CITY OF MORENO VALLEY

INITIAL STUDY FOR THE GATEWAY HEIGHTS PROJECT

GATEWAY HEIGHTS PROJECT
PEN 21-0066

February 2023

Lead Agency
CITY OF MORENO VALLEY
14177 Frederick Street
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Appendix A

Air Quality Calculations

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Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Gateway Heights Residential

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	108.00	Dwelling Unit	17.30	108,000.00	309

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - .

Construction Phase - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Grading -

Trips and VMT - .

Vehicle Trips - .

Fleet Mix - .

Woodstoves - No woodstoves

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	44.00
tblConstructionPhase	NumDays	300.00	264.00
tblConstructionPhase	NumDays	20.00	10.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.53	0.61
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	7.3100e-003	0.00
tblFleetMix	MCY	0.02	5.0470e-003
tblFleetMix	MDV	0.14	0.13
tblFleetMix	MH	5.4680e-003	1.0050e-003
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	6.1600e-004	1.5780e-003
tblFleetMix	SBUS	1.1000e-003	1.0280e-003
tblFleetMix	UBUS	3.1500e-004	1.2840e-003
tblGrading	MaterialExported	0.00	34,137.00
tblLandUse	LotAcreage	6.75	17.30
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblTripsAndVMT	WorkerTripNumber	78.00	25.00
tblVehicleTrips	ST_TR	8.14	9.22

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	6.28	7.87
tblVehicleTrips	WD_TR	7.32	9.44
tblWoodstoves	NumberCatalytic	5.40	0.00
tblWoodstoves	NumberNoncatalytic	5.40	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.7971	39.7656	19.4215	0.0954	10.5584	1.2602	11.8186	4.1004	1.1647	5.2651	0.0000	9,794.6965	9,794.6965	1.3003	0.9398	10,107.2639
2023	34.0356	14.8592	17.1536	0.0313	0.3563	0.7045	1.0608	0.0962	0.6629	0.7591	0.0000	3,003.1927	3,003.1927	0.6158	0.0390	3,030.1991
Maximum	**34.0356**	**39.7656**	**19.4215**	**0.0954**	**10.5584**	**1.2602**	**11.8186**	**4.1004**	**1.1647**	**5.2651**	**0.0000**	**9,794.6965**	**9,794.6965**	**1.3003**	**0.9398**	**10,107.2639**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Year	lb/day										lb/day					
2022	2.7971	39.7656	19.4215	0.0954	5.2077	1.2602	6.4679	1.8975	1.1647	3.0622	0.0000	9,794.6965	9,794.6965	1.3003	0.9398	10,107.2638
2023	34.0356	14.8592	17.1536	0.0313	0.3563	0.7045	1.0608	0.0962	0.6629	0.7591	0.0000	3,003.1927	3,003.1927	0.6158	0.0390	3,030.1991
Maximum	**34.0356**	**39.7656**	**19.4215**	**0.0954**	**5.2077**	**1.2602**	**6.4679**	**1.8975**	**1.1647**	**3.0622**	**0.0000**	**9,794.6965**	**9,794.6965**	**1.3003**	**0.9398**	**10,107.2638**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.02**	**0.00**	**41.54**	**52.49**	**0.00**	**36.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724
Energy	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Mobile	1.6883	1.7614	21.7014	0.0600	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,100.7232	6,100.7232	0.3037	0.1892	6,164.7077
Total	**29.7327**	**4.2485**	**59.3110**	**0.1179**	**7.2907**	**4.0618**	**11.3525**	**1.9358**	**4.0592**	**5.9950**	**374.2502**	**8,795.2702**	**9,169.5205**	**0.3705**	**0.2714**	**9,259.6482**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	lb/day										lb/day					
Area	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724
Energy	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Mobile	1.6883	1.7614	21.7014	0.0600	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,100.7232	6,100.7232	0.3037	0.1892	6,164.7077
Total	**29.7327**	**4.2485**	**59.3110**	**0.1179**	**7.2907**	**4.0618**	**11.3525**	**1.9358**	**4.0592**	**5.9950**	**374.2502**	**8,795.2702**	**9,169.5205**	**0.3705**	**0.2714**	**9,259.6482**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/24/2022	3/9/2022	5	10	
2	Grading	Grading	3/11/2022	5/11/2022	5	44	
3	Building Construction	Building Construction	5/12/2022	5/16/2023	5	264	
4	Paving	Paving	5/17/2023	5/30/2023	5	10	
5	Architectural Coating	Architectural Coating	5/31/2023	6/27/2023	5	20	

Acres of Grading (Site Preparation Phase): 5

Acres of Grading (Grading Phase): 110

Acres of Paving: 0

Residential Indoor: 218,700; Residential Outdoor: 72,900; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	4,267.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	25.00	12.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	0.8371	8.7937	3.5820	8.5300e-003		0.4174	0.4174		0.3840	0.3840		827.0354	827.0354	0.2675		833.7224
Total	**0.8371**	**8.7937**	**3.5820**	**8.5300e-003**	**6.5523**	**0.4174**	**6.9697**	**3.3675**	**0.3840**	**3.7515**		**827.0354**	**827.0354**	**0.2675**		**833.7224**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	7.9500e-003	0.0968	2.8000e-004	0.0335	1.7000e-004	0.0337	8.8900e-003	1.5000e-004	9.0500e-003		27.9047	27.9047	7.6000e-004	7.8000e-004	28.1564
Total	**0.0110**	**7.9500e-003**	**0.0968**	**2.8000e-004**	**0.0335**	**1.7000e-004**	**0.0337**	**8.8900e-003**	**1.5000e-004**	**9.0500e-003**		**27.9047**	**27.9047**	**7.6000e-004**	**7.8000e-004**	**28.1564**

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Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	0.8371	8.7937	3.5820	8.5300e-003		0.4174	0.4174		0.3840	0.3840	0.0000	827.0354	827.0354	0.2675		833.7224
Total	**0.8371**	**8.7937**	**3.5820**	**8.5300e-003**	**2.5554**	**0.4174**	**2.9728**	**1.3133**	**0.3840**	**1.6973**	**0.0000**	**827.0354**	**827.0354**	**0.2675**		**833.7224**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	7.9500e-003	0.0968	2.8000e-004	0.0335	1.7000e-004	0.0337	8.8900e-003	1.5000e-004	9.0500e-003		27.9047	27.9047	7.6000e-004	7.8000e-004	28.1564
Total	**0.0110**	**7.9500e-003**	**0.0968**	**2.8000e-004**	**0.0335**	**1.7000e-004**	**0.0337**	**8.8900e-003**	**1.5000e-004**	**9.0500e-003**		**27.9047**	**27.9047**	**7.6000e-004**	**7.8000e-004**	**28.1564**

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7716	0.0000	8.7716	3.6114	0.0000	3.6114			0.0000			0.0000
Off-Road	2.4756	26.6807	16.3336	0.0389		1.1156	1.1156		1.0264	1.0264		3,767.6232	3,767.6232	1.2185		3,798.0863
Total	**2.4756**	**26.6807**	**16.3336**	**0.0389**	**8.7716**	**1.1156**	**9.8872**	**3.6114**	**1.0264**	**4.6377**		**3,767.6232**	**3,767.6232**	**1.2185**		**3,798.0863**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2921	13.0637	2.8298	0.0558	1.6974	0.1442	1.8415	0.4654	0.1379	0.6033		5,952.6607	5,952.6607	0.0798	0.9377	6,234.0937
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0294	0.0212	0.2581	7.4000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		74.4126	74.4126	2.0300e-003	2.0800e-003	75.0838
Total	**0.3215**	**13.0849**	**3.0879**	**0.0565**	**1.7868**	**0.1446**	**1.9314**	**0.4891**	**0.1383**	**0.6274**		**6,027.0733**	**6,027.0733**	**0.0818**	**0.9398**	**6,309.1775**

Mitigated Construction On-Site

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4209	0.0000	3.4209	1.4084	0.0000	1.4084			0.0000			0.0000
Off-Road	2.4756	26.6807	16.3336	0.0389		1.1156	1.1156		1.0264	1.0264	0.0000	3,767.6232	3,767.6232	1.2185		3,798.0863
Total	**2.4756**	**26.6807**	**16.3336**	**0.0389**	**3.4209**	**1.1156**	**4.5365**	**1.4084**	**1.0264**	**2.4348**	**0.0000**	**3,767.6232**	**3,767.6232**	**1.2185**		**3,798.0863**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2921	13.0637	2.8298	0.0558	1.6974	0.1442	1.8415	0.4654	0.1379	0.6033		5,952.6607	5,952.6607	0.0798	0.9377	6,234.0937
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0294	0.0212	0.2581	7.4000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		74.4126	74.4126	2.0300e-003	2.0800e-003	75.0838
Total	**0.3215**	**13.0849**	**3.0879**	**0.0565**	**1.7868**	**0.1446**	**1.9314**	**0.4891**	**0.1383**	**0.6274**		**6,027.0733**	**6,027.0733**	**0.0818**	**0.9398**	**6,309.1775**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0187	0.5346	0.1832	2.1900e-003	0.0769	7.3300e-003	0.0842	0.0221	7.0200e-003	0.0292		231.7869	231.7869	2.4100e-003	0.0344	242.0984
Worker	0.0920	0.0663	0.8066	2.3000e-003	0.2794	1.3900e-003	0.2808	0.0741	1.2800e-003	0.0754		232.5394	232.5394	6.3600e-003	6.5100e-003	234.6370
Total	**0.1107**	**0.6008**	**0.9898**	**4.4900e-003**	**0.3563**	**8.7200e-003**	**0.3650**	**0.0962**	**8.3000e-003**	**0.1045**		**464.3263**	**464.3263**	**8.7700e-003**	**0.0409**	**476.7354**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0187	0.5346	0.1832	2.1900e-003	0.0769	7.3300e-003	0.0842	0.0221	7.0200e-003	0.0292		231.7869	231.7869	2.4100e-003	0.0344	242.0984
Worker	0.0920	0.0663	0.8066	2.3000e-003	0.2794	1.3900e-003	0.2808	0.0741	1.2800e-003	0.0754		232.5394	232.5394	6.3600e-003	6.5100e-003	234.6370
Total	**0.1107**	**0.6008**	**0.9898**	**4.4900e-003**	**0.3563**	**8.7200e-003**	**0.3650**	**0.0962**	**8.3000e-003**	**0.1045**		**464.3263**	**464.3263**	**8.7700e-003**	**0.0409**	**476.7354**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.4158	0.1669	2.1000e-003	0.0769	3.4300e-003	0.0803	0.0221	3.2800e-003	0.0254		222.8770	222.8770	2.2200e-003	0.0330	232.7553
Worker	0.0856	0.0585	0.7427	2.2300e-003	0.2794	1.3100e-003	0.2808	0.0741	1.2000e-003	0.0753		225.1059	225.1059	5.7200e-003	6.0000e-003	227.0377
Total	**0.0981**	**0.4743**	**0.9096**	**4.3300e-003**	**0.3563**	**4.7400e-003**	**0.3610**	**0.0962**	**4.4800e-003**	**0.1007**		**447.9828**	**447.9828**	**7.9400e-003**	**0.0390**	**459.7930**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.4158	0.1669	2.1000e-003	0.0769	3.4300e-003	0.0803	0.0221	3.2800e-003	0.0254		222.8770	222.8770	2.2200e-003	0.0330	232.7553
Worker	0.0856	0.0585	0.7427	2.2300e-003	0.2794	1.3100e-003	0.2808	0.0741	1.2000e-003	0.0753		225.1059	225.1059	5.7200e-003	6.0000e-003	227.0377
Total	**0.0981**	**0.4743**	**0.9096**	**4.3300e-003**	**0.3563**	**4.7400e-003**	**0.3610**	**0.0962**	**4.4800e-003**	**0.1007**		**447.9828**	**447.9828**	**7.9400e-003**	**0.0390**	**459.7930**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347		1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5164**	**5.0958**	**7.2921**	**0.0114**		**0.2551**	**0.2551**		**0.2347**	**0.2347**		**1,103.7921**	**1,103.7921**	**0.3570**		**1,112.7168**

Unmitigated Construction Off-Site

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Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0274	0.0187	0.2377	7.1000e-004	0.0894	4.2000e-004	0.0898	0.0237	3.8000e-004	0.0241		72.0339	72.0339	1.8300e-003	1.9200e-003	72.6521
Total	**0.0274**	**0.0187**	**0.2377**	**7.1000e-004**	**0.0894**	**4.2000e-004**	**0.0898**	**0.0237**	**3.8000e-004**	**0.0241**		**72.0339**	**72.0339**	**1.8300e-003**	**1.9200e-003**	**72.6521**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347	0.0000	1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5164**	**5.0958**	**7.2921**	**0.0114**		**0.2551**	**0.2551**		**0.2347**	**0.2347**	**0.0000**	**1,103.7921**	**1,103.7921**	**0.3570**		**1,112.7168**

