed	SS, MC
Dudleya pulverulenta ssp. *pulverulenta*	chalk-lettuce	MC, SS, Di
Cucurbitaceae	**Gourd Family**	
Marah macrocarpus var. *macrocarpus*	wild cucumber	MC, SS, OW
Ericaceae	**Heath Family**	
Arctostaphylos glandulosa ssp. *glandulosa*	eastwood manzanita	MC
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	MC
Xylococcus bicolor	mission manzanita	MC, SS/MC
Euphorbiaceae	**Spurge Family**	
Chamaesyce polycarpa	fairy mats	Di, MC, SS
Croton californicus	California croton	SS, Di, MC
Eremocarpus setigerus	doveweed	Di, SS, MC
*Euphoriba peplus**	petty spurge	Di
Fabaceae	**Pea Family**	
Lathyrus vestitus var. *alefeldii*	wild sweetpea	SS, MC
Lotus argophyllus var. *argophyllus*	silver lotus	Di, MC, SS
Lotus salsuginosus var. *salsuginosus*	alkali lotus	Di
Lotus scoparius var. *scoparius*	California broom	Di, MC, SS
Lotus strigosus	Bishop's lotus	Di, SS
Lupinus bicolor	miniature lupine	SS
Lupinus sparisflorus	Coulter's lupine	Di, MC, SS
Lupinus truncatus	chaparral lupine	MC, SS, Di
*Medicago polymorpha**	bur-clover	Di
*Medicago sativa**	alfalfa	Di, OW
*Melilotus indicus**	sour clover	Di
Trifolium sp.	clover	Di
Fagaceae	**Oak Family**	
Quercus agrifolia	coast live oak	OR, OW, MC
Quercus berberidifolia	scrub oak	MC, SS/MC
Quercus engelmannii	Engelmann oak	OW, MC, SS
Gentianaceae	**Gentian Family**	
Centaurium venustum	canchalagua	Di, MC, SS
Geraniaceae	**Geranium Family**	
*Erodium botrys**	long-beak filaree	Di, SS, MC

Scientific Name[2]	Common Name	Habitat[3]
*Erodium cicutarium**	red-stem filaree	Di, SS, MC
*Erodium moschatum**	white-stem filaree	Di
Grossulariaceae	**Currant Family**	
Ribes indecorum	winter currant	MC, SS, OW
Ribes speciosum	fuchsia-flower gooseberry	MC, SS, OW
Hydrophyllaceae	**Waterleaf Family**	
Encrypta chrysanthemifolia	eurcrypta	MC, OW
Eriodictyon crassifolium	yerba santa	MC, OW, Di
Nemophila rotata	baby blue-eyes	
Nemophila menziesii var. *menziesii*	baby blue-eyes	SS, OW
Phacelia cicutaria ssp. *hispida*	caterpillar phacelia	MC, SS, OW
Phacelia distans	wild-heliotrope	MC, SS, OR, Di
Phacelia grandiflora	large-flowered phacelia	SS, MC, OW, Di
Phacelia tanacetifolia	tansy phacelia	MC, SS, OW, Di
Pholistoma paradoxa	white fiesta flower	MC, OW, Di
Lamiaceae	**Mint Family**	
*Marrubium vulgare**	horehound	Di
Salvia apiana var. *apiana*	white sage	SS, MC
Salvia mellifera	black sage	SS, MC
Stachys ajugoides var. *rigida*	hedge nettle	OR
Malvaceae	**Mallow Family**	
Malacothamnus fasciculatus var. *fasciculatus*	bush mallow	MC, SS
*Malva parviflora**	cheeseweed	Di
Malvella leprosa	alkali-mallow	MC, OW
Myrtaceae	**Myrtle Family**	
*Eucalyptus globulus**	blue gum	Di
Nyctaginaceae	**Four O'clock Family**	
Mirabilis californica	wishbone plant	SS, MC, OW
Oleaceae	**Olive Family**	
*Olea europaea**	olive	Di
Onagraceae	**Evening-Primrose Family**	
Camissonia bistorta	California sun cup	Di, MC, SS, OW
Camissonia california	mustard evening primrose	Di, MC, OW
Clarkia purpurea ssp. *quadrivulnera*	four-spot clarkia	Di, MC, OW
Epilobium canum	California fuchsia	MC, OW, Di
Oenothera elata ssp. *hirsutissima*	tall yellow evening-primrose	OR, MC, Di
Oxalidaceae	**Oxalis Family**	
Oxalis albicans	wood-sorrel	OW, MC
*Oxalis pes-caprae**	Bermuda buttercup	Di, OW
Paeoniaceae	**Peony Family**	
Paeonia californica	California peony	OW, MC
Papaveraceae	**Poppy Family**	
Eschscholzia californica	California poppy	SS, Di
Plantaginaceae	**Plantain Family**	

Scientific Name(2)	Common Name	Habitat(3)
Plantago erecta ssp. *erecta*	dot-seed plantain	Di, MC, SS
*Plantago insularis**	woolly plantain	Di
*Plantago lanceolata**	English plantain	SCLORF
Platanaceae	**Sycamore Family**	
Platanus racemosa	California sycamore	OR
Polemoniaceae	**Phlox Family**	
Navarretia atractyloides	holly-leaf skunkweed	Di
Navarretia hamata	skunkweed	Di
Polygonaceae	**Buckwheat Family**	
Chorizanthe fimbriata var *fimbriata*	fringed spine-flower	Di, MC
Chorizanthe staticoides	Turkish rugging	Di, MC, SS
Eriogonum fasiculatum	California buckwheat	S
Pterostegia drymarioides	granny's hairnet	Di, MC, SS
*Rumex crispus**	curly dock	OR, MC
Portulacaceae	**Purslane Family**	
Calandrinia ciliata	red maids	Di, SS, MC
Claytonia perfoliata var. *perfoliata*	common miner's-lettuce	OW, MC
Primulaceae	**Primrose Family**	
Anagallis arvensis var. *arvensis**	scarlet pimpernel	Di, SS
Ranunculaceae	**Crowfoot Family**	
Clematis pauciflora	ropevine	MC
Delphinium parryi var. *parryi*	Parry's larkspur	Di, MC
Thalictrum polycarpum	common meadow-rue	OW, MC
Rhamnaceae	**Buckthorn Family**	
Ceanothus crassifolius	hoary-leaf lilac	MC
Ceanothus leucodermis	whitebark lilac	MC
Ceanothus tomentosus ssp. *olivaceus*	Ramona lilac	MC, SS/MC
Ranunculus californicus	buttercup	OW, MC
Rhamnus crocea	redberry	MC, SS
Rhamnus ilicifolia	hollyleaf redberry	MC, SS, OW
Rosaceae	**Rose Family**	
Adenostoma fasciculatum var. *fasciculatum*	chamise	MC, Di
Cercocarpus betuloides var. *betuloides*	birch-leaf mountain-mahogany	MC, OW, SS/MC
Heteromeles arbutifolia	toyon	MC, OW, SS/MC
Potentilla glandulosa	cinquefoil	MC
Prunus ilicifolia ssp. *ilicifolia*	holly-leafed cherry	MC, SS/MC
Rosa californica	California rose	OR, MC
Rubus ursinus	California blackberry	OR
Rubiaceae	**Madder Family**	
Galium angustifolium	narrow-leaf bedstraw	MC, SS
*Galium aparine**	common bedstraw	Di, SS
Galium nuttallii ssp. *nuttallii*	Nuttal's bedstraw	MC, OW
Rutaceae	**Rue Family**	
Cneoridium dumosum	bushrue	MC

Scientific Name[2]	Common Name	Habitat[3]
Salicaceae	**Willow Family**	
Populus fremontii ssp. *fremontii*	Fremont cottonwood	OR
Salix gooddingii	Goodding's black willow	OR
Salix laevigata	Red Willow	OR
Salix lasiandra	yellow willow	OR
Salix lasiolepis	arroyo willow	OR
Saururaceae	**Lizard-tail Family**	
Anemopsis californica	yerba mansa	OR, MC
Scrophulariaceae	**Figwort Family**	
Antirrhinum nuttallianum	Nuttall's snapdragon	Di MC
Castilleja exserta	purple owl's-clover	Di, SS
Collinsia heterophylla var. *hetgerophylla*	purple Chinese houses	OW, MC
Cordylanthus rigidus ssp. *setigerus*	thread-leaved bird's beak	Di, MC
Keckiella antirrhinoides ssp. *antirrhinoides*	yellow bush penstemon	MC, SS/MC
Keckiella cordifolia	heartleaf penstemon	MC
Mimulus aurantiacus	bush monkey-flower	MC, SS, Di, SS/MC
Mimulus brevipes	monkey-flower	MC, SS, OW
Penstemon spectabilis	showy penstemon	MC, SS
Scrophularia californica var. *floribunda*	bee plant	MC, SS
Solanaceae	**Nightshade Family**	
Datura wrightii	jimson weed	Di
*Nicotiana glauca**	tree tobacco	Di
Solanum parishii	Parish's nightshade	MC, SS
Tamaricaceae	**Tamarisk Family**	
Tamarix sp.*	tamarisk	OR
Urticaceae	**Nettle Family**	
Urtica dioica	nettle	SCLORF
*Urtica urens**	dwarf nettle	OR, Di
MONOCOTYLEDONEAE		
Cyperaceae	Sedge Family	
Carex triquetra	sedge	OR, MC, MM
*Cyperus esculentus**	yellow nutsedge	Di, MC, OR
Sisyrinchium bellum	blue-eyed grass	SS, MC, Di
Iridaceae	**Iris Family**	
Sisyrinchium bellum	blue-eyed grass	SS
Juncaceae	**Rush Family**	
Juncus bufonius var. bufonius	toad-rush	MC, OR, MM
Juncus effusus	common rush	MC, OR, MM
Juncus regulosus	rugose rush	OR, MM
Allium peninsulare	red-flowered onion	MC
Bloomeria crocea	common golden-stars	Di, SS, MC
Calochortus weedii var. *weedii*	Weed's mariposa	MC, Di, SS
Chlorogalum parviflorum	small-flower soap-plant	Di, MC, SS
Dichelostemma capitatum	wild hyacinth	MC, Di, SS

Scientific Name[2]	Common Name	Habitat[3]
Yucca whipplei	our Lord's candle	MC
Zigadenus fremontii var. *fremontii*	Fremont's camas	MC
Liliaceae	**Lily Family**	
Yucca whipplei	Our Lord's candle	SS, MC
Poaceae	**Grass Family**	
*Arundo donax**	Giant reed	OR
*Avena barbata**	slender wild oat	Di, MC, SS, OR
*Avena fatua**	wild oat	Di, MC, SS
*Bromus diandrus**	common ripgut-grass	Di, SS, MC, OW
*Bromus hordeaceus**	Soft chess	NNG, SS
Bromus madritensis ssp. *rubens**	foxtail chess	Di, SS, MC, MM
*Bromus mollis**	soft chess	Di, SS, MC
*Cortaderia jubata**	Atacama pampas-grass	Di
*Cynodon dactylon**	common Bermuda grass	Di
Elymus condensatus	giant wild rye	MC, OW
*Lolium perenne**	English ryegrass	Di, OW
Melica imperfecta	small-flowered melic	MC, SS
Muhlenbergia microsperma	littleseed muhly	MM
Nassella pulchra	purple needlegrass	MC
*Phalaris paradoxa**	canary grass	Di
*Pennisetum setaceum**	African fountain grass	Di
*Poa annua**	annual bluegrass	Di, OW
*Polypogon monspeliensis**	rabbitfoot beardgrass	OR
*Schismus barbatus**	Mediterranean schismus	Di
*Setaria virdis**	green bristlegrass	Di
Stipa coronata	giant stipa	MC, SS
Vulpia myuros var. *hirsuta*	rattail fescue	Di, OW
Vulpia octoflora	six-weeks fescue	SS, Di
Typhaceae	Cat-tail Family	
Typha angustifolia	narrow-leaf cat-tail	
Typha latifolia	cat-tail	OR

* Denotes nonnative taxa. [1]Includes plants reported to occur on-site by Collier 1992.

(2) Nomenclature from Bailey (1924), McClintock et. al. (1982), Beauchamp (1986) and Hickman (1993).

(3) Habitats: Di = Disturbed, SS = Diegan Coastal Sage Scrub and Recovering Sage Scrub, MC = Southern Mixed Chaparral, OW = Oak Woodland, OR = Oak Riparian Woodland, RS = Riparian Scrub, MM = Mesic Meadow, SCLORF = Southern Coast Live Oak Riparian Forest

Table 3. Wildlife at Proposed Valley View Development Site, 1998

Common Name	Scientific Name[1]	Status[2]	Evidence of Occurrence[3]
Amphibians and Reptiles			
California treefrog	*Hyla cadaverina*		V
western fence lizard	*Sceloporus occidentalis*		O
granite spiney lizard	*Sceloporus orcutti*		O
side-blotched lizard	*Uta stansburiana*		O
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	CSC,MSCP	O
orange-throated whiptail	*Cnemidophorus hyperythrus*	CSC,MSCP	O
coastal whiptail	*Cnemidophorus tigris*		O
southern alligator lizard	*Elgaria multicarinata*		C (offsite)
coast patch-nosed snake	*Salvadora hexalepis virgultea*	CSC	O (offsite)
red diamond rattlesnake	*Crotalus ruber*	CSC	O
southern pacific rattlesnake	*Crotalis viridis*		O
Birds			
turkey vulture	*Cathartes aura*		O
black-shouldered kite	*Elanus caeruleus*	CFP	O
Cooper's hawk	*Accipiter cooperii*	CSC	O
red-shouldered hawk	*Buteo lineatus*		O, V
red-tailed hawk	*Buteo jamaicensis*		O, V
golden eagle	*Aquila chrysaetos*	CSC, MSCP, BEPA, CFP	O
California quail	*Callipepla californica*		O, V
cliff swallow	*Hirundo pyrrhonota*		O
violet-green swallow	*Tachycineta thalassina*		O
scrub jay	*Aphelocoma coerulescens*		O, V
American crow	*Corvus brachyrhynchos*		O
common raven	*Corvus corax*		O, V
mourning dove	*zenaida Macroura*		O, V
Anna's hummingbird	*Calypte anna*		O, V
Costa's hummingbird	*Calypte costae*		O
acorn woodpecker	*Melanerpes formicivorus*		O, V
downy woodpecker	*Picoides pubescens*		O
northern flicker	*Colaptes auratus*		O
plain titmouse	*Parus inornatus*		O
black phoebe	*Sayornis nigricans*		O
ash-throated flycatcher	*Myiarchus cinerascens*		O
bushtit	*Psaltriparus minimus*		O, V
canyon wren	*Catherpes mexicanus*		V

Common Name	Scientific Name[1]	Status[2]	Evidence of Occurrence[3]
cactus wren	*Campylorhynchus brunneicapillus couesi*	CSC, MSCP	V
house wren	*Troglodytes troglodytes*		O
Bewick's wren	*Thryomanes bewickii*		O
blue-gray gnatcatcher	*Polioptila caerulea*		O, V
Coastal Californica gnatcatcher	*Polioptila californica californica*	FT	O,V (off-site along sewer/water pipeline alignment)
wrentit	*Chamaea fasciata*		O, V
hermit thrush	*Catharus guttatus*		O
northern mockingbird	*Mimus polyglottos*		O, V
California thrasher	*Toxostoma redivivum*		O
western wood-pewee	*Contopus sordidulus*		O
phainopepla	*Phainopepla nitens*		O, V
European starling	*Sturnus vulgaris*		O
common yellowthroat	*Geothlypis trichas*		O, V
yellow-rumped warbler	*Dendroica coronata*		O
blue grosbeak	*Guiraca caerulea*		O
black-headed grosbeak	*Pheucticus melanocephalus*		O
lazuli bunting	*Passerina amoena*		O
spotted towhee	*Pipilo maculatus*		O, V
california towhee	*Pipilo crissalis*		O, V
rufous-crowned sparrow	*Aimophila ruficeps*	CSC,MSCP	O, V
black-chinned sparrow	*Spizella atrogularis*		O, V
lark sparrow	*Chondestes grammacus*		O
song sparrow	*Melospiza melodia*		O, V
greater roadrunner	*Geococcyx californianus*		O
yellow-breasted chat	*Icteria virens*	CSC	O
lesser goldfinch	*Carduelis psaltria*		O, V
American goldfinch	*Carduelis tristis salicamans*		O
western kingbird	*Tyrannus verticalis*		O
house finch	*Carpodacus mexicanus*		O
hooded oriole	*Icterus cucullatus nelsoni*		O
wild turkey	*Meleagris gallopavo*		O, T
Mammals			
California ground squirrel	*Spermophilus beecheyi*		O, V, D
Botta's pocket gopher	*Thomomys bottae*		B
northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	CSC	C
Dulzura kangaroo rat	*Dipodomys agilis*		D, T, S
woodrat	*Neotoma sp.*		D
Audubon's cottontail	*Sylvilagus audubonii*		O

Common Name	Scientific Name[1]	Status[2]	Evidence of Occurrence[3]
coyote	*Canis latrans*		S, T
raccoon	*Procyon lotor*		T
mule deer	*Odocoileus hemionus*	MSCP	S, T
bobcat	*Felis rufus*		S, T

(1) Collins 1997.
(2) Status: BEPA=Bald and Golden Eagle Protection Act, CFP=California Fully Protected Species, CSC=CDFG Species of Special Concern, FT= Federally Threatened, MSCP=Multiple Species Conservation Program Target Species List.
(3) Evidence: V=Vocalization, O=Observed, T=Track, S=Scat, D=Den Site, B=Burrow, C=Carcass/Remains
(4) Binford 1986 and DeBenedictis 1989
(5) Jones, et al. 1982 and Jameson and Peeters 1988

Overall, the assortment of wildlife species detected on-site is representative of similar habitat areas within the northern portion of San Diego County. The coastal sage scrub wildlife component was somewhat light, but this is likely due to the early stage of post-fire recovery noted within this habitat type.

C. Sensitive Species

Plant and animal species are considered sensitive if they have been listed as such by federal or state agencies, or one or more special interest groups such as the California Native Plant Society (CNPS) (Skinner and Pavlik 1994). CDFG publishes separate comprehensive lists for plants and animals through their Natural Heritage Division (CDFG 1997a and 1998a). CDFG also publishes Rarefind Searches (CDFG 1998b) through the Natural Diversity Data Base (CNDDB). These lists include taxa officially listed by the state and federal governments as Endangered, Threatened, or Rare, and candidates for state or federal listing.

Please see Attachment 4 for further discussion of the state, federal, and CNPS guidelines used to determine the sensitivity of resources. Attachment 5 is a listing of Flora and Fauna covered by the Multiple Species Conservation Program Subarea plan.

Plants

The CNPS provides a comprehensive listing of plant species. Their sensitivity evaluation of a species is based on its rarity, endangerment, and distribution (Skinner and Pavlik 1994). Number values are assigned to these categories which, when considered together, are the basis for placement on one of four lists: List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere; List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere; List 3: Plants About Which We Need More Information - A Review List; and List 4: Plants of Limited Distribution - A Watch List.

No federally or state listed threatened or endangered plant species were detected on-site during the field surveys. However, several species have been reported to occur in the vicinity and may have potential to occur on-site. All of these species are discussed below and summarized in Table 4.

San Diego Thornmint (*Acanthomintha ilicifolia*). This annual herb occurs in grassy openings in chaparral and sage scrub with broken clay soils, and is often associated with San Miguel-Exchequer soils. The San Diego thornmint was listed as Federally Threatened in October 1998, and is a State Endangered species, a CNPS List 1B species, and is on the list of flora covered by the Multiple Species Conservation Program (MSCP, CDFG1998b). San Diego thornmint was not detected during the field surveys and is considered to have a very low potential to occur on-site.

San Diego Sagewort (*Artemisia palmeri*). This deciduous shrub occurs along creeks and drainages in coastal scrub, oak woodland, and riparian woodland. San Diego sagewort may also occur inland in mesic chaparral conditions. It is a CNPS List 2 (CDFG 1998b) and County Group B species that was not seen during the previous or present study of the property; however, there is some potential for San Diego sagewort to occur along the riparian woodlands.

Orcutt's Brodiaea (*Brodiaea orcuttii*). This bulbiferous herb occurs in vernally moist grasslands, the periphery of vernal pools, and occasionally streamside embankments. Orcutt's brodiaea is a CNPS List 1B and County Group A. It was not observed during the previous or current study of the site, however, there is a low potential for this species to occur within the mesic meadow habitat.

Engelmann Oak (*Quercus engelmannii*). This tree species occurs in oak woodland and southern mixed chaparral. Engelmann oak is a CNPS List 4 and County Group D species that is found scattered across the slopes on-site, but more abundantly in the northern half of the property. Many have sprouted basally after the 1993 Guejito fire.

Summer Holly (*Comarostaphylis diversifolia* ssp. *diversifolia*). This shrub is a County Group A and CNPS List 2 (CDFG 1998b) species that occurs in southern-mixed chaparral. The previous study (Collier 1992) reported the presence of six plants within the northwestern portion of the property. Although the current study of the property was conducted during a period of time when the red fruits would have been visible, this species was not observed. There is a low potential that the summer holly continues to occur on the property.

Palmer's Goldenbush (*Ericameria palmeri* ssp. *palmeri*). This shrub is a CNPS List 2 species and is on the list of flora covered by the MSCP (CDFG 1998b). It grows along drainages in chaparral and rarely in sage scrub. Seasonally moist locations are strongly preferred by Palmer's goldenbush (Reiser 1994). This fairly large shrub was not seen during any of the previous or current surveys, however, there is a very low potential to occur within the on-site drainages in the northern portion of the site.

Table 4. Sensitive Plant Species Observed and Potentially Occurring at Valley View Estates[1]

Common Name Scientific Name	Status[2]	Preferred Habitat	Growth Habit (Flowering Period[3])	Probability to Occur On-Site
San Diego thornmint *Acanthomintha ilicifolia*	FT, CE, CNPS List 1B, MSCP Group A	Grassy openings in chaparral and sage scrub; broken clay soils.	annual herb (Apr-May)	very low
San Diego sagewort *Artemisia palmeri*	CNPS List 2, MSCP Group B	Coastal scrub, oak woodland and riparian woodland; along creeks and drainages.	shrub	very low
Orcutt's brodiaea *Brodiaea orcuttii*	CNPS List 1B, MSCP Group A	Vernally moist grasslands, periphery of vernal pools, and occasionally streamside embankments.	bulbiferous herb Apr-Jul	very low
Summer holly *Comarostaphylis diversifolia* var. *diversifolia*	CNPS List 1B, MSCP Group A	Southern mixed chaparral.	shrub	Reported 1992
Palmer's goldenbush *Ericameria palmeri* ssp. *palmeri*	CNPS List 2, MSCP Group B	Chaparral and occasionally in sage scrub; drainages.	shrub	very low
San Diego barrel cactus *Ferocactus viridescens*	CNPS List 2, MSCP Group B	Chaparral, coastal sage scrub, grasslands, periphery of vernal pools, and mima mound topography.	stem succulent	none
rush-like bristleweed *Machaeranthera junceus*	CNPS List 4, MSCP Group D	Chamise chaparral and sage scrub.	shrub	very low
Cleveland's golden-star *Muilla clevelandii*	CNPS List 1B, MSCP Group A	Grasslands, especially near mima mound topography or near vernal pools.	bulbiferous herb Apr-Jul	very low
Engelmann oak *Quercus engelmannii*	CNPS List 4, MSCP Group D	Oak woodland, oak-savannah, and chaparral	tree	observed
Parry's tetracoccus *Tetracoccus dioicus*	CNPS List 1B, MSCP Group A	Chaparral and coastal sage scrub.	shrub	very low

1 Includes plants reported in the 1992 Collier study of the site.

2 FT= Federally listed as Threatened; CE=State-listed as Endangered, CNPS List 1B-4=California Native Plant Society listings, MSCP=flora covered by the sensitive and covered species known to occur in the Metro-Lakeside-Jamul Segment along with its sensitive plant list ranking. Please see Attachment 3 for further discussion of sensitivity listings.

3 Flowering periods of herbaceous annuals only.

San Diego Barrel Cactus (*Ferocactus viridescens*). This stem succulent occurs in chaparral, Diegan coastal sage scrub and grassland habitats, and sometimes on the periphery of vernal pools and mima mound topography. Occasionally it occurs on exposed crests of south-facing slopes. San Diego barrel cactus is a CNPS List 2 species and is on the list of flora covered by the MSCP. This cactus should have been seen if present, therefore, it is not expected to occur on-site.

Rush-Like Bristleweed (*Machaeranthera juncea*). This shrub is a CNPS List 4 species that prefers low-growing chamise chaparral or sage scrub in exposed, rocky locations with very little annual understory. It has been reported to occur on acid igneous rock lands (Reiser 1994) which are not found on-site. Rush-like bristleweed was not observed during the previous or current surveys, however, it has a low potential to occur on-site.

San Diego Golden-Star (*Muilla clevelandii*). This bulbiferous herb can be found in mesa grasslands, especially near mima mound topography or in the vicinity of vernal pools. Cleveland's golden-star is a CNPS List 1B species and is on the list of flora covered by the MSCP. This species was not seen during any of the surveys, however, it has a low potential to occur on the property.

Engelmann Oak (*Quercus engelmannii*). This tree species occurs in oak woodland and southern mixed chaparral. Engelmann oak is a CNPS List 4 species that is found scattered across the slopes site, but more abundantly in the northern half of the property. Many have sprouted basally after the 1993 Guejito fire.

Parry's Tetracoccus (*Tetracoccus dioicus*). This robust shrub is often found in xeric locations with low-growing chamise chaparral (Reiser 1994). Parry's tetracoccus is a CNPS List 1B species and is on the list of flora covered by the MSCP. It is not expected to occur on the property because it was not seen during the previous or current study, and due to the absence of appropriate habitat.

Wildlife

Three sensitive reptile species, four sensitive bird species and one sensitive mammal species were observed on-site and one sensitive bird species was observed off-site along the sewerline alignment during site reviews by Mooney & Associates team. One additional sensitive wildlife species (Cooper's hawk) was observed during the earlier surveys but not in 1998. Another seven have been reported to occur in the vicinity. All of these species are summarized in Table 5.

Quino Checkerspot (*Euphydryas editha quino*). This butterfly is restricted to open grassland and sunny openings within shrubland habitats of southwestern Riverside and San Diego Counties. Its distribution is defined primarily by that of its larval host plant, dwarf plantain (*Plantago erecta*), however, the larvae may also use owl's clover (*Castilleja exserta*). The Quino checkerspot (QCB) is generally found at sites where high densities of the host plant occur. The

Table 5. Sensitive Wildlife Species Observed and Potentially Occurring at Valley View Estates[1]

Common Name Scientific Name	Status[2]	Preferred Habitat	Potential to Occur On-Site
Quino checkerspot butterfly *Euphydryas editha quino*	Federal - FE	Open grasslands and sunny openings in shrublands.	low
arroyo southwestern toad *Bufo microscaphus californicus*	Federal - FE State - SC	Sandy banks with willows, cottonwoods, or sycamores.	very low
southwestern pond turtle *Clemmys marmorata pallida*	State - SC	Permanent or nearly permanent bodies of water; needs basking sites such as partially submerged logs, vegetation mats or open mud banks.	none
San Diego horned lizard *Phrynosoma coronatum blainvillei*	State - SC	Coastal sage scrub and chaparral; friable, rocky, or shallow sandy soils.	observed
orange-throated whiptail *Cnemidophorus hyperythrus*	State - SC	Coastal sage scrub, chaparral, and valley-foothill hardwood forests; washes and other sandy areas.	observed
red diamond rattlesnake *Crotalus ruber ruber*	State - SC	Rocky brushlands.	observed
black-shouldered kite *Elanus caeruleus*	State - FP	Nests in riparian woodlands; forages in any open, grassy area.	observed
golden eagle *Aquila chrysaetos canadensis*	State -FP, SC	Grasslands, broken chaparral, or sage scrub.	observed
southwestern willow flycatcher *Empidonax trailii extimus*	Federal - FE State - SE	Nests in riparian woodlands that are marshy or at water's edge.	extremely low
coastal cactus wren *Campylorhynchus brunneicapillus sandiegoense*	State - SC	Coastal sage scrub with tall opuntia cactus for nesting and roosting.	observed
Coastal California gnatcatcher *Polioptila californica californica*	Federal - FT State - SC	Coastal sage scrub in arid washes, mesas, and slopes.	Observed off-site along sewerline alignment, moderate potential to occur on-site
least Bell's vireo *Vireo bellii pusillus*	Federal - FE State - SE	Nests at low levels of riparian woodland or riparian scrub habitat.	very low
Cooper's hawk *Accipiter cooperii*	State - SC	Riparian habitats	observed
rufous-crowned sparrow *Aimophila ruficeps canescens*	State - SC	Sage scrub on steep rocky slopes.	observed
sage sparrow *Amphispiza belli*	State - SC	Chaparral, especially chamise chaparral	moderate - high
Northwestern San Diego Pocket Mouse *chaetodipus pollax pollax*	State - SC	Sage Scrub and Grasslands	observed
mountain lion *Felis concolor*	State - FP	Occupies a wide variety of habitats within San Diego County.	high

[1] Includes wildlife species observed during the 1992 Collier study.

[2] Federal: FE=Federally Endangered, FT=Federally Threatened; State: SE=State Endangered, FP=Fully Protected, SC=Species of Special Concern. See Attachment 4 for discussion on sensitivity listings.

1992 Collier study of the site reported observing dwarf plantain, however, the plant was not seen during the current study. Owl's clover was observed in narrow strips along several of the road cuts. The QCB is listed as Federally Endangered. No Quino checkerspot butterflies were observed on the project site during focused surveys (Attachment 2), despite the fact that 1998 was an excellent year for the host plants.

The most current report of this species within the vicinity of the Valley View project site is from 1932, when it was reported to occur in the Lake Hodges area (Mattoni et al. 1997). Although surveys are not often conducted, and survey results involving nonsensitive species are not always made public, there is no reason to suspect the QCB to occur on-site. Considering the lack of recorded sightings in the vicinity, the distance to any other known extant populations, and the results of our 1998 directed survey, this species is not expected to occur on-site. Its potential to occur here is considered very remote.

Arroyo Southwestern Toad (*Bufo californicus*). The arroyo toad was listed as an Endangered species by the USFWS 1995 and is a California Species of Concern. This toad occurs primarily west of the California desert areas from San Luis Obispo County to northwestern Baja California. Among the known locations within San Diego County are the Santa Margarita, Guejito, Sweetwater, Vallecito, San Luis Rey, Santa Ysabel, Witch, and Cottonwood drainages.

The arroyo toad breeds and forages along the edges of streams and rivers with shallow, gravelly pools adjacent to sandy terraces. Terraces must be stable and usually possess a moderately well-developed, scattered shrub and tree overstory typically containing mulefat, California sycamore, Fremont cottonwood, or coast live oak (Jennings and Hayes 1994). Shallow pools with clear water averaging less than 30 centimeters (cm) (12 inches) deep are favored by adults for breeding (Sweet 1992, 1993). The eggs are laid in these shallow breeding pools with minimal current (less than 5 cm/second), little or no emergent vegetation, bordering vegetation set back such that most of the pool is open to the sky, and with sand or pea gravel substrate overlain with flocculent silt. Adults are nocturnal except during their breeding season (March-July). Males show high site fidelity, and generally position themselves in an exposed position on the edges of a breeding pool (Sweet 1992). Juveniles and adults retreat onto sandy terraces and burrow deeply into the sand to overwinter (Sweet 1992).

The arroyo toad is considered to have little-to-no potential to occur on-site due to the absence of typically preferred habitat features. Although this species is known to occur within Guejito Creek (minimum one mile distant to the east), and Santa Ysabel Creek (2 miles distant to the south, beyond the Wild Animal Park), it is considered unlikely that the toad would disperse onto the site from one of these sources, and very unlikely that it would successfully breed here if dispersal did take place.

San Diego Horned Lizard (Phrynosoma coronatum blainvillii). The San Diego horned lizard ranges from coastal Southern California to the desert foothills and into Baja California. In San Diego County, it has a wide range but spotty distribution. They are largely dependent upon ant colonies as a primary source of food. Adults are active from late March to late August; young are active from August to November or December.

The San Diego horned lizard was observed in the southern-central portion of the site within coastal sage scrub habitat. As habitat appears suitable over much of the property, the species is expected to be common on-site. This animal is a State Species of Concern and an MSCP sensitive/covered species.

Orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*). The orange-throated whiptail occurs from southwestern San Bernardino County into lower Baja California, primarily within coastal sage scrub and mixed chaparral habitat. Hibernating sites are in soft, well-drained slopes with southern exposure, little or no vegetation cover (Bostic 1964), and road cuts tend to be suitable. Hibernation (for adults) begins in late July or early August and continues until late April. Immatures have a longer activity period, March through December (Bostic 1964).

The orange-throated whiptail is a California Species of Concern. This species was observed in several areas on-site, and is expected to occur over the majority of the property. This animal is a State Species of Concern and an MSCP sensitive/covered species.

Red Diamond Rattlesnake (*Crotalus ruber ruber*). The red diamond rattlesnake occurs in San Diego County, portions of Riverside and San Bernardino counties, and Baja California. It ranges well into the desert within San Diego County. Habitat for this species includes desert scrub and riparian habitats, Joshua tree woodland, open chaparral, and occasionally coastal sage scrub, maritime succulent scrub, grassland, and cultivated areas. The red diamond rattlesnake is a California Species of Concern.

Red diamond rattlesnakes were observed at two locations on-site, but are expected to occur throughout the property. This is a State Species of Concern.

Black-Shouldered Kite (*Elanus caeruleus*). The black-shouldered kite is a State fully protected species. This raptor prefers to nest in riparian woodlands but forages over any open, grassy area (Unitt 1984). Kites were observed in two locations on the southern half of the property. The sightings are believed to represent a single pair.

Golden Eagle (*Aquila chrysaetos canadensis*). The golden eagle is an uncommon resident of San Diego County, where it is widely but sparsely distributed. It forages over grassland and broken chaparral or sage scrub for rabbits and California ground squirrels (Unitt 1984), and carrion when mammal prey is scarce (Ehrlich, et al. 1988). The golden eagle is a California Fully Protected Species and Species of Concern. A single golden eagle was observed flying over the east-central portion of the property during the 1998 surveys.

Cooper's Hawk (*Accipiter cooperii*). A single Cooper's hawk was observed on-site. This species was also observed during Collier's on-site surveys (Collier 1992). It is a common migrant and rare summer resident in San Diego County. It typically breeds in oak woodland habitats and utilizes a wide variety of habitats within southern California for foraging.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*). The southwestern willow flycatcher is listed by both the federal and state governments as an endangered species. The species is a summer resident of San Diego County. Adult males arrive first, beginning in late April or early May, with females arriving approximately one week later. Adults leave the county during mid- to late August, with the juveniles departing shortly thereafter.

The southwestern willow flycatcher primarily nests within willow thickets in riparian woodland. Although oaks are not a typical species for the willow flycatcher to nest in, a population on the San Luis Rey River is known to use oaks almost exclusively for nesting (Haas 1995). Southwestern willow flycatchers require open, sunlit areas for foraging. They also strongly prefer areas of open water or areas that retain moisture throughout the breeding season (Haas 1995). Nests are cup-shaped, and typically attached by their sides to twigs within dense vegetation. Nests are usually placed within one meter of the outer edge of the nest tree's canopy, and at heights from 0.6-8.6 meters above ground. Typical plants associated with nest locations are willow, stinging nettle (*Urtica* sp.), *Baccharis*, alder, ash, California wild rose, California blackberry, and wild grape (*Vitis* sp.).

The Valley View site does not contain areas of dense willows which would suggest the potential for maintenance of a breeding population. Even the oak-lined drainages on-site do not match the unique characteristics of the oak-dominated habitats supporting the southwestern willow flycatcher at the San Luis Rey river. No southwestern willow flycatchers were noted during the current surveys, and this species is not expected to inhabit the property. However, this species has potential to occur off-site within the southern coast live oak riparian forest located along the sewer/water pipeline alignment.

Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegoense*). This species can be found in coastal sage scrub, maritime succulent scrub, and other areas with tall opuntia cactus for nesting and roosting (Unitt 1984). Coastal cactus wren is a California Species of Concern. A single cactus wren was detected in the southwestern portion of the property.

Coastal California Gnatcatcher (*Polioptila californica californica*). The coastal California gnatcatcher is federally listed as threatened and is also a California Species of Concern and is on the MSCP covered species list. It is a small gray bird with a black tail, and a very distinctive "mew" call, similar to the voice of a kitten. During the breeding season, male gnatcatchers develop a black cap that distinguishes them from the females. Habitat normally consists of coastal sage scrub, especially those areas dominated by coastal sagebrush. Other plant species typically found within gnatcatcher habitat include flat-top buckwheat, laurel sumac, and lemonadeberry (*Rhus integrifolia*). During parts of the year, especially during dispersal of young birds after fledging and during the hot summer months, gnatcatchers may be found in habitats other than coastal sage scrub, such as chaparral or riparian habitats.

The breeding season extends from mid-February, when the birds begin to pair, through August, with the peak nesting period being mid-March through mid-May. Nests are small cup-shaped baskets located one to three feet off the ground in shrubs. Clutches usually contain three or four eggs. Incubation takes 14 to 16 days, fledging lasts 11 to 13 days, and the fledglings are dependent on their parents for as little as three to four weeks (ERCE 1990) or up to several months (USFWS 1993).

Home range and territory sizes for coastal California gnatcatcher pairs vary depending on the habitat quality and time of year. Breeding territory sizes for gnatcatcher pairs have been found to vary from 2 acres to in excess of 40 acres (USFWS 1993). Habitat distribution, as well as total acreage, contributes to habitat quality. Much of the coastal sage scrub in San Diego County has been fragmented by development and agricultural activities, especially along the coast. Habitat fragmentation results in poor long-term survival of native bird species (Soule et al. 1988).

No coastal California gnatcatchers were detected during focused surveys conducted on the subject property during either the current (1998) surveys(Attachment 1), or the 1981 and 1992 surveys by Collier (1992). However, one coastal California gnatcatcher was observed along the off-site sewerline alignment.

Although repeated surveys confirmed the absence of Coastal California gnatcatchers on-site, the habitat is suitable and the potential for this species to occur must be considered moderate.

Least Bell's Vireo (*Vireo bellii pusillus*). Least Bell's vireo is a Federal and State Endangered species. In San Diego County, this species is a spring and summer resident of riparian habitats. Nests are placed along the margins of bushes, usually willows, mule-fat, or mesquite (Unitt 1984). The least Bell's vireo is not difficult to detect early in the breeding season (March 15 to September 25), as the male's song is quite loud and distinctive compared to most other riparian birds.

No vireos were detected on-site. Although an NDDB 1998b search revealed recent least Bell's vireo occurrences within Santa Ysabel Creek and San Pasqual Valley, these areas provide much better and more extensive habitat than the Valley View property. Habitat suitability over most of the Valley View property is marginal for least Bell's vireo. The willow-dominated areas are small and isolated, and there is little understory beneath the oaks. The least Bell's vireo is not expected to occur on-site; however, there is potential for this species to occur within the southern coast live oak riparian forest located along the sewer/water line alignment.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*). The Southern California rufous-crowned sparrow, a CDFG species of concern, is distributed throughout southwestern California (from Santa Barbara County south) and northwestern Baja California. They typically occupy steeply sloping, rocky areas within coastal sage scrub, with scattered patches of grass.

Rufous-crowned sparrows are very common on the Valley View property. Initial attempts to map sighting locations were quickly abandoned due to the abundance of this species on-site. This may represent a core population, serving as a source for dispersal into many surrounding areas. As such, impacts to the species and its on-site habitat would have increased cumulative significance.

Northwestern San Diego Pocket Mouse (*Chaetodipus [=Perognathus] fallax fallax*). The northwestern San Diego pocket mouse ranges from Los Angeles County and extreme southern San Bernardino County southward into west-central Baja California, Mexico (Hall 1981). Habitat for this species is most often sparse or disturbed coastal sage scrub or grasslands with sandy soils.

Despite the lack of a small mammal trapping program, a single *C. fallax fallax* was captured along an overgrown dirt road near the southeastern portion of the site. Much of the habitat on the southern half of the property could support this species.

Ringtail (*Bassariscus astutus*). The ringtail is in the same family as the raccoon. It is rarely observed even for a nocturnal species. It inhabits desert, oak woodland, juniper woodland, coniferous forests, chaparral, and riparian habitats within the southwest U.S. and Mexico. The ringtail takes shelter within tree or rock cavities. The species is thought to be partly colonial. Ringtails feed primarily upon *Neotoma* and *Peromyscus* (Bond 1977) and are even known to feed upon bats (Murie 1954). Hall (1981) lists recorded sightings in San Diego County from the San Luis Rey River "near Escondido," and Jacumba. The ringtail was a State Fully Protected species until recently. It is not included on the current CDFG Special Animals List (CDFG 2002).

No evidence of ringtail occurrence was noted on-site. Despite the presence of rock outcrops and habitat types known to support this species, its presence on-site is considered unlikely due to the species very shy nature and the proximity of the property to human habitation.

Mountain Lion (*Felis concolor*). The mountain lion, a species afforded protection by CDFG, ranges through most of western North America. They prefer rocky, rugged terrain with dense cover, but are remarkably adaptable to various habitat types. An adult male mountain lion has a home range of approximately 50 square miles. Home ranges sometimes overlap, especially when young are dispersing from their mother's territory (CDFG personal communication 1998c). Mountain lions can have litters during any month. The primary food source is deer. A CDFG estimate in the 1970's put the SD County population at approximately 25 (Bond 1977). A more current estimate is of their numbers ranges from 120 to 150 (CDFG personal communication 1998c).

The project site is likely within the home range of at least one mountain lion. Employees of the San Diego Wild Animal Park have seen mountain lions along the perimeter and interior of the park. Lions have even been noted within the Peñasquitos Canyon Preserve, which is at least 15 miles to the southwest of the Valley View property, closer to the center of population in San Diego and amidst very dense housing developments. No physical evidence of mountain lion occurrence was noted during the Valley View surveys, but the property itself has the potential to function as a movement corridor between the Santa Ysabel river valley and the area of Lake Wohlford.

Bell's Sage Sparrow (*Amphispiza belli belli*). Bell's sage sparrow was not observed on-site, but is expected to occur here due to the high degree of habitat suitability.

D. Sensitive Habitats

According to the County of San Diego's MSCP Subarea Plan, impacts to habitats within Tiers I-III will be mitigated at predefined ratios. These represent sensitive habitats worthy of protection through mitigation. Only Tier IV lands (defined as lands which do not support natural vegetation and which are not regulated by this ordinance) are exempt from mitigation requirements. Virtually the entire Valley View property is comprised of habitats within Tiers I-III, and therefore, virtually the entire property is considered sensitive, with mitigation required for impacts. The only areas on-site, which are not considered sensitive in the Subarea Plan, are those mapped as Disturbed in the south-central portion of the property. In addition, all off-site resources impacted are also considered sensitive, with the exception of agriculture and urban/landscaped areas.

Wetlands are also considered to be sensitive habitats. Wetlands are present in several areas both on- and off-site: many of the drainages, as well as a sizable mesic meadow in the northwestern corner of the site, qualify as wetlands. Other jurisdictional waters located on-site consist of the mapable drainages on- and off-site, which do not meet the criteria of jurisdictional wetlands, but would still be regulated as non-wetland waters of the U.S.

E. Habitat and Wildlife Corridor Evaluation

Wildlife corridors, or linkages, are important because of their role in preserving species diversity. Without some connection or corridor, wildlife use areas become islands surrounded by development. By definition, these corridors exist between important or major wildlife use areas. Carlquist's principles of island biogeography will predict that species' diversity of an island is a function of the size of the island, the distance from the mainland, and the length of time it has been isolated. These principles have been shown to apply to wildlife areas within the urban fabric (Soule et al. 1988). As shown by Soule, small, fragmented areas of habitat ultimately support lower numbers of species than similarly situated larger blocks of habitat.

The Valley View Estates SP site has been mapped as very high, high and moderate value habitat according to the MHCP Habitat Value Biological Core and Linkage Area map. The entire site has also been mapped as a Biological Resource Core/Linkage area. The property has the potential to function as a movement corridor between the Santa Ysabel River Valley and the area of Lake Wohlford.

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V. IMPACT ANALYSIS

A. Assumptions and Assessment Guidelines

Impacts to the flora and fauna observed or expected at the site were determined to be significant or insignificant based upon sensitivity of the resource and the extent of the impact. Resources are generally considered significant if they are limited in distribution and their ecological role is critical within a regional and local context. Habitat supporting species listed as rare, endangered, or threatened by the agencies that enforce the California or Federal Endangered Species Act are also regarded as significant resources. In addition, habitats meeting the following criteria were also determined to be significant:

- Natural areas, communities, and habitats of plant and animal species that are restricted in distribution.
- Habitat that is critical to species or a group of species for feeding, breeding, resting, and migrating.
- Biological resources that are of scientific or educational interest because they exhibit unusual characteristics.
- Buffer zones to protect significant resources.
- Corridors or areas that link significant wildlife habitats.

A significant impact to a sensitive resource may be direct, indirect, or cumulative. An impact is regarded as direct when the primary effects of the project result in loss of habitat that would cause a reduction in the density or diversity of biological resources within the region. The magnitude of an indirect impact is the same as a direct impact, however, the impact occurs from a secondary effect of the project. A project's impact upon a resource may be considered insignificant by itself, but may still be cumulatively significant if the combined impact from the project and other projects in the vicinity are considered significant.

The extent of an impact to any sensitive resource must be considered in determining the significance of an impact. For certain highly sensitive resources (e.g., an endangered species) any impact would be perceived as significant. Conversely, other resources which have a low sensitivity (e.g., species with a large, locally stable population but may be declining elsewhere) could sustain a relatively large area of impact or population loss and not result in a significant impact. Biological impacts are considered insignificant if the resource in question does not meet the above criteria for sensitivity or the extent of impact is not considered significant.

B. Project Impacts

1. Proposed Project

Habitats

Impacts resulting from the proposed project are discussed below and outlined in Table 6 and depicted on Figures 4a-b, 5, and 6.

Coastal sage scrub. The proposed project would impact a total of approximately 385 acres including 381 acres located on-site and 4 acres located off-site. Impacts to coastal sage scrub are considered significant and would require mitigation.

Coastal Sage-Chaparral Scrub. The proposed project would impact a total of approximately 20 acres of coastal sage-chaparral scrub located on-site. Impacts to coastal sage-chaparral scrub are considered significant and would require mitigation.

Southern Mixed Chaparral. The proposed project would impact a total of approximately 346 acres of southern mixed chaparral located on-site. Impacts to southern mixed chaparral are considered significant and would require mitigation.

Engelmann Oak/Coast Live Oak Woodland. Approximately 69 acres of Engelmann oak/coast live oak woodland would be impacted by the proposed project. All impacts to oak woodlands are considered significant and would require mitigation.

Oak Riparian Woodland. The proposed project would impact a total of approximately 14 acres of oak riparian woodland. All impacts to this wetland habitat are considered significant and would require mitigation.

Riparian Scrub. The proposed project would impact a total of approximately 1 acre of riparian scrub habitat. Impacts to this wetland habitat are considered significant and would require mitigation.

Mesic Meadow. Approximately 1 acre of mesic meadow would be impacted by the proposed project. Impacts to this wetland habitat are considered significant and would require mitigation.

Non-native grassland. The proposed project would impact a total of approximately 1 acre of non-native grassland located off-site. Impacts would occur as a result of off-site emergency access construction and installation of the water and sewer pipelines. Impacts to non-native grassland are considered significant and would require mitigation.

Table 6. Impacts and Mitigation Acreage - Proposed Project

Habitats	Existing Resources On-site			Project Impacts				Recommended Mitigation Ratios (County MSCP)	Mitigation Acreage Needed	How Mitigation Accomplished (Acres)		
	north	south	Total	north	south	Off-site	Total			On-site	Off-site	Total
Diegan Coastal Sage Scrub	0	531	531	0	381	4	385	1.5:1	578	150	428	578
Coastal Sage/Chaparral Scrub	0	30	30	0	20	0	20	1.5:1	30	10	20	30
Southern Mixed Chaparral	448	0	448	346	0	0	346	1:1	346	121	225	346
EnglemannOak/Coast Live Oak Woodland	64	29	93	47	22	0	69	2:1	138	24	114	138
Oak Riparian	13	25	38	4	10	0	14	2:1 with a minimum 1:1 creation	28	24 preserved and 14 created	0	38
Riparian Scrub	0	1	1	0	1	0	1	2:1 with a minimum 1:1 creation	2	2 created	0	2
Mesic Meadow	1	0.2	1.2	0.2	1	0	1	2:1 with a minimum 1:1 creation	2	2 created	0	2
Southern coast live oak riparian forest	0	0	0	0	0	1	1	2:1 with a minimum 1:1 creation	2	2 created	0	2
Non-native grassland	0	0	0	0	0	1	1	0.5:1	0.5	0	0.5	0.5
Orchard/Landscaped	0	0	0	0	0	3	3	N/A	N/A	N/A	N/A	N/A
Disturbed/Developed	2	7	9	2	6	1	9	N/A	N/A	N/A	N/A	N/A
TOTALS	528	624	1152	399	441	10	850		1126	329 preserved 20 created	788	1137

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LEGEND

HABITATS

- OAK WOODLAND
- OAK RIPARIAN WOODLAND
- DIEGAN COASTAL SAGE SCRUB
- DIEGAN COASTAL SAGE SCRUB (RECOVERING)
- COASTAL SAGE/CHAPARRAL SCRUB
- SOUTHERN MIXED CHAPARRAL
- RIPARIAN SCRUB
- MESIC MEADOW
- DISTURBED

WILDLIFE

- L SAN DIEGO HORNED LIZARD
- O ORANGE-THROATED WHIPTAIL
- S RED DIAMOND RATTLESNAKE
- W CACTUS WREN
- C YELLOW-BREASTED CHAT
- K BLACK-SHOULDERED KITE
- N RAPTOR NEST SITE
- M NORTHWESTERN SAN DIEGO POCKET MOUSE

PLANTS

- Codi SUMMER HOLLY (reported by Collier 1992)

Mooney & Associates

N

0 500' 1000'

Impacts Map - Proposed Project

Figure 6

Southern Coast Live Oak Riparian Forest. The proposed project would impact a total of approximately 1 acre of southern coast live oak riparian forest located off-site. Impacts would result from off-site installation of the sewer and water pipelines. All impacts to this wetland habitat are considered significant and would require mitigation.

Sensitive Plant Species

No federally or state listed threatened or endangered plant species were detected on-site. Engelmann oaks, a CNPS List 4 and County Group D species, occur on-site within the oak woodland and chaparral habitats. Impacts to individuals of this species are not considered significant; however, impacts to Engelmann oak woodland and southern mixed chaparral are considered significant and would require mitigation.

Sensitive Wildlife Species

Several state species of concern were observed or detected on-site including the San Diego horned lizard, orange-throated whiptail, red diamond rattlesnake, coastal cactus wren, rufous-crowned sparrow, and the northwestern San Diego pocket mouse. In addition, several raptor species, including the black-shouldered kite and golden eagle, were observed on-site during the field surveys. One sensitive bird species, the coastal California gnatcatcher, was observed off-site along the edge of the sewerline alignment. The proposed project may result in direct impacts to sensitive species observed on-site; however, direct impacts to the coastal California gnatcatcher detected off-site along the sewerline alignment are not anticipated.

2. Reduced Intensity and Density Alternative

Habitats

Impacts resulting from the Reduced Intensity and Density Alternative are discussed below, outlined in Table 7, and depicted on Figures 4a-b, 5, and 7.

Coastal Sage Scrub. The Reduced Intensity and Density Alternative would impact approximately 295 acres of coastal sage scrub including 291 acres located on-site and 4 acres located off-site. Impacts to this habitat type are considered significant and would require mitigation.

Coastal Sage-Chaparral Scrub. The Reduced Intensity and Density Alternative would impact approximately 20 acres of coastal sage-chaparral scrub. Impacts to this habitat type are considered significant and would require mitigation.

Southern Mixed Chaparral. The Reduced Intensity and Density Alternative would impact approximately 188 acres of southern mixed chaparral. Impacts to this habitat type are considered significant and would require mitigation.

Engelmann Oak/Coast Live Oak Woodland. The Reduced Intensity and Density Alternative would impact approximately 68 acres of Engelmann oak/coast live oak woodland. Impacts to oak woodlands are considered significant and would require mitigation.

Oak Riparian Woodland. The Reduced Intensity and Density Alternative would impact approximately 13 acres of oak riparian woodland. Impacts to this wetland habitat are considered significant and would require mitigation.

Riparian Scrub. The Reduced Intensity and Density Alternative would impact approximately 1 acre of riparian scrub. Impacts to this wetland habitat are considered significant and would require mitigation.

Mesic Meadow. The Reduced Intensity and Density Alternative would impact approximately 1 acre of mesic meadow. Impacts to this wetland habitat are considered significant and would require mitigation.

Non-native Grassland. The Reduced Intensity and Density Alternative would impact approximately 1 acre of non-native grassland. Impacts would result from off-site installation of the water and sewer pipelines and construction of the emergency access road. Impacts to this habitat type are considered significant and would require mitigation.

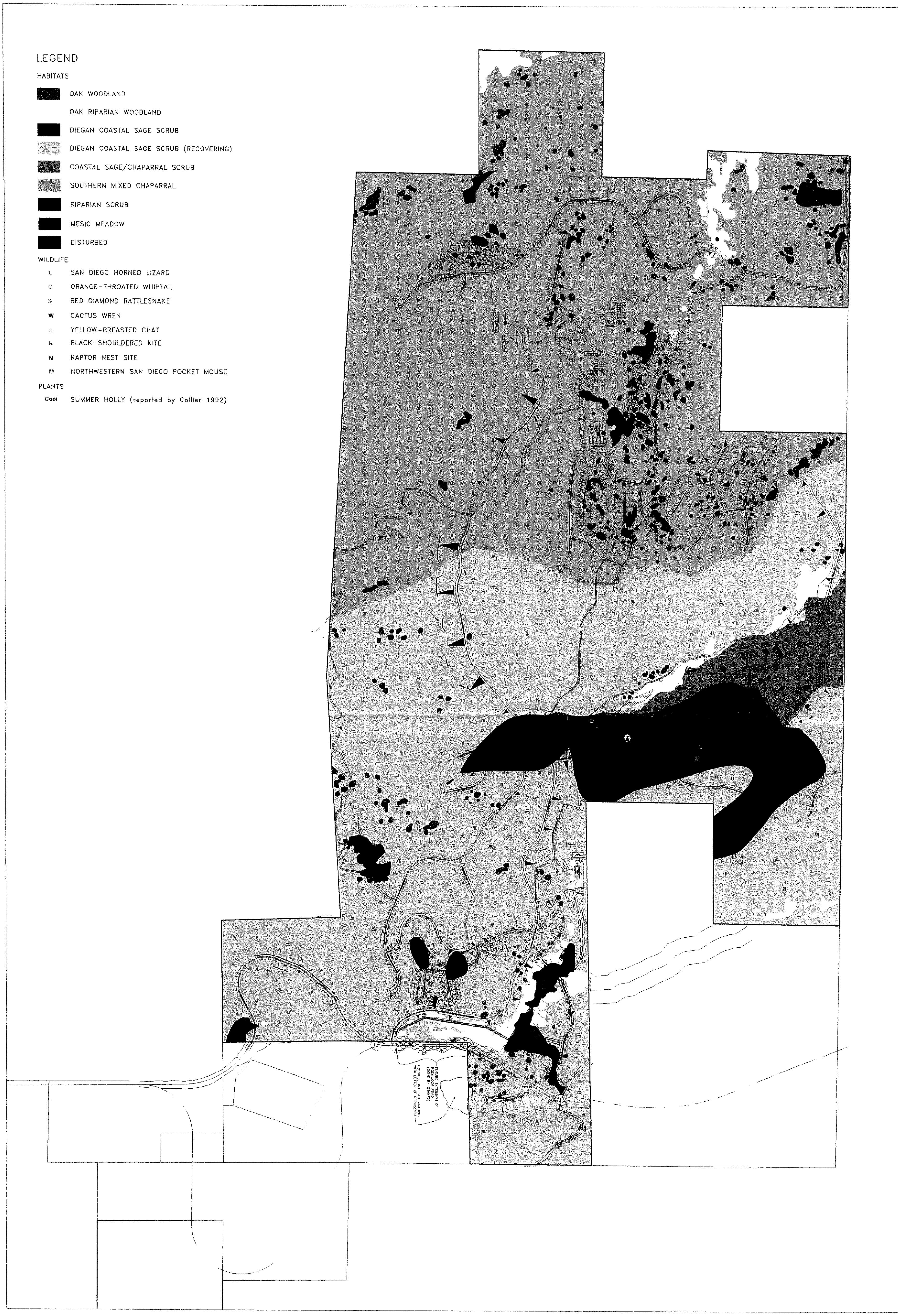
Southern Coast Live Oak Riparian Forest. The Reduced Intensity and Density Alternative would impact approximately 1 acre of southern coast live oak riparian forest. Impacts would result from the installation of the off-site sewer and water pipelines. All impacts to this habitat are considered significant and would require mitigation.

Sensitive Plant Species

No federally or state listed threatened or endangered plant species were detected on-site. Engelmann oaks, a CNPS List 4 and County Group D species, occur on-site within the oak woodland and chaparral habitats. Impacts to individuals of this species are not considered significant; however, impacts to Engelmann oak woodland and southern mixed chaparral are considered significant and would require mitigation.

Sensitive Wildlife Species

Several state species of concern were observed or detected on-site including the San Diego horned lizard, orange-throated whiptail, red diamond rattlesnake, coastal cactus wren, rufous-crowned sparrow, and the northwestern San Diego pocket mouse. In addition, several raptor species, including the black-shouldered kite and golden eagle, were observed on-site during the field surveys. One sensitive bird species, the coastal California gnatcatcher, was observed off-site along the edge of the sewerline alignment. The proposed project may result in direct impacts to sensitive species observed on-site; however, direct impacts to the coastal California gnatcatcher detected off-site along the sewerline alignment are not anticipated.



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Impacts Map - Reduced Intensity and Density Alternative

figure 7

Table 7. Impacts and Mitigation Acreage - Reduced Intensity and Density Alternative

Habitats	Existing Resources On-site			Project Impacts			Recommended Mitigation Ratios	Mitigation Acreage Needed	How Mitigation Accomplished (Acres)		
	north	south	Total	on-site	Off-site	Total			On-site (preservation/creation)	Off-site (purchase)	Total
Diegan Coastal Sage Scrub	0	531	531	291	4	295	1.5:1	443	240	203	443
Coastal Sage/Chaparral Scrub	0	30	30	20	0	20	1.5:1	30	10	20	30
Southern Mixed Chaparral	448	0	448	188	0	188	1:1	188	260	0	260
Engelmann Oak/Coast Live Oak Woodland	64	29	93	68	0	68	2:1	136	25	111	136
Oak Riparian	13	25	38	13	0	13	2:1 with a minimum 1:1 creation	26	25 preserved on-site and 13 created	0	38
Riparian Scrub	0	1	1	1	0	1	2:1 with a minimum 1:1 creation	2	2 created	0	2
Mesic Meadow	1	0.2	1.2	1	0	1	2:1 with a minimum 1:1 creation	2	2 created	0	2
Southern Coast Live Oak Riparian Forest	0	0	0	0 0	1	1	2:1 with a minimum 1:1 creation	2	2 created	0	2
Non-native grassland	0	0	0	0	1	1	0.5:1	0.5	0	0.5	0.5
Orchard	0	0	0	0	3	3	N/A	N/A	N/A	N/A	N/A
Disturbed	2	7	9	8	1	9	N/A	N/A	N/A	N/A	N/A
TOTALS	528	624	1152	590	10	600		830	566	335	914

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C. Habitat Conservation Programs

In March 1993 the Federal government listed the coastal California gnatcatcher as a threatened species under the Endangered Species Act (ESA). Pursuant to Section 9 of the ESA, it is a violation of federal law to "take" any listed species. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The protection of the act covers the habitat of listed species, as significant habitat modification or degradation may actually kill or injure listed plants and animals by significantly impairing essential behavior patterns (such as feeding or reproduction). Impacts to coastal sage scrub habitat would therefore represent "take" of the coastal California gnatcatcher. Section 9 of the ESA prohibits any taking of a listed species until a habitat conservation plan has been prepared and implemented in accordance with Section 10(a) of the ESA, or until an Incidental Take Permit has been obtained in accordance with Section 4(d). The USFWS has allowed, under Section 4(d), the take of listed species if such take results from activities which are conducted pursuant to the State of California's Natural Communities Conservation Planning (NCCP) program, and in accordance with an approved NCCP plan.

The State of California initiated the NCCP program in recognition of the need for conservation of the coastal sage scrub habitat community. Historically, attempts at conservation of species and native habitats by State and Federal agencies have been addressed on a project-by-project, or species-by-species basis, and only after the affected species has become listed. Fragmented habitat preserves have resulted, compounding impacts to the sensitive species these preserves are intended to protect. One of the intended benefits of the NCCP process is to shift the focus from a single species conservation effort, involving numerous federal and state listings of CSS dependent species, and secure the perpetuation of biodiversity on a regional basis while allowing compatible land use and appropriate development. The County of San Diego Subarea Plan is one of twelve implementing plans for the Multiple Species Conservation Program (MSCP) under the NCCP. The programs have been accepted by the State as meeting the requirements of the NCCP. Other local jurisdictions within the greater San Diego region are currently preparing plans to meet the requirements of the NCCP through the North County Multiple Habitat Conservation Program (MHCP).

Compliance with the 4(d) rule through preparation of the MSCP subarea plan allows the County of San Diego to authorize loss of the California gnatcatcher and its coastal sage scrub habitat if the loss is in accordance with the restrictions and requirements of the MSCP.

Under the 4(d) rule option, those jurisdictions participating in the NCCP program, but without an accepted plan to implement the NCCP, are only allowed to authorize the loss of a limit of 5% of the total amount of CSS within the jurisdictional boundaries. The jurisdiction must submit the proper findings to the USFWS and CDFG that enables the agencies to evaluate the project and to credit the incidental take to their allowed coastal sage scrub take allowance. These findings are generated through the NCCP Interim Habitat Loss Permit Process. The specific information used to generate these findings is included throughout this report.

The South County MSCP Subarea Plan and its associated Implementing Agreement, adopted by the Board of Supervisors on October 22, 1997, establish the conditions under which land development projects within its Subarea boundaries will receive long-term Take Authorizations. Compliance with the MSCP satisfies the conditions established in the Section 4(d) Special Rule and allows the taking of certain Covered Species incidental to land development and other lawful land uses authorized by the County. The adopted County Subarea Plan is divided into three Segments: Lake Hodges, Metro-Lakeside-Jamul, and South County. Habitats that the County considers sensitive are ranked by "Tier," with Tier I being the most sensitive and Tier IV being the least sensitive. Greater emphasis is placed on meeting the goals on a cumulative basis, preferring acquisition and preservation of predesignated areas with large areas of high-quality habitat rather than one which may result in fragmented preservation areas. Projects on Tier IV habitats are not required to mitigate for impacts.

The North County MSCP Subarea is currently under preparation. Since this portion of the unincorporated County is not covered by an adopted plan, vegetation removal requires a permit for compliance with the 4(d) rule.

The City of Escondido is currently preparing its Draft Multiple Habitat Conservation Program (MHCP) Subarea Plan. Any area located within the City's MHCP would be mitigated using the City's proposed mitigation ratios. In addition, areas not located within an adopted MSCP/MHPA may be annexed into the City and its MHCP once adopted.

VI. MITIGATION MEASURES

A. Mitigation Program

The southern half of the project site is currently located within the County of San Diego's MSCP. Impacts to habitats within the MSCP are mitigated using ratios outlined in the Biological Mitigation Ordinance (BMO) (Table 8).

Table 8. County of San Diego BMO Mitigation Ratios

	Mitigation Ratio[1]
Tier I	2:1
Tier II	1.5:1
Tier III	1:1[2]

[1] Ratios based on impacts and mitigation within a Biological Resource Core Area (BRCA)
[2] Impacts to non-native grassland mitigated at 0.5:1 unless occupied by burrowing owls.

The northern half of the project site is located outside of the adopted MSCP where the BMO does not apply. Typically mitigation ratios in these areas are 1:1 or 0.5:1 for Tier III habitats, 2:1 for Tier II habitats, and 3:1 for Tier I habitats. However, arguments can be made on a case by case basis to reduce mitigation ratios.

The proposed project includes the annexation of the entire project site into the City of Escondido. The northern portion of the property, while outside of the adopted MSCP, is within the planned North County Subarea Plan which is currently being prepared. If the North County Subarea Plan is not adopted prior to both approval of the Valley View project and adoption of the City of Escondido's Multiple Habitat Conservation Program Subarea Plan (MHCP), the northern portion of the project may be annexed into the City of Escondido's MHCP. Proposed mitigation ratios outlined in the Draft City of Escondido Subarea Plan are outlined below in Table 9.

Table 9. City of Escondido Proposed Mitigation Ratios

Vegetation Community	Location of Impacted Habitat	
	Inside Focused Planning Area (FPA)	Outside FPA
Wetland/Riparian	No net loss goal (replacement at 1:1 to 3:1)	No net loss goal (replacement at 1:1 to 3:1)
Rare Upland	3:1	2:1
Coastal Sage Scrub	2:1	1:1
Chaparral	1:1	0.5:1
Annual Grassland	0.5:1	0.5:1
Other	None	None

However, for purposes of consistency, mitigation ratios for all project impacts are proposed based on those outlined in the BMO (Table 8).

1. Proposed Project

Habitats

Coastal sage scrub. The proposed project would impact a total of approximately 385 acres of coastal sage scrub (Tier II) including 381 acres located on-site and 4 acres located off-site. Impacts to 385 acres of coastal sage scrub would be mitigated at a ratio of 1.5:1 through the on-site preservation of 150 acres of coastal sage scrub and the off-site purchase of 428 acres of coastal sage scrub within a pre-approved mitigation bank.

Coastal Sage-Chaparral Scrub. The proposed project would impact a total of approximately 20 acres of coastal sage-chaparral scrub (Tier II) located on-site. Impacts to 20 acres of coastal sage-chaparral scrub would be mitigated at a ratio of 1.5:1 through the on-site preservation of 10 acres of coastal sage-chaparral scrub and the off-site purchase of 20 acres of either coastal sage scrub or coastal sage-chaparral scrub within a pre-approved mitigation bank.

Southern Mixed Chaparral. The proposed project would impact a total of approximately 346 acres of southern mixed chaparral (Tier III) located on-site. Impacts to 346 acres of southern mixed chaparral would be mitigated at a ratio of 1:1 through the on-site preservation of 121 acres of southern mixed chaparral and the off-site purchase of 225 acres of southern mixed chaparral within a pre-approved mitigation bank.

Engelmann Oak/Coast Live Oak Woodland. Approximately 69 acres of Engelmann oak/coast live oak woodland (Tier I) would be impacted by the proposed project. Impacts to 69 acres of Engelmann oak/coast live oak woodland would be mitigated at a ratio of 2:1 through the on-site preservation of 24 acres of coast live oak woodland and the off-site purchase of 114 acres of coast live oak woodland within a pre-approved mitigation bank.

Oak Riparian Woodland. The proposed project would impact a total of approximately 14 acres of oak riparian woodland. Impacts to oak riparian woodland would be mitigated through the on-site preservation of 24 acres of oak riparian woodland and the creation of 14 acres of comparable wetland vegetation.

Riparian Scrub. The proposed project would impact a total of approximately 1 acre of riparian scrub habitat. Impacts to riparian scrub would be mitigated through the creation of 2 acres of comparable riparian vegetation.

Mesic Meadow. Approximately 1 acre of mesic meadow would be impacted by the proposed project. Impacts to mesic meadow would be mitigated through the creation of 2 acres of comparable riparian vegetation.

Non-native grassland. The proposed project would impact a total of approximately 1 acre of non-native grassland (Tier III) located off-site. Impacts would be mitigated through the purchase of 0.5 acre of non-native grassland within a pre-approved mitigation bank.

Southern Coast Live Oak Riparian Forest. The proposed project would impact a total of approximately 1 acre of southern coast live oak riparian forest located off-site. Impacts would be mitigated through the creation of 2 acres of comparable riparian vegetation.

Sensitive Plant Species

No federally or state listed threatened or endangered plant species were detected on- or off-site during the field surveys. Engelmann oaks, a CNPS List 4 and County Group D species, were observed on-site within the oak woodland and chaparral habitats. Mitigation for impacts to these species is proposed on a habitat basis as discussed in the above section; therefore, additional mitigation is not anticipated.

Sensitive Wildlife Species

Several state species of concern were observed or detected on-site including the San Diego horned lizard, orange-throated whiptail, red diamond rattlesnake, coastal cactus wren, rufous-crowned sparrow, and the northwestern San Diego pocket mouse. Potential impacts to these species are not considered significant as a large portion of the suitable habitat on-site will be preserved in a biological open space easement.

Several raptor species, including the black-shouldered kite and golden eagle, were observed during the field surveys. Raptor nests are considered sensitive and, if established on-site, could be impacted by project activities (noise, human activity, and night lighting). The breeding season varies somewhat between raptor species, although species conduct their nesting cycle at some time between February 1 and August 31. The loss of a nest, whether active or inactive, is considered to have an adverse effect. Therefore, a nest survey shall be conducted prior to clearing of individual oaks, oak woodland, and non-native grassland. If active nests are observed, clearing of vegetation within 300 feet of the nest will be postponed and conducted outside of the raptor breeding season (February 1- August 31).

One sensitive bird species, the coastal California gnatcatcher, was observed off-site along the edge of the sewerline alignment within the coastal sage scrub. Direct clearing of coastal sage scrub shall occur outside of the gnatcatcher breeding season (February 15-August 31). Impacts to gnatcatcher habitat (coastal sage scrub) located outside of the County's MSCP will also require a Habitat Loss Permit (HLP). However, if these areas are annexed into the City of Escondido's MHCP, a HLP will not be required.

2. Reduced Intensity and Density Alternative

Coastal Sage Scrub. The Reduced Intensity and Density Alternative would impact approximately 295 acres of coastal sage scrub. Impacts to this habitat type would be mitigated at a ratio of 1.5:1 through on-site preservation of 240 acres and off-site purchased within a pre-approved mitigation bank of 203 acres of coastal sage scrub.

Coastal Sage-Chaparral Scrub. The Reduced Intensity and Density Alternative would impact approximately 20 acres of coastal sage-chaparral scrub. Impacts to this habitat type would be mitigated at a ratio of 1.5:1 through the on-site preservation of 10 acres and the off-site purchase within a pre-approved mitigation bank of 20 acres of coastal sage scrub or coastal sage-chaparral scrub.

Southern Mixed Chaparral. The Reduced Intensity and Density Alternative would impact approximately 188 acres of southern mixed chaparral. Impacts to this habitat type would be mitigated at a ratio of 1:1 through the on-site preservation of 260 acres of southern mixed chaparral. Approximately 75 of the 260 acres would be placed in open space and revegetated.

Engelmann Oak/Coast Live Oak Woodland. The Reduced Intensity and Density Alternative would impact approximately 68 acres of Engelmann oak/coast live oak woodland. Impacts to oak woodland would be mitigated at a ratio of 2:1 through the on-site preservation of 25 acres and the off-site purchase of 111 acres of oak woodland within a pre-approved mitigation bank.

Oak Riparian Woodland. The Reduced Intensity and Density Alternative would impact approximately 13 acres of oak riparian woodland. Impacts to this wetland habitat would be mitigated through the on-site preservation of 25 acres and the creation of 13 acres of similar riparian vegetation.

Riparian Scrub. The Reduced Intensity and Density Alternative would impact approximately 1 acre of riparian scrub. Impacts to this wetland habitat would be mitigated through the creation of 2 acres of similar riparian vegetation.

Mesic Meadow. The Reduced Intensity and Density Alternative would impact approximately 1.2 acres of mesic meadow. Impacts to this wetland habitat would be mitigated through the creation of 2 acres of similar riparian vegetation.

Non-native Grassland. The Reduced Intensity and Density Alternative would impact approximately 1 acre of non-native grassland located along the off-site water/sewer pipeline alignment. Impacts to this habitat type would be mitigated at a ratio of 0.5:1 through the off-site purchase of 0.5 acre of non-native grassland within a pre-approved mitigation bank.

Southern Coast Live Oak Riparian Forest. The Reduced Intensity and Density Alternative would impact approximately 1 acre of southern coast live oak riparian forest located along the sewer/water pipeline alignment. Impacts to this habitat would be mitigated at a ratio of 2:1 through the creation of 2 acres of similar riparian vegetation.

Sensitive Plant Species

No federally or state listed threatened or endangered plant species were detected on- or off-site during the field surveys. Engelmann oaks, a CNPS List 4 and County Group D species, were observed on-site within the oak woodland and chaparral habitats. Mitigation for impacts to these species is proposed on a habitat basis as discussed in the above section; therefore, additional mitigation is not anticipated.

Sensitive Wildlife Species

Several state species of concern were observed or detected on-site including the San Diego horned lizard, orange-throated whiptail, red diamond rattlesnake, coastal cactus wren, rufous-crowned sparrow, and the northwestern San Diego pocket mouse. Potential impacts to these species are not considered significant as a large portion of the suitable habitat on-site will be preserved in a biological open space easement.

Several raptor species, including the black-shouldered kite and golden eagle, were observed during the field surveys. Raptor nests are considered sensitive and, if established on-site, could be impacted by project activities (noise, human activity, and night lighting). The breeding season varies somewhat between raptor species, although species conduct their nesting cycle at some time between February 1 and August 31. The loss of a nest, whether active or inactive, is considered to have an adverse effect. Therefore, a nest survey shall be conducted prior to clearing of individual oaks, oak woodland, and non-native grassland. If active nests are observed, clearing of vegetation within 300 feet of the nest will be postponed and conducted outside of the raptor breeding season (February 1- August 31).

One sensitive bird species, the coastal California gnatcatcher, was observed off-site along the edge of the sewerline alignment within the coastal sage scrub. Direct clearing of coastal sage scrub shall occur outside of the gnatcatcher breeding season (February 15-August 31). Impacts to gnatcatcher habitat (coastal sage scrub) located outside of the County's MSCP will also require a HLP. However, if these areas are annexed into the City of Escondido's MHCP, a HLP will not be required.

B. Construction Monitoring

Construction activities adjacent to areas designated as open-space should be monitored by a biologist. This monitoring will consist of four measures which are intended to avoid any intrusion into these habitats. 1) The edge of the construction easement will be conspicuously marked, both on grading plans and with physical markers in the field, 2) The biologist will discuss the sensitivity of these areas and the need to prevent any construction impacts (direct or indirect) with the construction superintendent. 3) The project biologist will periodically visit the construction site to monitor compliance. 4) As part of these visits, the project biologist will evaluate the effectiveness of the erosion control measures.

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ATTACHMENT 1

QUINO CHECKERSPOT BUTTERFLY

SURVEY REPORT

Merkel & Associates, Inc.
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June 19, 2000
M&A # 00-054-01

Mr. Ray York
York & Company
1970 E. Vista Way, Suite201
Vista, California 92084

Re: 45-day letter report of focused Quino Checkerspot Butterfly (*Euphydryas editha quino*) surveys for a 200-Acre Portion of the Valley View Specific Plan Area, Escondido, San Diego County, conducted under federal Endangered Species Act section 10(a)(1)(A) permit #797999.

SUMMARY

Merkel & Associates, Inc. (M&A) conducted focused surveys for the federally listed, endangered Quino Checkerspot Butterfly (*Euphydryas editha quino*) on a 200-acre portion of the Valley View Specific Plan property. The focused surveys were conducted under federal Endangered Species Act (ESA) section 10(a)(1)(A) permit #797999. The surveys generally followed the recommended guidelines of the U.S. Fish and Wildlife Service (USFWS) Quino Checkerspot Butterfly (QCB) Survey Protocol dated January 2000; however, the habitat assessment had to be performed during the initial site visit due to the work's authorization occurring on the last day of the first week of the butterfly's flight period. The entire Valley View Specific Plan encompasses 1,110 acres; this focused butterfly survey covered a contiguous block of 200 acres in the southwest corner of the property.

Potential Quino Checkerspot habitat included very open areas in and around rock outcrops, open and moderately dense Coastal Sage Scrub, Non-native Grasslands, and dirt roads. Habitat excluded from the focused survey requirement included dense Coast Live Oak/Riparian Woodland and moderately dense and tall Southern Mixed Chaparral.

No Quino Checkerspot Butterflies were observed on-site during the focused surveys.

INTRODUCTION

Merkel & Associates, Inc. conducted focused Quino Checkerspot Butterfly (*Euphydryas editha quino*) surveys for a 200-acre portion of the Valley View Specific Plan site at the request of Mr. Ray York of York & Company, Vista, California.. The purpose of this investigation was to determine the presence or potential presence of the Quino Checkerspot within the study area. Because the entire Valley View project site encompasses far more habitat than the 200-acre study area, this letter does not address the potential presence of Quino Checkerspot elsewhere on the property. A previous search for Quino Checkerspot was performed during 1998, and neither this species or its primary host plant were observed on the 1,110 acre property at that time (B. Mooney & Associates 1998).

LOCATION

The 200-acre project site is located in the western half of Section 21 of Township 12 South, Range 1 West of the of the San Bernardino Base & Meridian, USGS 7.5' San Pasqual Valley Quadrangle (Figure 1). The site is located just north of the San Diego Wild Animal Park (north of San Pasqual Valley) in San Diego County. It is adjacent to the eastern boundary of the City of Escondido. The study area is located within Survey Area 2, as designated by the USFWS in the QCB Survey Protocol dated January 2000 (Figure 2).

METHODS

M&A biologists were not authorized to begin the investigation until the last day of the first week of the year 2000 Quino Checkerspot flight season; therefore, the habitat assessment was not conducted until the initial site visit on April 6, 2000. Biologist(s) slowly searched for specific habitat components of the QCB (e.g., larval food plants, nectar resources, open/sparsely vegetated areas, suitable topographic features including hilltops and dirt trails/roads) and recorded these as locations for targeted butterfly survey effort, while also recording all butterflies observed. Areas that did not contain potential QCB habitat (e.g., oak woodlands; dense, north-facing chaparral) were mapped as excluded areas not requiring subsequent butterfly surveys as per USFWS QCB Survey Protocol.

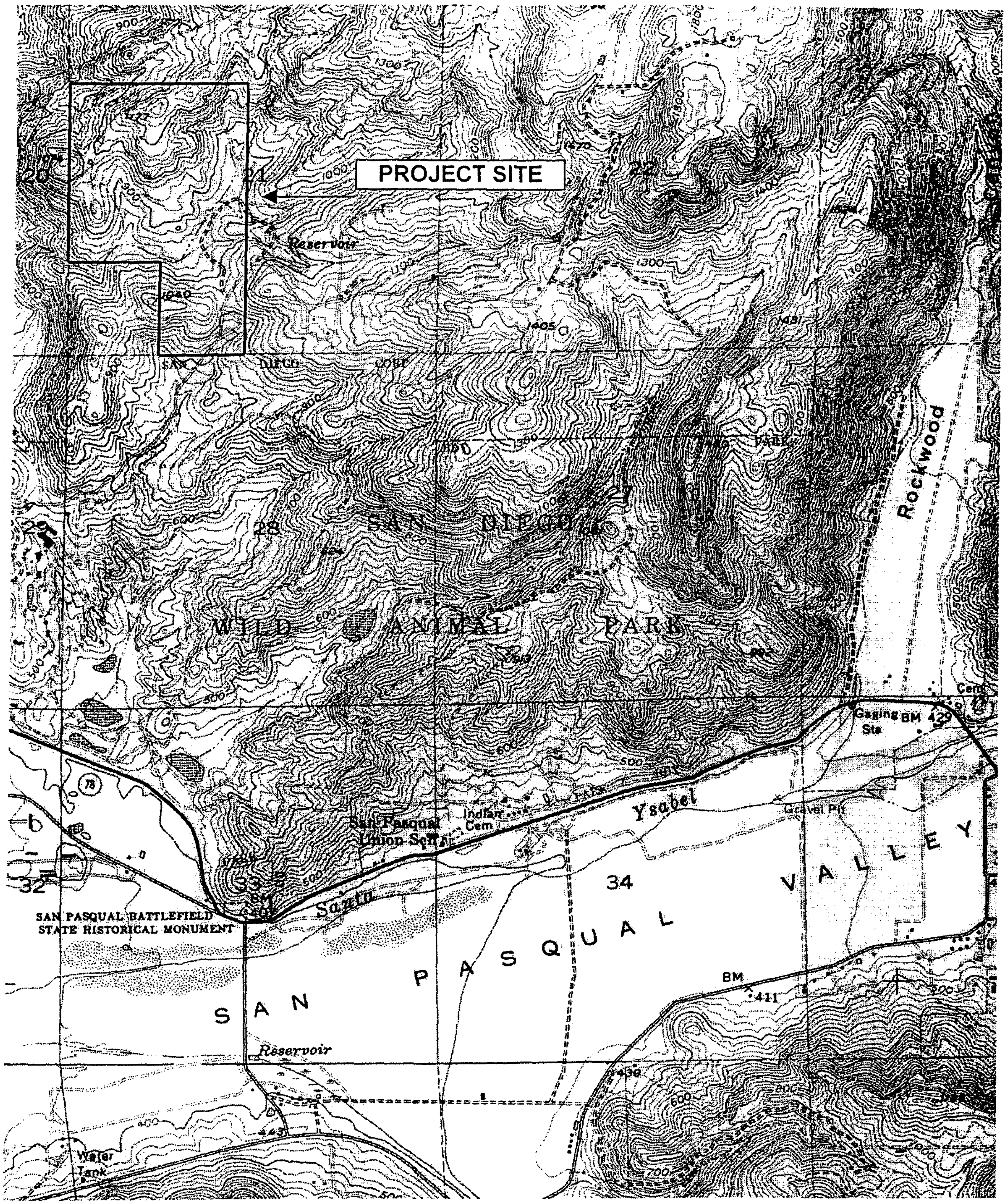
The QCB flight season began in the western portions of San Diego County on March 31, 2000. On each site visit, two M&A biologists, authorized under federal Endangered Species Act (ESA) section 10(a)(1)(A) permit #797999, performed focused adult QCB surveys according to the recommended guidelines noted in the USFWS QCB Survey Protocol. The focused surveys were conducted at approximate weekly intervals, beginning on April 6, 2000 and ending on May 1, 2000 (Table 1). Focused QCB survey dates varied according to weather and scheduling conditions, and individual biologists used professional judgement to comply with USFWS QCB protocol requirements as closely as possible. Biologist(s) slowly walked all butterfly survey areas, carefully followed the movements of butterflies, and periodically stopped within areas containing a relatively greater potential for Quino Checkerspot use. Copies of field notes are provided in Appendix 1. Plant species observed on-site are found in Appendix 2, while Appendix 3 lists the butterfly species detected within the study area.

Table 1. Survey Dates, Times, Conditions, Authorized Biologists, Acreage Covered Per Hour

Survey	Date	Time	Conditions (Start-End)	Permitted Biologist(s)	Acres/Hour
1	20000406	1000-1630**	Weather: Clear-Clear; 0%-0% cloud cover (cc) Wind (Beaufort): 0-2 Temp: 75-86° (high) - 74°F	David A. Mayer Adam H. Behle	ap. 15
2	20000411	1000-1600	Weather: Clear-Clear; 0%-0% (cc) Wind (Beaufort): 0-0 Temp: 79°-85°F (high)-74°F	David A. Mayer Stephen R. Rink	ap. 14
3	20000417	1030-1545	Weather: Partly Cloudy-Partly Cloudy; 50%-50% (cc) Wind (Beaufort): 0-2 Temp: 66°-72°F	David A. Mayer Adam H. Behle	ap. 16
4	20000424	0845-1445	Weather: Clear-Clear (cc) Wind (Beaufort): 0-1 Temp: 67°-71°F	Adam H. Behle Stephen R. Rink	ap. 14
5	20000501	0940-1540	Weather: Clear-Clear; 0%-0% (cc) Wind (Beaufort): 0-0	Craig H. Reiser Adam H. Behle	ap. 14

			Temp: 85°-92°F		

* = Butterfly survey areas (non-excluded) total approximately 166 acres
** = AHB ended survey at 1500, DAM continued initial assessment until 1630 hours



Project Vicinity Map

Source: USGS 7.5' San Pasqual Valley, CA Quadrangle

Scale: 1" = 2000'

Figure 1

Scientific Nomenclature

Scientific nomenclature used in this report is from the following standard references: vegetation and wildlife habitat, Holland (1986); flora, Skinner and Pavlik (CNPS) (1994), Hickman (1993); and butterflies, Garth and Tilden (1986).

GENERAL PHYSIOGRAPHY

The project site consists of low, moderate, and relatively steep slopes of south, west, and east-facing exposures. Native vegetation covers the vast majority of the property, with Diegan Coastal Sage Scrub dominating the study area. Oak woodlands and Southern Mixed Chaparral are also represented, with chaparral becoming more apparent in off-site lands to the north. Rock outcrop is extremely well represented on-site and in adjacent habitat, particularly to the north. Both extensive segments of rock slabs and very large, exposed boulders characterize this micro-habitat.

Generally undeveloped lands lie adjacent to the north, west, and northeast, while very limited numbers of rural residences occur to the southeast. Undeveloped lands and some large, open holding-pens for the Wild Animal Park occur to the south. Signs of recent human use such as shotgun/automatic casings and foot-traffic is generally limited on-site. The lack of urban influences result in a mostly undisturbed condition to the site's vegetation and wildlife habitats; however, a fire destroyed much of the vegetation several years prior. This has probably contributed to the local abundance of non-native plant species (e.g., mustards, etc.) intermixed in the native vegetation.

A high elevation of approximately 1175 feet occurs on the ridgeline near the northern boundary of the study area, while a low elevation of approximately 800 feet occurs both in the streambed exiting the southwest corner of the study area, and along the extreme southern border of the site. Underlying surficial geology is reported to be Mesozoic granitic rocks (Rogers 1965). On-site soils are mapped as Vista coarse sandy loam (15-30% slopes) and Cieneba-Fallbrook rocky sandy loams (30-65% slopes, eroded) (Bowman 1973).

RESULTS

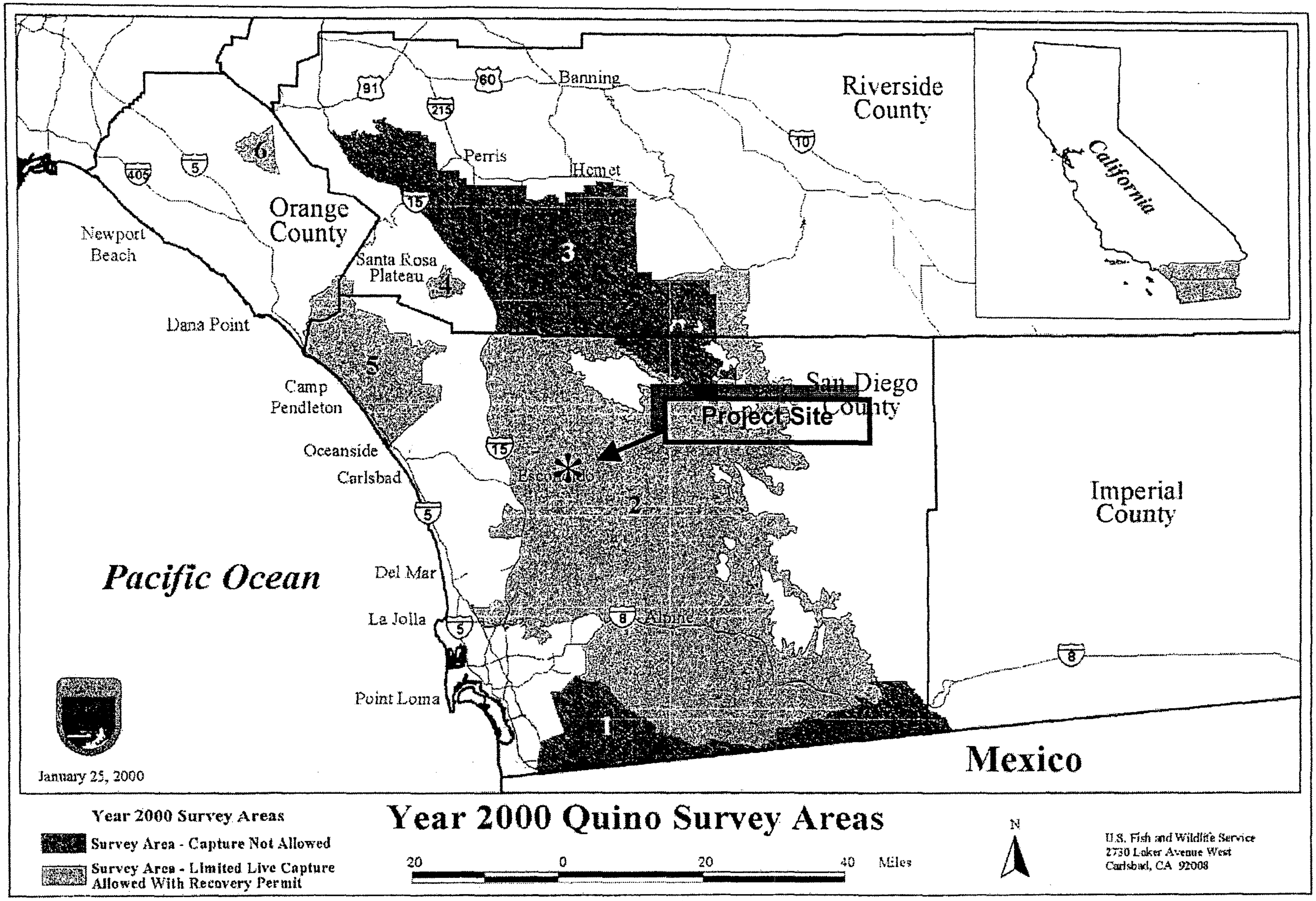
Butterfly survey areas as well as QCB host plant locations are indicated on a 200% enlarged 7.5' U.S. Geological Survey topographic quadrangle map of the project site (Figure 3).

Vegetation Communities

Four primary vegetation communities are identified in the study area: Coastal Sage Scrub, Southern Mixed Chaparral, Oak Woodlands, and Non-native Grassland. Also found are dirt roads which broadly access most of the study area, and a substantial amount of rock outcrop which is principally intermixed with the sage scrub in the eastern, central, and northwestern portions of the study area.

<u>Coastal Sage Scrub</u> (162.7 acres)

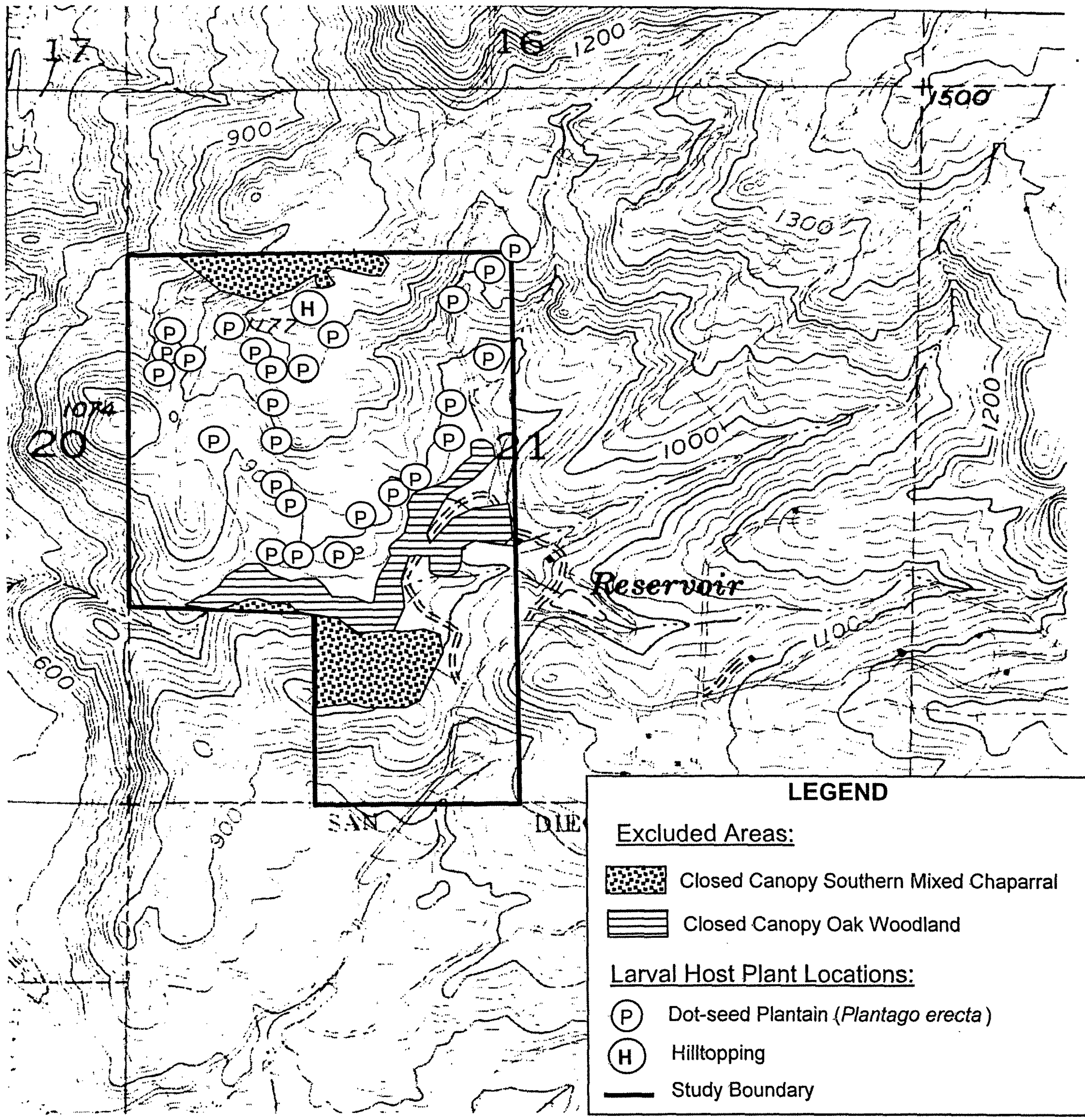
Laurel Sumac (*Malosma laurina*) is the most conspicuous plant of the on-site sage scrub community; however, its relative dominance is quite variable on the property. The east-facing slopes and much of the higher elevations show a dense Laurel Sumac component, while the more westerly and south-facing slopes show a more patchy distribution of this plant. Where the sumac is lacking, a lower canopy habitat is formed by varying concentrations of California Sagebrush (*Artemisia californica*), Flat-top Buckwheat (*Eriogonum fasciculatum*), Deerweed (*Lotus scoparius*), California Wishbone Plant (*Mirabilis*



Year 2000 Quino Survey Areas
Valley View
Figure Scanned From USFWS QCB Year 2000 Survey Protocol

Figure 2

M&A# 00-054-01



Valley View QCB Resource Map
Source: USGS 7.5' San Pasqual Valley, CA Quadrangles

Figure 3

Merkel & Associates, Inc.

The understory was diverse and included Popcornflower (*Plagiobothrys* spp.), lupines (*Pupinus bicolor, L. hirsutissimus, L. truncatus*), and other native annuals including *Camissonia* spp. and *Clarkia* spp. Non-native elements of the understory were mustards (*Hirshfeldia incana, Brassica nigra*) and several species of *Erodium*. Around the rock outcrops, mostly barren areas supported Ashy Spike-Moss (*Selaginella cinerascens*), Bigelow's Spike-Moss (*Selaginella bigelovii*), Dot-seed Plantain, and Silver-leaf Lotus (*Lotus argophyllus*).

Southern Mixed Chaparral (18.9 acres)

Chaparral within the study area is fairly limited, occurring on a north-facing slope in the southern-most portion. Typical species comprising this habitat include Chamise (*Adenostoma fasciculatum*), Scrub Oak (*Quercus berberidifolia*), Chaparral Mallow (*Malacothamnus fasciculatus*), Toyon (*Heteromeles arbutifolia*), Holly-leaved Cherry (*Prunus ilicifolia*), and Western Poison-Oak (*Toxicodendron diversilobum*).

Oak Woodlands (14.9 acres)

Mature Coast Live Oaks (*Quercus agrifolia*) dominate the riparian canopy; this species also occurs as a few or isolated individuals away from the main woodland. Engelmann Oaks (*Quercus engelmannii*) were also observed on the property. Large Western Sycamore (*Platanus racemosa*) and Arroyo Willow (*Salix lasiolepis*) also contributed to this dense canopied habitat.

Non-native Grassland (3.5 acres)

This is a very limited habitat on-site, occurring principally in areas flanking the oak woodlands, presumably where there has been historic human activity or grazing. Non-native grasses such as Slender Wild Oat (*Avena barbata*) and various brome grasses (*Bromus* spp.) characterize this habitat.

Butterfly Species Activities

Butterfly species observed most consistently, and generally in the higher numbers, included Behr's Metalmark (*Apodemia mormo virgulti*), Acmon Blue (*Icaricia acmon*), Sara Orangetip (*Anthocharis sara*), Perplexing Hairstreak (*Callophrys perplexa*), and Funereal Duskywing (*Erynnis zarucco funeralis*). These were typically noted perching or nectaring on various shrubs in sage scrub, or relatively open areas within the scrub, throughout the property. One particular hilltopping area was noted at a high elevation along a rigeline at the extreme northern end of the study area (Figure 3). Here were found Gray Hairstreak (*Strymon melinus*), Western Tiger Swallowtail (*Papilio rutulus*), Anise Swallowtail (*Papilio eurymedon*), West Coast Lady (*Vanessa anabella*), and Funereal Duskywing.

Potential Quino Checkerspot Butterfly Habitat Quality

Dot-seed Plantain (*Plantago erecta*), primary host plant of the Quino Checkerspot, was observed at numerous locations (approximately 30) throughout the 200-acre study area (Figure 3). Host plant was most typically found on the relatively thin soils overlying and/or adjacent to large rock outcrops, and in a few instances within openings in the sage scrub vegetation. Most patches were small (3' x 5') and often contained only 25-100 individuals. The more substantial host plant patches occurred in the northwest portion of the study area, again in association with large rock slabs.

Potential adult nectar sources identified on-site included the following: Pacific Sanicle (*Sanicula crassicaulis*), Common Goldfields (*Lasthenia californica*), Popcornflower (*Plagiobothrys* sp.), Rancher's

Fireweed (*Amsinckia menziesii*), Silver-leaf Lotus (*Lotus argophyllus*), various lupines (*Lupinus* spp.) and phacelias (*Phacelia* spp.), Chia (*Salvia columbariaea*), Checker-bloom (*Sidalcea malvaeflora*), California Poppy (*Eschscholzia californica*), and other flowering species listed in Appendix 1.

Quino Checkerspot Butterfly Observations

No Quino checkerspot butterflies were observed on-site during the five focused surveys.

If you have any additional questions concerning this aspect of the Valley View Specific Plan investigations, please call me at 858-560-5465.

Sincerely,

David A. Mayer
Project Manager

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APPENDIX 1

FIELD NOTES

Gate # : Esc Swap Meet 760-745-3100 - Jenny
if locked

Roy 941-4499

P1 Small patch of Plantago

CSS on south-facing slopes:
L. Suriac w/ Calif Sagebrush, FT Buckwheat, and a lot of Mustard, Phacelia + ______ and some bare grand.

Big rock Bald: rock, Selaginella bigelovii and hardpack mud/lichen Minimal number of plantago at NW end (< 100 plants).

Bench above (west) of drainage by boulders = robust Plantago patch = best so far. Maybe 10' x 30' but intermixed with grasses (bromes) mustard and weedy species. Somewhat [illegible] 50-100 ft² at [illegible]

Valley [illegible]

Sunny
wind 0-5 all day   10^45 - 4^30   4/6/00

- ✓ Southern Blue 𝍸
- ✓ Sara OT 𝍸 𝍸 𝍸 |
- ✓ Funereal Duskywing 𝍸 |||
- ✓ Unid Blue 𝍸 |||
- ✓ Acmon Blue 𝍸 𝍸 |||
- ✓ Perplexing Hairstreak 𝍸 |||
- ✓ Behr's Metalmark 𝍸 𝍸 ||||
- ✓ Anise Swallowtail |
- ✓ Mourning Cloak |

after meeting w/ client rep:
determined that the southern-most 200 acres would be surveyed to protocol.

7/[illegible]
Valley View (2)

CA Towhee
Hutton's Vireo
Lesser Goldfinch
Sp Towhee
CA Towhee
Acorn Woodpecker
RS Hawk 1
Cooper's Hawk (2)
Co Raven
Turkey Vulture
Bushtits
House Wren
Pl Titmouse
Costa's Humm
Wrentit 1
RCSp ///
CA Quail
Black Phoebe
RT Hawk
Mo Dove
Anna's Hum
Scrub Jay
CA Thrasher
Euro Starling
W-C Sparrow

SB Lizard 卌 1
Coastal Whip 1
RD Rattlesnake 1
W Fence Lizards

Ca GS ✓
Des Cott 1
Mule Deer scat
Coyote

00-054-01
Valley View

START 10:00 AM
STOP 3:00 PM AHB, DAM

Valley View E.C.B. SURVEY #1 5/6 should be 4/6/0[illegible]

TEMP - 87°F SUNNY

WIND - 0-2 MPH

LOCATION - EASTERN EDGE OF PROPERTY

BUTTERFLIES:

ACMON BLUE - HHT I

SARA'S ORANGETIP - HHT HHT HHT II

UNIDENTIFIED BLUE - HHT

UNIDENTIFIED WHITE - II

PERPLEXING HAIRSTREAK - III

W. CHECKERED SKIPPER - I

RURAL SKIPPER - I

BEHR'S METALMARK - HHT

HOST PLANT FOUND IN
2 ROADSIDE LOCATIONS
(ON MAP)

[illegible]:
LIZARDS - II
SNAKE - I
TURKEY TRA[illegible]

4/11/00 Valley View Q-
10:00-4:00 DAM SRR 26°C, wind 0-3
Anise Swallowtail /
Southern Blue ||||
Behr's Metalmark ||+⑬+ ~~||||~~ ~~||||~~ ||||
Sara Orangetip ~~||||~~ ~~||||~~ |
Checkered Skipper |
Acmon Blue ~~||||~~ ~~||||~~ ||
Funereal Duskywing ~~||||~~ ||
Pale Swallowtail //
Western Tiger Swallowtail |
West Coast Lady ||
Mourning Cloak |
Gray Hairstreak ||
Perplexing Hairstreak ~~||||~~ |

4/11/00 ②

Valley View

RC Sparrow	
Sp Towhee	Coyote poo
RT Hawk	CA GS
Tu Vulture	Mule Deer
NRW Swallow	Den - Bobcat ?
Cliff Swallow	SB Liz
B-C Sparrow	W.F. Lizard
Costa's Humm	Coastal Whiptail 1
Anna's Humm	Horned Lizard 2
W-C Sparrow	
L Goldfinch	
CA Towhee	Unid rattlesnakes -
Canyon Wren	(under rocks)
RS Hawk	
CA Quail	
Gr Roadrunner	House Wren
Mo Dove	Blue-gray Gnatcatcher
Whip-poor-will !	Bewicks Wren
W-T Swift	CA Thrasher
Acorn Woodpecker	Euro Starling
N. Yall's Woodpecker	O-C Warbler
Black Phoebe	House Finch
Cassin's Kingbird	
Scrub Jay	
Wrentit	

DAM AHE

P20 - Very small patch dried ~ 20 plants over a 2 x 3' patch

P21 - 8 x 10, sparse, in open CSS 10-25 plants/ft^2. Very likely distributed westward

P22 - Basically an adjunct to P21 but ~ 5' x 15', 10-25/ft^2

P23 - Sparse/rock bald 2 patches less than 25 plants each

P24 1' x 4', about 40 total plants

P25 - Patchy distribution in ~~ft~~ about an ~ 8 x 10 average about 10/ft^2.

Prostrate Spineflower ~500 just south of high elevation on-site

Driving 50 miles

10:30 - 3:45 Valley View φ3

50% clouds, 20°, 4/17/00

wind: 0 by 1 to 4 mph w/ rare gusts to 8-10

22° at 12

wind increases to 6-8 by 2pm, then ~ okay except on ridges

Sara OT |||

Acmon Blue ~~||||~~ |

Behr's Metalmark ~~||||~~ ~~||||~~ ~~||||~~ ||||

Southern Blue |

Most Plantago on balds is dried up, especially on west facing slope in NE corner of survey area

Common Kingsnake - striped version

AHB

$\boxed{\text{VALLEY VIEW}}$ Q.C.B. SURVEY #3 4/17/00

TEMP - 66° F

WIND - 0-6 MPH

LOCATION - ENTIRE SITE START 10:30 AM

STOP 3:00 PM

BUTTERFLIES:

SARA ORANGETIP - 1

BEHR'S METALMARK - 卌

ACMON BLUE - 1

BROWN ELFIN - 1

UNIDENTIFIED BLUE - 1

Quino
Valley View #4

4-24-00

8:38, 12:45

Sunny, no wind, ±70°F

S~~RR~~ / AHB

Birds	Herps	Butterflies
TUVU	lz. sp. ~~1111~~	Western-tailed blue ~~111~~
CORA	side blotch lll	Behr's metalmark ~~1111~~ ~~1111~~
RTHA	S.D. Horned lz. llll	Sara Orangetip l
Orange ~~rumped~~ crowned warbler		Felders Orangetip
~~Acorn woodpecker~~		
CATO		
~~LG~~		
Anna's hummingbird		
Bushtit		
Red-shoulder hawk		
Scrub jay		

AMD . SRR

VALLEY VIEW QCB #4 4/24 START 8:45 FINISH :00

TEMP - 67°

WIND - 0-3 MPH

LOCATION - ALL OF SITE

BUTTERFLIES

W. TAILED BLUE - 1

BEHR'S METALMARK - IIII 1

SARA'S ORANGETIP - 1

FELDER'S ORANGETIP - 1

GRANITE SPINY LIZARD

HOST PLANT

- SEVERAL NEW PATCHES FOUND
- OWL'S CLOVER IS COMING UP IN PATCHES ON SITE
- SEE MAP FOR SPECIFIC LOCATION

OTHER

LIZARD BURNT

BLUE BELLY -

HORNED LIZARD ////

CANYON WREN - 1

TURKEY VULTURE - 7

MANY NOT... FEMALE

W. FENCE LIZARD

5/1/00

AMB, CHR

START 9:45 AM Valley View QCB Surveys
STOP 3:45 PM
TEMP - 78°
WIND - 0-3 MPH

BUTTERFLIES

BEHR'S METALMARK - ~~||||~~ ~~||||~~
SARA ORANGETIP - ||||
ACMON BLUE - ~~||||~~ |
WHITE SP. - ||||
TIGER SWALLOWTAIL - |||
GABBS CHECKERSPOT - |
FUNEREAL DUSKYWING - |
PALE SWALLOWTAIL - |
MONARCH - |
CA. RINGLET - |

HOST PLANT

NEW PLANTAGO FOUND
ON ROAD NEAR ENTRANCE

OTHER

| - SIDE BLOTCH
| - W WHIPTAIL
| - S.D. HORNED LIZARD
| - GRANITE SPINY LIZARD
| - COMMON KINGSNAKE
| - WESTERN FENCE

C. Reiser

May [illegible] 1, 2000
Valley View San Pasqual Valley site
Quino Checkerspot survey - final survey date #5
0945 - 1340 hours
85° - 92° F no winds of significance
full sun

- met A. Beble at site

- Acmon Blue ✓✓✓✓
- Sara Orange ✓✓✓✓✓✓
- Behr's Metalmark ✓✓✓✓✓✓✓✓✓✓✓✓✓
- Western Tiger Swallowtail ✓✓✓
- Cabbage White ✓✓
- Pale Swallowtail ✓✓
- Monarch ✓
- Gabb's Checkerspot ✓✓
- Funereal Duskywing ✓
- California Ringlet ✓
- Buckeye ✓

APPENDIX 2

FLORAL CHECKLIST

APPENDIX 2. FLORAL CHECKLIST OF SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
CRYPTOGAMS	
Dryopteridaceae - Wood Fern Family	
Dryopteris arguta	Coastal Woodfern
Polypodiaceae - Polypody Family	
Polypodium californicum	California Polypody
Pteridaceae - Brake Family	
Cheilanthes newberryi	California Cottonfern
Pellaea mucronata var. *mucronata*	Bird's-foot Fern
Pentagramma triangularis ssp. *viscosa*	Silverback Fern
Selaginellaceae - Spike-Moss Family	
Selaginella bigelovii	Bigelow's Mossfern
Selaginella cinerascens	Ashy Spike-moss
GYMNOSPERMS	
Pinaceae - Pine Family	
Pinus sp.	Pine
DICOTYLEDONS	
Anacardiaceae - Sumac Family	
Malosma laurina	Laurel Sumac
Rhus integrifolia	Lemonadeberry
Rhus ovata	Sugar Bush
Rhus trilobata	Skunkbrush
Toxicodendron diversilobum	Western Poison Oak
Apiaceae - Carrot Family	
Apiastrum angustifolium	Mock Parsley
Daucus pusillus	Rattlesnake Weed
Sanicula crassicaulis	Pacific Sanicle
Asteraceae - Sunflower Family	
Acourtia microcephala	Sacapellote, Purpleheads
Ambrosia psilostachya	Western Ragweed
Artemisia californica	California Sagebrush
Artemisia douglasiana	Mugwort
Artemisia dracunculus	Tarragon
Baccharis pilularis	Coyote Brush
Baccharis salicifolia	Mule Fat

SCIENTIFIC NAME	COMMON NAME
Brickellia californica	California Brickellbush
* *Centaurea melitensis*	Tocalote
Chaenactis artemisiaefolia	Artemisia Pincushion
Cirsium occidentale var. *californicum*	California Thistle
* *Conyza canadensis*	Horseweed
Encelia californica	California Encelia
Erigeron foliosus var. *foliosus*	Leafy Daisy
Eriophyllum confertiflorum var. *confertiflorum*	Golden-yarrow
Filago californica	California Filago
Gnaphalium bicolor	Bicolor Cudweed
Gnaphalium californicum	California Everlasting
Gnaphalium palustre	Lowland Cudweed
Hazardia squarrosa ssp. *grindelioides*	Saw-toothed Goldenbush
* *Hedypnois cretica*	Crete Hedypnois
* *Helianthus annuus*	Western Sunflower
Hemizonia fasciculata	Fascicled Tarplant
Heterotheca grandiflora	Telegraph Weed
* *Hypochoeris glabra*	Smooth Cat's-ear
Isocoma menziesii var. *vernonioides*	Coastal Goldenbush
Lasthenia californica	Common Goldfields
Lessingia filaginifolia var. *filaginifolia*	Cudweed Aster
Osmadenia tenella	Osmadenia
* *Picris echioides*	Bristly Ox-tongue
* *Senecio vulgaris*	Common Groundsel
* *Silybum marianum*	Milk-thistle
Solidago californica	California Goldenrod
* *Sonchus asper*	Prickly Sow Thistle
* *Sonchus oleraceus*	Common Sow Thistle
Stylocline gnaphalioides	Everlasting Nest Straw
Uropappus lindleyi	Silver Puffs
Boraginaceae - Borage Family	
Amsinckia menziesii var. *intermedia*	Rancher's Fireweed
Cryptantha intermedia	Nievitas, Cryptantha
Pectocarya linearis ssp. *ferocula*	Slender Pectocarya
Plagiobothrys collinus var. *gracilis*	Small California Popcornflower
Plagiobothrys nothofulvus	Rusty Popcornflower
Brassicaceae - Mustard Family	
* *Brassica nigra*	Black Mustard
* *Hirschfeldia incana*	Short-pod Mustard
Lepidium nitidum var. nitidum	Shining Peppergrass
* *Raphanus sativus*	Radish
Capparaceae - Caper Family	
Isomeris arborea	Bladderpod
Caprifoliaceae - Honeysuckle Family	
Lonicera subspicata var. *denudata*	San Diego Honeysuckle
Sambucus mexicana	Blue Elderberry

Scientific Name	Common Name
Caryophyllaceae - Pink Family	
* *Cerastium glomeratum*	Mouse-ear Chickweed
Sagina apetala	Sticky Pearlwort
* *Stellaria media*	Common Chickweed
Chenopodiaceae - Goosefoot Family	
* *Salsola tragus*	Russian Thistle
Cistaceae - Rock-Rose Family	
Helianthemum scoparium	Peak Rush-rose
Convolvulaceae - Morning-Glory Family	
Calystegia macrostegia ssp. *arida*	Finger-leaf Morning-glory
Crassulaceae - Stonecrop Family	
Crassula aquatica	Stonecrop
Crassula connata	Dwarf Stonecrop
Dudleya edulis	Ladies-fingers
Dudleya pulverulenta	Chalk-lettuce
Cucurbitaceae - Gourd Family	
Marah macrocarpus var. *macrocarpus*	Wild Cucumber
Cuscutaceae - Dodder Family	
Cuscuta californica var. *californica*	Witch's Hair
Euphorbiaceae - Spurge Family	
Chamaesyce polycarpa	Small-seed Sandmat
Eremocarpus setigerus	Doveweed
* *Euphorbia peplus*	Petty Spurge
Fabaceae - Pea Family	
Lathyrus vestitus ssp. *alefeldii*	San Diego Sweetpea
Lotus argophyllus var. *argophyllus*	Silver-leaf Lotus
Lotus scoparius ssp. *brevialatus*	Deerweed
Lotus strigosus	Bishop's Lotus
Lupinus bicolor	Miniature Lupine
Lupinus hirsutissimus	Stinging Lupine
Lupinus truncatus	Collar Lupine
* *Melilotus albus*	White Sweetclover
Trifolium willdenovii	Valley Clover
Vicia ludoviciana var. *ludoviciana*	Deerpea Vetch
Fagaceae - Oak Family	
Quercus agrifolia	Coast Live Oak
Quercus berberidifolia	Scrub Oak
Quercus engelmannii	Engelmann Oak
Geraniaceae - Geranium Family	
* *Erodium brachycarpum*	Short-beak Filaree

SCIENTIFIC NAME	COMMON NAME
* *Erodium cicutarium*	Red-stem Filaree
* *Erodium moschatum*	White-stem Filaree
Hydrophyllaceae - Waterleaf Family	
Phacelia cicutaria var. *hispida*	Caterpillar Phacelia
Phacelia parryi	Parry's Phacelia
Phacelia ramosissima var. *latifolia*	Caterpillar Phacelia
Lamiaceae - Mint Family	
* *Marrubium vulgare*	Horehound
Salvia apiana	White Sage
Salvia columbariae	Chia
Salvia mellifera	Black Sage
Lythraceae - Loosestrife Family	
* *Lythrum hyssopifolia*	Grass Poly
Malvaceae - Mallow Family	
Malacothamnus fasciculatus	Mesa Bush Mallow, Chaparral Mallow
* *Malva parviflora*	Cheeseweed, Little Mallow
Sidalcea malvaeflora ssp. *sparsifolia*	Checker-bloom
Sphaeralcea ambigua var. *ambigua*	Desert Mallow
Myrtaceae - Myrtle Family	
* *Eucalyptus* sp.	Eucalyptus
Nyctaginaceae - Four-O'Clock Family	
Mirabilis californica	California Wishbone Plant
Oleaceae - Olive Family	
* *Olea europea*	Mission Olive
Onagraceae - Evening-Primrose Family	
Camissonia bistorta	California Sun Cup
Camissonia californica	False-mustard
Camissonia strigulosa	Strigulose Evening Primrose
Clarkia epilobioides	Canyon Godetia
Clarkia purpurea ssp. *viminea*	Large Clarkia
Oenothera elata ssp. *hirsutissima*	Great Marsh Evening Primrose
Papaveraceae - Poppy Family	
Eschscholzia californica	California Poppy
Plantaginaceae - Plantain Family	
Plantago erecta	Dot-seed Plantain
Platanaceae - Sycamore Family	
Platanus racemosa	Western Sycamore
Polemoniaceae - Phlox Family	

SCIENTIFIC NAME	COMMON NAME
Gilia angelensis	Grassland Gilia
Navarretia hamata ssp. *hamata*	Hooked Skunkweed
Polygonaceae - Buckwheat Family	
Chorizanthe procumbens	Prostrate Spineflower
Eriogonum fasciculatum var. *foliolosum*	Interior Flat-top Buckwheat
Pterostegia drymarioides	Granny's Hairnet
* *Rumex crispus*	Curly Dock
Portulacaceae - Purslane Family	
Calandrinia ciliata	Red Maids
Claytonia perfoliata ssp. *mexicana*	Miner's-lettuce
Primulaceae - Primrose Family	
* *Anagallis arvensis*	Scarlet Pimpernel
Ranunculaceae - Crowfoot Family	
Clematis pauciflora	Ropevine
Delphinium parryi ssp. *parryi*	Parry's Larkspur
Thalictrum fendleri var. *polycarpum*	Fendler's Meadow-rue
Rhamnaceae - Buckthorn Family	
Rhamnus ilicifolia	Holly-leaf Redberry
Rosaceae - Rose Family	
Adenostoma fasciculatum	Chamise
Heteromeles arbutifolia	Toyon
Prunus ilicifolia ssp. *ilicifolia*	Holly-leafed Cherry
Rubiaceae - Madder Family	
Galium angustifolium ssp. *angustifolium*	Narrow-leaf Bedstraw
* *Galium aparine*	Goose Grass
Salicaceae - Willow Family	
Salix lasiolepis	Arroyo Willow
Saururaceae - Lizard-tail Family	
Anemopsis californica	Yerba Mansa
Saxifragaceae - Saxifrage Family	
Jepsonia parryi	Coast Jepsonia
Lithophragma affine	Woodland Star
Scrophulariaceae - Figwort Family	
Antirrhinum nuttallianum ssp. *subsessile*	Nuttall's Snapdragon
Castilleja exserta ssp. *exserta*	Purple Owl's-clover
Collinsia heterophylla	Purple Chinese Houses
Cordylanthus rigidus ssp. *setigerus*	Dark-tip Bird's-beak
Keckiella antirrhinoides var. *antirrhinoides*	Yellow Bush Penstemon

Scientific Name	Common Name
Linaria canadensis	Blue Toadflax
Mimulus aurantiacus	San Diego Monkeyflower
Mimulus brevipes	Slope Monkeyflower
Mimulus guttatus	Common Monkeyflower
Penstemon spectabilis	Showy Penstemon
Scrophularia californica ssp. *floribunda*	California Figwort
Solanaceae - Nightshade Family	
Datura wrightii	Western Jimsonweed
Solanum douglasii	Douglas' Nightshade
Sterculiaceae - Cacao Family	
Urticaceae - Nettle Family	
Hesperocnide tenella	Western Nettle
Viscaceae - Mistletoe Family	
Phoradendron macrophyllum	Big-leaf Mistletoe
MONOCOTYLEDONS	
Cyperaceae - Sedge Family	
Carex praegracilis	Cluster Field-sedge
Carex triquetra	Triangular-fruit Sedge
Eleocharis montevidensis	Dombey's Spike-sedge
Scirpus acutus var. *occidentalis*	Viscid Bulrush
Iridaceae - Iris Family	
Sisyrinchium bellum	Blue-eyed-grass
Juncaceae - Rush Family	
Juncus bufonius var. *bufonius*	Toad Rush
Juncus mexicanus	Mexican Rush
Liliaceae - Lily Family	
Allium peninsulare	Red-flower Onion
Calochortus splendens	Splendid Mariposa
Chlorogalum parviflorum	Small-flower Soap-plant
Dichelostemma capitatum ssp. *capitatum*	Wild Hyacinth
Yucca whipplei	Our Lord's Candle
Poaceae - Grass Family	
Achnatherum coronatum	Giant Needlegrass
* *Avena barbata*	Slender Wild Oat
* *Bromus diandrus*	Ripgut Grass
* *Bromus hordeaceus*	Soft Chess
* *Bromus madritensis* ssp. *rubens*	Red Brome
* *Cynodon dactylon*	Bermuda Grass
Elymus glaucus ssp. *glaucus*	Blue Wild Rye
* *Gastridium ventricosum*	Nit Grass
* *Hordeum murinum* ssp. *leporinum*	Hare Barley

SCIENTIFIC NAME	COMMON NAME
* *Lamarckia aurea*	Golden-top
* *Lolium perenne*	Perennial Ryegrass
Melica frutescens	Tall Melic
Nassella lepida	Foothill Needlegrass
Nassella pulchra	Purple Needlegrass
* *Pennisetum setaceum*	Fountain Grass
* *Poa annua*	Annual Bluegrass
* *Schismus barbatus*	Mediterranean Schismus
* *Vulpia myuros* var. *hirsuta*	Foxtail Fescue
Typhaceae - Cat-Tail Family	
Typha latifolia	Broad-leaved Cattail

* = denotes non-native plant taxa

APPENDIX 3

LIST OF OBSERVED BUTTERFLY SPECIES

APPENDIX 3. SPECIES LOG FOR YEAR 2000 VALLEY VIEW QUINO CHECKERSPOT SURVEYS

Common Name	Scientific Name	Apr 6, 2000	Apr 11, 2000	Apr 17, 2000	Apr 24, 2000	May 1, 2000	Total Sightings
Papilionidae (Swallowtail Butterflies)							
Pale Swallowtail	*Papilio eurymedon*		2			3	5
Western Tiger Swallowtail	*Papilio rutulus*		1			6	7
Anise Swallowtail	*Papilio zelicaon*	1	3				4
Pieridae (White, Orange-tip, and Sulfur Butterflies)							
Sara Orangetip	*Anthocharis sara*	33	16	4	2	10	65
Felder's Orangetip	*Anthocharis cethura*				1		1
Cabbage White	*Artogeia rapae*					2	2
Nymphalidae (Brush-footed Butterflies)							
California Ringlet	*Coenonympha californica*					1	1
Monarch	*Danaus plexippus*					2	2
Gabb's Checkerspot	*Charidryas gabbii*					3	3
Mourning Cloak	*Nymphalis antiopa*	1	1				2
Buckeye	*Junonia coenia*					1	1
West Coast Lady	*Vanessa anabella*		2				2
Lycaenidae (Metalmark, Hairstreak, Copper, and Blue Butterflies)							
Behr's Metalmark	*Apodemia mormo virgulti*	19	51	24	16	22	132
Perplexing Hairstreak	*Callophrys perplexa*	11	7				18
Western Tailed Blue	Everes amyntula				4		4
Southern Blue	*Glaucopsyche lygdamus australis*	5	9	1			15
Acmon Blue	*Icaricia acmon*	19	27	7		10	63
Gray Hairstreak	*Strymon melinus*		2				2
Brown Elfin	*Incisalia augustinus*			1			1
Unidentified Blue		13		1			14
Hesperidae (Skipper Butterflies)							
Funereal Duskywing	*Erynnis zarucco funeralis*	8	8			2	18
Western Checkered Skipper	*Pyrgus communis albescens*	1	1				2
TOTAL SIGHTINGS		111	130	38	23	62	364

ATTACHMENT 2

COASTAL CALIFORNIA GNATCATCHER

SURVEY REPORT

Mooney & Associates
COMMUNITY PLANNING & ENVIRONMENTAL STUDIES

August 10, 1998

Mr. Doug Krofta
U.S. Fish and Wildlife Service
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, CA 92008

Reference: Post-Survey Notification for Focused Coastal California Gnatcatcher Surveys at Valley View Property.

Dear Mr. Krofta:

Mooney & Associates has completed its directed surveys for coastal California gnatcatcher (*Polioptila californica californica*) at the Valley View property in the City of San Diego. These surveys were conducted by Rick Eisenbart (permit # PRT-843449) and Lisa Chaddock (permit #PRT-830995), in accordance with the Coastal California Gnatcatcher Presence/Absence Survey Guidelines (February 28, 1997). S.C. Dodd Biological Consulting (permit #796271) also assisted in the surveys. No coastal California gnatcatchers were detected during these surveys.

The project site is located less than 1 mile north of the San Diego Wild Animal Park (Figures 1 and 2). The 1150 acre property contains 76.5 acres of coastal sage scrub (CSS) habitat, and 455 acres categorized as "recovering" coastal sage scrub (RCSS). The RCSS is in an early-mid stage of post-fire succession. The CSS habitat is considered good quality, but the RCSS habitat is considered only fair quality.

The majority of the property burned during the 1993 Guijito fire, and although vegetation returned quickly, the species composition does not yet approach normal percentages for CSS habitat. By far the dominant species within areas mapped as both CSS and recovering CSS are *Lotus scoparius* and *Avena barbata*. The species composition is one of two main contributing factors to the absence of coastal California gnatcatchers on-site. The other factor is the apparent absence of

■
9903 Businesspark Avenue
San Diego, California 92131-1120
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adjacent populations of gnatcatchers to provide dispersal onto the Valley View property. The fire that consumed the habitat on-site was not limited to this one property, but burned a considerable amount of habitat in this vicinity. It may take several years for dispersal to reach this site from the closest source populations.

As stated above, methodology was in accordance with the Coastal California Gnatcatcher Presence/Absence Survey Guidelines, (revised) July 28, 1997. Survey areas were variable in size, but no survey area approached the 100 acre survey limit. Tapes were played at variable intervals, to attempt to elicit calling response from gnatcatchers. Table 1 details the survey dates/times/personnel/conditions.

If you have any questions concerning the contents of this notification letter, please call.

Sincerely,

R J Eisenbart

Rick Eisenbart

RJE:tw
Attachments

Table 1

Coastal California Gnatcatcher Survey Details

Date	Time	Surveyor(s)	Conditions
April 20	0900-1430	RE, LC	Temp 68 - 85. No wind. No cloud cover.
April 27	0730-1200	RE, LC	Temp 60-80. No cloud cover. Wind 0-5 mph.
May 4	0745-1100	RE	Temp 62-68. Cloud cover 100-65%. Wind 0-2 mph
May 11	0730-1100	RE, LC	Temp 50-55. Overcast. Wind 0-8 mph.
May 16	0700-1030	RE, SD	Temp 58-70. Cloud cover 15-40%. Wind 0-4 mph
May 18	0845-1045	RE	Temp 60-75. Cloud cover 10-0%. Wind 0-2 mph.
May 30	0730-1030	SD	Temp 64-69. Cloud cover 100%-partly cloudy. Light breeze.
June 1	0720-1050	RE, LC	Temp 58-77. Cloud cover 10-0%. No wind.
June 6	0700-1100	SD	Temp 68-72. No cloud cover. Light breeze.
June 22	0710-1045	RE, LC	Temp 56-68. 100-0%. Wind 0-5 mph.

RE = Rick Eisenbart, LC = Lisa Chaddock, SD = Shana Dodd

ATTACHMENT 3

SITE ASSESSMENT FOR STEPHEN'S KANGAROO RAT

DUDEK
& ASSOCIATES
A California Corporation

Engineering, Planning, Environmental Sciences and Management Services

Corporate Office:
605 Third Street
Encinitas, California 92024

760.942.5147
Fax 760.632.0164

May 28, 1998 1854-01

Rick Eisenbart, Senior Biologist
Mooney & Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

Subject: ***Survey for Habitat and Populations of the Stephens' Kangaroo Rat on the Valley View Project Site, San Diego County, California***

Dear Mr. Eisenbart:

This letter addresses the status of the federally-listed endangered and state-listed threatened Stephens' kangaroo rat (*Dipodomys stephensi*) on the Valley View project site, San Diego County, California. The recent discovery of Stephens' kangaroo rat (SKR) populations in San Diego County, including Guejito Creek approximately 2-3 miles east of the property and the Santa Maria Valley (Ramona) approximately 5 miles southeast of the property, have raised the possibility of the SKR occupying other areas in the vicinity.

A walkover survey of two general areas for the SKR was conducted on May 27, 1998 under the authority of federal permit PRT-756268 and a state Memorandum of Understanding for conducting presence/absence surveys. The two areas were inspected for the presence of suitable habitat for the SKR and diagnostic surface sign of kangaroo rats, including burrows, scat (fecal pellets), tail drags, runways, and dust bowls. Survey conditions were appropriate for detecting kangaroo rat sign, including clear and sunny conditions and dry soils. The SKR typically is found in sparse annual grasslands and sparse or highly disturbed shrub habitats on relatively level terrain that in the summer and fall have at least 50% open ground.

The two sites inspected were those you identified as probably having the highest potential on the property to support the SKR, based on the presence of annual grassland and disturbed habitat. The first survey area is located in the southern portion of the property and is characterized by annual grassland and disturbed vegetation along an unmaintained dirt road and coastal sage scrub and chaparral habitats on the adjacent hillsides that are recovering from wildfire. The second survey area is located in the northern portion of the property and is characterized by a flat, open meadow a few acres in size surrounded by chamise chaparral and rugged terrain.

Survey Area 1

A walkover of the dirt road revealed the presence of kangaroo rats. There were several burrows and dust bowls in the road and a relative abundance of scat. However, in my opinion, the kangaroo rat in the area is the Dulzura kangaroo rat (*Dipodomys simulans [agilis]*) (DKR) and not the SKR. The overall habitat characteristics in the area are more suitable for the DKR, which prefers shrubbier habitats and occurs in more rugged terrain; i.e., based on the habitat, one would expect to find the

DKR. The habitat where kangaroo rat sign was found is not open enough for the SKR. Furthermore, there are no suitable SKR habitat areas in the vicinity of the area inspected that would serve as source populations, thus making the road an important dispersal corridor. If a road such as the one surveyed connected suitable habitat areas, it is possible that it would be occupied by the SKR. However, in the absence of occupied habitat nearby, the road would not be considered potential habitat for the SKR.

Survey Area 2

Survey area 2 consists of a wet meadow that supports wetland plant species, as well as filaree and annual grasses. The surrounding habitat consists of chamise chaparral in fairly rugged terrain. At the time of the survey, ground cover approached 100% and the soil was saturated. An inspection of the area revealed no evidence of kangaroo rats. Because of the lack of kangaroo rat sign, evidence of the area being a seasonal wetland, and the lack of nearby habitat suitable for the SKR, in my opinion this area has no potential to support the SKR.

Conclusion

Based on site inspections, I conclude that the Valley View property does not support the SKR. I did not see any habitat appropriate for the species. The kangaroo rat sign (burrows, scat, and dust bowls) present in survey area 1 is that of the DKR, which would be expected in the coastal sage scrub and chaparral on the property. Survey area 2 does not support kangaroo rats. The SKR will not be a constraint to development of the property.

Please feel free to call me at (760) 942-5147 if you have any questions regarding this letter.

Very truly yours,

Dudek & Associates, Inc.

Philip Behrends

Philip R. Behrends, Ph.D.
Senior Project Manager/Zoologist

reports\valview.skr

ATTACHMENT 4

PLANT AND ANIMAL SENSITIVITY GUIDELINES

PLANT AND ANIMAL SENSITIVITY GUIDELINES

Listings by the U.S. Fish and Wildlife Service and the California Department of Fish and Game carry regulatory authority while other listings herein are generally advisory in nature and serve to monitor and inform.

Federally Listed and Candidate Species

FE	Federal Endangered Species	Listed as Endangered by the federal government under the Endangered Species Act. Taxa that are in danger of becoming extinct throughout all or a significant portion of their range.
FT	Federal Threatened Species	Listed as Threatened by the federal government under the Endangered Species Act. Taxa which are likely to become Endangered in the foreseeable future in the absence of special protection.
PE/PT	Proposed Federal Threatened or Endangered Species	Proposed species are those for which a proposed rule to list as Endangered or Threatened has been published in the Federal Register.

California Listed and Candidate Species

CE	State Endangered Species	A native California taxa which is in serious danger of becoming extinct throughout all or in a significant portion of its range (CDFG Code 2062).
CT	State Threatened Species	A native California taxa which, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts (CDFG Code 2967).
CP	Fully Protected Species	Taxa which falls under special protection (CDFG Code 3511, 3700, 4800, 4900, 5000, 5050, 5515). The protection prohibits any taking of a fully protected species.
SA	Special Animals	Taxa listed as Special Animals fall into one or more of the following categories: • Taxa that are biologically rare, very restricted in distribution, or declining throughout their range. • Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California. • Taxa closely associated with a habitat that is declining rapidly in California (e.g., wetlands, riparian, old growth forests).
SC	Species of Concern	Taxa for which sufficient information exists which warrant concern over that species' status and may warrant future listing as Threatened or Endangered. Protective status falls under State government Code 66472.

County of San Diego Sensitive Biological Resources

San Diego County Sensitive Plant List	A list of approximately 100 species considered sensitive by the County of San Diego. The list is separated into groups A, B, C and D as described below. Group A = rare, threatened or endangered in California or elsewhere. Group B = rare, threatened or endangered in California but more common elsewhere Group C = plants which may be rare, but more information is needed to determine true status Group D = plants of limited distribution and are uncommon but that are presently not rare or endangered

California Native Plant Society

List 1B	Plants rare, threatened or endangered in California or elsewhere.
List 2	Plants rare or endangered in California, but more common elsewhere.
List 3	Plants about which more information is needed.
List 4	Plants of limited distribution.

ATTACHMENT 5

FLORA AND FAUNA COVERED BY THE

MULTIPLE SPECIES CONSERVATION PROGRAM

Flora Covered by the Multiple Species Conservation Program

Scientific Name	Common Name	Status(1)
Acanthomintha ilicifolia	San Diego thornmint	PE/CE/1B
Agave shawii	Shaw's agave	----/----/2
Ambrosia pumila	San Diego ambrosia	----/----/1B
Aphanisma blitoides	aphanisma	----/----/3
Arctostaphylos glandulosa var. *crassifolia*	Del Mar manzanita	FE/----/1B
Arctostaphylos otayensis	Otay manzanita	----/----/1B
Astragalus tener var. *titi*	coastal dunes milk vetch	----/CE/1B
Baccharis vanessae	Encinitas coyote brush	FE/CE/1B
Berberis nevinii	Nevin's barberry	----/CE/1B
Brodiaea filifolia	thread-leafed brodiaea	PT/CE/1B
Brodiaiea orcuttii	Orcutt's brodiaea	----/----/1B
Calamagrostis koelerioide	dense reed grass	----/----/4
Calochortus dunnii	Dunn's mariposa lily	----/SR/---
Caulanthus stenocarpus	slender-pod jewel flower	----/SR/---
Ceanothus cyaneus	Lakeside ceanothus	----/----/1B
Ceanothus verrucosus	wart-stemmed ceanothus	----/----/2
Cordylanthus maritimus spp. *maritimus*	salt marsh bird's-beak	FE/CE/1B
Cordylanthus orcuttianus	Orcutt's bird's-beak	----/----/2
Corethrogyne filaginifolia var. *linifolia*	Del Mar sand aster	----/----/1B
Cupressus forbesii	Tecate cypress	----/----/1B
Dudleya blochmaniae ssp. *brevifolia*	short-leaved live-forever	----/CE/1B
Dudleya viscida	sticky dudleya	----/----/1B
Ericameria palmeri ssp. *palmeri*	Palmer's ericameria	----/----/2
Erysimum ammophilum	coast wallflower	----/----/4
Eryngium aristulatum ssp. *parishii*	San Diego button-celery	FE/CE/1B
Ferocactus viridescens	San Diego barrel cactus	----/----/2
Hemizonia conjugens	Otay tarplant	PE/CE/1B
Lepechinia cardiophylla	heart-leaved pitcher sage	----/----/1B

Flora Covered by the Multiple Species Conservation Program

Scientific Name	Common Name	Status[1]
Lepechinia ganderi	Gander's pitcher sage	----/----/1B
Lotus nuttallianus	Nuttall's lotus	----/----/1B
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	----/----/1B
Monardella linoides ssp. *viminea*	willowy monardella	PE/CE/1B
Muilla clevelandii	San Diego goldenstar	----/----/1B
Navarretia fossalis	prostrate navarretia	----/----/1B
Nolina interrata	Dehesa bear-grass	----/CE/1B
Opuntia parryi var. *serpentina*	snake cholla	----/----/1B
Orcuttia californica	California Orcutt grass	FE/CE/1B
Pogogyne abramsii	San Diego mesa mint	FE/CE/1B
Pogogyne nudiuscula	Otay Mesa mint	FE/CE/1B
Pinus torreyana ssp. *torreyana*	Torrey pine (native populations)	----/----/1B
Rosa minutifolia	small-leaved rose	----/CE/1B
Satureja chandleri	San Miguel savory	----/----/4
Senecio ganderi	Gander's butterweed	----/CR/1B
Solanum tenuilobotam	narrow-leaved nightshade	----/----/---
Tetracoccus dioicus	Parry's tetracoccus	----/----/1B

(1) Federal Listing/State Listing/CNPS Listing
Federal: Fe=Federally Endangered, FT=Federally Threatened, PT=Proposed Federally Threatened
State: CE=State Endangered, CT=State Threatened, SC=Species of Concern, SR=Rare Species
CNPS: See Attachment 1 for explanation of listings.

Fauna Covered by the Multiple Species Conservation Program

Scientific Name	Common Name	Status(1)
Panoquina errans	saltmarsh skipper	----/----
Mitoura thornei	Thorne's hairstreak	----/----
Branchinecta sandiegoensis	San Diego fairy shrimp	FE/----
Streptocephalus wootoni	Riverside fairy shrimp	FE/----
Bufo microscaphus californicus	arroyo southwestern toad	FE/SC
Rana aurora draytoni	California red-legged frog	FT/SC
Clemmys marmorata pallida	southwestern pond turtle	----/SC
Cnemidophorus hyperythrus beldingi	orange-throated whiptail	----/SC
Phrynosoma coronatum blainvillei	San Diego horned lizard	----/SC
Accipiter cooperii	Cooper's hawk	----/SC
Agelaius tricolor	tricolored blackbird	----/SC
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	----/SC
Aquila chrysaetos	golden eagle	----/SC
Branta canadensis moffitti	Canada goose	----/---
Buteo swainsoni	Swainson's hawk	----/CT
Buteo regalis	ferruginous hawk	----/SC
Campylorhynchus brunneicapillus couesi	coastal cactus wren	----/SC
Charadrius alexandrinus nivosus	western snowy plover	FT/SC
Circus cyaneus	northern harrier	----/SC
Egretta reuescens	reddish egret	----/---
Empidonax traillii extimus	southwestern willow flycatcher	FE/CE
Falco peregrinus anatum	American peregrine falcon	----/CT
Haliaeetus leucocephalus	bald eagle	FE/SE
Numenius americanus	long-billed curlew	----/SC
Passerculus sandwichensis	large-billed savannah sparrow	----/SC
Passerculus sandwichensis beldingi	Belding's savannah sparrow	----/CE
Pelicanus occidentalis californicus	California brown pelican	FE/CE
Plegadis chihi	white-faced ibis	----/SC

Fauna Covered by the Multiple Species Conservation Program

Scientific Name	Common Name	Status[1]
Polioptila californica californica	coastal California gnatcatcher	FT/SC
Rallus longirostris levipes	light-footed clapper rail	FE/SE
Sialia mexicana	western bluebird	----/---
Speotyto cunicularia hypogaea	western burrowing owl	----/SC
Sterna antillarum browni	California least tern	FE/SE
Sterna elegans	elegant tern	----/SC
Vireo bellii pusillus	least Bell's vireo	FE/SE
Taxidea taxus	American badger	----/SC
Felis concolor	mountain lion	----/---
Odocoileus hemionus fuliginata	southern mule deer	----/---

(1) Federal listing/State listing: Please see Attachment 1 for discussion.

Appendix G
Cultural Resources Reports
(Attachment Confidential)

SDSU
San Diego State University
South Coastal Information Center
College of Arts and Letters
4283 El Cajon Blvd., Suite 250
San Diego CA 92105
TEL: 619•594•5682

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

SITE FILES RECORD SEARCH

Source of Request:	Mooney & Assoc. (D. Caterino)
Date of Request:	May 7, 2002
Date Request Received:	May 7, 2002
Project Identification:	Valley View Estates Off-Site Sewer and Water Pipeline (Project #0204-668)
Search Radius:	Within designated boundaries

() The South Coastal Information Center historical files DO NOT show recorded prehistoric or historic site location(s) within the project boundaries, nor prehistoric site location(s) within the specified radius of the project area.

(X) The South Coastal Information Center historical files DO show recorded prehistoric or historic site location(s) within the project boundaries and/or prehistoric site location(s) within the specified radius of the project area.

Historical Site Location(s) check: self **Date:** May 8, 2002

Archaeological (CA-SDI) and Primary (P-37) site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Bibliographic Materials check: self **Date:** May 8, 2002

Project boundary maps have been reviewed. The bibliographic materials for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Map(s) check: self **Date:** May 8, 2002

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Historic Resources check: self **Date:** May 8, 2002

If there are historic resources within your project boundaries, information from the National Register of Historic Properties, California Register, California State Landmarks, California Points of Historic Interest, and other historic property lists, has been included. A map generated from Geofinder, a historic database and mapping program, has been included.

HOURS: 10 **COPIES:** 328 **RUSH:** No

This is not an invoice. Please pay from the monthly Billing Statement.

28 September 2001

Mooney & Associates
COMMUNITY PLANNING & ENVIRONMENTAL STUDIES

From: Richard L. Carrico
To: Sonja Itson

Subject: Supplemental Report of Intensive Archaeological Survey of Proposed County of San Diego Route Alignment for Extension of Rockwood Road, Escondido, San Diego County, California

SUMMARY

This letter report is provided as supplement to the technical documentation presented in the report entitled *Archaeological Survey and Evaluation of Valley View Estates Specific Planning Area, City of Escondido, California* (Carrico 2000) prepared by Mooney & Associates for the City of Escondido. The current effort was conducted to identify and document the presence of historical resources, in compliance with the California Environmental Quality Act of 1970 (CEQA), as amended (Public Resources Code §21000 et seq.).

This report presents the methods, findings and recommendations resulting from an intensive cultural resource survey of a proposed County of San Diego route alignment for extension of Rockwood Road, located in Escondido, California. This proposed alignment is located on acreage contained within a portion of Escondido's Specific Plan Area #4, known as Valley View. Results of this cultural resource survey were positive: two prehistoric cultural resources were identified within the proposed easement right-of-way for Rockwood Road. Recommendations for resource evaluation and further treatment and/or avoidance are provided below.

PROJECT DESCRIPTION

The project area is located east of Escondido, in an unincorporated area of the County of San Diego, California (Figure 1). This undertaking consists of proposed design, engineering, and construction of an approximate 5,750 ft. portion of a route extension for Rockwood Road, following the County of San Diego Circulation Element route alignment. This portion of the proposed Rockwood Road alignment is located on the USGS Escondido and San Pasqual 7.5 minute quadrangles, near the intersection of Sections 20, 21, 28 and 29, Township 12 south, Range 1 west (Figure 2). This route will extend Rockwood Road westward, with a bend to the south followed by a sweeping curve back toward the north, where it crosses the existing easement for Old Battlefield Road, and climbs to the northwest up a steep, west-facing incline. The width of the proposed right-of-way is 100

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ft. (50 ft. either side of centerline). Based entirely on the width and length of this portion of the right-of-way, the project area occupies an approximate 13.20 acres. However, owing to the presence of steep slopes along the majority of this portion of the proposed route, it is expected that a wider construction footprint may be required to provide for areas of cut and fill necessary to establish the roadbed--particularly along the prominent west-facing slope in this portion of the proposed route.

SETTING

The natural and cultural setting for the project region have been previously documented, and are incorporated here by reference (Carrico 2000:6-11). Within the proposed route extension, vegetation consists of one avocado grove, ruderal grasses, and native species to include buckwheat, black sage, sumac, bushmallow, and scrub oak. Along this portion of the Rockwood Road route alignment, elevations range from roughly 450 to 900 feet above mean sea level.

RESEARCH METHODS

The current study was undertaken to supplement the cultural resource inventory conducted for the Valley View Estates Specific Plan Area, as reported previously (Carrico 2000). Because the current study area is immediately adjacent to the south of the Valley View Estates project area, the current study relied on the literature and archival review conducted for the earlier research, and the results reported therein are incorporated here by reference (Carrico 2000:7-8). The current study approach was developed to build from the results and information collected in that earlier assessment, and to accomplish an intensive survey of the proposed Rockwood Road route alignment. This study has been conducted following guidance from the California Office of Historic Preservation for the completion of site record forms (OHP 1995), and for the preparation of archaeological resource management reports (OHP 1989).

Background research, intensive survey, and limited test evaluations conducted for the Valley View Estates project area revealed that the highlands north of San Pasqual Valley and immediately adjacent to the current project area contain a rich and varied inventory of historic and prehistoric archaeological resources (Carrico 2000:16-43). This inventory includes major deposits associated with large prehistoric occupation sites or major encampments, and other, associated resource procurement/processing/storage sites representing a broad network of food procurement, processing and storage activities. Historic resources reported in the Valley View Estates inventory include fenced pasturage, animal corrals and holding pens, foundations for out-buildings and other evidence of small, early rural residential occupations. Although not yet well understood, historic archaeological resources appear to represent early land use of the Valley View Estates region during the late 19th and early 20th Centuries.

For the current project area, one additional cultural resource study has been conducted since the time of the previous Valley View Estates report. An archaeological survey was conducted for an approximate 205 acres for residential development of the Brower Dairy property, located along Old Battlefield Road, and including the majority of the current Rockwood Road route extension (Smith 2000). This survey produced negative results; Smith reported no cultural resource discoveries within the Brower Dairy project area.

Intensive archaeological survey of the proposed Rockwood Road route extension was conducted 11 June 2001 by Josh Smallwood and David Catarino of Mooney & Associates. Prior to the field survey, the route extension was rendered onto engineered drawings (Scale 1:1200), and the alignment was marked out in the field by placement of tall lengths of polyvinyl chloride pipe set along the alignment's centerline at distances of 100 feet. Limitations to ground visibility and survey coverage included: areas of dense grass cover; one area with an existing residence and some acreage in agricultural production (avocado grove); and the steep slopes of the west-facing hillside that dominates the terrain underlying the majority of the proposed route extension. Most of the relatively level, lower-lying terrain in western one-third of the alignment has been intensively used for agricultural and limited residential uses. An abandoned dairy farm occupies much of the area in the acreage contained within the route extension's sweeping southern curve. Where present within the proposed alignment, these areas of low-lying terrain were closely examined for evidence of early historic use. Because of past survey results in the high terrain immediately adjacent to the north, the survey team was instructed to examine all outcropped rock surfaces along the alignment for evidence of prehistoric food processing and storage activity sites.

FINDINGS

Intensive archaeological survey of the proposed Rockwood Road route extension resulted in the discovery of two previously unrecorded archaeological resources. Site records, scaled drawings, and photographs have been completed to document each resource. The photographic record is provided herein as Appendix A. A confidential appendix including site records, location maps, and scaled site maps is provided under separate cover as Appendix B. These resources are briefly described below.

Site CA-SDI-16,089 (temporary no. Rockwood-1). This resource is comprised of a cluster of milling features and one possible female ritual feature recorded on a ridge line of outcropped granite rock. The site area is open/exposed, occupying an approximate 100 x 25m area along a northwest-southeast trending ridge line in very steep terrain. Elevation for this resource is estimated at 800 ft. (MSL). Bedrock milling elements were observed in five features atop the ridge line and include slicks, basins, and shallow mortars. The possible female ritual feature consists of a natural rock formation with a shape and form analogous to the female genitalia. Two metavolcanic flakes were also observed near the one of the bedrock milling features.

Site CA-SDI-16,090 (temporary no. Rockwood-2). This resource consists of a single stacked rock feature recorded at the top of an unnamed drainage, at an elevation estimated at 890-900 ft. (MSL). This stacked rock feature is four tiers high, standing approximately 65cm tall, and stretching a maximum distance of some 80cm, in an alignment bearing 126°, located on an approximate 30° slope among large outcropped bedrock boulders. The feature is built from small boulders and cobbles, ranging in size from 20-30cm in diameter.

DISCUSSION/INTERPRETATION

The inventory of two prehistoric archaeological resources located in the steep terrain within the current project area confirms the expectations of possible site discoveries in the highland areas of the Valley View Estates Specific Plan Area. The complex of milling features on outcropped bedrock (temporary site # Rockwood-1) and the discrete stacked rock feature (temporary site # Rockwood-2) are likely associated with the prehistoric activity patterns and cultural resource inventory reported previously (Carrico 2000).

MANAGEMENT CONSIDERATIONS

Following the requirements of the City of Escondido, this cultural resources study was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code §21000 et seq.). Results of intensive archaeological survey of the proposed Rockwood Road route extension are positive. Two prehistoric cultural resource sites have been identified, located, and recorded within the proposed project area. Based on the results of survey, further efforts are warranted to evaluate the cultural resource discoveries, and to assess the project's potential impacts.

Under the provisions of CEQA, as specified in *Guidelines for Implementation of the California Environmental Quality Act* (Title 14, Chapter 3, California Code of Regulations), an assessment of impacts to resources that meet the eligibility criteria of the California Register of Historical Resources (California Register) is required. This requirement applies to effects on archaeological sites, and when a project has potential to impact archaeological sites, a lead agency must first determine whether the site(s) are historical resources (CEQA Guidelines, §15064.5). The criteria for determining the significance of impacts to cultural resources are: (1) the significance of the resources themselves, and (2) the severity of the impact in diminishing or destroying a given cultural resource.

Following the CEQA Guidelines, impacts to historical resources are deemed to be significant if they:

> affect the quality or integrity of a listed, nominated, or potentially eligible for listing California Historic Landmark or property eligible for listing on the California Register

alter or destroy historic and prehistoric resources of value to the community, the region, the state, or the nation

affect the cultural or spiritual values of an identified cultural group, i.e., local Native Americans

substantially change or alter an important cultural landscape.

As currently designed, the Rockwood Road route extension will directly impact the cultural resource sites reported in this inventory. If redesign is possible, then avoidance may be achieved by realignment or redirection of the route extension's eastern terminus. If avoidance is not feasible, then further measures are warranted in order to evaluate the eligibility of these resources for inclusion in the California Register. If these resource sites are determined eligible, then measures will be required to limit project impacts to a level below that qualifying as significant.

REFERENCES

Carrico, Richard L.

2000 Archaeological Survey and Evaluation of Valley View Estates Specific Planning Area, City of Escondido, California. With contributions by L.B. Chaddock, J.E. Dietler, W.T. Eckhardt, K.R. Way, and C.J. Serr. November 2000. Submitted to City of Escondido.

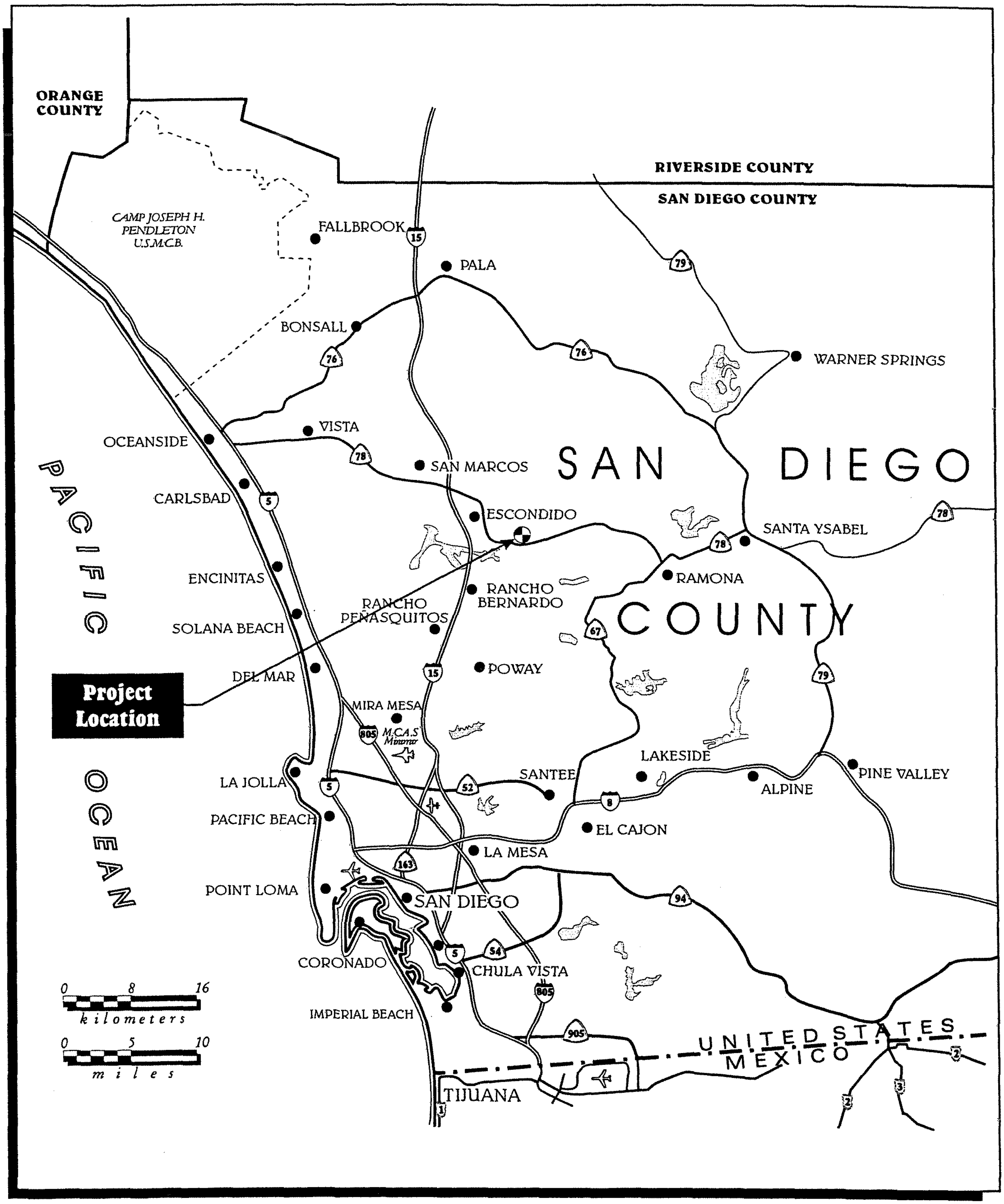
Office of Historic Preservation

1989 *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format.* California Office of Historic Preservation. December 1989. Sacramento.

1995 *Instructions for Recording Historic Resources.* California Office of Historic Preservation. March 1995. Sacramento.

Smith, Brian F.

2000 An Archaeological Survey for the Brower Dairy Project, Escondido, California. November 2000. Submitted to City of Escondido.

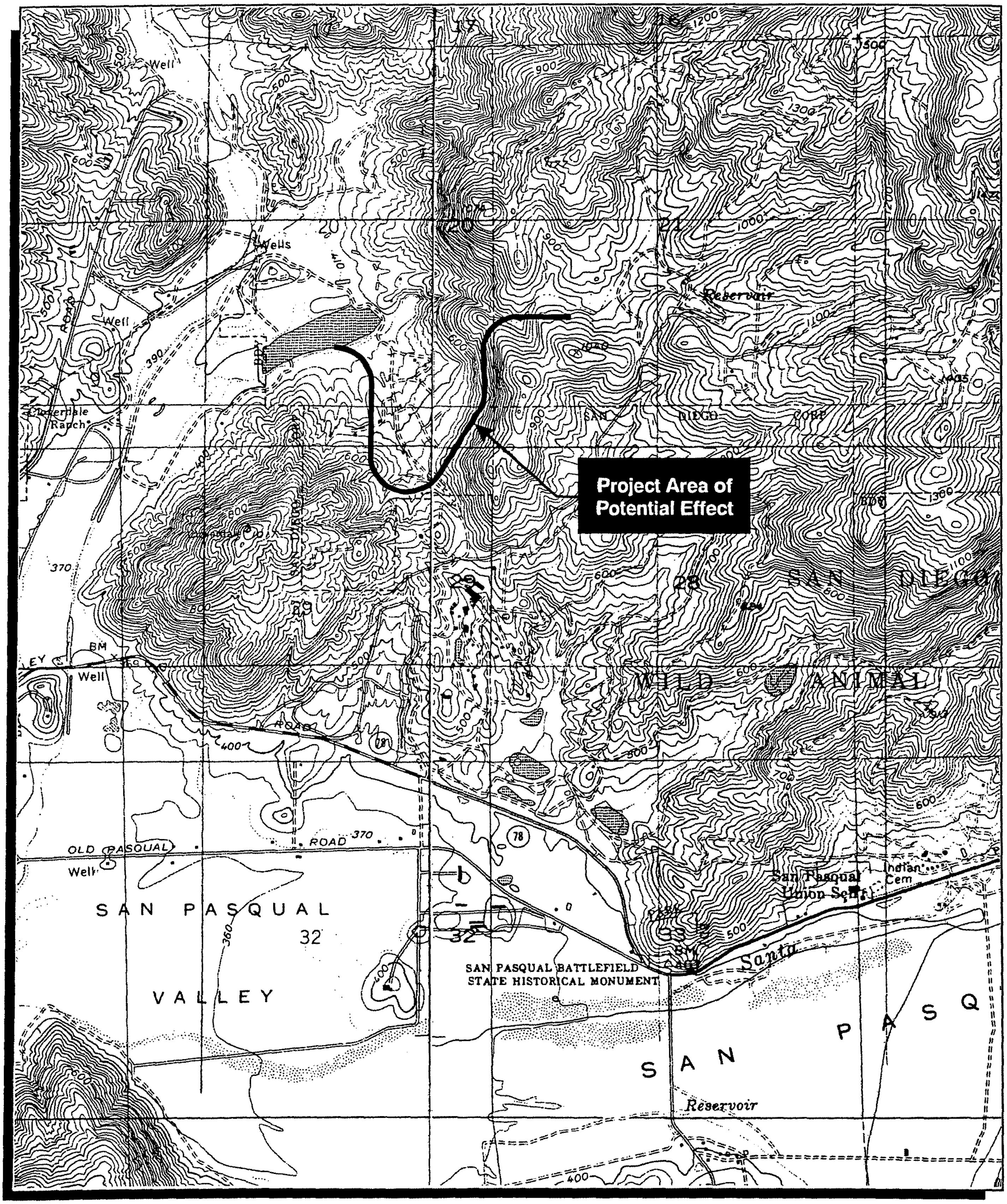


Mooney & Associates

0 5 10 miles

Regional Location

Figure 1



SOURCE: USGS 7.5' Quad Maps - Escondido and San Pasqual, CA

Mooney & Associates

N

0 1000' 2000'

Project Area of Potential Effect

figure 2

APPENDIX A
PHOTOGRAPHIC RECORD

PHOTOGRAPH RECORD

ROLL No. 20

Page 7 **of** 1
Project Name:Valley View 162 / Rockwood Road Alignment Survey
Camera Format: 35 mm SLR **Lens Size**:N/A **Accession Number**: *
Film Type and Speed: Color print, Kodak Gold 2000 **Year**: 2001
Photographer: Josh Smallwood
Negatives Kept at: Mooney & Associates, 9903-B Businesspark Ave., San Diego CA. 92131

Mo/Day	Frame	Site No.	Subject/Description	View
6/11	1	-----	Overview of valley from South end of valley at intersect of proposed Rockwood Rd. & existing Old Battlefield Rd.	N
6/11	2	-----	Same as frame 1.	NE
6/11	3	-----	Same as frames 1-2.	E
6/11	4	-----	Overview of valley from West hilltop along route of proposed Rockwood Rd.	E
6/11	5	-----	Same as frame 4.	NE
6/11	6	-----	View of route proposed for Rockwood Rd. at Engineering Station (Eng. Sta.) 73+00.	NNE
6/11	7	Vlly View.162 / Rockwood-1	Feature 1 (Feature 2 in background).	N
6/11	8	Vlly View.162 / Rockwood-1	Feature 2	N
6/11	9	Vlly View.162 / Rockwood-1	Feature 3 (Northern milling element; pink flagging marks 2 flakes).	N
6/11	10	Vlly View.162 / Rockwood-1	Feature 4 (Possible Yoni).	S
6/11	11	Vlly View.162 / Rockwood-1	Feature 5; Southern element	E
6/11	12	Vlly View.162 / Rockwood-1	Feature 6	S
6/11	13	Vlly View.162 / Rockwood-1	Overview (Clipboard at milling elements on Feature 6).	S
6/11	14	-----	Overview of route proposed for Rockwood Rd. across canyon drainage near northern reach of route (Note alignment stake).	NE
6/11	15	-----	Overview of route proposed for Rockwood Rd. near extreme northeast terminus (vicinity Eng. Sta. # ≈ 98+250); site Rockwood-1 on knoll top in background.	W
6/11	16	Vlly View.162 / Rockwood-2	Feature 1 (Stacked-rock feature).	N
6/11	17	Vlly View.162 / Rockwood-2	Feature 2 (Possible Yoni).	N

DRAFT

ARCHAEOLOGICAL SURVEY AND EVALUATION OF VALLEY VIEW ESTATES SPECIFIC PLANNING AREA CITY OF ESCONDIDO, CALIFORNIA

Prepared for:
City of Escondido
201 N. Broadway
Escondido, California 92025

Prepared by:
Mooney & Associates
9903 Businesspark Avenue, Suite B
San Diego, California 92131-1120

BFMA Contract No. 9712-162

Richard L. Carrico
Principal Investigator

with contributions by
Lisa B. Chaddock, John E. Dietler,
William T. Eckhardt, Stacey C. Jordan, K. Ross Way, and Carol J. Serr

November 2001

Acreage: 1,100

USGS Quadrangles: Escondido (1975), Rodriguez Mountain (1988),
San Pasqual (1988), Valley Center (1975), California 7.5

Key Words: Environmental assessment; background research, reconnaissance, recording, and limited testing; 35 archaeological and historical resources; historic homesteads, roads, and stacked rock walls; prehistoric seasonal camps, temporary camps, procurement sites, bedrock milling, cupules, and granary bases

TABLES OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

SUMMARY OF FINDINGS

This report presents the methods, findings and recommendations resulting from a cultural resources survey of the Valley View Estates Specific Plan. This effort was conducted to identify and evaluate the presence of historical resources, in compliance with the California Environmental Quality Act (CEQA).