Mitigated Construction Off-Site

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0274	0.0187	0.2377	7.1000e-004	0.0894	4.2000e-004	0.0898	0.0237	3.8000e-004	0.0241		72.0339	72.0339	1.8300e-003	1.9200e-003	72.6521
Total	**0.0274**	**0.0187**	**0.2377**	**7.1000e-004**	**0.0894**	**4.2000e-004**	**0.0898**	**0.0237**	**3.8000e-004**	**0.0241**		**72.0339**	**72.0339**	**1.8300e-003**	**1.9200e-003**	**72.6521**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.9808**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0548	0.0375	0.4754	1.4300e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		144.0678	144.0678	3.6600e-003	3.8400e-003	145.3041
Total	**0.0548**	**0.0375**	**0.4754**	**1.4300e-003**	**0.1788**	**8.4000e-004**	**0.1797**	**0.0474**	**7.7000e-004**	**0.0482**		**144.0678**	**144.0678**	**3.6600e-003**	**3.8400e-003**	**145.3041**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.9808**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0548	0.0375	0.4754	1.4300e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		144.0678	144.0678	3.6600e-003	3.8400e-003	145.3041
Total	**0.0548**	**0.0375**	**0.4754**	**1.4300e-003**	**0.1788**	**8.4000e-004**	**0.1797**	**0.0474**	**7.7000e-004**	**0.0482**		**144.0678**	**144.0678**	**3.6600e-003**	**3.8400e-003**	**145.3041**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6883	1.7614	21.7014	0.0600	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,100.7232	6,100.7232	0.3037	0.1892	6,164.7077
Unmitigated	1.6883	1.7614	21.7014	0.0600	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,100.7232	6,100.7232	0.3037	0.1892	6,164.7077

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,019.52	995.76	849.96	3,389,483	3,389,483
Total	1,019.52	995.76	849.96	3,389,483	3,389,483

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.614215	0.040586	0.209252	0.126005	0.000000	0.000000	0.000000	0.000000	0.001578	0.001284	0.005047	0.001028	0.001005

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
NaturalGas Unmitigated	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Condo/Townhouse	6243.28	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Total		**0.0673**	**0.5754**	**0.2448**	**3.6700e-003**		**0.0465**	**0.0465**		**0.0465**	**0.0465**		**734.5034**	**734.5034**	**0.0141**	**0.0135**	**738.8682**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	6.24328	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Total		**0.0673**	**0.5754**	**0.2448**	**3.6700e-003**		**0.0465**	**0.0465**		**0.0465**	**0.0465**		**734.5034**	**734.5034**	**0.0141**	**0.0135**	**738.8682**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724
Unmitigated	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1852					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1384					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	25.3851	1.8090	28.4526	0.0538		3.9317	3.9317		3.9317	3.9317	374.2502	1,944.0000	2,318.2502	0.0373	0.0687	2,339.6430
Landscaping	0.2685	0.1027	8.9121	4.7000e-004		0.0493	0.0493		0.0493	0.0493		16.0437	16.0437	0.0154		16.4294
Total	**27.9771**	**1.9117**	**37.3647**	**0.0542**		**3.9810**	**3.9810**		**3.9810**	**3.9810**	**374.2502**	**1,960.0437**	**2,334.2939**	**0.0527**	**0.0687**	**2,356.0724**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1852					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1384					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	25.3851	1.8090	28.4526	0.0538		3.9317	3.9317		3.9317	3.9317	374.2502	1,944.0000	2,318.2502	0.0373	0.0687	2,339.6430

Gateway Heights Residential - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Landscaping	0.2685	0.1027	8.9121	4.7000e-004		0.0493	0.0493		0.0493	0.0493		16.0437	16.0437	0.0154		16.4294
Total	**27.9771**	**1.9117**	**37.3647**	**0.0542**		**3.9810**	**3.9810**		**3.9810**	**3.9810**	**374.2502**	**1,960.0437**	**2,334.2939**	**0.0527**	**0.0687**	**2,356.0724**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Gateway Heights Residential

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	108.00	Dwelling Unit	17.30	108,000.00	309

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - .

Construction Phase - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Grading -

Trips and VMT - .

Vehicle Trips - .

Fleet Mix - .

Woodstoves - No woodstoves

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Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	44.00
tblConstructionPhase	NumDays	300.00	264.00
tblConstructionPhase	NumDays	20.00	10.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.53	0.61
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	7.3100e-003	0.00
tblFleetMix	MCY	0.02	5.0470e-003
tblFleetMix	MDV	0.14	0.13
tblFleetMix	MH	5.4680e-003	1.0050e-003
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	6.1600e-004	1.5780e-003
tblFleetMix	SBUS	1.1000e-003	1.0280e-003
tblFleetMix	UBUS	3.1500e-004	1.2840e-003
tblGrading	MaterialExported	0.00	34,137.00
tblLandUse	LotAcreage	6.75	17.30
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblTripsAndVMT	WorkerTripNumber	78.00	25.00
tblVehicleTrips	ST_TR	8.14	9.22

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	6.28	7.87
tblVehicleTrips	WD_TR	7.32	9.44
tblWoodstoves	NumberCatalytic	5.40	0.00
tblWoodstoves	NumberNoncatalytic	5.40	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.8138	39.0865	19.4063	0.0955	10.5584	1.2600	11.8184	4.1004	1.1645	5.2649	0.0000	9,797.8945	9,797.8945	1.3010	0.9390	10,110.2502
2023	34.0392	14.8333	17.3201	0.0315	0.3563	0.7045	1.0608	0.0962	0.6629	0.7591	0.0000	3,025.9702	3,025.9702	0.6159	0.0387	3,052.9046
Maximum	**34.0392**	**39.0865**	**19.4063**	**0.0955**	**10.5584**	**1.2600**	**11.8184**	**4.1004**	**1.1645**	**5.2649**	**0.0000**	**9,797.8945**	**9,797.8945**	**1.3010**	**0.9390**	**10,110.2502**

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.8138	39.0865	19.4063	0.0955	5.2077	1.2600	6.4677	1.8975	1.1645	3.0620	0.0000	9,797.8945	9,797.8945	1.3010	0.9390	10,110.2502
2023	34.0392	14.8333	17.3201	0.0315	0.3563	0.7045	1.0608	0.0962	0.6629	0.7591	0.0000	3,025.9702	3,025.9702	0.6159	0.0387	3,052.9046
Maximum	**34.0392**	**39.0865**	**19.4063**	**0.0955**	**5.2077**	**1.2600**	**6.4677**	**1.8975**	**1.1645**	**3.0620**	**0.0000**	**9,797.8945**	**9,797.8945**	**1.3010**	**0.9390**	**10,110.2502**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.02**	**0.00**	**41.55**	**52.49**	**0.00**	**36.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724
Energy	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Mobile	2.0520	1.6872	25.3532	0.0659	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,693.5319	6,693.5319	0.2961	0.1847	6,755.9893
Total	**30.0964**	**4.1743**	**62.9627**	**0.1238**	**7.2907**	**4.0618**	**11.3525**	**1.9358**	**4.0592**	**5.9950**	**374.2502**	**9,388.0789**	**9,762.3291**	**0.3629**	**0.2669**	**9,850.9299**

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724
Energy	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Mobile	2.0520	1.6872	25.3532	0.0659	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,693.5319	6,693.5319	0.2961	0.1847	6,755.9893
Total	**30.0964**	**4.1743**	**62.9627**	**0.1238**	**7.2907**	**4.0618**	**11.3525**	**1.9358**	**4.0592**	**5.9950**	**374.2502**	**9,388.0789**	**9,762.3291**	**0.3629**	**0.2669**	**9,850.9299**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/24/2022	3/9/2022	5	10	
2	Grading	Grading	3/11/2022	5/11/2022	5	44	
3	Building Construction	Building Construction	5/12/2022	5/16/2023	5	264	
4	Paving	Paving	5/17/2023	5/30/2023	5	10	
5	Architectural Coating	Architectural Coating	5/31/2023	6/27/2023	5	20	

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Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 5

Acres of Grading (Grading Phase): 110

Acres of Paving: 0

Residential Indoor: 218,700; Residential Outdoor: 72,900; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	4,267.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	9	25.00	12.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	0.8371	8.7937	3.5820	8.5300e-003		0.4174	0.4174		0.3840	0.3840		827.0354	827.0354	0.2675		833.7224
Total	**0.8371**	**8.7937**	**3.5820**	**8.5300e-003**	**6.5523**	**0.4174**	**6.9697**	**3.3675**	**0.3840**	**3.7515**		**827.0354**	**827.0354**	**0.2675**		**833.7224**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Worker	0.0118	7.6600e-003	0.1194	3.0000e-004	0.0335	1.7000e-004	0.0337	8.8900e-003	1.5000e-004	9.0500e-003		30.8068	30.8068	7.7000e-004	7.6000e-004	31.0533
Total	**0.0118**	**7.6600e-003**	**0.1194**	**3.0000e-004**	**0.0335**	**1.7000e-004**	**0.0337**	**8.8900e-003**	**1.5000e-004**	**9.0500e-003**		**30.8068**	**30.8068**	**7.7000e-004**	**7.6000e-004**	**31.0533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	0.8371	8.7937	3.5820	8.5300e-003		0.4174	0.4174		0.3840	0.3840	0.0000	827.0354	827.0354	0.2675		833.7224
Total	**0.8371**	**8.7937**	**3.5820**	**8.5300e-003**	**2.5554**	**0.4174**	**2.9728**	**1.3133**	**0.3840**	**1.6973**	**0.0000**	**827.0354**	**827.0354**	**0.2675**		**833.7224**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	7.6600e-003	0.1194	3.0000e-004	0.0335	1.7000e-004	0.0337	8.8900e-003	1.5000e-004	9.0500e-003		30.8068	30.8068	7.7000e-004	7.6000e-004	31.0533

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0118**	**7.6600e-003**	**0.1194**	**3.0000e-004**	**0.0335**	**1.7000e-004**	**0.0337**	**8.8900e-003**	**1.5000e-004**	**9.0500e-003**		**30.8068**	**30.8068**	**7.7000e-004**	**7.6000e-004**	**31.0533**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7716	0.0000	8.7716	3.6114	0.0000	3.6114			0.0000			0.0000
Off-Road	2.4756	26.6807	16.3336	0.0389		1.1156	1.1156		1.0264	1.0264		3,767.6232	3,767.6232	1.2185		3,798.0863
Total	**2.4756**	**26.6807**	**16.3336**	**0.0389**	**8.7716**	**1.1156**	**9.8872**	**3.6114**	**1.0264**	**4.6377**		**3,767.6232**	**3,767.6232**	**1.2185**		**3,798.0863**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3067	12.3854	2.7542	0.0558	1.6974	0.1440	1.8413	0.4654	0.1377	0.6031		5,948.1198	5,948.1198	0.0805	0.9370	6,229.3552
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0315	0.0204	0.3185	8.1000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		82.1515	82.1515	2.0500e-003	2.0300e-003	82.8087
Total	**0.3382**	**12.4058**	**3.0727**	**0.0566**	**1.7868**	**0.1444**	**1.9312**	**0.4891**	**0.1381**	**0.6272**		**6,030.2714**	**6,030.2714**	**0.0825**	**0.9390**	**6,312.1639**

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Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4209	0.0000	3.4209	1.4084	0.0000	1.4084			0.0000			0.0000
Off-Road	2.4756	26.6807	16.3336	0.0389		1.1156	1.1156		1.0264	1.0264	0.0000	3,767.6232	3,767.6232	1.2185		3,798.0863
Total	**2.4756**	**26.6807**	**16.3336**	**0.0389**	**3.4209**	**1.1156**	**4.5365**	**1.4084**	**1.0264**	**2.4348**	**0.0000**	**3,767.6232**	**3,767.6232**	**1.2185**		**3,798.0863**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3067	12.3854	2.7542	0.0558	1.6974	0.1440	1.8413	0.4654	0.1377	0.6031		5,948.1198	5,948.1198	0.0805	0.9370	6,229.3552
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0315	0.0204	0.3185	8.1000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		82.1515	82.1515	2.0500e-003	2.0300e-003	82.8087
Total	**0.3382**	**12.4058**	**3.0727**	**0.0566**	**1.7868**	**0.1444**	**1.9312**	**0.4891**	**0.1381**	**0.6272**		**6,030.2714**	**6,030.2714**	**0.0825**	**0.9390**	**6,312.1639**

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0195	0.5074	0.1764	2.1800e-003	0.0769	7.3200e-003	0.0842	0.0221	7.0000e-003	0.0291		231.5344	231.5344	2.4500e-003	0.0343	241.8277
Worker	0.0985	0.0638	0.9953	2.5400e-003	0.2794	1.3900e-003	0.2808	0.0741	1.2800e-003	0.0754		256.7235	256.7235	6.4000e-003	6.3600e-003	258.7773
Total	**0.1180**	**0.5713**	**1.1717**	**4.7200e-003**	**0.3563**	**8.7100e-003**	**0.3650**	**0.0962**	**8.2800e-003**	**0.1045**		**488.2579**	**488.2579**	**8.8500e-003**	**0.0407**	**500.6050**