Background research, literature and records review, in-field reconnaissance, and limited test evaluations have been accomplished in the current study. This examination resulted in the identification and recordation of 35 historic and prehistoric sites, and one isolated find. Test evaluation procedures were conducted on five prehistoric cultural resource sites. Historic sites within Valley View Specific Plan are predominantly mud and rock foundations stacked rock walls, trash scatters, and roadways. Prehistoric sites within the Specific Plan include seasonal occupation sites, temporary camps, and procurement and food storage sites. Sites range from excellent condition to severely damaged, some with evidence of plundering left behind by artifact hunters. All cultural resources were assessed and analyzed for basic value, i.e. integrity, uniqueness, Native American concern, and research potential, and Native American concerns.

As a result of these assessments and site evaluations, recommended determinations of site significance are provided. Within the project acreage, six resource sites are evaluated as high-value (CA-SDI-14,770, CA-SDI-15,072, CA-SDI-15,077, CA-SDI-15,081, CA-SDI-15,085, and P-37-017044), and 12 resource sites (CA-SDI-14,772, CA-SDI-14,773, CA-SDI-14,776, CA-SDI-14,777, CA-SDI-14,779, CA-SDI-14,780, CA-SDI-15,075, CA-SDI-15,084, CA-SDI-15,088, P-37-017047, P-37-017048, and P-37-017051) are evaluated as medium-value. Some or all of these resources may be eligible for listing in the California Register of Historical Resources. Seventeen sites (CA-SDI-14,768, CA-SDI-14,769, CA-SDI-14,771, CA-SDI-14,774, CA-SDI-14,775, CA-SDI-14,778, CA-SDI-14,943, CA-SDI-15,201, CA-SDI-15,074, CA-SDI-15,078, CA-SDI-15,080, CA-SDI-15,082, CA-SDI-15,089, CA-SDI-15,091, P-37-016276, P-37-017031, P-37-017032, and P-37-017034) and one isolate (P-37-016270) are evaluated as low-value. These resources may not be eligible for listing in the California Register of Historical Resources. With exception of the single isolated find (P-37-016270), the cultural resource inventory of the Valley View Estates Specific Plan warrants further treatment and consideration (CEQA §15064.5).

I. UNDERTAKING INFORMATION/INTRODUCTION

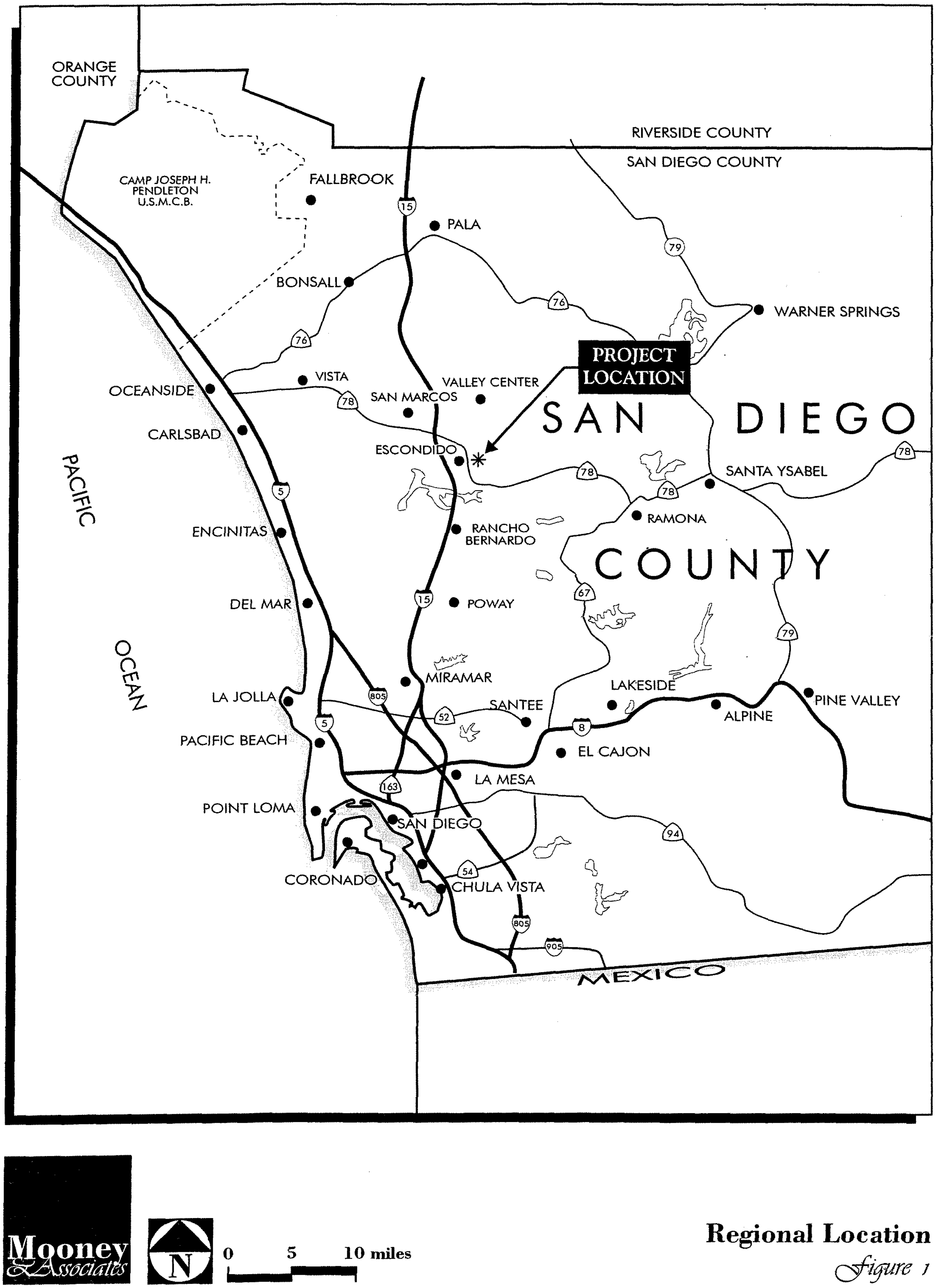
1.1. Regulatory Background

Legal requirements for the identification, evaluation and treatment of archaeological and historical resources in California is embodied in the California Environmental Quality Act (CEQA). In recent amendments, determining the significance of impacts to archaeological and historical resources is linked directly to the level of significance or importance of the resources themselves, as defined by their listing or potential eligibility for listing in either federal, state, or local registers (CEQA §15064.5 (a)). A project may have a significant effect on the environment if it has potential to cause a substantial adverse change in the significance of an historical resource (Section 15064.5(b)). CEQA applies to effects on historic resources and archaeological sites as well, and when a project will impact archaeological sites, lead agencies are responsible to first determine whether a site is an historical resource, as defined in subsection (a); if so, further treatment and consideration are warranted. If an archaeological resource is neither unique nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment. For those sites that do not satisfy the historical resource threshold, they need not be considered further in the CEQA process (§15064.5(c)(4)).

1.2. Background

While the property is currently within the County of San Diego, the City of Escondido (City) is serving as lead agency for development of the Valley View Estates Specific Plan and Tentative Map area in San Pasqual Valley (Figure 1). In the City's Specific Plan this property has been preplanned as part of Specific Plan number 4 (SP#4). The project includes the City's annexation of the property.

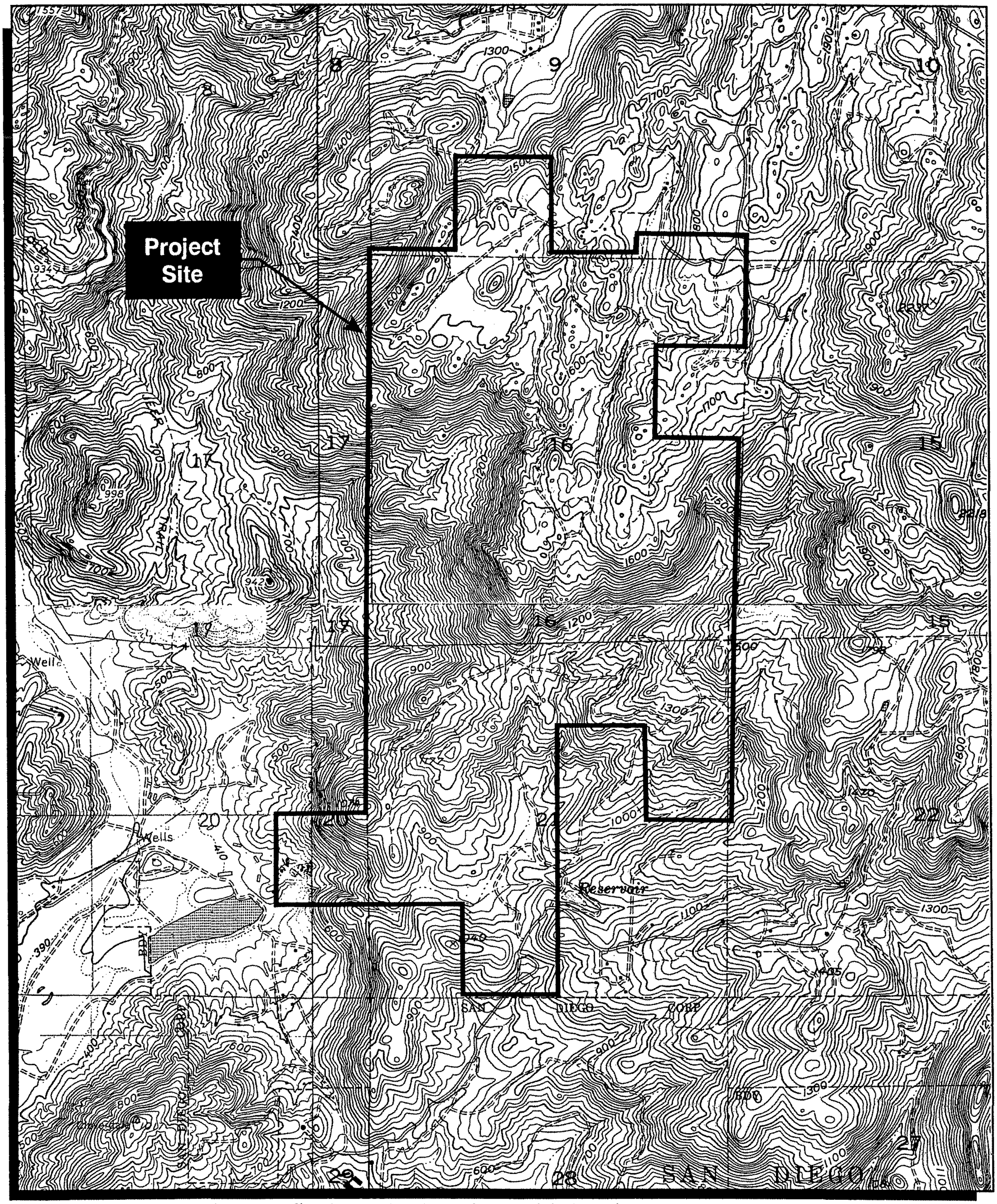
The Valley View project site is located in Township 12 South, Range 2 East, San Bernardino Meridian in the unincorporated area of the County of San Diego on portions of the Escondido, Rodriguez Mountain, San Pasqual, and Valley Center 7.5 minute quadrangles (Figure 2). The property is located north of and adjacent to the San Diego Wild Animal Park, and extends north covering more than 1,100 acres. It is also immediately east of the Rancho San Pasqual housing development.



Mooney & Associates

Regional Location

figure 1



SOURCE: USGS 7.5' Quad Maps (Valley Center, San Pasqual, Escondido & Rodriguez Mountain)

Mooney & Associates

N

0 1000' 2000'

Vicinity Map

Figure 2

1.3. Project Description

The proposed Valley View Estates Specific Plan includes 450 high-end homes, a golf course, a hotel/resort, and 280 time-share condominiums. The plan provides for open space easements and trails for equestrian and hiking uses. The majority of open space areas are oak woodlands and streams, accounting for 331 acres of open space.

II. SETTING

2.1. Natural Setting

The project area is situated along the northwestern margin of the San Pasqual Valley and the area east of Lake Hodges. The area falls into the foothills transition zone between the coastal plain and the mountains of the interior. Average January minimum temperature is 38° F while maximum temperature in July averages 90° F. Rainfall averages 15 inches per year. The topography on-site consists of three blue-line streams crossing the property in a northeast-southwest direction and five ridge lines (see Figure 2). Elevation ranges from approximately 700 feet above mean sea level (MSL) in the southern portion of the property to about 1,800 feet MSL in the northeastern corner of the site. Soils found on the site are primarily Cieneba Fallbrook rocky, sandy loams with 30-65% eroded slopes and Cieneba very rocky, coarse, sandy loams with 30-75% slopes (Bowman 1973). There are also smaller areas with the following soils: Vista coarse, sandy loams with 15-30% slopes; Vista rocky, coarse, sandy loams with 5-15% slopes; Fallbrook rocky, sandy loam with 9-30% eroded slopes; Vista rocky, coarse, sandy loams with 15-30% slopes; and Vista coarse, sandy loam with 9-15% slopes (Bowman 1973). The underlying bedrock ranges from Jurassic/Triassic metavolcanics, Mesozoic granodiorites, adamellites and basic intrusive rocks, to Quaternary alluviums. Undisturbed open space areas typically support a mixed chaparral on the northern portion and Diegan coastal sage scrub community on the southern portion of the property, with the intermittent streams within the watershed supporting coast live oak-, Engelmann oak- and oak-riparian woodlands and willow riparian scrub. Portions of the property are now fallow farming areas, and are covered in non-native grasses and plants including bottlebrush, palms, and vinca.

Historically, portions of these parcels have been used for grazing cattle and, in the lower elevations, orchards and grape vineyards were maintained. Current land uses include abandoned undeveloped hillsides and bottomlands, and an abandoned pasturage and farm complex.

2.2. Cultural Setting

Prehistory. Beginning with Rogers (1939), a variety of regional chronologies have been proposed for southern coastal California. Indeed, a proliferation of named "cultures," "complexes," "traditions," "stages," and "periods" characterize previous research (Meighan 1954; Moriarty 1966; Rogers 1945; True 1958, 1966, 1970; Wallace 1955, 1978; Warren 1968). Despite this apparent terminological confusion, there is general agreement on the major temporal units for the region. The prehistory of San Diego County can be divided into three temporal periods: Paleoindian, Archaic, and Late Prehistoric (Bull 1983; Ezell 1987; Moriarty 1966; Warren 1987).

The antiquity of human occupation in the New World has been the subject of considerable hemisphere-wide debate over the last few decades, and a number of sites have been suggested to represent very early occupation of the Americas. The currently accepted model is that humans first entered the western hemisphere between 12,000 and 15,000 before present (B.P.). While there is no firm evidence of human occupation in the southern coastal California prior to 12,000 B.P., the possibility has intrigued a number of investigators, and dates of 48,000 B.P. and 23,000 B.P. have been reported (Bada et al. 1974; Carter 1980; Rogers 1966). The technique employed to date these sites (amino acid racemization), however, has been largely discredited by recent Accelerator Mass Spectrometry (AMS) radiocarbon dating of early human remains along the California coast (Taylor et al. 1985). Despite such intensive interest and a long history of research into the early occupation of North America, no firm, widely accepted evidence dating prior to 15,000 B.P. has emerged. This state of knowledge stands in stark contrast to Australia where 30 years of less intensive research has yielded an extensive body of evidence for occupation dating back to pre-40,000 B.P. For North America, there is no strong evidence that objects recovered from alleged very early sites were manufactured by humans <u>and</u> that these objects indeed date prior to 15,000 B.P. (or are directly associated with Pleistocene deposits) (e.g., Haynes 1969; Jelinek 1992).

The Paleoindian period, dating from 12,000 to 8,000 B.P., is typified by artifact assemblages termed the San Dieguito complex (Moratto 1984; Warren et al. 1993). Malcolm Rogers (1966), who first described the San Dieguito complex, felt it extended from Oregon to mid-Baja California. The San Dieguito complex is considered to represent generalized hunter-gatherers, and is primarily characterized by flaked lithic tools such as scrapers, scraper planes, choppers, and large projectile points (Davis et al. 1969; Warren 1987). Sites are documented in inland and coastal areas of San Diego County during a climatic period of cooler and moister conditions than presently exist. Pinion-juniper forests and riparian communities along watercourses and lake shores in the deserts were more widespread, and the hunting of deer and smaller game is considered central to the San Dieguito economy, although undoubtedly many plant foods were also gathered. The absence of a milling technology was, until recently, seen as the major differentiation between the San Dieguito and later Archaic period complexes.

The Archaic period (also referred to as the Millingstone horizon or La Jolla complex) persisted at least 7,000 years ago, possibly beginning as early as 9,000 B.P. Archaic shell middens are well documented all along the northern San Diego County coast (Moratto 1984:146-151). Traditionally, the Archaic adaptation is considered to have differed from the previous San Dieguito adaptation by being more focused on gathering activities that emphasized marine mollusks, fish, and plant resources, along with small to large mammals. Occupation was heaviest along the coast and major drainage systems extending inland. The coastal Archaic sites (often termed the La Jolla complex) are characterized by shell middens, cobble tools, basin metates, manos, discoidals, and flexed burials. Early Archaic occupations have burials dispersed within the occupation areas, while later occupations have separate cemetery areas.

In the inland area of northern San Diego County, True identified a number of Archaic period sites with artifact assemblages distinct from coastal Archaic sites (True 1958, 1980; True and Beemer 1982). These sites, termed the Pauma complex, were typically on small saddles and hills overlooking drainages, and were characterized by basin and slab metates, manos, scraper planes, a small number of Pinto and Elko series points, and debitage. Recently, the Pauma complex has been characterized as an inland counterpart of the coastal La Jolla complex (Cardenas and Van Wormer 1984; Gallegos 1987; True and Beemer 1982). Given the limited distance between these two different environmental contexts (coastal and inland) and possible contemporaneity in occupation, these sites may represent seasonal manifestations of a single Archaic settlement system. Similar exploitation of different environmental zones is documented during the Archaic in the Southwest (Bayham et al. 1986; Sayles 1983; Sayles and Antevs 1941).

Recently, the definition of the San Dieguito complex (consisting solely of flaked lithic tools and lacking milling technology) has been questioned. San Dieguito and La Jolla sites have been hypothesized as reflecting functional differences within one cultural complex, rather than temporally distinct adaptive strategies (Bull 1983; Gallegos 1987). Gallegos (1987) has proposed that the San Dieguito, La Jolla, and Pauma complexes are manifestations of the same culture. The differing site types can be "explained by site location, resources exploited, influence, innovation and adaptation to a rich coastal region over a long period of time" (Gallegos 1987:30). This hypothesis, however, has been strongly challenged by Warren et al. (1993).

The subsequent Late Prehistoric period in San Diego County differs from the Archaic period in the occurrence of small, pressure flaked projectile points, the replacement of flexed inhumations with cremations, the introduction of ceramics, and an emphasis on inland plant food collection, processing, and storage, especially of acorns. Around 2,000 B.P., Yuman-speaking people from the eastern Colorado River region may have begun migrating into southern California, although few incipient Late Prehistoric sites dating to this period have been found. An intrusion of Shoshonean-speakers occurred in the northern part of San Diego County after 1,500 B.P. Inland semi-sedentary villages were established along major water courses, and mountain areas were seasonally occupied to exploit acorns and pinon nuts, where settlements are associated with milling stations at bedrock outcrops.

The Late Prehistoric period begins between 1,500 and 1,000 years B.P., in western San Diego County (Moriarty 1966; Warren 1968). Terms used to designate the Late Prehistoric assemblages in this area include the Yuman Complex, the Cuyamaca Complex, the Hakataya Tradition, and the Patayan Tradition (May 1978; Rogers 1945; Schroeder 1979; True 1970; Waters 1982). Late Prehistoric sites are characterized by ceramics; small Cottonwood Triangular, Desert Side-notched, and Dos Cabezas Serrated projectile points; obsidian from the Obsidian Butte source in Imperial County; human cremations; and the mortar and pestle. These sites are often attributed to the ethnographic Kumeyaay.

Ethnohistory. Early ethnographers employed the term Diegueño when referring to the Yuman-speaking population inhabiting portions of southern Alta California and northern Baja California during the late prehistoric and early historic eras. The term results from the coerced affiliation of a large part of this cultural group with the Mission San Diego de Alcalá established in 1769. Throughout the twentieth century various anthropologists, using generalized ethnographically documented territories and geographical variations, employed various subdivisions when discussing these people. This situation is complicated by the fact that while the Diegueño recognized their collective similarity in speech and custom as opposed to surrounding societies, they had no all-inclusive name they recognized for themselves as a single people. In this discussion, the term "Kumeyaay" will be used to refer to the groups that existed in the vicinity of the project.

There seems to have been considerable variability in the level of social organization and settlement variability. The Kumeyaay were organized by patrilineal, patrilocal lineages that claimed prescribed territories, but did not own the resources except for some minor plants and eagle aeries (Luomala 1976; Spier 1923). Some of the lineages occupied procurement ranges that required considerable residential mobility, such as those in the deserts (Hicks 1963). In the mountains, some of the larger groups occupied a few large residential bases that would be occupied biannually, such as those occupied in Cuyamaca in the summer and fall, and in Guatay or Descanso during the rest of the year (Almstedt 1982; Rensch 1975). According to Spier (1923) many Eastern Kumeyaay spent the spring and autumn in larger residential bases in the upland procurement ranges, and wintered in mixed groups in residential bases along the eastern foothills on the edge of the desert (i.e., Jacumba and Mountain Springs). This variability in Kumeyaay settlement mobility and organization reflects the great range of environments found throughout their territory.

Acorns were the most important single food source used by the Kumeyaay. Their villages were usually located near water necessary for leaching acorn meal. Other storable resources such as mesquite or agave were equally valuable to groups inhabiting desert areas, at least during certain seasons (Hicks 1963; Shackley 1984). Seeds from grasses, manzanita, sage, sunflowers, lemonade berry, chia, and other plants were also used along with various wild greens and fruits. Deer, small game, and birds were hunted, and fish and marine foods were eaten. Houses were arranged in the village without apparent pattern. The houses in primary villages were conical structures covered with tule bundles, having excavated floors and central hearths. Houses constructed at the mountain camps generally lacked any excavation, probably due to the summer occupation. Other structures included steakhouses, ceremonial enclosures, ramadas, and acorn granaries. The material culture included ceramic cooking and storage vessels, basketry, flaked lithic and ground stone tools, arrow shaft straighteners, and stone, bone, and shell ornaments.

Hunting implements consisted of the bow and arrow, curved throwing sticks, nets, and snares. Shell and bone hooks as well as nets were used for fishing. Lithic resources of quartz and metavolcanics were commonly available throughout much of the Kumeyaay territory. Other materials, such as obsidian, chert, chalcedony, and steatite, occur in more localized areas and were acquired through direct procurement or exchange. Projectile points included the Cottonwood Series points, as well as Desert Side-notched points, both commonly produced.

Kumeyaay culture and society remained stable until the advent of missionization and displacement by Hispanic populations during the eighteenth century. The effects of missionization, along with the introduction of European diseases, greatly reduced the native population of southern California. By the early 1800s California was under Mexican rule. The establishment of ranchos under the Mexican land grant program further disrupted the way of life of the native inhabitants.

History. San Diego's historical period technically begins in 1542 when the first Europeans, commanded by Juan Rodriguez Cabrillo, explored what he called San Miguel Bay. Cabrillo's voyage was retraced by Sebastian Vizcaino in 1602. No direct archaeological evidence of either explorer's visit has yet been discovered nor did they have any apparent long-term effect on Native American populations encountered (e.g., oral histories or myths relating to the Europeans, evidence of depopulation due to disease, changes in the material culture, etc.). The major lasting effect of this early explorer period was Vizcaino renaming the bay San Diego de Alcalá because he had entered the bay on that Saints' feast day (Pryde 1976).

For practical purposes, the historical period can be considered to begin on July 16, 1769 with the founding of the joint mission and Royal Presidio. Subsequently, the Mission re-established at its current location in 1774. Although the Royal Presidio was a fortified site, its location precluded it from effectively defending the bay from foreign intrusion. Instead, it was designed to protect the settlers from land attacks, principally from Native Americans. For the defense of the bay from maritime intrusions, Fort San Joaquin, better known as Fort Guijarros, was constructed on the eastern side of the Point Loma peninsula at Ballast Point. This cannon battery was operational from 1796 through the 1830s, encompassing most of the Spanish period (1769-1822) as well as most of the Mexican period (1822-1848) of San Diego's history.

During the Mexican period the Native American populations came under increasing pressure as numerous ranchos were established under the land grant system. The Brammer leasehold falls within the San Bernardo (Snook) Rancho which, like the other ranchos, was used primarily for cattle, horse, and sheep grazing. The northern parcels lie along the eastern margin of the Rincon del Diablo land grant.

During the Mexican-American War, one of the most important engagements to occur in California took place in the San Pasqual Valley in December of 1846. Although the American forces under Brigadier General Kearney were severely mauled by the Californianos militia, California was transferred to the United States under the Treaty of Guadalupe Hidalgo in 1848 and gained statehood in 1850. San Diego changed very little over the next two decades, continuing the sparsely dispersed agrarian pattern of the Mexican period. Subsequently, the San Diego region underwent two major land booms.

The first land boom began in 1869 and was initiated by the establishment of Alonzo Horton's Addition (New Town), coupled with the founding of National City in the South Bay area by the Kimball brothers. Population increased from 459 Anglo-American inhabitants in 1860 to roughly 2,300 in 1870. The shift of political and economic power from Old Town to New Town was formalized on April 3, 1871 with the transfer of the county courts (Schaefer and Van Wormer 1993:VI 9-10). A second, larger boom was propelled by the completion of the Santa Fe railroad line to National City in November 1885 and lasted until the spring of 1888. During this span numerous townsites were laid out throughout San Diego County including the north county communities of Escondido, Fallbrook, Oceanside, and Encinitas (Dumke 1944). Pioneer families established farms, orchards, and dairies supported by irrigation systems throughout the San Pasqual Valley at this time (Wright 1974); the surplus was then transported to the railroad station at Escondido for shipment to San Diego. The area retained its rural agrarian atmosphere over the ensuing decades and the establishment of an agricultural preserve by the City of San Diego is specifically intended to prevent urban encroachment.

III. RESEARCH DESIGN AND METHODS

3.1 Research Design

A three stage research approach was used to conduct this investigation. The first stage consisted of background research, including a site record and literature search at the appropriate data repositories to identify previous cultural resources research within and surrounding the Valley View Estates project area, and a review of a previous letter report concerning the project area generated by Brian Smith (1992). The second stage involved a reconnaissance of the property to relocate and record the condition of cultural resources previously discovered by Smith. The third stage focused on archaeological site testing and evaluation of five archaeological resources identified through research and reconnaissance as potentially significant resources with high likelihood to pose constraints to development areas. The methods employed at each stage are described in the paragraphs below.

3.2 Background Research

A literature and site records search was requested from the South Coastal Information Center (SCIC) of the California Historical Resources Information System, San Diego State University, and the San Diego Museum of Man (SDMM). Based on discussions with City of Escondido and the project proponent, there was evidence of previous archaeological survey of the project area by Brian F. Smith, in the form of a brief letter report with descriptive table and project location map (Smith 1992). The record searches conducted with SCIC and SDMM confirmed that: (1) the project acreage had not been surveyed prior to Smith (1992); and (2) there were no site record files, maps, or reports documenting the sites discovered by Smith within the Valley View Estates project area.

Based on these findings, Smith's (1992) letter report, descriptive table, and location map were used to generate a set of preliminary record forms following the conventions and procedures of the California Historical Resources Information System, established by California Department of Parks and Recreation, Office of Historic Preservation. These data were then taken into the field and used to direct the approach and coverage of archaeological reconnaissance described below.

3.3 Archaeological Reconnaissance

Using the preliminary forms and site locations generated by the review of Smith's letter report, reconnaissance was initiated of the acreage where archaeological resources had been mapped (Smith 1992). In most instances, reconnaissance resulted in re-identifying the resources mapped by Smith;

some of these relocated sites were consolidated according to current convention when their locations were separated by fewer than 50 meters. In other instances, the data was insufficient to detect accurate locations for Smith's prior observations, and intensive reconnaissance of target areas failed to re-identify Smith's findings. Also during this process, several additional resources not described or mapped by Smith (1992) were newly discovered.

For all resources examined during this archaeological reconnaissance, site locations were plotted on appropriate USGS quadrangles, using topographic and terrain features, and compass bearing triangulations. Site record documentation was revised and/or initiated. A photographic record was established to provide images of the project area environment, and of the archaeological resources recorded during this phase of the investigation.

Upon completion of this reconnaissance, the archaeological record forms were completed and submitted to SCIC for inclusion in the California Historical Resources Information System. During the course of this reconnaissance, no surface collections or subsurface examinations were conducted. All archaeological materials were observed, recorded, and left in place.

3.4 Archaeological Site Testing and Evaluation

Based on evaluation of survey-level information, the inventory of cultural resources within the Valley View Estates Specific Plan project area was rated in terms of site significance, using variables of site integrity, uniqueness, potential for Native American concern, and scientific research potential. Using these criteria, nine of the highest-value cultural resources were selected for test evaluation, as presented in Table 1.

Standard archaeological methods were used to more fully examine the breadth, depth, and extent of each of these five resources. For each site, datum control points were first established to guide site mapping and to provide locational positions for site features, landforms and archaeological test locations. Maps were developed for each resource, using compass bearings from each datum control point and metric tapes to establish distances, with the resultant values and relationships generated into scaled drawings. Archaeological features were then addressed and examined thoroughly, to include recording of their conditions, positions, and contents. Photography and scaled drawings were used to accurately record each feature. Resource processing elements present in sites' bedrock milling features were recorded in terms of their relative positions, size and depth, and type. For archaeological features other than bedrock milling, similar techniques were applied to record and document each feature.

Table 1. Archaeological Test Evaluations at Valley View Estates

Record # (CA-SDI-)	Temp (VV #)	Site Description	Test Plan	Dates of Fieldwork
15,072	3	Settlement/Temporary Encampment	Mapping, feature records, surface collection, subsurface testing	5-8 June 2000
15,077	10	Procurement/Food Storage	Mapping, feature records, surface collection, subsurface testing	8-12 June 2000
14,769	9	Procurement/Food Storage	Mapping, feature records, subsurface testing	13-14 June 2000
15,081	15	Settlement/Temporary Encampment	Mapping, feature records, surface collection, subsurface testing	19-20 June & 5 July 2000
14,770	14	Settlement/Temporary Encampment	Mapping, feature records, surface collection, subsurface testing	28 June-1 July 2000
15,085	19	Procurement/Food Storage	Mapping, feature records, surface collection	24 Sept 2001
P-37-017032	2	Historic Settlement	Mapping, feature records, subsurface testing	24 Sept-1 Oct 2001
15,074	6	Historic Settlement	Mapping, feature records, surface collection, subsurface testing	26 Sept-1 Oct 2001
P-37-017044	17	Historic Settlement	Mapping, feature records, subsurface testing	28 Sept-3 Oct 2001

Each site was further examined to identify site areas exhibiting likely midden deposit, and/or areas of visible surface artifact scatter. These areas were added to each site map, and, when present, limited collections of diagnostic artifacts were recovered.

Based on the mapping, feature, and surface examinations at each site, some level of subsurface testing was applied to identify sites' potential subsurface deposit. In most cases, this effort included use of standard techniques for shovel test pits (STPs) and 1 x 1 meter test units (TUs). Non-standard test excavation technique was applied to the excavation at site CA-SDI-15,077, owing to size and location of the small deposit observed in one very tight crevice that was considered during survey to be a possible cultural deposit.

After completion of all site test methods for the five sites selected for test evaluation, the Primary Datums and all secondary control points used in the field tests were mapped using Global Positioning System (GPS) technology. Data collected using GPS were later post-processed and the locational values transferred to files used in adding these cultural data to the layering included in the project development maps for Valley View Estates Specific Plan.

3.5 Archaeological Laboratory Techniques

The procedures used in the initial processing of recovered material included the cleaning (as appropriate), sorting, and cataloging of all items. All materials were individually examined and cataloged according to class, type, and material. All recovered items were coded, counted, weighed on a digital scale and labeled as appropriate. The coded data were then entered into an Excel catalog file that served as the master catalog (Appendix A) from which various analyses, using the Statistical Package for Social Science (SPSS) version 8.0, could be performed.

The cultural material from prehistoric sites was sorted for preliminary cataloging, by Laboratory Director Carol Serr, into eight categories that include six classes of prehistoric artifacts (flaked stone, ground stone, ceramics, modified shell, modified bone, and miscellaneous items), a modern item class, and three classes of ecofacts (bone, shell, and charcoal samples). The subclasses used to classify the recovered prehistoric flaked stone items include debitage, cores, utilized flake, modified flakes, and unifacially flaked and bifacially flaked items . Debitage, consisting of flakes, flake fragments, and angular debris, was sorted by reduction type, presence or absence of cortex, cortical type, patination variability, and material type. The cores were separated by type based on reduction method. The utilized flake was designated by use-wear type and the modified flakes by reduction method. The bifacially flaked items were primarily subdivided by stage of production as well as material. Ground stone artifacts were divided into milling equipment and non-utilitarian stone shaped by intentional grinding. The milling equipment were further subdivided into manos, pestles, and metates and examined for attributes such as pecking, shaping, and thermal alteration. The ceramic pieces were separated into vessel sherds and other items. Ceramic vessel sherds were sorted into vessel rim or body fragments and material type. The other ceramic items were identified as to specific item as was modified shell and bone.

The ecofacts were bulk cataloged as either unmodified bone or shell, and wood charcoal residue. Animal type was noted only on a preliminary basis for the bone assemblage, and shell species was identified as best as possible given the weathered nature of the small fragments.

Historic artifacts were carefully cleaned, and divided into primary material classes of glass, ceramic, metal and fauna. Glass and metal assemblages were also divided into functional subclasses, and ceramics were further classified according to both function and ware. Historic artifacts that did not fall into one of these material classes were recorded as "other," with a specific subclass for their material and function. Faunal remains of domesticated mammals were identified according to skeletal part and animal size, with non-domesticates identified according to probable species. Shell was identified to genus and species when possible.

Ceramics and glass were given particular attention in the laboratory, due to their diagnostic potential. Glass and ceramic fragments were refitted when possible, enabling staff archaeologists to construct minimum vessel counts, identify maker's marks, and recognize vessel forms.

IV. REPORT OF FINDINGS

Cultural resources have been identified within the Valley View Estates Specific Plan. These resources were identified through a combination of background research, archaeological reconnaissance, and test evaluation procedures. Findings are reported below.

4.1 Background Research

The SCIC and Museum of Man were requested to search their respective databases to provide information for archaeological records and cultural resource surveys previously reported within a one mile radius of the Valley View Estates Specific Plan project area. Twenty-two sites were reported to have been previously recorded within one mile of the Valley View Estates Specific Plan property, but none are located within the project area itself. Table 2 summarizes the results of previous archaeological studies within one mile of the project property not including the survey performed by Smith (1992).

Table 2. Archaeological Sites Recorded within One Mile of Valley View Estates

Site # CA-SDI-	Site Type	Direction†
7303-7305	Granary bases	NE
8882, 8884	Bedrock milling	W
8883	Artifact scatter	W
9887-9891	Bedrock milling, granaries, sherds	N
9235	Bedrock milling	E
14,467, 14,469	Artifact scatters	SW
14,468, 14,475	Bedrock milling & artifacts	SW
14,470-14,475	Bedrock milling	SW

† Direction from Valley View Estates project boundary

The City of Escondido and the project proponent provided evidence of prior archaeological survey within the Valley View Estates Specific Plan project area. That information consisted of a brief letter report, table of sites, and site location map, prepared by Brian F. Smith and Associates (Smith 1992). Although Smith's data was not recorded with either SCIC or SDMM, by the evidence in the letter report, Smith had identified a total of 66 cultural sites within SPA #4 (Smith 1992:1-5 and Figure 1). Fifty-one of these sites were within and 15 sites outside the boundaries of the Valley View Estates Specific Plan.

4.2 Archaeological Reconnaissance

Using the preliminary forms and site locations generated from the review of Smith's letter report, archaeological reconnaissance was initiated for the acreage where archaeological resources had previously been mapped (Smith 1992:Figure 1). As a result, the majority of resources mapped by Smith were re-identified. In some cases it was necessary to redistribute the record findings of smith int single or multiple records when dictated by current site record recording requirements. Additional elements observed in this examination but not noted by Smith (1992) were added to the archaeological record detail. In several instances, the data was insufficient to detect accurate relocations, and intensive resurvey of target areas failed to re-identify Smith's findings. The resultant inventory of cultural resources for the Valley View Estates Specific Plan project includes 35 recorded cultural resource sites and a single isolated artifact. These records are presented as Appendix B and Figure 3 provides the site locations. This confidential material has been bound as a separate volume that is not for public review. Table 3 provides permanent record numbers-to-temporary numbers concordance, and summary descriptions for the complete inventory.

4.2.1 Resource Site Descriptions

P-37-017031

This resource consists of the remains of a historic homestead that include a cement-lined well, two small structures, chain-link fenced enclosure with a water trough, and trash piles. One structure has cement wall foundations and walls, now collapsed, made of bimetal cans stacked in columns filled with cement. The other structure, approximately 100 m north of the first, has rounded cobble and cement wall foundations, and walls and roof made of steel poles and corrugated steel and plastic, chain-link fence, and aluminum siding. This appears far too flimsy for human habitation, and the first structure appears too small (about 6 feet square). Based on the cans incorporated into the southern structure, the trash scatter and the condition of the northern structure, this site dates to the late 1950's or later. A local resident, named John Aldrich, referred to this property as "the big T."

P-37-017032

This is a building foundation made of local cobbles with no mortar. At least two external walls and one internal wall, possibly divided by a doorway, are present. It appears to be a residence approximately 7.5 m squared, divided into two rooms by a central, east-west wall. Also present is

Table 3. Concordance and Descriptions for Valley View Estates Cultural Resource Inventory

Record Number ‡	Valley View Temp. No.	Smith 1992 Temp. Site No.	Summary Resource Description
P-37-017031	1	BS-1A	Historic well, structures, fence
P-37-017032	2	BS-1B	Historic building foundation
CA-SDI-15072	3	BS-5	Prehistoric temporary camp
CA-SDI-14768	4	BS-7A, M-1	Prehistoric bedrock milling
P-37-017034	5	BS-6, BS-7B	Historic road
CA-SDI-15074	6	BS-15, BS-47	Historic structure, fence, trash scatter
CA-SDI-15075	7	BS-22	Prehistoric bedrock milling
CA-SDI-14943	8	BS-17	Prehistoric granary base
CA-SDI-14769	9	BS-18, M-7, M-8, M-9	Prehistoric temporary camp
CA-SDI-15077	10	BS-20, BS-21, BS-44	Prehistoric bedrock milling, granaries
CA-SDI-15078	11	BS-23	Rock wall (hist/prehist?)
CA-SDI-15201	12	BS-26	Prehistoric bedrock milling
CA-SDI-15080	13	BS-28	Prehistoric granary base
CA-SDI-14770	14	BS-30, BS-31, BS-42, M-5, M-6, M-11	Prehistoric seasonal camp
CA-SDI-15081	15	BS-16, BS-32	Prehistoric temporary camp
CA-SDI-15082	16	BS-36	Prehistoric granary base
P-37-017044	17	BS-45, BS-49, BS-50	Historic foundation, structure, walls
CA-SDI-15084	18	BS-51	Prehistoric bedrock milling
CA-SDI-15085	19	BS-52	Prehistoric granaries
P-37-017047	20	BS-53, BS-54	Historic rock walls
P-37-017048	21	BS-60	Prehistoric bedrock milling, granaries
CA-SDI-14771	22	M-2	Prehistoric bedrock milling
CA-SDI-14772	23	M-3	Prehistoric bedrock milling
CA-SDI-14773	24	M-10	Prehistoric bedrock milling, granaries
CA-SDI-15088	25	BS-55	Prehistoric bedrock milling
CA-SDI-15089	26	BS-57	Prehistoric bedrock milling
P-37-017051	27	BS-57	Historic foundation, trash scatter
CA-SDI-15091	28	BS-58	Rock cairn (hist/prehist?)
CA-SDI-14774	29	M-14	Prehistoric granary
CA-SDI-14775	30	M-15	Prehistoric bedrock milling
CA-SDI-14776	31	M-16	Prehistoric bedrock milling, granaries
CA-SDI-14777	32	M-17	Historic stacked rock enclosure
CA-SDI-14778	33	M-18	Historic foundations, trash scatter
CA-SDI-14779	34	M-19	Historic (?) rock walls
CA-SDI-14780	35	M-13	Prehistoric granaries
P-37-016276	ISO- 1	BS-48	Prehistoric metavolcanic flake

‡ Record Numbers issued by California Historical Resources Information System

a scatter of whiteware ceramic shards and metal objects, none of which are readily datable. An abandoned dirt road with rocks forming its borders runs north-south, just to the west of the foundation. This road is site P-37-017034. Rocks also seem to have been placed around a patch of oleander in order to landscape the area.

CA-SDI-15,072

This site was initially recorded as a bedrock milling station next to a stream. Four bedrock mortars, five basins and numerous slicks are present on four bedrock outcrops. Also present is what Dr. Moriarty, during a previous visit (Smith 1992), referred to as a "rain rock", an upright lichen-covered boulder with at least eight possible cupules, mostly on the flat top surface. Dr. Moriarty also interpreted a nearby depression in the ground, ringed with large bedrock boulders, as "a possible *temescal*, or sweat house, that would have had a wooden planked roof, and may have been built by the Indians in historic times."

CA-SDI-14,768

This is a bedrock milling site with one slick on an outcrop near elderberry plants and another boulder with two slicks, immediately adjacent to site P-37-017034, an old rock-lined dirt road.

P-37-017034

An abandoned dirt road running approximately north-south for at least 250 m, lined on the west side along a portion of its length with medium sized local cobbles. Smith and Associates (1992) identified this as a "wagon road retaining wall." The road leads directly to site CA-SDI-14,778, a historic foundation and dump dating to the 1950s or later. It seems more likely that this road serves as a driveway for this 1950s era site than as a nineteenth century wagon road.

CA-SDI-15,074

A rock and mud wall foundation of a house-like structure, and a small round construction, possibly an oven. A barbed wire fence runs north-south just east of the foundations, and a dirt road runs east-west just to the south. This road contains a scatter of white stoneware shards, as well as brown and clear glass, and a button. None of these objects were readily datable. A few prehistoric basalt flakes found with this scatter are being considered an isolate at this time, and not a part of this site.

CA-SDI-15,075

This site consists of one milling slick and one mortar on a bedrock boulder. Not other features or cultural constituents were observed.

CA-SDI-14,943

This site consists of small rocks stacked in a row on top of a flat boulder, immediately adjacent to the vertical face of another boulder. This may be the remains of a prehistoric granary base.

CA-SDI-14,769

The resource was originally recorded as containing numerous rock rings and rock walls, four granary bases, milling slicks, possible cupules, possible rock art, burned acorns, cow, coyote and rabbit bones in a rock crevice (may be result of pack rat and wild fire activities). Upon closer examination all but one of the features was considered to be of natural origin and the burned bone is probably a cahce from a pack rat. The one feature that may be of cultural origin consists of one or two deflated granary bases on a bedrock slab.

CA-SDI-15,077

Five granary bases, one rock ring on bedrock 1.5 m across, milling slicks, and a jumble of loose and possibly stacked stones which may represent prehistoric fieldstone quarrying or some other activity. On a previous survey, Smith and Associates reported seeing 8 potsherds and one quartz flake. These were not observed on this survey, and may have been collected by Smith, or another "amateur archaeologist" who was in the area in recent years, according to a neighbor named John Aldrich.

CA-SDI-15,078

Fifteen foot long rock wall, two courses high and two rocks wide, appearing to enhance one side of a natural basin, possibly to enclose livestock. One 5 gallon Snug floor wax can was found wedged between nearby rocks, apparently once used as a target for small bore arms (.22 caliber).

CA-SDI-15,201

This site contains two milling slicks one a massive granitic boulder. No other cultural constituents were observed.

CA-SDI-15,080

The site contains possible granary base on granitic rock cluster. No milling or artifacts were observed in association.

CA-SDI-14,770

Originally recorded in 1998 as a large, well-preserved seasonal camp with distinct loci. Locus 1 is an oblong bedrock slab with seven mortars, two basins, and a number of slicks. Locus 2 is a group of at least seven 1-2 m diameter circles of stones, one to two courses high, underlain by extensive midden. Locus 3 is a pair of bedrock slabs, one having two slicks, and the other with eight mortars and seven or more slicks. Locus 4 is a single bedrock boulder with milling slicks and a light midden deposit. Locus 5 consists of at least three bedrock slabs surrounding a massive (very tall) bedrock outcrop, with six mortars and numerous slicks. Midden surrounds this outcrop, and is densest to the north. A mano and metate were observed here.

CA-SDI-15,081

The site consists of a rock wall in good condition, two courses high, enhancing a natural outcrop of rock under a small grouping of oaks on the shoulder of a hillside. It is an arc with its ends pointing downslope, and only rocks and steep slope enclosed within it, and could not have served as a residence or storage structure. It may have been a hunting blind. Included in the site, on the next shoulder over, 50 m to the west, is a grouping of bedrock that contains nine bedrock mortars, five basins and numerous slicks. Dark midden soil, cupules and a 2 x 3 m rock room were also observed at this second locus.

CA-SDI-15,082

This is a rock ring or granary base on a flat granitic outcrop overlooking a broad drainage. The center of the ring has some residual charcoal, and may be a historic fire ring, or a granary base later used as a fire ring. It is a relatively windy spot, though, and seems to be an unlikely place to build a fire. On the other hand, it is near oaks and a likely spot for a granary base

P-37-017044

Rock and mud mortar wall foundations for two structures, and multiple segments of a long rock wall encircling a long, flat finger of land on two sides. The wall uses bedrock outcrops as advantageous extensions of its enclosure, and extends in non-contiguous segments for over 425 m (1400 ft.). The north end comes right up to a set of cairns straddling the road that leads to a house foundation (CA-SDI-15,074)that may be related. The southern portion dips down and almost meets the northern of the two structures of P-37-017044, suggesting contemporaneity. The southern building appears to be a small house, with a front step facing south and the remains of a chimney against the east wall. About 5 m to the northeast, the second structure appears to be an outbuilding built against a large bedrock boulder, that serves as its back, or north, wall. The two structures consist of cobble wall foundations, three to four courses high. Historic artifacts are scattered in the area, including a square shovel blade, an aerosol can, a brown bottle base, and some ceramics. A neighbor named John Aldrich was observed clearing brush on the site, and spoke of an "amateur archaeologist" friend of his who did some excavation and collection on the site recently. The remains of a hand-held sifter screen were also found on the site. The site is immediately next to the prehistoric site CA-SDI-15,084.

CA-SDI-15,084

The site is comprised of a bedrock milling feature containing 13 deep mortars and three slicks. Smith and Associates reported a surface scatter of lithics, pottery, and shell in 1992, but heavy looting and vegetation have removed and obscured all traces of these artifacts. The site continues to be looted by a neighbor named John Aldrich, by his own admission. The site, however, may partially exist on land that he is renting.

CA-SDI-15,085

A granary complex consisting of at least three activity loci. Three granary bases were observed, as well as at least one bedrock mortar. No artifacts were seen in the area however.

P-37-017047

Two historic rock walls. The northern forms an oblong enclosure 10 m from North to South, and 15 m from East to West, and was presumably used to enclose animals such as sheep. The southern wall is directly on a drainage, and forms a semicircle on the eastern bank and open to this drainage. When Smith and Associates visited in 1992, they observed a "watering hole excavated into the sandy creek bed". This was not seen during this most recent visit. Both walls are approximately two to three courses high, constructed of unmodified river cobbles with no mortar, and sit about 50 m apart.

P-37-017048

Historic house foundation. The wall foundations consist of mud and rock and are only about one or two feet high. The remnants of a plaster floor also seems to be present, as well as a possible chimney base. The ruins are very badly eroded and overgrown, and a road runs over the center of the house. It is very difficult to tell how big the structure was, or anything else about it without clearing brush. Nearby artifacts looked recent, including a large pile of tar paper roof shingles, copper wire, and a produce stand sign.

CA-SDI-14,771

This site contains a single milling slick in good condition. No other cultural constituents were found in the area.

CA-SDI-14,772

The site consists of two bedrock milling slicks and one basin in fair condition. A linear rock feature on the same bedrock base runs parallel and adjacent to an upright boulder, and may have been a part of a granary base.

CA-SDI-14,773

The site is situated on a large outcrop exposure and consists of a partial granary base and two milling slicks. One slick is surrounded by what may be peck marks. A second scatter of small stones may have been a granary base also.

CA-SDI-15,088

This is a prehistoric milling station consisting of 11 slicks on two massive granitic boulders. Nine slicks are located on the western boulder and two are located on the eastern one. Both boulders are very flat and have indentations which form natural water catchment basins, and a natural seep occurs along the northwestern edge of the western rock.

CA-SDI-15,089

The resource contains six well-developed milling slicks on two low, flat bedrock outcrops. One flake of metavolcanic material was found on the ground next to the bedrock. A historic house foundation about 10 m to the east was recorded as P-37-017051.

P-37-017051

A historic building foundation made of rocks three courses high measuring 15 ft. by 5 ft. 3 inches, and an adjacent open-ended square composed of three rocks one course high, and measuring 2 x 3 ft. Artifacts found in the vicinity include: olive green wine bottle shards, brick-colored glazed earthenware ceramics, brown beer bottle glass, beveled clear glass, aqua glass shards, and barbed wire lengths. Prehistoric milling on a bedrock outcrop just west of the structure was recorded as CA-SDI-15,089.

CA-SDI-15,091

Rock cairn consisting of four placed rocks on a granitic outcrop on the edge of a deep intermittent drainage. Just east of the cairn is a scatter of rocks on a granite sheet which may represent the remains of one or more granary bases.

CA-SDI-14,774

This resource contains possible remnants of several granary bases on two adjacent massive granitic outcropings. No artifacts or other cultural constituents were discovered.

CA-SDI-14,775

This site contains three milling slicks on a large, flat granitic boulder. No artifacts or other cultural constituents were observed.

CA-SDI-14,776

Possible granary base consisting of 10 rocks placed in a circle on a large granitic boulder. Six milling slicks are located on adjacent boulders; four on one boulder and two on another.

CA-SDI-14,777

Stacked rock wall which enhances a natural bowl formed on two sides by large granitic boulders. Probably built as a historic animal enclosure for sheep. Bowl measures approximately 30 m in diameter and the wall stands two courses high in one segment and three courses in the other. Neither segment has mortar between the rocks.

CA-SDI-14,778

Historic rock and mud wall foundations, associated dirt road, dump, and abandoned cars. The walls seem to form one side of a small structure, and may have also served as a fence foundation at one time. The dump contains ceramics, glass and metal objects probably dating to the 1950s, and perhaps earlier. A stripped car and truck have been included in the dump, and the car appears to be a 1930s model. A dirt road that runs right by the site to the west has been recorded as P-37-017034.

CA-SDI-14,779

Various lengths of rock wall on the slopes of an intermittent drainage. Three or more segments on the east side of the drainage, while not contiguous, seem to form a more or less straight line perpendicular to the drainage and the slope. The west side of the drainage has at least two segments of wall, each around five meters long, running parallel to the slope, one above the other, and directly across from the east wall segments. Barbed wire fence is incorporated into the wall or appended onto it, indicating that it was likely used as either a property boundary or an animal enclosure. No indication of age of the feature was available

CA-SDI-14,780

The resource is three or four somewhat disarranged granary bases and a larger (1 m diameter) stone circle. A barbed wire fence crosses the site.

P-37-016276

This isolated find is a single metavolcanic flake. No other cultural material was observed during this investigation, however Smith had noted an artifact scatter in this location originally.

4.2.2 Resource Site Evaluations

Based on the results of archaeological reconnaissance and field recording for the inventory of resource sites within the Valley View Estates Specific Plan project, the cultural resources were rated in terms of site significance or value, using variables of site integrity, uniqueness, potential for Native American concern, and scientific potential. These results are presented in Table 4.

4.3 Archaeological Site Testing and Evaluation

At the request of the City of Escondido and the project proponent, nine of the highest value cultural resources recorded for the Valley View Estates Specific Plan were selected for test evaluation. The results of these efforts are described below. A test investigation summary is provided in Table 5.

CA-SDI-15,072

Located among oak trees near a stream, this site consists of five bedrock milling features, a rock with cupules, and a large cleared area (Figure 4). Evaluation included the mapping and recording of the surface features and milling elements, collection of 11 artifacts, and excavation of six STPs and one test unit (see Table 5). The five milling features contain 40 slicks, six mortars, and six basins. Another rock, lying on top of Feature 1, contains at least nine cupules or small depressions. These are sometimes classified as rock art associated with puberty ceremonies, but when found in direct association with mortars used for grinding acorns they are thought to have a functioned in a utilitarian manner perhaps to support the acorn when it is cracked open.

A depression-area cleared of rocks exists in the southwestern portion of the site and measures 9 m by 6.5 m. This feature was interpreted as a possible *Temescal* or sweathouse in Smith's report

Table 4. Survey-Level Site Significance Ratings of the Valley View Estates Cultural Resource Inventory

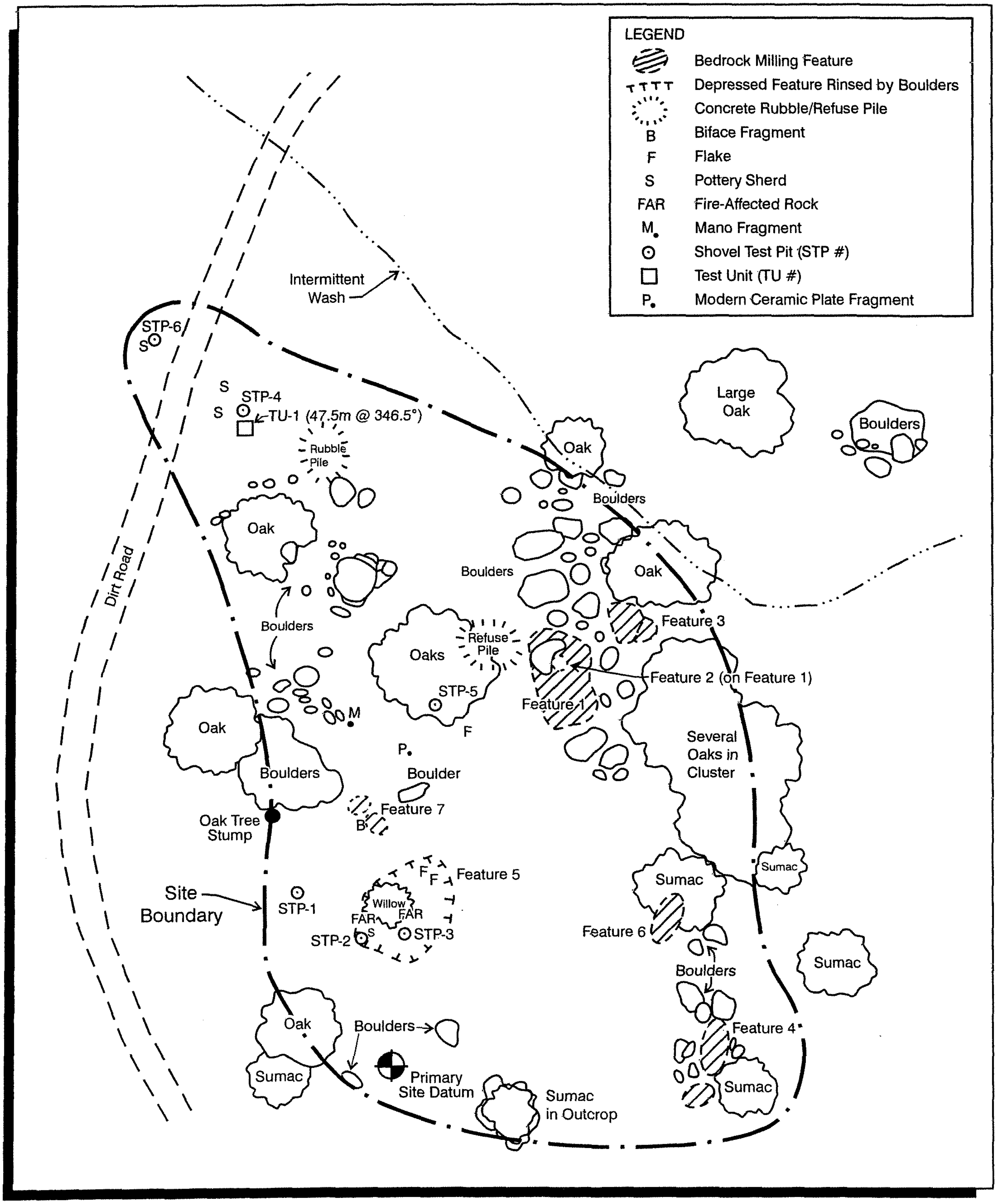
Record Number	Integrity	Uniqueness	Native American Concerns	Research Potential	Scheduled for Dev.	Composite Score	Resource Values
Maximum Score	3	3	3	5	1	15	H/M/L
P-37-017031	1	1	0	1	1	4	LOW
P-37-017032	2	1	0	2	1	6	LOW
CA-SDI-15072	2	3	3	5	1	13	HIGH
CA-SDI-14768	2	1	1	2	1	6	LOW
P-37-017034	1	1	0	1	1	4	LOW
CA-SDI-15074	2	1	0	1	1	5	LOW
CA-SDI-15075	2	1	1	1	1	6	MEDIUM
CA-SDI-14943	1	2	1	1	1	6	LOW
CA-SDI-14769	3	3	3	5	1	15	HIGH
CA-SDI-15077	2	3	3	4	1	13	HIGH
CA-SDI-15078	2	1	0	1	1	5	LOW
CA-SDI-15201	1	1	1	1	1	5	LOW
CA-SDI-15080	1	1	1	1	1	5	LOW
CA-SDI-14770	3	3	3	5	1	15	HIGH
CA-SDI-15081	3	3	3	3	1	13	HIGH
CA-SDI-15082	1	2	1	1	1	6	LOW
P-37-017044	2	2	0	5	1	11	HIGH
CA-SDI-15084	2	3	1	3	0	9	MEDIUM
CA-SDI-15085	3	2	3	3	1	12	HIGH
P-37-017047	2	2	0	3	0	7	MEDIUM
P-37-017048	1	2	0	4	1	8	MEDIUM
CA-SDI-14771	1	1	1	1	1	5	LOW
CA-SDI-14772	2	2	1	2	1	8	MEDIUM
CA-SDI-14773	2	2	1	2	1	8	MEDIUM
CA-SDI-15088	2	2	2	2	1	9	MEDIUM
CA-SDI-15089	2	1	2	1	0	6	LOW
P-37-017051	2	3	0	3	0	8	MEDIUM
CA-SDI-15091	1	1	1	1	0	4	LOW
CA-SDI-14774	1	1	1	1	1	5	LOW
CA-SDI-14775	1	1	1	1	1	5	LOW
CA-SDI-14776	2	2	1	1	1	7	MEDIUM
CA-SDI-14777	3	1	0	3	0	7	LOW
CA-SDI-14778	2	2	0	2	0	6	LOW
CA-SDI-14779	3	1	0	2	1	7	MEDIUM
CA-SDI-14780	2	1	2	2	1	8	MEDIUM
P-37-016276	1	0	1	1	1	4	LOW

Site Quality Values: high=15-11 medium=10-7 low= 6-0

Table 5. Investigation Summary of Nine Archaeological Sites

Site	Features			Surface Collection		No. of		Subsurface
CA-SDI-	Milling	Foundation	Other	Feature	Site	STPs	Units	Recovery
15,072	5	—	2	5	6	6	1	464
14,769	—	—	1	—	—	X	—	0
15,077	4	—	8	1	3	6	—	1
14,770	15	—	10	43	17	5	—	614
15,081	8	—	2	—	24	6	2	1608
15,085	—	—	1	—	—	—	—	—
15,074	—	1	1	3	52	6	—	63
P-37-017032	—	2	1	—	—	8	—	131
P-37-017044	—	2	—	—	—	6	—	6

X = excavation of feature



Mooney & Associates

N

0 5 10m

CA-SDI-15,072 Site Map

Figure 4

(Smith 1992:1). A quartz flake and a modified quartz flake were found in this area. The perimeter of the depression is not clearly defined by rocks, but boulders and smaller cobbles border two-thirds of the area. The cobbles may have been placed to fill in gaps between the boulders, but no clear courses of rock are noticeable. Subsurface testing failed to reveal any prehistoric subsurface content. In fact, an oil filter and oil-stained soils were observed in the floor of STP 3. Test evaluation of this feature neither confirmed nor refuted Smith's previous interpretation.

Four Tizon Brownware sherds were found on the surface at the northern part of the site. A flake of gabbro material and a badly weathered and fire-fractured mano fragment were also collected from the surface. A few pieces of more recent trash were also collected off the surface including a fragment of an earthenware, white glazed plate, the metal end of a whisk broom handle, and an oil filter from a tractor. Four of the STPs produced artifacts and faunal remains to depths of 90 cm (Table 6), and a single piece of bone was found in the 90-100 cm level of the test unit.

Table 6. Vertical Recovery of Cultural Material from Four Prehistoric Sites

Level	Site CA-SDI-15,072				15,077	14,770				15,081			
(cm)	A	%	F	%	A	A	%	F	%	A	%	F	%
0-10	20	10.9	6	2.2	-	129	31.1	73	28.6	560	46.1	147	35.3
10-20	38	20.8	48	17.4	1	82	19.8	57	22.3	310	25.5	120	28.8
20-30	33	18.0	52	18.9		51	12.3	48	18.8	211	17.4	91	21.9
30-40	17	9.3	59	21.4		39	9.4	30	11.8	74	6.1	34	8.2
40-50	34	18.6	44	16.0		35	8.4	25	9.8	24	1.2	16	3.8
50-60	15	8.2	31	11.3		21	5.1	14	5.5	11	0.9	8	1.9
60-70	7	3.8	21	7.6		—		2	0.8				
70-80	7	3.8	12	4.4		2	0.5	6	2.3				
80-90	1	0.5	1	0.4									
90-100	—		1	0.4									
Total	**183**		**275**		**1**	**415**		**255**		**1214**		**416**	

A = artifacts; F = faunal remains

The total artifact recovery from this evaluation includes 139 (76.0% of the artifacts) pieces of debitage, a utilized flake, a unifacially modified flake, four bifacial artifacts, a pounding tool, four pieces of milling equipment, 30 ceramic vessel sherds, a modified sherd, a ceramic pipe fragment, and an irregular piece of clay (Table 7). Animal bone (n=271; 48.6 g), a small amount of shellfish (n=4; 0.4 g), and a fragment of possibly bird egg shell were also recovered through excavations.

The debitage is primarily of quartz (n=99; 71.2%) and volcanic (n=30; 21.6%) material with a few pieces of gabbro and granitic (n=8; 5.7%) and a piece each of quartzite and obsidian. The majority (98.5%) of the debitage lacks cortex indicating secondary reduction took place at the site rather than earlier stage reduction of on-site material. The coarse-grained gabbroic and granitic flakes suggest that milling implements were shaped on-site. The single, small obsidian flake may have resulted from resharpening or reshaping a bifacial tool. The only recognizable bifacial thinning flake is of quartz, as are all four bifacially worked pieces. The unifacially modified flake is also of quartz and was probably a very early attempt at biface manufacture that was aborted due to thickness. The majority (76.7%) of the volcanic debitage appear patinated and even some of the other materials appear chemically weathered. The four bifacial artifacts are all incomplete stages of arrow point manufacture indicating this practice took place within the site boundary.

All four pieces of milling equipment are fragments and all of granitic material. Two are recognizable as manos and a third fragment that is badly weathered and fire-affected was probably a handstone also. One mano was minimally shaped and moderately used on two faces. One face shows evidence of being pecked, or resharpened. The second mano is an oddly shaped chunk with minimal polish on one face and battering on an edge. A small fragment of rock appears to be from a basin metate based on the shape yet surface polish is not present.

The recovered ceramics assemblage from this site is quite varied, although all are of Tizon Brownware. The 30 vessel fragments weigh 72.8 g. They came from the surface (n=4) and four levels from STP 4 (n=6) and six levels in Unit 1 (n=20). Three vessel rim fragments were found; all are straight and one is from a cooking pot, another from a somewhat constricted bowl, and the other was a jar with a restricted neck. Of the vessel body sherds, two have exterior evidence of blackening from being used as cooking pots and two others have carbon residue on their interior surfaces. The presence of this residue indicates cooking in ceramic vessels was performed at the site.

Table 7. Material Recovery by Site

Item	Site Number CA-SDI- 15,072	14,769	15,077	14,770	15,08	Total
Debitage						
Diagnostic Flakes	52	-	1	77	194	324
Bifacial Thinning Flakes	1	-	-	37	88	125
Non-diagnostic Flake Fragments	82	-	-	227	847	1156
Angular Debris	4	-	-	5	21	30
Subtotal	***139***	***0***	***1***	***346***	***1150***	***1636***
Cores	-	-	-	2	-	2
Utilized Flake	1	-	-	-	-	1
Modified Flakes	1	-	-	2	1	4
Unifacial Tool	-	-	1	-	-	1
Flaked Glass (Unifacial)	-	-	1	-	-	1
Bifacial Items						
Blanks	1	-	-	-	4	5
Unfinished Points	3	-	-	5	11	20
CT Arrow Point	-	-	-	-	1	1
Indeterminate Fragment	-	-	-	-	4	4?
Flaked Glass	-	-	1	-	-	1
Subtotal	***4***	***0***	***1***	***5***	***20***	***29***
Hammer	1	-	-	-	-	1
Milling Equipment						
Manos	2	-	1	6	1	9
Mano/pestle	-	-	-	1	-	1
Indeterminate Fragments	1	-	-	2	-	3
Metate	-	-	-	-	1	1
Base Fragment	1	-	-	-	-	1
Subtotal	***4***	***0***	***1***	***9***	***2***	***15***
Incised Stone	-	-	-	-	1	1
Ceramics						
Rim Sherds	3	-	-	4	3	10
Body Sherds	27	-	-	45	34	106
Pipe	1	-	-	-	-	1
Modified Sherd	1	-	-	-	-	1
Daub?	1	-	-	-	-	1
Subtotal	***33***	***0***	***0***	***49***	***37***	***119***
Modified Bone	-	-	-	1	1	2
Modified Shell	-	-	-	-	1	1
Griddle Stone	-	-	-	1	1	2
TOTAL ARTIFACTS	**183**	**0**	**5**	**415**	**1216**	**1815**
Faunal Remains						
Bone	271	2	-	258	408	937
Shell	4	-	-	1	8	13
Egg Shell?	1	-	-	-	-	1
TOTAL FAUNAL REMAINS	***??***	***2***	***0***	***??***	***??***	***953***

The recovered animal bone is primarily of small mammal but there are some fragments of large mammal and at least one piece of turtle. The majority of the bone came from between 10-50 cm in Unit 1 and STPS 1, 4-6, however some amount was found in each level to 100 cm. The recovered shell is only very small pieces; a chalky piece of *Chione* clam came from the first level of Unit 1 and three even smaller bits of what look like abalone came from two lower levels of Unit 1 and the first level of adjacent STP 4. Due to their large size, abalone shells were used for bowls and this could explain the presence of this shell at the site. Also from STP 4 is an extremely thin, slightly rough textured fragment of what looks like an egg shell.

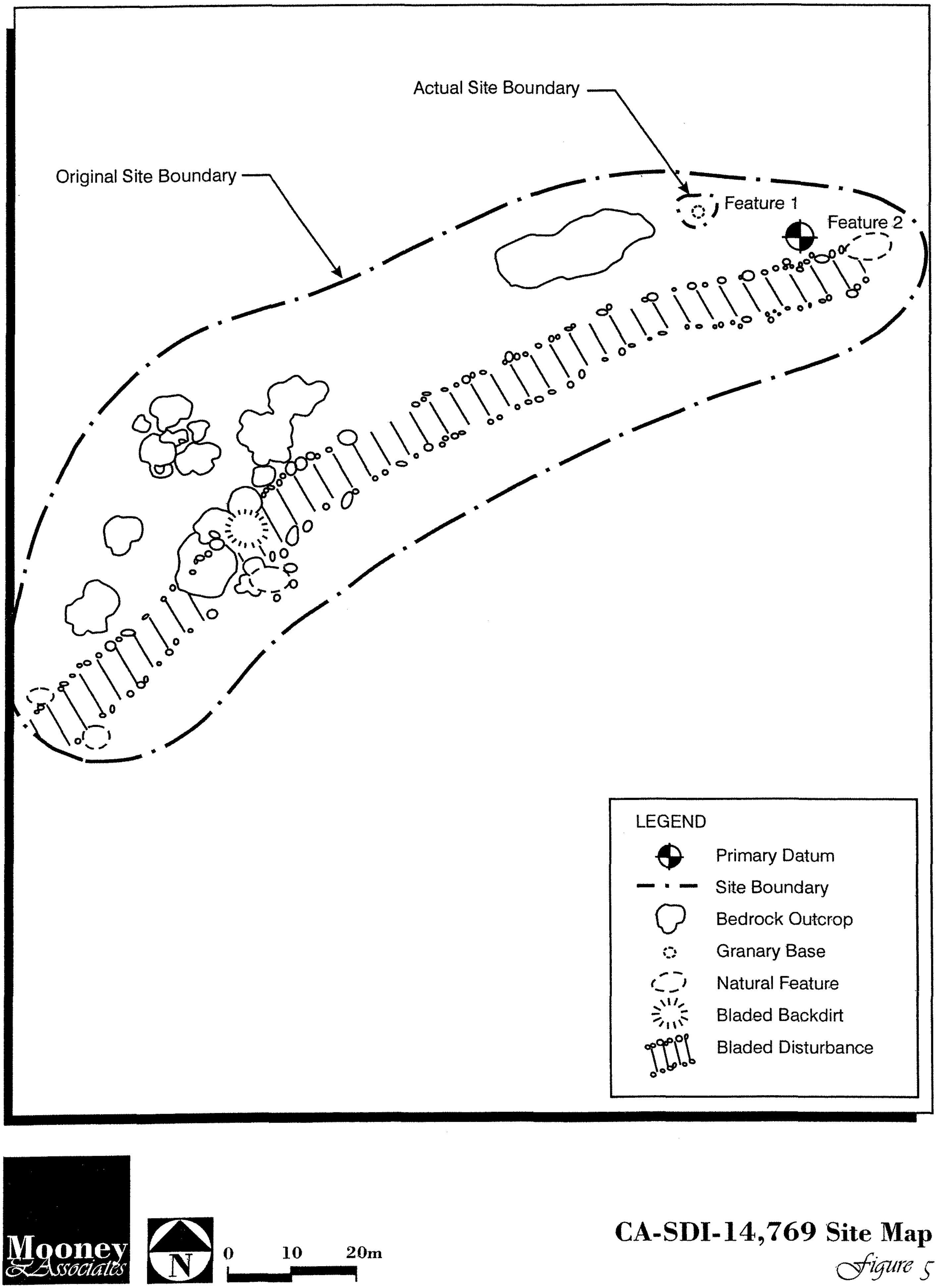
CA-SDI-14,769

Site evaluation for this locale involved the intense examination of the area and re-evaluation of the originally recorded cultural constituents. An irregular rock alignment on bedrock, Feature 1, was interpreted to be one or more deflated granary bases (Figure 5). What was originally recorded as a rockshelter (Feature 2) was excavated and found to be a natural accumulation or probable packrat cache of acorn husks and small rodent bone among angular cobbles. No milling elements were found and no cultural materials were recovered from investigations at this site. The alignments recorded in 1998, with the exception of the granary base, were found to be either natural or the result of a path cut by modern machinery. This blading disturbance created a linear alignment of rocks that were misidentified as being of intentional construction.

CA-SDI-15,077

Evaluation at this site consisted of the mapping of 13 surface features and four artifacts, and the excavation of six STPs (see Table 5). Twelve stone features were plotted (Figure 6) and include two cairns, six granary bases, four milling features, and a rock enclosure (on the same outcrop as one of the milling features). The milling features consist of 10 grinding elements among features 3, 5, 8 and 9, and they are all slicks. No other types of milling elements were observed at the site.

Two prehistoric artifacts and two pieces of bottle glass with edge modifications were recovered from the surface. A fragment of a patinated volcanic flake that was trimmed along the margin of the dorsal surface displays faint polish from use as a scraping tool on a few spots of the tool edge. This tool was found in the dirt road that cuts through the northern end of the site. A complete, shaped bifacial mano of granitic material was found among the boulders at Feature 10. This well worn grinding implement was pecked on both faces and both ends were used for pounding. The two pieces of aqua bottle glass appear to be from the same bottle, one is a base fragment and the other



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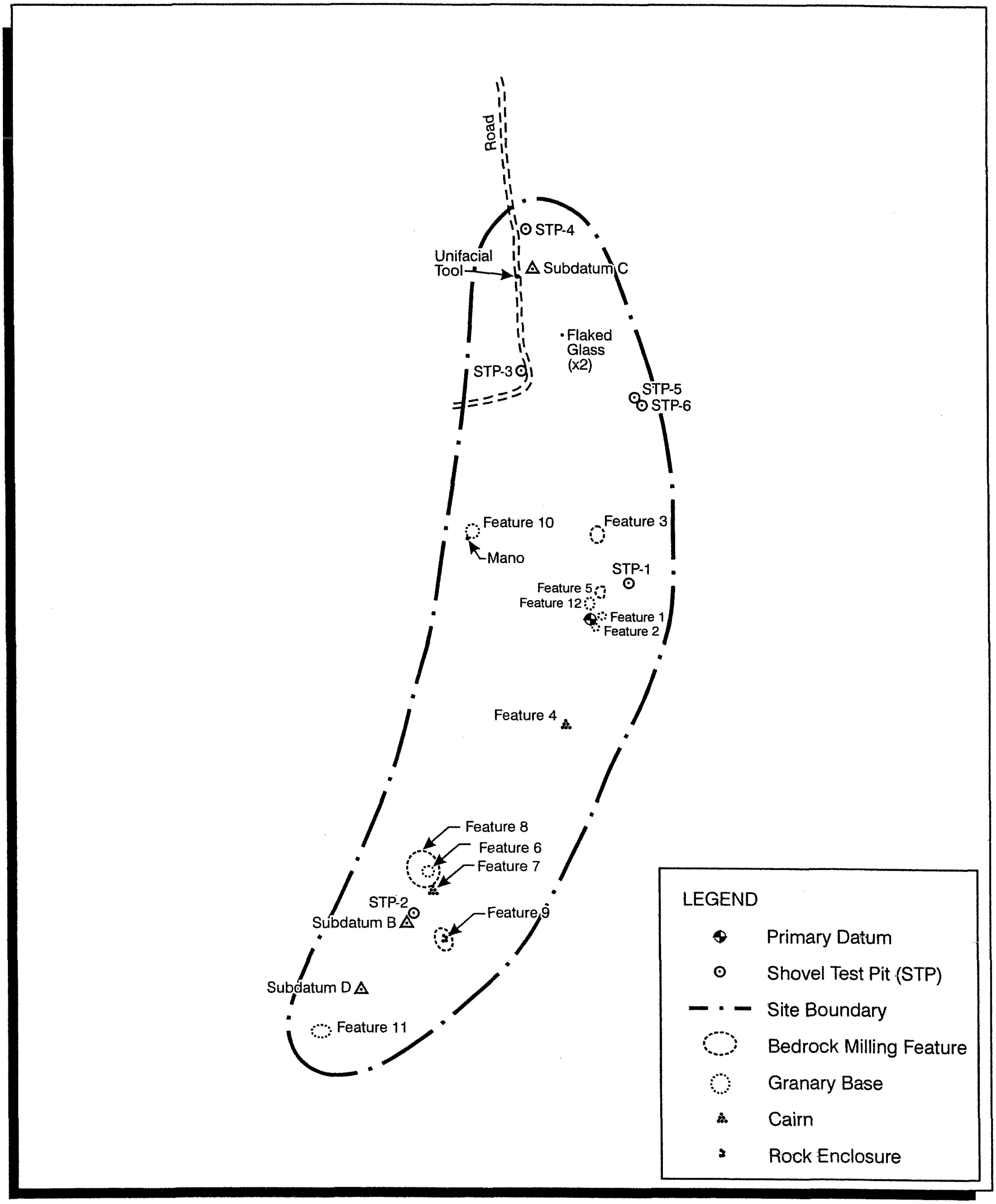
CA-SDI-14,769 Site Map

Figure 5



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CA-SDI-15,077 Site Map

Figure 6

a more curved wall fragment. Each piece was flaked along on or more edges but no recognizable forms were created. Bottle glass was used for making arrow points during ethnohistoric times, however, determination of when these fragments were flaked can not be determined especially with the lack of much other cultural debris at the site.

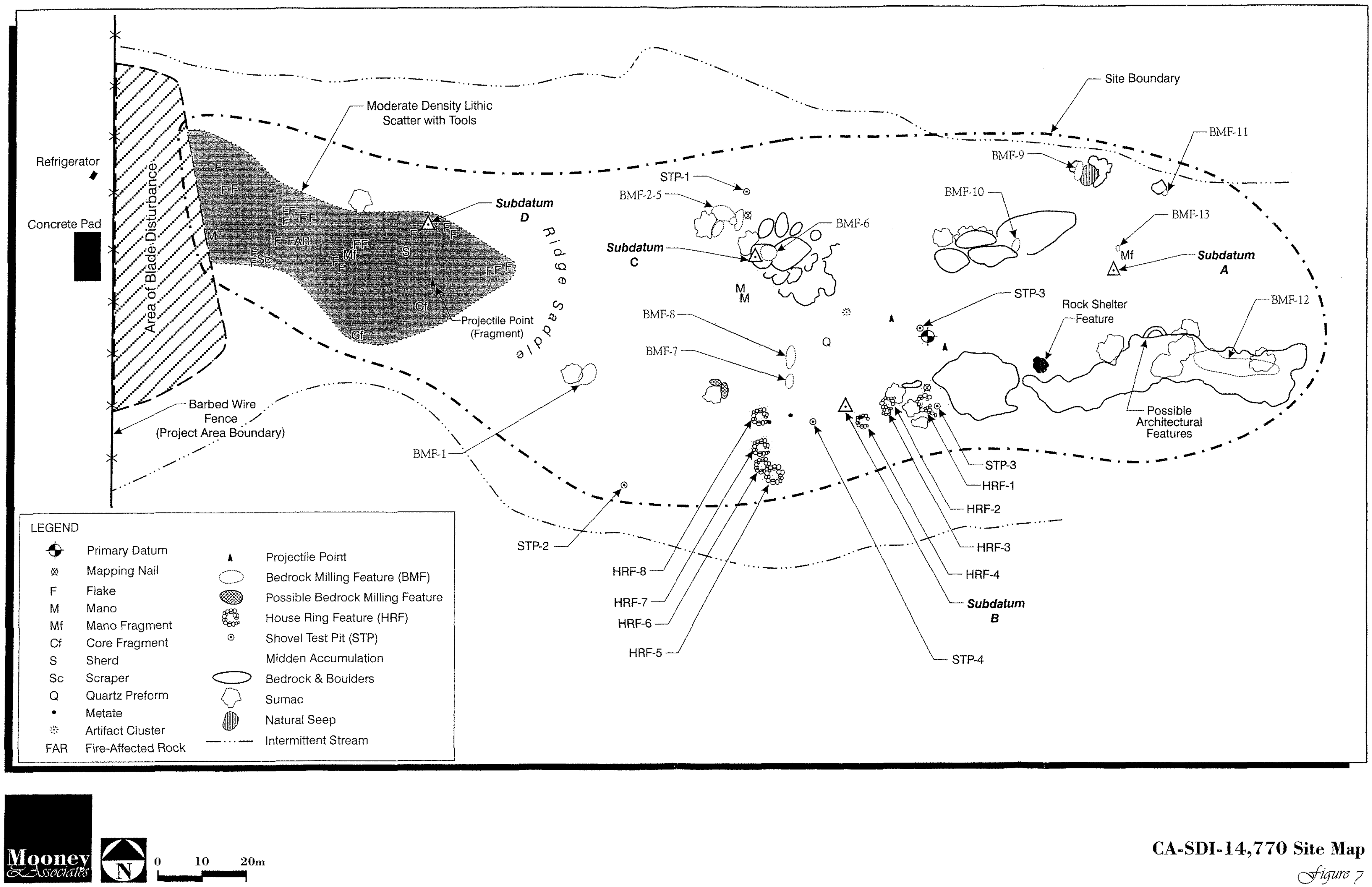
Excavation of six STPs produced only one small noncortical volcanic flake. This complete and patinated flake came from the second level of excavation in STP 5 in the northern portion of the site. No other cultural materials were found during the subsurface testing.

CA-SDI-14,770

Evaluation of this seasonal camp site involved mapping and recording of 25 surface features, the collection of 43 items from six of these features and 17 artifacts from the site surface, and excavation of five STPs in the midden areas (see Table 5). The surface features consist of 13 bedrock milling locations containing 113 milling elements, two possible milling features, eight rock rings, a rock shelter, and a possible architectural feature (Figure 7). The milling elements include 73 slicks, 30 mortars, 10 basins. In association with one of the milling features is a smaller boulder containing 17 cupules of varying sizes. The eight circles of stones all occur in the southern portion of the site (see Figure 7) and are associated with midden soil. Seven of the rings are roughly 4 m in diameter on the exterior and 2 m across inside, and made of one to two courses of stones; a smaller ring adjoins one of the larger rings. A noticeable opening or gap in the ring, facing to the east, is present in most of the rings. A sparse scatter of artifacts was found in association with the most eastern ring that included five flakes, 10 vessel sherds, and a possible griddle stone of granitic rock. Three metates were also found in association with the rock rings.

The rock shelter, located in the eastern portion of the site, is a floor space measuring 1.5 m by 0.8 m that is sheltered by a tumbled boulder. The ceiling appears heavily blackened by smoke and a possible smoke hole exists at the northeast edge. No artifacts were found in association with the shelter, but some cobbles exist on the floor along the northeastern edge that may represent hearth stones.

The portion of the site with the highest density of surface artifacts is at the western end not associated with the milling or rock features (see Figure 7). The far western edge of the site has been graded away in the recent past, along the property fence line. Artifacts were also found in association with some of the milling features and include debitage, ceramic vessel sherds, and a few milling equipment fragments. The majority of the artifacts were recovered from eight levels of subsurface excavation (see Table 6). The artifact recovery from this evaluation includes 346 (83.4%) pieces of



CA-SDI-14,770 Site Map

Figure 7

debitage, two cores, two unifacially modified flakes, five bifacial artifacts, nine pieces of milling equipment, 49 ceramic vessel sherds, a bone tool fragment, and a possible *comal* or griddle stone (see Table 7). Animal bone (n=258; 28.1 g) and a single piece of shellfish were also recovered.

The debitage is primarily of quartz (n=238; 68.8%) and volcanic (n=96; 27.7%) material with a few pieces of other materials including obsidian (n=7), chert (n=3), and a single piece each of silicified wood and granitic. The majority (98.0%) of the debitage lacks cortex, but a few examples of waterworn or subangular cortex were noted. The limited amount of cortical remnants on the flakes indicates that most of the primary reduction of nodules took place outside of the site area and that secondary reduction and tool production took place on-site. The presence of the coarse-grained granitic flake suggests that at least one milling implement was shaped on-site.

Thirty-seven flakes (10.7% of the debitage) are recognizable as waste from the production of bifaces. The majority of these (64.9%) are of volcanic material yet only one of the five bifacially worked artifacts is of volcanic material. The other materials represented in the bifacial thinning flakes are quartz (n=11) and obsidian (n=2). Examples of bifaces of both of these materials were also recovered during testing. Within the varieties of recovered volcanic materials, the majority (53.1%) do not appear patinated yet 45 pieces are noticeably chemically weathered.

Two small, expended quartz cores were recovered which is not surprising given the high frequency of quartz debitage at this site. Most likely quartz is locally available in dykes in the granitic bedrock. Two fragments of flakes that were modified by percussion flaking on one face were found on the surface. One is of volcanic material and the other quartz. Both appear to have broken during initial trimming and the quartz piece was probably intended to become a bifacial tool but broke before the opposing face was worked. The five bifacial artifacts all represent late stage production of arrow points that broke during trimming. Three are quartz, one is obsidian, and another is fine-grained volcanic. Three came from the surface of the site and two were found in STP 4 from as deep as 40-50 cm. This STP was excavated in the vicinity of the rock circles.

The presence of incomplete arrow points as well as the bifacial thinning flakes indicates their manufacture took place within the site boundary. Five obsidian flakes came from this STP, including two bifacial thinning flakes that may have come from the unfinished obsidian point from the 10-20 cm level.

Eight manos and a mano/pestle were recovered. Six manos came from the surface, three directly associated with bedrock milling features (1, 3 & 4); two came from a cache in STP 3 that also contained the mano/pestle. Surprisingly, this STP was excavated some 30 m from any of the bedrock milling features. The two manos and the mano with pestle use on the ends were found on edge, touching each other. Four of the manos are whole and of three different materials: granitic, gabbro, and coarse-grained volcanic river cobble. The four fragments, including two that are not assuredly only manos, are of either granitic or gabbroic material. Of the six that are clearly manos, use-wear is bifacial on all but one which also has polish from use on the edges. The faces on four show evidence of resharpening by pecking. The mano faces of the multipurpose implement were also pecked; the ends of this tool are polished and slightly shouldered from rotary use as a pestle. Four of the implements were shaped for use. Three of the four fragments and one complete mano were recycled as heating or hearth stones as shown by fire blackening or spalling.

The 49 recovered ceramics vessel sherds weigh 196.5 g and all but four buffware pieces are of Tizon Brownware. Eighteen came from the surface, seven associated with three bedrock milling features on the north-central part of the site, 10 found among the rock circles, and one piece came from the surface of STP 2 in the southern portion of the site. Not surprisingly, the subsurface recovery came from STPs associated with these same locales and sherds came from as deep as 30-40 cm. Four vessel rim fragments were found; none are recurved rims and all seem to be from large pots. Two have slightly restricted mouths and two are nearly straight sided only sloping inwards a small degree. One has exterior sooting from use as a cooking vessel and two others have carbon residue on their interior surfaces also indicating cooking was done at the site. The sherd with exterior soot also has a hole drilled into it from the exterior side. The piece broke on the hole, which may have been made to patch a cracked vessel by lacing a strap through paired holes.

A ground bone tool fragment came from the first level of STP 4. The fragment is a midsection and can not be identified as to function, but it may have been an awl or punch type of tool. A tabular, slightly waterworn slab of granitic rock was found in house ring feature 1. This slab of rock may have been used for cooking as a griddle, known as a *comal*.

The recovered animal bone is primarily of small mammal but there may be a few small fragments of large mammal. The majority of the bone (50% by count, 61.9% by weight) came from the first two levels of excavation. All five STPs produced some amount of bone and four pieces were recovered from bedrock milling feature 2. The recovered shell is a small fragment of a large clam, *Laevicardium elatum*, found in the first level of STP 5. Due to their large size, valves of this type of clam were used for bowls or scoops and this could explain the presence of this shell at the site.

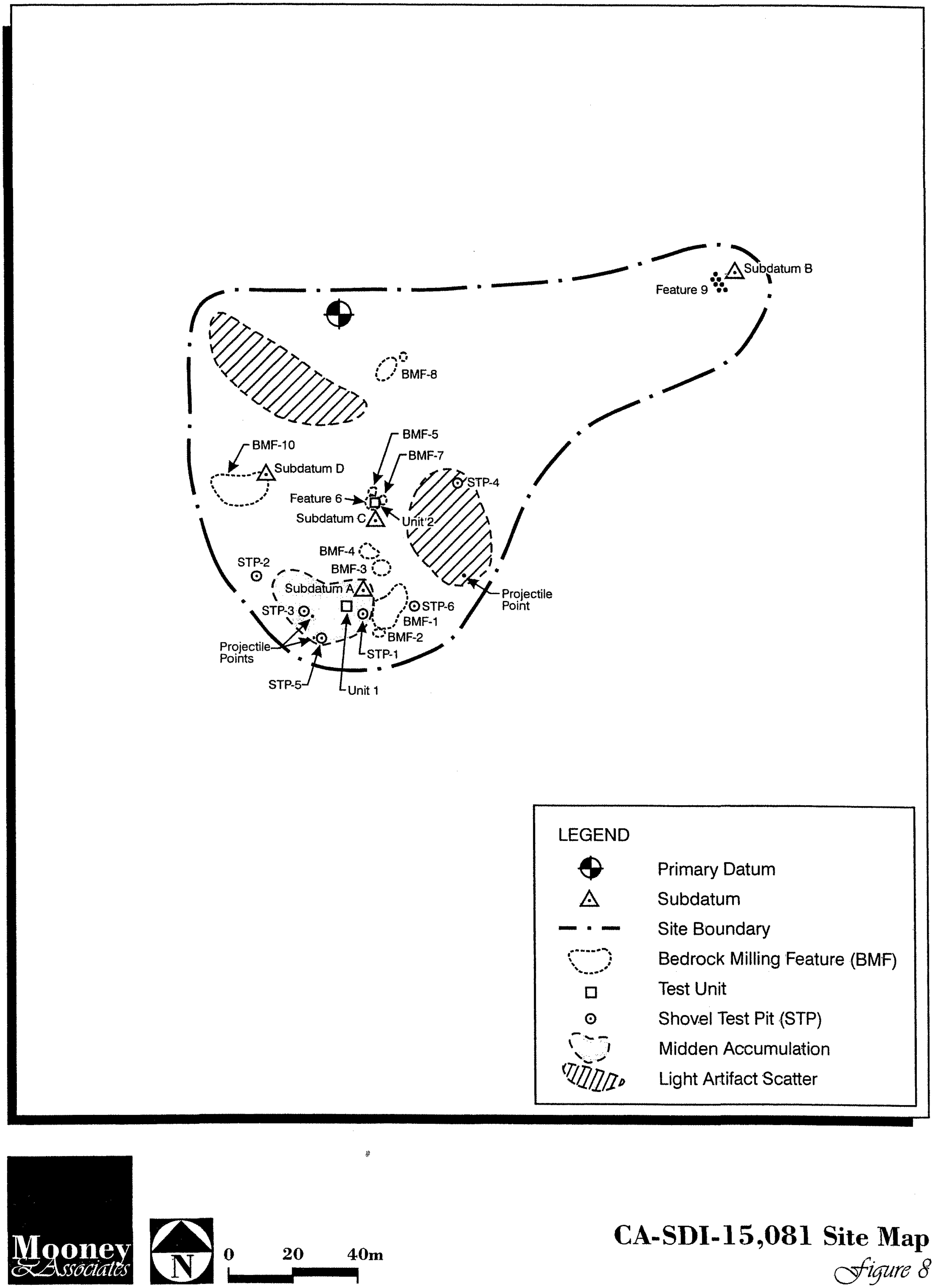
CA-SDI-15,081

This seasonal camp site was evaluated by mapping and recording the eight bedrock milling features, a rock enclosure, and a rock alignment, collection of surface artifacts, and excavation of six STPs and two units (Figure 8). The bedrock milling locations contain 35 slicks, 18 mortars, 4 basins, and 15 large-size cupules. The elements recorded as cupules range in diameter from 5 to 13 cm and exist on the convex surface of two boulders. Both features are found adjacent to boulders with mortars so the function of these depressions may be affiliated with food processing rather than considered as rock art as many cupules have been. Feature 6 is a room enclosure created by filling the gaps between boulders with smaller rocks. Feature 9, located at the far eastern end of the site, is a two-course high stack of rocks piled around and upon existing small boulders creating a linear feature. The temporal affiliation of this feature is not known, nor is the function. Perhaps it was created as a hunting blind since the location overlooks a stream drainage.

Twenty-four artifacts were collected from the site surface and 1,190 came from the STPs (n=336; 27.7%) and two units (n=855; 70.4%). Recovery depth went as deep as 60 cm yet 90.7% of the artifacts came from the first three levels of excavation (see Table 6). The artifacts recovered from evaluation of this site include 1,150 (94.7%) pieces of debitage, a unifacially modified flake, 20 bifacial artifacts, 2 milling implements, 37 ceramic vessel sherds, and incised stone, a bone tool fragment, a possible shell bead, and a possible *comal* or griddle stone (see Table 7). Animal bone (n=408; 45.4 g) and a small amount of shellfish (n=8; 1.3 g) were also recovered.

The debitage is primarily of quartz (n=888; 77.2%) and volcanic (n=223; 19.4%) material with some other materials including obsidian (n=23; 2.0%), chert (n=5), three pieces each of gabbro and more fine-grained metavolcanic material, and unidentified material (n=5) that may be unusual forms of volcanic. The majority (99.0%) of the debitage lacks cortex, but a few examples of waterworn or subangular cortex were noted. The limited amount of cortical remnants on the flakes indicates that most of the primary reduction of nodules took place outside of the site area and that secondary reduction and tool production took place on-site. The presence of the coarse-grained gabbroic flakes suggests that at least one milling implement was shaped on-site.

Eighty-eight flakes (7.7% of the debitage) are recognizable as waste from the production of bifaces. Equal numbers of these (47.7% each) are of quartz and volcanic material (including two metavolcanic flakes) yet only three of the bifacially worked artifacts are of volcanic material. There are also four obsidian bifacial thinning flakes, and three examples of bifaces of this material were also recovered



CA-SDI-15,081 Site Map

Figure 8

during testing. Within the varieties of recovered volcanic materials, the majority (95.1%) appear patinated yet the two metavolcanic flakes do not appear to be chemically weathered.

A fragment of a quartz flake that was modified unifacially by percussion flaking was found in the first level of Unit 2. The flake broke during initial trimming, after only a few flakes had been removed. Four of the 20 bifacially trimmed artifacts are early stage blank forms of quartz that broke before any diagnostic shaping took place. The remaining 16 pieces represent various mid-stages of arrow point production. One basal fragment actually appears to have broken during the final stage of trimming. Only two are complete, one of quartz and one of obsidian, but neither of these are more than minimally flaked and the distal ends are not well shaped. Fourteen are quartz (70%), three are obsidian, two are volcanic, and one is of a fine-grained metavolcanic material. Three flakes, including two from bifacial tool making, are of this same charcoal-colored material and were all recovered in two levels of Unit 1. Three of the bifacial artifacts came from the surface of the site. The subsurface recovery came from three STPs (1, 3 & 6) and from both units. Depth of these 17 bifaces ranged from the first level to 30-40 cm with the majority (76.5%) coming from the first two levels. This relatively large assemblage of incomplete points clearly indicates that point production was taking place within the site boundary.

Milling equipment at this site is represented by only fragments of a possible mano and a flat metate. An eroded piece of granitic rock appears to be shouldered from wear yet no striations or actual polish can be detected on the weathered surface. This rock, that came from the third level of excavation in STP 6, was also exposed to the alteration of fire. A small chunk of a granitic metate displaying a distinct polished surface came from the 20-30 cm level of Unit 2.

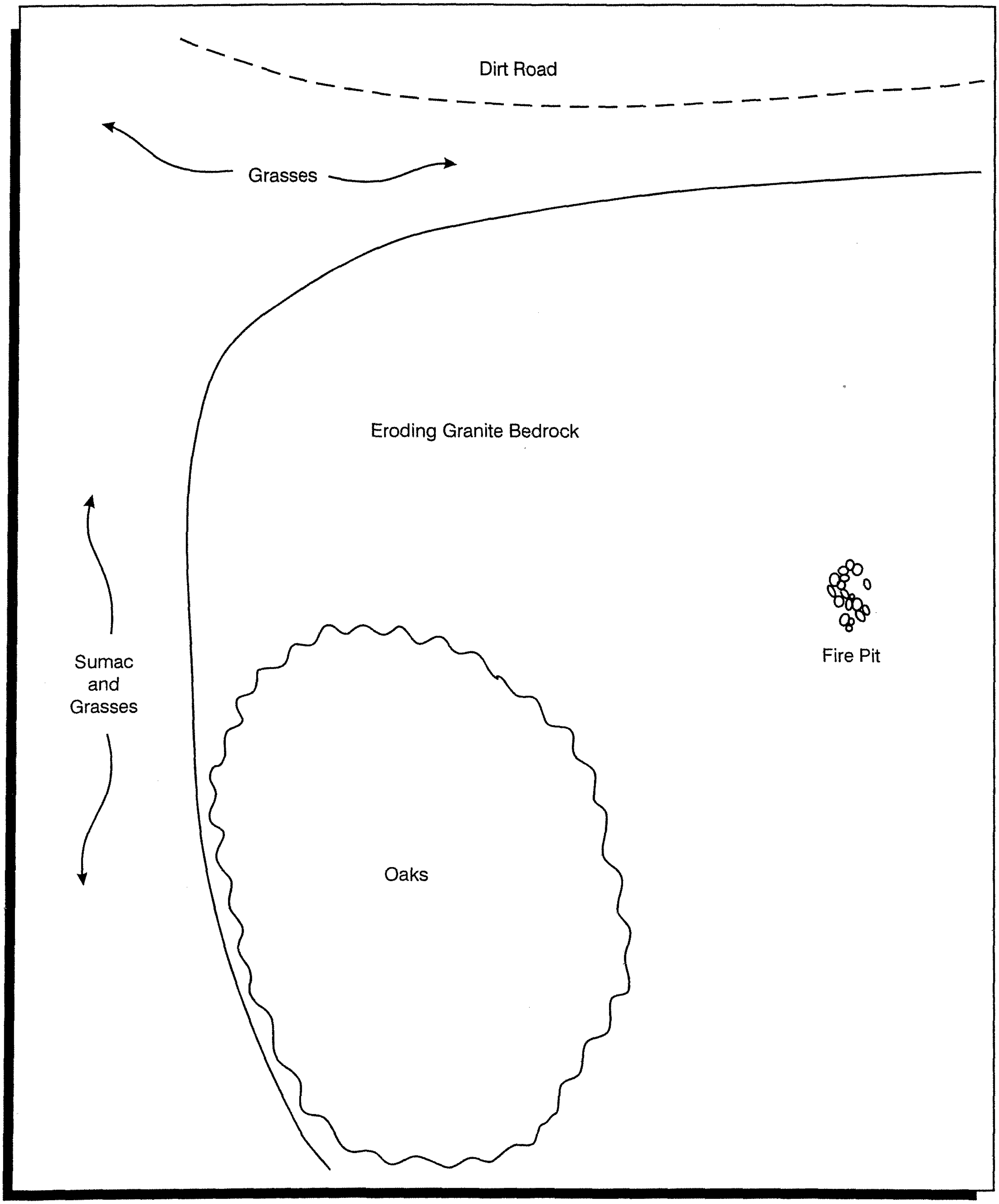
The 37 recovered ceramics vessel sherds weigh 172.4 g and all but one buffware piece are of Tizon Brownware. Three came from the surface, including a rim sherd of a wide-mouthed vessel that was decorated. A portion of a multi-lined chevron design is visible on the sherd, starting at 1.6 cm below the flattened vessel lip. The remaining sherds came from three STPs (1, 3 & 6) and both units, and were distributed through the first 50 cm. The majority (n=27; 79.4%) however, came from the first two levels. Two other rim fragments were found, both in the 20-30 cm level of Unit 1. Neither is large enough to determine vessel form accurately however. One has a beveled lip and the orientation of the slightly larger piece suggests a shallow bowl. Five body sherds have carbon residue on their interior surfaces indicating cooking was done at the site.

The first level of STP 1 produced a ground and incised piece of slate. The fragment split on a natural fracture plane so it can not be determined whether the object had a hole or not. The edge is notched and the intact face has lines incised across it in a random pattern. The same STP also produced a tip fragment of a modified piece of large mammal bone. This object may have served as an awl or punch. A weathered *Olivella biplicata* shell fragment came from the first level of Unit 1. The condition is too poor to determine if it was culturally modified into a bead, but the likelihood is pretty good since this type of shell was commonly used for beads and would not have been brought to the site as a food source. A tabular, slightly waterworn slab of granitic rock was found in the first level of Unit 1. This slightly blackened slab of rock may have been used as a sort of griddle for cooking or heating foods on a fire.

The recovered animal bone is primarily of small mammal but there are also a few small fragments of large mammal as well as turtle and lizard. The majority of the bone (86.0% by count, 85.9% by weight) came from the first three levels of excavation. Four STPs (1,3, 5 & 6) produced some amount of bone as did the two units. The recovered shell consists of small, weathered fragments of both bivalves and gastropods. Pieces of the large clam, *Laevicardium elatum*, was found in three levels of Unit 1. Due to their large size, valves of this type of clam were used for bowls or scoops and this could explain the presence of this shell at the site. Unit 2 produced even smaller pieces of unidentified snail type species from the 10-20 cm level. The presence of shellfish remains suggests the site inhabitants visited the coast or perhaps traded for shellfish as a food source or to use as utilitarian or ornamental purposes.

CA-SDI-15,085

Site evaluation for this locale involved the re-identification of previously recorded cultural constituents on a granitic bedrock bluff overlooking a seasonal drainage to the west and north (Figure 9). The bedrock platform is surrounded by seasonal grasses and marked by a cluster of large oaks at the southwest edge. An intense examination of the granite platform revealed that what was originally recorded as a milling feature was instead a section of naturally eroded bedrock. Two clusters of cobbles previously identified as deflated granary basins were found to be natural accumulations of angular eroded granite cobbles. The third, easternmost cluster of cobbles, originally recorded as a granary basin, was re-recorded as a fire pit. Comprised of fire affected cobbles and containing pieces of charcoal, this feature is interpreted as a historic fire pit likely associated with the earlier twentieth-century deer hunting activities documented in this area. No cultural material was recovered from this site.



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CA-SDI-15,085 Site Map

Figure 9

P-37-017044

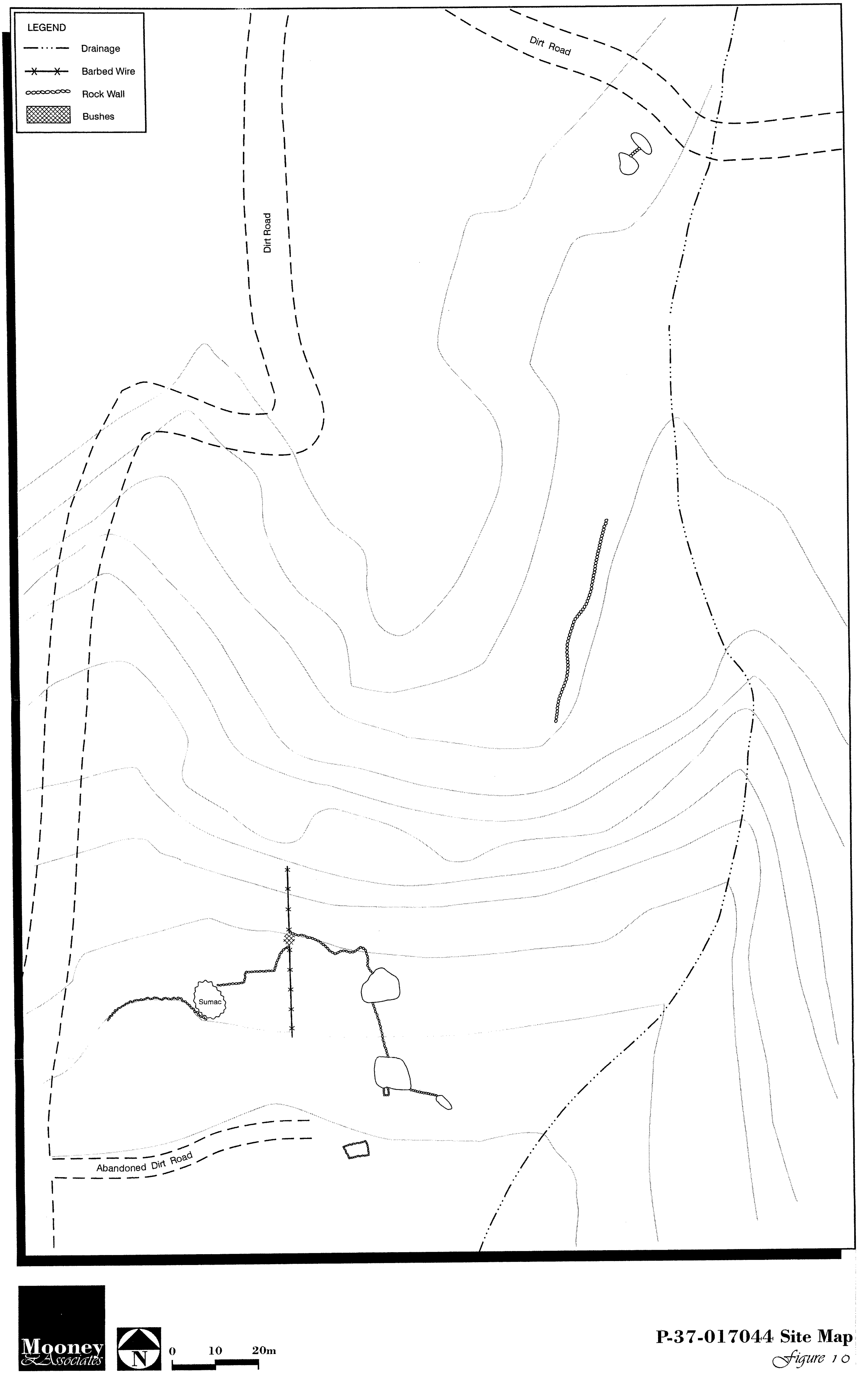
Evaluation of this site involved the mapping and recording of multiple features, and the excavation of six STPs. The site rests on the sloping food of a long, flat ridge to the north, and overlooks an intermittent drainage to the east and southeast. The surface features consist of two rock and mud mortar building foundations in a flat area of grasses, mustard, and sumac, as well as three non-contiguous segments of unmortared rock wall on a rocky slope covered in dense chaparral (Figure 10). A very sparse scatter of undiagnostic ironstone ceramics was found in the area of the building foundations.

Feature 1, a house foundation with a front step facing south and the possible remains of a chimney against the east wall, is irregular in shape and measures approximately 4m by 6m. Feature 2, a rectangular outbuilding foundation comprised of three walls set against a large boulder to the north, measures 2m by 1m. Six STPs were placed in and around the two foundations (Figure 11). It appears, however, that previous looting of the site may have removed significant amounts of cultural material. From the six STPs, only seven artifacts were recovered, including a round nail, a metal grommet, one burned and unidentifiable small mammal bone, one unidentifiable metal fragment, one Tizon Brownware sherd, and one piece of flaked stone debitage.

A semicircular rock wall begins just east of feature 2 and extends to the north and west for approximately 75m, incorporating bedrock outcrops and boulders. This wall does not appear to have been high enough to serve as a livestock enclosure and may have been intended to delineate the immediate property. Approximately 135m to the north of the foundations, one north-south trending segment of rock wall runs for approximately 50m along the eastern slope of the ridge. A second 7m segment of rock wall is also present approximately 330m north of the foundations The functions of these two wall segments is unclear, though they may relate this site to the historic site CA-SDI-15074 to the north. No cultural material was observed along any of the rock wall segments.

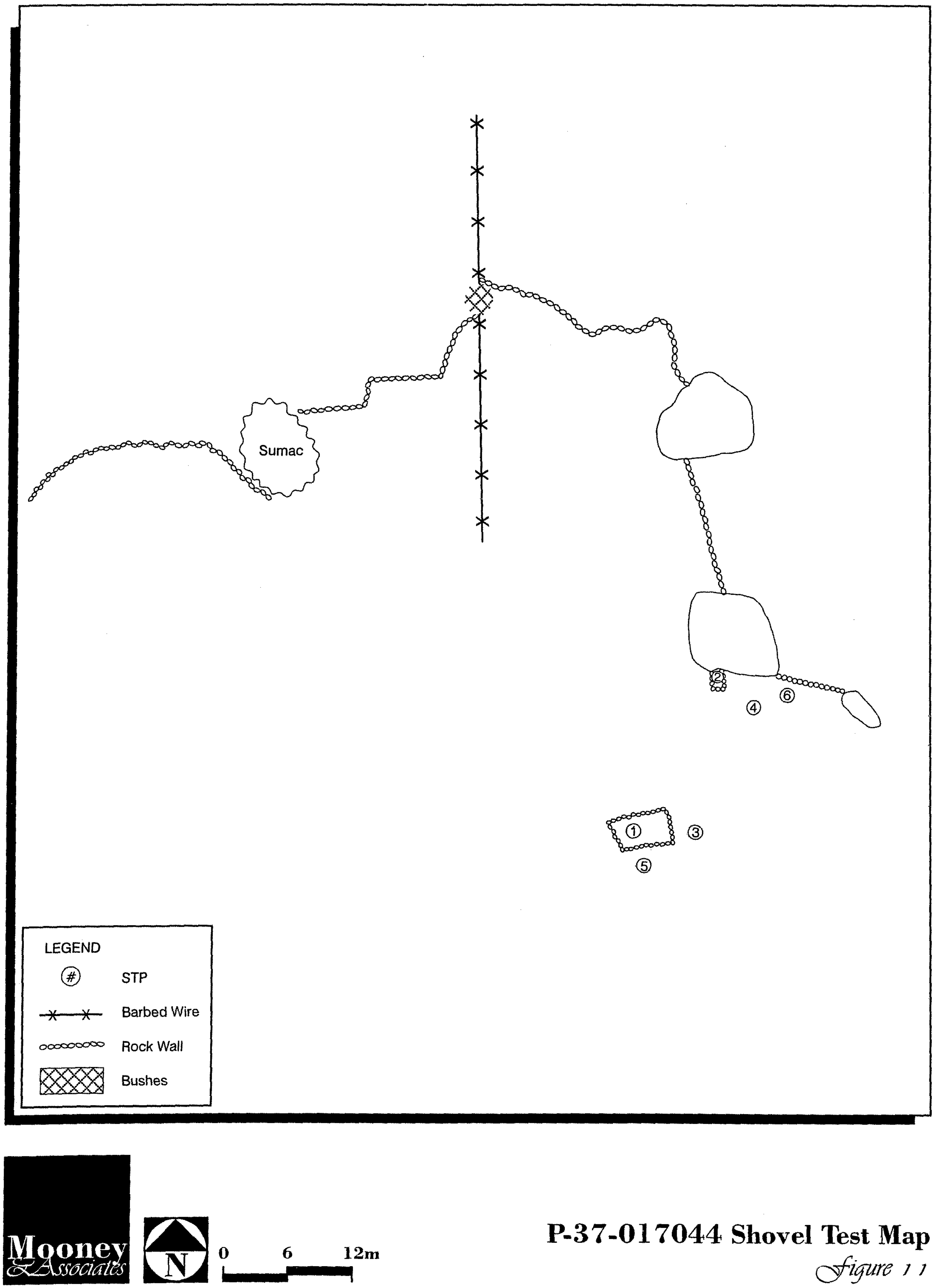
P-37-017032

Evaluation of this site involved the mapping and recording of three features and the excavation of eight STPs. The site consists of two cobble foundations, a length of cobble landscaping, and large area of artifact scatter. The features are located on a low knoll top covered in seasonal grasses and large shrubs, with occasional oak and ornamental oleander. The site overlooks a flat area to the north and west, and an intermittent drainage to the east and southeast. An abandoned dirt road with a cluster of oaks and boulders sits approximately 15 m to the north (Figure 12).



P-37-017044 Site Map

figure 10



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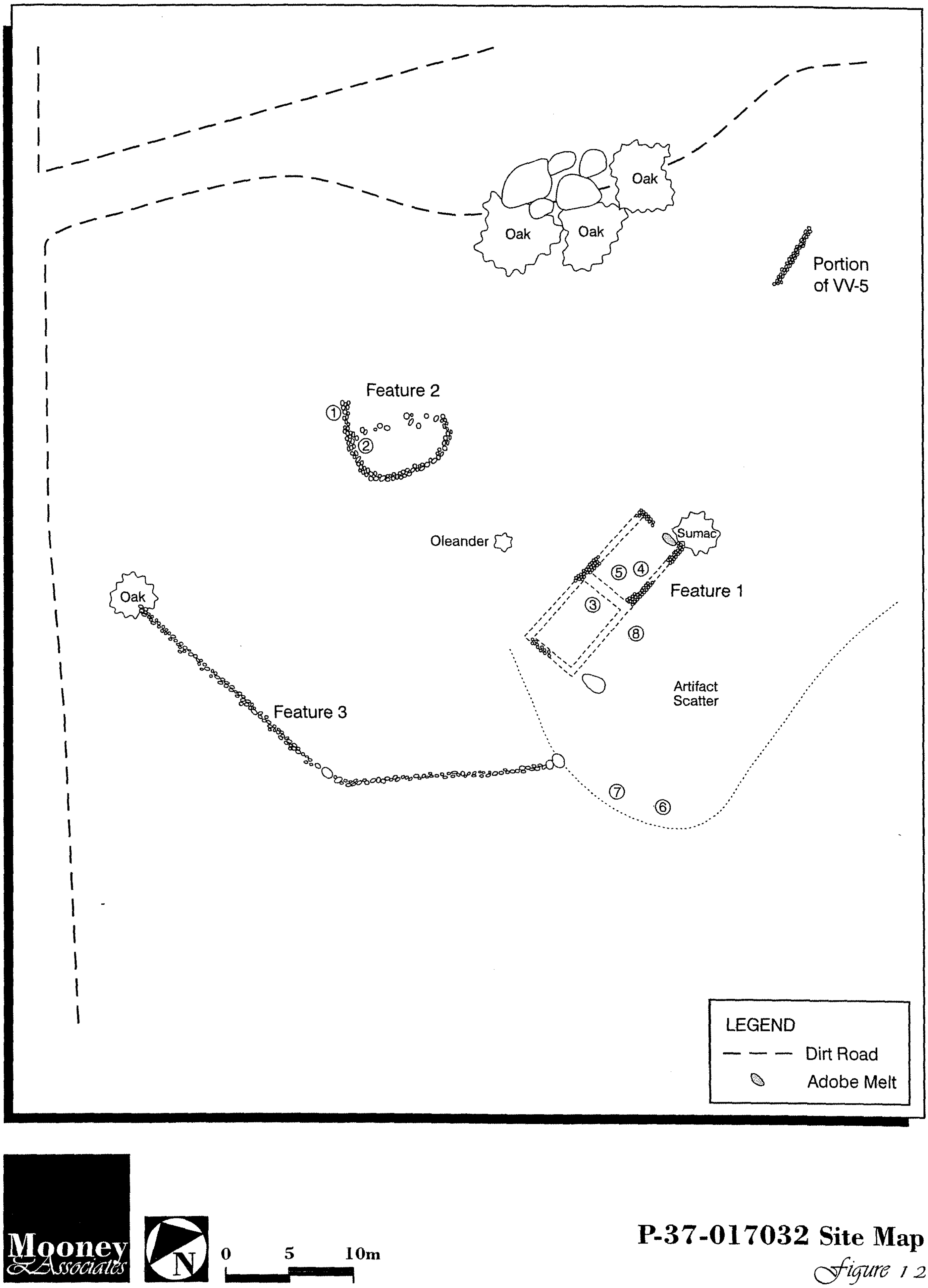
P-37-017044 Shovel Test Map

figure 11



P-37-017032 Site Map

Figure 12

Feature 1 is a rectangular, unmortared cobble house foundation measuring 4.6 by 13.5 m and trending east-west. Portions of all four external walls are exposed, and a central north-south internal wall appears to be present under a mound of soil and vegetation. A portion of possible adobe melt sits at the east end of the foundation. Approximately 15 m to the north is feature 2, a nearly semi-circular cobble foundation measuring 7.6 m from east to west. There is an apparent opening to the northeast, although it is unclear how much of the foundation has fallen and/or been buried. The function of feature 2 remains unclear. Feature 3, a low cobble retaining or landscaping wall, runs 40 m along the elevation beneath the knoll top and borders the site along the west and southwest. A light artifact scatter begins adjacent to the south side of feature 1, and extends outwards to the south and southeast for approximately 15 m. Northeast of the site is a short segment of abandoned rock-lined road, recorded as site P-37-017034. The previous survey identified the presence of an oleander encircled with cobbles to the south of feature 1; this was not found in the current study, although an ornamental oleander does sit mid-way between features 1 and 2.

Shovel tests recovered a total of 131 artifacts and faunal remains, primarily associated with feature 2 and the artifact scatter (see Table 8). No subsurface features were encountered during excavation. Shovel tests 1 and 2 along the foundation of feature 2 yielded material to a depth of 30 cm. Ceramics include one small fragment of a Rockingham-type vessel popular between 1840 and 1900, an ironstone saucer produced between 1864 and 1892 marked with the Royal Arms flanked by a lion and unicorn, with a banner reading "DIEU ET MON DROIT", and the stamp "IRONSTONE CHINA/H. BURGESS, BURSLEM", an early undecorated ironstone bowl with a transitional glaze, and an ironstone bowl with polychrome stamped decoration. Also recovered were fragments of a stoneware ginger beer bottle, a stoneware bowl, an unidentified earthenware container, an ironstone mug, a large ironstone basin, two porcelain bowls (one with molded decoration), and five Tizon Brownware sherds. Glass recovered from these shovel tests consists of fragments of 22 bottles of various colors, one fragment each from a drinking glass and an amethyst pressed-glass bowl or dish, and two buttons. Charcoal and a small piece of wood cut on both ends were also recovered from these shovel tests. Two pieces of recent gopher remains were in the upper levels of shovel test 2.

Shovel test 6 in the area of the artifact scatter yielded material to 40 cm below surface. Ceramics from this shovel test included fragments of five undecorated ironstone bowls, plates, and saucers, an ironstone bowl with a handpainted polychrome sprig pattern produced intermittently through the 1890s, and an annular yellowware bowl produced primarily between 1840 and 1900, with a peak in popularity in the 1860s and 1870s. Fragments of seven brown, yellow, clear, and amethyst glass bottles as well as one fragment of possible window glass were also recovered from shovel test 6. A single comb tine, one possible finishing nail, and five pieces of unidentified metal were also excavated. Faunal remains from this shovel test consisted of one portion of a nacreous shell, eight

Table 8. Material Recovery by Site

Item	Site Number			Total
	CA-SDI-	P-37-017032	P-37-017044	
Glass				
Bottle/jar	59	36	-	95
Drinking glass	-	1	-	1
Bowl/dish	-	1	-	1
Window?	1	2	-	3
Buttons	4	2	-	6
Misc.	6	-	-	6
Ceramic				
Tableware	14	20	-	34
Toy Cup	1	-	-	1
Brownware	2	6	1	9
Metal				
Nails	1	9	1	11
Closure	2	-	-	2
Fastener	1	-	1	2
Handle	1	-	-	1
Other	-	1	-	1
Misc.	4	15	1	20
Other				
Comb fragment?	-	1	-	1
Writing Slate?	2	-	-	2
Cut Wood	-	1	-	1
TOTAL HISTORIC ARTIFACTS	**98**	**95**	**4**	**197**
Prehistoric Items				
Flake	1	-	1	2
Metate	1	-	-	1
Faunal Remains				
Large Mammal	17	24	-	41
Small Mammal	-	3	2	5
Mammal	-	8	-	8
Shell	2	1	-	3
Charcoal	X	X	-	X
TOTAL	**119**	**131**	**7**	**257**

fragments of unidentified burned and unburned mammal bone, and five fragments of burned and unburned large mammal bone and tooth enamel.

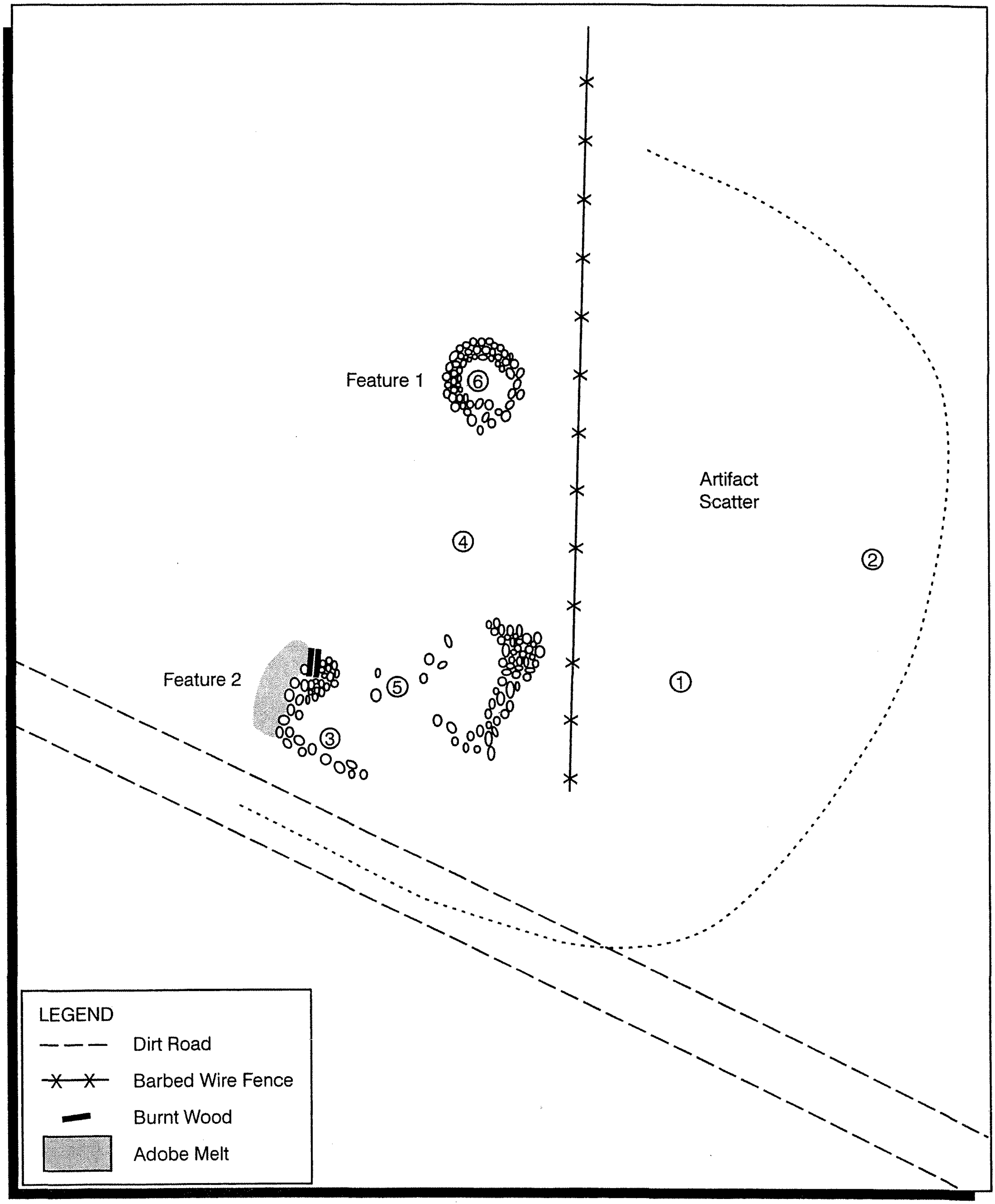
The other shovel tests at P-37-017032 yielded little cultural material. An ironstone bowl with a black and magenta floral pattern and gilt dots around the rim was recovered from shovel test 4. An ironstone tea cup with a hand-painted black, red, pink, and mustard flower with gilt dots at the center was excavated from shovel test 5. Shovel test 7 yielded a porcelain bowl with a gilt line around the circumference. Four unidentifiable glass bottle fragments, one sherd of window glass, one sherd of Tizon Brownware, seven nail fragments, a metal latch plate, four unidentifiable pieces of metal, and one small mammal remain were also found. Only small amount of glass and unidentifiable metal was recovered in and around feature 1. Excavation inside feature 1 ended at a level of eroding bedrock between 10 and 20cm below surface.

CA-SDI-15074

Evaluation of this site involved the mapping and recording of two cobble features, a systematic surface collection, and the excavation of six STPs. The features consist of a rectangular rock and mud mortar house foundation and a circular cobble oven foundation. The site sits on a gently eastward sloping hill covered in seasonal grasses and shrubs, including chamise, white sage, and flattop buckwheat, and overlooks a north-south trending drainage to the southeast (Figure 13).

Feature 1, the circular unmortared cobble foundation, measures approximately 2.7 m in exterior diameter and .6 m high. Feature 2 is located approximately 15 m south of feature 1 and consists of two separate cobble concentrations outlining the southwest and northeast corners of a rectilinear building foundation. Along the foundation's west wall are the remnants of a hearth, comprised of a semicircular arrangement of small stones with two charred logs resting on top. A raised area interpreted as adobe melt sits adjacent to the west wall on the exterior side. An artifact scatter begins 1.6 m south of the features in the adjacent dirt road, and extends approximately 15 m to the east of the foundations. A barbed wire fence runs north-south immediately east of the features. Stone jack stands straddling the road were recorded in the reconnaissance survey but were not relocated.

A total of 118 cultural remains were retrieved from the shovel tests and from surface collection in the artifact scatter (see Table 8). No subsurface features were encountered during excavation. Little material was recovered between the features, though an overturned slab of granite approximately 45 cm in length with a slight depression and small amounts wear polish was embedded in the surface immediately



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N

0 2.5 5m

CA-SDI-15,074 Site Map

Figure 13

north of shovel test 5. It is currently unclear whether this is associated with the historical occupation of the site. Feature 1 yielded only fire affected rock, supporting its identification as a cobble oven.

Cultural material was concentrated within feature 2 and the artifact scatter. Shovel test 3 inside feature 2 yielded artifacts to a depth of 80cm below surface. One black glass button and ten fragments of bottle glass were recovered from this area, including two fragments of amethyst glass and three bottle fragments with identifiable maker's marks. These, two Duffy's Malt Whiskey bottles and one Adolph Busch Glass Manufacturing Company bottle, were produced from 1886 to 1926 and 1886 to 1928, respectively. Two Tizon brownware sherds were found among the hearth remnants of feature 2. One large mammal bone was also recovered.

Shovel test 1 in the area of the artifact scatter yielded material to 60cm below surface. A diversity of material was recovered from this STP, including two undecorated ironstone fragments, a rubber button typical of the second half of the 19th century, an undecorated four-hole Prosser button, a square cut nail and other unidentifiable metal fragments, and one fragment of large mammal bone. Twelve glass fragments representing two clear flasks, one aqua patent medicine bottle, four thin flat sherds which may be window glass or bottle panels, and five unidentifiable bottle fragments were also excavated.

A systematic surface collection along a 40 m transect at 340 degrees from datum yielded 53 artifacts (44.92% of total). Ten undecorated ironstone bowl, plate, and saucer fragments, one porcelain plate fragment, and one molded porcelain handle fragment were recovered. Two of the ironstone sherds were identifiable and represent ceramics produced by H. Burgess between 1864 and 1892 and by J. & G. Meakin after 1887. Of particular interest is a fragment of a porcelain toy tea cup, indicating the presence of a child at the site. This is also supported by two fragments of writing slate. Further, the presence of two silver-plated women's purse frames and a Prosser Calico button suggest a female resided at the site. These transfer printed buttons were decorated with designs to match the affordable patterned Calico fabrics imported from India and in common use in the second half of the nineteenth century. Calico buttons were produced in the United States from 1848 to 1856, though continued to be imported from France into the early twentieth century.

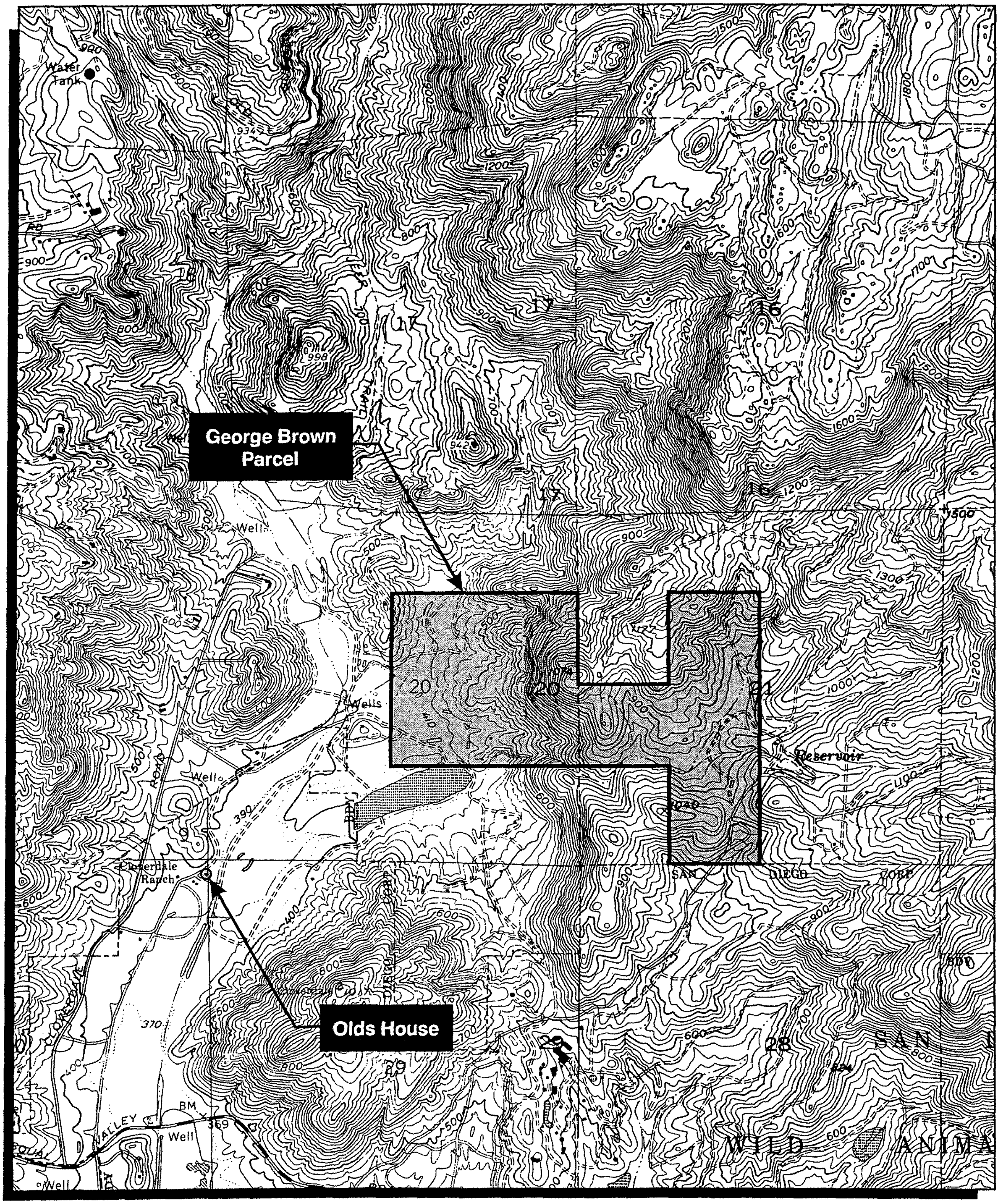
Other artifacts recovered in the surface collection include six amethyst glass fragments, one fragment of window glass, one green beer bottle with a finished ring or oil lip, one large turn-molded dark green glass alcohol bottle, a glass pumpkin-type whiskey flask, and thirteen unidentifiable glass fragments. A metal handle, possibly for a trunk, was collected. Faunal remains included one Mytlius valve shell, one saw-cut large mammal bone, and twelve burned bovid bone fragments, including a rib fragment with what appear to be parallel axe or cleaver marks on the surface.

4.4 Historic Research Results

Research was conducted at the San Diego Historical Society archives, the Escondido Historical Society, the California Room of the San Diego Public Library, the Pioneer Room of the Escondido Public Library, the San Diego County Tax Assessor's Office, and the archives of the Love Library and Map Room at San Diego State University. Sites CA-SDI-15074, P-37-017032, and P-37-017044 all fall within or directly adjacent to land whose earliest recorded owner was George Brooks Brown. Brown owned the parcel on the eastern sloping land of Sonorenian (or Sonoran, present-day Cloverdale) Canyon, then considered part of the Bernardo and later San Pasqual districts, as early as 1898 (Figure 14; San Diego County 1898). Research of lands acquired through the Homestead Act of 1862 and the Timber Culture Act of 1873, in addition to a search of the Bureau of Land Management (BLM) and Government Land Office (GLO) databases, did not reveal ownership of the land prior to 1898.

George B. Brown was born in Illinois in October 1860. Not much is known about his early life. At the age of 26 he married Canadian native Florence West, and Brown first appears in San Pasqual on the 1898 Great Register of Voters for San Diego County. The register, which recorded the physical details of individuals to ensure their proper identification in an age when photography was not yet ubiquitous, describes him as 5' 9½" tall with a fair complexion, brown hair and blue eyes. Listed as a dairyman, he joined the ranks of other 1890s San Pasqual Valley residents, like Herbert and Andrew Judson, Nelson Olds, and C.J. Rowley, who ran livestock and developed the region's dairy and creamery industries. John Judson, an early settler, dairyman, and breeder in San Pasqual, commented in 1898 on the state of dairying in the valley in the Rural Californian. Identifying the climatic and environmental constraints on cattle productivity, including high temperature, a dearth of native grasses, and the seasonal availability of edible resources, Judson noted the nearly complete failure of the San Pasqual dairy industry prior to the 1890s (San Diego Union 4,18,98). Creamery butter produced in San Pasqual was taken to San Diego by mule team and wagon, often on the "Butter Express," a horse-drawn operation carrying passengers and commodities from the valley (Wood 1961:11-12), and was of such high quality that it commanded a higher price than butter produced elsewhere.

By the time of the 1900 Federal Census, George and Florence Brown had five children. Arthur, Clara, Charles, Ethel, and Edgar ranged in age from 2 to 12 years old, respectively, and another son, Clarence, was born to them in October of that same year. The census lists George Brown as a butter maker, indicating his continued participation in the San Pasqual dairy industry. The Brown family is listed immediately after the John B. Judson family. The Judsons resided on an approximately 1000 acre tract in eastern San Pasqual Valley, in a then $3000 home located on the south bank of the San



SOURCE: USGS 7.5' Quads - Valley Center, San Pasqual, Escondido, and Rodriguez Mountain

Mooney & Associates

N

0 1000' 2000'

George Brown Parcel

Figure 14

Dieguito River on present-day Bandy Canyon Road (Thorne 1984). As the census generally recorded residences in some semblance of geographic succession, this evidence suggests that the Brown family did indeed reside on the parcel they owned.

Reflecting his interest in his community and children, George Brown served as a school trustee in San Pasqual from 1903 to 1907. Florence Brown died during this time, at the early age of 36 in 1904. Tragedy struck the family again in 1908 when 17-year old son Charles Brown died. The 1910 census still locates the remaining members of the Brown family on their property. George Brown, now recorded as a farmer, is listed with his children after the Nelson Olds, Jr. family. The wood frame Olds house (site P-37-024049) still sits in the in the northwest 1/4 of the northeast 1/4 of section 23 of the Escondido Quadrangle, only 1 mile to the west of the Brown parcel in the heart of Sonorenian Canyon (see Figure 14). By 1901, the Olds family had constructed the residence to the east of Cloverdale Road and concentrated on dairying and stock raising on their 320-acre ranch (Black 1913:510, Jordan 2001). Nelson Olds, Jr. took charge of the family's dairy, located on what later became the Cloverdale Ranch, and with his brother grew alfalfa which they cut for hay and let go to seed for export (San Diego Union 3,24,42 10:4; Black 1913:510).

In 1912, the San Diego County Directory lists George Brown as a rancher as well as his eldest surviving son Edgar, then a 21 year-old laborer working for his father. Both could be reached by the postal service along San Diego's new Rural Free Delivery Route 1. By this time, George Brown had developed a 350-acre stock ranch with alfalfa pasturage worth $12,000 on the market. In April of the same year, Brown sold the property for that price to Matthew (Matt) A. Cassou, a prominent local businessmen and member of an early pioneer family in Escondido. Brown was still running livestock on the land, promising Cassou "not to allow any of my stock to pasture on the alfalfa on said premises" (County Assessor's Office 1912). Brown subsequently moved out of the San Pasqual Valley and records show that neither he nor his children continued to live in the area. After his death in 1932 at the age of 72, George Brown was buried in San Pasqual Cemetery next to his wife and son. The youngest of the Brown children, Clarence, is also interred in the family plot.

Although Matt Cassou, the seventh of eleven children born to French Basque sheepherder Peter (Pierre) Cassou and his Irish wife, Mary McHale, owned the property until 1916 there is no direct evidence that or members of his family ever resided on the parcel. The Cassou family is known to have occupied an adobe, replaced in 1898 by a wood frame house, on their land west of present-day Escondido, and Matt Cassou later lived with his own family on Juniper Street and Seventh Avenue in the growing town itself (Perkins 1971). Cassou likely used the land for sheep grazing and it is possible that sheepherders in his employ may have stayed on the land. The property sat just to the east of the pasture land of the Rancho Rincon del Diablo land grant, and may have been used by John Wolfskill who owned and ranched that property during the late 19th and early 20th centuries.

Matt Cassou sold the parcel to George J. Bach in 1916 who maintained it as a ranch. In 1919, Bach was involved in a lawsuit over Santa Ysabel Creek water in San Pasqual. Resulting in a victory for the residents of the eastern end of the valley, Bach was denied the use of an irrigation ditch siphoning water from the creek. Ownership of the land has changed hands several times since Bach owned the property. Later owners include Henry and Clara Jost, Carl and Bernice Jendressen, Morris Levy, Albertine Fox, Virginia Jones, and Sara Millar.

4.5 Summary

Based on results of the test evaluation program conducted for nine of the cultural resources within the Valley View Estates Specific Plan project area, ratings for significance and site value were adjusted for eight of the nine sites tested, as shown below in Table 9.

Table 9. Revised Significance Ratings for Valley View Estates Sites Subjected to Test Evaluation

Record Number	Integrity	Uniqueness	Native American Concerns	Research Potential	Scheduled for Dev.	Composite Score	Value
Maximum Score	3	3	3	5	1	15/12	H/M/L
CA-SDI-15072	2	2	3	4	1	12	HIGH
CA-SDI-14769	1	1	1	0	1	4	LOW
CA-SDI-15077	1	2	3	2	1	9	MEDIUM
CA-SDI-14770	3	3	3	5	1	15	HIGH
CA-SDI-15081	3	3	3	5	1	15	HIGH
P-37-017044	1	2	N/A	1	1	5	LOW
CA-SDI-15085	2	1	N/A	0	1	4	LOW
CA-SDI-15074	2	3	N/A	4	1	10	HIGH
P-37-017032	3	2	N/A	4	1	10	HIGH

Prehistoric Site Quality Values: high=15-11 medium=10-7 low= 6-0
Historic Site Quality Values: high=12-9 medium=8-6 low= 5-0

Significance ratings for five sites were revised downward. CA-SDI-15,072 has been found to have a slightly lower research potential than was originally estimated, based on survey-level information. However, this resource still has high-value, albeit slightly less than before test evaluation. CA-SDI-15,077 too is evaluated to contain less research potential than previously estimated. Because of an absence of subsurface deposit, this resource's research potential has been reduced by half, lowering the site's significance value from high to medium. Circumstances surrounding assessment of site

CA-SDI-14,769 are more profound, because a great deal of site variability recorded during survey was found to be absent during the more rigorous examination conducted for test evaluation. This site's significance rating was revised downward accordingly, from high-value to low-value. CA-SDI-15085 is regarded as having no research potential based on the re-identification and evaluation of the resources present, as well as the absence of subsurface deposit. The rating for site P-37-017044 has also been revised downward. The site has less research potential than originally suggested due to the effects of looting on subsurface deposits.

Significance rating for sites CA-SDI-15,081, CA-SDI-15,074, and P-37-017032 have been revised upward on the basis of the cultural assemblages recorded for the subsurface deposits at these site. At CA-SDI-15,08, the presence of obsidian flaked stone lithics, at least one bone tool fragment and shellfish remains suggest this may be more a seasonal encampment than a temporary camp. The artifacts from CA-SDI-15074 indicate the presence of women and children at the site and, combined with the oven feature, suggest more than a temporary occupation. Its association with the George B. Brown parcel and the potential information regarding family life in this rural homestead give this site greater research potential than originally estimated. The depth and content of the subsurface deposits at P-37-017032 also indicate a greater potential to contribute to our understanding of history than previously anticipated. The diversity of glass and decorated ceramics, including a full representation of tableware forms, suggests an occupation of some permanence, with the material comforts carried by national and international trade networks assembled in this small rural homestead.

V. MANAGEMENT CONSIDERATIONS

As a result of the assessments and site evaluations conducted for the Valley View Estates Specific Plan, a total of 35 cultural resource sites and one isolated find have been identified. Under CEQA §15064.5, the isolated find (P-37-016276) warrants no further consideration in the environmental review/planning process. For the 35 historic and prehistoric cultural resources further treatment and consideration are warranted.

In the current study, six resource sites have been evaluated as high-value cultural resources, and 12 resource sites have been evaluated as medium-value cultural resources. Some or all of these resources may be eligible for listing in the California Register of Historical Resources. Additional testing and evaluation are recommended to determine the eligibility of these 18 cultural resource sites (CEQA §15064.5(c)(1)). Sites eligible for listing as Historical Resources will require avoidance and preservation, or further treatment and consideration to reduce potential impacts to less than significant levels.

Seventeen resource sites have been evaluated as low-value cultural resources. These resources may or may not be eligible for listing in the California Register of Historical Resources. Although further treatment in terms of mapping and testing are recommended, it is currently assumed that these additional treatments may mitigate potential impacts to less than significant levels.

Table 10 provides a summary outline of the recommendations for further treatment and consideration of the cultural resource inventory for Valley View Estates Specific Plan.

Table 9. Proposed Treatment of Cultural Resources

Record Number	Tested	Rank	Map & Test Before Approval of SP/TM	Map & Test	Mitigation
CA-SDI-14768		L			N
CA-SDI-14769	X	L			N
CA-SDI-14770	X	H			A/P
CA-SDI-14771		L		X	TM
CA-SDI-14772		M		X	T/P/DR
CA-SDI-14773		M		X	T/P/DR
CA-SDI-14774		L		X	TM
CA-SDI-14775		L		X	TM
CA-SDI-14776		M		X	T/P/DR
CA-SDI-14777		M		X	T/P/DR
CA-SDI-14778		L		X	A
CA-SDI-14779		M		X	T/P/DR
CA-SDI-14780		M		X	T/P/DR
CA-SDI-14943		L		X	TM
CA-SDI-15072	X	H			DR
CA-SDI-15074	X	H			T/P/DR
CA-SDI-15075		M		X	T/P/DR
CA-SDI-15077	X	H		X	DR
CA-SDI-15078		L		X	TM
CA-SDI-15080		L		X	TM
CA-SDI-15081	X	H			A/P
CA-SDI-15082		L		X	TM
CA-SDI-15084		M			A
CA-SDI-15085	X	L			N
CA-SDI-15088		M		X	T/P/DR
CA-SDI-15089		L		X	TM
CA-SDI-15091		L		X	TM
CA-SDI-15201		L		X	TM
P-37-017031		L			N
P-37-017032	X	H			T/P/DR
P-37-017034		L			TM
P-37-017044	X	L			N
P-37-017047		M		X	T/P/DR
P-37-017048		M		X	T/P/DR
P-37-017051		M		X	T/P/DR

Legend

DR: Data Recovery
P: Preservation
H: High
M:Medium

A: Avoid - Beyond Project
N: None Required
TM: Assume Testing Will Mitigate Impacts

VI. STAFF

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APPENDIX A

CULTURAL MATERIAL CATALOG

VALLEY VIEW ESTATES MATERIAL CATALOG

CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
14770	2000-	1	SURFACE	-	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.7
14770	2000-	2	SURFACE	-	-	-	FLAKED STONE	CORE	UNIDIRECTIONAL	-	FRAG	-	NONE	QUARTZ	1	13.0
14770	2000-	3	SURFACE	-	-	-	FLAKED STONE	MODIFIED FLAKE	UNIFACIAL	-	FRAG	Y	SUB	VOLCANIC	1	38.1
14770	2000-	4	SURFACE	-	-	-	FLAKED STONE	MODIFIED FLAKE	UNIFACIAL	-	FRAG	-	NONE	QUARTZ	1	14.0
14770	2000-	5	SURFACE	-	-	-	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	1.2
14770	2000-	6	SURFACE	-	-	-	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	0.7
14770	2000-	7	SURFACE	-	-	-	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	?	NONE	METAVOLCANI(	1	0.3
14770	2000-	8	SURFACE	-	-	-	GROUND STONE	MILLING EQUIP	MANO	BIFACIAL	WHOLE	-	WW	COB. VOL	1	859.7
14770	2000-	9	SURFACE	-	-	-	GROUND STONE	MILLING EQUIP	MANO	BIFACIAL	FRAG	-	-	GABBRO	1	383.9
14770	2000-	10	SURFACE	-	-	-	GROUND STONE	MILLING EQUIP	MANO	BIFACIAL	WHOLE	-	-	GRANITIC	1	
14770	2000-	11	BRM FEA	1	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.4
14770	2000-	12	BRM FEA	1	-	-	GROUND STONE	MILLING EQUIP	INDETERMINATE	-	FRAG	-	-	GABBRO	1	334.3
14770	2000-	13	BRM FEA	2	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.1
14770	2000-	13	BRM FEA	2	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	3.8
14770	2000-	13	BRM FEA	2	-	-	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.2
14770	2000-	14	BRM FEA	2	-	-	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	TIZON	1	5.3
14770	2000-	15	BRM FEA	2	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	2	2.0
14770	2000-	16	BRM FEA	2	-	-	FAUNAL	BONE	MAMMAL	-	-	-	-	-	4	0.8
14770	2000-	17	BRM FEA	3	-	-	GROUND STONE	MILLING EQUIP	INDETERMINATE	-	FRAG	-	-	GRANITIC	1	9.6
14770	2000-	18	BRM FEA	3	-	-	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	TIZON	1	4.3
14770	2000-	19	BRM FEA	3	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	2	20.8
14770	2000-	20	BRM FEA	4	-	-	GROUND STONE	MILLING EQUIP	MANO	BIFACIAL	FRAG	-	-	GABBRO	1	643.2
14770	2000-	21	BRM FEA	5	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	2.9
14770	2000-	21	BRM FEA	5	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.3
14770	2000-	21	BRM FEA	5	-	-	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.1
14770	2000-	22	BRM FEA	5	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	1.1
14770	2000-	23	ROCK RINC	1	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	2	4.3
14770	2000-	23	ROCK RINC	1	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.9
14770	2000-	23	ROCK RINC	1	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	4.3
14770	2000-	23	ROCK RINC	1	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	1
14770	2000-	24	ROCK RINC	1	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BUFFWARE	2	8.8
14770	2000-	24	ROCK RINC	1	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	7	43.5
14770	2000-	25	ROCK RINC	1	-	-	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	TIZON	1	11.2
14770	2000-	26	ROCK RINC	1	-	-	UNFLAKED STONE	GRIDDLE STONE?	-	-	-	-	-	GRANITIC	1	938
14770	2000-	27	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	4.2
14770	2000-	27	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	N	NONE	VOLCANIC	1	0.2
14770	2000-	27	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.3
14770	2000-	27	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.2
14770	2000-	27	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	2	2.8
14770	2000-	28	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.1
14770	2000-	29	STP	1	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	5	15.4
14770	2000-	30	STP	1	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	16	1.6
14770	2000-	31	STP	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	5	0.4
14770	2000-	31	STP	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	CORTICAL	FRAG	N	WW	VOLCANIC	1	0.1
14770	2000-	31	STP	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	0.1
14770	2000-	32	STP	1	10	20	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	2	3.8
14770	2000-	33	STP	1	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	10	2.7
14770	2000-	34	STP	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.6
14770	2000-	35	STP	2	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	3	3.5
14770	2000-	35	STP	2	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	9.0
14770	2000-	36	STP	2	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	6.3

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
14770	2000-	37	STP	2	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	15	4.0
14770	2000-	37	STP	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
14770	2000-	37	STP	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	6	2.1
14770	2000-	37	STP	2	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	1	0.3
14770	2000-	38	STP	2	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	2	10.1
14770	2000-	39	STP	2	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	15	1.1
14770	2000-	40	STP	2	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	1.0
14770	2000-	40	STP	2	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	0.2
14770	2000-	41	STP	2	10	20	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	TIZON	1	2.9
14770	2000-	42	STP	2	10	20	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	0.7
14770	2000-	43	STP	2	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	17	4.3
14770	2000-	44	STP	2	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	2	0.1
14770	2000-	44	STP	2	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
14770	2000-	44	STP	2	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
14770	2000-	45	STP	2	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	0.8
14770	2000-	46	STP	2	20	30	FAUNAL	BONE	MAMMAL	-	-	-	-	-	3	0.2
14770	2000-	47	STP	3	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	0.5
14770	2000-	47	STP	3	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
14770	2000-	47	STP	3	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.3
14770	2000-	47	STP	3	0	10	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.1
14770	2000-	48	STP	3	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	3	4.1
14770	2000-	49	STP	3	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	1	0.1
14770	2000-	50	STP	3	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	6	2.6
14770	2000-	50	STP	3	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
14770	2000-	50	STP	3	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.4
14770	2000-	50	STP	3	10	20	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	N	SUB	VOLCANIC	1	0.1
14770	2000-	51	STP	3	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	5	0.4
14770	2000-	51	STP	3	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	1.1
14770	2000-	52	STP	3	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.1
14770	2000-	53	STP	3	30	40	GROUND STONE	MILLING EQUIP	MANO	BIFACIAL	WHOLE	-	-	GRANITIC	1	675.8
14770	2000-	54	STP	3	30	40	GROUND STONE	MILLING EQUIP	MANO	MULTIFACIAL	WHOLE	-	-	GABBRO	1	1134.9
14770	2000-	55	STP	3	40	50	GROUND STONE	MILLING EQUIP	MANO/PESTLE	BIFACIAL	WHOLE	-	-	COB. VOL	1	907.4
14770	2000-	56	STP	3	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	1.7
14770	2000-	56	STP	3	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.1
14770	2000-	56	STP	3	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	CHERT	1	0.1
14770	2000-	56	STP	3	40	50	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	2	0.1
14770	2000-	57	STP	3	40	50	FAUNAL	BONE	MAMMAL	-	-	-	-	-	1	0.1
14770	2000-	58	STP	4	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	10.7
14770	2000-	59	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	18	4.9
14770	2000-	59	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	3	0.1
14770	2000-	59	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	CHERT	1	0.1
14770	2000-	59	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	0.1
14770	2000-	59	STP	4	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
14770	2000-	59	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.3
14770	2000-	60	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.9
14770	2000-	61	STP	4	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	3.2
14770	2000-	62	STP	4	0	10	MODIFIED BONE	BONE TOOL	AWL?	-	FRAG	-	-	LG MAMMAL	1	0.9
14770	2000-	63	STP	4	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	32	3.6
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	10	2.2
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	2	0.1

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	SIL. WOOD	1	0.1
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	OBSIDIAN	1	0.1
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.5
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	1.1
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	1.1
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	-	ANG	QUARTZ	1	0.4
14770	2000-	64	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.5
14770	2000-	65	STP	4	10	20	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	OBSIDIAN	1	1.5
14770	2000-	66	STP	4	10	20	CERAMICS	VESSEL	BODY SHERD	DRILLED	-	-	-	TIZON	1	19.5
14770	2000-	67	STP	4	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	22	2.4
14770	2000-	68	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
14770	2000-	68	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	CHERT	1	0.1
14770	2000-	68	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	1.1
14770	2000-	68	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	Y	WW	VOLCANIC	1	0.7
14770	2000-	69	STP	4	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	0.3
14770	2000-	70	STP	4	20	30	FAUNAL	BONE	MAMMAL	-	-	-	-	-	11	0.5
14770	2000-	71	STP	4	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	4	0.8
14770	2000-	71	STP	4	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
14770	2000-	71	STP	4	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	0.4
14770	2000-	71	STP	4	30	40	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	SPLIT	Y	WW	VOLCANIC	1	0.1
14770	2000-	71	STP	4	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
14770	2000-	72	STP	4	30	40	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BUFFWARE	1	0.7
14770	2000-	72	STP	4	30	40	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	1.5
14770	2000-	73	STP	4	30	40	FAUNAL	BONE	MAMMAL	-	-	-	-	-	9	1.3
14770	2000-	74	STP	4	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
14770	2000-	74	STP	4	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	0.6
14770	2000-	74	STP	4	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
14770	2000-	74	STP	4	40	50	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	OBSIDIAN	1	0.1
14770	2000-	74	STP	4	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	1.8
14770	2000-	74	STP	4	40	50	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	-	WW	GRANITIC	1	0.1
14770	2000-	75	STP	4	40	50	FAUNAL	BONE	MAMMAL	-	-	-	-	-	22	1.8
14770	2000-	76	STP	4	40	50	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.2
14770	2000-	77	STP	4	40	50	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	1.9
14770	2000-	78	STP	4	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	4	0.8
14770	2000-	78	STP	4	50	60	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
14770	2000-	78	STP	4	50	60	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
14770	2000-	78	STP	4	50	60	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
14770	2000-	79	STP	4	50	60	FAUNAL	BONE	MAMMAL	-	-	-	-	-	11	0.7
14770	2000-	80	STP	4	50	60	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.3
14770	2000-	81	STP	4	60	80	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	2	0.2
14770	2000-	82	STP	4	60	80	FAUNAL	BONE	MAMMAL	-	-	-	-	-	6	0.3
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	OTHER	1	0.4
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	7	1.1
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	2	0.1
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	8	0.8
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	CORTICAL	FRAG	N	SUB	VOLCANIC	1	0.4
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	N	NONE	VOLCANIC	2	0.4
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	N	NONE	VOLCANIC	1	0.2
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	1.9
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	N	NONE	VOLCANIC	2	0.3

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	0.2
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	N	NONE	OTHER	2	3.2
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	3	0.4
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	1	0.2
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.2
14770	2000-	83	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	0.8
14770	2000-	84	STP	5	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BUFFWARE	1	0.4
14770	2000-	84	STP	5	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	6	17.9
14770	2000-	85	STP	5	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	8	1.0
14770	2000-	86	STP	5	0	10	FAUNAL	SHELL	BIVALVE	-	-	-	-	LAEVICARDIUM	1	0.2
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	2	0.3
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	5	0.7
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	11	2.6
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	2	0.1
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
14770	2000-	87	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	3.4
14770	2000-	88	STP	5	10	20	FLAKED STONE	CORE	MULTIDIRECTIONAL	CORTICAL	-	-	ANG	QUARTZ	1	11.7
14770	2000-	89	STP	5	10	20	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	5.2
14770	2000-	90	STP	5	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	8	0.6
14770	2000-	91	STP	5	10	20	ECOFACT	CHARCOAL	-	-	-	-	-	-		11
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	OTHER	2	0.3
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	3	0.6
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	10	1.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	N	NONE	OTHER	1	0.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	N	NONE	OTHER	1	0.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	1	0.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	1	0.1
14770	2000-	92	STP	5	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	3	0.1
14770	2000-	93	STP	5	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	3	6.7
14770	2000-	94	STP	5	20	30	FAUNAL	BONE	MAMMAL	-	-	-	-	-	34	2.3
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	3	0.1
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	9	0.6
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	N	NONE	VOLCANIC	1	0.2
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.05
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.05
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.8
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	1	0.1
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	4	0.3
14770	2000-	95	STP	5	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	2	0.1
14770	2000-	96	STP	5	30	40	FAUNAL	BONE	MAMMAL	-	-	-	-	-	21	1.7
14770	2000-	97	STP	5	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	OTHER	1	0.1
14770	2000-	97	STP	5	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	0.1
14770	2000-	97	STP	5	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	4	7.0

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
14770	2000-	97	STP	5	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	N	NONE	VOLCANIC	1	0.3
14770	2000-	97	STP	5	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.7
14770	2000-	97	STP	5	40	50	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	1	0.2
14770	2000-	98	STP	5	40	50	FAUNAL	BONE	MAMMAL	-	-	-	-	-	2	0.8
14770	2000-	99	STP	5	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	OTHER	2	0.2
14770	2000-	99	STP	5	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	0.1
14770	2000-	99	STP	5	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	1.0
14770	2000-	99	STP	5	50	60	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	N	NONE	VOLCANIC	1	0.3
14770	2000-	99	STP	5	50	60	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	SPLIT	Y	NONE	VOLCANIC	1	0.1
14770	2000-	99	STP	5	50	60	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
14770	2000-	99	STP	5	50	60	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
14770	2000-	100	STP	5	50	60	FAUNAL	BONE	MAMMAL	-	-	-	-	-	3	0.1
14770	2000-	101	STP	5	60	70	FAUNAL	BONE	MAMMAL	-	-	-	-	-	2	0.1
15072	2000-	1	SURFACE	-	-	-	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	N	ANG	GABBRO	1	7.9
15072	2000-	2	SURFACE	-	-	-	GROUND STONE	MILLING EQUIP	INDETERMINATE	-	FRAG	-	-	GRANITIC	1	463.3
15072	2000-	3	SURFACE	-	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	3	9.1
15072	2000-	4	SURFACE	-	-	-	MODERN DEBRIS	CERAMIC	PLATE	-	-	-	-	EARTHENWARE	1	2.7
15072	2000-	5	FEATURE	5	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.8
15072	2000-	6	FEATURE	5	-	-	FLAKED STONE	MODIFIED FLAKE	UNIFACIAL	BLANK	WHOLE	-	NONE	QUARTZ	1	5.6
15072	2000-	7	FEATURE	5	-	-	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		0.8
15072	2000-	8	FEATURE	7	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	0.1
15072	2000-	8	FEATURE	7	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	2	1.0
15072	2000-	9	FEATURE	7	-	-	MODERN DEBRIS	METAL	MISC	-	-	-	-	-	1	2.1
15072	2000-	10	SURFACE	-	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	1	6.3
15072	2000-	11	STP	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.5
15072	2000-	12	STP	1	30	40	FAUNAL	BONE	MAMMAL	-	BURNEI	-	-	-	1	0.1
15072	2000-		STP	3	-	-	MODERN DEBRIS	OTHER	OIL FILTER	-	-	-	-	-	1	
15072	2000-	13	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	2	0.2
15072	2000-	13	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15072	2000-	13	STP	4	0	10	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.2
15072	2000-	14	STP	4	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	1	0.2
15072	2000-	15	STP	4	0	10	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	2	0.2
15072	2000-	16	STP	4	0	10	FAUNAL	SHELL	GASTROPOD	-	-	-	-	HALIOTIS	1	0.1
15072	2000-		STP	4	0	10	MODERN DEBRIS	PLASTIC	MISC	-	-	-	-	-	1	
15072	2000-	17	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	-	GABBRO	1	6.1
15072	2000-	18	STP	4	10	20	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	4	0.4
15072	2000-	19	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15072	2000-	19	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	10	0.9
15072	2000-	19	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15072	2000-	20	STP	4	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	1	2.0
15072	2000-	21	STP	4	20	30	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	18	1.1
15072	2000-	22	STP	4	20	30	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		0.2
15072	2000-	23	STP	4	20	30	MODERN DEBRIS	GLASS	MISC	-	-	-	-	-	1	0.2
15072	2000-	24	STP	4	30	40	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	13	0.7
15072	2000-	24	STP	4	30	40	FAUNAL	BONE	TURTLE	-	-	-	-	-	1	0.2
15072	2000-	25	STP	4	30	40	ECOFACT	EGG SHELL ?	-	-	-	-	-	-	1	0.1
15072	2000-	26	STP	4	30	40	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		2.3
15072	2000-	28	STP	4	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.3
15072	2000-	28	STP	4	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.3
15072	2000-	29	STP	4	40	50	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	2	6.0
15072	2000-	30	STP	4	40	50	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	2	0.1