Mitigated Construction On-Site

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0195	0.5074	0.1764	2.1800e-003	0.0769	7.3200e-003	0.0842	0.0221	7.0000e-003	0.0291		231.5344	231.5344	2.4500e-003	0.0343	241.8277
Worker	0.0985	0.0638	0.9953	2.5400e-003	0.2794	1.3900e-003	0.2808	0.0741	1.2800e-003	0.0754		256.7235	256.7235	6.4000e-003	6.3600e-003	258.7773
Total	**0.1180**	**0.5713**	**1.1717**	**4.7200e-003**	**0.3563**	**8.7100e-003**	**0.3650**	**0.0962**	**8.2800e-003**	**0.1045**		**488.2579**	**488.2579**	**8.8500e-003**	**0.0407**	**500.6050**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.3921	0.1614	2.1000e-003	0.0769	3.4100e-003	0.0803	0.0221	3.2700e-003	0.0254		222.3252	222.3252	2.2700e-003	0.0329	232.1721
Worker	0.0913	0.0564	0.9147	2.4600e-003	0.2794	1.3100e-003	0.2808	0.0741	1.2000e-003	0.0753		248.4351	248.4351	5.7400e-003	5.8600e-003	250.3264
Total	**0.1048**	**0.4485**	**1.0761**	**4.5600e-003**	**0.3563**	**4.7200e-003**	**0.3610**	**0.0962**	**4.4700e-003**	**0.1007**		**470.7603**	**470.7603**	**8.0100e-003**	**0.0387**	**482.4985**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.3921	0.1614	2.1000e-003	0.0769	3.4100e-003	0.0803	0.0221	3.2700e-003	0.0254		222.3252	222.3252	2.2700e-003	0.0329	232.1721
Worker	0.0913	0.0564	0.9147	2.4600e-003	0.2794	1.3100e-003	0.2808	0.0741	1.2000e-003	0.0753		248.4351	248.4351	5.7400e-003	5.8600e-003	250.3264
Total	**0.1048**	**0.4485**	**1.0761**	**4.5600e-003**	**0.3563**	**4.7200e-003**	**0.3610**	**0.0962**	**4.4700e-003**	**0.1007**		**470.7603**	**470.7603**	**8.0100e-003**	**0.0387**	**482.4985**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347		1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5164**	**5.0958**	**7.2921**	**0.0114**		**0.2551**	**0.2551**		**0.2347**	**0.2347**		**1,103.7921**	**1,103.7921**	**0.3570**		**1,112.7168**

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Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0292	0.0181	0.2927	7.9000e-004	0.0894	4.2000e-004	0.0898	0.0237	3.8000e-004	0.0241		79.4992	79.4992	1.8400e-003	1.8800e-003	80.1045
Total	**0.0292**	**0.0181**	**0.2927**	**7.9000e-004**	**0.0894**	**4.2000e-004**	**0.0898**	**0.0237**	**3.8000e-004**	**0.0241**		**79.4992**	**79.4992**	**1.8400e-003**	**1.8800e-003**	**80.1045**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347	0.0000	1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5164**	**5.0958**	**7.2921**	**0.0114**		**0.2551**	**0.2551**		**0.2347**	**0.2347**	**0.0000**	**1,103.7921**	**1,103.7921**	**0.3570**		**1,112.7168**

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0292	0.0181	0.2927	7.9000e-004	0.0894	4.2000e-004	0.0898	0.0237	3.8000e-004	0.0241		79.4992	79.4992	1.8400e-003	1.8800e-003	80.1045
Total	**0.0292**	**0.0181**	**0.2927**	**7.9000e-004**	**0.0894**	**4.2000e-004**	**0.0898**	**0.0237**	**3.8000e-004**	**0.0241**		**79.4992**	**79.4992**	**1.8400e-003**	**1.8800e-003**	**80.1045**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.9808**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

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Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0584	0.0361	0.5854	1.5700e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		158.9985	158.9985	3.6800e-003	3.7500e-003	160.2089
Total	**0.0584**	**0.0361**	**0.5854**	**1.5700e-003**	**0.1788**	**8.4000e-004**	**0.1797**	**0.0474**	**7.7000e-004**	**0.0482**		**158.9985**	**158.9985**	**3.6800e-003**	**3.7500e-003**	**160.2089**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.7892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.9808**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0584	0.0361	0.5854	1.5700e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		158.9985	158.9985	3.6800e-003	3.7500e-003	160.2089
Total	**0.0584**	**0.0361**	**0.5854**	**1.5700e-003**	**0.1788**	**8.4000e-004**	**0.1797**	**0.0474**	**7.7000e-004**	**0.0482**		**158.9985**	**158.9985**	**3.6800e-003**	**3.7500e-003**	**160.2089**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0520	1.6872	25.3532	0.0659	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,693.5319	6,693.5319	0.2961	0.1847	6,755.9893
Unmitigated	2.0520	1.6872	25.3532	0.0659	7.2907	0.0343	7.3250	1.9358	0.0317	1.9675		6,693.5319	6,693.5319	0.2961	0.1847	6,755.9893

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,019.52	995.76	849.96	3,389,483	3,389,483
Total	1,019.52	995.76	849.96	3,389,483	3,389,483

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.614215	0.040586	0.209252	0.126005	0.000000	0.000000	0.000000	0.000000	0.001578	0.001284	0.005047	0.001028	0.001005

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
NaturalGas Unmitigated	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682

5.2 Energy by Land Use - NaturalGas

Unmitigated

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	6243.28	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Total		**0.0673**	**0.5754**	**0.2448**	**3.6700e-003**		**0.0465**	**0.0465**		**0.0465**	**0.0465**		**734.5034**	**734.5034**	**0.0141**	**0.0135**	**738.8682**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	6.24328	0.0673	0.5754	0.2448	3.6700e-003		0.0465	0.0465		0.0465	0.0465		734.5034	734.5034	0.0141	0.0135	738.8682
Total		**0.0673**	**0.5754**	**0.2448**	**3.6700e-003**		**0.0465**	**0.0465**		**0.0465**	**0.0465**		**734.5034**	**734.5034**	**0.0141**	**0.0135**	**738.8682**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	lb/day										lb/day					
Mitigated	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724
Unmitigated	27.9771	1.9117	37.3647	0.0542		3.9810	3.9810		3.9810	3.9810	374.2502	1,960.0437	2,334.2939	0.0527	0.0687	2,356.0724

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1852					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1384					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	25.3851	1.8090	28.4526	0.0538		3.9317	3.9317		3.9317	3.9317	374.2502	1,944.0000	2,318.2502	0.0373	0.0687	2,339.6430
Landscaping	0.2685	0.1027	8.9121	4.7000e-004		0.0493	0.0493		0.0493	0.0493		16.0437	16.0437	0.0154		16.4294
Total	**27.9771**	**1.9117**	**37.3647**	**0.0542**		**3.9810**	**3.9810**		**3.9810**	**3.9810**	**374.2502**	**1,960.0437**	**2,334.2939**	**0.0527**	**0.0687**	**2,356.0724**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					

Gateway Heights Residential - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Architectural Coating	0.1852					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1384					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	25.3851	1.8090	28.4526	0.0538		3.9317	3.9317		3.9317	3.9317	374.2502	1,944.0000	2,318.2502	0.0373	0.0687	2,339.6430
Landscaping	0.2685	0.1027	8.9121	4.7000e-004		0.0493	0.0493		0.0493	0.0493		16.0437	16.0437	0.0154		16.4294
Total	**27.9771**	**1.9117**	**37.3647**	**0.0542**		**3.9810**	**3.9810**		**3.9810**	**3.9810**	**374.2502**	**1,960.0437**	**2,334.2939**	**0.0527**	**0.0687**	**2,356.0724**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Gateway Heights Residential

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	108.00	Dwelling Unit	17.30	108,000.00	309

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - .

Construction Phase - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Off-road Equipment - .

Grading -

Trips and VMT - .

Vehicle Trips - .

Fleet Mix - .

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves - No woodstoves

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	44.00
tblConstructionPhase	NumDays	300.00	264.00
tblConstructionPhase	NumDays	20.00	10.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.53	0.61
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	7.3100e-003	0.00
tblFleetMix	MCY	0.02	5.0470e-003
tblFleetMix	MDV	0.14	0.13
tblFleetMix	MH	5.4680e-003	1.0050e-003
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	6.1600e-004	1.5780e-003
tblFleetMix	SBUS	1.1000e-003	1.0280e-003
tblFleetMix	UBUS	3.1500e-004	1.2840e-003
tblGrading	MaterialExported	0.00	34,137.00
tblLandUse	LotAcreage	6.75	17.30
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblTripsAndVMT	WorkerTripNumber	78.00	25.00
tblVehicleTrips	ST_TR	8.14	9.22
tblVehicleTrips	SU_TR	6.28	7.87
tblVehicleTrips	WD_TR	7.32	9.44
tblWoodstoves	NumberCatalytic	5.40	0.00
tblWoodstoves	NumberNoncatalytic	5.40	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2173	2.2728	1.8974	4.7700e-003	0.2939	0.0981	0.3920	0.1149	0.0918	0.2067	0.0000	428.4098	428.4098	0.0742	0.0219	436.7787
2023	0.4239	0.7595	0.8946	1.6200e-003	0.0192	0.0362	0.0554	5.1800e-003	0.0340	0.0392	0.0000	141.5839	141.5839	0.0289	1.7600e-003	142.8315
Maximum	**0.4239**	**2.2728**	**1.8974**	**4.7700e-003**	**0.2939**	**0.0981**	**0.3920**	**0.1149**	**0.0918**	**0.2067**	**0.0000**	**428.4098**	**428.4098**	**0.0742**	**0.0219**	**436.7787**

Mitigated Construction

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2173	2.2728	1.8974	4.7700e-003	0.1562	0.0981	0.2543	0.0561	0.0918	0.1479	0.0000	428.4095	428.4095	0.0742	0.0219	436.7783
2023	0.4239	0.7595	0.8946	1.6200e-003	0.0192	0.0362	0.0554	5.1800e-003	0.0340	0.0392	0.0000	141.5837	141.5837	0.0289	1.7600e-003	142.8314
Maximum	**0.4239**	**2.2728**	**1.8974**	**4.7700e-003**	**0.1562**	**0.0981**	**0.2543**	**0.0561**	**0.0918**	**0.1479**	**0.0000**	**428.4095**	**428.4095**	**0.0742**	**0.0219**	**436.7783**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**43.98**	**0.00**	**30.78**	**48.93**	**0.00**	**23.89**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-1-2022	4-30-2022	0.8164	0.8164
2	5-1-2022	7-31-2022	0.6856	0.6856
3	8-1-2022	10-31-2022	0.5920	0.5920
4	11-1-2022	1-31-2023	0.5759	0.5759
5	2-1-2023	4-30-2023	0.5252	0.5252
6	5-1-2023	7-31-2023	0.4764	0.4764
		Highest	0.8164	0.8164

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area	0.7749	0.0355	1.4697	7.3000e-004		0.0553	0.0553		0.0553	0.0553	4.2439	23.8639	28.1078	2.1700e-003	7.8000e-004	28.3942
Energy	0.0123	0.1050	0.0447	6.7000e-004		8.4900e-003	8.4900e-003		8.4900e-003	8.4900e-003	0.0000	216.8693	216.8693	0.0104	3.2000e-003	218.0834
Mobile	0.3041	0.3180	3.9948	0.0109	1.2695	6.0700e-003	1.2755	0.3375	5.6000e-003	0.3431	0.0000	999.9603	999.9603	0.0486	0.0308	1,010.3480
Waste						0.0000	0.0000		0.0000	0.0000	10.0846	0.0000	10.0846	0.5960	0.0000	24.9842
Water						0.0000	0.0000		0.0000	0.0000	2.2324	24.9897	27.2221	0.2314	5.6700e-003	34.6966
Total	**1.0914**	**0.4584**	**5.5092**	**0.0123**	**1.2695**	**0.0699**	**1.3393**	**0.3375**	**0.0694**	**0.4069**	**16.5609**	**1,265.6832**	**1,282.2441**	**0.8885**	**0.0404**	**1,316.5063**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7749	0.0355	1.4697	7.3000e-004		0.0553	0.0553		0.0553	0.0553	4.2439	23.8639	28.1078	2.1700e-003	7.8000e-004	28.3942
Energy	0.0123	0.1050	0.0447	6.7000e-004		8.4900e-003	8.4900e-003		8.4900e-003	8.4900e-003	0.0000	216.8693	216.8693	0.0104	3.2000e-003	218.0834
Mobile	0.3041	0.3180	3.9948	0.0109	1.2695	6.0700e-003	1.2755	0.3375	5.6000e-003	0.3431	0.0000	999.9603	999.9603	0.0486	0.0308	1,010.3480
Waste						0.0000	0.0000		0.0000	0.0000	10.0846	0.0000	10.0846	0.5960	0.0000	24.9842
Water						0.0000	0.0000		0.0000	0.0000	2.2324	24.9897	27.2221	0.2314	5.6700e-003	34.6966
Total	**1.0914**	**0.4584**	**5.5092**	**0.0123**	**1.2695**	**0.0699**	**1.3393**	**0.3375**	**0.0694**	**0.4069**	**16.5609**	**1,265.6832**	**1,282.2441**	**0.8885**	**0.0404**	**1,316.5063**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/24/2022	3/9/2022	5	10	
2	Grading	Grading	3/11/2022	5/11/2022	5	44	
3	Building Construction	Building Construction	5/12/2022	5/16/2023	5	264	
4	Paving	Paving	5/17/2023	5/30/2023	5	10	
5	Architectural Coating	Architectural Coating	5/31/2023	6/27/2023	5	20	

Acres of Grading (Site Preparation Phase): 5

Acres of Grading (Grading Phase): 110

Acres of Paving: 0

Residential Indoor: 218,700; Residential Outdoor: 72,900; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	4,267.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	25.00	12.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0328	0.0000	0.0328	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	4.1900e-003	0.0440	0.0179	4.0000e-005		2.0900e-003	2.0900e-003		1.9200e-003	1.9200e-003	0.0000	3.7514	3.7514	1.2100e-003	0.0000	3.7817
Total	**4.1900e-003**	**0.0440**	**0.0179**	**4.0000e-005**	**0.0328**	**2.0900e-003**	**0.0349**	**0.0168**	**1.9200e-003**	**0.0188**	**0.0000**	**3.7514**	**3.7514**	**1.2100e-003**	**0.0000**	**3.7817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	5.1000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1295	0.1295	0.0000	0.0000	0.1307
Total	**5.0000e-005**	**4.0000e-005**	**5.1000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1295**	**0.1295**	**0.0000**	**0.0000**	**0.1307**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0128	0.0000	0.0128	6.5700e-003	0.0000	6.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	4.1900e-003	0.0440	0.0179	4.0000e-005		2.0900e-003	2.0900e-003		1.9200e-003	1.9200e-003	0.0000	3.7514	3.7514	1.2100e-003	0.0000	3.7817
Total	**4.1900e-003**	**0.0440**	**0.0179**	**4.0000e-005**	**0.0128**	**2.0900e-003**	**0.0149**	**6.5700e-003**	**1.9200e-003**	**8.4900e-003**	**0.0000**	**3.7514**	**3.7514**	**1.2100e-003**	**0.0000**	**3.7817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	5.1000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1295	0.1295	0.0000	0.0000	0.1307
Total	**5.0000e-005**	**4.0000e-005**	**5.1000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1295**	**0.1295**	**0.0000**	**0.0000**	**0.1307**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1930	0.0000	0.1930	0.0795	0.0000	0.0795	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	0.0545	0.5870	0.3593	8.6000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	75.1945	75.1945	0.0243	0.0000	75.8025
Total	**0.0545**	**0.5870**	**0.3593**	**8.6000e-004**	**0.1930**	**0.0245**	**0.2175**	**0.0795**	**0.0226**	**0.1020**	**0.0000**	**75.1945**	**75.1945**	**0.0243**	**0.0000**	**75.8025**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6100e-003	0.2873	0.0613	1.2300e-003	0.0368	3.1700e-003	0.0400	0.0101	3.0300e-003	0.0131	0.0000	118.7510	118.7510	1.6000e-003	0.0187	124.3656
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.8000e-004	5.9900e-003	2.0000e-005	1.9300e-003	1.0000e-005	1.9400e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5198	1.5198	4.0000e-005	4.0000e-005	1.5335
Total	**7.2300e-003**	**0.2878**	**0.0673**	**1.2500e-003**	**0.0387**	**3.1800e-003**	**0.0419**	**0.0106**	**3.0400e-003**	**0.0137**	**0.0000**	**120.2708**	**120.2708**	**1.6400e-003**	**0.0188**	**125.8991**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0753	0.0000	0.0753	0.0310	0.0000	0.0310	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	0.0545	0.5870	0.3593	8.6000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	75.1944	75.1944	0.0243	0.0000	75.8024
Total	**0.0545**	**0.5870**	**0.3593**	**8.6000e-004**	**0.0753**	**0.0245**	**0.0998**	**0.0310**	**0.0226**	**0.0536**	**0.0000**	**75.1944**	**75.1944**	**0.0243**	**0.0000**	**75.8024**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6100e-003	0.2873	0.0613	1.2300e-003	0.0368	3.1700e-003	0.0400	0.0101	3.0300e-003	0.0131	0.0000	118.7510	118.7510	1.6000e-003	0.0187	124.3656
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.8000e-004	5.9900e-003	2.0000e-005	1.9300e-003	1.0000e-005	1.9400e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5198	1.5198	4.0000e-005	4.0000e-005	1.5335
Total	**7.2300e-003**	**0.2878**	**0.0673**	**1.2500e-003**	**0.0387**	**3.1800e-003**	**0.0419**	**0.0106**	**3.0400e-003**	**0.0137**	**0.0000**	**120.2708**	**120.2708**	**1.6400e-003**	**0.0188**	**125.8991**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1425	1.3039	1.3663	2.2500e-003		0.0676	0.0676		0.0636	0.0636	0.0000	193.4906	193.4906	0.0464	0.0000	194.6495

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.1425**	**1.3039**	**1.3663**	**2.2500e-003**		**0.0676**	**0.0676**		**0.0636**	**0.0636**	**0.0000**	**193.4906**	**193.4906**	**0.0464**	**0.0000**	**194.6495**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5900e-003	0.0445	0.0150	1.8000e-004	6.3300e-003	6.1000e-004	6.9400e-003	1.8300e-003	5.9000e-004	2.4100e-003	0.0000	17.5468	17.5468	1.8000e-004	2.6000e-003	18.3273
Worker	7.2900e-003	5.6800e-003	0.0710	2.0000e-004	0.0229	1.2000e-004	0.0231	6.0900e-003	1.1000e-004	6.2000e-003	0.0000	18.0262	18.0262	4.8000e-004	5.0000e-004	18.1880
Total	**8.8800e-003**	**0.0502**	**0.0860**	**3.8000e-004**	**0.0293**	**7.3000e-004**	**0.0300**	**7.9200e-003**	**7.0000e-004**	**8.6100e-003**	**0.0000**	**35.5730**	**35.5730**	**6.6000e-004**	**3.1000e-003**	**36.5153**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1425	1.3039	1.3663	2.2500e-003		0.0676	0.0676		0.0636	0.0636	0.0000	193.4904	193.4904	0.0464	0.0000	194.6492
Total	**0.1425**	**1.3039**	**1.3663**	**2.2500e-003**		**0.0676**	**0.0676**		**0.0636**	**0.0636**	**0.0000**	**193.4904**	**193.4904**	**0.0464**	**0.0000**	**194.6492**

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5900e-003	0.0445	0.0150	1.8000e-004	6.3300e-003	6.1000e-004	6.9400e-003	1.8300e-003	5.9000e-004	2.4100e-003	0.0000	17.5468	17.5468	1.8000e-004	2.6000e-003	18.3273
Worker	7.2900e-003	5.6800e-003	0.0710	2.0000e-004	0.0229	1.2000e-004	0.0231	6.0900e-003	1.1000e-004	6.2000e-003	0.0000	18.0262	18.0262	4.8000e-004	5.0000e-004	18.1880
Total	**8.8800e-003**	**0.0502**	**0.0860**	**3.8000e-004**	**0.0293**	**7.3000e-004**	**0.0300**	**7.9200e-003**	**7.0000e-004**	**8.6100e-003**	**0.0000**	**35.5730**	**35.5730**	**6.6000e-004**	**3.1000e-003**	**36.5153**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0763	0.6977	0.7878	1.3100e-003		0.0339	0.0339		0.0319	0.0319	0.0000	112.4253	112.4253	0.0267	0.0000	113.0939
Total	**0.0763**	**0.6977**	**0.7878**	**1.3100e-003**		**0.0339**	**0.0339**		**0.0319**	**0.0319**	**0.0000**	**112.4253**	**112.4253**	**0.0267**	**0.0000**	**113.0939**

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.3000e-004	0.0200	7.9500e-003	1.0000e-004	3.6800e-003	1.7000e-004	3.8400e-003	1.0600e-003	1.6000e-004	1.2200e-003	0.0000	9.7922	9.7922	1.0000e-004	1.4500e-003	10.2261
Worker	3.9300e-003	2.9100e-003	0.0380	1.1000e-004	0.0133	6.0000e-005	0.0134	3.5400e-003	6.0000e-005	3.6000e-003	0.0000	10.1347	10.1347	2.5000e-004	2.7000e-004	10.2212
Total	**4.5600e-003**	**0.0229**	**0.0459**	**2.1000e-004**	**0.0170**	**2.3000e-004**	**0.0172**	**4.6000e-003**	**2.2000e-004**	**4.8200e-003**	**0.0000**	**19.9269**	**19.9269**	**3.5000e-004**	**1.7200e-003**	**20.4474**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0763	0.6977	0.7878	1.3100e-003		0.0339	0.0339		0.0319	0.0319	0.0000	112.4252	112.4252	0.0267	0.0000	113.0938
Total	**0.0763**	**0.6977**	**0.7878**	**1.3100e-003**		**0.0339**	**0.0339**		**0.0319**	**0.0319**	**0.0000**	**112.4252**	**112.4252**	**0.0267**	**0.0000**	**113.0938**

Mitigated Construction Off-Site

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.3000e-004	0.0200	7.9500e-003	1.0000e-004	3.6800e-003	1.7000e-004	3.8400e-003	1.0600e-003	1.6000e-004	1.2200e-003	0.0000	9.7922	9.7922	1.0000e-004	1.4500e-003	10.2261
Worker	3.9300e-003	2.9100e-003	0.0380	1.1000e-004	0.0133	6.0000e-005	0.0134	3.5400e-003	6.0000e-005	3.6000e-003	0.0000	10.1347	10.1347	2.5000e-004	2.7000e-004	10.2212
Total	**4.5600e-003**	**0.0229**	**0.0459**	**2.1000e-004**	**0.0170**	**2.3000e-004**	**0.0172**	**4.6000e-003**	**2.2000e-004**	**4.8200e-003**	**0.0000**	**19.9269**	**19.9269**	**3.5000e-004**	**1.7200e-003**	**20.4474**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5800e-003	0.0255	0.0365	6.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	5.0067	5.0067	1.6200e-003	0.0000	5.0472
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5800e-003**	**0.0255**	**0.0365**	**6.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1700e-003**	**1.1700e-003**	**0.0000**	**5.0067**	**5.0067**	**1.6200e-003**	**0.0000**	**5.0472**

Unmitigated Construction Off-Site

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	1.2500e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3343	0.3343	1.0000e-005	1.0000e-005	0.3372
Total	**1.3000e-004**	**1.0000e-004**	**1.2500e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3343**	**0.3343**	**1.0000e-005**	**1.0000e-005**	**0.3372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5800e-003	0.0255	0.0365	6.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	5.0067	5.0067	1.6200e-003	0.0000	5.0472
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5800e-003**	**0.0255**	**0.0365**	**6.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1700e-003**	**1.1700e-003**	**0.0000**	**5.0067**	**5.0067**	**1.6200e-003**	**0.0000**	**5.0472**

Mitigated Construction Off-Site

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	1.2500e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3343	0.3343	1.0000e-005	1.0000e-005	0.3372
Total	**1.3000e-004**	**1.0000e-004**	**1.2500e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3343**	**0.3343**	**1.0000e-005**	**1.0000e-005**	**0.3372**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.3398**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

Unmitigated Construction Off-Site

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.8000e-004	5.0100e-003	1.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	1.3374	1.3374	3.0000e-005	4.0000e-005	1.3488
Total	**5.2000e-004**	**3.8000e-004**	**5.0100e-003**	**1.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.3374**	**1.3374**	**3.0000e-005**	**4.0000e-005**	**1.3488**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.3398**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

Mitigated Construction Off-Site

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.8000e-004	5.0100e-003	1.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	1.3374	1.3374	3.0000e-005	4.0000e-005	1.3488
Total	**5.2000e-004**	**3.8000e-004**	**5.0100e-003**	**1.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.3374**	**1.3374**	**3.0000e-005**	**4.0000e-005**	**1.3488**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3041	0.3180	3.9948	0.0109	1.2695	6.0700e-003	1.2755	0.3375	5.6000e-003	0.3431	0.0000	999.9603	999.9603	0.0486	0.0308	1,010.3480
Unmitigated	0.3041	0.3180	3.9948	0.0109	1.2695	6.0700e-003	1.2755	0.3375	5.6000e-003	0.3431	0.0000	999.9603	999.9603	0.0486	0.0308	1,010.3480

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,019.52	995.76	849.96	3,389,483	3,389,483
Total	1,019.52	995.76	849.96	3,389,483	3,389,483

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.614215	0.040586	0.209252	0.126005	0.000000	0.000000	0.000000	0.000000	0.001578	0.001284	0.005047	0.001028	0.001005

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	95.2640	95.2640	8.0400e-003	9.7000e-004	95.7555
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	95.2640	95.2640	8.0400e-003	9.7000e-004	95.7555

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

NaturalGas Mitigated	0.0123	0.1050	0.0447	6.7000e-004		8.4900e-003	8.4900e-003		8.4900e-003	8.4900e-003	0.0000	121.6053	121.6053	2.3300e-003	2.2300e-003	122.3279
NaturalGas Unmitigated	0.0123	0.1050	0.0447	6.7000e-004		8.4900e-003	8.4900e-003		8.4900e-003	8.4900e-003	0.0000	121.6053	121.6053	2.3300e-003	2.2300e-003	122.3279

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	2.2788e+006	0.0123	0.1050	0.0447	6.7000e-004		8.4900e-003	8.4900e-003		8.4900e-003	8.4900e-003	0.0000	121.6053	121.6053	2.3300e-003	2.2300e-003	122.3279
Total		**0.0123**	**0.1050**	**0.0447**	**6.7000e-004**		**8.4900e-003**	**8.4900e-003**		**8.4900e-003**	**8.4900e-003**	**0.0000**	**121.6053**	**121.6053**	**2.3300e-003**	**2.2300e-003**	**122.3279**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	2.2788e+006	0.0123	0.1050	0.0447	6.7000e-004		8.4900e-003	8.4900e-003		8.4900e-003	8.4900e-003	0.0000	121.6053	121.6053	2.3300e-003	2.2300e-003	122.3279
Total		**0.0123**	**0.1050**	**0.0447**	**6.7000e-004**		**8.4900e-003**	**8.4900e-003**		**8.4900e-003**	**8.4900e-003**	**0.0000**	**121.6053**	**121.6053**	**2.3300e-003**	**2.2300e-003**	**122.3279**