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15072	2000-	31	STP	4	40	50	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		0.9
15072	2000-	32	STP	4	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.2
15072	2000-	33	STP	4	50	60	FLAKED STONE	MODIFIED COBBLI	HAMMER	-	WHOLE	N	WW	QUARTZITE	1	145.6
15072	2000-	34	STP	4	50	60	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	2	0.1
15072	2000-	35	STP	4	60	70	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	2	0.3
15072	2000-	36	STP	4	60	70	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	2	2.1
15072	2000-	37	STP	4	60	70	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	5	0.6
15072	2000-	38	STP	4	60	70	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		1.8
15072	2000-	39	STP	4	70	80	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.1
15072	2000-	39	STP	4	70	80	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	1.7
15072	2000-	39	STP	4	70	80	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	2.5
15072	2000-	39	STP	4	70	80	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15072	2000-	40	STP	4	70	80	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	4	0.3
15072	2000-	41	STP	5	20	30	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	WHOLE	-	NONE	QUARTZ	1	2.4
15072	2000-	42	STP	5	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	OBSIDIAN	1	0.1
15072	2000-	43	STP	5	30	40	GROUND STONE	MILLING EQUIP	MANO	BIFACIAL	FRAG	-	-	GRANITIC	1	463.3
15072	2000-	44	STP	5	30	40	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	8	0.4
15072	2000-	45	STP	5	30	40	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		0.9
15072	2000-	46	STP	5	40	50	MODERN DEBRIS	MISC	-	-	-	-	-	-	1	0.1
15072	2000-	47	STP	5	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15072	2000-	48	STP	5	60	70	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	1	0.1
15072	2000-	49	STP	5	70	80	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	0.4
15072	2000-	50	STP	5	70	80	FAUNAL	BONE	MAMMAL	-	-	-	-	-	4	0.5
15072	2000-	51	STP	5	80	90	FAUNAL	BONE	LG MAMMAL	-	-	-	-	-	1	0.3
15072	2000-	52	STP	6	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.1
15072	2000-	53	STP	6	20	30	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	1	0.1
15072	2000-	54	STP	6	20	30	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		1.3
15072	2000-	55	STP	6	40	50	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	2	0.1
15072	2000-	56	STP	6	40	50	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		6.9
15072	2000-	57	STP	6	50	60	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	3	0.4
15072	2000-	58	STP	6	50	60	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		1.2
15072	2000-	59	STP	6	60	70	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	1	0.1
15072	2000-	60	STP	6	60	70	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		0.1
15072	2000-	61	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	GABBRO?	1	1.2
15072	2000-	61	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	3	0.4
15072	2000-	61	UNIT	1	0	10	FLAKED STONE	DEBITAGE	BIF THIN FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15072	2000-	61	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	1.3
15072	2000-	62	UNIT	1	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	8	9.6
15072	2000-	63	UNIT	1	0	10	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	2	0.2
15072	2000-	64	UNIT	1	0	10	FAUNAL	SHELL	BIVALVE	-	-	-	-	CHIONE	1	0.2
15072	2000-		UNIT	1	0	10	MODERN DEBRIS	MUNITIONS	CASING	-	-	-	-	BRASS	1	
15072	2000-		UNIT	1	0	10	MODERN DEBRIS	METAL	MISC	-	-	-	-	-	3	
15072	2000-		UNIT	1	0	10	MODERN DEBRIS	PLASTIC	MISC	-	-	-	-	-	1	
15072	2000-	65	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	11	3.0
15072	2000-	65	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	5	0.4
15072	2000-	65	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.2
15072	2000-	65	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	4	3.1
15072	2000-	65	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	4	2.0
15072	2000-	65	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZITE	1	1.6
15072	2000-	65	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	3	31.7
15072	2000-	66	UNIT	1	10	20	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	4	7.2

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15072	2000-	67	UNIT	1	10	20	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	BROWNWARE	1	1.9
15072	2000-	68	UNIT	1	10	20	CERAMICS	PIPE	-	-	FRAG	-	-	BROWNWARE	1	1.4
15072	2000-	69	UNIT	1	10	20	FAUNAL	BONE	LG MAMMAL	-	-	-	-	-	4	3.3
15072	2000-	69	UNIT	1	10	20	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	40	5.1
15072	2000-	70	UNIT	1	10	20	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		2.0
15072	2000-		UNIT	1	10	20	MODERN DEBRIS	GLASS	FLAT	-	-	-	-	-	1	3.6
15072	2000-		UNIT	1	10	20	MODERN DEBRIS	GLASS	OTHER	-	-	-	-	-	1	0.3
15072	2000-	71	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	8	0.8
15072	2000-	71	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15072	2000-	71	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	QUARTZ	1	0.4
15072	2000-	71	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	Y	NONE	QUARTZ	1	0.3
15072	2000-	71	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15072	2000-	71	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.4
15072	2000-	71	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	Y	WW	VOLCANIC	1	0.2
15072	2000-	72	UNIT	1	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	2	18.4
15072	2000-	73	UNIT	1	20	30	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	BROWNWARE	1	2.1
15072	2000-	74	UNIT	1	20	30	CERAMICS	MODIFIED SHERD	-	-	FRAG	-	-	BROWNWARE	1	5.9
15072	2000-	75	UNIT	1	20	30	FAUNAL	BONE	LG MAMMAL	-	-	-	-	-	2	2.6
15072	2000-	75	UNIT	1	20	30	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	30	5.1
15072	2000-	76	UNIT	1	20	30	FAUNAL	SHELL	GASTROPOD	-	-	-	-	HALIOTIS	1	0.1
15072	2000-	77	UNIT	1	20	30	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		2.1
15072	2000-		UNIT	1	20	30	MODERN DEBRIS	GLASS	CONTAINER	BOTTLE	-	-	-	-	2	
15072	2000-	78	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	8	1.9
15072	2000-	78	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	2	0.2
15072	2000-	78	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	GRANITIC	1	26.0
15072	2000-	78	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	0.6
15072	2000-	79	UNIT	1	30	40	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	BROWNWARE	1	1.7
15072	2000-	80	UNIT	1	30	40	FAUNAL	BONE	LG MAMMAL	-	-	-	-	-	6	8.9
15072	2000-	80	UNIT	1	30	40	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	30	1.8
15072	2000-	81	UNIT	1	30	40	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		4.3
15072	2000-		UNIT	1	30	40	MODERN DEBRIS	GLASS	CONTAINER	BOTTLE	-	-	-	-	1	0.7
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	2	0.2
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	10	2.4
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	3	0.2
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	N	NONE	VOLCANIC	1	7.2
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	N	NONE	VOLCANIC	2	0.2
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	GABBRO?	3	0.4
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15072	2000-	82	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	1.7
15072	2000-	83	UNIT	1	40	50	FLAKED STONE	BIFACE	BLANK	-	FRAG	-	NONE	QUARTZ	1	0.1
15072	2000-	84	UNIT	1	40	50	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	0.4
15072	2000-	85	UNIT	1	40	50	GROUND STONE	MILLING EQUIP	MANO	UNIFACIAL	FRAG	-	SUB	GRANITIC	1	812.8
15072	2000-	86	UNIT	1	40	50	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	2	3.8
15072	2000-	87	UNIT	1	40	50	CERAMICS	OTHER	DAUB ?	-	-	-	-	BROWNWARE	1	1.0
15072	2000-	88	UNIT	1	40	50	FAUNAL	BONE	MIXED	-	-	-	-	-	40	7.4
15072	2000-	89	UNIT	1	40	50	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		3.6
15072	2000-		UNIT	1	40	50	MODERN DEBRIS	OTHER	FOIL	-	-	-	-	-	1	
15072	2000-	90	UNIT	1	50	60	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.3
15072	2000-	90	UNIT	1	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	9.4
15072	2000-	90	UNIT	1	50	60	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	2	0.2
15072	2000-	90	UNIT	1	50	60	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15072	2000-	91	UNIT	1	50	60	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BROWNWARE	1	2.4
15072	2000-	92	UNIT	1	50	60	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	25	2.2
15072	2000-	93	UNIT	1	50	60	FAUNAL	SHELL	-	-	-	-	-	HALIOTIS ?	1	0.1
15072	2000-	94	UNIT	1	50	60	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		5.1
15072	2000-		UNIT	1	50	60	MODERN DEBRIS	OTHER	FOIL	-	-	-	-	-	1	
15072	2000-	95	UNIT	1	60	70	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15072	2000-	95	UNIT	1	60	70	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.3
15072	2000-	96	UNIT	1	60	70	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	0.8
15072	2000-	97	UNIT	1	60	70	FAUNAL	BONE	LG MAMMAL	-	-	-	-	-	2	3.2
15072	2000-	97	UNIT	1	60	70	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	12	1.5
15072	2000-	98	UNIT	1	60	70	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		3.0
15072	2000-		UNIT	1	60	70	MODERN DEBRIS	GLASS	CONTAINER	BOTTLE	-	-	-	-	1	
15072	2000-	99	UNIT	1	70	80	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.1
15072	2000-	99	UNIT	1	70	80	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	GRANITIC	1	0.9
15072	2000-	100	UNIT	1	70	80	FAUNAL	BONE	LG MAMMAL	-	-	-	-	-	1	1.2
15072	2000-	100	UNIT	1	70	80	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	3	0.2
15072	2000-	101	UNIT	1	70	80	RADIOCARBON	CHARCOAL	-	-	-	-	-	-		0.9
15072	2000-	102	UNIT	1	80	90	FLAKED STONE	UTILIZED FLAKE	POLISH	-	WHOLE	Y	NONE	GRANITIC?	1	43.0
15072	2000-	103	UNIT	1	90	100	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	1	0.1
15072	2000-	104	UNIT	1	10	20	GROUND STONE	MILLING EQUIP	BASE FRAG	-	FRAG	-	-	GRANITIC	1	104.0
15077	2000-	1	SURFACE	201	-	-	ETHNOHISTORIC	FLAKED GLASS	BIFACIAL	INDETERMINATE	FRAG	-	-	GLASS	1	4.6
15077	2000-	2	SURFACE	201	-	-	ETHNOHISTORIC	FLAKED GLASS	UNIFACIAL	INDETERMINATE	FRAG	-	-	GLASS	1	4.1
15077	2000-	3	SURFACE	202	-	-	FLAKED STONE	UNIFACIAL TOOL	SCRAPER	-	FRAG	Y	NONE	VOLCANIC	1	12.2
15077	2000-	4	FEATURE	10	-	-	GROUND STONE	MILLING EQUIP	MANO	BIFACIAL	WHOLE	-	-	GRANITIC	1	1076.4
15077	2000-	5	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.6
15081	2000-	1	SURFACE	101	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.8
15081	2000-	1	SURFACE	102	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	3.3
15081	2000-	1	SURFACE	103	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.5
15081	2000-	1	SURFACE	105	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.2
15081	2000-	1	SURFACE	107	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.4
15081	2000-	1	SURFACE	108	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.8
15081	2000-	1	SURFACE	109	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.2
15081	2000-	1	SURFACE	111	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.2
15081	2000-	1	SURFACE	115	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	1.5
15081	2000-	1	SURFACE	300?	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	1.1
15081	2000-	1	SURFACE	114	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	1.6
15081	2000-	1	SURFACE	117	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	0.2
15081	2000-	1	SURFACE	118	-	-	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	10.7
15081	2000-	1	SURFACE	110	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	2.8
15081	2000-	1	SURFACE	104	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	2.6
15081	2000-	1	SURFACE	111	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.4
15081	2000-	1	SURFACE	113	-	-	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.7
15081	2000-	1	SURFACE	119	-	-	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.5
15081	2000-	2	SURFACE	-	-	-	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	0.8
15081	2000-	3	SURFACE	-	-	-	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	1.1
15081	2000-	4	SURFACE	-	-	-	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	WHOLE	-	NONE	QUARTZ	1	1.5
15081	2000-	5	SURFACE	120	-	-	CERAMICS	VESSEL	RIM SHERD	INCISED	-	-	-	TIZON	1	6.5
15081	2000-	6	SURFACE	112	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	2.6
15081	2000-	7	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	CHERT	1	0.1
15081	2000-	7	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	2	0.1
15081	2000-	7	STP	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	56	8.3

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL	CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15081	2000-	7	STP	1	0 10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	5	1.1
15081	2000-	7	STP	1	0 10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	5	0.2
15081	2000-	7	STP	1	0 10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.8
15081	2000-	7	STP	1	0 10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	8	1.9
15081	2000-	7	STP	1	0 10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15081	2000-	7	STP	1	0 10	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	5	2.7
15081	2000-	8	STP	1	0 10	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	0.2
15081	2000-	9	STP	1	0 10	GROUND STONE	OTHER	INCISED STONE	-	-	-	-	SLATE	1	0.3
15081	2000-	10	STP	1	0 10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	4	2.1
15081	2000-	11	STP	1	0 10	FAUNAL	BONE	SM MAMMAL	-	MIXED	-	-	-	45	6.1
15081	2000-	12	STP	1	10 20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	24	2.2
15081	2000-	12	STP	1	10 20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15081	2000-	12	STP	1	10 20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	3	0.1
15081	2000-	12	STP	1	10 20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.1
15081	2000-	12	STP	1	10 20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15081	2000-	12	STP	1	10 20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.2
15081	2000-	12	STP	1	10 20	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	4	1.1
15081	2000-	13	STP	1	10 20	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	-	QUARTZ	1	0.1
15081	2000-	14	STP	1	10 20	FAUNAL	BONE	MAMMAL	-	-	-	-		30	3.1
15081	2000-	15	STP	1	10 20	MODIFIED BONE	BONE TOOL	AWL?	-	FRAG	-	-	LG MAMMAL	1	0.1
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	20	1.5
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	2	0.6
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	4	0.5
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	OBSIDIAN	1	0.1
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	0.1
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	PROX	-	SUB	QUARTZ	1	3.1
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.1
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	0.1
15081	2000-	16	STP	1	20 30	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.1
15081	2000-	17	STP	1	20 30	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	20	1.0
15081	2000-	18	STP	1	30 40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	9	0.5
15081	2000-	18	STP	1	30 40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15081	2000-	18	STP	1	30 40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	3	0.2
15081	2000-	18	STP	1	30 40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.2
15081	2000-	18	STP	1	30 40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	0.2
15081	2000-	19	STP	1	30 40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.5
15081	2000-	20	STP	1	30 40	FAUNAL	BONE	MAMMAL	-	-	-	-	-	18	1.8
15081	2000-	21	STP	1	40 50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	2	0.2
15081	2000-	21	STP	1	40 50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	0.2
15081	2000-	22	STP	1	40 50	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	8.1
15081	2000-	23	STP	1	40 50	FAUNAL	BONE	MAMMAL	-	-	-	-	-	7	0.4
15081	2000-	24	STP	1	50 60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	9	0.5
15081	2000-	24	STP	1	50 60	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15081	2000-	25	STP	1	50 60	FAUNAL	BONE	MAMMAL	-	-	-	-	-	8	0.5
15081	2000-	26	STP	2	0 10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	5	0.6
15081	2000-	27	STP	2	10 20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.9
15081	2000-	28	STP	2	20 30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.1
15081	2000-	29	STP	2	30 40	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.4
15081	2000-	30	STP	3	0 10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	10	3.9
15081	2000-	30	STP	3	0 10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	3	0.4

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15081	2000-	30	STP	3	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	1.2
15081	2000-	30	STP	3	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15081	2000-	31	STP	3	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	2.5
15081	2000-	32	STP	3	0	10	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	1	0.1
15081	2000-	33	STP	3	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	4	0.3
15081	2000-	33	STP	3	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	0.9
15081	2000-	33	STP	3	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	0.1
15081	2000-	33	STP	3	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15081	2000-	34	STP	3	10	20	FLAKED STONE	BIFACE	INDETERMINATE	-	FRAG	-	-	QUARTZ	1	0.2
15081	2000-	35	STP	3	10	20	FAUNAL	BONE	SM MAMMAL	-	-	-	-	-	1	0.1
15081	2000-	36	STP	3	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	2	0.3
15081	2000-	36	STP	3	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
15081	2000-	36	STP	3	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.1
15081	2000-	37	STP	3	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	5	0.2
15081	2000-	37	STP	3	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
15081	2000-	38	STP	3	30	40	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.2
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	CHERT	2	0.6
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	5	0.1
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	164	19.1
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	5	0.4
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	10	1.0
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	CORTICAL	FRAG	-	SUB	QUARTZ	1	0.6
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	CORTICAL	FRAG	-	WW	CHERT	1	0.1
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	14	4.4
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	3	0.2
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	METAVOL	1	0.3
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	PROX	-	WW	CHERT	1	0.2
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	2	4.0
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	-	IND	GABBRO?	1	4.5
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	12	16.3
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	3	2.9
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	5	0.8
15081	2000-	39	UNIT	1	0	10	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.5
15081	2000-	40	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.2
15081	2000-	41	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.1
15081	2000-	42	UNIT	1	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.1
15081	2000-	43	UNIT	1	0	10	FLAKED STONE	BIFACE	INDETERMINATE	-	FRAG	-	NONE	QUARTZ	1	0.3
15081	2000-	44	UNIT	1	0	10	MODIFIED SHELL	ORNAMENT	BEAD	-	FRAG	-	-	OLIVELLA	1	0.1
15081	2000-	45	UNIT	1	0	10	FAUNAL	SHELL	BIVALVE	-	-	-	-	SHELL	1	0.2
15081	2000-	46	UNIT	1	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	45	5.2
15081	2000-	47	UNIT	1	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	5	28.1
15081	2000-	48	UNIT	1	0	10	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.9
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	132	19.0
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	8	0.7
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	GABBRO?	1	13.7
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	4	2.8
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	N	NONE	METAVOL	1	0.4
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.1
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	9	4.4
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	N	NONE	METAVOL	1	0.9

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.2
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	2	0.2
15081	2000-	49	UNIT	1	10	20	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	2	0.2
15081	2000-	50	UNIT	1	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	OBSIDIAN	1	0.1
15081	2000-	51	UNIT	1	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	OBSIDIAN	1	0.1
15081	2000-	52	UNIT	1	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.3
15081	2000-	53	UNIT	1	10	20	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	OBSIDIAN	1	0.3
15081	2000-	54	UNIT	1	10	20	FLAKED STONE	BIFACE	INDETERMINATE	-	FRAG	Y	NONE	VOLCANIC	1	3.0
15081	2000-	55	UNIT	1	10	20	FLAKED STONE	BIFACE	INDETERMINATE	-	FRAG	N	NONE	METAVOL	1	0.1
15081	2000-	56	UNIT	1	10	20	CERAMICS	VESSEL	BODY SHERD	-	FRAG	-	-	TIZON	7	42.3
15081	2000-	57	UNIT	1	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	50	4.7
15081	2000-	58	UNIT	1	10	20	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.2
15081	2000-	59	UNIT	1	0	10	UNMOD. STONE	GRIDDLE STONE?	-	-	WHOLE	-	-	GRANITIC	1	2510.0
15081	2000-	60	UNIT	1	0	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	OBSIDIAN	1	0.1
15081	2000-	61	UNIT	1	0	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	13	1.5
15081	2000-	61	UNIT	1	0	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15081	2000-	61	UNIT	1	0	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	0.1
15081	2000-	61	UNIT	1	0	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	4	1.9
15081	2000-	61	UNIT	1	0	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	0.2
15081	2000-	62	UNIT	1	0	20	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	Y	NONE	VOLCANIC	1	4.3
15081	2000-	63	UNIT	1	0	20	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	0.9
15081	2000-	64	UNIT	1	0	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	6	0.2
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	83	10.0
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	8	1.1
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	9	2.9
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	2	0.4
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.05
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	2	0.4
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	1.3
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	5	0.3
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	Y	NONE	VOLCANIC	1	2.6
15081	2000-	65	UNIT	1	20	30	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	2	0.3
15081	2000-	66	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.3
15081	2000-	67	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.3
15081	2000-	68	UNIT	1	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.2
15081	2000-	69	UNIT	1	20	30	FLAKED STONE	BIFACE	BLANK	-	FRAG	-	NONE	QUARTZ	1	1.4
15081	2000-	70	UNIT	1	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	BUFFWARE	1	3.0
15081	2000-	70	UNIT	1	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	2	1.2
15081	2000-	71	UNIT	1	20	30	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	TIZON	1	1.6
15081	2000-	72	UNIT	1	20	30	CERAMICS	VESSEL	RIM SHERD	-	-	-	-	TIZON	1	2.3
15081	2000-	73	UNIT	1	20	30	FAUNAL	BONE	MIXED	-	-	-	-	-	60	7.8
15081	2000-	74	UNIT	1	20	30	FAUNAL	SHELL	BIVALVE	-	-	-	-	LAEVICARDIUM	2	0.4
15081	2000-	75	UNIT	1	20	30	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.1
15081	2000-	76	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	10	1.9
15081	2000-	76	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	2	0.2
15081	2000-	76	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	3	0.6
15081	2000-	76	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	1.5
15081	2000-	76	UNIT	1	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15081	2000-	76	UNIT	1	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.05
15081	2000-	77	UNIT	1	30	40	FAUNAL	BONE	MIXED	-	-	-	-	-	6	2.4

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15081	2000-	78	UNIT	1	30	40	ECOFACT	CHARCOAL	-	-	-	-	-	-		1.2
15081	2000-	79	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	11	2.7
15081	2000-	79	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE FRAG	CORTICAL	FRAG	Y	WW	VOLCANIC	1	0.1
15081	2000-	79	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	0.7
15081	2000-	79	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15081	2000-	79	UNIT	1	40	50	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.05
15081	2000-	79	UNIT	1	40	50	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	Y	WW	VOLCANIC	1	0.3
15081	2000-	80	UNIT	1	40	50	FAUNAL	BONE	MAMMAL	-	-	-	-	-	8	0.6
15081	2000-	81	UNIT	1	40	50	FAUNAL	SHELL	BIVALVE	-	-	-	-	LAEVICARDIUM	1	0.5
15081	2000-	82	UNIT	1	40	50	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.1
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	CORTICAL	FRAG	N	ANG	OTHER	1	1.8
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	36	5.6
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	OTHER	1	0.1
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	0.4
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	63	4.9
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	5	3.4
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	8	1.9
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	7	0.7
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	4	0.3
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	PROX	Y	SUB	VOLCANIC	1	0.4
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.5
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	Y	NONE	VOLCANIC	1	0.05
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	Y	IND	OTHER	1	0.2
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	2.5
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	N	NONE	OTHER	2	4.9
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	16	3.9
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	6	1.4
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	5	0.2
15081	2000-	83	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE	CORTICAL	WHOLE	Y	SUB	VOLCANIC	1	0.2
15081	2000-	84	UNIT	2	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	2	0.7
15081	2000-	85	UNIT	2	0	10	FLAKED STONE	MODIFIED FLAKE	UNIFACIAL	-	FRAG	-	NONE	QUARTZ	1	2.7
15081	2000-	86	UNIT	2	0	10	FLAKED STONE	BIFACE	BLANK	EARLY STAGE	FRAG	-	NONE	QUARTZ	1	1.0
15081	2000-	87	UNIT	2	0	10	FLAKED STONE	BIFACE	PT PREFORM	EARLY STAGE	FRAG	-	NONE	QUARTZ	1	3.0
15081	2000-	88	UNIT	2	0	10	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	QUARTZ	1	0.8
15081	2000-	89	UNIT	2	0	10	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	FRAG	-	NONE	OBSIDIAN	1	0.3
15081	2000-	90	UNIT	2	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	5	14.9
15081	2000-	91	UNIT	2	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	45	6.6
15081	2000-	92	UNIT	2	0	10	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.2
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	13	4.0
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	11	2.2
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.2
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	2	0.2
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	2	0.1
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15081	2000-	93	UNIT	2	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15081	2000-	94	UNIT	2	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	OBSIDIAN	1	0.1
15081	2000-	95	UNIT	2	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	23	1.4
15081	2000-	96	UNIT	2	10	20	FAUNAL	SHELL	GASTROPOD	-	-	-	-	-	3	0.1
15081	2000-	96	UNIT	2	10	20	FAUNAL	SHELL	INDETERMINATE	-	-	-	-	-	1	0.05
15081	2000-	97	UNIT	2	10	20	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.1

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CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	CORTICAL	FRAG	-	ANG	QUARTZ	1	0.8
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	5	0.2
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	11	0.6
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	GABBRO	1	0.7
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	2.5
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	6	0.5
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	2	0.1
15081	2000-	98	UNIT	2	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	2	2.2
15081	2000-	99	UNIT	2	20	30	FLAKED STONE	BIFACE	ARROW POINT	CT	WHOLE	-	NONE	OBSIDIAN	1	0.4
15081	2000-	100	UNIT	2	20	30	GROUND STONE	MILLING EQUIP	METATE	-	FRAG	-	-	GRANITIC	1	16.1
15081	2000-	101	UNIT	2	20	30	FAUNAL	BONE	MAMMAL	-	-	-	-	-	9	0.4
15081	2000-	102	UNIT	2	20	30	ECOFACT	CHARCOAL	-	-	-	-	-	-		0.05
15081	2000-	103	UNIT	2	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.2
15081	2000-	103	UNIT	2	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	7	0.1
15081	2000-	103	UNIT	2	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.05
15081	2000-	103	UNIT	2	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.1
15081	2000-	103	UNIT	2	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	1	0.1
15081	2000-	103	UNIT	2	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.05
15081	2000-	104	UNIT	2	30	40	FAUNAL	BONE	MAMMAL	-	-	-	-	-	8	0.6
15081	2000-	105	STP	4	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	4	0.4
15081	2000-	106	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	0.1
15081	2000-	106	STP	4	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	N	NONE	VOLCANIC	1	0.3
15081	2000-	107	STP	4	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	3	0.5
15081	2000-	108	STP	5	-	-	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	17.7
15081	2000-	109	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	7	1.0
15081	2000-	109	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	3	0.3
15081	2000-	109	STP	5	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	2	0.1
15081	2000-	109	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	SPLIT	-	NONE	QUARTZ	1	0.7
15081	2000-	109	STP	5	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	4.1
15081	2000-	109	STP	5	0	10	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.05
15081	2000-	109	STP	5	0	10	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.05
15081	2000-	110	STP	5	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	6	0.4
15081	2000-	111	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	4	0.4
15081	2000-	111	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.7
15081	2000-	111	STP	5	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	4.9
15081	2000-	111	STP	5	10	20	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	N	NONE	VOLCANIC	1	0.7
15081	2000-	112	STP	5	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	2	0.1
15081	2000-	113	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	5	0.8
15081	2000-	114	STP	6	0	10	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	5	0.7
15081	2000-	114	STP	6	0	10	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	Y	NONE	VOLCANIC	2	0.6
15081	2000-	114	STP	6	0	10	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.3
15081	2000-	115	STP	6	0	10	FLAKED STONE	BIFACE	BLANK	EARLY STAGE	FRAG	-	NONE	QUARTZ	1	7.1
15081	2000-	116	STP	6	0	10	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	2	33.4
15081	2000-	117	STP	6	0	10	FAUNAL	BONE	MAMMAL	-	-	-	-	-	4	1.4
15081	2000-	118	STP	6	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	OBSIDIAN	1	0.05
15081	2000-	118	STP	6	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	10	1.7
15081	2000-	118	STP	6	10	20	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	Y	NONE	VOLCANIC	1	0.1
15081	2000-	118	STP	6	10	20	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.3
15081	2000-	118	STP	6	10	20	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.05
15081	2000-	119	STP	6	10	20	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	2	4.7

VALLEY VIEW ESTATES MATERIAL CATALOG

CA-SDI-	ACC #	CAT #	REC TYPE	UNIT	LEVEL		CLASS	SUBCLASS	ITEM	SUBITEM	COND	PAT	CORT	MATERIAL	COUNT	WT
15081	2000-	120	STP	6	10	20	FAUNAL	BONE	MAMMAL	-	-	-	-	-	4	0.4
15081	2000-	121	STP	6	20	30	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	3	0.1
15081	2000-	121	STP	6	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.6
15081	2000-	121	STP	6	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.7
15081	2000-	121	STP	6	20	30	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.2
15081	2000-	122	STP	6	20	30	GROUND STONE	MILLING EQUIP	MANO?	INDETERMINATE	FRAG	-	-	GRANITIC	1	42.2
15081	2000-	123	STP	6	20	30	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	-	1	0.3
15081	2000-	124	STP	6	30	40	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	8	0.6
15081	2000-	124	STP	6	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.4
15081	2000-	124	STP	6	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	Y	NONE	VOLCANIC	1	0.1
15081	2000-	124	STP	6	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	PROX	-	NONE	QUARTZ	1	0.1
15081	2000-	124	STP	6	30	40	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	3	0.9
15081	2000-	124	STP	6	30	40	FLAKED STONE	DEBITAGE	BIF. THIN. FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.05
15081	2000-	124	STP	6	30	40	FLAKED STONE	DEBITAGE	ANGULAR DEBRIS	NONCORTICAL	-	-	NONE	QUARTZ	1	0.3
15081	2000-	125	STP	6	30	40	FLAKED STONE	BIFACE	BLANK	EARLY STAGE	FRAG	-	NONE	QUARTZ	1	1.1
15081	2000-	126	STP	6	30	40	FLAKED STONE	BIFACE	ARROW POINT	UNFINISHED	-	-	NONE	QUARTZ	1	1.3
15081	2000-	127	STP	6	30	40	CERAMICS	VESSEL	BODY SHERD	-	-	-	-	TIZON	1	0.5
15081	2000-	128	STP	6	30	40	FAUNAL	BONE	MAMMAL	-	-	-	-	-	2	0.1
15081	2000-	129	STP	6	40	50	FLAKED STONE	DEBITAGE	FLAKE	NONCORTICAL	WHOLE	-	NONE	QUARTZ	1	0.6
15081	2000-	130	STP	6	50	60	FLAKED STONE	DEBITAGE	FLAKE FRAG	NONCORTICAL	FRAG	-	NONE	QUARTZ	1	1.3

CA-SDI-	CAT #	REC T	STP#	BEG	END	CLASS	SUBCLASS	ITEM	SUBITEM	COND	MATEI	COLOR	COUNT	COMMENTS
15074	1	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	4	all body; 2 pcs are thin (2 mm); 2 pcs 4 mm thick; 3 with pat
15074	1	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	3	2 thin body pcs (2 mm), 1 4 mm thick base frag; thin pcs are patinated
15074	1	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	5	all body; 4 are fainter purple and patinated; darker pc has cylindrical scrape marks on exterior
15074	1	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	2	body; slight patina
15074	1	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	2	body; 1 no pat; 1 very pat
15074	1	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	M	1	"flake" off container; possibly worked?
15074	1	SURF		-	-	HISTORIC	GLASS	FLAT	WINDOW	-	GLS	C	1	2 mm thick; could be panel from bottle?; patinated
15074	2	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN		3	2 rims (different vessels); 1 body (probably matches one rim?
15074	2	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	CUP	-	PRC		1	handle frag; molded (not applied) with raised ridge and cross-hatching below hole
15074	2	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	MISC	-	PRC		1	probably from a plate
15074	2	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	PLATE	-	IRN		2	1 base frag; 1 rim
15074	2	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	SAUCER	-	IRN		1	rim
15074	3	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	BASE	-	IRN		1	mark= [IRO]NSTONE / (unicorn on right half of Royal Arms with sheild and writing around it) / ??S & SON
15074	3	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	BASE	-	IRN		1	mark= PAT . . (probably) at the top of the symbol (if there was one)
15074	4	SURF		-	-	HISTORIC	CERAMIC	VESSEL		-	BRN		1	neck portion; micaceous reddish-brown clay; is it prehistoric?
15074	5	SURF		-	-	HISTORIC	METAL	CLOSURE		-	MTL		1	silver plated (?) purse frame; hinge points and connective "welds" are rusty; max width 2.75", depth 1.5"; clasp knobs 3/8" dia.
15074	6	SURF		-	-	HISTORIC	MISC	WRITING SLATE		-	SLT		1	slate frag; less than 1 mm thick but not true thickness
15074	7	SURF		-	-	FAUNAL REMAINS	BONE	LG MAMMAL		BURNEI	BNE		12	probably bovine; 1 rib frag has cut 2 parallel marks
15074	7	SURF		-	-	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURI	BNE		1	13 pieces of saw cut, sun-whitened long bone
15074	8	SURF		-	-	FAUNAL REMAINS	SHELL	BIVALVE		-	MYT		1	in 6 pieces of 1 Mytlius valve; is it of historic origin?
15074	9	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	SAUCER	-	IRN		1	base portion; mark= (lion on left side of Royal Arms design) / J & .../ EA... / H...; mark is J. & G. MEAKIN/EASTWOOD WORKS/HANLEY, ENG. (cf. The Steamer Fedora, near Bayfield, Wisc., sunk 1901); >1887
15074	10	SURF		-	-	HISTORIC	CERAMIC	TABLEWARE	PLATE	-	IRN		1	base portion; mark= (lion on left side of Royal Arms design) / I[RONSTONE] / BU[RGESS]?
15074	11	SURF		-	-	HISTORIC	CERAMIC	TOY	CUP	-	PRC		1	< half of a cup/mug and handle portion from a childs tea set; molded so that there is no hole in handle; 13/16" tall/ 1/2" base dia./ 3/4"? Mouth
15074	12	SURF		-	-	HISTORIC	METAL	HANDLE		-	MTL		1	3/8" thick solid iron rod; trunk handle?
15074	13	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	1	base and partial side of pumpkin whiskey flask type bottle; 2" long x 1.5" wide oval base; bubbles in glass; patinated in inside
15074	14	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	shoulder frag of large bottle; Duffy's Malt Whiskey??
15074	15	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	1	misc. frag

CA-SDI-	CAT #	REC T	STP#	BEG	END	CLASS	SUBCLASS	ITEM	SUBITEM	COND	MATEI	COLOR	COUNT	COMMENTS
15074	15	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	base frag of large turn-molded bottle, like champaigne, but no kick-up
15074	15	SURF		-	-	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	finished ring/oil beer bottle lip; very scuffed up
15074	16	SURF		-	-	HISTORIC	CERAMIC	VESSEL		-	BRN		1	bowl rim; seems to have coating, not like normal prehistoric vessels; is it even Indian made? Looks like "Tizon" in cross-section
15074	17	STP	1	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	2	1 oval-bottomed, flask base frag; 1 misc body frag
15074	17	STP	1	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	body frag, near neck; protrusion may be part of a screw lid closure - not normal threads tho
15074	17	STP	1	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	body frag; pale olive
15074	17	STP	1	0	10	HISTORIC	GLASS	MISC		-	GLS	A	1	strange, small fragment of triangular protrusion,? corner?
15074	17	STP	1	0	10	HISTORIC	GLASS	MISC		-	GLS	C	2	small, thin, flat pcs - window or bottle panel?
15074	18	STP	1	0	10	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN		1	rim; thick rimmed bowl; serving?
15074	18	STP	1	0	10	HISTORIC	CERAMIC	TABLEWARE	PLATE	-	IRN		1	rim; large plate or platter
15074	19	STP	1	0	10	HISTORIC	CLOTHING	BUTTONS		-	PRC	M	2	1 whole, 1 frag of 4-hole Prosser-type, depressed in middle; 14 mm dia.
15074	20	STP	1	10	20	HISTORIC	GLASS	MISC		-	GLS	A	2	teeny pcs of thin, flat glass; faintly aqua; 1 is battered/tumbled
15074	21	STP	1	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	1	body
15074	21	STP	1	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	body, but with squared off shoulder or ?
15074	22	STP	1	30	40	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	1	small base corner of rectangular panel patent med. bottle; deep aqua; Blake base
15074	23	STP	1	30	40	HISTORIC	CLOTHING	BUTTON		-	RUB		1	9/16" dia. Rubber button or female end of snap; >1849
15074	23	STP	1	30	40	HISTORIC	METAL	MISC		-	MTL		1	frags of thin pc; perhaps from backing of fastener?
15074	24	STP	1	30	40	CHARCOAL				-				0.1 grams
15074	25	STP	1	50	60	HISTORIC	METAL	MISC		-	MTL		1	frag of thin pc; perhaps from backing of fastener?
15074	26	STP	1	50	60	CHARCOAL				-				0.1 grams
15074	27	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	4	5 small "flakes" made in excavtion of at least 3 different bottles ?
15074	27	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	weathered body fragment
15074	27	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body (plus 7 "flakes" made in excavtion)
15074	27	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	2	body; from same bottle; "flaked" during excavation; + 5 "flakes"
15074	27	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	M	1	small "flake" off jar?
15074	27	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	1	flat body frag, very slight bow
15074	28	STP	2	0	10	HISTORIC	METAL	MISC		-	MTL		1	rusty flat piece
15074	28	STP	2	0	10	HISTORIC	METAL	NAIL	SQ	FRAG	MTL		1	approx 3/16" machine square headed cut nail; 1/8" x 1/16" shank; no length
15074	29	STP	2	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	small body frag/"flake"
15074	29	STP	2	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	small body frag
15074	29	STP	2	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	2	1 body frag; 1 whiskey bottle lip
15074	30	STP	2	10	20	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURI	BNE		2	probably bovine; 1 pc in fragments; 1 frag of tooth enamel
15074	31	STP	2	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	1	thick body frag
15074	31	STP	2	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	"flake" probably off of whiskey bottle ?
15074	31	STP	2	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	"flake" off previous brown bottle

Valley View CA-SDI-15074 Catalog

CA-SDI-	CAT #	REC T	STP#	BEG	END	CLASS	SUBCLASS	ITEM	SUBITEM	COND	MATEI	COLOR	COUNT	COMMENTS
15074	32	STP	2	20	30	HISTORIC	MISC	WRITING SLATE		-	SLT		1	slate frag; less than 1 mm thick but not true thickness
15074	33	STP	2	20	30	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURI	BNE		1	frag from bone of previous level
15074	34	STP	3	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	1	1 thin, flat frag; bottle body?
15074	34	STP	3	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	1	thin shoulder? Pc
15074	34	STP	3	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	3 body pcs
15074	34	STP	3	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	base and body frags (small scraps discarded); base embossed: ?? G. M. CO./ 122 (in center); 3" dia. Base; may be A.B.G.M. CO. - Adolp Busch 1886-1928 ??
15074	34	STP	3	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	base (3" dia.)frag and body frags; base embossed: PATD AUG 24 / W / ??; shoulder frag has: ROC[HESTER]; this is Duffy's Malt Whiskey, from Rochester NY
15074	35	STP	3	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	base (3" dia.) and 2 shoulder frags (the body frags were discarded); base embossed: PATD AUG 24 / O / 1886; shoulder frag has: [ROCHES[TER, N[Y]; this is Duffy's Malt Whiskey, from Rochester NY
15074	36	STP	3	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	8 body frags; 6 are patinate tho; probably from bottle in previous levels
15074	37	STP	3	30	40	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	body frag
15074	37	STP	3	30	40	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag
15074	38	STP	3	50	60	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag
15074	39	STP	3	50	60	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURI	BNE		1	meta-tarsal/carpal? Phalanx of?
15074	40	STP	3	70	80	HISTORIC	CLOTHING	BUTTON		-	GLS	B	1	3/4" dia; 2-hole; flat on 1 face, convex on opposite; holes slightly depressed on flat side
15074	41	STP	4	10	20	HISTORIC	METAL	MISC		-	MTL		1	small, bit of rust
15074	42	STP	5	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	1	1 thin, flat frag; bottle body?; yellowish tinge
15074	43	STP	5	0	10	HISTORIC	CLOTHING	BUTTON	DECORATEC	-	PRC	M	1	4-hole Prosser-type Calico button; 12 mm dia.; blue transfer design pattern 126
15074	44	STP	5	0	10	HISTORIC	METAL	CLOSURE		-	MTL		1	silver plated (?) purse frame; hinge points are rusty; max width 2 3/8", depth 1.5"; clasp knobs 3/8" dia.; rows of dots on a diagonal as decoration
15074	45	STP	5	20	30	FLAKED STONE	DEBITAGE	FLAKE	NONCORTIC.	WHOLE	VOL		1	aphanitic; very patinated, 3-cm size, with abraded platform; 2.2 g
15074	46	STP	5	30	40	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag
15074	47	STP	O	0	10	CHARCOAL				-				1.4g; some pieces only partially charred; also recovered were a pc of Eucalyptus bark and 8 small fire-affected bits of rock
15074	48	STP	O	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag; slightly patinated
15074	48	STP	O	10	20	HISTORIC	GLASS	MISC		-	GLS	C	1	very thin (1 mm) curved pc, like a tube?
15074	49	STP	O	10	20	FAUNAL REMAINS	SHELL	GASTROPOD		-	AST		1	1.8 g; Astraea undosa (wavy turban) fragments
15074	50	STP	O	10	20	CHARCOAL								0.5 g; also 2 small fire-affected rocks
15074	51	SURF	-	-		PREHISTORIC	GROUND STC	METATE	FLAT		GRN		1	large slab of granitic rock with slight depression and wear pollish on high spots; possibly eroded rough so wear doesn't show up well

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CAT #	REC	STP#	BEG	END	CLASS	SUBCLASS	ITEM	SUBITEM	COND	MATE	COLOR	COUNT	COMMENTS
1	STP	1	0	30	HISTORIC	CERAMIC	TABLEWARE	SAUCER	-	IRN	-	1	6 original frags, broken in excavation into total of 19 pcs; mark= (Royal arms) / (banner that reads: DIEU ET MON DROIT) / IRONSTONE CHINA / H. BURGESS, BURSLEM; foot ring is 3" dia.; crazed
2	STP	1	0	30	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	STN	-	1	rim frag; projected 3" dia.
2	STP	1	0	30	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	POR	-	1	cereal type?; exterior molded design, possibly floral; in 3 fresh pcs
2	STP	1	0	30	HISTORIC	CERAMIC	TABLEWARE	MUG	-	IRN	-	1	rim frag; small portion; crazed
3	STP	1	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	2	1 thin (1/16") pc, body
3	STP	1	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	neck portion?
3	STP	1	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	5	3 body frags are slightly patinated
4	STP	1	0	10	HISTORIC	CERAMIC	VESSEL		-	BRN	-	4	all different vessels (1 in 2 pcs); 1 has ext. carbon residue
5	STP	1	0	10	HISTORIC	METAL	MISC			MTL	-	3	flat, rusty frags
6	STP	1	0	10	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	10	several broken into bits
7	STP	1	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag
8	STP	1	10	20	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	1	fresh break
9	STP	1	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frags from same bottle; 5 plus bits
10	STP	1	20	30	HISTORIC	METAL	MISC		-	MTL	-	1	thin rusty frag
11	STP	1	20	30	HISTORIC	OTHER	CUT WOOD		-	WOD	-	1	small piece (1/2"), cut on both ends, with axe?
12	STP	1	20	30	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	2	1 long bone end in 21 pcs
13	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	2	both are thin (1/16") body frags; small pc faintly patinaed; large pc has numerous bubbles
13	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	body frag; slight patinated
13	STP	2	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	Y	2	body frags; "amber";1 has been burned
13	STP	2	0	10	HISTORIC	GLASS	DRINKING GLASS		-	GLS	C	1	rim frag; 3" dia.
14	STP	2	0	10	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN	-	1	part of foot ring; soft paste, cobalt in glaze
15	STP	2	0	10	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	1	bovine?
15	STP	2	0	10	FAUNAL REMAINS	BONE	LG MAMMAL		BURNED	BNE	-	3	2 ends of deer leg bone?; 1 other frag
15	STP	2	0	10	FAUNAL REMAINS	BONE	SM MAMMAL		UNBURNED	BNE	-	1	gopher/squirrel ? Femur; recent
16	STP	2	0	10	CHARCOAL				-		-		< 0.1g
17	STP	2	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	2	body frags from 2 different bottles; both patinated
17	STP	2	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	body?; very thick (1/2") and very patinated - golden; 2 pcs
17	STP	2	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag (in 3 pcs); patinated
17	STP	2	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	Y	1	body frag
18	STP	2	10	20	HISTORIC	CERAMIC	CONTAINER	CROCK	-	ETH	-	1	"Rockingham-type"
18	STP	2	10	20	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	POR	-	1	small rim frag; cereal type?
18	STP	2	10	20	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN	-	1	body frag (in 4 fresh pcs); polychrome stamped dark green leaves & Magenta flowers; mends with 25
19	STP	2	10	20	HISTORIC	CERAMIC	CONTAINER	BOTTLE	-	STN	-	1	lip of ginger beer bottle
20	STP	2	10	20	HISTORIC	CERAMIC	VESSEL		-	BRN	-	1	reddish
21	STP	2	10	20	HISTORIC	CLOTHING	BUTTON		-	GLS	M	2	4-hole style, depressed in middle; 9/16" dia.
22	STP	2	10	20	HISTORIC	METAL	MISC		-	MTL	-	4	misc pcs (14) of rusty, flat metal
23	STP	2	10	20	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	1	4 pcs of deer ? Long bone
23	STP	2	10	20	FAUNAL REMAINS	BONE	SM MAMMAL		UNBURNED	BNE	-	1	gopher jaw; recent
24	STP	2	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	teeny body frag
24	STP	2	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	Y	1	body frag; patinated

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CAT #	REC	STP#	BEG	END	CLASS	SUBCLASS	ITEM	SUBITEM	COND	MATE	COLOR	COUNT	COMMENTS
24	STP	2	20	30	HISTORIC	GLASS	CONTAINER	BOWL/DISH	-	GLS	P	1	pressed glass design; in 7 fresh fragments; can't tell vessel type or design
25	STP	2	20	30	HISTORIC	CERAMIC	CONTAINER	BOTTLE	-	ETH	-	1	body frag; 3 fresh pcs; pinkish clay; is it a bottle?
25	STP	2	20	30	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN	-	1	rim frag of large bowl/basin
25	STP	2	20	30	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN	-	1	body frag (in 5 fresh pcs); polychrome stamped dark green leaves & Magenta flowers; mends with 18
26	STP	2	20	30	HISTORIC	METAL	MISC		-	MTL	-	1	1 flat rusty frag
27	STP	2	20	30	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	1	bovine?
28	STP	3	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	1	teeny body frag
29	STP	3	0	10	HISTORIC	METAL	NAIL	SQ	FRAG	MTL	-	5	5 heads, 15 shank frags; approx 1/4" square head; 1 is 2.5" long
30	STP	3	0	10	HISTORIC	METAL	MISC		-	MTL	-	1	10 small rusty flat frags
31	STP	3	0	10	FAUNAL REMAINS	BONE	SM MAMMAL		UNBURNED	BNE	-	1	long bone frag
32	STP	3	0	10	CHARCOAL				-		-		1.2 g
33	STP	3	10	20	HISTORIC	METAL	MISC		-	MTL	-	2	3 may be nail(s), too deteriorated; 5 flat pcs
34	STP	3	0	10	HISTORIC	METAL	NAIL	SQ	FRAG	MTL	-	1	
35	STP	4	0	10	HISTORIC	CERAMIC	TABLEWARE	BOWL		IRN	-	1	body frag; polychrome = fine-petaled flower of black and magenta petals, yellow center with hand pained gold dots around rim of central part
36	STP	4	0	10	HISTORIC	METAL	MISC		-	MTL	-	1	flat pc
36	STP	4	0	10	HISTORIC	METAL	NAIL	SQ	FRAG	MTL	-	1	1 head and 2 shank pcs
37	STP	4	0	10	HISTORIC	METAL	OTHER		WHOLE	MTL	-	1	4.5" long latch plate; 3 recessed screw holes; from unidentified machinery
38	STP	5	0	10	HISTORIC	GLASS	FLAT	WINDOW?	-	GLS	A	1	3 frags; is it window? 2 mm thick
39	STP	5	0	10	HISTORIC	CERAMIC	TABLEWARE	CUP/MUG	-	IRN	-	1	3 pcs, molded and handpainted with red, pink, black, mustard flower with gold dots inside
40	STP	6	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag
40	STP	6	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	Y	1	body frag
41	STP	6	0	10	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN	-	1	serving bowl?; blue, purple, green handpainted sprig pattern
41	STP	6	0	10	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	IRN	-	1	burned?
41	STP	6	0	10	HISTORIC	CERAMIC	TABLEWARE	PLATE	-	IRN	-	1	
41	STP	6	0	10	HISTORIC	CERAMIC	TABLEWARE	SAUCER	-	IRN	-	1	is it a saucer?
42	STP	6	0	10	HISTORIC	METAL	MISC		-	MTL	-	1	3 pcs rusty bits
42	STP	6	0	10	HISTORIC	METAL	NAIL	SQ	FRAG	MTL	-	2	1 head like from STP 4; 1 frag of thinner, sq. shank - finishing nail?
43	STP	6	0	10	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	2	bits + tooth enamel
44	STP	6	10	20	HISTORIC	GLASS	FLAT	WINDOW?	-	GLS	A	1	patinated
45	STP	6	10	20	HISTORIC	CERAMIC	TABLEWARE	BOWL	-	STN	-	1	yellowware with annular brown decoration; mixing bowl
45	STP	6	10	20	HISTORIC	CERAMIC	TABLEWARE	PLATE	-	IRN	-	1	very small, thick pc
46	STP	6	10	20	FAUNAL REMAINS	BONE	MAMMAL		UNBURNED	BNE	-	4	misc bits
46	STP	6	10	20	FAUNAL REMAINS	BONE	MAMMAL		BURNED	BNE	-	1	
47	STP	6	20	30	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag
48	STP	6	20	30	HISTORIC	CERAMIC	TABLEWARE	PLATE	-	IRN	-	1	platter? Too small to tell, but thick 3/8"
49	STP	6	20	30	HISTORIC	OTHER	COMB?		-	PLS	-	1	is it a tine frag from a black plactic comb?
50	STP	6	20	30	FAUNAL REMAINS	BONE	MAMMAL		UNBURNED	BNE	-	2	
50	STP	6	20	30	FAUNAL REMAINS	BONE	MAMMAL		BURNED	BNE	-	1	
51	STP	6	20	30	FAUNAL REMAINS	SHELL	GASTROPOD		-	NCR	-	1	2 small bits of nacreous shell, either abalone or wavy turbin?

CAT #	REC	STP#	BEG	END	CLASS	SUBCLASS	ITEM	SUBITEM	COND	MATI	COLOR	COUNT	COMMENTS
52	STP	6	30	40	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	C	2	body frag; patinated; all pcs are just little bits
52	STP	6	30	40	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	body frag; scratched and weathered; faintly purple
52	STP	6	30	40	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	B	1	body frag; patinated
53	STP	6	30	40	HISTORIC	METAL	MISC		-	MTL	-	1	2 frags of flat rusty metal
54	STP	6	30	40	FAUNAL REMAINS	BONE	LG MAMMAL		UNBURNED	BNE	-	2	small bits
54	STP	6	30	40	FAUNAL REMAINS	BONE	LG MAMMAL		BURNED	BNE	-	1	tooth enamel?
55	STP	7	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	P	1	body frag
56	STP	7	0	10	HISTORIC	CERAMIC	TABLEWARE	BOWL		POR		2	1 base/foot ring frag with band of gilt around exterior "waist"; 1 body frag which may be from same vessel
57	STP	7	0	10	HISTORIC	CERAMIC	VESSEL		-	BRN	-	1	
58	STP	7	10	20	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	O	1	body frag
59	STP	8	0	10	HISTORIC	GLASS	CONTAINER	BOTTLE	-	GLS	A	1	body frag; looks brand new?

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CAT #	REC TYPE	STP#	BEG-L	END-L	CLASS	SUBCLASS	ITEM	SUBITEM	COND	MATERIAL	COUNT	COMMENTS
1	STP	1	30	40	HISTORIC	METAL	NAIL	RND	FRAG	MTL	1	5/16" dia head; wire cut; corroded
2	STP	2	20	30	HISTORIC	METAL	FASTENER	GROMMET	-	MTL	1	7/32" dia
3	STP	2	20	30	FLAKED STONE	DEBITAGE	ND FRAGMENT	NONCORTICAL	-	VOL	1	patinated; porphyritic
4	STP	2	20	30	FAUNAL REMAINS	BONE	SM MAMMAL		BURNED	BNE	2	
5	STP	6	10	20	HISTORIC	METAL	MISC		-	MTL	1	flat rusty metal
6	STP	6	30	40	HISTORIC	CERAMIC	VESSEL		-	BRN	1	is this historic or prehistoric?

BRIAN F. SMITH AND ASSOCIATES
ARCHAEOLOGICAL AND HISTORICAL CONSULTING

July 13, 1992

Ray York
York and Company
1970 East Vista Way
Suite 201
Vista, California 92084

Dear Mr. York:

The following is a brief report on the cultural resources discovered during the field survey of the Crowder/Valley View Partners SPA 4 Project. The survey of the property included portions of Areas 3 and 4, which are shown on the project cultural resource map. You may choose to use this information as you like; however, we will eventually record all of the sites which we discovered. In addition, I have included a proposal for the testing and evaluation of the cultural resources within the project.

If you have any questions regarding the results of the survey, or about the proposed testing program, please contact me as soon as possible. Our work schedule is generally light for the next few months, and we would be available to initiate the testing program at any time.

Sincerely,

Brian F. Smith

BFS:ks

14678 IBEX COURT SAN DIEGO, CALIFORNIA 92129 (619) 484-0915 FAX (619) 484-0988

CULTURAL RESOURCES WITHIN THE CROWDER SUBDIVISION PROJECT

The following list of sites corresponds with the temporary site numbers shown on the attached Cultural Resource Location Map (page 10). Included in this list is an estimate of the potential significance (i. e., high, medium, or low) of each site. This estimate is based solely on surface features and artifacts observed during the survey. Further investigations, especially subsurface testing of the sites, could change our evaluation of these sites. The locations of the sites are also provided on the map.

(1) **Site 1** consists of five historic components, including a roughly rectangular house foundation constructed from cobbles and boulders; a semicircular rock feature made of cobbles and boulders; a discontinuous boulder retaining wall; an old water tank (wood with iron bands) and an old well with a pump and a historic trash deposit (solarized glass, tin can, sheet tin roof and tin bucket fragments). It is possible that elements of this site may date to the late 1800s. Potential significance — high.

(2) **Site 2** appears to be located off the property.

(3) **Site 3** appears to be located off the property.

(4) **Site 4** is a prehistoric site consisting of 12+ slicks on three bedrock milling features and a possible granary base (a stacked rock feature on bedrock—four boulders, one course high). Potential significance — medium.

(5) **Site 5** is prehistoric site which includes 20+ milling surfaces on three bedrock milling features, a possible cupule feature or "rain rock" on one of bedrock features, a portable metate, and a light scatter of flakes and potsherds which measures approximately 90 meters square. Site 5 also includes an excavated feature with stacked rock enhancement of the boulders along its perimeter. Dr. Moriarty of our staff interpreted this as a possible *temescal*, or sweat house, which would have had a wooden planked roof, and may have been built by the Indians in historic times. Potential significance — high.

(6) **Site 6** has dual components representing historic and prehistoric occupations. Site 6A is a historic component that includes a stacked rock feature and a rock retaining wall for a wagon road, similar to and probably associated with the wagon road feature at Site 1. Potential significance — low. Site 6B is a prehistoric component consisting of a single slick on a granite bedrock outcrop, and an associated potsherd. Potential significance — low.

(7) **Site 7** has dual components representing historic and prehistoric occupations. Site 7A is prehistoric site consisting of at least five slicks on two bedrock milling features. Potential significance — low. Site 7B is historic and consists of another section of a wagon road retaining wall (probably associated with Sites 1 and 6, adjacent to it). Potential significance — low.

(8) **Site 8** appears to be located off the property.

(9) **Site 9** appears to be located off the property.

(10) **Site 10** appears to be located off the property.

(11) **Site 11** appears to be located off the property.

(12) **Site 12** appears to be located off the property.

(13) **Site 13** appears to be located off the property.

(14) **Site 14** appears to be off the property.

(15) **Site 15** has dual components representing historic and prehistoric occupations. Site 15A is prehistoric and is characterized by a small scatter (5+) of basalt flakes. Potential significance — low. Site 15B is a light scatter of ironstone fragments and historic glass fragments which are probably associated with Site 47. Site 15 was severely impacted by road grading during the time of the survey, resulting in a dispersal of the scatter of artifacts. Potential significance — low.

(16) **Site 16** is a possible prehistoric rock room. No surface artifacts or other features were observed at the time of the survey. Potential significance — medium.

(17) **Site 17** is a possible prehistoric granary base on a bedrock granite sheet. Potential significance — low.

(18) **Site 18** is a prehistoric site consisting of a rock shelter which contained a concentration of ceramic shards commonly called a "pot drop." The ceramic potsherds were mapped and collected after photographing and drawing, to prevent possible vandalism. The rock shelter was comprised of three "chambers;" the downsloping or lowest one contained the pot drop. Potential significance — medium.

(19) **Site 19** is an historic or post-contact Indian site consisting of a light scatter of worked historic glass (4+ shards) on the edge of bedrock. Potential significance — low.

(20) **Site 20** is located on the property line and is comprised of at least two and possibly three granary bases on bedrock; there are no milling surfaces or surface artifacts present. Potential significance — low.

(21) **Site 21** is located just south of the property line (less than 150 feet) and could be consolidated with Site 20, as it is a prehistoric site consisting of another granary base and a rock circle which measures approximately 2.5 meters in diameter. Both features are located on granite bedrock sheets. Potential significance — low.

(22) **Site 22** is a prehistoric site consisting of a mortar and two slicks on two bedrock milling features. No other surface features or surface artifacts were observed. Potential significance — low.

(23) **Site 23** consists of a rock wall of unknown origin which measures 12 to 15 feet long and extends three courses high. The wall seems to have been constructed to enhance a bowl-shaped depression in the hillside to form a natural corral. Potential significance — low.

(24) **Site 24** is a prehistoric site consisting of one (possibly two) granary bases on bedrock. Potential significance — low.

(25) **Site 25** consists of an stacked rock feature of unknown origin which is only one course high. Potential significance — low.

(26) **Site 26** is a prehistoric site consisting of at least three slicks on one bedrock milling feature, which is actually a gigantic boulder with a relatively flat top. Potential significance — low.

(27) **Site 27** is a prehistoric site consisting of a light, dispersed scatter of at least three flakes. Potential significance — low.

(28) **Site 28** is a possible prehistoric granary base on a granite bedrock sheet. Potential significance — low.

(29) **Site 29** consists of a historic rock wall located just downslope from Site 28. Potential significance — low.

(30) **Site 30** is a prehistoric site that includes at least 11 mortars, 10+ slicks, three collars, and three slicks, on three bedrock milling features. In addition, one potsherd, one quartz flake, and one obsidian flake were also observed. Potential significance — high.

(31) **Site 31** is a prehistoric site consisting of a rock circle on dirt which incorporates medium size boulders, a medium flake scatter, a small midden area and two bedrock milling features with at least three slicks. There is evidence of some vandalism to the site in the form of "pothunting." Potential significance — medium.

(32) **Site 32** is a prehistoric site comprised of two slicks on one bedrock milling feature located across the creek from Site 3. Potential significance — low.

(33) **Site 33** appears to be located off the property.

(34) **Site 34** is a possible prehistoric granary base. Potential significance — low.

(35) **Site 35** consists of a single slick on one bedrock feature. No artifacts were observed. Potential significance — low.

(36) **Site 36** is a prehistoric granary base situated on a remote ridge. Potential significance — low.

(37) **Site 37** appears to be located off the property.

(38) **Site 38** appears to be located off the property.

(39) **Site 39** appears to be located off the property.

(40) **Site 40** appears to be located off the property.

(41) **Site 41** is a prehistoric site consisting of two large potsherds which are weathering out of a former cache in a cliff face. Potential significance — low.

(42) **Site 42** is located downslope from Site 31, and consists of three slicks on one bedrock milling feature. Potential significance — low.

(43) **Site 43** is a prehistoric site which consists of at least four slicks and a mortar on three bedrock milling features, along with a light scatter of four potsherds and flakes. Potential significance — medium.

(44) **Site 44** consists of at least three prehistoric "stacked" rock features and two loci of potsherds (a minimum of eight were observed, including an unusual rim shard which was collected) and a quartz flake. Dr. Moriarty viewed the site and interpreted it as an agave roasting pit with two adjacent fieldstone "quarries" which were probably utilized prehistorically. Potential significance — medium.

(45) **Site 45** is an historic site on the property boundary, comprised of the ruins of a cabin and an outbuilding constructed from rock and mud mortar. The outbuilding abuts a rock (boulder) face, utilizing it as a wall. Also, there are several sections of rock fence (approximately 18 meters in length) associated with the cabin ruins. Potential significance — high.

(46) **Site 46** is an historic site which consists of an anomalous rock pile (about 1.5 meters across) with two or three associated historic can fragments which appear to be from meat tins (i. e., Spam). Potential significance — low.

(47) **Site 47** is an historic site which consists of the ruins of a cabin and a circular outbuilding constructed from rock and mud mortar. Dr. Moriarty viewed the site and interpreted it as a pastoral dwelling with an associated bread oven. There is also a medium to heavy scatter of historic refuse, including solarized glass, ironstone, milk glass, and large animal (horse or cow) bones. Potential significance — high.

(48) **Site 48** is a prehistoric site with at least two slicks on two bedrock milling features, as well as a light artifact scatter (basalt, quartzite flakes, ceramic pottery shards) which overlaps the historic scatter at Site 47. Potential significance — low

(49) **Site 49** consists of a short segment of historic rock fence. Potential significance — low.

(50) **Site 50** consists of a long segment (18+ meters) of historic rock fence; it is located on or near the property line. Potential significance — low.

(51) **Site 51** is a locus of Site 45, and is situated off the property. The site consists of 13+ mortars and at least three slicks, as well as a midden deposit with potsherds, quartz and basalt flakes, and one piece of marine shell. There is conspicuous evidence of vandalism (a pot hunter's pit, a weathered hat, and a rusty trowel).

(52) **Site 52** consists of one slick situated on a single bedrock feature; no artifacts were present. Potential significance — low.

(53) **Site 53** appears to be historic, and consists of a rock wall (about two courses high) and a "watering hole" excavated into the sandy creek bed in a grove of oak trees. Potential significance — low.

(54) **Site 54** is appears to be a historic stacked rock animal enclosure located approximately 60 meters east of Site 53. Potential significance — low.

(55) **Site 55** consists of at least 10 slicks on two bedrock milling features. Potential significance — medium.

(56) **Site 56** consists of one poorly developed slick on a single bedrock feature; no artifacts were present. Potential significance — low.

(57) **Site 57** represents dual components of historic and prehistoric occupation. Site 57A is an historic rock wall with mud mortar — possibly cabin ruins. Potential significance — medium. Site 57B is a prehistoric site consisting of at least six slicks on four bedrock milling features. Potential significance — medium.

(58) **Site 58** is an historic cairn or fencepost base (i. e., a small pile of rocks). Potential significance — low.

(59) **Site 59** is a prehistoric rock shelter which contains a single potsherd and burned animal bone fragments. Potential significance — low.

(60) **Site 60** consists of the ruins of a historic cabin constructed from rock and mud mortar (including an intact chimney) in the northeast corner of the property. Potential significance — high.

(61) **Site 61** is a prehistoric site consisting of at least two stacked rock features situated upon a large "pile" of bedrock granite boulders. These features resemble the agave roasting pit identified by Dr. Moriarty at Site 44. Potential significance — medium.

(62) **Site 62** appears to be located off the property.

The archaeological survey of the subject property resulted in the discovery of several archaeological sites. The record searches for the project, including Areas 3, 4, and 4A, did not indicate that any sites were previously recorded within the project boundaries. The project includes sites that range from low to high in potential significance, and are either historic or prehistoric in origin. The prehistoric sites appear to be associated with a late prehistoric Luiseño Indian subsistence pattern in the area which focused upon the collection of food from the available resources. The historic sites observed appear to date from the late 1800s to the early 1900s, and some historic sites are associated with herding animals, possibly sheep.

The chart on the following page provides a summary of the types of sites discovered during the field survey, and also shows the potential significance of the sites. Although 66 sites were originally discovered during the survey, only the 49 sites that are definitely located within the project boundaries are listed in the chart. Of the 66 sites identified, four of these are dual component sites, and therefore, the site map shows only 62 locations. Seventeen sites are located off the property, in areas which may be added to the project at a later time.

SITE DESCRIPTIONS	SITE SIGNIFICANCE HIGH	MEDIUM	LOW
Historic Sites (Residences)	Sites 1, 45, 47, and 60	Site 57	Sites 6, 15, and 46
Historic Sites (Other Features)			Sites 7, 23, 25, 29, 49, 50, 53, 54, and 58
Historic Indian Sites			Site 19
Prehistoric Surface Scatter (No Features)			Sites 15, 27, and 41
Prehistoric Milling Features (No Surface Artifacts)		Sites 55 and 57	Sites 6, 7, 22, 26, 32, 35, 42, 52, and 56
Prehistoric Milling Features (Some Surface Artifacts)	Sites 5 and 30	Sites 31, 43, and 48	
Prehistoric Milling Features with Granary Base		Site 4	
Prehistoric Rock Features (± Surface Artifacts)		Sites 44 and 61	
Prehistoric Granary Bases			Sites 17, 20, 24, 28, 34, and 36
Prehistoric Granary Bases with Rock Circle			Site 21
Prehistoric Rock Shelter with "Pot Drop"		Site 18	Site 59

Note: Sites listed more than once (e. g. Sites 6, 7, 15, and 57) include more than one component, and must be treated as two separate sites, such as Historic Site 15A and Prehistoric Site 15B.

In accordance with the California Environmental Quality Act (CEQA) and the environmental guidelines of the City of Escondido, all of the cultural resources discovered within the project, or in areas adjacent to the project that maybe indirectly impacted by the development project, must be evaluated for significance. The significance rating of each individual site will then be used to determine the level of potential impacts represented by the project and the types of mitigation that will be necessary for project approval. In order to determine the significance of each site, a subsequent field testing program will be necessary. The testing program will involve the detailed mapping and analysis of each resource to extract the information necessary to evaluate the resource both on a regional scale as well as in the context of the sites within the project. The testing and impact information will be incorporated into a report with the survey results for submittal to the City of Escondido as part of the project EIR. The testing information is also critical to the constraints analysis for the project. The scope of work for the testing of each cultural resource located within the project will include the following elements:

(A) Detailed mapping of all surface elements, including artifacts and features (such as bedrock milling features, rock walls and shelters, foundations, wells, etc.);

(B) Detailed recordation, photographing, and sketching of any surface features;

(C) The excavation of a series of shovel tests to examine the potential for the existence of subsurface deposits of cultural materials. All soil excavated from the shovel tests will be sifted through 1/8-inch mesh screen, and all artifacts and ecofacts will be collected. The number of shovel tests at each site will depend upon the size and potential of each site;

(D) The excavation of up to two standard one-meter-square test units to qualitatively analyze the subsurface content of the area of greatest information potential identified by the shovel test data and/or surface recovery data. All soil excavated from the test units will be sifted through 1/8-inch mesh screen, and all artifacts and ecofacts will be collected;

(E) Backhoe trenching may be necessary to help delineate the subsurface boundaries of large sites or to search for possible buried features and foundations. A percentage of the soil excavated by the backhoe will be sifted through 1/8-inch mesh screen, and all artifacts and ecofacts will be collected;

(F) The identification, cataloguing and labeling, and preservation of all recovered artifacts;

(G) The evaluation of the significance of the site and the potential for adverse impacts from the proposed project;

(H) The incorporation of all information from the testing of the sites and the data from the laboratory analysis of recovered artifacts in a report of findings.

All of the cultural resources located within the project boundaries will require additional field work to accurately determine the significance of the individual sites. However, the amount of field work at each site will be determined by the size and content of each site. For example, a site listed as a "granary base" will not require the same amount of work as a site listed as "a cobble and boulder cabin foundation, with associated trash dump and a large scatter of surface artifacts."

In addition to the sites listed in the previous chart, the following sites were also located during the field survey and are tentatively considered to be located outside the project boundaries: Sites 2, 3, 8, 9, 10, 11, 12, 13, 14, 33, 37, 38, 39, 40 and 51. Due to the rugged terrain and the lack of survey monuments for the project, some or all of these adjacent sites may actually be located inside the project boundaries. If that is the case, these sites will require an evaluation for site significance in a manner similar to the testing phase for the sites listed in the chart above. Any sites that lie outside the project boundaries, but which may be impacted by the project development (such as sites that may be impacted by utility construction or roads to the development) will also require testing to determine site significance.

PROPOSAL TO COMPLETE THE TESTING AND EVALUATION OF CULTURAL RESOURCES

The testing of the cultural resources within the project will be expensive, due primarily to the number of sites that were discovered. However, since many of the sites are considered to contain minimal data potential, the size of the testing program at these sites may be limited. For the purposes of estimating the budget to complete the testing program, the field investigation fee per site is projected based upon the potential significance rating provided in the table on page 6. The field investigation fee for sites, according to the projected level of significance, would be:

Sites with potential high significance:	$3,000.00	to	$5,100.00
Sites with potential medium significance:	$1,800.00	to	$2,600.00
Sites with potential low significance:	$500.00	to	$1,100.00

The actual cost of the program will be based upon the time necessary to conduct the program at each site. The cost will be computed according to the hourly rates of the field personnel, which are provided in the attached schedule of hourly rates for Brian F. Smith and Associates. The projected cost per site provided above will be used to establish a cost ceiling for the program; however, by billing on an hourly rate basis, the actual billed amount should be lower than the ceiling provided. The cost ceiling is computed below:

Sites with high significance — 6:	Range of costs – $18,000.00	to	$30,600.00
Sites with medium significance— 10:	Range of costs – $18,000.00	to	$51,000.00
Sites with low significance— 33:	Range of costs – $16,500.00	to	$36,300.00

The cost ceiling for the project as a whole will range from a low figure of $52,500.00 to a high of $117,900.00. This cost ceiling range applies only to the field work, and may be revised in the event that any major discoveries are made that require additional work to record and sample. The level of effort needed to complete the remaining laboratory analysis and report phases will depend directly upon the quantity of artifacts and other data generated by the field work. Therefore, I will estimate a corresponding cost ceiling for the analysis and report phases upon completion of the field work phase. It will also be necessary to conduct historical research to determine the age and uses of the various historic sites on the property. This work will be performed during the field work phase, and will be billed in addition to the field work cost ceiling. A chain of ownership may be required to complete the historic analysis, and this would be supplied by the owners' title company. The cost of the title information is not included in this proposal.

The time required to complete the field work phase will be approximately two to two and one-half months. This estimate may be revised if any major discoveries are made that require additional time to study. The laboratory analysis and report phases would likely require two months each to complete. Therefore, the entire program is estimated to require approximately six months. If you need to have the program completed sooner, I am confident we can adjust the timing by adding personnel to the program to accomplish the work in a shorter time.

Schedule of Hourly Rates
Brian F. Smith and Associates

Brian F. Smith, Principal Consultant	$80.00/hour
Dr. James R. Moriarty, Consultant	$65.00/hour
Senior Field Archaeologist	$49.00/hour
Assistant Field Archaeologist	$35.00/hour
Field Archaeologists	$24.00/hour
Word Processing	$22.00/hour
Graphics	$22.00/hour

Appendix H
Limited Geotechnical Evaluations

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

November 8, 2001
Project No. 103608004

Ms. Sonja Itson
Mooney and Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

Subject: Addendum to Limited Geotechnical Evaluation
Proposed Rockwood Road Extension, Valley View Estates
San Diego County, California

Reference: Ninyo & Moore, 2001"Limited Geotechnical Evaluation, Proposed Rockwood Road Extension, Valley View Estates, San Diego County, California," dated July 18, 2001.

Dear Ms. Itson:

In accordance with your request we are providing this addendum letter to our referenced limited geotechnical evaluation report for the extension of Rockwood Road into the Valley View Estates property. We understand that, as part of the project, a footbridge or undercrossing is planned for foot traffic between the San Pasqual Union School located on the south side of Rockwood Road and the residential neighborhood north of Rockwood Road, west of Old Ranch Road.

Based on observations conducted during our limited geotechnical evaluation, either a footbridge or an undercrossing in this area should be generally feasible from a geotechnical viewpoint. Based on surface observations, the area of Rockwood Road between the school and Old Ranch Road appears to be primarily underlain by excavatable fill soils, topsoil/colluvium, and alluvial soils. Surface outcrops of granitic rock were not observed near the road in this area. Based on topography and local vegetation, shallow groundwater may be locally present.

As stated in our referenced report, we recommend that a comprehensive geotechnical evaluation, including development-specific subsurface exploration and laboratory testing be conducted prior to design and construction. The purpose of the subsurface evaluation would be to evaluate the subsurface conditions in the area of the proposed alignment including the footbridge/undercrossing and to provide information pertaining to the engineering characteristics of earth materials at the project site including depth to groundwater. From these data, recommendations for grading/earthwork, tunneling, footbridge foundations, surface and subsurface drainage, and other pertinent geotechnical design considerations may be formulated.

We appreciate the opportunity to be of service on this project. If you have any questions regarding this letter, please contact the undersigned.

Respectfully submitted,
NINYO & MOORE

Ronald D. Hallum, C.E.G.
Senior Project Geologist

Randal L. Irwin, C.E.G.
Chief Engineering Geologist

RDH/RI/kmf

Distribution: (2) Addressee

LIMITED GEOTECHNICAL EVALUATION
PROPOSED ROCKWOOD ROAD EXTENSION
VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PREPARED FOR:
Mooney and Associates
1551 Fourth Avenue, Suite 430
San Diego, California 92101

PREPARED BY:
Ninyo & Moore Geotechnical and Environmental Sciences Consultants
5710 Ruffin Road
San Diego, California 92123

July 18, 2001
Project No. 103608004

July 18, 2001
Project No. 103608004

Ms. Sonja Itson
Mooney and Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

Subject: Limited Geotechnical Evaluation
Proposed Rockwood Road Extension, Valley View Estates
San Diego County, California

Dear Ms. Itson:

Transmitted herein are the results of Ninyo & Moore's limited geotechnical evaluation for the Proposed Rockwood Road Extension, Valley View Estates project. This study was conducted in accordance with your request and included review and analysis of available geologic and geotechnical background data, and a geologic reconnaissance of the project site area. We understand that the results of this study will be utilized in the preparation of environmental impact documents.

We appreciate the opportunity to be of service. Should you have any questions or comments regarding this report, please contact our Project Manager, Mr. Ron Hallum, or the undersigned at your convenience.

Respectfully submitted,
NINYO & MOORE

Randal L. Irwin, C.E.G.
Chief Engineering Geologist

Gregory T. Farrand, C.E.G.
Principal Geologist

RDH/RI/GTF/rlm

Distribution: (4) Addressee

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1. INTRODUCTION

In accordance with your request, Ninyo & Moore has performed a geologic reconnaissance and limited geotechnical evaluation of the project site (Figure 1). The purpose of this study was to evaluate geologic and geotechnical conditions using available geologic and geotechnical data and to provide a geotechnical reconnaissance report. This report presents our preliminary findings and conclusions pertaining to the proposed Rockwood Road Extension, Valley View Estates development. Subsurface exploration and laboratory testing of materials were not included in the scope of this limited evaluation.

2. SCOPE OF SERVICES

Ninyo & Moore's scope of services has included review of background materials, and geologic reconnaissance of the site area. Specifically, we have performed the following tasks:

- Review of pertinent, available geotechnical literature including topographic maps, geologic maps, stereoscopic aerial photographs, and geotechnical and geologic reports. Documents pertaining to the site vicinity, as well as documents reviewed for our site evaluation are listed in the Selected References section of this report.
- Geologic reconnaissance and limited mapping of the project study area. A geotechnical map is provided as Plate 1.
- Compilation and analysis of the data obtained.
- Preparation of this report to present our preliminary findings and conclusions, particularly, regarding potential geotechnical constraints and possible mitigative measures.

3. SITE AND PROJECT DESCRIPTION

The site is located near the southwestern edge of the proposed Valley View Development, along the eastern edge of the city of Escondido. The proposed development consists of an approximately 6,820 foot long extension of Rockwood Road from the current terminus near Old Ranch Road into the proposed Valley View Development. Grading for the proposed roadway will result in cut slopes up to roughly 180 feet in height, constructed at slope angles of up to 1.5:1 (horizontal to vertical) and fill slopes up to roughly 160 feet in height, constructed at slope angles up to 2:1. The proposed roadway alignment extends south from Station 34+40.86, turns east near approximately Station 57+00, crosses Brillwood Hill Road at Station 59+00, private residential properties between Stations 59+00 and 65+500, and Old Battlefield Road at Station 66+00. The roadway turns northeast, crosses several orchards between Stations 66+50 and 72+00, and extends along a steep, westerly-facing slope to approximately Station 91+00. At Station 91+00, the roadway turns to the east and extends along a westerly draining creek and a series of northerly facing slopes and ravines to the terminus at Station 102+58.59. Elevations range from approximately 408 feet above mean sea level (MSL) near Station 38+00 to approximately 880 feet above MSL near approximately Station 98+00. The western portion of the site is covered by sparse to moderate brush and local landscaping. The roadway passes through existing private properties and orchards near the center of the roadway and the eastern portion is covered by native vegetation including chaparral and wild grasses.

4. GEOLOGY

The following sections present our findings relative to regional geology, site geology, groundwater, faulting and seismicity, agricultural soils, and mineral resources.

4.1. Regional Geologic Setting

The project study area is situated in the western portion of the Peninsular Ranges geomorphic province of southern California. This geomorphic province encompasses an area that extends 125 miles, from the Transverse Ranges and the Los Angeles Basin, south to the Mexican border, and beyond another 775 miles to the tip of Baja California (Norris and Webb, 1990; Harden, 1998). The geomorphic province varies in width from 30 to 100 miles, most of which is characterized by northwest trending mountain ranges separated by subparallel fault zones. In general, the Peninsular Ranges are underlain by Jurassic-age metavolcanic and metasedimentary rocks and by Cretaceous-age igneous rocks of the southern California batholith. The westernmost portion of the province in San Diego County, in which the site is located, generally consists of Upper Cretaceous-, Tertiary-, and Quaternary-age sedimentary rocks.

The Peninsular Ranges are traversed by several major active faults. The Whittier-Elsinore, San Jacinto, and the San Andreas faults are major active fault systems located northeast of the site and the Rose Canyon, Agua Blanca-Coronado Bank and San Clemente faults are active faults located to the west-southwest. Major tectonic activity associated with these and other faults within this regional tectonic framework is right-lateral strike-slip movement. These faults, as well as other faults in the region, have the potential for generating strong ground motions at the project site. Further discussion of faulting relative to the site is provided in the Faulting and Seismicity section of this report.

4.2. Site Geology

Based on our literature review, including published geologic maps and available geotechnical reports, the project site is underlain generally by artificial fill, topsoil/colluvium, alluvium, and Cretaceous-age granitic bedrock materials of the southern California batholith and older metamorphic rock. A brief description of these units, as described in the cited literature, or as observed on the site, is presented below.

4.2.1. Artificial Fill (Qaf)

Minor amounts of artificial fill were observed on the western end of the site and where the proposed roadway crosses existing residential properties and roadways. The fill soils are expected to range from roughly two to eight feet in thickness.

4.2.2. Topsoil/Colluvium (Col)

A variable cover of topsoil/colluvium was observed to mantle most of the site. This material was observed to generally consist of reddish brown, damp, loose, silty to clayey sand with locally numerous cobbles and boulders. These deposits are expected to range in thickness from roughly three to six feet on the western and central portions of the roadway and one to three feet thick over the eastern portions of the roadway. Thicker deposits of topsoil/colluvium are represented on the Geotechnical Map, Plate 1, where observed on the western portion of the proposed alignment between roughly Stations 39+00 and 48+00.

4.2.3. Alluvium (Qal)

Alluvial deposits generally consisting of dark gray, loose, sand and silty sand underlie the drainage channel between roughly Stations 36+00 and 39+00. The alluvial deposits are anticipated to range in thickness from roughly five to 15 feet.

4.2.4. Granitic and Metamorphic Rock, undifferentiated (Kg)

Bedrock materials of the Cretaceous-age southern California batholith along with older metamorphic rocks underlie the entire site. These rocks were observed to consist of light gray, slightly to intensely weathered, well-indurated, fine- to medium-grained tonalite and migmatite and reddish brown medium-grained granodiorite. The rock over the western and central portions of the proposed roadway was observed to be relatively deeply weathered with a thicker developed topsoil/colluvium cover. The rock observed on the eastern portion of the proposed roadway was observed to be relatively fresh and less weathered, with a relatively thin topsoil/colluvium cover. It is expected that much of the rock can be classified as hard to very hard, based on criteria of the U.S Department of the Interior, Bureau of Reclamation (1989).