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	537166	95.2640	8.0400e-003	9.7000e-004	95.7555
Total		**95.2640**	**8.0400e-003**	**9.7000e-004**	**95.7555**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	537166	95.2640	8.0400e-003	9.7000e-004	95.7555
Total		**95.2640**	**8.0400e-003**	**9.7000e-004**	**95.7555**

6.0 Area Detail

6.1 Mitigation Measures Area

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7749	0.0355	1.4697	7.3000e-004		0.0553	0.0553		0.0553	0.0553	4.2439	23.8639	28.1078	2.1700e-003	7.8000e-004	28.3942
Unmitigated	0.7749	0.0355	1.4697	7.3000e-004		0.0553	0.0553		0.0553	0.0553	4.2439	23.8639	28.1078	2.1700e-003	7.8000e-004	28.3942

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3903					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3173	0.0226	0.3557	6.7000e-004		0.0492	0.0492		0.0492	0.0492	4.2439	22.0446	26.2885	4.2000e-004	7.8000e-004	26.5311
Landscaping	0.0336	0.0128	1.1140	6.0000e-005		6.1700e-003	6.1700e-003		6.1700e-003	6.1700e-003	0.0000	1.8193	1.8193	1.7500e-003	0.0000	1.8631
Total	**0.7749**	**0.0355**	**1.4697**	**7.3000e-004**		**0.0553**	**0.0553**		**0.0553**	**0.0553**	**4.2439**	**23.8639**	**28.1078**	**2.1700e-003**	**7.8000e-004**	**28.3942**

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3903					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.3173	0.0226	0.3557	6.7000e-004		0.0492	0.0492		0.0492	0.0492	4.2439	22.0446	26.2885	4.2000e-004	7.8000e-004	26.5311
Landscaping	0.0336	0.0128	1.1140	6.0000e-005		6.1700e-003	6.1700e-003		6.1700e-003	6.1700e-003	0.0000	1.8193	1.8193	1.7500e-003	0.0000	1.8631
Total	**0.7749**	**0.0355**	**1.4697**	**7.3000e-004**		**0.0553**	**0.0553**		**0.0553**	**0.0553**	**4.2439**	**23.8639**	**28.1078**	**2.1700e-003**	**7.8000e-004**	**28.3942**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.2221	0.2314	5.6700e-003	34.6966
Unmitigated	27.2221	0.2314	5.6700e-003	34.6966

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	7.03663 / 4.43614	27.2221	0.2314	5.6700e-003	34.6966
Total		**27.2221**	**0.2314**	**5.6700e-003**	**34.6966**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	7.03663 / 4.43614	27.2221	0.2314	5.6700e-003	34.6966
Total		**27.2221**	**0.2314**	**5.6700e-003**	**34.6966**

8.0 Waste Detail

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.0846	0.5960	0.0000	24.9842
Unmitigated	10.0846	0.5960	0.0000	24.9842

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	49.68	10.0846	0.5960	0.0000	24.9842
Total		**10.0846**	**0.5960**	**0.0000**	**24.9842**

Mitigated

Gateway Heights Residential - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	49.68	10.0846	0.5960	0.0000	24.9842
Total		**10.0846**	**0.5960**	**0.0000**	**24.9842**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Biological Resources Report, Jurisdictional Delineation, Rare Plant Survey Report, Burrowing Owl Survey Report, and Determination of Biologically Equivalent or Superior Preservation (DBESP) Report

DUDEK
3615 MAIN STREET, SUITE 103
RIVERSIDE, CALIFORNIA 92501

October 21, 2022 11675

Shizao Zheng
1378 West Zhorgshan Road
Ningbo City, Zhejiang Province
China

Subject: **Biological Resources Letter Report and MSHCP Consistency for the Gateway Heights Project, City of Moreno Valley, Riverside County, California**

Dear Mr. Zheng:

This biological resources habitat assessment and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) consistency analysis letter report describes the existing biological conditions of the proposed Gateway Heights Project (project) site and provides an assessment of potential biological impacts. This report was initially submitted in 2019 but underwent a redesign including a revised project name, description, footprint, and impact analysis, all of which have been updated in this report. The proposed project and potential impacts to special-status biological resources are analyzed in the context of the California Environmental Quality Act (CEQA) and the MSHCP. This report describes the project site, the general biological reconnaissance survey, the focused burrowing owl (*Athene cunicularia*) surveys special-status biological resources present or potentially present on site, potential constraints to development that may be posed by biological resources on the project site, and recommended mitigation. This report also provides an MSHCP consistency assessment including the following requirements of the MSHCP (relevant MSHCP sections are identified in parentheses):

- Riparian/riverine, vernal pool, and fairy shrimp requirements (Section 6.1.2)
- Species survey requirements (Section 6.3.2)
- Urban/wildlife interface guidelines (Section 6.1.4)

1 Project Location

The 32.8-acre project site is comprised of Assessor's Parcel Number 256-150-001 and 256-040-009, as well as rights-of-way, and is located north of Jennings Court and east of Morton Road in Riverside County (Figure 1, Project Location; figures can be found in Attachment A, Figures). The project site occurs within U.S. Geological Survey 7.5-minute Riverside East quadrangle map, Section 34 of Township 2 South, Range 4 West. The approximate center of the property is at longitude 117°17′39.77″W and latitude 33°57′34.95″N.

The proposed project includes the residential development of 108 detached condominium units, parking, open space, utility lines, fuel modification zones (FMZs), and storm drain lines. The project also includes an undercrossing beneath Morton Road. The collection system will begin on the east side of Morton Road and consist of a concrete lined drop in the channel bottom and concrete headwall structure to result in no increase to water surface elevation. As a result of negotiations with adjacent landowners, two alternatives for the outlet structure are proposed. In Alternative 1, the outlet structure will cross Morton Road directly across the street from the proposed

Project into an existing channel. (Figure 2A, Alternative 1 Site Plan) In Alternative 2, the outfall structure will travel south along Morton Road for approximately 170 feet before depositing into an existing channel on the west side of Morton Road south of its intersection with Jennings Court (Figure 2B, Alternative 2 Site Plan). The headwall and concrete spillway will extend for approximately 40 feet. To aid in reducing downstream erosion, a rip rap apron will extend for an additional 40 feet.

2 Methods

2.1 Literature Review

For this biological resources letter report, "special-status" species are those that are (1) listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act; (2) listed or candidates for listing as threatened or endangered under the California Endangered Species Act; (3) a state fully protected species; (4) a California Department of Fish and Wildlife Species of Special Concern; (5) a species listed on the California Native Plant Society's Inventory of Rare and Endangered Plants with a California Rare Plant Rank of 1B or 2B; or (6) an MSHCP species not adequately conserved and species for which the MSHCP has additional surveys requirements for the project site. Special-status vegetation communities are those identified as high priority for inventory in the Natural Communities List (CDFW 2018) by a state rarity ranking of S1, S2, or S3.

Special-status biological resources present or potentially present on the project site were identified through a literature search using the following sources: U.S. Fish and Wildlife Service's Critical Habitat and Occurrence Data (USFWS 2019); California Department of Fish and Wildlife's California Natural Diversity Database (CDFW 2019b); the California Native Plant Society's online Inventory of Rare and Endangered Plants (CNPS 2019); and the Calflora database, which compiles observation and plant data from both private and public institutions, including the Consortium of California herbaria (Calflora 2019). Searches were completed for the following U.S. Geological Survey quadrangles (which include the quadrangle within which the study area is located and the eight surrounding quadrangles): Fontana, San Bernardino South, Redlands, Riverside West, Riverside East, Sunnymead, Lake Matthews, Steele Peak, and Perris.

Previous reports for the property were reviewed including Delineation of Jurisdictional Waters and Wetlands (Attachment B) and Planning Commission Staff Report (City of Moreno Valley 2007).

2.2 Field Reconnaissance

Dudek Biologists Anna Cassady and Britney Strittmater conducted a general biological survey of the project site including a 500-foot buffer, collectively referred to as the study area, on February 22, 2019, from 6:40 a.m. to 12:30 p.m. Private properties within the study area were surveyed visually with binoculars from the project site boundary. The survey was conducted when weather conditions were favorable, with no cloud cover, wind speeds from 3 to 10 miles per hour, and temperatures ranging from 40°F to 53°F. All native and naturalized plant species encountered within the study area were identified and recorded. The potential for special-status plant and wildlife species to occur within the study area was evaluated based on the vegetation communities, soils present, and surrounding features. Vegetation communities and land covers on site were mapped directly in the field onto a 200-foot-scale (1 foot = 200 feet) aerial photograph-based field map of the study area. A formal jurisdictional delineation was conducted on February 22, 2019. The methodology and results are provided under a separate cover; therefore,

they are not further discussed within this report. Dudek Biologist Tracy Park conducted a biological survey of the study area associated with Alternative 2 on September 21, 2022, from 1:30 p.m. to 3:25 p.m.

Latin and common names for plant species with a California Rare Plant Rank follow the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2019). For plant species without a California Rare Plant Rank, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2019), and common names follow the U.S. Department of Agriculture's Natural Resources Conservation Service Plants Database (USDA 2019a). Natural vegetation communities were mapped in the field using the Vegetation Alliances of Western Riverside County (Klein and Evens 2006). Land cover types were described in accordance with Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). Latin and common names of animals follow Crother (2012) for reptiles and amphibians, the American Ornithologists' Union (AOU 2018) for birds, Wilson and Reeder (2005) for mammals, the North American Butterfly Association (NABA 2016) for butterflies, and Moyle (2002) for fish.

During the February 22, 2019, general biological survey of the site, two ponded features (i.e., ruts) were observed. Therefore, an additional site visit for these two features was conducted by Dudek biologist Anna Cassady on March 13, 2019. This visit was conducted to confirm if these features held water after 7 days.

Dudek used geographic information system software to map biological resources and provide figures.

2.3 Burrowing Owl Survey Methods

To meet requirements in the MSHCP, a habitat assessment (Step I) was conducted during the February 22, 2019, visit to identify suitable habitat for burrowing owl (*Athene cunicularia*) within the project site and a 500-foot buffer. This assessment was conducted in accordance with the *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (RCA 2006). Due to private properties, the 500-foot buffer was visually inspected with binoculars.

Due to the presence of suitable habitat, from March through May 2019, Dudek biologist Anna Cassady conducted a focused burrow survey (Step II-A) and focused burrowing owl surveys (Step II-B) in accordance with the *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (RCA 2006). Table 1 lists the dates and conditions of these surveys. The area surveyed on foot was limited to the project site boundary as entry was not granted for adjacent parcels. All buffer areas were surveyed visually.

The focused burrow survey consisted of pedestrian transects spaced approximately 30 meters (approximately 100 feet) apart to allow for 100% visual coverage of the project site. For a 500-foot buffer, only visual surveys were conducted as access to the privately owned parcels had not been granted. All burrows suitable for burrowing owl were mapped using GPS and then digitized using ArcGIS.

Dudek conducted a total of four focused burrowing owl surveys during the burrowing owl breeding season (March 1–August 31). The burrowing owl survey area was based on mapped suitable habitat and presence of suitable burrows. This area totaled 14.1 acres of the project site and 32.4 acres within the study area. The surveys were conducted when conditions were suitable for detecting owls (i.e., no rain, high winds [>20 mph], dense fog, or temperatures over 90°F).

Table 1. Survey Information

Date	Sunrise	Hours	Survey Type	Conditions (temperature, cloud cover, wind)
3/26/19	6:45 a.m.	6:30 a.m.–8:50 a.m.	BUOW 1, Burrow Mapping	50°F–65°F, 0% - 20% cc, 0–1 mph winds
4/9/19	6:30 a.m.	6:15 a.m.–8:00 a.m.	BUOW 2	58°F–60°F, 0%-5% cc, 0-1 mph winds
4/23/19	6:05 a.m.	6:15 a.m.–7:35 a.m.	BUOW 3	50°F–53°F, 0% cc, 0–1 mph winds
5/13/19	5:49 a.m.	6:00 a.m.–7:00 a.m.	BUOW 4	58°F, 100% cc, 0–1 mph winds

Notes: °F = ° Fahrenheit; BUOW = burrowing owl; cc = cloud cover; mph = miles per hour

2.4 Survey Limitations

Access was not available within the 500-foot buffer within the southern portion due to private property. The 500-buffer within the north, east, and west was surveyed visually using binoculars. Therefore, vegetation mapping, habitat assessments, and the focused burrowing owl surveys were conducted from the project site or other public roads, in addition to being complimented with the use of aerial signatures of vegetation communities occurring within the proposed project footprint.

The reconnaissance survey was conducted during the late winter season, which resulted in detection and identification of most perennial plant species that may potentially occur in the area. Due to the timing of the surveys, annual and cryptic perennials may not have been detectable. Conditions were suitable for detection of most wildlife species (i.e., no cloud cover, 40°F–53°F temperatures, and moderate winds) and of winter migratory birds. However, timing of the survey limited the observations of neotropical breeding birds and colder temperatures may have limited the observations of reptiles.

Due to high rainfall over the winter, areas originally determined to be suitable for burrowing owl became marginal throughout the duration of the focused burrowing owl survey period. This was due to high grass and forb growth throughout the spring that led to dense cover that lowered the quality of the habitat for burrowing owl. These areas were still surveyed where accessible; however, areas with no visible ground were typically excluded.