Relatively moderate jointing and fracturing of the granitic rock was observed during our site reconnaissance. Joint patterns on the western and central portions of the proposed roadway were obscured by the relatively thick topsoil cover. On the eastern portions of the roadway, several joint patterns were observed with strikes ranging from 25 to 50 degrees east and west of north and dipping 25 to 60 degrees from the horizontal to the northwest, southwest, and southeast.

Based on our review of published geologic maps and stereoscopic aerial photographs, as well as our site reconnaissance, no landslides or faults were observed at the project site. Active faulting, however, has been mapped in the site region and could potentially impact the proposed development. A more detailed discussion of faulting and seismicity is presented in the Faulting and Seismicity section of this report.

4.3. Groundwater

Minor surface water was observed within the small drainage that crosses the northwestern end of the proposed alignment at the time of our site visit. Groundwater is expected to be generally confined to the alluvial deposits perched on the underlying crystalline bedrock. Groundwater over the remainder of the site is expected to be confined to fractures within the bedrock. Based on our review of existing topographic information and surface conditions, the depth to groundwater is expected to occur at a depth of in excess of 100 feet below ground surface over most of the project site. The depth to groundwater at the site may fluctuate with seasonal variations. Perched conditions within colluvium or fractured bedrock may be locally present, particularly during the wet season.

4.4. Faulting and Seismicity

The project site is considered to be in a seismically active area, as is most of southern California. Based on our review of the referenced reports, geologic maps, and stereoscopic aerial photographs, as well as on our geologic field mapping, the project site is not underlain by known active fault splays (i.e., faults that exhibit evidence of ground displacement during the last 11,000 years). The closest known active faults are the Elsinore fault zone, mapped approximately 15 miles to the northeast, and the Rose Canyon fault zone, mapped approximately 19 miles to the southwest.

In general, hazards associated with seismic activity include strong ground motion, ground surface rupture, liquefaction, seismically induced settlement, and tsunamis. These potential hazards are discussed in the following sections.

4.4.1. Strong Ground Motion and Ground Surface Rupture

The most significant seismic event likely to affect the proposed project would be a maximum moment magnitude 7.1 earthquake within the Julian segment of the Elsinore fault zone (CDMG, 1998). According to the 1997 Uniform Building Code (UBC) and the CDMG (1998), the Julian segment of the Elsinore fault is classified as an "A" seismic source type. The proposed roadway is not within a UBC Near-Source Zone for active faults and is within UBC Seismic Zone 4.

Based on a Probabilistic Seismic Hazard Assessment for the Western United States, issued by the United States Geological Survey (1999), the proposed roadway alignment is located in a zone where the horizontal peak ground acceleration having a 10 percent probability of exceedance in 50 years is 0.26g (26 percent of the acceleration of gravity).

Based on our review of the referenced literature, no active faults have been mapped across the project site. Based on the absence of mapped active faults on or in proximity to the site, the potential for ground surface rupture at the subject site is considered low. Lurching or cracking of the ground surface as a result of nearby seismic events is possible.

4.4.2. Liquefaction and Seismically Induced Settlement

Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Research and historical data indicate that loose granular soils and non-plastic silts that are saturated by a relatively shallow groundwater table are most susceptible to liquefaction.

Our preliminary evaluation has indicated that the majority of the project site is underlain by hard to very hard granitic and metamorphic bedrock. An unknown thickness of alluvium exists within the drainage channel near the northwestern terminus of the roadway where near-surface groundwater exists (although likely perched). Based on the presence of these conditions and the possible seismic accelerations, the potential for liquefaction and seismically induced settlement within the drainage channel, under existing conditions, is considered moderate. The potential for liquefaction or seismically induced settlement over the remainder of the site is considered very low to nil.

4.4.3. Tsunamis

Tsunamis are long seismic sea waves (long compared to the ocean depth) generated by sudden movements of the ocean bottom during submarine earthquakes, landslides, or volcanic activity. Based on the inland location of the site, the potential for damage due to tsunami is considered nil.

4.5. Agricultural Soils

According to the United States Department of Agriculture (USDA) Soil Survey for the San Diego Area (USDA, 1973), the soils mapped along the proposed roadway are classified as a combination of the Visalia Series (units VaA and VaC) and the Ramona Series (unit RaD2) on the western and central portions of the proposed alignment and the Cieneba-Fallbrook Series (unit CnG2) on the western half of the proposed alignment. The Visalia Series consists of moderately well drained, very deep sandy loams derived from granitic alluvium. The Ramona Series consists of well-drained, very deep sandy loams with a sandy clay loam subsoil derived from granitic alluvium. The Cieneba-Fallbrook Series consists of excessively drained, very shallow to shallow coarse sandy loams, often developed on steep slopes directly from granitic rocks. Site-specific soil or engineering reports were not available for our review, and a soil evaluation was beyond the scope of work for this evaluation. From an agricultural perspective, the soils in the area have been classified as ranging from marginal to good for intensive farming (USDA, 1973).

4.6. Mineral Resources

Our evaluation has indicated that no significant economic mineral resources have been discovered within the limits of the project study area. Therefore the potential for loss of mineral deposits due to further development of the study area is considered low.

5. CONCLUSIONS

Based on the results of our geologic reconnaissance and limited geotechnical evaluation, it is our opinion that construction of the project is feasible from a geotechnical perspective. Based on our review of published geologic maps and aerial photographs, and our site reconnaissance, no active faults or landslides have been mapped or were observed within the study area. The Elsinore fault zone is located approximately 15 miles to the northeast of the site.

We recommend that a comprehensive geotechnical evaluation, including development-specific subsurface exploration and laboratory testing be conducted prior to design and construction. The purpose of the subsurface evaluation would be to further evaluate the subsurface conditions in the area of the proposed alignment and to provide information pertaining to the engineering characteristics of earth materials at the project site. From these data, recommendations for grading/earthwork, rippability, slope stability, surface and subsurface drainage, pavement structural sections, and other pertinent geotechnical design considerations may be formulated.

5.1. Geologic and Geotechnical Constraints and Possible Mitigation Measures

In our opinion, the following geotechnical factors should be considered in the planning and implementation of the project:

- It is anticipated that grading of the site will result in relatively deep cuts and fills. Rippability (excavatibility) of the hard igneous and metamorphic bedrock in these areas will be a concern. Rippability may be addressed by subsurface investigation including geophysical surveys. Blasting will likely be needed for the effective excavation of marginally rippable to nonrippable rock.

- The rock that is generated through excavation may result in large volumes of oversize rock material to be placed as fill. It may be feasible to reduce the oversize rock to a workable size with mechanical rock breakers and/or an on-site rock crusher.

- Potentially compressible soils such as existing fill, topsoil/colluvium, and alluvium will be locally encountered along the proposed alignment. The nature and extent of potentially compressible subsurface soils should be further evaluated by a subsurface geotechnical evaluation. Mitigation of potentially compressible soils could include removal, moisture conditioning, and compaction.

- Based on limited exposures, the rock is moderately fractured and contains several high- to low-angle joints. Several of the observed joint sets are adversely oriented (i.e. out-of-slope) to the proposed cuts. Based on our observations and preliminary analyses, it is our opinion that the proposed 1.5:1 cut slopes will be grossly stable against large-scale slope failures. However, due to the steepness of the proposed cuts and the fractured nature of the rock, small-scale failures mainly in the form of individual rock falls may be anticipated during or after grading. Potential mitigation measures could include removal of loose exposed boulders or rock masses, local rock bolting and/or wire mesh covers. The cut slopes should be mapped by an engineering geologist during construction to evaluate potential problem areas.

- As is typical for areas with steep slopes underlain by hard resistant rocks, there is the potential for boulders falling or rolling down the slopes. This impact may be mitigated by observation and removal of potentially unstable boulders during or after grading and/or anchoring unstable boulders.
- The potential for liquefaction and dynamic settlement over most of the site is considered very low to nil. However, the presence of loose, granular soils and the shallow depth of groundwater within the existing drainage channel at the northwestern end of the roadway alignment increases the potential of liquefaction and dynamic settlement occurring in this area in the event of strong ground shaking at the site. Mitigation measures for liquefiable soils may include ground modification (such as removal and recompaction of loose soils).
- The potential for strong ground motions to occur at the site is significant. Like most of southern California, the site is located in Seismic Zone 4, according to the 1997 edition of the Uniform Building Code (ICBO, 1997). Accordingly, the potential for relatively strong seismic accelerations will need to be considered in the design of proposed improvements.

6. LIMITATIONS

The field evaluation and geotechnical analyses presented in this report have been conducted in accordance with current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No warranty, implied or expressed, is made regarding the conclusions, recommendations, and professional opinions expressed in this report. Variations may exist and conditions not observed or described in this report may be encountered. Our preliminary conclusions and recommendations area based on an analysis of the observed conditions and the referenced background information.

The purpose of this study was to evaluate geologic and geotechnical conditions within the project site and to provide a geotechnical reconnaissance report to assist in the preparation of environmental impact documents for the project. A comprehensive geotechnical evaluation, including subsurface exploration and laboratory testing, should be performed prior to design and construction of structural improvements.

7. SELECTED REFERENCES

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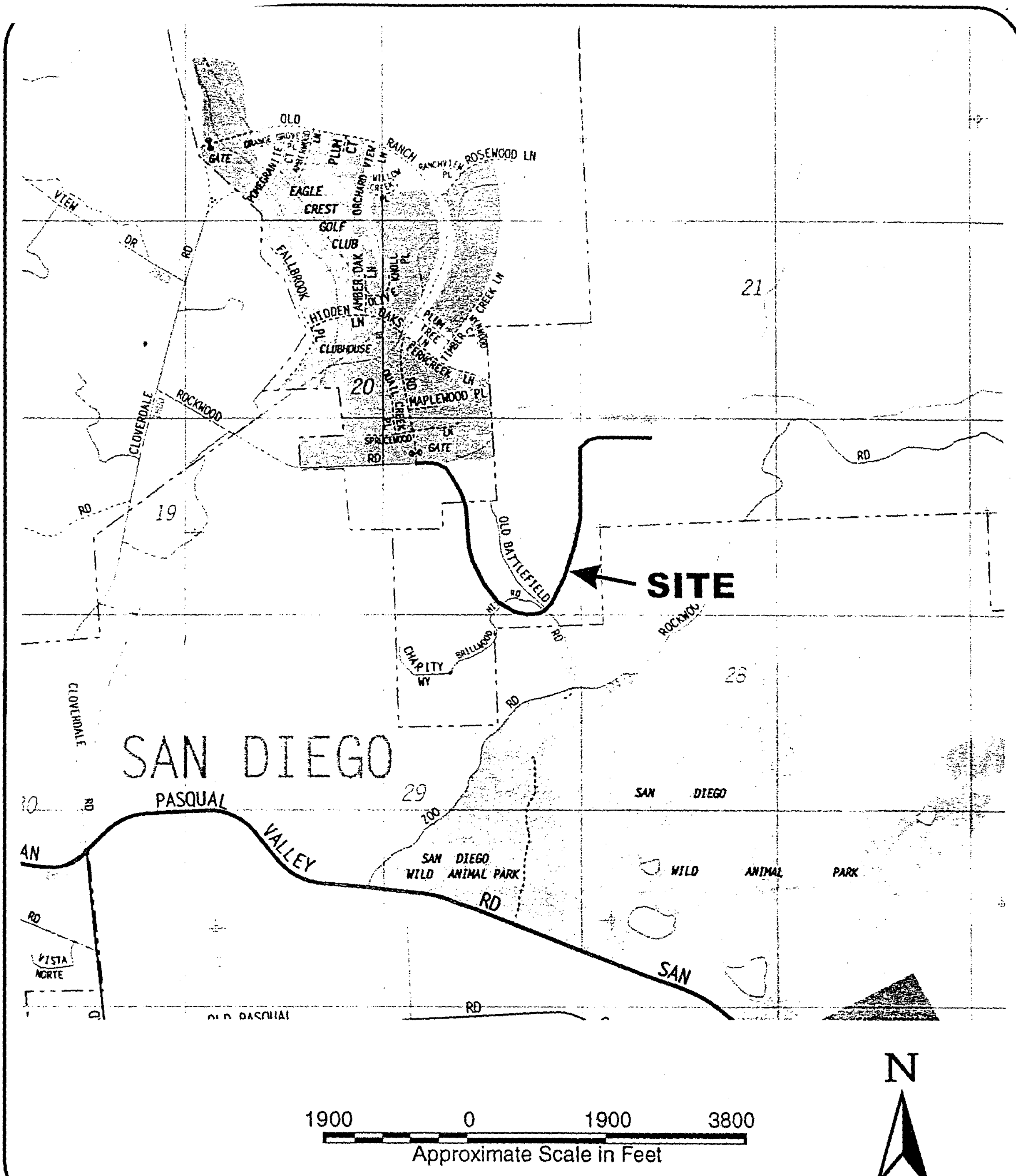
AERIAL PHOTOGRAPHS				
Source	**Date**	**Flight**	**Numbers**	**Scale**
USDA	4-14-53	AXN-10M	31 and 32	1:20,000
County of San Diego	11-28-78	SDCO 210-30B	23 and 24	1:12,000



REFERENCE: 1999 THOMAS GUIDE FOR SAN DIEGO COUNTY, STREET GUIDE AND DIRECTORY.

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Ninyo & Moore

SITE LOCATION MAP

PROPOSED ROCKWOOD ROAD ALIGNMENT
VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608004	7/01	1

LIMTED GEOTECHNICAL EVALUATION
VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PREPARED FOR
Mooney and Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

PREPARED BY
Ninyo & Moore Geotechnical and Environmental Sciences Consultants
5710 Ruffin Road
San Diego, California 92123

July 12, 2000
Project No. 103608-01

Ninyo & Moore

Geotechnical and Environmental Sciences Consultants

July 12, 2000
Project No. 103608-01

Ms. Sonja Itson
Mooney and Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

Subject: Limited Geotechnical Evaluation
Valley View Estates
San Diego County, California

Dear Ms. Itson:

Transmitted herein are the results of Ninyo & Moore's limited geotechnical evaluation for the Valley View Estates Environmental Impact Report (EIR) project. This study was conducted in accordance with your request and included review and analysis of available geologic and geotechnical background data, a geologic reconnaissance of the project site area, and limited subsurface exploration. We understand that the results of this study will be utilized in the preparation of environmental impact documents.

We appreciate the opportunity to be of service on this project. If you have any questions or comments regarding our report, please contact the project manager, Ronald Hallum, or the undersigned.

Sincerely,
NINYO & MOORE

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Erik Olsen, G.E.
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1. INTRODUCTION

In accordance with your request, Ninyo & Moore has performed a geologic reconnaissance and limited geotechnical evaluation of the project site (Figure 1). The purpose of this study was to evaluate geologic and geotechnical conditions using available geologic and geotechnical data and to provide a geotechnical reconnaissance report, which we understand will be utilized in the preparation of environmental impact documents. This report presents our preliminary findings and conclusions pertaining to the proposed Valley View Estates development. Laboratory testing of subsurface soil materials was not included in the scope of this limited evaluation.

2. SCOPE OF SERVICES

Ninyo & Moore's scope of services for the project included review of pertinent background data, performance of a field reconnaissance to observe the existing exposed conditions, performance of a limited subsurface evaluation, and engineering analysis. Specifically, we performed the following tasks:

- Review of pertinent, available geotechnical literature including topographic maps, geologic maps, stereoscopic aerial photographs, and geotechnical and geologic reports. Documents pertaining to the site vicinity, as well as documents reviewed for our site evaluation are listed in the Selected References section of this report.
- Geologic reconnaissance and mapping of the project study area, which included written and photographic documentation of the observed site conditions. These materials are on file at the offices of Ninyo & Moore and are available for review upon request. A geotechnical map is provided as Figure 2.
- Performing a subsurface evaluation consisting of the excavating and logging of five air-track borings. The borings were advanced to depths of approximately 30 feet. Drilling rates were recorded for the purpose of evaluating rippability.
- Compilation and analysis of the data obtained.
- Preparation of this report to present our preliminary findings and conclusions, particularly, regarding potential geotechnical constraints and possible mitigative measures.

3. PROJECT DESCRIPTION

We understand the proposed project will consist of a residential and resort development and will include approximately 485 residential units, a hotel with approximately 250 rooms, a 205-acre, 18-hole golf course with clubhouse, a commercial restaurant, tennis courts and an equestrian center. Approximately 331 acres will be left as natural open space. Grading is proposed to include cut slopes up to 80 feet in height and fill slopes up to 40 feet in height. Some of the proposed cut slopes are planned to be steeper than 2:1 (horizontal:vertical) with inclinations as steep as up to 1:1.

4. SITE DESCRIPTION

The site is located along the eastern edge of the city of Escondido, approximately 1,000 feet north of the San Diego Wild Animal Park and roughly two miles south of Lake Wohlford. Access is via Rockwood Road from the south and from Old Wagon Road at the northeast corner of the site. The site is an irregularly shaped parcel that consists of 1,150 acres of currently undeveloped land. The site consists of boulder-covered mesas and ridges, moderate to steep slopes, and relatively level to gently sloping meadows. Elevations range from approximately 420 feet above mean sea level (MSL) near the southwestern corner of the site to approximately 1,820 feet MSL near the northeastern corner of the site. Numerous unpaved roads and trails cross the site. The site is covered by native vegetation ranging from chaparral and wild grasses on the slopes and upper mesas to oak trees in the meadows.

5. FIELD EXPLORATION

Our field exploration of the subject site included a geologic reconnaissance and limited subsurface exploration. The subsurface evaluation consisted of excavating five exploratory air-track borings. The boring locations were selected based on the results of our background geotechnical review, and field reconnaissance. It should be noted that the location of several borings was limited due to site access constraints such as dense brush and steep natural slopes.

5.1. Borings

Five exploratory borings were excavated near proposed large cut slopes on June 19, 2000 at the locations indicated on Figure 2. The borings were drilled with a track mounted, ECM-370 pneumatic drill, with a 3.5-inch bit, to depths of approximately 30 feet. Drilling rates logged at the time of excavation are presented below in Table 1.

Table 1 – Logged Drilling Rates

Depth (ft.)	Drilling rate (seconds per foot)				
	B-1	B-2	B-3	B-4	B-5
0-1	2	3	1	6	12
1-2	3	15	1	6	14
2-3	10	44	4	7	13
3-4	14	46	9	7	8
4-5	3	62	14	7	10
5-6	13	50	11	6	12
6-7	12	55	14	6	11
7-8	15	68	14	7	10
8-9	10	38	10	9	25
9-10	36	32	7	9	14
10-11	34	57	21	14	13
11-12	22	54	10	10	14
12-13	22	45	15	15	14
13-14	16	51	12	13	14
14-15	7	120	16	12	15
15-16	11	17	18	18	17
16-17	20	13	18	25	20
17-18	28	32	15	34	12
18-19	34	35	20	54	12
19-20	21	42	18	75	55
20-21	26	38	16	45	60
21-22	17	65	18	45	40
22-23	21	48	13	40	62
23-24	20	68	14	60	58
24-25	18	58	13	65	68
25-26	21	65	16	40	68
26-27	19	48	17	65	59
27-28	18	48	15	60	62
28-29	26	49	14	60	46
29-30	31	53	12	71	63

Based on test drilling data provided by M. J. Baxter Drilling, drilling rates can be roughly correlated to rock hardness and rippability as presented below in Table 2. The information contained in Table 2 is based from historical data compiled by M. J. Baxter Drilling over a period of many years. It assumes that a Caterpillar D-9 dozer ripping with a single shank is used.

Table 2 – Drilling Rate Correlations

Drilling Rate (seconds per foot)	Rock Hardness	Rippability
10 – 18	Soft – Medium	Rippable
18 – 25	Medium – Hard	Probable-non rippable
25+	Hard	Non rippable-blasting likely
35+	Very Hard	Blasting

Based on our logged drilling rates and the correlations in Table 2, hard rock that may require blasting to excavate can be anticipated at depths of approximately 2 to 15 feet or deeper. We emphasize that the cutoffs in this classification scheme are approximate and that rock characteristics, such as fracture spacing and orientation, play a significant role in determining rock rippability. These characteristics may also vary with location and depth.

5.2. Geologic Reconnaissance of Proposed Secondary Access Route

Based on our June 19, 2000, reconnaissance of the proposed secondary access/emergency access road, the proposed cut slopes associated with the widening of the existing secondary access/emergency access road, and those cut slopes associated with the widening of the existing Zoo Road are considered to be generally rippable along much of the their alignment with modern heavy-duty construction equipment. However, localized areas may contain zones of non-rippable or difficult ripping core stones at various depths, which during grading operations will likely require mechanical rock breaking and/or local blasting. Rippability may be addressed in more detail by additional subsurface evaluation including geophysical surveys.

In general, the geologic hazards associated with seismic activity including; strong ground motion, ground surface rupture, liquefaction, seismically induced settlement, and seismically induced slope failures/rock falls and other geologic hazards such as landsliding are considered similar to those for the main project site. Those hazards are discussed in the following sections.

6. GEOLOGY AND SUBSURFACE CONDITIONS

Our findings regarding regional and local geology, including faulting and seismicity, landslides, excavatibility, and groundwater conditions are provided in the following sections.

6.1. Regional Geologic Setting

The project area is situated in the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California (Norris and Webb, 1990). The province varies in width from approximately 30 to 100 miles. In general, the province consists of rugged mountains underlain by Jurassic metavolcanic and metasedimentary rocks, and Cretaceous igneous rocks of the southern California batholith. The portion of the province in San Diego County that includes the project area consists generally of uplifted and dissected Cretaceous granitic basement rocks.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest. Several of these faults are considered active faults. The Whittier–Elsinore, San Jacinto, and San Andreas faults are active fault systems located northeast of the project area and the Agua Blanca–Coronado Bank, San Clemente, and Rose Canyon faults are active faults located west of the project area. Major tectonic activity associated with these and other faults within this regional tectonic framework consists primarily of right-lateral, strike-slip movement. Further discussion of faulting relative to the site is provided in the Faulting and Seismicity section of this report.

6.2. Site Geology

Geologic units encountered during our field reconnaissance include topsoil, colluvium, and granitic rock. Generalized descriptions of the earth units encountered are provided in the subsequent sections.

6.2.1. Alluvium

During our field reconnaissance, Quaternary-age alluvial deposits were noted in drainage courses that cross the proposed project site. Areas of relatively thick alluvium exist within the topographically lower southern portion of the project site. Based on our site reconnaissance and review of pertinent background information, alluvial soils across the project are expected to consist generally of sandy clay, silty sand, and clayey sand with varying amounts of rock fragments.

6.2.2. Granitic Rock

Cretaceous-age materials of the southern California batholith have been mapped as underlying the project site. This unit was observed to consist of light gray to reddish gray, slightly to intensely weathered, compact, fine- to medium-grained granodiorite. It is expected that much of the rock can be classified as hard to very hard, based on criteria of the U.S Department of the Interior, Bureau of Reclamation (1989).

6.3. Rippability

Based on our subsurface evaluation, we anticipate that difficult to non-rippable granitic rock and hard coherent core stones will likely be encountered at various depths, some shallow, during grading operations. The hard rock on the site will likely require mechanical rock breaking and/or blasting to facilitate efficient excavation.

6.4. Groundwater

Surface water was observed within the project site main drainage at the time of our initial site visit on May 20, 1998. However, at the time of our most recent site visit on June 19, 2000 surface water was not observed at that location. Groundwater was not encountered in our borings during our subsurface exploration. Within the on-site surficial deposits, we expect groundwater to be generally confined to the alluvial deposits and to be perched on the underlying bedrock. In general, groundwater over the remainder of the site is expected to be at significant depth and confined to fractures within the bedrock. Based on our review of existing topographic information and surface conditions, the depth to the ambient groundwater table is expected to occur at a depth of in excess of 500 feet below ground surface over most of the project site. Perched conditions within surficial soils or within the fractured bedrock may be locally present. It should be noted that groundwater levels could fluctuate due to seasonal variations, irrigation, groundwater withdrawal or injection, and other factors. Groundwater is not expected to be a constraint to the construction of the project.

6.5. Faulting and Seismicity

The project area is considered to be seismically active, as is the majority of southern California. Based on our review of the referenced geologic maps and stereoscopic aerial photographs, as well as on our geologic field reconnaissance, the subject site is not underlain by known active or potentially active faults (i.e., faults that exhibit evidence of ground displacement in the last 11,000 years and 2 million years, respectively). The closest mapped active fault (approximately 20 kilometers) to the subject site is the Elsinore fault zone (Julian segment) which could produce a maximum moment magnitude 7.1 earthquake (CDMG, 1998).

In general, hazards associated with seismic activity include; strong ground motion, ground surface rupture, liquefaction, seismically induced settlement, and seismically induced slope failures/rock falls. These hazards are discussed in the following sections.

6.5.1. Strong Ground Motion and Ground Surface Rupture

Based on a Probabilistic Seismic Hazard Assessment for the Western United States, issued by the United States Geological Survey (1997), the project site is located in a zone where the horizontal peak ground acceleration having a 10 percent probability of exceedance in 50 years is 0.26g (26 percent of the acceleration of gravity). The requirements of the governing jurisdictions and applicable building codes should be considered in the project design.

The potential for ground rupture due to faulting is considered low. However, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

6.5.2. UBC Seismic Design Parameters

According to the 1997 Uniform Building Code (UBC), the proposed project site is within UBC Seismic Zone 4. Table 3 includes the seismic design parameters for the site as defined in, and for use with, the 1997 edition of the UBC (ICBO, 1997). Please note that Soil Profile Type S_B is not applicable for areas where more than 10 feet of soil is present between the rock surface and the bottom of the foundation. For areas with a significant thickness of dense alluvium and/or fill soil, a Soil Profile Type S_C should instead be used along with Seismic Coefficients C_a and C_v of $0.56N_v$.

Table 3 – Seismic Design Parameters

Parameter	Value	1997 UBC Reference
Seismic Zone Factor, Z	0.40	Table 16 – I
Soil Profile Type	S_B	Table 16 – J
Seismic Coefficient C_a	$0.40N_a$	Table 16 – Q
Seismic Coefficient C_v	$0.40N_v$	Table 16 – R
Near-Source Factor, N_a	1.0	Table 16 – S
Near-Source Factor, N_v	1.0	Table 16 – T
Seismic Source Type	A	Table 16 – U

6.5.3. Liquefaction and Seismically Induced Settlement

Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Research and historical data indicate that loose, granular soils with clay contents of less than 20 percent which are saturated by a relatively shallow groundwater table are most susceptible to liquefaction. Based on the observed absence of shallow groundwater, and the presence of granitic rock, as encountered in our exploratory excavations, it is our opinion that the potential for liquefaction and dynamic settlement over most of the site is considered very low. However, the presence of loose, granular soils in drainage channels increases the potential of liquefaction and dynamic settlement occurring in this area, in the event of strong ground shaking at the site.

6.5.4. Seismically Induced Slope Failures/Rock Falls

During our study we noted very steep natural slopes, and high proposed cut slopes (up to 80 feet high) in the vicinity of proposed pads and roadways. During a seismic event, slopes already made weak by weathering, fracturing, and/or undercutting, or slopes containing relatively loosely founded boulders, may present a hazard to some of the proposed improvements. Precariously perched boulders above improvements should be securely anchored or removed.

6.6. Landsliding

Based on our review of published geologic literature and stereoscopic aerial photographs, and our geologic reconnaissance, deep-seated landslides do not appear to underlie the project site.

6.7. Agricultural Soils

From an agricultural perspective, the soils in the area have been classified as ranging from not suited to good, for intensive farming (USDA, 1973). The on-site soils are generally suited only for range, watershed, and limited agricultural use. Accordingly, development of the proposed project should result in a minimal loss of potentially good agricultural soils.

6.8. Mineral Resources

Our evaluation has indicated that no significant economic mineral resources have been discovered within the limits of the project study area. Therefore the potential for loss of mineral deposits due to further development of the study area is considered low.

7. CONCLUSIONS

Based on the results of our geologic reconnaissance and limited geotechnical evaluation, it is our opinion that construction of the project is feasible from a geotechnical perspective. Based on our review of published geologic maps and aerial photographs, our site reconnaissance and our limited subsurface evaluation, no active faults or landslides have been mapped or were observed within the study area.

We recommend that a comprehensive geotechnical evaluation, including development-specific subsurface exploration and laboratory testing be conducted prior to design and construction. The purpose of the subsurface evaluation would be to further evaluate the subsurface conditions in the area of the proposed structures and to provide information pertaining to the engineering characteristics of earth materials at the project site. From these data, recommendations for grading/earthwork, surface and subsurface drainage, foundations, pavement structural sections, and other pertinent geotechnical design considerations may be formulated.

7.1. Geologic and Geotechnical Constraints and Possible Mitigation Measures

In our opinion, the following geotechnical factors should be considered in the planning and implementation of the project:

- It is anticipated that grading of the site will result in cuts on the order of 80 feet, especially on the western portions of the site for proposed roadways. Based on the results of our limited subsurface evaluation and our site reconnaissance, rippability (excavatibility) of the hard igneous bedrock in these areas is a concern. Blasting will likely be needed for the effective excavation of the majority of the proposed cut slopes on the project. Rippability may be addressed in more detail by additional subsurface evaluation including geophysical surveys.

- The proposed cut slopes, which range in inclination from 1:1 (horizontal:vertical) to 2:1, should generally be stable. However, the stability of these slopes should be addressed in more detail by the performance of an additional geotechnical evaluation consisting of rock coring, seismic refraction, trenching, and detailed field mapping. Further we recommend that these slopes be observed during grading by a Certified Engineering Geologist, since localized slope instability can occur along areas of adverse jointing.

- Based on our site reconnaissance, the proposed cut slopes associated with the widening of the existing secondary access/emergency access road, and those cut slopes associated with the widening of the existing Zoo Road are considered to be generally rippable along much of the their alignment with modern heavy-duty construction equipment. However, localized areas may contain zones of non-rippable or difficult ripping core stones at various depths, which during grading operations will likely require mechanical rock breaking and/or local blasting. Rippability may be addressed in more detail by additional subsurface evaluation including geophysical surveys.

- The rock that is generated through excavation may result in large volumes of oversize rock material that may need to be placed as fill. It may be feasible to reduce the oversize rock to a workable size with mechanical rock breakers and/or an on-site rock crusher.

- Clearing and grubbing should include the substantial removal of vegetation, brush, grass, wood, stumps, trees, tree roots greater than 1/2-inch in diameter, and other deleterious materials from the areas to be graded. Demolition, if any, in the areas to be graded should also include the removal of building structures, foundations, reservoirs, utilities (including underground pipelines, septic tanks, leach fields, seepage pits, and cisterns, etc.), and other man-made surface and subsurface improvements. The debris generated during clearing, grubbing and/or demolition operations should be removed from areas to be graded and disposed of off site at a legal dump site.

- The alluvial soils are considered loose and compressible and not suitable for support of structures or fill in their present condition. The existing alluvial soils may be removed, reworked and compacted during grading prior to construction of the proposed improvements.

- As is typical for areas with steep slopes underlain by hard resistant rocks, there is the potential for existing hard rock boulders falling or rolling down the slopes. The potential for this issue to impact the development depends on the specific areas to be developed, the areal extent to be graded, proximity to existing slopes, and the nature of the underlying rock units. This impact may be mitigated by geotechnical observation and removal of potentially unstable boulders during grading or by anchoring unstable boulders.

- The potential for liquefaction and dynamic settlement over the majority of the site is considered very low. However, the presence of loose, granular soils in drainage channels increases the potential of liquefaction and dynamic settlement occurring in these areas, in the event of strong ground shaking at the site. Mitigation measures for liquefiable soils include ground modification (such as removal and recompaction of loose soils) or the use of deep foundations.

- The potential for strong ground motions to occur at the site is significant. Accordingly, the potential for relatively strong seismic accelerations will need to be considered in the design of proposed improvements.

8. LIMITATIONS

The field reconnaissance and geotechnical analysis presented in this report have been conducted in accordance with current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No other warranty, implied or expressed, is made regarding the conclusions, recommendations, and professional opinions expressed in this report. Variations may exist and conditions not observed or described in this report may be encountered. Our preliminary conclusions and recommendations are based on an analysis of the observed conditions and the referenced background information.

The purpose of this study was to evaluate geologic and geotechnical conditions within the project site and to provide a geotechnical reconnaissance report to assist in the preparation of environmental impact documents for the project. A comprehensive geotechnical evaluation, including subsurface exploration with laboratory testing, should be performed prior to design and construction of structural improvements.

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AERIAL PHOTOGRAPHS

Source	Date	Flight	Numbers	Scale
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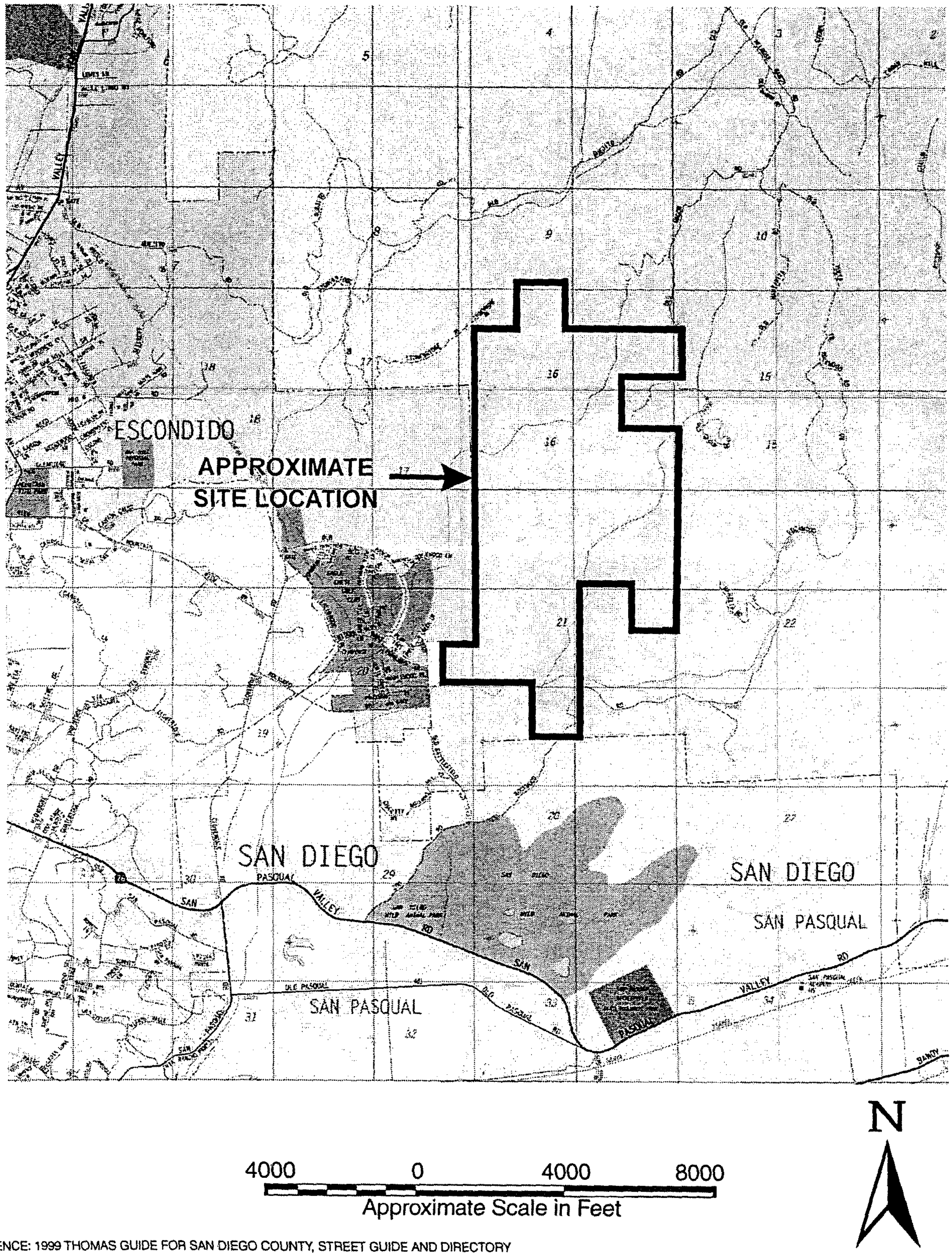
USDA	4-14-53	AXN-9M	136 and 137	1:20,000



REFERENCE: 1999 THOMAS GUIDE FOR SAN DIEGO COUNTY, STREET GUIDE AND DIRECTORY

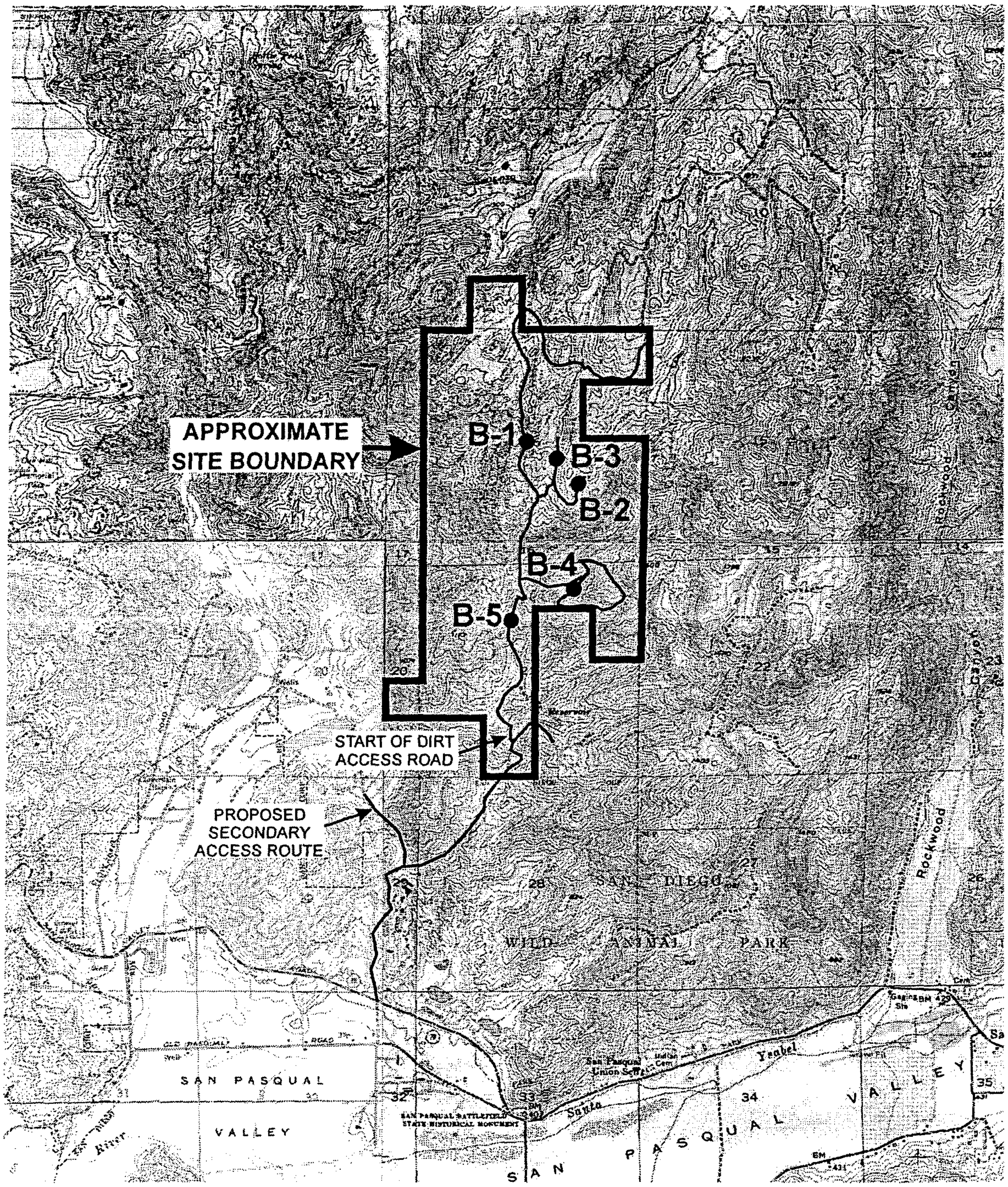
G:3608-01SLM

Ninyo & Moore

SITE LOCATION MAP

VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608-01	7/00	1



LEGEND

B-5 ● Approximate location of exploratory boring

N

4000 0 4000 8000

Approximate Scale in Feet

REFERENCE: ESCONDIDO, RODRIGUEZ MTN., SAN PASQUAL, AND VALLEY CENTER QUADRANGLES, U.S.G.S., 7.5 MINUTE SERIES (TOPOGRAPHIC), DATED 1968, PHOTOREVISED 1975.

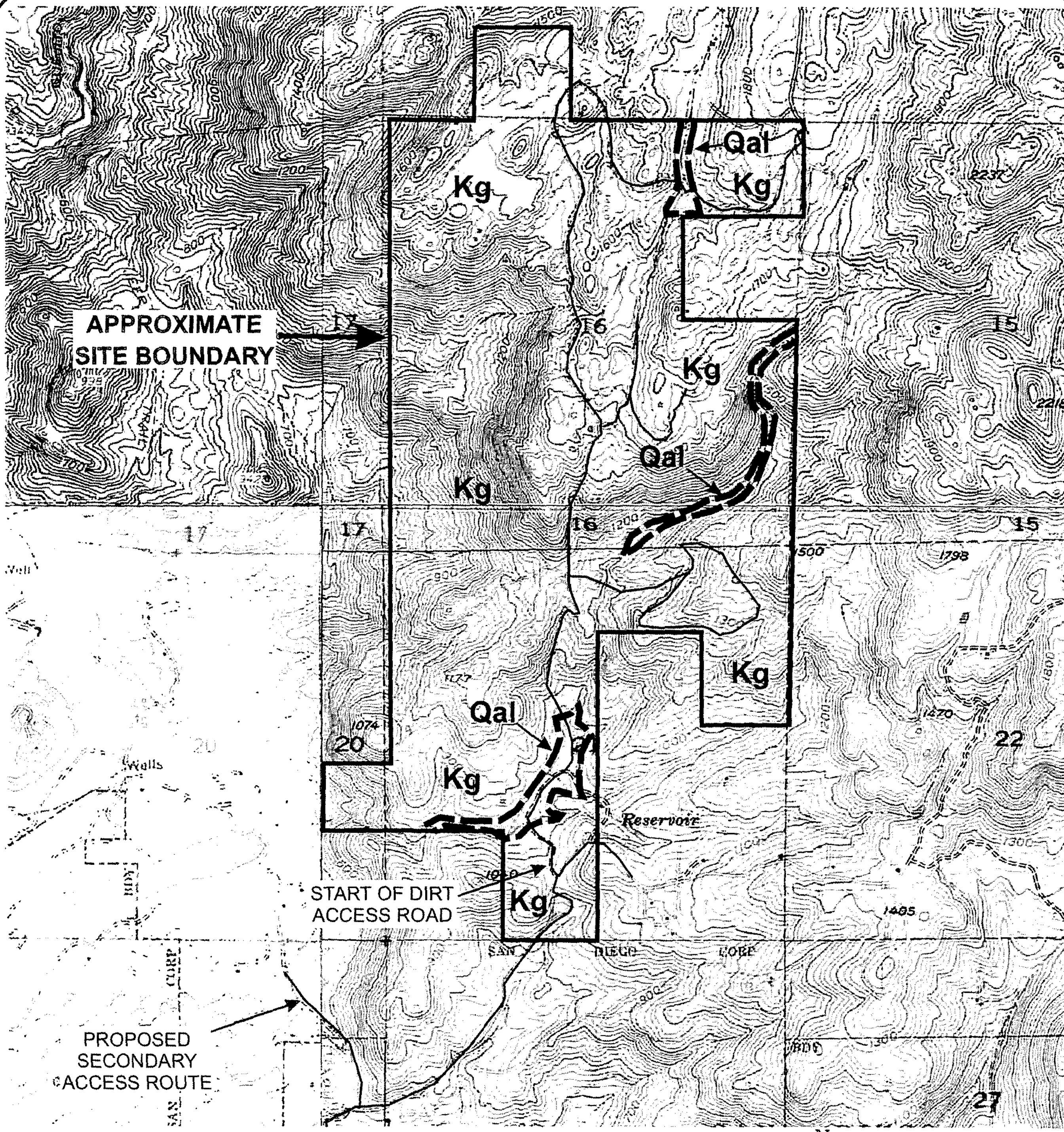
G:3608-01GEO

Ninyo & Moore

GEOTECHNICAL MAP

VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608-01	7/00	2



LEGEND

Approximate location of geologic contact

Qal Alluvium

Kg Granitic Rock

4000 0 4000 8000

Approximate Scale in Feet

REFERENCE: ESCONDIDO, RODRIGUEZ MTN., SAN PASQUAL, AND VALLEY CENTER QUADRANGLES, U.S.G.S., 7.5 MINUTE SERIES (TOPOGRAPHIC), DATED 1968, PHOTOREVISED 1975.

G:3608-01GEO2

Ninyo & Moore

GEOLOGIC MAP

VALLEY VIEW ESTATES

SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608-01	7/00	3

Appendix I
Hazardous Materials Evaluation

HAZARDOUS MATERIALS EVALUATION
VALLEY VIEW PROJECT
NORTH OF ROCKWOOD ROAD
SAN DIEGO COUNTY, CALIFORNIA

PREPARED FOR:
Mooney and Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

PREPARED BY:
Ninyo & Moore Geotechnical and Environmental Sciences Consultants
5710 Ruffin Road
San Diego, California 92123

October 22, 1998
Project No. 103608-02

October 22, 1998
Project No. 103608-02

Ms. Sonya Itson
Mooney and Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

Subject: Hazardous Materials Evaluation
Valley View Project
North of Rockwood Road
San Diego County, California

Dear Mr. Held:

Ninyo & Moore is pleased to present this report of hazardous material evaluation for the Valley View Project located in a currently unincorporated area of San Diego County, California. Project tasks were performed in general accordance with our proposal and scope of services dated January 13, 1998. We understand that the findings of this study will be utilized in the preparation of environmental impact documents.

We appreciate the opportunity to be of service to Mooney and Associates on this project. Should you require clarification of our findings, conclusions or recommendations as presented, please contact the undersigned in our San Diego office.

Sincerely,
NINYO & MOORE

Ronald D. Hallum, C.E.G.
Project Geologist

Stephan A. Beck, C.E.G., H.G.
Manager, Environmental Sciences Division

RDH/SB/ccl

Distribution: (4) Addressee

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1. INTRODUCTION

In accordance with your request, Ninyo & Moore has performed a hazardous materials evaluation of the project site located in a currently unincorporated area of San Diego County, California (Figure 1). We understand that the site will be incorporated into the City of Escondido upon commencement of development. The purpose of this study was to evaluate hazardous materials conditions using available data and to provide a report, which will be utilized in the preparation of environmental impact documents. This report presents our findings and conclusions pertaining to the proposed Valley View Project (Project). Subsurface exploration and laboratory testing of materials were not included in the scope of this evaluation.

2. SCOPE OF SERVICES

Mooney and Associates retained Ninyo & Moore to conduct a hazardous materials evaluation for inclusion into an environmental impact report (EIR). The services were conducted in general accordance with Ninyo & Moore's proposal and scope of services dated December 10, 1997, and the subcontractor agreement between Ninyo & Moore and Mooney and Associates. Ninyo & Moore's scope of services included the following tasks:

- Reviewing readily available maps, reports, photographs, plans and other documents pertinent to hazardous materials issues for the site.
- Performing a site reconnaissance, subject to site access, to visually identify areas of possibly contaminated surficial soil or water, improperly stored hazardous materials, possible sources of pesticides and polychlorinated biphenyls, and possible risks of contamination from activities at the sites and adjacent properties.
- Reviewing available regulatory agency databases for the site and for properties located within a specified radius of the project site. Databases were used to identify locations of known hazardous waste sites, landfills, burn ash sites, leaking underground storage tanks, permitted facilities that utilize underground storage tanks and facilities that use, store, treat or dispose of hazardous materials.
- Reviewing readily available historical aerial photographs.

- Preparing this Hazardous Materials Evaluation report including an introduction, methodology, existing conditions, impact analysis, criteria of significance and mitigation measures supported by illustrations, references, agencies and individuals contacted, and a list of preparers.

3. SITE DESRIPTION AND EXISTING CONDITIONS

The site is located along the eastern edge of the city of Escondido, approximately 1,000 feet north of the San Diego Wild Animal Park and roughly two miles south of Lake Wohlford. Access is via Rockwood Road from the south and from Old Wagon Road at the northeast corner of the site. The site is an irregularly shaped parcel that consists of 1,150 acres of currently undeveloped land. The site consists of boulder-covered mesas and ridges, moderate to steep slopes, and relatively level to gently sloping meadows. Elevations range from approximately 420 feet above mean sea level (MSL) near the southwestern corner of the site to approximately 1,820 feet MSL near the northeastern corner of the site. Numerous unpaved roads and trails cross the site. The site is covered by native vegetation ranging from chaparral and wild grasses on the slopes and upper mesas to oak trees in the meadows.

4. PROJECT DESCRIPTION

The proposed project will consist of a residential and resort development and will include approximately 485 residential units, 250 hotel units, an 18-hole golf course with clubhouse, tennis courts and an equestrian center. Grading is proposed to include cut slopes up to 80 feet in height and fill slopes up to 40 feet in height.

5. ENVIRONMENTAL SETTING

The following sections include discussions of the topographic, geologic, soil and hydrogeologic conditions; a review of available published documents; and presents the findings of our visual site reconnaissance of the property and adjacent areas.

5.1. Topographic Conditions

In general, the project is located within hilly terrain located north of San Pasqual Valley. The site consists of moderately to steep sided hills separated by steep ravines and broad meadows. Overall drainage is to the west although local variations are common. Elevations range from approximately 420 feet MSL near the southwestern corner of the site to approximately 1,820 feet MSL near the northeastern corner of the site. A topographic map is presented as Figure 2.

5.2. Geologic Conditions

The project area is situated in the western portion of the Peninsular Ranges geomorphic province of southern California. This geomorphic province encompasses an area that extends 125 miles, from the Transverse Ranges and the Los Angeles Basin, south to the Mexican border, and beyond another 775 miles to the tip of Baja California (Norris and Webb, 1990; Harden, 1998). The geomorphic province varies in width from 30 to 100 miles, most of which is characterized by northwest trending mountain ranges separated by subparallel fault zones. In general, the Peninsular Ranges are underlain by Jurassic-age metavolcanic and metasedimentary rocks and by Cretaceous-age igneous rocks of the southern California batholith. The westernmost portion of the province in San Diego County, in which the site is located, generally consists of Upper Cretaceous-, Tertiary-, and Quaternary-age sedimentary rocks.

The Peninsular Ranges are traversed by several major active faults. The Whittier-Elsinore, San Jacinto, and the San Andreas faults are major active fault systems located northeast of the site and the Rose Canyon, Agua Blanca-Coronado Bank and San Clemente faults are active faults located to the west-southwest. These faults, as well as other faults in the region, have the potential for generating strong ground motions at the project site.

5.3. Site Geology

Based on our literature review, including published geologic maps and available geotechnical reports, the project is underlain generally by alluvium, colluvium/topsoil, and granitic bedrock materials of the southern California batholith. Alluvium, consisting of unconsolidated sands and silts, underlies the meadow and valley areas. A one to three foot thick layer of colluvium/topsoil mantles much of the hillsides and mesas and consists of silty sand derived from the bedrock. Igneous bedrock consisting of tonalite, granodiorite, and locally mixed migmatite underlie the entire site.

A more detailed analysis of geologic conditions, including faults, liquefaction, landslides, and other geologic hazards are discussed under a separate report that is currently being prepared by Ninyo & Moore.

5.4. Soil Conditions

According to the United States Department of Agriculture (USDA) Soil Survey for the San Diego Area (USDA, 1973), the site soils are classified as a combination of the Cieneba-Fallbrook Series (units CnG2 and CmrG) and the Vista Series (units VvE and VvD). The Cieneba-Fallbrook Series consists of excessively drained, very shallow to shallow coarse sandy loams. The Vista Series consists of well drained, moderately deep to deep coarse sandy loams. These soils are typically derived from granodiorite and tonalite. Site-specific soil or engineering reports were not available for our review, and a soil evaluation was beyond the scope of work for this evaluation.

5.5. Groundwater Conditions

At the time of our site reconnaissance (May 1998), surface water was observed in the two main streams that cross the site. It is anticipated that a permanent groundwater table exists within the valleys and meadows on the site at depths of roughly 5 to 20 feet below the existing ground surface. Perched groundwater may locally exist within the alluvium. Deeper groundwater may exist within fractures in the igneous bedrock. The depth to groundwater at the site may fluctuate with seasonal variations and perched conditions may be locally present.

6. SITE HISTORY

The following sources were reviewed to compile a history of the site.

6.1. Aerial Photographs

Based on our review of historical aerial photographs, it appears that the site has been generally unimproved from at least 1928 to the present. A listing of selected photographs reviewed is presented below, followed by observations of each photograph.

Table 1 – Aerial Photographs Reviewed

Date	Photograph Number	Source
1928	21-E 4, 5, and 6	A
04-14-53	AXN-9M, 136 and 137	B
09-10-63	SDC T-4, 16-74, 16-75, and 16-76	A
11-25-73	SDPD, 18-53, 18-54, and 18-55	A
11-28-78	SDCO 210 30B, 21, 22, and 23	A
05-09-89	WAC-89CA, 18-26 and 18-29	A
12-07-93	Lenska Aerial Atlas, 1111 and 1131	A

Sources: A – County of San Diego, Department of Public Works, San Diego, California.
B – Ninyo & Moore, San Diego, California.

<u>1928:</u> The site and vicinity are in a native state. San Pasqual Road is in-place as an unpaved road approximately 6,000 feet south of the site.

<u>1953:</u> The site appears similar to the 1928 photographs. Several unpaved trails cross the central and southern portions of the site. A pond impounded behind a small dam is located adjacent to the southeastern edge of the site. San Pasqual Road appears to be paved at this time. Several small structures are visible approximately 1,000 feet south of the site.

1963: The site and vicinity appear to be in the same general configuration as in the 1953 photographs.

1973: Several additional dirt trails cross the site and the site vicinity. The San Diego Wild Animal Park is extant approximately 1,000 feet south of the site. Several single-family houses and small buildings are visible adjacent to the southeastern and eastern sides of the property and approximately 500 to 1,000 feet west of the site. The pond first observed in the 1953 photographs appears to be dry.

1978: The site and vicinity appear similar to that shown in the 1973 photographs.

1989: The site and adjacent areas appear similar to the 1978 photographs. Several additional dirt trails cross the northern half of the site and several additional houses appear adjacent to the eastern edge of the site.

1993: The site and vicinity appear similar to that shown in the 1989 photographs. Grading and construction for several residential structures are taking place 1,000 to 2,000 feet west of the site.

6.2. Sanborn Fire Insurance Maps

Available Sanborn Fire Insurance Maps were reviewed at the City of San Diego Main Library. No coverage of the site or immediate vicinity is available.

6.3. County of San Diego Building Department

Since there are no buildings or addresses associated with the site, building permit files were not reviewed.

6.4. Summary of Historical Site Use

Ninyo & Moore reviewed historical documents, including aerial photographs, to evaluate prior features that may indicate structures, facilities or activities which might reflect the use, storage or disposal of hazardous substances at the site. Our aerial photograph review indicated that the site has been generally in a native state from before 1928 to the present. Several single-family houses and associated buildings have been constructed along the eastern and southern perimeters of the site and an earthen dam and pond existed along the southeastern edge of the site at various times over the years. No documentation of commercial or industrial land use adjacent to the site was found during the evaluation of the history of the site.

7. SITE RECONNAISSANCE

On May 20, 1998, a site reconnaissance was conducted by a representative of Ninyo & Moore, and involved a walking tour of the site and visual observations of adjoining properties. Photographs taken during the reconnaissance are on file at Ninyo & Moore and are available for review upon request.

7.1. Chemical Storage/Hazardous Waste Storage

Evidence of chemical or hazardous waste storage was not observed on the property during our site reconnaissance. Minor amounts of trash or landscaping debris were observed near the southwestern corner of the site and near the crossroads located near the center of the property.

7.2. Polychlorinated Biphenyls (PCBs)

Electrical transformers were not observed on or adjacent to the property during our site reconnaissance.

7.3. Subsurface Structures and Buried Utilities

Evidence of substructures such as utility vaults, sewer manholes, water meters, and other accessways were not observed on site.

7.4. Surface Staining

Areas of significant surficial staining were not observed during the site reconnaissance.

7.5. Wells

Water wells were not observed on or immediately adjacent to the subject site. The U.S.G.S Rodriguez Mountain Quadrangle Map shows a well located approximately two miles to the northeast of the site.

8. ENVIRONMENTAL DATA BASE SEARCH

A computerized, environmental information database search was performed by Vista Information Solutions, Inc. (Vista), dated May 18, 1998. The Vista search included federal, state, and local databases. A summary of the environmental databases searched, their corresponding search radii, and number of noted sites of environmental concern, are presented in the following table.

Table 2 – Summary of Environmental Database Search

Database Name	Agency	Date[1]	Search Radius (mile)	Sites
National Priority List (NPL)	U.S. EPA	9-97	1	0
RCRA Corrective Action Sites List (CORRACTS)	U.S. EPA	8-97	1	0
RCRA Facilities List (TSD)	U.S. EPA	8-97	1/2	0
Cal-Sites Annual Work Plan (SPL)	Cal EPA	7-97	1	0
Cal-Sites Abandoned Sites Program Information System (SCL)	Cal EPA	7-97	1	0
Comprehensive Environmental Response, Compensation, and Liability Information System List (CERCLIS/NFRAP)	U.S. EPA	7-97	1/2	0
Leaking Underground Storage Tank (LUST) Lists	SWRCB/ DEH	9-97/ 8-97	1/2	0
Solid Waste Information System (SWIS/SWLF) List (landfills)	CIWMB/ SWRCB	4-97/ 5-97	1/2	0
State of California Deed Restrictions List (DEED RSTR)	DHS	4-94	1/2	0
Hazardous Waste and Substances Sites List (CORTESE)	Cal EPA	2-95	1/2	0
Toxic Pits Cleanup Facilities (TOXIC PITS)	SWRCB	2-95	1/2	0
RCRA Violators List (RCRA VIOL)	U.S. EPA	8-97	1/4	0
SARA Title III-Toxic Release Inventory System (TRIS)	U.S. EPA	12-96	1/4	0
Registered UST and AST Lists	SWRCB/	1-94/	1/4	0

Table 2 – Summary of Environmental Database Search

Database Name	Agency	Date[1]	Search Radius (mile)	Sites
	DEH	8-97		
Emergency Response Notification System (ERNS) List	U.S. EPA	7-97	1/8	0
RCRA Generators List (GNRTR)	U.S. EPA	8-97	1/8	0
San Diego County Hazardous Materials Establishment List (HE17)	DEH	8-97	1/8	0

NOTES:
U.S. EPA = U.S. Environmental Protection Agency
Cal EPA = California Environmental Protection Agency
DHS = California Department of Health Services
CIWMB = California Integrated Waste Management Board
SWRCB = California State Water Resources Control Board
DEH = San Diego County Department of Environmental Health
[1] Agency database release date.

A complete description of the assumptions and approach to the database search, as well as the results, are provided in Appendix B. The review was conducted to evaluate whether the site or properties within the vicinity of the site have been identified as having experienced significant unauthorized releases of hazardous substances or other events with potentially adverse environmental effects. Figures on pages 3 and 4 of the Vista report indicate approximate locations of properties which may pose environmental concerns. The database search did not identify potential environmental concerns on the property or surrounding properties. Five unmapped sites were identified in the database search. Based on our review, the unmapped sites are located beyond the specified search distances for the types of sites identified.

9. REGULATORY AGENCY FILE REVIEW

This section addresses regulatory agency file review.

9.1. County of San Diego Department of Environmental Health

A request was not made to the County of San Diego Department of Environmental Health (DEH) for information on the site or adjacent properties based on the site not having an address and the adjacent properties are currently vacant land, residential or agricultural in use.

9.2. City of Escondido Fire Department

A request was not made to the City of Escondido Fire Department (EFD) for information on the site or adjacent properties based on the site not having an address and the adjacent properties are currently vacant land, residential or agricultural in use.

9.3. San Diego Air Pollution Control District

A request was not made to the San Diego Air Pollution Control District (SDAPCD) for information on the site or adjacent properties based on the site not having an address and the adjacent properties are currently vacant land, residential or agricultural in use.

10. SIGNIFICANCE OF IMPACTS

The City of Escondido Department of Planning does not have a set of criteria for significance determination guidelines. Criteria for significance determination were obtained from the guidelines set forth in the document entitled "Significance Determination Guidelines Under the California Environmental Quality Act," prepared by the City of San Diego Planning Department, Environmental Analysis Section, dated January 1991 (revised January 1994). The following criteria were compared with each of the findings of this study to determine their impact significance to the proposed redevelopment project:

- All uses proposing the handling, storage, and treatment of hazardous materials (e.g., a hazardous waste treatment center).
- Sites on or near known contamination sources.
- All cases of dewatering.

- Demolition of old commercial, industrial and residential structures (e.g., asbestos and other hazardous materials).
- Removal of underground fuel tanks.
- Residential, day care, social agencies, and schools in industrial areas.

11. ENVIRONMENTAL IMPACTS

The following environmental impact sites, as identified in this study, were compared with the significance criteria as outlined in Section 10:

- No obvious environmental impacts relating to hazardous materials are anticipated for the proposed project.

12. MITIGATION MEASURES

In accordance with the significance determination criteria discussed in Section 10, the following mitigation measures are recommended:

- A hazardous waste treatment center is not proposed for the redevelopment; therefore, mitigation measures regarding such a facility are not required.

  If hazardous materials are proposed to be temporarily stored on the site for construction purposes, then they should be stored and used in accordance with all applicable federal, state and local laws and regulations.

- The project site is not located on or near an area of known soil or groundwater contamination; therefore, mitigation measures regarding known soil or groundwater contamination are not required.

  However, in order to prepare for the possibility of encountering unknown soil or groundwater contamination during construction, a contingency plan should be prepared to address contractor procedures for such an event to minimize the potential for costly construction delays.

- Although it is not anticipated, if construction dewatering is required for the project, the effluent must meet discharge requirements for National Pollution Discharge Elimination System (NPDES) permitting and/or City of Escondido sewer system discharge.

- Demolition of old industrial, commercial, or residential structures is not proposed for the project; therefore, mitigation measures are not required.

- Underground storage tank removal is not proposed for the project; therefore, mitigation measures regarding these activities are not required.
- A residential development is planned for the site; however, the site or vicinity are not now nor planned to be used as an industrial area. Therefore, mitigation measures are not required.

13. LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No other warranty, expressed or implied, is made regarding the professional opinions presented in this report.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information or has questions regarding the content, interpretations presented, or completeness of this document.

Our conclusions, recommendations and opinions are based on an analysis of the observed site conditions and the referenced literature. It should be understood that the conditions of a site can change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

14. PREPARERS OF REPORT

Ronald D. Hallum, RG 4766, CEG 1484
Project Geologist

Stephan A. Beck, RG 4375, CEG 1512
Manager, Environmental Sciences Division

15. AGENCIES, ORGANIZATIONS, PERSONS CONTACTED

County of San Diego Department of Environmental Health
Ms. Ermie Esquibel,

San Diego Air Pollution Control District
Ms. Marcie Laudani

City of Escondido Fire Department
Mr. Frank Smith

City of Escondido Department of Planning
Mr. Bill Martin

16. REFERENCES

City of San Diego, Planning Department, Environmental Analysis Section, 1991, Significance Determination Guidelines Under the California Environmental Act, January. Revised January 1994.

County of San Diego, Department of Public Works, 1928 (selected years), Historical Aerial Photographs of San Diego County.

County of San Diego, Department of Environmental Health, 1997, Site Assessment Listing: dated April 2.

County of San Diego, Department of Environmental Health, 1997, Hazardous Materials Establishment Listing (HE17): dated April 2.

Harden, D.H., 1998, California Geology, Prentice Hall, Inc.

Norris, R.M., and Webb, R.W., 1990, Geology of California, Second Edition: John Wiley & Sons, Inc.

Rogers, T.H., 1965, Geologic Map of California, Santa Ana Sheet, California Division of Mines and Geology.

State of California, Department of Water Resources, 1967, Ground Water Occurrence and Quality, San Diego Region: dated June.

State of California, Division of Oil and Gas, Regional Wildcat Map, San Diego and Riverside Counties, W1-7, Dated February 27, 1993.

State of California, Department of Water Resources, 1967, Ground Water Occurrence and Quality, San Diego Region: dated June.

State of California, Governor's Office of Planning and Research, 1998, California Environmental Quality Act (CEQA), Statutes and Guidelines.

State of California, Regional Water Quality Control Board, San Diego Region, 1990, Well Investigation Program (AB1803): dated July.

State of California, Regional Water Quality Control Board, San Diego Region, 1994, Water Quality Control Plan for the San Diego Basin (9): dated September 8, amended October 13.

State of California, Regional Water Quality Control Board, San Diego Region, 1997, List of Underground Storage Tanks (LUST): dated September 10.

United States Department of Agriculture, Soil Conservation and Forest Service, 1973, Soil Survey, San Diego Area, California: dated December.

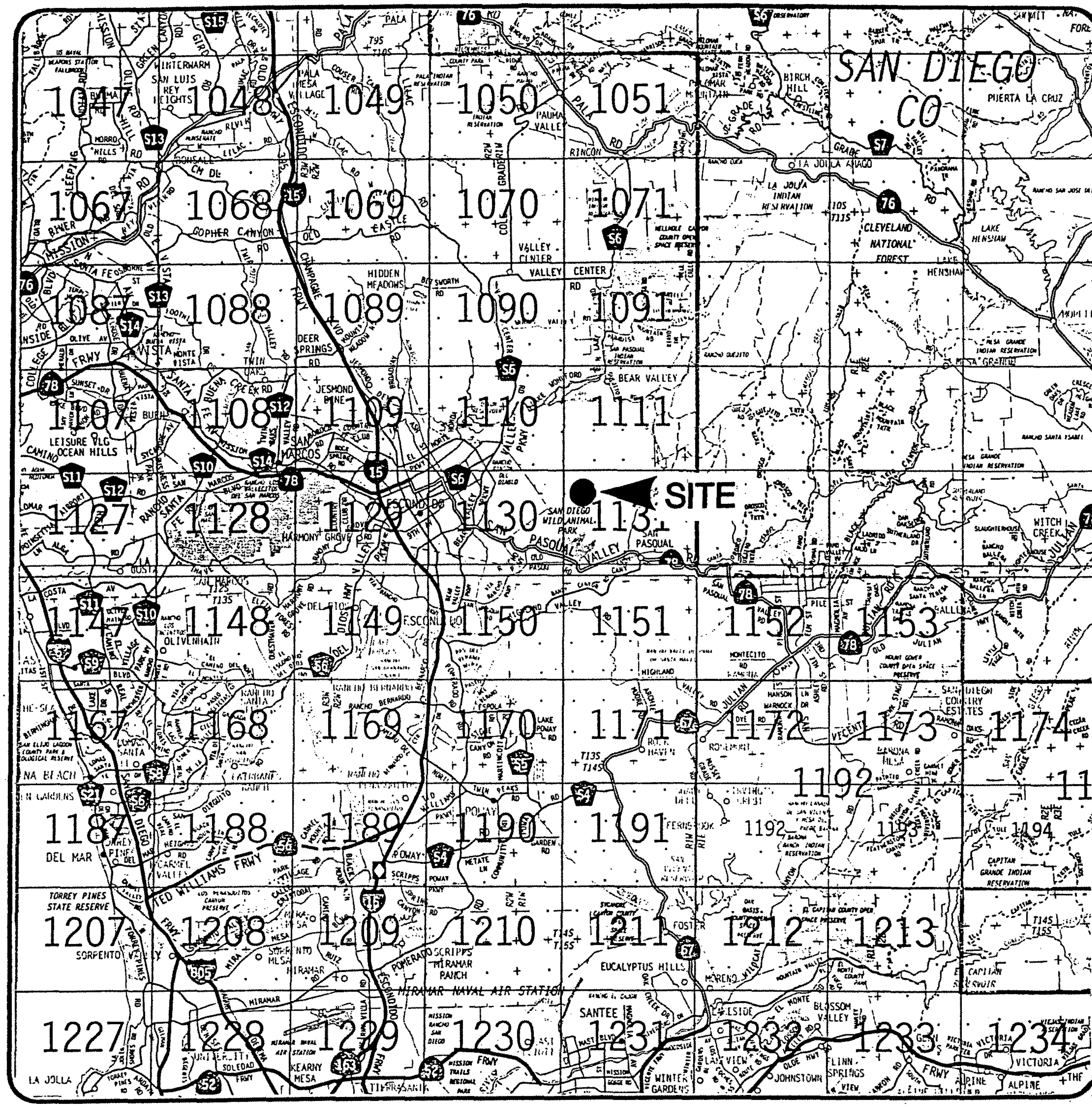
United States Geological Survey, 1948, Rodriguez Mountain, California: 7.5-minute series (topographic), Scale 1:24,000: photorevised 1982.

United States Geological Survey, 1954, San Pasqual, California: 7.5-minute series (topographic), Scale 1:24,000: photorevised 1982.

United States Geological Survey, 1968, Valley Center, California: 7.5-minute series (topographic), Scale 1:24,000: photorevised 1975.

Weber, F.H., 1963, Geology and Mineral Resources of San Diego County, California: California Division of Mines and Geology, County Report No. 3.

Vista Information Solutions, Inc., 1998, Site Assessment Plus Report Number 103608-02: dated May 18.



REFERENCE: 1997 Thomas Guide for San Diego County, Street Guide and Directory

NORTH

0 5 10

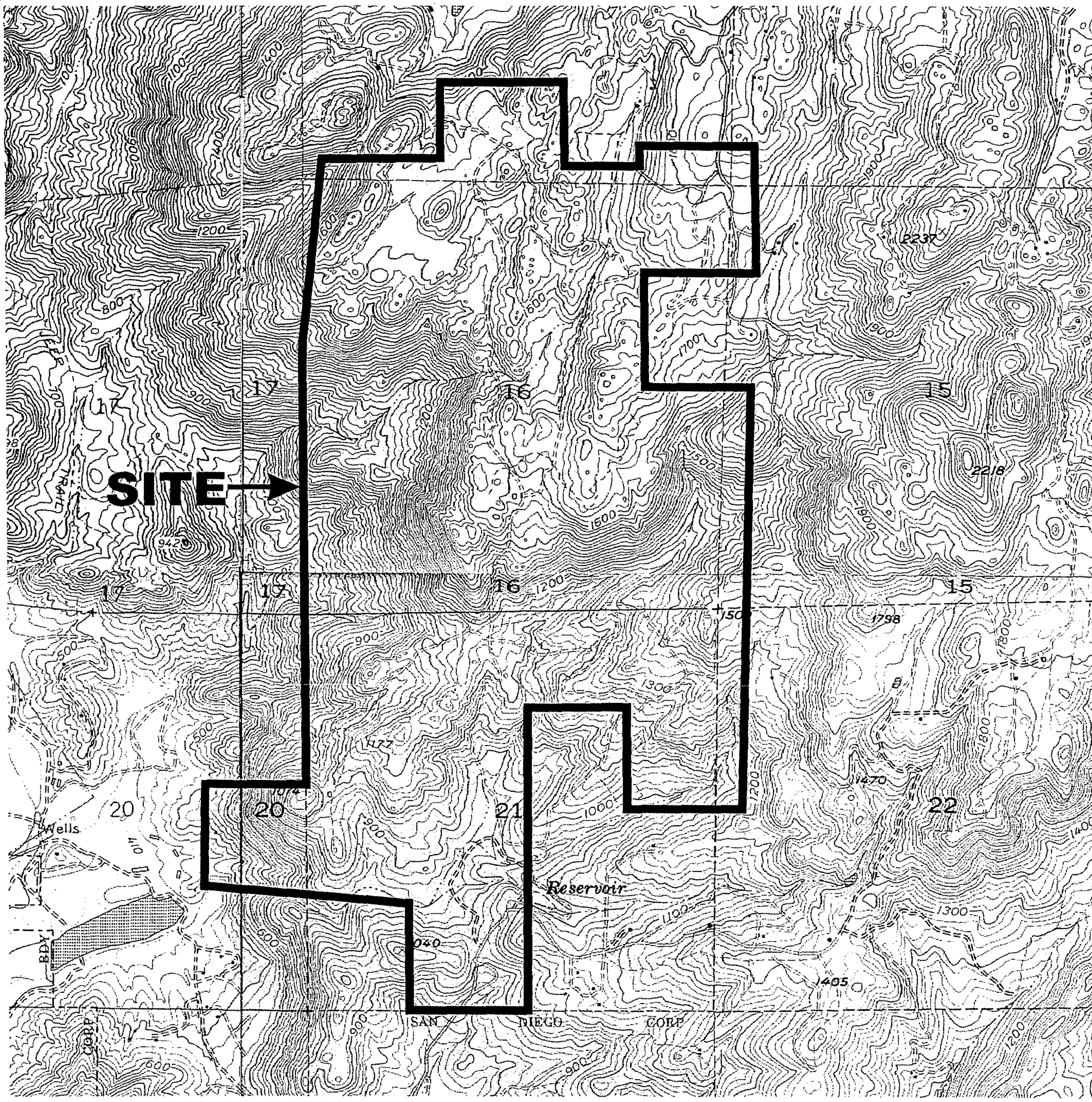
Approximate Scale in Miles

Ninyo & Moore

SITE LOCATION MAP

VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608-02	10/98	1



REFERENCE: U.S.G.S., ESCONDIDO, VALLEY CENTER, SAN PASQUAL AND RODRIGUEZ MTN. QUADRANGLES, 7.5 MINUTE SERIES (TOPOGRAPHIC) MAP, DATED 1967, REVISED 1975.

2000 0 2000 4000

Approximate Scale in Feet

N

3608topo

Ninyo & Moore

SITE TOPOGRAPHIC MAP

VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608-02	10/98	2

APPENDIX A

N&M TELEPHONE CONVERSATION RECORD

AUTHOR RDH DATE 10/13/98 TIME 9:00 a.m./p.m.

DISTRIBUTION File PAGE 1 OF 1

PROJECT NAME Valley View PROJECT NUMBER 103608-02

CALL TO/FROM Bill Martin

FIRM/ASSOCIATION City of Escondido Planning Dept. PHONE NUMBER (760) 741-4671

PREVIOUS CALLS:	RESPONSE:

SUMMARY OF CONVERSATION:

Mr. Martin told RDH that the City of Escondido does not have a set of criteria for significance determination guidelines in accordance w/ CEQA.

ACTION ITEMS:

APPENDIX B

SITE ASSESSMENT PLUS REPORT
(PROPERTY BOUNDRY EXTENDED 1 MILE)

PROPERTY INFORMATION	CLIENT INFORMATION
Project Name/Ref #: EIR VALLEY VIEW ROCKWOOD ROAD ESCONDIDO, CA 92027 Cross Street: SAN PASQUAL VALLEY Latitude/Longitude: (33.123429, 116.988309)	DAVID BLOOM NINYO MOORE 10225 BARNES CYN RD A112 SAN DIEGO, CA 92121

Site Distribution Summary Agency / Database - Type of Records			within 1/8 mile	1/8 to 1/4 mile	1/4 to 1/2 mile	1/2 to 1 mile
A) Databases searched to 1 mile:						
US EPA	NPL	National Priority List	0	0	0	0
US EPA	CORRACTS (TSD)	RCRA Corrective Actions and associated TSD	0	0	0	0
STATE	SPL	State equivalent priority list	0	0	0	0
STATE	SCL	State equivalent CERCLIS list	0	0	0	0
B) Databases searched to 1/2 mile:						
US EPA	CERCLIS / NFRAP	Sites currently or formerly under review by US EPA	0	0	0	-
US EPA	TSD	RCRA permitted treatment, storage, disposal facilities	0	0	0	-
STATE REG CO	LUST	Leaking Underground Storage Tanks	0	0	0	-
STATE/ REG/CO	SWLF	Permitted as solid waste landfills, incinerators, or transfer stations	0	0	0	-
STATE	DEED RSTR	Sites with deed restrictions	0	0	0	-
STATE	CORTESE	State index of properties with hazardous waste	0	0	0	-
STATE	TOXIC PITS	Toxic Pits cleanup facilities	0	0	0	-
C) Databases searched to 1/4 mile:						
US EPA	RCRA Viol	RCRA violations/enforcement actions	0	0	-	-
US EPA	TRIS	Toxic Release Inventory database	0	0	-	-
STATE	UST/AST	Registered underground or aboveground storage tanks	0	0	-	-

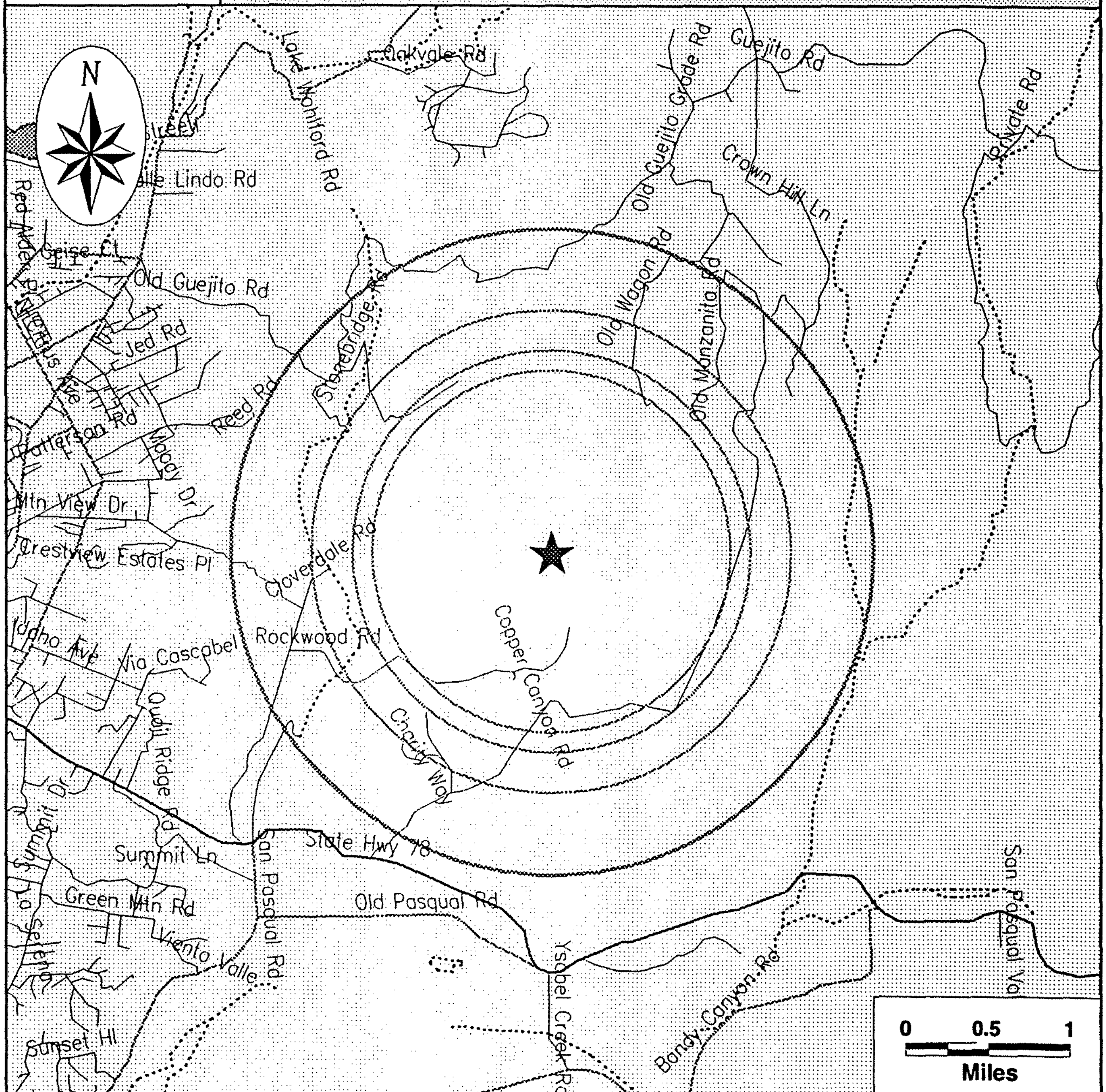
Site Distribution Summary Agency / Database - Type of Records			within 1/8 mile	1/8 to 1/4 mile	1/4 to 1/2 mile	1/2 to 1 mile
D) Databases searched to 1/8 mile:						
US EPA	ERNS	Emergency Response Notification System of spills	**0**	-	-	-
US EPA	GNRTR	RCRA registered small or large generators of hazardous waste	**0**	-	-	-
COUNTY	HE17	SD County unauthorized release list	**0**	-	-	-

This report meets the ASTM standard E-1527 for standard federal and state government database research in a Phase I environmental site assessment. A (-) indicates a distance not searched because it exceeds these ASTM search parameters.