3 Results

3.1 Site Description

The project site is characterized as open, vacant lands situated at the southwestern foothills of Box Springs Mountain. Based on aerial imagery (Google Earth 2019), the central and southern portions of the site have been frequently disced, as recently as October 2016. This is presumed to be for weed abatement and fire prevention. Elevations range from approximately 1,600 to 2,200 feet above mean sea level. The project site is surrounded by undeveloped land to the north, east, and west with residential developments to the south. Numerous erosional features with deep incised banks occur throughout the study area and are the result of sheet flow off Box Springs Mountain. Numerous dirt roads bisect the project site and contain deep, eroded segments. Morton Road bisects

the southwestern portion of the study area. Representative photographs of the project site are included in Attachment B, Site Photographs.

Based on a review of historical topographic maps (Historic Aerials 2019), residences were built along a dirt access road in the northeastern portion of the project site sometime between 1942 and 1955. It is unclear when the residences were removed; however, the dirt road remains, along with eucalyptus trees, which are assumed to have been planted around the residences.

3.2 Soils

Five soil types are mapped within the study area: Cieneba Sandy Loam (15% to 50% slopes); Cieneba Rocky Sandy Loam (15% to 50% slopes); Fallbrook fine sandy loam, shallow (8% to 15% slopes); Monserate Sandy Loam (8% to 15% slopes); and Rockland (USDA 2019b). The spatial distribution of these soils is depicted in Figure 2, Soils.

- **Cieneba Series** consists of very shallow, somewhat excessively drained soils formed in material weathered from granitic rock. These soils typically occur on hills and mountains (USDA 2019b). This soil series occurs in the central and western portions of the study area in between the Rockland and Monserate Series.
- **Fallbrook Series** consists of deep, well-drained soils formed in material weathered from granitic rock. These soils typically occur on hills (USDA 2019b). This soil series occurs in the southern portion of the study area in between the Monserate and Rockland Series.
- **Monserate Series** consists of moderately well drained soils formed in alluvium from granitic rocks. These soils typically occur within alluvial fans and terraces (USDA 2019b). This soil series dominates the southern portion of the study area and is located south of the Cajon Series.
- **Rockland** consists of well-drained soils formed in loamy colluvium from landslides on slopes of stream valleys and ground moraines (USDA 2019b). This soil series dominates the northern and eastern portions of the study area.

3.3 Vegetation Communities and Land Covers

Three vegetation communities and two land cover types were documented within the study area: brittlebush scrub, California annual grassland, eucalyptus woodland, disturbed habitat, and urban/developed. Figure 3, Biological Resources, illustrates the distribution of vegetation communities and land covers, and Table 1 provides a summary of each vegetation community and land cover's extent within the study area.

Table 1. Vegetation Communities and Land Covers within the Study Area

Vegetation Community/Land Cover	Acreage
Vegetation Communities	
Brittlebush Alliance	67.9
California Annual Grassland Alliance	18.6
Eucalyptus Alliance	1.8
Non-Natural Land Covers	
Disturbed Habitat	6.0
Urban/Developed	16.4

Table 1. Vegetation Communities and Land Covers within the Study Area

Vegetation Community/Land Cover	Acreage
Total*	110.8

Note:
* Acreage may not total due to rounding.

3.3.1 Brittlebush Alliance

The brittlebush (*Encelia farinosa*) vegetation alliance is an open-to-intermittent shrub layer where brittlebush dominates or co-dominates at a low-to-moderate cover. The shrub layer often occurs in two separate strata: low shrubs at 0–2 meters tall and tall shrubs at 1–5 meters tall. A variety of native or non-native species may make up the herb layer (Klein and Evens 2006).

Within the study area, brittlebush is located in the northern portion of the study area at the base of Box Springs Mountain. This area contains numerous rocky outcrops. This community also occurs within the foothills in the central portion of the study area at slightly lower covers. This species was dominant in the shrub layer and included a lower cover of shrubs including California sagebrush (*Artemisia californica*) and black sage (*Salvia mellifera*). The herbaceous layer included various non-native grasses and a mixture of annual herbs such as redstem stork's bill (*Erodium cicutarium*) and shortfruit stork's bill (*Erodium brachycarpum*).

3.3.2 California Annual Grassland Alliance

As defined by Klein and Evens (2006), California annual grassland alliance is usually dominated by an open-to-continuous herbaceous layer of native or non-native species at 0–1 meters tall, where emergent shrubs occur infrequently at 0.5–5 meters tall. Herbaceous non-native grasses may include compact brome (*Bromus madritensis*), ripgut brome (*B. diandrus*), slender oat (*Avena barbata*), or common Mediterranean grass (*Schismus barbatus*), with other herbaceous species such as slender Russian thistle (Salsola tragus), prickly lettuce (*Lactuca serriola*), and redstem stork's bill.

California annual grassland occupies the central and southern portions of the study area. This vegetation community is comprised primarily of weedy species including, but not limited to, brome species (*Bromus* spp.), short-podded mustard (*Hirschfeldia incana*), Tournefort's mustard (*Brassica tournefortii*), common Mediterranean grass, common fiddleneck (*Amsinckia intermedia*), distant phacelia (*Phacelia distans*), shining pepperweed (*Lepidium nitidum*), Indian hedgemustard (*Sisymbrium orientale*), miniature lupine (*Lupinus bicolor*), winecup clarkia (*Clarkia purpurea*), California poppy (*Eschscholzia californica*), redstem stork's bill, and shortfruit stork's bill. Scattered emergent brittlebush is located along the northern portions of the community; however, due to the low cover in these areas, it did not warrant its own vegetation community.

3.3.3 Eucalyptus Alliance

The eucalyptus alliance is dominated by eucalyptus (*Eucalyptus* spp.) in the tree canopy, forming an open-to-interment tree layer at 10–15 meters tall. Typically, more than one eucalyptus species comprises this alliance. Other emergent trees may include coast live oak (*Quercus agrifolia*) or non-native trees and shrubs such as date palm (*Phoenix dactylifera*), peppertree (*Schinus* spp.), and tamarisk (*Tamarix* spp.) at lower covers.

Within the study area, this alliance occurs within the northeastern portion of the study area and is dominated by various eucalyptus species. Scattered giant reed (*Arundo donax*), poison oak (*Toxicodendron diversilobum*), and laurel sumac (*Malosma laurina*) occur within the understory at low covers. A couple scattered California sycamores (*Platanus racemosa*) and a single Fremont cottonwood (*Populus fremontii*) were present but did not create a continuous canopy or high enough cover to warrant their own community. This area occurs at a topographic change in the slope of the Box Springs Mountain that appears to allow the water table to be close enough to the surface to support this vegetation; however, there was no evidence of wetland hydrology and, as described, plant species consisted of scattered individuals that did not create a continuous canopy.

3.3.4 Urban/Developed

Although not recognized by the Vegetation Alliances of Western Riverside County, urban/developed is defined by Oberbauer et al. (2008) as areas that have been constructed on or disturbed so severely that native vegetation is no longer supported. Urban/developed lands includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials.

Urban/developed land takes the form of rural residential development that is located within the 500-foot buffer to the south and paved roads including Morton Road, Jennings Court, and Penunuri Place, which all occur within the 500-foot buffer. A very small portion of Morton Road occurs within the proposed project site.

3.3.5 Disturbed Habitat

The classification of disturbed habitat is due to the predominance of bare ground, non-native plant species, and other disturbance-tolerant plant species. Oberbauer et al. (2008) describes disturbed habitat as areas that have been physically disturbed by previous human activity and are no longer recognizable as a native or naturalized vegetation association, but that continue to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native annual plant species.

Within the study area, disturbed land encompasses the dirt access roads occurring within the western portion of the project site and within the western and southwestern portions of the 500-foot buffer. While the disturbed land within the study area was composed primarily of bare ground, plant species observed within this land cover include redstem stork's bill and common Mediterranean grass.

3.4 Floral Diversity

A total of 56 species of native or naturalized plants, 34 native (61%) and 22 non-native (39%), were recorded within the study area. This relatively low plant diversity reflects the study area's small size and the timing of the site visit, which was conducted in late winter, which would have precluded the detection of spring and summer blooming annuals. In addition, the study area was surveyed from public roads, which inherently constrains the ability to inventory all plant species. Plant species observed within the study area are listed in Attachment C, Vascular Plant Species.

3.5 Wildlife

A total of 32 bird species were detected within the study area, including western meadowlark (*Sturnella neglecta*), bushtit (*Psaltriparus minimus*), house finch (*Haemorhous mexicanus*), western kingbird (*Tyrannus verticalis*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (Calypte anna), American crow wren (*Corvus*

brachyrhynchos), coastal California gnatcatcher (*Polioptila californica californica*), mourning dove (*Zenaida macroura*), Bewick's wren (*Thryomanes bewickii*), and California towhee (*Melozone crissalis*). No active bird nests were observed within the study area during the reconnaissance survey or the focused burrowing owl surveys; however, the native scrub vegetation and eucalyptus within the study area surrounding the project site provides habitat for nesting birds and raptors. No amphibian species were observed and no amphibian species are expected to occur. Two reptile species was observed during the survey: common side-blotched lizard (*Uta stansburiana*) and granite spiny lizard (*Sceloporus orcutti*). Three mammal species were detected during the survey: mule deer (Odocoileus hemionus), California ground squirrel (*Spermophilus* (*Otospermophilus*) *beecheyi*), and desert cottontail (*Sylvilagus audubonii*). Wildlife species observed within the study area are listed in Attachment D, Wildlife Species.

3.6 Special-Status Plant Species

Attachment E, Special-Status Plant Species Detected or Potentially Occurring in the Study Area, lists special-status plant species that have been documented in the U.S. Geological Survey 7.5-minute Riverside East quadrangle and the eight surrounding quadrangles (CDFW 2019; CNPS 2019). For each species listed, a determination was made regarding the potential for the species to occur in the study area based on information gathered during the field reconnaissance, including the location of the site, habitats present, current site conditions, and past and present land use. Listed species with a potential to occur and non-listed special-status species with a moderate or higher potential to occur are discussed herein.

No special-status plant species were detected within the study area. Two non-listed special-status species, Plummer's mariposa lily (*Calochortus plummerae*) and Parry's spineflower (*Chorizanthe parryi* var*. parryi*) have a moderate potential to occur within the study area; however, these species are fully covered species under the MSHCP (RCA 2017).

3.7 Special-Status Wildlife Species

Attachment F, Special-Status Wildlife Species Detected or Potentially Occurring in the Study Area, lists special-status wildlife species that have been documented in the U.S. Geological Survey 7.5-minute Riverside East quadrangle and the eight surrounding quadrangles (CDFW 2019). For each species listed, a determination was made regarding potential use of the project site based on information gathered during the field reconnaissance, known habitat preferences, and knowledge of the species' relative distributions in the area. Listed species with a potential to occur and non-listed special-status species with a moderate or higher potential to occur are discussed herein.

The federally listed threatened coastal California gnatcatcher was incidentally observed foraging during the February 2019 site visit; however, this species is a fully covered species under the MSHCP. The federally listed endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*) has a low potential to occur in both the project site and study area; however, this species is fully covered under the MSCHP. The federally listed endangered and state-listed threatened Stephens' kangaroo rat (*Dipodomys stephensi*) has a moderate potential to occur in both the project site and the study area; however, this species is a fully covered species under the MSHCP. The project is also within the Stephens' Kangaroo Rat Habitat Conservation Plan, which provides take authorization for Stephens' kangaroo rat within its boundaries. The state fully protected white-tailed kite (*Elanus leucurus*) has a low potential to nest and moderate potential to forage within the study area; however, this species is fully covered under the MSCHP. Two non-listed species have a high potential to occur

within the study area: red diamond rattlesnake (*Crotalus ruber*) and Blainville's horned lizard (*Phrynosoma blainvillii*). Three non-listed species have a moderate potential to occur within the study area: San Diego banded gecko (*Coleonyx variegatus abbotti*), burrowing owl, and loggerhead shrike (*Lanius ludovicianus*). All five of these species are covered by the MSHCP. The MSHCP has additional survey requirements for burrowing owl that are discussed in more detail below.

3.7.1 Burrowing Owl Habitat Assessment and Focused Survey Results

The proposed project is located within the MSHCP Burrowing Owl Habitat Assessment Area. In accordance with the MSHCP Burrowing Owl Survey Instructions (RCA 2006), a habitat assessment (step I of the survey instructions) was conducted for this species.

The burrowing owl is a California Species of Special Concern. With a relatively wide-ranging distribution throughout the west, burrowing owl is considered a habitat generalist (Lantz et al. 2004). In California, burrowing owl is a yearlong resident of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon–juniper and ponderosa pine habitats (Zeiner et al. 1990). Preferred habitat is generally typified by short, sparse vegetation with few shrubs; level to gently sloping topography; and well-drained soils (Haug et al. 1993).

The presence of burrows is the most essential component of burrowing owl habitat, as they are required for nesting, roosting, cover, and caching prey. In California, western burrowing owl most commonly lives in burrows created by California ground squirrels. Burrowing owl may occur in human-altered landscapes such as agricultural areas, ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable (i.e., open and sparse), useable burrows are available, and foraging habitat is close (Gervais et al. 2008). Debris piles, riprap, culverts, and pipes can also be used for nesting and roosting.