NOTES

SITE ASSESSMENT PLUS REPORT
(PROPERTY BOUNDRY EXTENDED 1 MILE)

Map of Sites within One Mile

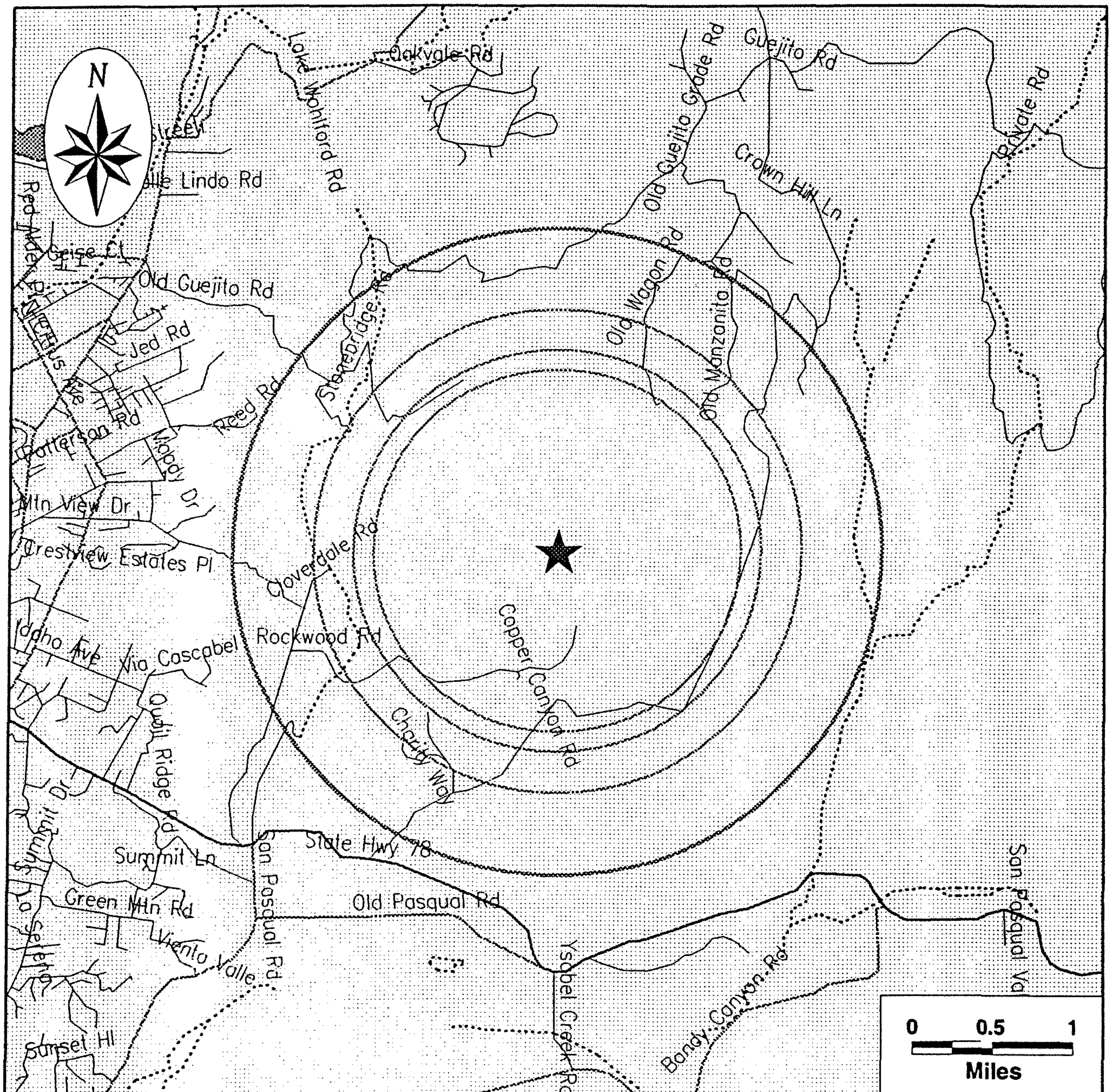


Subject Site	Category:	A	B	C	D
★	Databases Searched to:	1 mi.	1/2 mi.	1/4 mi.	1/8 mi.
	Single Sites	◆	■	▲	●
	Multiple Sites	◆	■	▲	●
		NPL, SPL, CORRACTS (TSD), SCL	CERCLIS\ NFRAP, TSD, LUST, SWLF	RCRA VIOL, TRIS, UST	ERNS, GENERATORS

Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

SITE ASSESSMENT PLUS REPORT (PROPERTY BOUNDRY EXTENDED 1 MILE)

Street Map



Subject Site	
★	Highways and Major Roads Roads Railroads Rivers or Water Bodies Utilities

SITE ASSESSMENT PLUS REPORT
(PROPERTY BOUNDRY EXTENDED 1 MILE)

SITE INVENTORY

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1/8 mile) VISTA ID DISTANCE DIRECTION	A				B							C			D		
		NPL	CORRACTS(TSD)	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	HE17
No Records Found																		

MAP ID	SITES IN THE SURROUNDING AREA (within 1/8 - 1/4 mile) VISTA ID DISTANCE DIRECTION	A				B							C			D		
		NPL	CORRACTS(TSD)	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	HE17
No Records Found																		

MAP ID	SITES IN THE SURROUNDING AREA (within 1/4 - 1/2 mile) VISTA ID DISTANCE DIRECTION	A				B							C			D		
		NPL	CORRACTS(TSD)	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	HE17
No Records Found																		

MAP ID	SITES IN THE SURROUNDING AREA (within 1/2 - 1 mile) VISTA ID DISTANCE DIRECTION	A				B							C			D		
		NPL	CORRACTS(TSD)	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	HE17
No Records Found																		

UNMAPPED SITES	VISTA ID	A: NPL	A: CORRACTS(TSD)	A: SPL	A: SCL	B: CERCLIS/NFRAP	B: TSD	B: LUST	B: SWLF	B: DEED RSTR	B: CORTESE	B: TOXIC PITS	C: RCRA VIOL	C: TRIS	C: UST/AST	D: ERNS	D: GNRTR	D: HE17
KLEMM RANCH 15666 OLD PASQUAL RD ESCONDIDO, CA 92027	5297573														X			X
SANTA YSABEL CREEK GROUNDWATER CONTAMIN 1.5 MILES SE OF ESCONDIDO ESCONDIDO, CA 92612	[illegible]					X												
ESCONDIDO INTERSEC 9TH AND 11TH STREETS ESCONDIDO, CA	5432769								X									
EAST ESCONDIDO DUMP WST HWY 78/SE OF ESC ESCONDIDO, CA	5813445								X									
DIXON DAM TB18-B4 LA HONDRA DRIVE ESCONDIDO, CA	5813646								X									

SITE ASSESSMENT PLUS REPORT
(PROPERTY BOUNDRY EXTENDED 1 MILE)

DETAILS

PROPERTY AND THE ADJACENT AREA (within 1/8 mile)
No Records Found

SITES IN THE SURROUNDING AREA (within 1/8 - 1/4 mile)
No Records Found

SITES IN THE SURROUNDING AREA (within 1/4 - 1/2 mile)
No Records Found

SITES IN THE SURROUNDING AREA (within 1/2 - 1 mile)
No Records Found

VISTA Address*:	SANTA YSABEL CREEK GROUNDWATER CONTAMIN 1.5 MILES SE OF ESCONDIDO ESCONDIDO, CA 92612	VISTA ID#:	4222560
CERCLIS / SRC# 4465		EPA ID:	CAD983659152

Agency Address:	*SAME AS ABOVE*		
Alias Name:	*SAN PASQUAL VALLEY SITE*		
Alias Street:	*NOT REPORTED*		
Alias City:	*NOT REPORTED*	**Alias Latitude:**	*0*
Alias Zip:	*NOT REPORTED*	**Alias Longitude:**	*0*
Alias State:	*NOT REPORTED*		
Alias Description:	*NOT REPORTED*		
Alias Name:	*WELLS 33H1, 33H2, AND 33J1*		
Alias Street:	*NOT REPORTED*		
Alias City:	*NOT REPORTED*	**Alias Latitude:**	*0*
Alias Zip:	*NOT REPORTED*	**Alias Longitude:**	*0*
Alias State:	*NOT REPORTED*		
Alias Description:	*NOT REPORTED*		
EPA Region:	*9*		
Congressional District:	*0*		
Federal Facility:	*NOT A FEDERAL FACILITY*		
Facility Ownership:	*PRIVATE*		
Site Incident Category:	*unknown*		
Federal Facility Docket:	*SITE IS NOT INCLUDED ON THE DOCKET*		
NPL Status:	*NOT ON NPL*		
Incident Type:	*Unknown*		
Proposed NPL Update #:	*0*		
Final NPL Update #:	*0*		
Financial Management System ID:	*NOT REPORTED*		
Latitude:	*0*		
Longitude:	*0*		
Lat/Long Source:	*GENERATED BY THE GEOGRAPH DATABASE*		
Lat/Long Accuracy:	*Unknown*		
Dioxin Tier:	*Unknown*		
USGS Hydro Unit:	*0*		
RCRA Indicator:	*Unknown*		
Unit Id:	*0*		
Unit Name:	*SITE EVALUATION/DISPOSITION*		
Type:	*DISCOVERY*	**Lead Agency:**	*EPA FUND-FINANCED*
Qualifier:	*UNKNOWN*	**Category:**	*Unknown*
Name:	*DISCOVERY*	**Actual Start Date:**	*NOT REPORTED*
Plan Status:	*Unknown*	**Actual Completion Date:**	*UNKNOWN*

Type:	PRELIMINARY ASSESSMENT	Lead Agency:	EPA FUND-FINANCED
Qualifier:	HIGHER PRIORITY	Category:	Unknown
Name:	PRELIMINARY ASSESSMENT	Actual Start Date:	NOT REPORTED
Plan Status:	Unknown	Actual Completion Date:	UNKNOWN
Type:	SCREENING SITE INSPECTION	Lead Agency:	EPA FUND-FINANCED
Qualifier:	LOWER PRIORITY	Category:	Unknown
Name:	SCREENING SITE INSPECTION	Actual Start Date:	UNKNOWN
Plan Status:	Unknown	Actual Completion Date:	UNKNOWN

VISTA Address*:	ESCONDIDO INTERSEC 9TH AND 11TH STREETS ESCONDIDO, CA	VISTA ID#:	5432769
WMUDS / SRC# 3938		Agency ID:	9 370055NUR

Agency Address:	SAME AS ABOVE
Solid Waste Inventory System ID:	NOT REPORTED
Facility Type:	Not reported
Facility In State Board Waste Discharger System:	NO
Chapter 15 Facility:	NO
Solid Waste Assessment Test Facility:	YES
Toxic Pits Cleanup Act Facility:	NO
RCRA Facility:	NO
Department of Defense Facility:	NO
Open To Public:	NO
Number Of Waste Management Units:	1
Rank:	6
Enforcements At Facility:	NO
Violations At Facility:	NO

VISTA Address*:	EAST ESCONDIDO DUMP WST HWY 78/SE OF ESC ESCONDIDO, CA	VISTA ID#:	5813445
STATE SWLF - Solid Waste Landfill / SRC# 4424		Agency ID:	37-CR-0020

Agency Address:	SAME AS ABOVE
Facility Type:	SOLID WASTE DISPOSAL FACILITY
Facility Status:	OTHER
Permit Status:	UNDER REVIEW

* VISTA address includes enhanced city and ZIP.

VISTA Address*:	DIXON DAM TB18-B4 LA HONDRA DRIVE ESCONDIDO, CA	VISTA ID#:	5813646
STATE SWLF - Solid Waste Landfill / SRC# 4424		Agency ID:	37-CR-0019

Agency Address:	*SAME AS ABOVE*
Facility Type:	*SOLID WASTE DISPOSAL FACILITY*
Facility Status:	*OTHER*
Permit Status:	*UNPERMITTED/UNLICENSED*

SITE ASSESSMENT PLUS REPORT (PROPERTY BOUNDRY EXTENDED 1 MILE)

DESCRIPTION OF DATABASES SEARCHED

A) DATABASES SEARCHED TO 1 MILE

NPL
SRC#: 3622

VISTA conducts a database search to identify all sites within 1 mile of your property. **The agency release date for NPL was January, 1998.**

The National Priorities List (NPL) is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the US Dept of Health and Human Services and the US EPA in order to become an NPL site.

SPL
SRC#: 4544

VISTA conducts a database search to identify all sites within 1 mile of your property. **The agency release date for Calsites Database: Annual Workplan Sites was January, 1998.**

This database is provided by the Cal. Environmental Protection Agency, Dept. of Toxic Substances Control. The agency may be contacted at: 916-323-3400.

SCL
SRC#: 4543

VISTA conducts a database search to identify all sites within 1 mile of your property. **The agency release date for Calsites Database: All Sites except Annual Workplan Sites (incl. ASPIS) was January, 1998.**

This database is provided by the Department of Toxic Substances Control. The agency may be contacted at: .

The CalSites database includes both known and potential sites. Two- thirds of these sites have been classified, based on available information, as needing "No Further Action" (NFA) by the Department of Toxic Substances Control. The remaining sites are in various stages of review and remediation to determine if a problem exists at the site. Several hundred sites have been remediated and are considered certified. Some of these sites may be in long term operation and maintenance.

CORRACTS
SRC#: 4244

VISTA conducts a database search to identify all sites within 1 mile of your property. **The agency release date for HWDMS/RCRIS was October, 1997.**

The EPA maintains this database of RCRA facilities which are undergoing "corrective action". A "corrective action order" is issued pursuant to RCRA Section 3008 (h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA.

B) DATABASES SEARCHED TO 1/2 MILE

CERCLIS
SRC#: 4465

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for CERCLIS was February, 1998.

The CERCLIS List contains sites which are either proposed to or on the National Priorities List(NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL. The information on each site includes a history of all pre-remedial, remedial, removal and community relations activiies or events at the site, financial funding information for the events, and unrestricted enforcement activities.

Cal Cerclis
SRC#: 2462

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Ca Cerclis w/Regional Utility Description was June, 1995.

This database is provided by the U.S. Environmental Protection Agency, Region 9. The agency may be contacted at: . These are regional utility descriptions for California CERCLIS sites.

NFRAP
SRC#: 4466

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for CERCLIS-NFRAP was February, 1998.

NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

RCRA-TSD
SRC#: 4244

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for HWDMS/RCRIS was October, 1997.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA TSDs are facilities which treat, store and/or dispose of hazardous waste.

SWLF
SRC#: 4424

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Ca Solid Waste Information System (SWIS) was January, 1998.

This database is provided by the Integrated Waste Management Board. The agency may be contacted at: 916-255-4021.

The California Solid Waste Information System (SWIS) database consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations pursuant to the Solid Waste Management and Resource Recovery Act of 1972, Government Code Section 2.66790(b). Generally, the California Integrated Waste Management Board learns of locations of disposal facilities through permit applications and from local enforcement agencies.

WMUDS **SRC#: 3938**	VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Waste Management Unit Database System (WMUDS) was May, 1997.**

This database is provided by the State Water Resources Control Board. The agency may be contacted at: 916-892-0323. This is used for program tracking and inventory of waste management units. This system contains information from the following eight main databases: Facility, Waste Management Unit, SWAT Program Information, SWAT Report Summary Information, Chapter 15 (formerly Subchapter 15), TPCA Program Information, RCRA Program Information, Closure Information; also some information from the WDS (Waste Discharge System). This database con

The WMUDS system also accesses information from the following databases from the Waste Discharger System (WDS): Inspections, Violations, and Enforcements. The sites contained in these databases are subject to the California Code of Regulations - Title 23. Waters.

LUST **SRC#: 3273**	VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Region #9-SLIC List was August, 1996.**

This database is provided by the Regional Water Quality Control Board, Region #9. The agency may be contacted at: 619-467-2975.

LUST **SRC#: 4548**	VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Lust Information System (LUSTIS) was February, 1998.**

This database is provided by the California Environmental Protection Agency. The agency may be contacted at: 916-445-6532.

LUST RG7 **SRC#: 4416**	VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Region #7-Colorado River Basin Leaking Underground Storage Tank Listing was November, 1997.**

This database is provided by the Regional Water Quality Control Board, Region #7. The agency may be contacted at: 760-346-7491.

LUST RG9 **SRC#: 4420**	VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Region #9 Leaking Underground Storage Tank List was December, 1997.**

This database is provided by the Regional Water Quality Control Board, Region #9. The agency may be contacted at: 619-467-2975.

HE17 LUST **SRC#: 4444**	VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for San Diego County Environmental Health Services Database-LUST Sites was January, 1998.**

This database is provided by the San Diego County Dept. of Health Services. It contains information concerning any sites which fall under the jurisdiction of this agency. Cases classified as Releases appear under "County Lust" in this report regardless of the "Cause" or "Case Type". Sites classified as USTs appear under "County UST", and Solid Waste facilities appear under "County SWLF". Sites with violation and/or disclosure information are reported under "SDC Site" in this VISTA report.

CORTESE SRC#: 2298

VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Cortese List-Hazardous Waste Substance Site List was February, 1995.**

This database is provided by the Office of Environmental Protection, Office of Hazardous Materials. The agency may be contacted at: 916-445-6532.

The California Governor's Office of Planning and Research annually publishes a listing of potential and confirmed hazardous waste sites throughout the State of California under Government Code Section 65962.5. This database (CORTESE) is based on input from the following: (1)CALSITES-Department of Toxic Substances Control, Abandoned Sites Program Information Systems; (2)SARA Title III Section III Toxic Chemicals Release Inventory for 1987, 1988, 1989, and 1990; (3)FINDS; (4)HWIS-Department of Toxic Substances Control, Hazardous Waste Information System. Vista has not included one time generator facilities from Cortese in our database.; (5)SWRCB-State Water Resources Control Board; (6)SWIS-Integrated Waste Management Control Board (solid waste facilities); (7)AGT25-Air Resources Board, dischargers of greater than 25 tons of criteria pollutants to the air; (8)A1025-Air Resources Board, dischargers of greater than 10 and less than 25 tons of criteria pollutants to the air; (9)LTANK-SWRCB Leaking Underground Storage Tanks; (10)UTANK-SWRCB Underground tanks reported to the SWEEPS systems; (11)IUR-Inventory Update Rule (Chemical Manufacturers); (12)WB-LF- Waste Board - Leaking Facility, site has known migration; (13)WDSE-Waste Discharge System - Enforcement Action; (14)DTSCD-Department of Toxic Substance Control Docket.

Deed Restrictions SRC#: 1703

VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Deed Restriction Properties Report was April, 1994.**

This database is provided by the Department of Health Services-Land Use and Air Assessment. The agency may be contacted at: 916-323-3376. These are voluntary deed restriction agreements with owners of property who propose building residences, schools, hospitals, or day care centers on property that is "on or within 2,000 feet of a significant disposal of hazardous waste".

California has a statutory and administrative procedure under which the California Department of Health Services (DHS) may designate real property as either a "Hazardous Waste Property" or a "Border Zone Property" pursuant to California Health Safety Code Sections 25220-25241. Hazardous Waste Property is land at which hazardous waste has been deposited, creating a significant existing or potential hazard to public health and safety. A Border Zone Property is one within 2,000 feet of a hazardous waste deposit. Property within either category is restricted in use, unless a written variance is obtained from DHS. A Hazardous Waste Property designation results in a prohibition of new uses, other than a modification or expansion of an industrial or manufacturing facility on land previously owned by the facility prior to January 1, 1981. A Border Zone Property designation results in prohibition of a variety of uses involving human habitation, hospitals, schools and day care center.

Toxic Pits SRC#: 2229

VISTA conducts a database search to identify all sites within 1/2 mile of your property. **The agency release date for Summary of Toxic Pits Cleanup Facilities was February, 1995.**

This database is provided by the Water Quality Control Board, Division of Loans Grants. The agency may be contacted at: 916-227-4396.

C) DATABASES SEARCHED TO 1/4 MILE

RCRA-Viols/Enf VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for HWDMS/RCRIS was October, 1997.**

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Violators are facilities which have been cited for RCRA Violations at least once since 1980. RCRA Enforcements are enforcement actions taken against RCRA violators.

UST's SRC#: 573 VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Fullerton Underground Storage Tank List was June, 1992.**

This database is provided by the Fullerton Fire Department. The agency may be contacted at: ; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's SRC#: 1612 VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Underground Storage Tank Registrations Database was January, 1994.**

This database is provided by the State Water Resources Control Board, Office of Underground Storage Tanks. The agency may be contacted at: 916-227-4337; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's SRC#: 3945 VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Alameda County UST List was June, 1997.**

This database is provided by the Department of Environmental Health. The agency may be contacted at: 510-567-6713; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's SRC#: 4415 VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for San Bernardino County UST List was December, 1997.**

This database is provided by the San Bernardino County Fire Department, Hazardous Materials Division. The agency may be contacted at: 909-387-3200; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's SRC#: 4419 VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Sutter County UST Owner List was November, 1997.**

This database is provided by the Sutter County Agricultural Department. The agency may be contacted at: 916-822-7504; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's SRC#: 4431 VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Riverside County UST List was January, 1998.**

This database is provided by the Riverside County Environmental Health. The agency may be contacted at: 909-358-5055; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's
SRC#: 4441

VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Los Angeles County UST "Street Number" Book was November, 1997.**

This database is provided by the Los Angeles County Department of Public Words, Environmental Programs. The agency may be contacted at: 818-458-3514; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's
SRC#: 4444

VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for San Diego County Environmental Health Services Database-UST Sites was January, 1998.**

This database is provided by the San Diego County Department of Health Services. The agency may be contacted at: 619-338-2268; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's
SRC#: 4552

VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Ventura County "BWT" (Business, Waste, Tanks) List was February, 1998.**

This database is provided by the Ventura County Environmental Health Division. The agency may be contacted at: 805-654-2813; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's
SRC#: 4576

VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for San Francisco Current Active UST List was February, 1998.**

This database is provided by the San Francisco Department of Health. The agency may be contacted at: 415-252-3900; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's
SRC#: 4582

VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Kern County Sites and Tanks Listing was February, 1998.**

This database is provided by the Kern County Environmental Health Department. The agency may be contacted at: 805-862-8700; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

HE17 UST
SRC#: 4444

VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for San Diego County Environmental Health Services Database-LUST Sites was January, 1998.**

This database is provided by the San Diego County Dept. of Health Services. It contains information concerning any sites which fall under the jurisdiction of this agency. Cases classified as Releases appear under "County Lust" in this report regardless of the "Cause" or "Case Type". Sites classified as USTs appear under "County UST", and Solid Waste facilities appear under "County SWLF". Sites with violation and/or disclosure information are reported under "SDC Site" in this VISTA report.

AST's
SRC#: 4320

VISTA conducts a database search to identify all sites within 1/4 mile of your property. **The agency release date for Aboveground Storage Tank Database was December, 1997.**

This database is provided by the State Water Resources Control Board. The agency may be contacted at: 916-227-4364.

TRIS
SRC#: 3716

VISTA conducts a database search to identify all sites within 1/4 mile of your property.
The agency release date for TRIS was December, 1996.

Section 313 of the Emergency Planning and Community Right-to-Know Act (also known as SARA Title III) of 1986 requires the EPA to establish an inventory of Toxic Chemicals emissions from certain facilities(Toxic Release Inventory System). Facilities subject to this reporting are required to complete a Toxic Chemical Release Form(Form R) for specified chemicals.

D) DATABASES SEARCHED TO 1/8 MILE

ERNS
SRC#: 4144

VISTA conducts a database search to identify all sites within 1/8 mile of your property.
The agency release date for was September, 1997.

The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil and hazardous substances. The database contains information from spill reports made to federal authorities including the EPA, the US Coast Guard, the National Response Center and the Department of transportation. A search of the database records for the period October 1986 through September 1997 revealed information regarding reported spills of oil or hazardous substances in the stated area.

RCRA-LgGen
SRC#: 4244

VISTA conducts a database search to identify all sites within 1/8 mile of your property.
The agency release date for HWDMS/RCRIS was October, 1997.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Large Generators are facilities which generate at least 1000 kg./month of non-acutely hazardous waste (or 1 kg./month of acutely hazardous waste).

RCRA-SmGen
SRC#: 4244

VISTA conducts a database search to identify all sites within 1/8 mile of your property.
The agency release date for HWDMS/RCRIS was October, 1997.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Small and Very Small generators are facilities which generate less than 1000 kg./month of non-acutely hazardous waste.

San Diego
HE17
SRC#: 4444

VISTA conducts a database search to identify all sites within 1/8 mile of your property.
The agency release date for San Diego County Environmental Health Services Database-LUST Sites was January, 1998.

This database is provided by the San Diego County Dept. of Health Services. It contains information concerning any sites which fall under the jurisdiction of this agency. Cases classified as Releases appear under "County Lust" in this report regardless of the "Cause" or "Case Type". Sites classified as USTs appear under "County UST", and Solid Waste facilities appear under "County SWLF". Sites with violation and/or disclosure information are reported under "SDC Site" in this VISTA report.

End of Report

Appendix J
Hydrology study and Water Quality Report

3.XXX HYDROLOGY

ENVIRONMENTAL SETTING

CLIMATE

The San Diego region's climate is generally mild, averaging 65 degrees at the coast. The City of Escondido averages 77 degrees Fahrenheit. Average annual precipitation for the City of Escondido area is approximately 16.6 inches per year. Dry conditions generally prevail during the summer months with rains occurring primarily between November and February.

WATERSHED

The Specific Plan Area consists of 1,150 undeveloped acres, within the Valley View and Cloverdale Watersheds as designated in the City of Escondido Drainage Master Plan. The boundaries of the development also include a small portion of an unnamed watershed to the south. The area is approximately two miles north of the San Pasqual Valley, within the San Dieguito Hydrologic Unit as designated in the Regional Water Quality Control Plan (Basin Plan) prepared by the San Diego Regional Water Quality Control Board (RWQCB). This Hydrologic Unit consists of the headwaters for the San Dieguito River, flowing from the Peninsular Range, Volcan Mountains to the Pacific Ocean near the coastal city of Solano Beach. The watershed extends for approximately 30 miles, covering an area of approximately 350 square miles. Precipitation falling in the Specific Plan area flows south to the San Dieguito River and on to Lake Hodges. From this Lake, the San Dieguito River flows to a small coastal lagoon and the Pacific Ocean.

The Specific Plan Area is further defined in the Basin Plan as Las Lomas Muertas Sub-Area of the San Pasqual Hydrologic Area. The Specific Plan Area is near the northern border of Las Lomas Muertas Hydrologic Sub-Area, bordering the Carlsbad Hydrologic Unit and Escondido Creek watershed to the north. The area consists of intermittent subdrainages and stream channels, which respond only to local precipitation. During most of the year, these stream channels are devoid of flowing water. **Figure 3.XXX-1** shows the subdrainages within the Specific Plan Area. **Table 3.XXX-1** lists the size of each drainage area.

The Specific Plan Area is characterized by hilly terrain with slopes up to 65 %. Soil types in the northern portion are predominantly Cieneba, very rocky coarse sandy loam with 30 to 75 % slopes (Soil Symbol: CmrG). Soil types in the southern portion are predominantly Cieneba-Fallbrook, rocky sandy loams, with slopes of 30 to 65 %, eroded (Soil Symbol: CnG2). The Soil Conservation Service designates both these soil types as having severe erodibility and severe limitations for conversion from brush to grass. The site currently contains minimal impervious surfaces, and elevations range from 500 to 1,800 feet.

Table 3.XXX-1
Subdrainage Areas within the Specific Plan Area

Subdrainage Area	Acreage
A	11
B	131
C	291
D	431
E	158
F	104
G	264
H	417
I	218
J	238
K	194

Source: Piro Engineering, 1998

Preliminary drainage analysis has identified eleven subdrainages either upstream or within the Specific Plan Area. Eight of these drainages converge southward through the project site and feed into the San Dieguito River Valley. The remaining three subdrainages drain westward to the San Dieguito River Valley.

GROUNDWATER RESOURCES

Major groundwater basins in the area include the Escondido Basin to the west and the San Pasqual Basin in the San Pasqual Valley to the south. Generally speaking, groundwater basins exist in San Diego County only within major river corridors. The groundwater in these areas is recharged through the river channels and is generally shallow and limited in size. Since the project area is located in a headwaters area at relatively high elevations within the watershed (grater than 500 feet), significant amounts of groundwater would not be anticipated.

The San Pasqual Valley contains approximately 38,000 acre-feet of useable water according the RWQCB Basin Plan. However, much of the water in the western portion of the valley is poor quality. Efforts are underway to improve the water quality by recharging the basin with highly treated reclaimed water from the Escondido Hale Avenue Treatment Plant. The reclaimed water from the San Pasqual Valley Groundwater Basin could be used for many purposes including the Wild Animal Park just southeast of the Specific Plan Area. The use of reclaimed water reduces the demand for potable water supply which is almost entirely imported to the area.

SURFACE WATER QUALITY

The stream channels and drainages in the Specific Plan Area are generally intermittent, responsive only to precipitation. Land uses in the region have historically been rural in nature including ranching. The State Water Resources Control Board in compliance with the Clean Water Act Section 303 has prepared a list of impaired water bodies in the State of California. The list includes a priority schedule for the development of total maximum daily loads (TMDLs) for each contaminant or "stressor" impacting the water body. No creeks or water bodies within the San Dieguito watershed have been listed on the 303(d) list.

FLOODING

The Specific Plan Area has not been mapped by the Federal Emergency Management Agency (FEMA, 1999). The entire Specific Plan Area is therefore within Zone X for areas of undetermined flood risk. The area is included within the headwaters of the San Dieguito River at elevations over 500 feet. Flooding can occur during local storm bursts in the immediate area, but flood intensities and duration are generally short.

STORM WATER REGULATIONS

In 1987, Congress enacted the Water Quality Act that amended portions of the Clean Water Act and set requirements for permitting storm water runoff. The amendments required municipalities of over 100,000 people with separate storm sewers to obtain a Storm water NPDES permit. The County of San Diego and the 18 incorporated cities within the County, including the City of Escondido, coordinated to develop a single Storm Water Management Plan (SWMP) under a single storm water NPDES permit. Under this permit, the County is required to prohibit illegal discharges to its storm water conveyance system, and to conduct scheduled inspections and other activities to identify and eliminate these discharges. The SWMP has implemented the following programs:

1. Illegal Discharge and Illicit Connection Detection and Elimination Program
2. Best Management Practices Program
3. Wet Weather Monitoring Program
4. Education and Outreach Program

New developments are required to implement best management practices as outlined in the SWMP. The EPA recently approved Phase II of the NPDES storm water program which requires permits for small municipalities and for construction sites between one and five acres in size.

The San Diego RWQCB will soon be requiring Standard Urban Storm Water Mitigation Plans (SUSWMPs) for new developments in the region including hillside residential developments. The SUSWMPs will require the implementation of post-construction Best Management Practices

(BMPs) including structural BMPs, treatment control BMPs, and source control BMPs. BMPs include detention basins, swales, and filtering units designed to reduce impacts from increased runoff. The BMPs are required to be sized to infiltrate, filter, or treat the first 0.6 inches of rain during any storm. The RWQCB is still considering the sizing criteria for the structural and treatment control BMPs. The San Diego County RWQCB has indicated that the SUSWMP program will be similar to the Los Angeles RWQCB program.

Construction activities occurring over an area larger than five acres are required to prepare Storm Water Pollution Prevention Plans (SWPPPs) prior to project implementation under Phase I of the EPA's Storm Water Program. The SWPPPs are required for coverage under the State-Wide General Construction Storm Water NPDES permit.

Finally, the County has adopted a Storm Water Quality and Management Ordinance No. 8394. This Ordinance outlines specific storm water management requirements for industrial, commercial, and residential developments.

EROSION CONTROL

The San Diego RWQCB implemented an Erosion and Sediment Control Program in 1987 to reduce erosion (Resolution No.87-91). The three major management principles of the Resolution included the following: Property owners are responsible for activities that could promote erosion, local governments have the lead role in controlling land use and construction practices, and best management practices should be implemented for construction and operational phases of a project. In addition, the RWQCB implements other sediment control and channelization reduction polices which employ BMPs to reduce erosion and sedimentation within the region.

ENVIRONMENTAL IMPACTS

SIGNIFICANCE CRITERIA

A storm drainage or hydrologic impact would be considered significant if the proposed project would result in any of the following, adapted from CEQA *Guidelines*, Appendix G:

- cause substantial flooding, erosion, or siltation;
- expose people or structures to flood hazards;
- generate substantial storm water runoff;
- contaminate a public water supply;
- substantially degrade water quality; and
- substantially degrade or deplete groundwater resources.
- violate conditions of applicable NPDES permits

PROPOSED DEVELOPMENT

The proposed development would result in the installation of impervious surfaces over approximately 70 percent of the Specific Plan Area. Currently, the site is covered with minimal impervious surfaces. The proposed development would include clusters of residential and commercial areas as conceptually shown in Figure xxx. The access road enters the Specific Plan Area approximately at the low point of the Valley View Watershed. Preliminary drainage designs, based on conceptual development locations, provided calculations for the 50-year flood volume at the mouth of the watershed. The preliminary calculations show a 50-year post-construction flow of 1,800 cubic feet per second within Subdrainage Area A (see Figure XXX). This volume includes the full combined drainage volume from subdrainages A, B, C, D, E, F, G, and H.

As part of the project, a new separate storm sewer system would be constructed, draining development areas following natural topographic features.. The City of Escondido requires new developments to comply with specific design standards to avoid flood and erosion impacts. These standards are included in **Appendix xxx.**

Impact 3.XXX-1: The development would increase storm water runoff due to the increased area of impervious surfaces. Increased runoff promotes erosion and scouring, increases velocity, and degrades the quality of receiving waters. With implementation of mitigation measures, this would constitute a less-than-significant impact.

Currently, the site is unimproved, and no drainage facilities have been installed. Soil types in the area are characterized within the Soil Conservation Service Soil Survey as having severe erodibility potential. Since the proposed project involves more than 100,000 square feet and will be considered a hillside residential community, the project will be required to comply with the new SUSWMP regulations to be adopted by the San Diego RWQCB. Although these regulations have not yet been adopted, compliance with the proposed regulations including implementation of sizing criteria will be required for the project. The final drainage design will include structural, source control, and treatment BMPs to reduce the impact of increased storm flows.

Since the area includes steep hillsides with moderately low infiltration rates and little groundwater, drainage systems must account for storm water runoff of the entire watershed during large storm events. The increased impervious surfaces will substantially increase runoff volumes. Structural BMPs designed to reduce impacts from increased impervious surfaces must take into account the low infiltration rates of the natural soils. Storm water collection systems must be able to detain the excess water and release flows to the stream channels at more natural rates.

The BMPs may include detention basins, filter strips, grassy swales, water features, and energy dissipaters. The BMPs will be approved by the City of Escondido as compliance with the Municipal Storm Water Management Plan for San Diego County to detain and filter the first 0.6 inches of rain for every storm. Implementation of the BMPs is required for coverage under the County of San Diego, Municipal Separate Storm Sewer System NPDES permit, and will reduce impacts of increased impervious surfaces and increased storm water runoff to less-than-significant levels.

Mitigation Measures

3.XXX-1a A drainage system will be designed to accommodate 50-year flows as required by the San Diego County Department of Flood Control. Structural and procedural BMPs will be established to detain and treat the first 0.6 inches of every rain storm. Structural BMPs will include designing swales throughout the development, capable of trapping and infiltrating the first 0.6 inches of rain. Residential areas should be designed to accommodate the necessary drainage swales. In areas with not enough room for topographical swales, such as near parking areas for commercial developments, detention basins will be installed to collect and filter storm water.

3.XXX-1b A landscaping plan will be developed based on the final grading plan. The landscaping plan will be designed to reduce erosion. Since native soils have been characterized as having severe limitations for accommodating grass, landscaping will incorporate native species wherever feasible.

Level of Significance After Mitigation

Less than significant.

Impact 3.XXX-2: The development could impact surface water quality due to the introduction of urban runoff containing contaminants such as oil and grease, sediment, metals, pesticides, and trash. With implementation of mitigation measures, this would constitute a less-than-significant impact.

As the area becomes more developed, urban runoff could impact water quality through the introduction of contaminants and the increase runoff volume and velocity. Stream channels could become perennial due to landscape irrigation. Contaminants could include increased sediments, hydrocarbons and metals from road surfaces, pesticides, nutrients, and trash. Increased runoff could create erosion and scouring and could impact riparian and aquatic habitats downstream.

None of the waterbodies within the watershed are currently listed as impaired by the SWRCB. Nonethless, BMPs will be implemented pursuant to the SUSWMP requirements to reduce urban runoff contaminants to less-than-significant levels. These will include structural BMPs such as detention basins, grassy swales, and filters. Compliance with the County of San Diego Municipal Storm Water NPDES permit will include conducting public outreach programs, implementing housekeeping BMPs, and conducting periodic wet weather monitoring.

Mitigation Measure

3.XXX-2 The project will be required to implement treatment BMPs pursuant to the San Diego County Storm Water Management Plan in order to obtain coverage in the County's Storm Water NPDES permit. Structural and procedural BMPs will be established to detain and treat the first 0.6 inches of every rain storm.

Level of Significance After Mitigation

Less than significant.

Impact 3.XXX-3: Construction activities could expose soils to erosion, impacting water quality with the introduction of increased sediment loads downstream. This would constitute a significant impact. Implementation of mitigation measures would reduce this impact to less-than-significant levels.

The topography of the site is varied with steep slopes which will require significant grading. Grading and construction activities at the project site for each Alternative other than the No Project Alternative would expose soils to erosion and may result in the transportation of sediment downstream where deposition would occur. Fuels, solvents and/or other chemicals used in construction activities could be spilled, dumped, or discarded and ultimately seep or leak into waterways draining the project site.

Mitigation Measure

3.XXX-3 The project applicant shall employ construction storm water best management practices (BMPs). The project applicant shall prepare a SWPPP as part of the construction activities NPDES storm water permit required by the RWQCB. At a minimum, this plan shall include the following requirements:

1. Plan excavation and grading activities for only the dry season (April 15 to October 31) to the extent possible. This reduces the chance of severe erosion from intense rainfall and surface runoff, as well as the potential for soil saturation in swale areas.

2. If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated by temporary on-site silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work is stopped due to rains, a positive grading away from slopes shall be provided to carry the surface runoff to areas to where flow can be controlled, such as the temporary silt basins. Sediment basin/traps shall be located and operated to prevent offsite sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location on-site away from concentrated flows, or removed to an approved disposal site.

3. Temporary erosion control measures shall be provided until perennial revegetation or landscaping is established and can prevent discharge of sediment into the drainage channels. Properly trenched and staked silt fences shall be placed on steep areas along the toe of cut or fill slopes. Straw bales shall be placed along both sides of steep drainage channels.

4. After completion of grading, erosion protection shall be provided on all cut and fill slopes. Revegetation shall be facilitated by mulching, hydroseeding or other methods, and should be initiated as soon as possible after completion of grading, and prior to the onset of the rainy season (by November 1).

5. Permanent revegetation/landscaping shall emphasize drought-tolerant perennial ground coverings, shrubs, and trees, to improve the probability of slope and soil stabilization without adverse impacts to slope stability due to irrigation infiltration and long-term root development.

6. BMPs selected and implemented for the project shall be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities shall be maintained regularly and cleared of accumulated sediment as necessary to preserve the siltation basins storage volumes and permit adequate conveyance.

Level of Significance After Mitigation

Less than significant.

Impact 3.XXX-4: The development area could experience flooding during 50 and 100-year, high-intensity storm events. Residential areas and infrastructure could be affected by the temporary flooding. However, drainage system designs would comply with applicable design standards and regulations. As a result, this would constitute a less-than-significant impact.

The Specific Plan Area is within the higher elevations of the watershed and is not mapped by the Federal Insurance Rate Mapping program used by FEMA to determine flooding potential. However, increased impervious surfaces and channelization of storm water may increase runoff volume from natural flow volumes. In addition, placing obstructions within drainage channels such as bridge bulkheads can back up water causing upstream flooding. As part of the project, the applicant will prepare a drainage system which has adequate capacity to accommodate the 50-year flow as recommended by the City of Escondido Drainage Design Standards. Detention basins required to reduce the impacts of development will assist in reducing downstream flooding. The city will be required to prepare a Letter of Map Revision for FEMA to include the new development.

REFERENCES

East Grove Specific Plan EIR, June 1997

Masson & Associates, *Drainage Master Plan*, City of Escondido, November 1995

Piro Engineering, *Valley View Estates, Preliminary Drainage Report*, January 1998

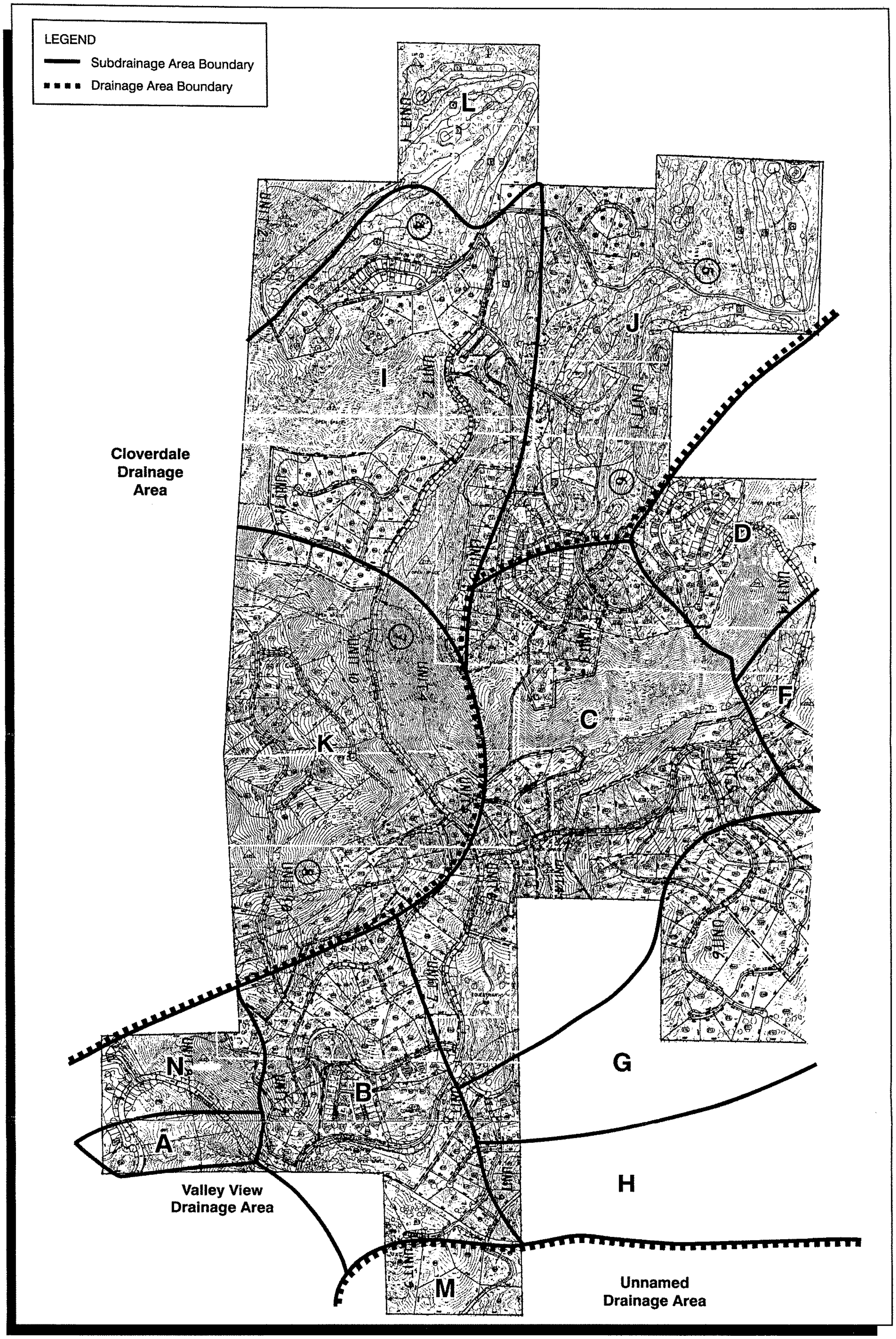
San Diego Regional Water Quality Control Board, *Water Quality Control Plan*, (Basin 9), September 1994

San Diego Regional Water Quality Control Board, *Staff Report for Standard Urban Storm Water Mitigation Plans and Numerical Sizing Criteria for Best management Practices*, 1999

State Water Resources Control Board, 1998 California 303(d) List and TMDL Priority Schedule, May 12, 1999

TRS Consultants, *Valley View Estates, Specific Plan Text*, July 1997

US Department of Agriculture Soil Conservation Service, *Soil Survey for the San Diego Area,* December 1973



Subdrainages
Figure 3.XXX-1

WATER QUALITY REPORT
VALLEY VIEW ESTATES PROJECT
ESCONDIDO, CALIFORNIA

PREPARED FOR:
Ms. Sonja Itson
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PREPARED BY:
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October 30, 1998
Project No. 103608-02

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

October 30, 1998
Project No. 103608-02

Ms. Sonja Itson
Mooney and Associates
9903 Businesspark Avenue
San Diego, California 92131-1120

Dear Ms. Itson:

In accordance with your written authorization and our proposal dated December 10, 1997, Ninyo & Moore this Water Quality Report for inclusion in an Environmental Impact Report that will address the proposed Valley View Estates Project Specific Plan.

We appreciate the opportunity to be of service to you on this project. Should you have any questions regarding this report, please contact the undersigned at your convenience.

Respectfully submitted,
NINYO & MOORE

Ronald D. Hallum, C.E.G.
Project Geologist

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Manager, Environmental Sciences Division

RDH/SB/rlm

Distribution: (4) Addressee

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1. INTRODUCTION

Ninyo & Moore has performed a water quality evaluation of the project site located in a currently unincorporated area of San Diego County, California (Figure 1). We understand that the site will be incorporated into the City of Escondido upon commencement of development. The purpose of this study was to evaluate water quality issues using available data and to provide a report, which will be utilized in the preparation of environmental impact documents. Subsurface exploration and laboratory testing of materials were not included in the scope of this evaluation.

The proposed project has the potential to affect the quality of surface water and groundwater in the area as pollutants leave the site in drainage waters from the two distinct project land use types; urbanized development and landscaped open space/golf course. Increased runoff from newly created impervious surfaces, such as paving, combined with urban pollutants associated with mixed land uses have the potential to impact streams, watercourses, and groundwater in the vicinity.

1.1. Purpose and Scope of Work

Ninyo & Moore's scope of work for this Water Quality Report included the following tasks:

- An evaluation of recommended Best Management Practices (BMPs) to mitigate impacts to water quality.
- An evaluation of potential mitigation measures to reduce erosion potential on site, particularly during construction.
- An evaluation of potential mitigation measures to reduce the impact of urban runoff.
- Providing recommendations, where appropriate, regarding our evaluation of the potential mitigation measures.

To accomplish the above referenced tasks, Ninyo & Moore performed the following:

- Reviewed readily available maps, reports, plans and other documents pertaining to water quality at the subject site.
- Performed a site reconnaissance to visually identify areas of obvious existing water quality impacts.

- Reviewed readily available local regulatory agency files for the subject site. Information from the Regional Water Quality Control Board, State Water Resources Board, and the United States Geological Survey was reviewed.

- Reviewed readily available aerial photographs of the subject site.

- Prepared this Water Quality Report documenting findings and providing opinions and recommendations regarding specific water quality issues.

2. SITE INFORMATION AND CHARACTERISTICS

The following sections describe the site, planned site uses, and regional setting.

2.1. Site Conditions

The site is located along the eastern edge of the city of Escondido, approximately 1,000 feet north of the San Diego Wild Animal Park and roughly two miles south of Lake Wohlford. Access is via Rockwood Road from the south and from Old Wagon Road at the northeast corner of the site. The site is an irregularly-shaped parcel that consists of 1,150 acres of currently undeveloped land. The site consists of boulder-covered mesas and ridges, moderate to steep slopes, and relatively level to gently sloping meadows. Elevations range from approximately 420 feet above mean sea level (MSL) near the southwestern corner of the site to approximately 1,820 feet MSL near the northeastern corner of the site. Numerous unpaved roads and trails cross the site. The site is covered by native vegetation ranging from chaparral and wild grasses on the slopes and upper mesas to oak trees in the meadows.

2.2. Project Characteristics

The proposed project will consist of a residential and resort development and will include approximately 485 residential units, 250 hotel units, a 205-acre, 18-hole golf course with clubhouse, a commercial restaurant, tennis courts and an equestrian center. Approximately 331 acres will be left as natural open space. Grading is proposed to include cut slopes up to 50 feet in height and fill slopes up to 40 feet in height.

The Valley View Estates Specific Plan (Plan), prepared by TRS Consultants, dated July 1997, indicates most water used on the site will be provided by the Escondido Municipal Water District via an on-site water transmission system, including a number of pumping stations and pressure reduction systems. Water storage will be accommodated by a reservoir to be located on the northeasterly corner of the property. A connection will be made to the City water system main line, to be constructed in Rockwood Road in the southwesterly corner of the site.

The plan also states that "Where feasible, the golf course watering will be supplemented by the use of well water." The feasibility of on-site groundwater wells and the impact on drawdown or water quality of the site aquifer was beyond the scope of this study. We recommend that a focused technical groundwater study, including the installation of test wells and the performance of pump testing, be performed to assess the feasibility of on-site groundwater wells, if proposed. We anticipate that the great majority of the water used on the property will be imported from off-site.

3. HYDROLOGIC SETTING

According to the Regional Water Quality Control Board Basin Plan (1994), the project site is located near the center of the San Dieguito Hydrologic Unit. The boundaries and subdivisions of these areas were first published by the State of California, Department of Water Resources (DWR, 1964). The State Water Resources Control Board (SWRCB), in accordance with DWR definitions, subsequently enumerated the hydrologic units, hydrologic areas and hydrologic subareas. A hydrologic unit is the entire watershed of one or more streams; a hydrologic area is a major tributary and/or major groundwater basin within the hydrologic unit; and a hydrologic subarea is a major subdivision of a hydrologic area including both water-bearing and nonwater-bearing formations. The San Dieguito Hydrologic Unit is a roughly rectangular area of approximately 350 square miles. The unit includes the San Dieguito River and its tributaries as well as Santa Ysabel and Santa Maria Creeks. The unit contains one coastal lagoon, the San Dieguito Slough, located at the mouth of the San Dieguito River, which forms the northern edge of the city of Del Mar. The San Dieguito Hydrologic Unit is subdivided into five hydrologic areas, four of which have been divided further into hydrologic subareas.

The project site is located in the Las Lomas Muertas Hydrologic Subarea of the San Pasqual Hydrologic Area. The site is drained by two westerly trending creeks that drain to Cloverdale Creek, approximately 1,500 feet to the west, and ultimately to the San Dieguito River near its junction with Santa Ysabel Creek, approximately 7,000 feet southwest of the property.

3.1. Surface Water

Surface water at the project site does not exist in perennial water bodies. However, the United States Geological Survey (USGS) (1983) reported results of surface water testing during 1981 and 1982 from Cloverdale Creek and Santa Ysabel Creek. A water sample from Cloverdale Creek indicated a hardness level (as $CaCO_3$ in milligrams per liter [mg/l]) of 444 mg/l, a chloride level of 250 mg/l, and total dissolved solids (TDS) as 945 mg/l in March 1982. Samples from San Ysabel Creek indicated hardness levels of 234 mg/l and 167 mg/l, chloride levels of 100 mg/l and 61mg/l, and TDS levels of 443 mg/l and 298mg/l in November 1981 and March 1982, respectively. The TDS sample from Cloverdale Creek exceeds water quality standards for drinking water. The USGS report indicates the higher levels of dissolved constituents in Cloverdale Creek are the result of avocado groves and other agricultural activities in the area.

3.2. Groundwater

Based upon the information reviewed, specific groundwater conditions at the project site are not known. General groundwater conditions were studied for the San Pasqual Hydrologic Area by the USGS (1983). Reportedly, groundwater depths roughly follow topography and range from 5 to 20 feet below ground surface in Cloverdale Creek portion of the basin (roughly 1,500 feet west of the site). According to this study, between 1957 and 1982, groundwater ranged from 220 mg/l to 535 mg/l in hardness (as measured by $CaCO_3$) and ranged from 570 mg/l to 1035 mg/l in TDS. In the later years of the study, the wells sampled exceeded basin objectives for TDS. It should be noted that the locations of water samples collected for the DWR study were downstream of the project area.

4. STATUTORY/REGULATORY BACKGROUND

The Regional Water Quality Control Board – San Diego Region (RWQCB), has developed policies, rules, and procedures, and has been granted the authority to implement and enforce the laws and regulations requiring the control of water quality. The principal federal and state laws pertaining to the regulation of water quality are known respectively as, the 1972 Federal Water Pollution Control Act (also known as the Clean Water Act) and Division 7 of the 1969 California Water Code (also known as the Porter-Cologne Water Quality Control Act). The laws are similar in many ways. The fundamental purpose of both laws is to establish beneficial uses and to provide for their protection. An important distinction between the two is that the Porter-Cologne Water Quality Control Act addresses both ground and surface waters while the Clean Water Act addresses surface water only.

The water quality objectives used for this study are primarily contained within the Water Quality Control Plan (Basin Plan), San Diego Basin (9) RWQCB final draft dated September 8, 1994). The Basin Plan defines existing and potential beneficial uses and water quality objectives for coastal waters, groundwaters, surface waters, imported surface waters, and reclaimed waters in the basin. The Basin Plan also summarizes drinking water standards as specified by the California Department of Health Services, the California Inland Surface Waters Plan (State Water Resources Control Board 1991), and Code of Federal Regulations Title 40 Part 131.

The Clean Water Act also established the National Pollutant Discharge Elimination System (NPDES), which requires permits for discharges of pollutants from certain point sources into waters of the United States. The CWA allows the United States Environmental Protection Agency (EPA) to delegate NPDES permitting authority to states with approved environmental regulatory programs. California is one of the delegated states. In 1987, the federal Water Quality Act (WQA) added Section 402(p) to the CWA. Pursuant to Section 402(p)(4), EPA promulgated regulations for NPDES permit applications for stormwater discharges. These federal regulations became effective on October 31, 1990. In anticipation of this final ruling, RWQCB issued Order No. 90-42, NPDES No. CA 0108758, "Waste Discharge Requirements for Stormwater and Urban Run-off from the County of San Diego, the Incorporated Cities of San Diego County and the San Diego Unified Port District," on July 16, 1990. Order No. 90-42 presents guideline requirements for the control of pollutants resulting from stormwater and urban runoff from all areas named in NPDES Permit No. CA 0108758. RWQCB Order 90-42 specifically requires co-permittees to:

> "Inventory existing stormwater pollution control programs, illicit discharge detection programs, monitoring programs and data, stormwater conveyance system maps, land use maps, and existing laws, ordinances, and codes giving the dischargers the authority to implement and enforce stormwater pollution control programs in their areas of jurisdiction and where necessary, promulgate the authority to carry out all functions of the stormwater management programs."

This implies that the developers/owners of the Valley View Estates project will need to comply with this permit and amendments.

Specific conditions of the NPDES permit that may directly affect the planning and design requirements of the proposed project are:

- Development and implementation of stormwater and receiving water monitoring programs to evaluate discharges of pollutants from stormwater conveyance systems to waters of the United States.
- Development and implementation of an illicit connection/illegal discharge detection program to identify and eliminate non-stormwater discharges to stormwater conveyance systems.
- To the maximum extent practicable, development and BMPs to control discharges of pollutants to waters of the United States.
- Implementation of an annual analysis of the effectiveness of the overall stormwater pollution control management program.

According to the Code of Federal Regulations Title 40, Section 122.2 (40 CFR 122.2):

> "Best management practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce

> the pollution of 'waters of the United States.' BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage."

In response to NPDES regulations, the California State Water Resources Control Board (SWRCB) has issued the General Construction Activity Stormwater Permit (Permit), which was adopted by SWRCB on August 20, 1992. In order to be in compliance with the Permit, all projects involving 5 acres or more of soil disturbance will require NPDES permits, which must include the following:

- Notices of Intent (NOIs) – Certification to be signed by owner of the construction site.
- Stormwater Pollution Prevention Plans (SWPPPs).
- Monitoring Programs – Including inspection of prevention measures, record keeping and annual certification of compliance, due July 1, 1993, and each July 1st thereafter.
- Post Construction Stormwater Management - Describing operation and maintenance of control practices including identification of funding.

5. BENEFICIAL WATER USES

Beneficial uses of groundwater and surface water have been established for each water body within the San Diego County Region. According to the Basin Plan:

> "Beneficial uses are defined as the uses of water necessary for the survival or well being of man, plants and wildlife. These uses of water serve to promote the tangible and intangible economic, social and environmental goals of mankind. Examples include drinking, swimming, industrial and agricultural water supply, and the support of fresh and saline aquatic habitats."

According to the Basin Plan (RWQCB, 1994), beneficial uses have been designated for specific coastal water bodies, inland surface waters, and groundwaters. The inland surface waters potentially impacted by the project area are the unnamed tributaries of the San Dieguito River and Santa Ysabel Creek that cross the site and the groundwater potentially impacted is the groundwater of the Las Lomas Muertas Hydrologic Subarea of the San Pasqual Hydrologic Area.

The beneficial use designations described below are categorized as "existing" or "potential" beneficial uses, according to Basin Plan (1994). In general, the designation of an existing beneficial use has been established by demonstrating that: 1) fishing, swimming, or other uses have actually occurred since November 28, 1975; or 2) the water quality and quantity are suitable to allow the use to be attained.

Beneficial uses are designated as "potential" for a variety of reasons, including: 1) plans are proposed to put the water to a future use; 2) potential exists to put the water to a future use; 3) the public desires to put the water to future use; 4) the water is potentially suitable for municipal or domestic water supply under the terms of the "Sources of Drinking Water Policy" (State Board Resolution No. 88-63); or 5) the RWQCB has designated a beneficial use as a regional water quality goal.

Designated beneficial uses are generally, but not always, present throughout the entire reach of a particular hydrologic unit, area, subarea, or water body. Designated beneficial uses may not be present throughout the year. Specific beneficial uses near or below discharges will be carefully evaluated by the RWQCB during the development of waste discharge requirements or enforcement orders. The lack of a beneficial use listed for any given area does not rule out the possibility of existing or future beneficial uses.

The California Water Code establishes a comprehensive program for the protection of beneficial uses of the waters of the state. Water Code Section 13050(f) describes the beneficial uses of surface and groundwaters that may be designated by the State or RWQCBs for protection as follows:

> "Beneficial uses of the waters of the state that may be protected against degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves."

Currently designated existing beneficial uses of tributaries of the San Dieguito River and Santa Ysabel Creek surface waters are:

- Municipal and Domestic Supply (MUN)—Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

- Agricultural Supply (AGR)—Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering or support of vegetation for range grazing.

- Industrial Service Supply (IND)—Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

- Industrial Process Supply (PROC)—Includes uses of water for industrial activities that depend primarily upon water quality.

- Non-Contact Water Recreation (REC-2)—Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water so that ingestion of water is not reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine-life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

- Warm Freshwater Habitat (WARM)—Includes uses of water that support warm water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, or wildlife.

- Wildlife Habitat (WILD)—Includes the uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates) or wildlife water and food sources.

The currently designated potential beneficial use for tributaries of San Dieguito River and Santa Ysabel Creek surface water is:

- Contact Water Recreation (REC-1)—Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Currently designated existing beneficial uses for groundwater in the San Pasqual Hydrologic Area include municipal and domestic supply, agricultural supply, and industrial service supply. There are no currently designated potential beneficial uses for groundwater in the San Pasqual Hydrologic Area.

5.1. Water Quality Objectives

The Porter-Cologne Water Quality Control Act (California Water Code, Division 7, Chapter 2) requires that beneficial uses and water quality objectives be established for both surface and groundwaters of the State. The establishment of beneficial uses and water quality objectives (or criteria) for surface water is also mandated by the federal Clean Water Act (33 United States.). The California Water Code defines water quality objectives as:

> "The limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area."

In establishing water quality objectives, the Regional Board must provide for the reasonable protection of all beneficial uses which are designated for protection, taking into account existing water quality, environmental and economic considerations. California Water Code Section 13241 provides that the Regional Board shall consider, but is not limited to, the following factors in establishing water quality objectives:

- Past, present and probable future beneficial uses of water;
- Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;
- Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
- Economic considerations;
- The need for developing housing within the region; and
- The need to develop and use recycled water.

The Basin Plan states that:

> "Water Quality objectives for waters of the state must conform to the State Board Resolution No. 68-16, 'Statement of Policy with Respect to Maintaining High Quality of Waters in California.' Under State Board 68-16, which applies to all waters of the State, the Regional Board and State Board must have sufficient grounds to adopt findings, which demonstrate that any water quality degradation will:
>
> - Be consistent with the maximum benefit to the people of the State;
> - Not unreasonably affect existing and potential beneficial uses of such water; and
> - Not result in water quality less than described in the Basin Plan."

Resolution No. 68-16 establishes a general principle of nondegradation with flexibility to allow some changes in water quality, which are in the best interests of the State. Changes in water quality are allowed only where it is in the public interest and beneficial uses are not unreasonable affected.

The Federal Clean Water Act (Section 303(c)(2)(B)) established numeric criteria for a limited number of priority toxic pollutants for inland surface waters in California. However, California is not currently in full compliance with the Clean Water Act due to the invalidation of the Water Quality Control Plan for Inland Surface Waters of California, and the Water Quality Control Plan for Enclosed Bays and Estuaries of California. According to the final draft of the Basin Plan, these criteria established by the federal Clean Water Act are still applicable to the surface waters in this region.

The Basin Plan's water quality objectives are numerical or narrative limits on constituents or characteristics of water designed to protect designated beneficial uses of the water. Water quality objectives are primarily achieved through the establishment of waste discharge requirements and implementation of the Basin Plan. Numerical limits represent the maximum level of constituents that will allow for the beneficial use to continue unimpaired. An objective may allow for natural, or "background" levels of a constituent or characteristic, but prohibit any increase above these levels, or may simply express an objective in terms of not adversely impacting beneficial uses (i.e., narrative limit).

Water quality objectives applying to all inland surface waters are specified in Chapter 3 of the Basin Plan, while specific numerical water quality objectives are presented by hydrologic area, subarea and watershed in Table 3.1, Chapter 3 of the Basin Plan

6. STORMWATER RUNOFF

A growing concern of regulatory agencies and the public is that surface runoff from roadways and urbanized areas has the potential to transport harmful pollutants, either as dissolved or particulate matter, to nearby sensitive receptors such as wetlands, surface water and groundwater. Pollutants are generally classified as heavy metals (e.g., lead, copper, cadmium, iron, zinc, chromium, manganese, nickel), oil and grease, nutrients (nitrate, nitrogen, phosphorus, phosphate) and residue (particulates). These pollutants are derived from a number of sources such as vehicles, unauthorized releases related to accidents, winds and fallout of air pollutants. The adverse impact of these pollutants on sensitive receptors would be related to their toxicity, oxygen consuming, biostimulation and aesthetic characteristics. The magnitude of the impact would be a function of these characteristics as well as pollutant concentration and/or total pollutant load reaching the receptor(s) from a single storm event (acute impact) or over a period of years (chronic impact).

In a study conducted by Kerri, et al. (1985), forecasting regression equations were developed for estimating pollutant loads in runoff from urban highways. Data for their study were collected from California highway sites, which included Redondo Beach (I-405), Walnut Creek (I-680), Sacramento (US 50) and Placerville (US 50). They recommended that proposed highway projects having: 1) anticipated traffic volumes of at least 30,000 average daily traffic (ADT), and 2) nearby sensitive environmental receptors, should determine constituent loads for chemical oxygen demand, filterable residue, total lead, total Kjeldahl nitrogen and total zinc from highway surfaces. These data would then be used as an aid in evaluating the environmental impact of surface runoff. They also recommended that studies of surface runoff quality should include monitoring of vegetation and aquatic life so that mitigation measures can be modified to remain compatible with facility design. Their study did not address road slope (unpaved) runoff, which may receive pollutants from adjacent land uses and regional, stationary sources via rainfall.

Results of recent studies (e.g., Kerri, et. al., 1985) have identified total pollutant load as a more important variable than maximum concentration in assessing the impact of pollutants on sensitive receptors. Essentially, the concentration of pollutants at the receptor is much more significant than maximum pollutant concentrations at or near the roadway. Therefore, the processes affecting the pollutants during transport (e.g., dilution, volatilization, biodegradation, photo-oxidation) need to be identified so that planners and/or environmental specialists can calculate changes in pollutant concentrations resulting from development.

It is our understanding that the RWQCB is refraining from establishing accepted BMPs or specific water quality standards. The RWQCB is reviewing each project on a case-by-case basis, and will discuss specific BMPs and/or project requirements as needed.

The study performed by Kerri, et al. (1985) made the following conclusions, which are applicable to the proposed urbanized areas of the project site:

- "Urban highways in California operating under normal conditions (i.e., no accidents or chemical spills) do not produce large amounts of pollutant constituents during storm runoff events. The findings of the research indicate that for highway segments which drain between 2 and 3 acres of completely paved areas, and had six to eight traveled lanes, the constituent loads in runoff water were sufficiently low so that costly treatment facilities are not needed to meet water quality objectives."

- "The following constituents exhibited a 'first flush' pattern with relatively insignificant loads and concentrations: sulfate, iron, chromium, copper, manganese, nickel, bicarbonate ion, carbonate ion, calcium, magnesium, chloride, mercury, molybdenum, potassium, silica, and sodium."

- "The number of dry days between storm events and the corresponding cumulative traffic volume before the storm were found to be *not* statistically significant for quantifying cumulative constituent loads."

- "After the initial pavement and gutter loads are washed off, vehicles traveling on the highway will continue to release pollutant constituents. Pollutants will also be reaching the highway surface from atmospheric fallout and surrounding land-use activities."

6.1. Best Management Priorities

BMPs were originally developed to protect water quality by controlling erosion and sedimentation at the source. They have since been expanded to include controlling the volume and concentration of chemical pollutants entering waters of the United States.

BMPs include such standard practices as lengthening detention periods, covering bare areas with mulches, constructing infiltration facilities, and providing public education as to the consequences, both legally and environmentally, of illicit discharges to storm drains.

Two comprehensive documents addressing BMPs are the "Storm-Water Management Manual for the Puget Sound Basin" produced by the Washington State Department of Ecology (Technical Review Draft, 1990), and the State of California "Stormwater Best Management Practice Handbooks" (Preliminary Draft, 1992). In general, BMPs have been divided into two broad categories: quality control (e.g., pollution control) and quantity control (e.g., controlling runoff volume and peak rate).

Quality control BMPs are further subdivided into source control and treatment BMPs. As the name implies, source control BMPs are designed to prevent pollution of stormwater, while treatment BMPs are used to treat other types of runoff pollution. According to these documents, the most practical approach is to use source control BMPs as the primary system, and treatment BMPs as the secondary system. Treatment BMPs are more effective and efficient when used to handle pollutants that get past the source control BMPs. Quantity control BMPs are subdivided into volume control (e.g., infiltration and retention BMPs) and those directed toward peak rate control (e.g., detention facilities).

To maximize efficiency and minimize costs, treatment and quantity control BMPs can be designed into a single facility. An example is the use of a wet pond, which treats stormwater by allowing solids to settle out and promoting biological assimilation of dissolved pollutants through the use of an extended retention period. Peak rate control is then obtained through the controlled release of water from the pond.

In order to select, design and implement the most effective and efficient BMPs, certain parameters have to be established. Important items to consider include identification of target pollutants, physical and chemical characteristics of those pollutants, anticipated volumes and concentrations of pollutants and stormwater, and any regulatory action levels (e.g., drinking water standards, nondegradation policies).

7. POTENTIAL IMPACTS OF PROJECT ON WATER QUALITY

Ninyo & Moore reviewed the drainage management concepts as proposed in the Valley View Estates Specific Plan ("Plan"), prepared by TRS Consultants, dated July 1997. Section V.C.3 of the Plan states that "Runoff from impervious surfaces such as roofs and pavement areas will be directed to natural or improved drainage channels or dispersed into shallow sloping vegetated areas whenever feasible. Surface drainage will be designed to transport runoff onto the street, as feasible rather than across adjacent lots."

Two land uses are proposed for the development: residential or resort areas and landscaped open space/golf course areas. Different runoff characteristics and potential pollutants will be generated from each of the proposed land uses. Any drainage management should plan to utilize specific structures and facilities to handle runoff from each area based upon land use.

Ongoing maintenance will be essential for ensuring the success of the stormwater collection system. In urban areas, routine street and parking lot sweeping are proposed to reduce loading of the system with debris and pollutants. Pollutant concentrations and loads flushed from a road surface during storm events would be reduced as flow moves overland or downstream. The amount of attenuation would depend upon the specific design of the collection, diversion and/or conveyance system, first flush pattern (initial runoff after a heavy rain) of the pollutants, engineering management practices employed, and soil/vegetation characteristics of the downstream drainages

Landscaped open spaces and golf course areas should institute integrated maintenance and pest control policies to avoid unnecessary application of fertilizers and pesticides.

The management system should be designed to remove silt and other contaminants from the stormwater. In order to remain effective, cleaning of accumulations will need to be performed routinely (e.g., vegetated filter strips will need to be regraded and replanted). Because trapped sediment in detention ponds and sedimentation basins will reduce their storage capacities and effectiveness, these facilities will need to be regularly inspected, periodically dredged, and otherwise maintained. Specific designs of detention structures and pollution trapping facilities need to take into account reasonable maintenance access, in addition to effective pollution-control design.

The proposed golf course also has the potential to impact the water quality of the site and adjacent properties. If proper golf course management practices are not utilized, soil and turf amendments (i.e., fertilizers, pesticides and herbicides) can significantly affect the quality of groundwater in the basin. Fertilizers, for instance, can increase the nitrate and TDS concentrations, as well as alter the pH of the groundwater. Typically, these amendments are fairly water-soluble and, therefore, can potentially migrate to shallow groundwater. However, many of the newer pesticides and herbicides are designed to degrade quickly, both on exposure to sunlight and within the soil. Also, many of the fertilizers used currently are time-released and are applied in smaller quantities than in the past. Other potential mitigation measures for the golf course are included in Section 9.3.

The proposed equestrian center also has the potential to impact the surface and groundwater of the site and adjacent properties. If not managed properly, nitrates from animal waste may be introduced to surface water and groundwater. Stormwater and irrigation drainage should be maintained so that animal waste is not washed into drainages or streams. Graded berms and swales, appropriate location of corrals and stables, and appropriate management and disposal of waste should be among the measures used to mitigate potential impacts from animal waste.

The proposed project should not have a significant, direct negative impact on surface or groundwater quality unless an unauthorized source of contamination is introduced during the preconstruction, construction, and/or maintenance phases of the project. Proper design, planning, quality assurance/quality control, construction techniques/materials and maintenance procedures should greatly reduce any risk that the proposed project may pose to surface and groundwater quality, erosion and sedimentation.

The project has the potential to increase rates of surface runoff locally and, therefore, reduce infiltration of precipitation and groundwater recharge by increasing the area of paved or dressed surfaces. However, this increase may be mitigated to some degree by the use of surface impoundments, retention basins, unlined, vegetated drainage swales, and/or other types of engineered surface water conveyance and/or collection systems.

8. POTENTIAL IMPACTS OF PROJECT ON EROSION

Major grading projects can result in increased erosion and sedimentation, which have the potential to adversely impact, the quality of local surface runoff and groundwater. This potential, greatest during the construction phase, continues until the landscaping has been established to stabilize graded or exposed slopes. The Plan states:

> "Erosion control measures discussed in Section 7013 of the Escondido Zoning Code identify landscaping and vegetation re-establishment as a permanent means of controlling erosion. The drainage for Valley View will include provision for temporary sediment trapping devices to capture sediment during construction, as required by the reviewing jurisdictions. Once landscaping has reached maturity, sediment storage and facility maintenance requirements will decrease."

Implementation of the guidelines and incorporating appropriate engineering design (e.g., runoff collection/diversion systems) further decreases the short-term and long-term potential for project-related erosion and sedimentation to impact water quality. For long-term effectiveness of the stormwater control system to reduce pollution and prevent flooding, it is emphasized that a hydrologic engineer should collaborate in the design of the stormwater system. The system design should be sufficiently robust to control anticipated peak flows from the fully developed site without exceeding the maximum current undeveloped peak flows.

We understand that the majority of the grading for the proposed project will consist of cuts and fills of less than approximately 20 feet, with some areas of extensive grading with cut and fill depths up to roughly 50 feet. According to the plan, a grading exemption will be sought to build some slopes with slope ratios up to 1:1 (horizontal:vertical).

We do not expect that project-related erosion and sedimentation will have any irreversible short-term or long-term adverse impacts on water quality provided that the policies listed in the Specific Plan and other relevant construction practices and codes are followed during the planning, construction and maintenance phases of the project (e.g., Caltrans Standard Specifications, City of Escondido standards).

9. MITIGATION OF POTENTIAL IMPACTS ON WATER QUALITY

Federal Highway Administration (FHWA) research documents indicate that certain BMPs are more effective than others. The management practices considered most effective for removal of pollutants from roadway runoff are vegetative controls, wet detention basins, infiltration basins and wetlands. Street cleaning, catch basins, dry detention basins, porous pavements and filtration devices for sediment control were deemed ineffective as BMPs. BMP effectiveness is a function of numerous variables related to site conditions (e.g., roadway design, traffic conditions and precipitation occurrence, intensity and duration). Specific BMPs that would be most effective in remediating potential pollutants in stormwater runoff from the Valley View Estates project would need to take into account appropriate precipitation events, including intensity and duration of the wet season's "first flush" precipitation event. Other factors include potential non-precipitation related discharges into the stormwater system (e.g., unauthorized releases of pollutants from spills or other accidents).

The following sections discuss the mitigation measures, and our comments on BMPs, that can be incorporated into the project design and BMP practices to assist in the maintenance of the stormwater pollution prevention system. Our comments are based on the regulatory framework and studies discussed earlier

9.1. Erosion Reduction Measures

Permanent erosion control involves diverting urban runoff and reducing sediment carried from entering the stormwater system. Proposed methods include slope contouring and placement of berms and/or swales to direct water away from lots onto streets. Vegetated swales, check dams, and sedimentation basins are may also be used to trap sediment in stormwater prior to collection by the proposed and existing underground storm drain system.

9.2. Urban Runoff Impact-Reduction Measures

As discussed in a previous section, runoff from urbanized areas is recognized as the primary potential contributor to increased stormwater runoff volume compared with pre-development conditions. Conceptual plans should call for permanent detention ponds with sufficient capacity and engineering controls to prevent stormwater flow from exceeding pre-development rates.

Potential pollutants are associated with streets and parking areas, and will likely included oil and other automobile-related products. Leaves, litter and other detritus are often washed by stormwater from these areas. Urban landscaped areas can also contribute soil nutrients and pesticides.

Where appropriate, detention structures are proposed to regulate discharge rates. These facilities are considered "structural" BMPs. When designed appropriately for the volume of stormwater in the drainage area and for the likely pollutants, these facilities can be effective in maintaining and/or improving water quality.

Stormwater pollution control is generally most effective closer to the source of the pollution. For this reason, filter strips and other vegetative filter controls should be placed as close as possible to the stormwater system collection points. Where appropriate, vegetative filter strips and/or grass-lined swales can be used instead of curbs and gutters to reduce flow velocities and improve water quality prior to collection into a storm drain system.

In many municipalities, detention basins are widely used to control stormwater surface runoff and improve water quality through pollutant removal (e.g., settlement). Urban areas tend to increase volume and peak runoff rates from a drainage area. Detention basins should be constructed to detain stormwater and release it at a rate which will not exceed the predevelopment conditions.

The stormwater management design should consider aspects of extended detention dry ponds. These basins employ an outlet structure what will cause the runoff from most storms to pond in the basin. Following a storm, these basins drain in about 24 to 40 hours and will be dry at all other times. The outlet structures can be designed to provide good particulate removal efficiency, and the relatively slow discharge rates provide good water quality control. Detention basins can become unsightly if routine maintenance is not performed. Periodic removal of sediments is required to maintain effectiveness of the basin.

Vegetative controls can provide efficient means of controlling nonpoint pollution nearest its source. Plant materials intercept rainfall, filter runoff, enhance infiltration and absorb moisture and nutrients, all of which improve water quality. Vegetation controls also reduce erosion. A grass-lined swale is a type of vegetative control that is commonly used instead of a buried storm drain to convey stormwater. Grass-lined swales require shallow slopes and soils that drain well. The grass-lined swales can reduce runoff velocities, enhance infiltration and remove runoff contaminants. Grass-lines swales are most applicable in low to moderate density developments where the percentage of impervious cover is to be relatively small. The effectiveness of grass-lined swales is dependent upon anticipated runoff velocities, steepness of slopes, soil porosity and erodibility, water table depth, the type of grass selected and proper maintenance.

Grass-lined swales are most effective in improving water quality by reducing runoff velocities and, to a smaller extent by filtering. Generally the bulkier and denser the plant stand, the greater the flow impedance and velocity reduction. Channel linings also require grasses that are not adversely affected by frequent water submersion and have adequate root systems to resist erosion. If possible, grasses native to the site should be selected to insure acclimation.

The design of the grass-lined swales will need to take into account the flow volumes that will be generated for the relatively large runoff area. In addition, the water is proposed to be initially conveyed in a conventional, underground system. This type of system is typically designed to move large volumes of water quickly, resulting in relatively high velocities at the discharge point. The overall design of the stormwater management system needs to balance the typically high velocity movement of water in conventional storm drains with the requirement for relatively low velocities of water to enhance the effectiveness of the grass-lined swales to remove pollutants. Where effectiveness could be enhanced by lower flow velocities, the grass-lined swales could be fitted with low check dams to reduce flow velocities and increase removal efficiency. Design specifications should be developed with the participation of a hydraulic engineer. Recommendations for design criteria can be found in the City of San Diego Drainage Design Manual and the Caltrans Highway Design Manual.

Filter strips are designed to distribute runoff across a wide area and result in an overland sheet flow. Strings of close-growing grasses can be established at the perimeter of impervious areas to intercept runoff and remove particulate contaminants. The vegetation slows sheet flow, causing denser particles to fall out. Grass-soil filter strips have been shown to substantially improve runoff water quality. Pollutant-removal efficiencies of well-designed vegetative filter strips are assumed to be greater than grass-lined swales due to their ability to reduce flow velocities. When designing filter strips, above-strip factors to consider are the type of land use, and length and steepness of slopes. Other design factors include slope of the strip, type of vegetation to be used in the strip, and degree of maintenance the strip will receive. Of particular importance is the maintenance of soil permeability. Maintenance measures include periodic removal of thatch, mechanical aeration of the area, and removal of accumulations of sediment.

9.3. Golf Course Mitigation Measures

Mitigation measures to protect the quality of surface water and groundwater, which should be incorporated into the golf course design and management plan, include, but are not limited to the following:

- Manage irrigation carefully to avoid excess water percolation through the turf.
- When possible, leave grass clippings on the turf. It has been estimated that if grass clippings are not removed, nitrogen fertilization can be reduced by one-third.
- Do not use nitrate fertilizers; rather apply organic nitrogen sources.
- Apply low rates of fertilizers and pesticides frequently, rather than high rates infrequently.
- Apply fertilizers only when the grass is growing and the roots are active.
- If fertilizers and pesticides must be applied during the non-growing season, use slow-release sources.
- When seeding turf areas, make maximum use of less nitrogen-demanding grasses.
- Use minimal rates of nitrogen-supplying fertilizers at times of seeding and after sodding.
- Reduce nitrogen rates on turf that has been intensively managed for several years. The soil-turf system can become nitrogen saturated, and nitrate infiltration to the groundwater may increase.

Applying the above best management practices to golf course maintenance can reduce nitrate and pesticide leaching rates to less than five percent of that originally applied to the turf.

10. CONCLUSIONS AND RECOMMENDATIONS

The proposed project should not have a significant direct negative impact on surface or groundwater quality unless an unauthorized source of contamination is introduced during the preconstruction, construction, and/or maintenance phases of the project. Proper design, planning, quality assurance/quality control, construction techniques/materials and maintenance procedures should greatly reduce any risks that the proposed project may pose to surface and groundwater quality, erosion and sedimentation.

RWQCB Order No. 90-42 presents requirements for the control of pollutants resulting from stormwater and urban runoff from all areas named in NPDES Permit No. CA 0108758. It is again emphasized specific stormwater control system design criteria be developed in collaboration with a hydraulic engineer. So that the system can be both safely and effectively convey stormwater from the area and improve water quality. The system design must be sufficiently robust to be able to control anticipated peak flows from the developed site, as fully built-out, without exceeding the maximum current undeveloped peak flows.

Specific comments regarding the stormwater management concept include using vegetative filters and other pollution control structures as near as possible to the pollution sources. Also, the BMPs with the greatest long-term positive effect are those that use education and incentives to reduce pollution sources, and maximize the elimination of pollutants prior to entering the pollution control structures. Good maintenance BMPs including inspecting and maintaining the system, with an appreciation of critical events such as the wet season's "first flush," are integral to the long-term success of the system.

Strategic use of vegetative filters, detention basins, and other stormwater quality control structures integrated into the overall design of the project, along with comprehensive ongoing management protocol for keeping the stormwater system operating efficiently could potentially improve the overall water quality of the stormwater runoff from the project area.

The feasibility of on-site groundwater wells and the potential impact on drawdown or water quality of the site aquifer was beyond the scope of this study. We recommend that a focused technical groundwater study, including the installation of test wells and performance of pump testing, be performed to assess the feasibility of on-site wells, if they are proposed. We anticipate that the great majority of the water used on the property will be imported from off-site.

11. LIMITATIONS

The conclusions and recommendations presented above are based upon the findings of the agreed upon scope of work. Consultant makes no warranties or guarantees as to the accuracy or completeness of information obtained, provided or compiled by others. It is possible that information exists beyond the scope of this evaluation. Also, changes in site use may have occurred sometime in the past due to variations in rainfall, temperature, water usage, economic, agricultural or other factors. Additional information, which was not found or available to the consultant at the time of writing this report, may result in a modification of the conclusions presented. This report is not a legal opinion.

The limited environmental evaluation outlined in this report has been conducted in a manner generally consistent with current regulatory guidelines. It should be understood that regulatory guidelines are often updated, therefore, we may not be aware of all current guidelines. No other warranty, expressed or implied, is made regarding the professional opinions presented in this report. Ninyo & Moore's opinions are based on an analysis of observed conditions and on information obtained from third parties.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information, or has questions regarding content, interpretations presented, or completeness of this document.

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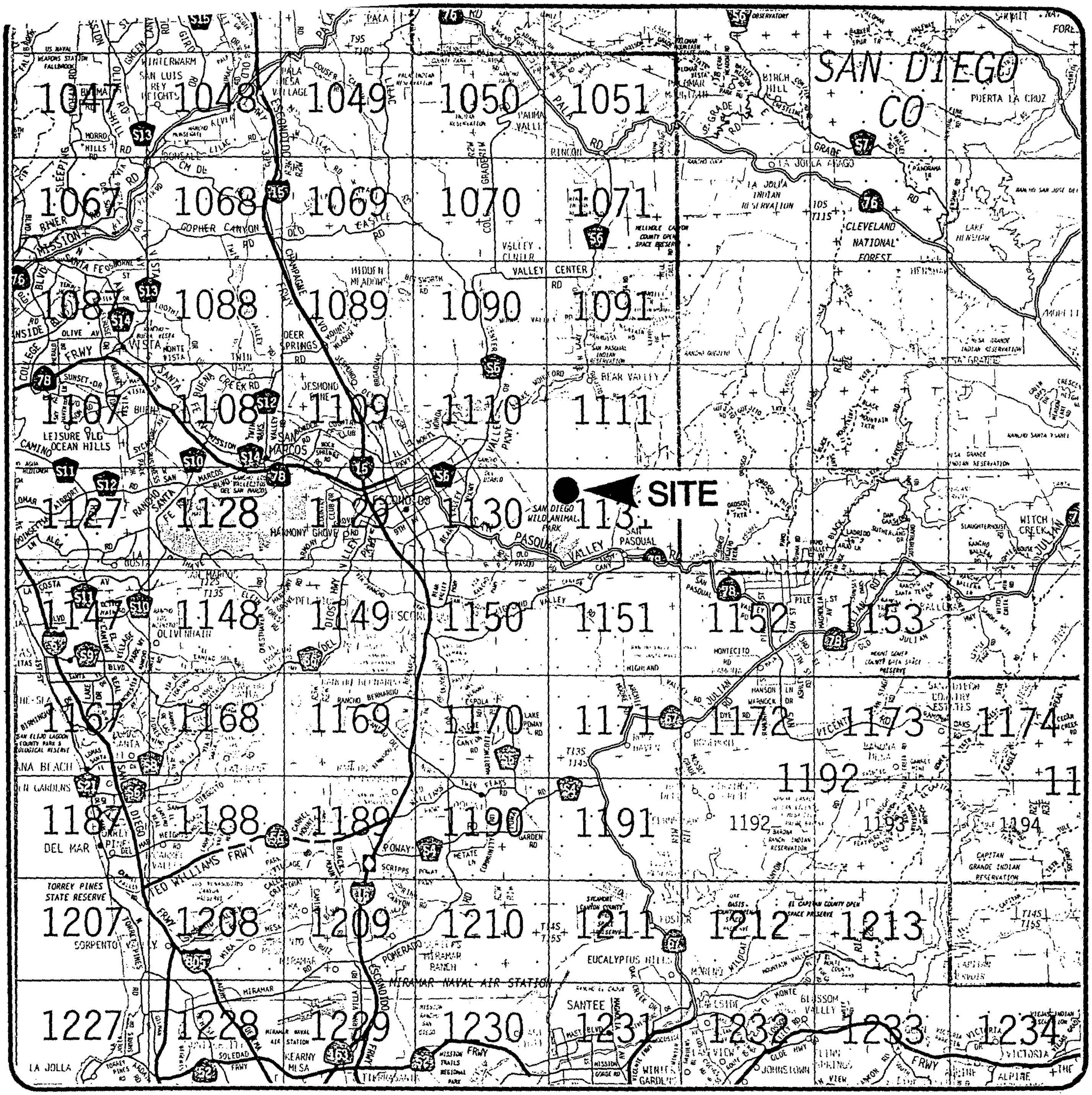
Table 1 – Aerial Photographs Reviewed

Date	Photograph Number	Source
1928	21-E 4, 5, and 6	A
04-14-53	AXN-9M, 136 and 137	B
09-10-63	SDC T-4, 16-74, 16-75, and 16-76	A
11-25-73	SDPD, 18-53, 18-54, and 18-55	A
11-28-78	SDCO 210 30B, 21, 22, and 23	A
05-09-89	WAC-89CA, 18-26 and 18-29	A
12-07-93	Lenska Aerial Atlas, 1111 and 1131	A

Sources: A – County of San Diego, Department of Public Works, San Diego, California.
B – Ninyo & Moore, San Diego, California.



REFERENCE: 1997 Thomas Guide for San Diego County, Street Guide and Directory

NORTH

0 5 10

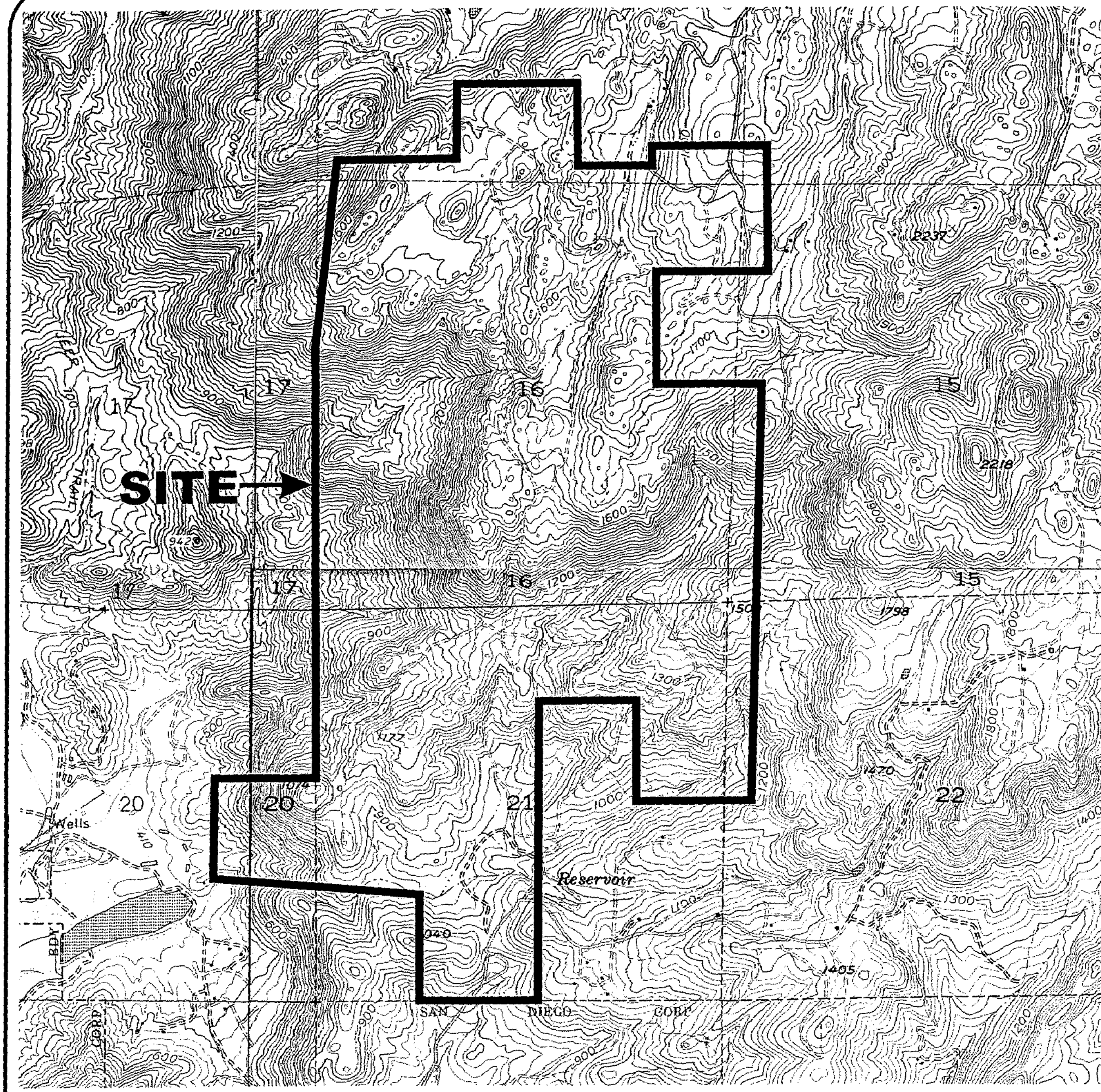
Approximate Scale in Miles

Ninyo & Moore

SITE LOCATION MAP

VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608-02	10/98	1



REFERENCE: U.S.G.S., ESCONDIDO, VALLEY CENTER, SAN PASQUAL AND RODRIGUEZ MTN. QUADRANGLES, 7.5 MINUTE SERIES (TOPOGRAPHIC) MAP, DATED 1967, REVISED 1975.

N

2000 0 2000 4000

Approximate Scale in Feet

3608topo

Ninyo & Moore

SITE TOPOGRAPHIC MAP

VALLEY VIEW ESTATES
SAN DIEGO COUNTY, CALIFORNIA

PROJECT NO.	DATE	FIGURE
103608-02	10/98	2

Appendix K
Noise Analysis

3.N NOISE

The purpose of the Noise section is to identify, describe, and evaluate noise sources and potential noise conflicts associated with the proposed project. This section analyzes the noise impacts generated by the proposed project, including both the short-term construction impacts and long-term operational impacts, and determines whether they would result in perceptible or significant increases in noise levels.

SETTING

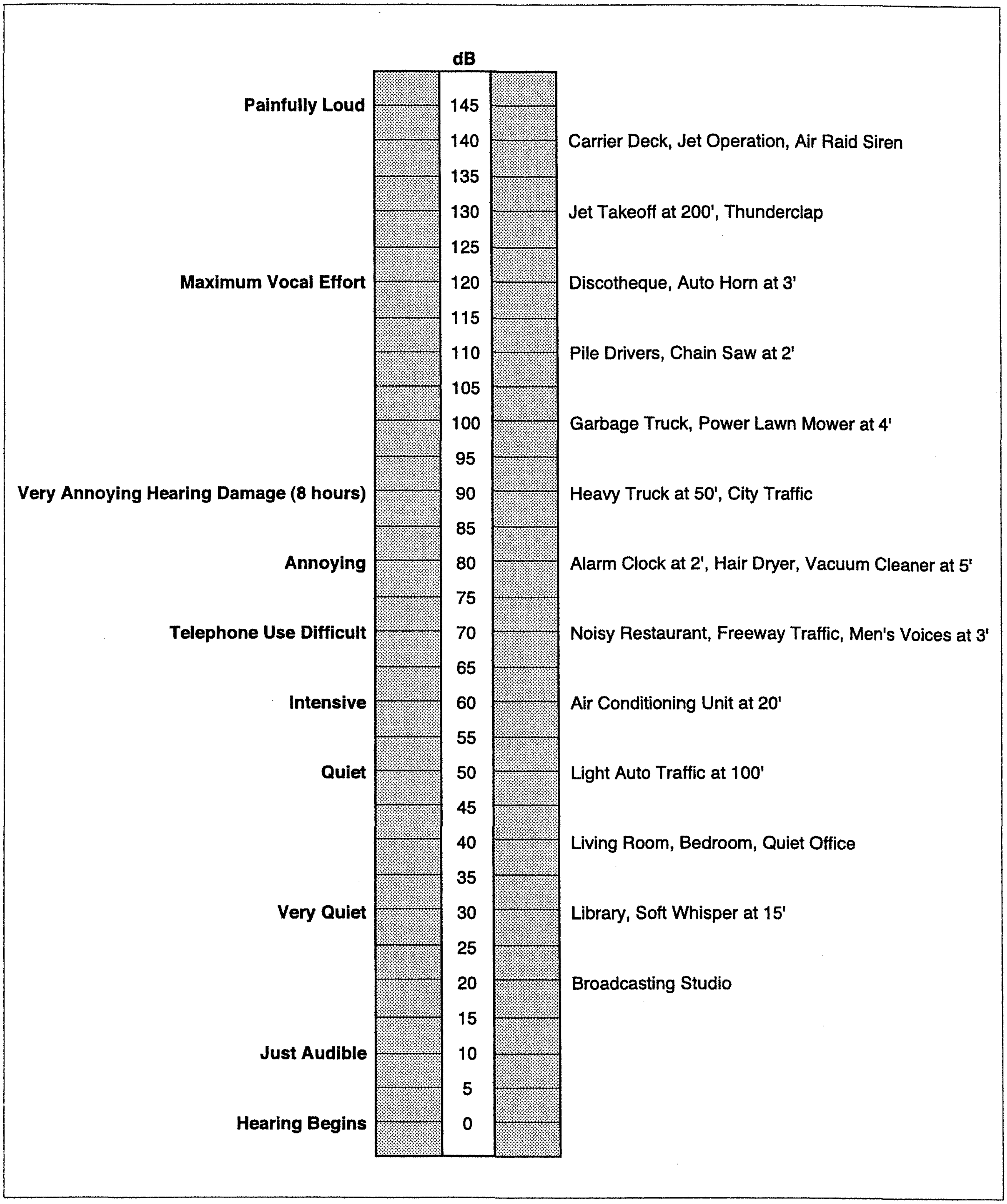
Ambient Noise Sources and Levels

Environmental noise usually is measured in A-weighted decibels (dBA). A decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called "sound level"), measured in decibels. A dBA is a decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels. The highest dBA recorded in a given period of time is known as the maximum noise level (L_{max}). In general, people can perceive a three-dBA difference in noise levels; a difference of 10 dBA is perceived as a doubling of loudness. Some representative sounds and sound pressure levels are shown in Figure 3.N-1.

Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Useful noise descriptors measure time-averaged noise levels. These descriptors include L_{eq} and L_{dn}. The L_{eq}, the energy equivalent noise level, is the equivalent steady-state continuous noise level which, in a stated period of time, contains the same acoustic energy as the time-varying sound level actually measured during the same period. The Community Noise Equivalent Level (CNEL) is a 24-hour day and night noise measurement which accounts for greater sensitivity of most people to nighttime noise by assigning a higher weight to noise levels emitted at night. The CNEL is based on human reaction to cumulative noise exposure over a 24-hour period. Evening noise between 7:00 p.m. and 10:00 p.m. is weighted by 5 dBA to take into account the greater annoyance of nighttime noise. Nighttime noise between 10:00 p.m. and 7:00 a.m. is weighted by adding 10 dBA. The L_{dn} is very similar to the CNEL. However, the L_{dn} only penalizes nighttime noise (and not the evening noise) between 10:00 p.m. and 7:00 a.m. by 10 dBA.

Sound Propagation and Attenuation

Noise sources can be categorized as either a "line source" or a "point source." An example of a "line source" is a highway, where noise sources (i.e., cars and trucks) are distributed along a line. "Point sources" are stationary sources such as industrial machines and building air handling equipment. The distinction is made between these two general categories of noise sources because, while noise levels decrease as one moves away from either line sources or point sources, the rate at which noise levels decrease depends upon which type of source it is.



SOURCE: City of Escondido, Noise Abatement and Controll (Ordinance No. 90-8), 1990

Figure 3.N-1
Sound Levels and Human Response

Noise levels decrease (attenuate) by three decibels for each doubling of distance between the noise source and the noise receptor. This applies where there is a clear unobstructed view of the highway, the ground is hard, no intervening structures exist, and the line-of-sight between the noise source and receptor averages more than three meters above the ground.[1]

In many cases, noise attenuation for a line source can be as much as 4 decibels (dBA) for each doubling of distance with the combined effects of environmental factors, such as wind conditions, temperature gradients, characteristics of the ground and the air, and the presence of vegetation. The increase in noise attenuation in an exterior environment is particularly perceived where the following conditions exist:

- an elevated profile, higher truck mix, or the presence of intervening buildings or topography come into play;
- the view of a roadway is interrupted by isolated buildings;
- the intervening ground is soft or covered with vegetation; and
- the source or receptor is located more than three meters above the ground.

In an area which is relatively flat and free of barriers, the sound level resulting from a single noise point source decreases by about six dBA for each doubling of distance or 20 dBA for each factor of 10 in distance. In addition, a doubling of roadway traffic will usually result in a 3 dBA increase in noise levels.

Vibration

Vibrations caused by construction activities can be interpreted as energy transmitted in waves through the soil mass. These energy waves generally dissipate with distance from the vibration source due to spreading of the energy and frictional losses. The energy transmitted through the ground as vibration, if great enough, can result in structural damage. In order to assess the potential for structural damage associated with vibration from construction and blasting activities, the vibratory ground motion in the vicinity of an affected structure is measured in terms of peak particle velocity (PPV) in the vertical and horizontal directions, typically in units of inches per second (in/sec). Table 3.N-1 indicates criteria for structural damage and human annoyance from vibration.

[1] State of California, Department of Transportation, *Noise Manual*, 1980.

TABLE 3.N-1: GENERAL THRESHOLD LEVELS OF HUMAN AND STRUCTURAL RESPONSE TO VIBRATION LEVELS

Effects on Structures and People	Peak Vibration Threshold (in/sec PPV)
Structural damage to commercial structures[a]	6
Structural damage to residential buildings[a]	2
Architectural damage[a]	1.0
People's perception of vibration[a]	0.1 within several hundred feet of the vibration source
Vibrations from trucks and buses[a]	0.01 to 0.1

a Orion Environmental Associates, *Final Environmental Impact Report: Richmond Transport Project, 87.240E*, June 28, 1990.

SOURCE: Orion Environmental Associates; Wilson, Ihrig & Associates

Noise Standards, Plans, Policies, and Guidelines

State of California

The California Department of Health Services, in coordination with the Governor's Office of Planning and Research, has established noise compatibility standards for different land uses. According to the state guidelines, noise levels exceeding 70 dBA L_{dn}, are normally unacceptable to residential uses. Noise levels within 60 and 70 dBA L_{dn}, are conditionally acceptable to such uses. Schools, libraries, churches, hospitals, and nursing homes are treated as noise-sensitive land uses, which require acoustical studies within areas experiencing noise levels that exceed 60 dBA L_{dn}.

County of San Diego

Noise Element of the General Plan

The County of San Diego noise policies are established in the General Plan Noise Element. The Noise Element serves to protect and enhance the County's acoustical environment by simultaneously controlling noise at its source, along its transmission paths, and at the site of the ultimate receiver. Priority is given to residential areas to assure an environment free from excessive or damaging noise. The Noise Element establishes the basic approach, through policies and programs, required to be taken by the County to achieve these objectives.

The following San Diego County General Plan policies are relevant to the proposed project:

Policy 2: Continue to support by official advocacy the control of noise sources through legal regulation and cooperative government efforts.

Policy 3: Establish a coordinated program within the Environmental Development Agency and Public Works Agency to maximize efforts to deamplify noise along its transmission paths.

Policy 4: Insure acceptable noise levels at the receiver's site by incorporating appropriate regulations and standards in the County's development policies and ordinances.

Noise Ordinance

Sound level limits for various zoning classifications for the County of San Diego are shown in Table 3.N-1. According to the County of San Diego Zoning Code, Section 36.401, has established sound levels limits for various land uses.

The County regulates construction noise in Section 36.410, as follows:

a) It shall be unlawful for any person, including the County of San Diego, to operate construction equipment at any given construction site on Sundays, and days appointed by the President, Governor, or Board of Supervisors for a public fast, Thanksgiving, or holiday. Notwithstanding the above, a person may operate construction equipment on the above-specified days between the hours of 10 a.m. and 5 p.m. in compliance with the requirements of subdivision (b) of this Section at his residence or for the purpose of constructing a residence for himself, provided such operation of construction equipment is not carried on for profit or livelihood. In addition, it shall be unlawful for any person to operate construction equipment at any construction site on Mondays through Saturday except between the hours of 7 a.m. and 7 p.m.

b) No such equipment, or combination of equipment regards of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 dBA for more than 8 hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes. In the event that lower noise limit standards are established for construction equipment pursuant to State and Federal law, said lower limits shall be used as a basis for revising and amending the noise level limits specified in subsection (b) above.

TABLE 3.N-2: COUNTY OF SAN DIEGO SOUND LEVEL LIMITS

Zone	Time	Applicable Hourly Average Sound Level (dB)
Residential	7:00 a.m. to 10:00 p.m.	50
(residential uses with a density of less than 11 dwelling units or less per acre)	10:00 p.m. to 7:00 a.m.	45
Residential	7:00 a.m. to 10:00 p.m.	55
(residential uses with a density of 11 dwelling units or more per acre)	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55

SOURCE: County of San Diego, Noise Abatement and Control Ordinance, 1986.

City of Escondido

Noise Element of the General Plan

The City of Escondido noise standards are determined by the City's General Plan Noise Element. The Noise Element serves to identify and mitigate noise pollution within the City of Escondido. The overall noise goal related to public health and safety is the attainment of the lowest possible level of harmful effects of noise on the people by the implementation of monitoring and advisory programs.

The following General Plan policies are relevant to the proposed project:

Policy E1.1: New projects shall be required to meet acceptable exterior noise level standards as established in the noise and land use compatibility guidelines contained in City of Escondido's Noise Ordinance, as shown in Table 3.N-3 of this EIR. These guidelines, along with the future noise levels shown in the future noise contours map in the General Plan shall be used by the City as a guide for evaluating the compatibility of "noise sensitive" projects in potentially noisy areas.

Policy E1.2: The goal for outdoor noise levels in residential areas is a CNEL of 60 dB or less. However, a CNEL of 60 dB or less is a goal which may not necessarily be achievable in all residential areas within the realm of economic or aesthetic feasibility. This goal should be applied where outdoor use is a major consideration (e.g., back yards and single family housing developments, and

TABLE 3.N-3: CITY OF ESCONDIDO SOUND LEVEL LIMITS

Zone	Time	Applicable Hourly Average Sound Level (dB)
Residential	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-residential	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55

SOURCE: City of Escondido, Noise Abatement and Control (Ordinance No. 90-8), 1990.

recreation areas in multifamily housing developments). The goal should generally be applied at ten feet from the backyard property line. However, in certain cases such as on estate lots where backyards are typically very large, the goal could be applied approximately one half the distance between the back of the main residential structure and the rear property line. The outdoor standard should not normally be applied to balconies or patios associated with residential uses.

Policy E1.3: The City shall require new residential projects to provide for an interior CNEL of 45 dB or less due to exterior noise sources.

Policy E1.4: The City shall enforce its noise ordinance to protect the noise environment in existing residential areas. The City shall analyze potential noise impacts associated with any projects which could significantly alter noise levels in the community. The noise impacts for the proposed project on existing land use should be evaluated in terms of potential for adverse community response, based on a significant increase in existing noise levels. The "noise/land use compatibility guidelines" are not intended to assess the impacts associated with a project with the potential to generate noise. If an area currently is below the maximum normally acceptable level, an increase in noise up to the maximum should not necessarily be allowed. Projects that increase noise levels by 5 dBA or greater should be considered as generating a significant impact and should require mitigation.

Policy E1.5: The City shall enforce its noise ordinance as the method to control noise from sources other than transportation sources.

Policy E1.6: The City shall encourage use of the following measures to minimize impacts on and from new projects:

(a) Site Planning. Proper site planning to reduce noise impacts is the first area that shall be required. By taking advantage of the natural shape and terrain of a site, it often is possible to arrange the buildings and other uses in a manner which will reduce and possibly eliminate noise impacts. Site planning techniques shall include but not be limited to :

1) increasing the distance between the noise source and the receiver;
2) placing non-noise-sensitive land uses such as parking lots, maintenance facilities, and utility areas between the source and the receiver;
3) using non-noise-sensitive structures such as garages to shield noise-sensitive areas; and
4) orienting buildings to shield outdoor spaces from a noise source.

(b) Architectural Layout: In many cases, noise reduction can be attained by careful layout of noise-sensitive spaces.

(c) Noise Barriers. Noise barriers or walls commonly are used to reduce noise levels from ground transportation noise sources and industrial sources. To be effective, a barrier must interrupt the line of sight between the noise source and the receiver.

(d) Construction Modifications. Construction modification to walls, roofs, ceilings, doors, windows, and other penetrations may be necessary.

Policy E1.7: Evaluate the feasibility of adopting and implementing a Traffic Noise Barrier Installation Program.

Policy E1.8: Through truck traffic should be generally limited to designated routes.

Policy E1.9: The City will establish and maintain coordination among City, County, and State agencies involved in noise abatement and other agencies to reduce noise generated from outside the City's jurisdiction.

Policy E1.10: The City shall implement these policies through a noise ordinance which shall be periodically reviewed to address changing conditions.

Noise Ordinance

The City of Escondido Zoning Code, Section 17-229, has established sound level limits for various land use issues. The sound level limits for various zoning classifications are shown in Table 3.N-3. These limits apply to City of Escondido roads only. Federal and State highways are regulated by State and Federal laws.

The City of Escondido regulates construction noise in Article XII (Noise Abatement and Control) of Ordinance No. 90-08 as follows:

Section 17-234 - Construction Equipment.

Except for emergency work, it shall be unlawful for any person, including the City of Escondido, to operate construction equipment as follows:

a) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (d) of this section.

b) It shall be unlawful for any person including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the President, Governor, or City Council as public holidays.

c) A person may operate construction equipment at his/her residence or for the purpose of constructing or modifying a residence for himself/herself on Monday through Friday on a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays, Sundays, and holidays between the hours of 9:00 a.m. and 5:00 p.m., provided that such operation of construction equipment is not carried on for profit or livelihood and complies with the requirements of subsection (d) of this section.

d) No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of 75 dBA at any time, unless a variance has been obtained on advance from the City Manager.

e) Persons engaged in construction for profit or as a business shall post signs at conspicuous places on a construction site, indicating hours of work as prescribed in this article or authorized by permit and the applicable noise levels.

Section 17-238 - Grading

a) It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00a.m. to 5:00 p.m..

b) For the purpose of this section, "grading" shall include but not be limited to compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.

c) In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dBA at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposed, unless a variance has been obtained in advance from the City Manager.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure time and "insulation" from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, parks and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. The proposed property would be located approximately 300 yards east of the Eagle Crest Golf Course and Rancho San Pasqual housing development. The San Pasqual Union Elementary School is located approximately ½ mile west of the proposed project. The San Diego Wild Animal Park is located immediately south of the proposed project site.

Existing Noise Environment

The ambient noise in the project vicinity is influenced mostly by motor vehicle traffic on State Route 78, approximately ¾ mile south of the project site, and Cloverdale Road, approximately one mile west of the project site. State Route 78 supports 10,100 average daily trips (ADT) traveling east of San Pasqual Valley Road, 10,000 ADT traveling west of San Pasqual Valley Road, and 8,200 traveling west of the Wild Animal Park on San Pasqual Valley Road[2]. On-site, noise levels generally diminish from south to north with increasing distance from State Route 78.

To further characterize the ambient noise environment, five short-term (15-minute) noise measurements were taken on March 5, 2002 at locations around the project site. The measurements were taken 50 feet of the roadway intersections. The average 15 minute L_{eq} and maximum noise levels for the four short-term noise measurements are shown in Table 3.N-4. The average noise levels measured in the vicinity of the project site ranged from a 48.9 dBA to 63.1 dBA. The maximum noise levels ranged from 68.7 dBA to 85.7 dBA.

[2] Source: KOA Valley View Estates Traffic Analysis, February 2002

TABLE 3.N-4: SHORT-TERM, 15-MINUTE NOISE MEASUREMENT RESULTS

Location	Measured Noise Levels L_{eq} (dBA)	L_{max} (dBA)	Peak Noise Source
Citrus Avenue at San Pasqual Valley Road	62.1	78.5	Local Traffic
San Pasqual Road at Old Pasqual Road	61.9	78.5	Local Traffic
San Pasqual valley Road at San Pasqual Road	63.1	76.5	Bus
Rockwood Road at Old Ranch Road	48.9	68.7	Local Traffic
Cloverdale Road at Rockwood Road	59.5	85.7	Trash Truck

SOURCE: Environmental Science Associates, 2002.
Noise collection data sheets included in Appendix _____

Significance Criteria

The project would be considered to create a significant impact if it substantially increased the ambient noise levels for adjoining areas. The City of Escondido's Noise Element and Noise Abatement and Ordinance has established the following significance criteria:

- transportation noise that exceeds 50 dBA (exterior) at project residential land uses and 60 dBA at project commercial land uses; and

- an increase in noise exposure level of greater than 5 dBA at existing residential and commercial land uses.

The above criteria are applicable to long-term changes in the noise environment. Construction noise impacts, which are temporary by nature, would be significant if they 1) would last for an inordinate amount of time near any given noise-sensitive use, 2) would substantially interfere with land uses in the vicinity, 3) or would violate the City of Escondido's noise standards.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Construction noise levels were estimated using U.S. Environmental Protection Agency (U.S. EPA) construction equipment and operation noise assumptions (1971). Land use compatibility noise impacts were evaluated by the California Office of Planning and Research standards for exterior noise exposure and Land Use Compatibility (1990). Vehicular traffic noise was estimated using the Federal Highway Administration Highway Traffic Noise Prediction Model. Input to the model includes traffic volumes, vehicle speeds and vehicle mix. Traffic data used as input for the model was provided by Katz, Okitsu and Associates.

Impact 3.N-1: Construction at the proposed project site would result in a temporary increase in ambient noise levels. This would be considered a less than significant impact.

Construction-related noise levels at and near any given location in the project vicinity would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Construction within the project site would take place over a 10 to 15 year period and would occur in seven phases, each of which has its own mix of equipment and noise characteristics. During these phases of construction, the characteristics of noise levels surrounding the construction sites would change as work progresses. Table 3.N-5 shows typical noise levels generated during various phases of construction.

Noise from construction activities generally attenuates (decreases) at a rate of six dBA per doubling of distance. Assuming this, finishing noise levels of 88 dBA, at 50 feet would be reduced to approximately 82 dBA at 100 feet, 76 dBA at 200 feet, and 70 dBA at 400 feet. The closest sensitive receptor to the site is located approximately 400 feet west of the proposed extension of Rockwood Road and patio homes near the entrance to the Specific Plan. All other construction will occur at distances greater than one-quarter mile from sensitive receptors. Sensitive receptors could be exposed to construction noise levels as high as 70 dBA during finishing activities. This would be less than the 75 dBA threshold set by the City Noise Ordinance. Construction noise would occur during the day which is considered the least sensitive noise period.

TABLE 3.N-5: TYPICAL CONSTRUCTION PHASE NOISE LEVELS

Construction Phase	**Noise Level dBA (L_{eq})[a]**
Ground Clearing	83
Excavation	88
Foundations	81
Erection	81
Finishing	88

a. Noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: Bolt, Beranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, prepared for the U.S. Environmental Protection Agency*, 1971.

In addition to various other construction activities, rock crushing, rock drilling and rock blasting will occur at various times at the project site. Assuming rock crushing and rock drilling levels of

98 dBA at 50 feet[3], 800 feet would be required to attenuate noise levels to less than 75 dBA. In addition, terrain features at the project site would decrease the distance required to attenuate the noise level to a less than significant level. The western portion of the project site is dominated by a 400 foot ridge line. Sensitive receptors west of the ridgeline would be shielded from most noise produced east of the ridgeline. Mitigation measures 3.N-1d would minimize the impact from rock crushing operations.

As opposed to rock crushing, which would be a continuous noise source for several hours, rock blasting would last seconds but would emit a higher decibel level. Escondido noise ordinance No. 90-08 Section 17-234 states no construction equipment shall be operated so as to cause noise in excess of a one hour average sound level of 75 dBA, unless a variance has been obtained in advance from the City Manager. While rock blasting would emit a maximum of 98-105 dBA at 50 feet, it would only last seconds and when averaged over an hour would not be expected to exceed the City of Escondido's Noise Ordinance. In addition, a majority of rock blasting would occur east of the 400 foot ridge line, which would help reduce the noise perceived at sensitive receptors located west of the ridge line.

A small portion of rock blasting is expected to occur on top of and west of the ridge line. While this would increase the noise level perceived by the sensitive receptors, noise levels would not be expected to violate the City of Escondido noise ordinance. However, intermittent, unexpected blasting could be a nuisance or cause alarm in nearby communities. Mitigation measures 3.N-1e and 3.N-1f would minimize the potential impact.

Rock drilling at the project site also has the potential to cause a significant noise impact. Unlike rock blasting, rock drilling has the potential to last several hours to several days. Unlike rock crushing, which can be located far from sensitive receptors, the location of rock drilling is dependent on the geologic formations being drilled. Rock drilling that occurs east of the ridgeline would not significantly impact local sensitive receptors. Prolonged rock drilling on top of or west of the ridgeline has the potential to significantly impact the ambient noise levels of local sensitive receptors. Rock drilling operations within 800 feet of residences would require a variance from the noise ordinance. Since the duration of rock drilling near the residences would be stationary, implementation of mitigation measure 3.N-1g would reduce the potential impact to less than significant levels.

Mitigation Measures

3.N-1a. Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturers' specifications) and by shrouding or shielding impact tools where feasible.

[3] Source: Noise From Construction Equipment and Operations, Building Equipment, and Home Appliances, Bolt, Beranek and Newman, December 31, 1971, U.S. Environmental Protection Agency Office of Noise Abatement and Control.

3.N-1b. Construction staging areas shall be located as far from noise-sensitive uses as possible.

3.N-1c. The City shall designate a contact person to respond to community complaints concerning noise and to ensure compliance with applicable project noise conditions and controls.

3.N-1d. If rock crushers are used, they will be situated east the ridgeline and at least 800 feet from the closest sensitive receptor.

3.N-1e. The applicant shall prepare a blasting plan designating hours of blasting and techniques to reduce noise levels to the extent feasible. Such techniques shall include use of non-electrical caps and covering shots with fill materials or blankets.

3.N-1f. The blasting contractor shall notify local sensitive receptors within 1,000 feet of the blasting site at least one week in advance. In addition, a notice of intent to blast shall be posted at the entrance to the San Pasqual Housing Development.

3.N-1g. If rock drilling is to be conducted within 800 feet of a sensitive receptor, a noise variance from the City Manager shall be obtained.

Significance After Mitigation: Less-than-significant with mitigation incorporated.

Impact 3.N-2: Development of the project could result in an increase in stationary source noise levels. This would be considered a less than significant impact.

Construction equipment operations, and particularly blasting activities, could create earthborne vibrations that could affect adjacent sensitive receptors. To assess the potential for structural damage associated with vibration, the vibratory ground motion in the vicinity of the affected structure is measured in terms of peak particle velocity (PPV) typically in units of inches per second (in/sec). A PPV ranging from 0.02 in/sec to 0.10 in/sec is perceptible. A PPV of 1.0 in/sec is strongly perceptible[4]. The PPV for a track-driven excavator/backhoe, for example, has been measured at 0.043 in/sec at a distance of 30 to 40 feet[5]. The California Department of Transportation (Caltrans) uses a vibration criterion of 0.1968 in/sec PPV in the vertical direction for its construction projects.

The frequency of blast vibration (the number of oscillations per second that a particle makes when under the influence of an energy wave, measured in Hertz [Hz]) also affects the potential for damage to structures. The potential for damage to structures from controlled detonation is greater with low frequency vibration (below 40 Hz) than with high frequency vibration (40 Hz and above). Consequently, performance standards for vibration impacts are sometimes expressed as a range of PPV and frequency values. The U.S. Bureau of Mines has published the following criteria to avoid causing architectural or structural damage:

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[4] Source: Bender, undated

[5] Source: Wilson Ihrig & Associates, 1994

- For frequencies of 10 Hz, the PPV should not exceed 0.5 in/sec
- For frequencies of 40 Hz or greater, the PPV should not exceed 2.0 in/sec[6]. (PPV thresholds for frequencies between 10 Hz and 40 Hz progress linearly.)

The actual human and structural response to different vibration levels is influenced by a number of factors, including soil type, distance between source and receptor, duration, and number of perceived events.

Controlled detonation impacts associated with proposed project would be temporary and intermittent during construction, occurring during the excavation phase of construction. Mitigation measures 3.N-2a and 3.N-2b would reduce this impact to a less than significant level.

Mitigation Measures

3.N-2a. The construction specifications for the project shall incorporate standards for vibration thresholds published by the U.S. Bureau of Mines or Caltrans to avoid significant impacts to humans or structures. The construction specifications will require monitoring of vibration during detonation events, which will then be compared to the adopted standards. Monitored exceedance of the standards would result in suspension of detonations and an adjustment in design of subsequent blasts.

Significance After Mitigation: Less than significant with mitigation incorporated.

Impact 3.N-3: Increased traffic from the proposed project would increase ambient noise levels on local roadways in the vicinity of the project site. This would be considered a significant impact.

Short term ambient noise measurements conducted in March 2002 indicate that existing noise levels along local roadway segments in the project area exceed thresholds defined by the City of Escondido Zoning Ordinance for residential (50 dBA) and commercial (60 dBA) land uses (See Table 3.N-5.) To evaluate the project's impact on local conditions, the Federal Highway Administration (FHWA) Traffic Noise Prediction model was used to evaluate one hour peak noise levels. Traffic volumes used in the model were taken from the Katz, Okitsu and Associates *Valley View Traffic Study*, PM peak hour traffic volumes. The results of this model are shown in Table 3.N-6.

According to the City of Escondido's General Plan, significant noise impacts in this context refers to a change in noise at existing residential and commercial land uses of 5 dBA or more as a result of the proposed project. The noise estimates provided in Table 3.N-6 indicate that the traffic noise increase would be greater than 5 dBA over existing levels for the proposed project in some areas, in particular at the quieter, currently undeveloped areas near Rockwood Road and

[6] Source: Bender, undated

TABLE 3.N-6: CALCULATED PM PEAK NOISE LEVELS VALLEY VIEW ESTATES PROPOSED AND VALLEY VIEW ESTATES PREFFERED.

Road Segment	From	To	Existing Conditions dBA	Existing plus Valley View Estates Proposed dBA	Existing plus Valley View Estates Preferred dBA
Rockwood Road	Project	Cloverdale Road	62	69	69
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	64	70	69
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	67	71	71
San Pasqual Road	Citrus Avenue	Cloverdale Road	72	74	74

SOURCE: KOA Valley View Traffic Study.
Federal Highway Administration Noise Prediction Model.

further into the hills. Due to the large increase in traffic, increased roadway noise would be considered a significant impact.

Mitigation Measures

None feasible.

Level of Significance After Mitigation: Significant and unavoidable.

Impact 3.N-4 Development of the project could result in an increase in stationary source noise levels. This would be considered a less than significant impact.

Operational noise impacts other than from vehicular traffic include HVAC systems, children playing, music and other noises associated with housing developments. Housing developments are not normally associated with a significant stationary source noise impact. Any noise produced by the residence of a housing development would normally subject to the local noise ordinance. This would be considered a less than significant impact.

Mitigation Measures

None required.

Level of Significance After Mitigation: Less than significant.

Impact 3.N-5. Cumulative development could increase noise levels at local road segments. This would be considered a significant impact.

The CEQA Guidelines require that a project be evaluated with respect to its contribution to the cumulative baseline. The cumulative baseline is estimated by combining all proposed sources for projects under the build out conditions. Currently the surrounding land uses include the San Pasqual Housing Development, Eagle Crest Golf Course, San Pasqual Union Elementary School and the San Diego Wild Animal Park. In addition to the Valley View Estates project, the Rancho Vistamonte project is currently proposed for a 133.1 acre site south west of the project site. The Rancho Vistamonte housing development will consist of 80 residential units. Construction of the Valley View Estates project and Rancho Vistamonte would be considered buildout for the area.

TABLE 3.N-7: CALCULATED PM PEAK NOISE LEVELS AT BUILDOUT (2020)

Road Segment	From	To	Existing Conditions dBA	Rancho Vistamonte and Valley View Proposed dBA	Rancho Vistamonte and Valley View Reduced Intensity Alternative dBA
Rockwood Road	Project	Cloverdale Road	62	69	69
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	64	70	70
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	67	71	71
San Pasqual Road	Citrus Avenue	Cloverdale Road	72	74	74

SOURCE: KOA Valley View Traffic Study.
Federal Highway Administration Noise Prediction Model.

The Federal Highway Association Noise Prediction Model was used to estimate noise levels at buildout conditions. Increased traffic volumes were estimated for buildout conditions, including the Valley View Estates and Rancho Vistamonte developments, by Katz, Okitsu and Associates. Table 3.N-7 summarizes results of the model run at 45 feet from the noise source. Under the buildout condition, noise levels would increase by as much as 7 dBA over current conditions in localized areas. The noise levels associated with local traffic would exceed ambient standards established in the local noise ordinance. Therefore, the cumulative increase would be considered significant.

Mitigation Measures: None feasible.

Level of Significance After Mitigation: Significant and unavoidable.

REFERENCES

Bolt, Beranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, prepared for the U.S. Environmental Protection Agency*, 1971.

California Office of Planning and Research, *Guidelines for the Preparation and Content of the Noise Element of the General Plan*, November 1990.

City of Escondido, *Noise Abatement and Control (Ordinance No. 90-8)*, 1990.

City of San Diego, *San Diego Municipal Code, Article 9.5 (Noise and Abatement Control)*, 1989.

County of San Diego, *Noise Abatement and Control Ordinance*, 1986.

Katz, Okitsu and Associates, *Draft Traffic Analysis for Valley View Estates*, August 11, 2000.

State of California, Department of Transportation, *Noise Manual*, 1980.

Valley View Estates Noise Calculations

Existing Conditions (2002)

ROAD SEGMENT	from	to	TOT. # VEH.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)
Rockwood Road	Project	Cloverdale Road	199	92	183.1	5	9.95	3	5.97	35	56	35	56	35	56	56.1	54.9	58.5	61.6	30	58.6	60	55.5
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	337	92	310	5	16.9	3	10.1	35	56	35	56	35	56	58.4	57.2	60.8	63.9	30	60.8	60	57.8
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	334	87	290.6	3	10	10	33.4	35	56	35	56	35	56	58.1	55.0	66.0	67.0	30	63.9	60	60.9
San Pasqual Road	Citrus Avenue	Cloverdale Road	1144	87	995.3	3	34.3	10	114	35	56	35	56	35	56	63.5	60.3	71.4	72.3	30	69.3	60	66.3

Existing Conditions plus Valley View Estates Proposed at Implementation (Near-term)

ROAD SEGMENT	from	to	TOT. # VEH.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)
Rockwood Road	Project	Cloverdale Road	1155	92	1063	5	57.8	3	34.7	35	56	35	56	35	56	63.7	62.6	66.2	69.2	30	66.2	60	63.2
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	1302	92	1198	5	65.1	3	39.1	35	56	35	56	35	56	64.3	63.1	66.7	69.7	30	66.7	60	63.7
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	788	87	685.6	3	23.6	10	78.8	35	56	35	56	35	56	61.8	58.7	69.7	70.7	30	67.7	60	64.7
San Pasqual Road	Citrus Avenue	Cloverdale Road	1380	87	1201	3	41.4	10	138	35	56	35	56	35	56	64.3	61.1	72.2	73.1	30	70.1	60	67.1

Existing Conditions plus Valley View Estates Preffered at Implementation (Near-term)

ROAD SEGMENT	from	to	TOT. # VEH.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)
Rockwood Road	Project	Cloverdale Road	1025	92	943	5	51.3	3	30.8	35	56	35	56	35	56	63.2	62.0	65.7	68.7	30	65.7	60	62.7
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	1168	92	1075	5	58.4	3	35	35	56	35	56	35	56	63.8	62.6	66.2	69.3	30	66.2	60	63.2
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	741	87	644.7	3	22.2	10	74.1	35	56	35	56	35	56	61.6	58.4	69.5	70.4	30	67.4	60	64.4
San Pasqual Road	Citrus Avenue	Cloverdale Road	1574	87	1369	3	47.2	10	157	35	56	35	56	35	56	64.9	61.7	72.8	73.7	30	70.7	60	67.7

Buildout (2020) Valley View Estates Proposed

ROAD SEGMENT	from	to	TOT. # VEH.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)
Rockwood Road	Project	Cloverdale Road	1129	92	1039	5	56.5	3	33.9	35	56	35	56	35	56	63.6	62.5	66.1	69.1	30	66.1	60	63.1
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	1313	92	1208	5	65.7	3	39.4	35	56	35	56	35	56	64.3	63.1	66.7	69.8	30	66.7	60	63.7
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	830	87	722.1	3	24.9	10	83	35	56	35	56	35	56	62.1	58.9	70.0	70.9	30	67.9	60	64.9
San Pasqual Road	Citrus Avenue	Cloverdale Road	1653	87	1438	3	49.6	10	165	35	56	35	56	35	56	65.1	61.9	73.0	73.9	30	70.9	60	67.9

Valley View Estates Noise Calculations

Buildout (2020) Valley View Estates Preffered

ROAD SEGMENT	from	to	TOT. # VEH.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)
Rockwood Road	Project	Cloverdale Road	1032	92	949.4	5	51.6	3	31	35	56	35	56	35	56	63.3	62.1	65.7	68.7	30	65.7	60	62.7
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	1177	92	1083	5	58.9	3	35.3	35	56	35	56	35	56	63.8	62.6	66.3	69.3	30	66.3	60	63.3
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	739	87	642.9	3	22.2	10	73.9	35	56	35	56	35	56	61.6	58.4	69.5	70.4	30	67.4	60	64.4
San Pasqual Road	Citrus Avenue	Cloverdale Road	1600	87	1392	3	48	10	160	35	56	35	56	35	56	64.9	61.8	72.8	73.8	30	70.8	60	67.7

Buildout (2020) with Rancho Vistamonte and Valley View Estates Proposed

ROAD SEGMENT	from	to	TOT. # VEH.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)
Rockwood Road	Project	Cloverdale Road	1189	92	1094	5	59.5	3	35.7	35	56	35	56	35	56	63.9	62.7	66.3	69.3	30	66.3	60	63.3
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	1373	92	1263	5	68.7	3	41.2	35	56	35	56	35	56	64.5	63.3	66.9	70.0	30	66.9	60	63.9
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	855	87	743.9	3	25.7	10	85.5	35	56	35	56	35	56	62.2	59.0	70.1	71.0	30	68.0	60	65.0
San Pasqual Road	Citrus Avenue	Cloverdale Road	1681	87	1462	3	50.4	10	168	35	56	35	56	35	56	65.1	62.0	73.0	74.0	30	71.0	60	68.0

Buildout (2020) with Rancho Vistamonte and Valley View Estates Preferred

ROAD SEGMENT	from	to	TOT. # VEH.	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALC. NOISE LEV. (15 m from rdwy ctr)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)	Recept. Dist. fr. Rdwy Ctr (m)	Adjusted Noise Level (dBA)
Rockwood Road	Project	Cloverdale Road	1093	92	1006	5	54.7	3	32.8	35	56	35	56	35	56	63.5	62.3	65.9	69.0	30	66.0	60	62.9
Cloverdale Road	Rockwood Road	San Pasqual Valley Road	1238	92	1139	5	61.9	3	37.1	35	56	35	56	35	56	64.1	62.9	66.5	69.5	30	66.5	60	63.5
Cloverdale Road	San Pasqual Valley Road	Old Pasqual Road	765	87	665.6	3	23	10	76.5	35	56	35	56	35	56	61.7	58.6	69.6	70.6	30	67.5	60	64.5
San Pasqual Road	Citrus Avenue	Cloverdale Road	1628	87	1416	3	48.8	10	163	35	56	35	56	35	56	65.0	61.8	72.9	73.8	30	70.8	60	67.8

Appendix L
Water Availability Study and Offsite Sewer Improvements Evaluation

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APR 10 2002
PLANNING DIVISION

Mr. John Hoagland, Utilities Manager
CITY OF ESCONDIDO
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Escondido, California 92025

April 5, 2002

Valley View Estates Offsite Sewer Improvements Evaluation

In accordance with our Scope of Work dated March 22, 2002, we are pleased to submit to you this letter report summarizing the results of the Valley View Estates Offsite Sewer Improvements Evaluation. This letter report is based on data contained within the *Wastewater Master Plan Update: Eagle Crest Drainage Basin Study* (Parsons Engineering Science, February 1997) and the *Offsite Sewer Analysis for the Valley View Estates Project in the City of Escondido* (Dexter Wilson Engineering, Inc., March 2002). These reports are respectively referred to as the 1997 Update and 2002 Report within the remaining text of this letter report.

Background

The proposed Valley View Estates development is located within the City's Eagle Crest Drainage Basin, just north of the San Diego Wild Animal Park and San Pasqual Valley Road, east of the existing Eagle Crest (Rancho San Pasqual) development. A connection into the existing sewer system is proposed at Rockwood Road. The City retained Boyle Engineering Corporation (Boyle) to evaluate, at a concept-level, the potential offsite sewer improvements which may be required to service the proposed Valley View Estates development. This offsite evaluation extends from the proposed connection point at Rockwood Road through Pump Station 1.

Existing Sewer Facilities

From the proposed connection point, the City's existing offsite sewer facilities include an 8-inch and 12-inch diameter gravity trunk sewer system feeding into the Eagle Crest Pump Station (No. 13), located along San Pasqual and Old Pasqual Roads. The Eagle Crest Pump Station pumps into an 8-inch diameter force main within San Pasqual Road. This force main extends to a 10-inch and 18-inch diameter gravity system along San Pasqual Road that ultimately feeds into Pump Station 1 (located just south of Via Rancho Parkway and east of Interstate 15). From this point, flows are pumped north through a 16-inch diameter force main that connects to Pump Station 3.

The offsite sewer analysis performed in the 2002 Report focused on the gravity system between Rockwood Road and the Eagle Crest Pump Station, the Eagle Crest Pump Station and force main, and the gravity system up to the intersection of San Pasqual Road and Bear Valley Parkway.

Eagle Crest Basin Sewage Flow Projections

The ultimate average dry weather sewage flow projections for the Eagle Crest Basin presented in the 1997 Update and 2002 Report were compared and are summarized below.

Ultimate Eagle Crest Basin Development	Average Dry Weather Flows (gpd)	
	1997 Update	2002 Report
Eagle Crest (Rancho San Pasqual)	131,000	150,000
Valley View Estates	265,000	144,163
Rancho Vistamonte	--	20,000
Rockwood Road School	--	19,800
Others	191,000	--
Wild Animal Park	65,000	--
Total	**653,000**	**333,963**

As shown, the revised average dry weather flow projections from the 2002 Report are about half of those projected in the 1997 Update. The projected flows for Valley View Estates and Others (Rancho Vistamonte and Rockwood Road School) are considerably smaller, and a possible future connection by the Wild Animal Park is not considered. For purposes of this study, the 2002 Report flow projections were used, and Eagle Crest, Rancho Vistamonte, and Rockwood Road School were considered to be existing (for flows purposes). Flows for Valley View Estates were subsequently added in order to evaluate the additional required offsite sewer facilities.

Evaluation of Existing Sewer Facilities

Gravity System Between Rockwood Road & Eagle Crest Pump Station

The computer model results presented in the 2002 Report were reviewed. The ultimate peak flow simulation suggests that approximately 3500 feet of the existing 8-inch reach along Rockwood Road (just downstream of the proposed connection point) requires upsizing in order to accommodate flows from Valley View Estates. The 2002 Report states that a 10-inch diameter replacement or 6-inch diameter parallel sewer is required; the report recommends a parallel 8-inch sewer.

It appears that the sewer capacity analysis in the 2002 Report is based on a maximum d/D ratio of 75%. The design criteria presented in the 1997 Update indicates that gravity pipelines 12-inches and below should be designed for a 50% d/D ratio. Based on this criteria, a re-evaluation of the sewer lines in the model suggests that a 12-inch diameter replacement or 10-inch diameter parallel sewer is required.

Eagle Crest Pump Station & 8-inch Force Main

The Eagle Crest Pump Station currently has a capacity of 340 gpm at 146 feet of head. Peak flows to the pump station from Eagle Crest, Rancho Vistamonte, and Rockwood Road School are projected to total approximately 326 gpm (per the 2002 Report), just below the pump station's current capacity. Ultimate peak flows (with Valley View Estates included) are projected to be 551 gpm. The 2002 Report recommends a pump station expansion without upsizing the existing 8-inch force main, resulting in a total dynamic head requirement of nearly 200 feet.

The existing 8-inch diameter force main is large enough to handle the ultimate projected peak flow from the Eagle Crest Basin (at velocities near 3.5 fps). The increased head requirement (from the added Valley View Estates flows) is a result of the length of the force main. With the proposed pump station expansion and assuming similar pumping efficiencies, the City can expect to see an increase in energy consumption of over 130% relative to current conditions.

The projected ultimate peak flow of 551 gpm in the 2002 Report does not include any flows from the Wild Animal Park. It is recommended that the possibility of a future connection by the Wild Animal Park be investigated prior to implementing the proposed Eagle Crest Pump Station expansion such that provision for future expansion is incorporated into the design. For example, a future connection may require upsizing the existing 8-inch force main. The pumps may also be designed to operate efficiently at higher flows and reduced head conditions, reflective of an upsized force main.

Gravity System Between Eagle Crest Pump Station & Pump Station 1

The computer model output presented in the 2002 Report was reviewed. The ultimate peak simulation results suggest that the gravity system between the Eagle Crest Pump Station and the intersection of San Pasqual Road and Bear Valley Parkway have sufficient capacity to handle the projected flows from Valley View Estates.

The results of hydraulic analyses presented in the 1997 Update suggest that the existing gravity system between San Pasqual Road and Bear Valley Parkway and Pump Station 1 has enough capacity to handle the ultimate peak flows projected in the 2002 Report. However, potential additional flows associated with the Wild Animal Park should ultimately be considered.

Pump Station 1 & 16-inch Force Main

The current capacity of Pump Station 1 ranges between 1700 and 1750 gpm. Flows are pumped through a 16-inch force main to Pump Station 3. The City's current expansion plans are as follows:

- Keep the existing pump station and 16-inch force main pumping to Pump Station 3.
- Build a separate pump station and force main that bypasses Pump Station 3 to handle flows that are beyond the existing station's capacity.

Hydraulic runs presented in the 1997 Update (based on estimated 1996 population data) indicate that the peak inflow to Pump Station 1 (without the Eagle Crest Basin) is approximately 1580 gpm. Including peak flows from Eagle Crest, Rancho Vistamonte, and Rockwood Road School (326 gpm) increases the peak inflow to just over 1900 gpm, or 200 gpm over capacity. Including additional flows from Vista View Estates (551 gpm Eagle Crest Basin total) increases Pump Station 1 peak inflow to just over 2130 gpm. Based on this data, it appears that a separate new 430 gpm pump station (at Pump Station 1), and roughly 15,370 feet of 6-inch force main will be needed to bypass Pump Station 3.

Concept-Level Opinion of Probable Construction Costs

The estimated construction costs associated with the offsite sewer improvements necessary to handle ultimate peak flows projected for the Eagle Crest Basin within the 2002 Report are estimated to total nearly $3,000,000 (see Table 1).

****

The evaluations contained in this letter report are premised upon current criteria. It is not a representation, expressed or implied, that the City will allow connection to their sewer facilities. Applications for sewer service are governed by separate rules and regulations, and are the subject of separate proceedings, apart from these evaluations. The conclusions and recommendations of this study are presented in schematic form only and are not to be used as facility design reports nor as construction drawings. It is the responsibility of others to design the final improvements.

As always, it is our pleasure to provide assistance to the City. If you have any questions relative to this letter report or require additional information, please feel free to call us at (858) 268-8080.

Boyle Engineering Corporation

Eugene F. Shank, PE
Senior Civil Engineer

Randall S. Whitmann, PE
Associate Civil Engineer

Enclosures: Table 1 – Concept-Level Opinion of Probable Construction Costs

Copy to: Jay Petrek, City of Escondido/Planning Department
Reader, File

TABLE 1
Concept-Level Opinion of Probable Construction Costs

Description	Unit	Quantity	Unit Cost	Total Cost [1]
Eagle Crest Drainage Basin				
Parallel 10-inch Trunk Sewer ($10/dia-in/ft)	feet	3,500	$100	$350,000
Expand Pump Station (per 2002 Report)	gpm	550	$664	$365,000
	Sub-Total			**$715,000**
Pump Station 1 Drainage Basin				
New Pump Station (per 1988 WWMP, inflated)	gpm	430	$2,000	$860,000
6-inch Force Main - Bypass Pump Station 3 ($10/dia-in/ft)	feet	15,370	$60	$922,200
	Sub-Total			**$1,782,200**
	Total			$2,498,000
	Contingency (20%)			$500,000
	Grand Total			**$2,998,000**

[1] It should be noted that the Total Cost presented above does not include: planning, design, environmental/mitigation, geotechnical, right-of-way, surveying, easements, construction inspection, administration, or other City costs.

PBS&J
An employee-owned company

April 25, 2002

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SUBJECT: CITY OF ESCONDIDO WATER AVAILABILITY STUDY FOR THE PROPOSED VALLEY VIEW ESTATES

PBS&J is pleased to submit this final report on water availability for the proposed Valley View Estates development. A draft report was submitted to the City of Escondido on February 27, 2002. Comments were received on March 25, 2002, during a meeting held at the City. This revised study incorporates those comments, which are included in the appendix.

PURPOSE

The purpose of this study is to assess water availability in the existing City of Escondido water system, develop a conceptual onsite water system and determine any offsite improvements required to serve this development in support of the EIR process. A detailed onsite water distribution system evaluation is not part of this study and will be evaluated at a later date during the tentative map preparation process.

INTRODUCTION

Valley View Estates is a 1,150-acre development located within the County of San Diego. It is situated east of the City of Escondido and north of the San Diego Wild Animal Park. Elevations range from 820 feet in the southern area of the project up to approximately 1,730 feet in the northeastern portion. It is being proposed that this property be included in the City of Escondido's sphere of influence prior to annexation into the City of Escondido. The project was also included in the City's 2000 Water Master Plan. Water service is anticipated to be provided by the City of Escondido.

Land uses for this project include single-family estate and urban residential dwelling units, a golf course, a resort hotel and an equestrian center. A seven-acre lot is currently proposed to be a parking lot and fire station, but has future potential to be commercial or multi-family residential dwelling units. For this study, it was assumed to be commercial.

Water will be made available to Valley View Estates through a connection to the City of Escondido's existing Reed Zone. Because the project is located at a higher elevation than the Reed Reservoir can serve by gravity, a pump station will be required along Rockwood Road near the entrance to the project.

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WATER DEMANDS AND DESIGN CRITERIA

The 2000 *Water Master Plan* provides unit water demands and design criteria for the City of Escondido. Potable water demands for Valley View Estates were projected using these unit water demands. Table 1 shows the proposed land uses within Valley View Estates with the corresponding unit water demand and the resulting potable average day water demands.

Table 1
Valley View Estates Potable Water Demands

Land Use		Number of Acres	Unit Demand (gpm/acre)	Avg. Demand (gpm)
Category	**Description**			
R1	Rural I (>4 acres)	15.1	0.45	6.8
R2	Rural II (>2 acres)	72.1	0.60	43.3
E1	Estate I (>40,000 sq. ft.)	212.7	0.82	174.4
E2	Estate II (>20,000 sq. ft.)	23.6	1.00	23.6
U1	Urban I (<5.5 du/acre)	3.5	1.47	5.2
U2	Urban II (5.5 - 12 du/acre)	20.3	2.81	57.0
P	Parks/Equestrian Center	40.6	0.87	35.3
CG	Commercial General	30.3	1.22	37.0
GC	Golf Course	201.5[1]	1.55	234.2
	Total		--	**616.9**

[1] 75% of golf course assumed to be irrigated.

Peaking factors for water use within the City of Escondido are addressed in the 2000 *Water Master Plan.* The maximum day and the peak hour peaking factors are 1.8 and 2.7, respectively.

The Golf Course irrigation demand was assumed to be served by the potable system. Although it is likely that private onsite storage will be provided to manage peak demands and minimize capacity charges, the City has recommended that operational storage be included in the distribution reservoirs within the project. Therefore, two-thirds of a maximum day demand was included in storage.

Design criteria for City of Escondido potable water facilities are outlined in the 2000 *Water Master Plan.* The design criteria is used to evaluate the existing water supply facilities and to size new facilities based on peak flow demands and certain emergency conditions. The criteria defined in the 2000 *Water Master Plan* is summarized in Table 2. It was recommended that emergency storage be included with fire storage in sizing the distribution reservoirs to increase system reliability.

Table 2
City of Escondido Design Criteria For Potable Water Facilities

Facility	Design Criteria
Pressure Zones	110 psi - maximum desired pressure 150 psi - maximum allowable pressure 40 psi - minimum pressure at peak flow 20 psi - minimum pressure with maximum day demands plus fire flow
Pipelines	7 fps - maximum allowable velocity at peak flow 10 ft./1000 ft. - maximum allowable head loss at peak flow
Storage Reservoirs	Capacity equal to: • 15% of maximum day demand (for daily operations) • 1 average day (emergency use) • 3 hours of maximum fire flow • 2/3 maximum day golf course demand Separate inlet and outlet pipelines
Pump Stations	Open System (with storage): • minimum capacity of maximum day demands plus fire flow recharge over 3 days.

The 2000 *Water Master Plan* discussed the varying fire flow requirements within the City. The fire flows range from 1,500 gpm for low-density residential use to 2,500 gpm for multi-family residential and commercial use. The maximum fire flow demand for Valley View Estates is 2,500 gpm.

ONSITE WATER SYSTEM

The conceptual onsite potable water system developed for Valley View Estates includes a layout of proposed water lines, pressure zones and approximate storage tanks and pump station sites. The conceptual onsite system is shown in Figure 1.

Elevations within the development range from 820 feet at the southern area of the project up to approximately 1,730 feet in the northeastern portion. Due to the range of elevations within the project, a minimum of two pumping stations are required to serve the entire development in order to limit operating pressures to 250 psi. Because of the size of this development, need to provide large fire flows, and City's preference for reservoir supplied water systems, it is recommended that these pumped zones include storage tanks.

Storage of potable water should be located at two storage tanks within Valley View Estates. The Low Zone Reservoir will supply the lots with an elevation lower than 1,250 feet and the High Zone Reservoir will supply the lots at an elevation higher than 1,250 feet and a majority of the golf course. Table 3 indicates the size of the storage tanks based on the City's storage criterion.

Table 3
Capacity of Potable Water Storage Tanks

Storage Tank	15% of Maximum Day Demand (MG)	Average Day Demand (x1 day) (MG)	2/3 Max. Day Golf Course Demand (MG)	Fire Flow Storage (MG)	Total Storage (MG)
Low Zone	0.07	0.25	--	0.45	0.76
High Zone	0.08	0.30	0.40	0.45	1.24

The dimensions of the storage tanks based on the required capacity and approximate sites are listed in Table 4.

Table 4
Potable Water Storage Tank Dimensions

Zone Served	Volume (MG)	Bottom Elevation (ft)	Top Elevation (ft)	Diameter (ft)
Low Zone	0.76	1386	1410	74
High Zone	1.24	1800	1824	94

Pump stations are needed to boost water to the two pressure zones within Valley View Estates. One will be located along Rockwood Road near the entrance to the project at a maximum elevation of 780 feet. This pump station will boost water from the City's existing Reed Zone to the Valley View Estates Low Zone Tank. The second pump station will be located near the Low Zone Tank and boost water to the High Zone Tank.

OFFSITE WATER SYSTEM

The City of Escondido's hydraulic computer model of the existing water system was used to evaluate the effects of the Valley View Estates potable water demand on the existing system and confirm the availability of system capacity. Updates were made to the City's existing water system model in order to account for pipelines currently under construction. These updates include increasing the 27-inch supply pipeline upstream of the Reed Reservoir control valve in Oak Valley Lane to 36-inches, increasing the 27-inch pipeline between the Reed Reservoir control valve and Reed Reservoir to 30-inches, and replacing the existing Reed Reservoir control valve with a 24-inch valve. These improvements increase capacity in the City's exising water system.

Several modifications were also made to the City's existing water system model in order to account for pipelines currently being designed and anticipated to be constructed prior to Valley View Estates. These modifications include converting the pipelines in Cloveridge Road from the Reed Zone to the Hogback Zone, in effect removing the existing secondary supply to the southern area of the Reed Zone, and the 24-inch pipeline south of Falconer Road was abandoned north of Glenridge Road and replaced with 12-inch pipeline south of Glenridge Road.

The Valley View Estates water system is proposed to connect to the existing 12-inch pipeline in Rockwood Road, near the Wild Animal Park meter. Initially a 12-inch pipeline was added to the model at the proposed connection point.

Peak hour demands and fire flows were assumed to be provided by the reservoirs serving the development, resulting in the existing Reed Zone only supplying the maximum day demand of Valley View Estates. The proposed pump station was assumed to operate over a 12-hour period during the maximum day simulation. The draft study assumed the pump station would operate during minimum demand periods to reduce offsite impacts. At the March 25 meeting, the City recommended that the offsite analysis include an evaluation of the pump station operating during peak periods. This would provide the City with increased system flexibility. In addition, the City expressed concern that the capacity of the 16-inch pipeline from Reed Reservoir, based on resent field observations of the Wild Animal Park and Eagle Crest Golf Course demands, is at or near capacity.

An extended period hydraulic analysis was performed over a 24-hour period with maximum day and peak hour demands on the system. Pressures, velocities and headloss were evaluated to assure that compliance with the City's design criteria was accomplished. A drop of up to approximately 6 psi (20 percent) was estimated by the model during peak hour conditions at a high point in the Reed Zone located along Canyon Crest Drive while the Valley View Estates' pumps were running. Replacing the existing 12-inch reservoir drain, all valves and pipelines between the Reed Reservoir and Old Ranch Road with 20-inch valves and pipelines significantly increased pressures at the high point.

The 2000 Water Master Plan recommended a proposed 20-inch pipeline to replace the existing 16-inch from the Reed Reservoir to Old Ranch Road in order to increase capacity to meet future demands. Based on the recently observed capacity issues, the City has recommended that this pipeline be included as part of the Valley View Estates project. The timing and financial responsibilities for this pipeline should be determined as part of the detailed onsite analysis. The City may participate in the cost of the pipeline based on available funding in its Capital Improvement Program. A water reimbursement agreement could also be established with the City for future benefiting areas.

The existing 12-inch pipeline, approximately 1,500 feet in length, located in Rockwood Road supplying the Wild Animal Park meter is recommended to be upsized to a 16-inch pipeline. The proposed pipeline supplying Valley View Estates from the connection point should also be a 16-inch pipeline.

Currently the southern pressure reducing station located at Rockwood Road and Old Ranch Road is used as the main supply for the Rancho San Pasqual Zone. Converting the pipelines in Cloveridge Road from the Reed Zone to the Hogback Zone eliminates the second supply to the area off of Rockwood Road, in effect creating a dead-end system in the Reed Zone. Once construction of the zone change is complete, the City may want to consider using the northern pressure reducing station located along Old Ranch Road as the main supply for the Rancho San Pasqual Zone in order to minimize impacts on the existing 14-inch pipeline in Cloverdale Road.

CONCLUSIONS

Figures 1 and 2 illustrate the recommended offsite and onsite conceptual system to serve the proposed Valley View Estates development. With the offsite improvements noted above the City can provide water service to the proposed development. The timing and phasing of offsite improvements should be addressed in a more detailed onsite water system study. This study would also would recommend final onsite distribution system sizes and pump station and reservoir sizes.

We appreciate the opportunity to assist you with this project. If you have any questions, please feel free to contact Angela Froelich or myself at (619) 624-2710.

Respectfully submitted,

PBS&J

Angela Froelich
for
Mark B. Elliott, P.E.
Project Director

MBE:AF:sw

Attachments

c: Tony Crebs, Joe Crowder Investments
John Hoagland, City of Escondido
Jay Petrek, City of Escondido
Glen Peterson, City of Escondido
Homi Namdari, City of Escondido
Angela Froelich, PBS&J
file

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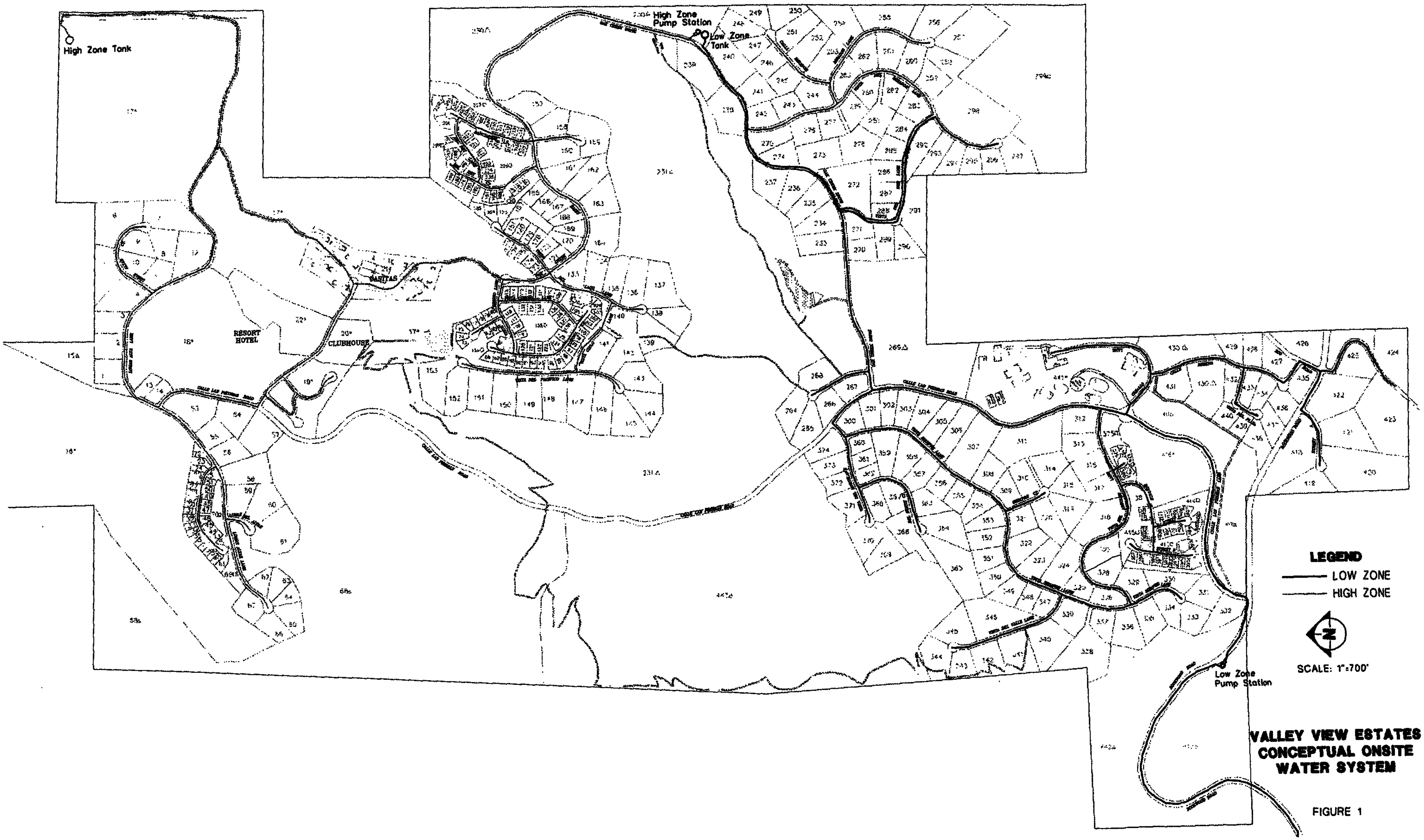
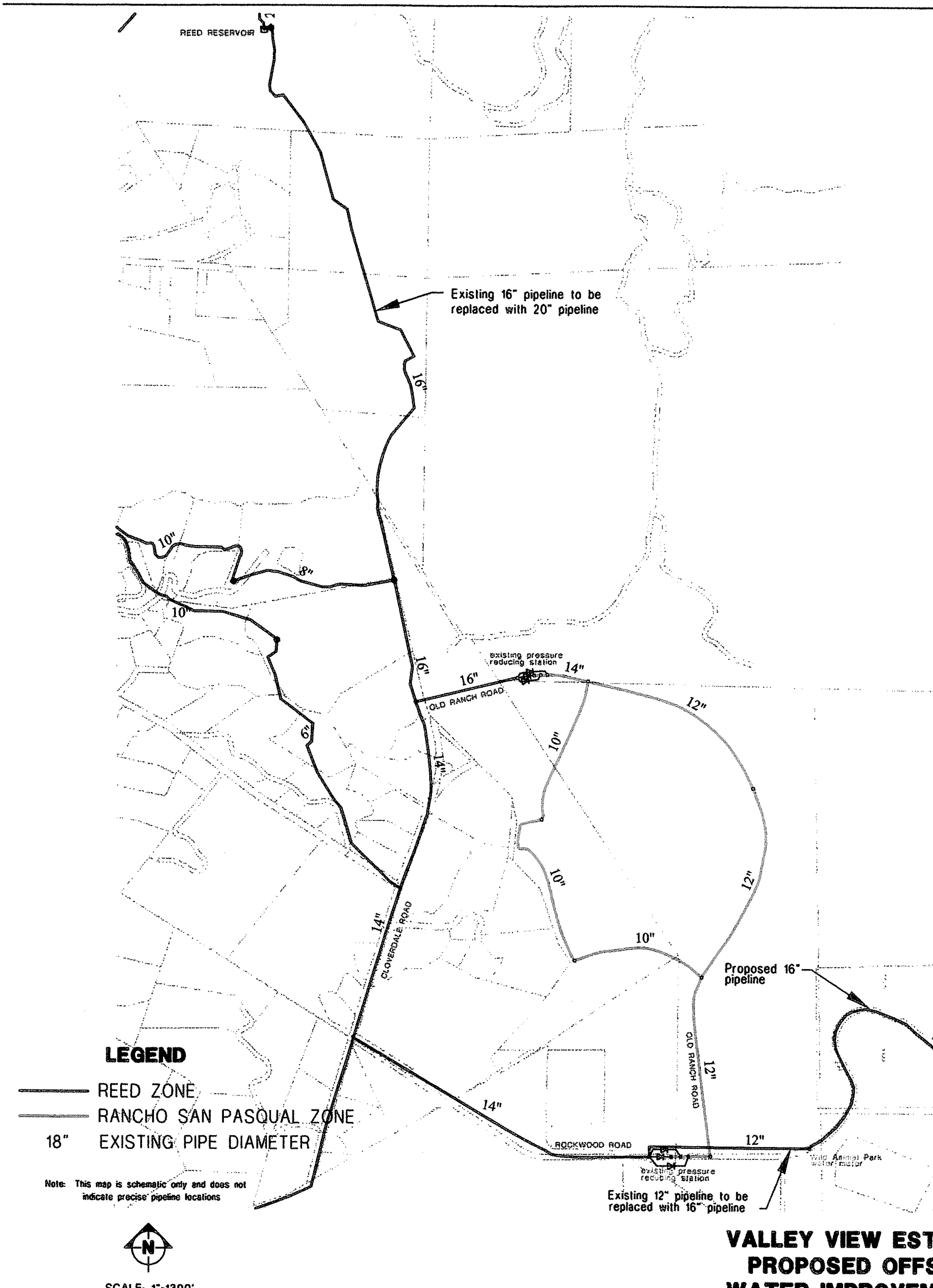


VALLEY VIEW ESTATES
CONCEPTUAL ONSITE
WATER SYSTEM

FIGURE 1

BSI

Appendix A



VALLEY VIEW ESTATE
PROPOSED OFFSITE
WATER IMPROVEMENT

FIGURE 2

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PBS&J

An employee-owned company

MEMORANDUM

TO:	Crowder Investments Attendees	**DATE:**	April 5, 2002
FROM:	Mark B. Elliott	**PROJECT NO.:** N:\019\As Needed\Valley View\SW Apr02 Mtg Minutes with City Comments.doc	621917.01 1000
SUBJECT:	**Valley View Water Analysis**	**CLIENT:**	Crowder Investments

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A meeting was held on Monday, March 26, 2002 with the City of Escondido to receive and discuss comments to the draft Water Availability Study for the Valley View Estates. The following people were in attendance:

Name	Phone	Company / Agency
John Hoagland	(760) 839-4528	City of Escondido, Utilities Division
Ron Anderson	(760) 839-4651	City of Escondido, Engineering Division
Glen Peterson	(760) 839-5461	City of Escondido, Utilities Division
Jay Petrek	(760) 839-4556	City of Escondido, Planning Division
Homi Namdari	(760) 839-4651	City of Escondido, Engineering Division
Mark Elliott	(760) 753-1120	PBS&J
Angela Froelich	(760) 753-1120	PBS&J

The Water Department expressed concern with use of City standard water design criteria for this proposed rural development at the edge of the water system. The City's current criteria is based on more urban development. The City's concerns cover three major elements: system reliability, water storage and system flexibility.

A single 16-inch pipeline in Rockwood Road is proposed to serve the entire Valley View development. Due to the location of this development, a redundant pipeline may not be feasible; the City expressed concern over the minimum recommended storage volumes. In addition to fire storage it may be appropriate to include one average day domestic (non-irrigation) demand of storage for increased system reliability.

Because Valley View will be served by a public water system, flexibility of how the system is operated must be considered. In the draft study, water to Valley View was assumed to be pumped only during low demand (nighttime) hours to minimize offsite system impacts. Pumping during peak hours must also be evaluated. Pump stations will be assumed to operate over a 12 to 24 hour period, including during the morning peaks. PBS&J will run additional operational scenarios and re-evaluate possible offsite improvements.

The golf course demand was assumed to be supplied at a constant maximum day rate, with all required storage located in assumed golf course lakes. The City is concerned that a golf course operator may desire public water system storage to meet demands. Therefore, operational storage was assumed for the golf course in only the upper onsite tank at approximately two-thirds of a maximum day.

Valley View Estates is located in a wildland urban interface area. Fires in these areas are intense and fast spreading, potentially requiring more water to fight them. The City Fire Department is reviewing the current fire flow criteria of 2,500 gpm for two hours and will provide recommendations.

It was noted that the existing 16-inch pipeline from Reed Reservoir currently experiences high velocities during peak demands. PBS&J to review peaking of the Wild Animal Park and Eagle Crest Golf Course and compare to hydraulic model assumptions.