The nearest documented occurrence of burrowing owl is approximately 3.5 miles south of the study area. This occurrence was documented in 2009 (CDFW 2019).

The project site is vacant, consisting of open habitat comprised of California annual grassland, brittlebush, and disturbed habitat. The brittlebush alliance within the northern portion of the site is not suitable for burrowing owl due to the steep topography and dense shrub cover. The California annual grassland provides open habitat with moderate- to high-quality potential foraging habitat for burrowing owl. In addition, California ground squirrels are present within the project site and may provide suitable burrows (i.e., greater than 4 inches in diameter) for burrowing owl. In addition, rocky outcrops and large erosional features do occur within portions of the study area within the brittlebush alliance. These rocky outcrops and erosional features contain interstitial space marginally suitable for the nesting of burrowing owl, and adjacent grasslands are present for potential foraging. Therefore, burrowing owl has a moderate potential to occur within the study area due to suitable habitat present.

As described in Section 2.3 of this document, focused burrowing owl surveys were conducted between March and May 2019. No burrowing owls or signs of burrowing owls (e.g., feathers, whitewash, pellets) were observed within the project site. The result of the focused burrow survey is depicted on Figure 4, Burrowing Owl Focused Survey Results.

3.8 Nesting Birds

The project site provides potential nesting habitat for commonly occurring birds such as Anna's hummingbird or house finch. The project site did contain large trees (e.g., eucalyptus) suitable for raptor nesting. One nest was observed within the eucalyptus alliance stand; however, this nest appeared to be old and was not active. No additional nests were observed within the study area during the survey; however, the site visit was conducted just outside of the known nesting season of many species.

3.9 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal. The study area and the surrounding environment to the north, east, and west contain open scrub habitat associated with Box Springs Mountain that likely functions as open habitat, but does not function as a corridor for wildlife. Additionally, the area is not identified as a wildlife movement corridor by the MSHCP.

4 Western Riverside County MSHCP Consistency Analysis

The project site is located in the MSHCP Reche Canyon/Badlands Area Plan and must comply with relevant sections of the MSHCP. The project site is not within an MSHCP Criteria Cell (Figure 5, Western Riverside MSHCP Plan Area); therefore, no Reserve Assembly requirements would apply to the project site. The project site is not located within MSCHP Section 6.1.3 Narrow Endemic Species Survey Area or MSHCP Section 6.3.2 Additional Survey Needs and Procedures for Criteria Area Plant Species, Mammals, or Amphibians; therefore, additional survey requirements for these would not apply to the project site and are not further discussed. The project's compliance with the relevant sections of the MSHCP is discussed below.

4.1 MSHCP Section 6.1.2 Riparian/Riverine Resources

The MSHCP defines riparian/riverine areas as "lands which contain habitat dominated by trees, shrubs, persistent emergent, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year." The MSHCP further clarifies those areas "demonstrating characteristics as described above which are artificially created are not included in these definitions" (County of Riverside 2003).

The study area contains two ephemeral drainages (Drainage 1 and Drainage 2) and two associated tributaries (Tributary 1 and Tributary 2) (Figure 6, Western Riverside MSHCP Biological Resources). These features convey water ultimately connecting to Box Springs Canyon Wash, which has surface connection ultimately flowing to the Santa Ana River. Because these features convey water to downstream resources, they would be considered riverine resources as defined by the MSHCP. There are approximately 0.29 acres of MSHCP riverine resources within the study area.

The study area contains two additional upland swales and five erosional features. These features originate from natural topography of Box Springs Mountain; runoff conveyed by these features ultimately sheetflows and

dissipates. These features do not rely on a fresh water source and do not convey flows to downstream riverine resources; therefore, these are not a riverine resource as defined by the MSHCP.

The project site supports a few scattered individuals of California sycamore, Fremont cottonwood, and mulefat (*Baccharis salicifolia*) as observed during the February 2019 field visit. This riparian vegetation is small in its extent, lacks understory or closed-canopy features, lacks continuity with higher quality habitat, and is not contiguous; therefore, it is not sufficient to support riparian bird species such as least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), or yellow-billed cuckoo (*Coccyzus americanus*). These scattered individuals are not considered a riparian resource as defined by the MSHCP.

4.1.1 Vernal Pools and Fairy Shrimp Habitat

The MSHCP defines vernal pools as the following (County of Riverside 2003):

> [S]easonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics, and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by-case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records.

Fairy shrimp habitat also includes ephemeral pools and other features such as road ruts or stock ponds.

No vernal pool–indicator plant species were identified within the area and no vernal pools were observed within the study area. Soils mapped in the region are Cieneba Sandy Loam, Cieneba Rocky Sandy Loam, Monserate Sandy Loam, Fallbrook sandy loam, and Rockland. These series are all considered well to moderately well draining and therefore are not known to retain ponded water. However, two topographic low points contained standing water and ponding as observed during the February 22, 2019, site visit. Moreno Valley received approximately 3.79 inches of rain in the month of February 2019 due to larger storm events resulting in 1.39 inches of rain recorded on February 14 and 1.10 inches of rain recorded on February 15, and smaller events resulting in 0.21 inches of rain recorded on February 21 and 0.08 inches of rain recorded on February 22, 2019 (NRCS 2019). An ephemeral pond needs to hold water for at least 7 days for it to be suitable for fairy shrimp (USFWS 2015). Due to the rain events occurring less than 7 days prior to the February 22, 2019, field visit it was determined a subsequent visit should be conducted to determine if the ponds held water for at least 7 days. Approximately 0.10 inches of rain was recorded on March 6, 0.43 inches of rain was recorded on March 7, and 0.13 inches of rain was recorded on March 8, 2019 (NRCS 2019). Furthermore, the National Oceanic and Atmospheric Administration recorded 0.14 inches of rain between March 11 and 13, 2019 (NOAA 2019). The onset of significant rain events (i.e., 0.10 inches or more) beginning March 6, 2019, was adequate in order to determine if these feature held water as a result of this initial rain event and subsequent rain events after. Therefore, an additional site visit was conducted on March

13, 2019, to confirm if the two ponded areas observed on February 22, 2019, had held water for 7 days. The two topographic low points did not contain standing water or ponding during the March 13, 2019, site visit. Therefore, based on the facts that these features did not hold water for 7 days and that the soils present are considered well to moderately well draining and not known to retain ponded water, the study area was determined to not support habitat for Riverside fairy shrimp (*Streptocephalus woottoni*).

4.2 MSHCP Section 6.3.2 Additional Survey Area Needs and Procedures

Section 6.3.2 of the MSHCP establishes habitat assessment requirements for certain species of plants, birds, mammals, and amphibians. The project site is located in a required habitat assessment area for burrowing owl. As discussed above under Section 3.7, Special-Status Wildlife Species, of this report, the habitat assessment did identify potential burrowing owl habitat, including open areas that provide line of sight and suitable burrowing owl burrows. As such, Step II (focused surveys, census, and mapping) was conducted with negative results; however, pre-construction surveys will be required.

4.3 MSHCP Section 6.1.4 Urban/Wildlife Interface Guidelines

According to the MSHCP, the Urban/Wildlands Interface Guidelines are intended to address indirect effects associated with locating development in proximity to the MSHCP Conservation Area (County of Riverside 2003, pp. 6–42). The project site is not within any conserved areas; however, the Henry Conservation Easement is north of the site within Criteria Cell 637 (Figure 5). Furthermore, ephemeral drainages within the study area flow to Box Springs Canyon Wash, which ultimately flows to the Santa Ana River based on surface connectivity. Due to the proposed project being located adjacent to proposed conservation and having connectivity to areas described for conservation, the Urban/Wildlife Interface Guidelines are applicable.

5 Impacts Analysis and Recommendations

This section addresses potential impacts to special-status biological resources that could result from implementation of the proposed project. This section follows the CEQA checklist for biological resources as identified below. For the impacts analysis, the two alternatives of the project site plans were overlaid with biological resources (Figure 7, Project Impacts). Table 2 summarizes the total area of impact used in the impact analysis.

Significance Thresholds

The following are the significance thresholds for biological resources provided in the CEQA Appendix G Environmental Checklist, which states that project activities could potentially have a significant affect if they:

1. **Impact-BIO-1**: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Threshold Bio-1).
2. **Impact-BIO-2:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS (Threshold Bio-2).

3. **Impact-BIO-3:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Threshold Bio-3).
4. **Impact-BIO-4:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites (Threshold Bio-4).
5. **Impact-BIO-5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Threshold Bio-5).
6. **Impact-BIO-6:** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan (Threshold Bio-6).

Table 2. Impacts to Vegetation Communities and Land Covers within the Project Site

Vegetation Community/Land Cover	Alternative 1 Impact Acreage	Alternative 2 Impact Acreage
Vegetation Communities		
Brittlebush Alliance	3.56	3.56
California Annual Grassland Alliance	7.65	7.65
Eucalyptus Alliance	0.19	0.19
Non-Natural Land Covers		
Disturbed Habitat	2.84	2.85
Urban/Developed	0.02	0.04
Total*	**14.26**	**14.30**

* Acreage may not total due to rounding.

5.1 Impact-Bio-1: Special-Status Species

5.1.1 Special-Status Plants

No special-status plant species were detected within the study area; however, two non-listed special-status plant species have a moderate potential to occur within the project site: Plummer's mariposa lily and Parry's spineflower. Plummer's mariposa lily and Parry's spineflower are fully covered under the MSCHP; therefore, compliance with the MSHCP offsets potential direct and indirect impacts to these species.

5.1.2 Special-Status Wildlife

One federally listed threatened species (coastal California gnatcatcher) was detected within the project site; however, this species is a fully covered species under the MSHCP. Therefore, compliance with the MSHCP offsets potential direct and indirect impact to this species.

One federally listed endangered wildlife species (San Bernardino kangaroo rat) has a low potential to occur within the study area and one federally listed endangered and state-listed threatened wildlife species (Stephen's kangaroo rat) has a moderate potential to occur within the study area. San Bernardino kangaroo and Stephen's kangaroo rat are fully covered under the MSCHP; therefore, compliance with the MSHCP offsets potential direct and indirect

impacts to these species. Furthermore, the project is also within the Stephen's Kangaroo Rate Habitat Conservation Plan, which provides take authorization for Stephen's kangaroo rat within its boundaries.

One state fully protected wildlife species (white-tailed kite) has a low potential to nest and moderate potential to forage within the study area. This species is fully covered under the MSCHP; therefore, compliance with the MSHCP offsets potential indirect impacts to this species. There is no take authorization of fully protected species; therefore, impacts to nesting white-tailed kite would be significant. Nests would be avoided as described in Section 5.4.1. With implementation of MM-BIO-2 (Nesting Birds), no significant impacts to nesting white-tailed kite would occur.

In addition, two non-listed special-status species (San Diego banded gecko and loggerheaded shrike) have moderate potential to occur within the study area. Two other non-listed special-status species (red diamond rattlesnake and Blainville's horned lizard) have a high potential to occur within the study area. All of these species are fully covered under the MSCHP; therefore, compliance with the MSHCP offsets potential direct and indirect impacts to this species.

5.1.2.1 Burrowing Owl

The focused burrowing owl surveys concluded that burrowing owls were absent from the project site; however, burrowing owl could move into the project site prior to initiation of construction activities. Direct impacts to burrowing owl would be significant if they occupy the site (Impact-BIO-1). Additionally, if burrowing owl occupy surrounding habitat within 500 feet of construction activities, indirect impacts could be significant. To avoid potential for significant impacts to burrowing owl during construction activities and to remain consistent with the MSHCP, a pre-construction burrowing owl survey should be conducted and avoidance measures implemented if burrowing owl are present (MM-BIO-1, Burrowing Owl Pre-Construction Surveys).

5.2 Impact-Bio-2: Riparian and Special Status Vegetation Communities

There are no special-status vegetation communities as defined by the California Department of Fish and Wildlife within the project site; therefore, the project would not result in direct or indirect impacts to special-status vegetation communities (Impact-Bio-2). The project would result in impacts to riverine resources as defined by the MSHCP and as summarized in Table 3. Impacts to riverine resources are further discussed in Section 4.1, MSHCP Section 6.1.2 Riparian/Riverine Resources, of this report.

Table 3. Permanent Impacts to MSHCP Riverine Resources within the Project Site

Feature	Vegetation Community and/or Land Cover	Alternative 1 MSHCP Riverine Resources (Acres/Linear Feet) *	Alternative 2 MSHCP Riverine Resources (Acres/Linear Feet) *
Drainage 1	Brittlebush (*Encelia farinosa*) Alliance	—	—
	California Annual Grassland Alliance	0.01/38	0.01/76
	Eucalyptus (*Eucalyptus* spp.) Alliance	—	<0.01/24

Table 3. Permanent Impacts to MSHCP Riverine Resources within the Project Site

Feature	Vegetation Community and/or Land Cover	Alternative 1 MSHCP Riverine Resources (Acres/Linear Feet) *	Alternative 2 MSHCP Riverine Resources (Acres/Linear Feet) *
	Disturbed Habitat	—	—
	Urban/Developed	—	—
Drainage 1 MSHCP Riverine Total		*0.01/38*	*0.01/100*
Tributary 1	Brittlebush Alliance	0.02/307	0.02/307
	California Annual Grassland Alliance	0.01/284	0.01/284
	Eucalyptus Alliance	<0.01/82	<0.01/82
Tributary 1 MSHCP Riverine Total		*0.03/674*	*0.03/674*
Drainage 2	Brittlebush Alliance	—	—
	Disturbed Habitat	—	—
Drainage 2 MSHCP Riverine Total		—	—
Tributary 2	Brittlebush Alliance	—	—
Tributary 2 MSHCP Riverine Total		—	—
Grand Total*		**0.04/712**	**0.05/774**

Notes: MSHCP = Multiple Species Habitat Conservation Plan
* Acreage may not total due to rounding.

5.3 Impact-Bio-3: Jurisdictional Waters

Impacts to jurisdictional waters are discussed under separate cover (Dudek 2022).

5.4 Impact-BIO-4: Migratory Birds and Wildlife Corridor/ Nursery Sites

5.4.1 Nesting Birds

Project construction could result in direct and indirect impacts to nesting birds, including the loss of nests, eggs, and fledglings (Impact-BIO-4) if ground-disturbing activities occur during the nesting season (generally February 15 through August 31). Construction activities during this time may result in reduced reproductive success and may violate the federal Migratory Bird Treaty Act and California Fish and Game Code. If construction (including any ground-disturbing activities) occurs during the nesting season, a nesting bird survey must be conducted by a qualified biologist prior to grading activities. If nesting birds are observed within or adjacent to the construction activities, avoidance of active bird nests should occur as determined by the qualified biologist to ensure compliance with these regulations. With implementation of MM-BIO-2 (Nesting Birds), no significant impacts to nesting birds would occur.

5.4.2 Wildlife Corridors and Nursery Sites

The project site currently does not function as a wildlife corridor and does not support any wildlife nursery sites. As a result, implementation of the proposed project would not result in impacts to these resources (Impact-Bio-4).

5.5 Impact-Bio-5: Other Local Ordinances

There are no applicable local ordinances related to biological resources; therefore, the project would be consistent with local ordinances.

5.6 Impact-Bio-6: Habitat Conservation Plans

The project site overlaps both the MSHCP and the Stephens' Kangaroo Rat Habitat Conservation Plan and must be consistent with each of these plans for compliance with Impact-Bio-6.

5.6.1 Western Riverside Multiple Species Habitat Conservation Plan

The project site is within the MSHCP Plan Area and must comply with applicable sections of the MSHCP as well as pay the applicable MSHCP Development Mitigation Fee.

5.6.1.1 MSHCP Section 6.1.2 Riparian/Riverine Resources

As described in Section 4.1 of this letter report, the project site supports riverine resources as defined by the MSHCP. The proposed project would result in the permanent loss of approximately 0.04 acres (Alternative 1) or 0.05 acres (Alternative 2) of MSHCP riverine resources. To remain consistent with the MSHCP, the project must prepare a Determination of Biologically Equivalent or Superior Preservation identifying avoidance, minimization, and mitigation measures for impacts to riverine resources. With implementation of MM-BIO-3 (Determination of Biologically Equivalent or Superior Preservation), the project is consistent with Section 6.1.2 of the MSHCP.

5.6.1.2 MSHCP Section 6.1.4 Urban/Wildlife Interface Guidelines

The project is located adjacent to a proposed conservation area and has connectivity to areas described for conservation; therefore, the Urban/Wildlife Interface Guidelines are applicable. Each of the Urban/Wildlife Interface Guidelines are further discussed below.

- Drainage/Toxics: The proposed project includes the construction of a debris basin and water quality basin. Furthermore, the project will include the development of a stormwater pollution prevention plan. With implementation of these measures, the project would be consistent with these requirements of the MSHCP and no further actions are required.
- Lighting/Noise: The project is located immediately north of existing residential development and adjacent to Morton Road. The project will incorporate a setback consisting of open space within the northern portion of the project site. Therefore, night lighting and noise will not impact existing or future MSHCP Conservation Areas and the project would be consistent with these requirements of the MSHCP.
- Barriers: The project does not include fencing or other barriers that would impede wildlife. Furthermore, the project site does not function as a corridor for wildlife. Additionally, the area is not identified as a wildlife movement corridor by the MSHCP; therefore, the project would be consistent with these requirements of the MSHCP.

- Grading/Land Development: No manufactured slopes extend within existing or planned Conservation Areas; therefore, the project would be consistent with these requirements of the MSHCP.
- Invasives: Invasive species provided in MSHCP Table 6-2 are not to be used in development or restoration plan activities for projects adjacent to conservation areas. As described in MM-BIO-4, the project shall not use invasive species as defined in the MSHCP Table 6-2 within its landscape plan. With implementation of this measure, the project would be consistent with this requirement of the MSHCP.
- Fuel Modification: Weed abatement and fuel modification zones do not encroach into existing or planned Conservation Areas; therefore, the project would be consistent with these requirements of the MSHCP.

With the project design features and mitigation measures, including the development of a debris basin and water quality basin, development of a stormwater pollution prevention plan, and implementation of MM-BIO-4, the project is consistent with Section 6.1.4 of the MSHCP.

5.6.1.3 MSHCP Section 6.3.2 Additional Survey Needs and Procedures

The project does support burrowing owl habitat and burrowing owl have the potential to occupy the site in the future. With implementation of MM-BIO-1, which includes burrowing owl pre-construction surveys, and avoidance and minimization measures if applicable, the project would be consistent with the MSHCP burrowing owl requirements.

5.6.2 Stephens' Kangaroo Rat Habitat Conservation Plan

The project site is within the Stephens' Kangaroo Rat Habitat Conservation Plan boundary. With payment of the Stephens' Kangaroo Rat Habitat Conservation Plan Development Mitigation Fee, the proposed project would be consistent with the Stephens' Kangaroo Rat Habitat Conservation Plan.

6 Avoidance, Minimization, and Mitigation Measures

MM-BIO-1 Burrowing Owl Pre-Construction Surveys

A pre-construction survey shall be conducted for burrowing owl in accordance with the Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area (RCA 2006). In accordance with these instructions, this survey would occur within 30 days prior to ground-disturbance activities. A minimum of one survey site visit within the described time frame prior to disturbance is required to confirm presence or absence of owls on the site. Pre-construction surveys shall be conducted by a qualified biologist. If burrowing owl are present within the survey area, take of active nests shall be avoided as determined by a qualified biologist.

MM-BIO-2 Nesting Birds.

To maintain compliance with the Migratory Bird Treaty Act and California Fish and Game Code, if ground-disturbing and/or vegetation clearance activities are scheduled to occur during the avian nesting season (typically February 15 through August 31), a pre-construction nesting bird survey shall be conducted by a qualified biologist within the project site and a 500-foot buffer around the project site. Surveys shall be conducted within 3 days prior to initiation of activity and shall be conducted between dawn and noon.

If an active nest is detected during the nesting bird survey, avoidance buffers shall be implemented as determined by a qualified biologist. The buffer shall be of a distance to ensure avoidance of adverse effects to the nesting bird by accounting for topography, ambient conditions, species, nest location, and activity type. All nests shall be monitored as determined by the qualified biologist until nestlings have fledged and dispersed or it is confirmed that the nest has been unsuccessful or abandoned.

MM-BIO-3 Determination of Biologically Equivalent or Superior Preservation

Prior to initiating construction activities, the applicant shall prepare and have reviewed by the wildlife agencies a Determination of Biologically Equivalent or Superior Preservation (DBESP) for impacts to riverine habitat in compliance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Section 6.1.2, Protection of Species Associated with Riparian/Riverine areas and Vernal Pools. The DBESP will ensure replacement of any lost functions and values of riparian/riverine habitat as it relates to riverine resources, and will include the following:

- Definition of the project area;
- A written project description, demonstrating why an avoidance alternative is not possible;
- A written description of biological information available for the project site, including the results of resource mapping;
- Quantification of unavoidable impacts to riparian/riverine areas, including direct and indirect effects;
- A written description of project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, minimization, and/or compensation through restoration or enhancement; and
- A finding demonstrating that, although the proposed project would not avoid impacts, with proposed design and compensation measures the project would be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures, based on effects on conserved habitats, effects on least Bell's vireo (*Vireo bellii pusillus*), and/or effects on riparian linkages and function of the MSHCP Conservation Area.

MM-BIO-4 General Avoidance and Minimization Measures

The following avoidance and minimization measures shall be implemented during proposed project construction activities:

- Construction limits along the northern boundary of the proposed project shall be clearly flagged so that adjacent native vegetation is avoided.

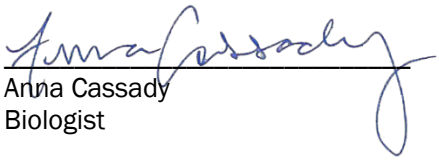
- Staging and storage areas for spoils, equipment, materials, fuels, lubricants, and solvents shall be located within the designated impact area or adjacent developed areas.
- Invasive species identified in Table 6-2 of the Western Riverside County Multiple Species Habitat Conservation Plan shall not be used in development landscape plans or restoration plan activities.

7 Conclusions

The proposed has the potential to impact three special-status biological resources: burrowing owl, Parry's spineflower, and riverine habitat. With implementation of the avoidance, minimization, and mitigation measures described in this report, the project would be consistent with the MSHCP and would result in less than significant impacts to biological resources under CEQA.

If you have any questions regarding this biological resources letter report, please feel free to contact me at acassady@dudek.com or at 951.300.1088.

Sincerely,



Anna Cassady
Biologist

Att.: *Attachment A – Figures*
Attachment B – Site Photographs
Attachment C – Vascular Plant Species
Attachment D – Wildlife Species
Attachment E – Special-Status Plant Species Detected or Potentially Occurring in the Study Area
Attachment F – Special-Status Wildlife Species Detected or Potentially Occurring in the Study Area

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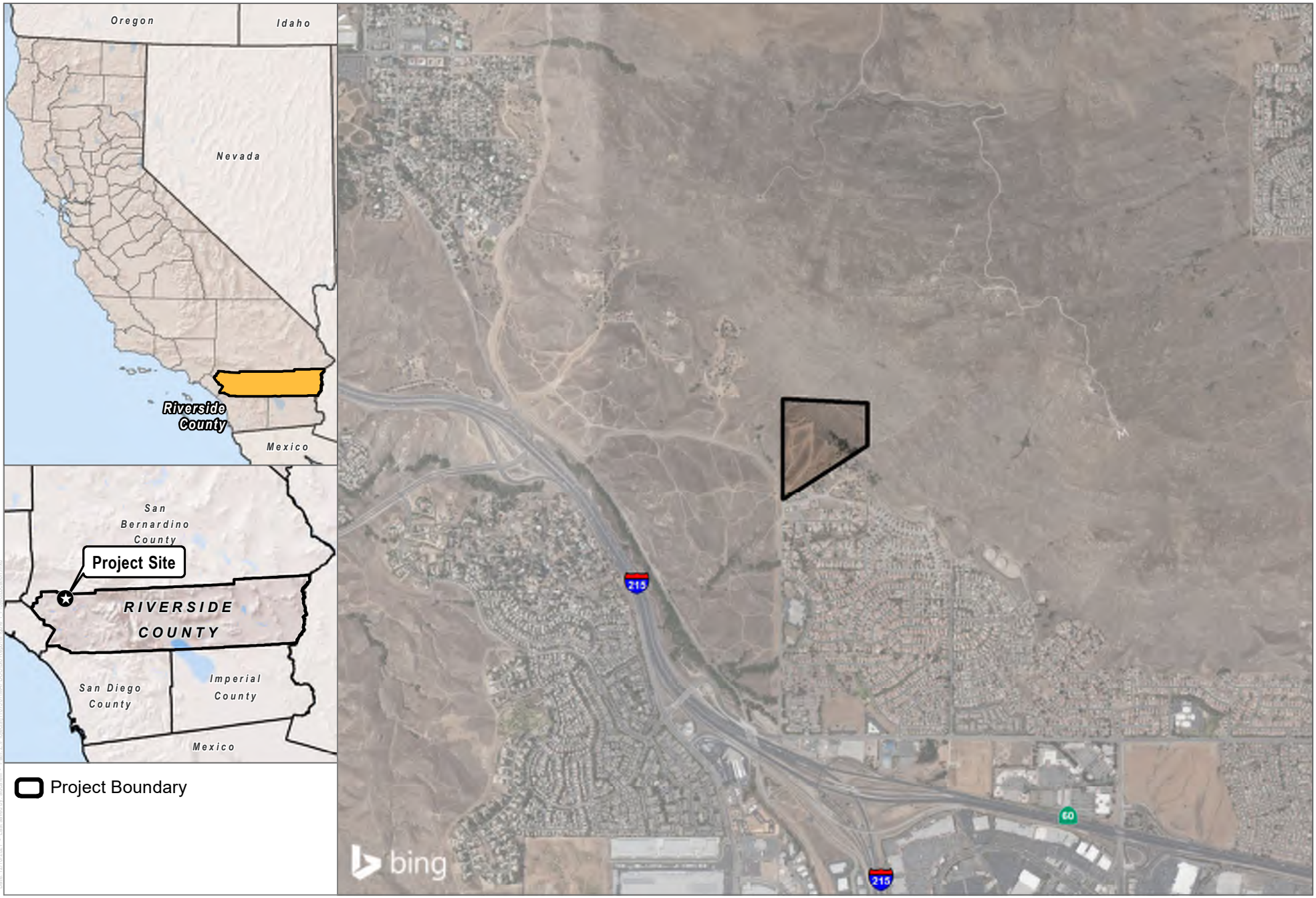
Attachment A

Figures



SOURCE: Bing Maps 2021

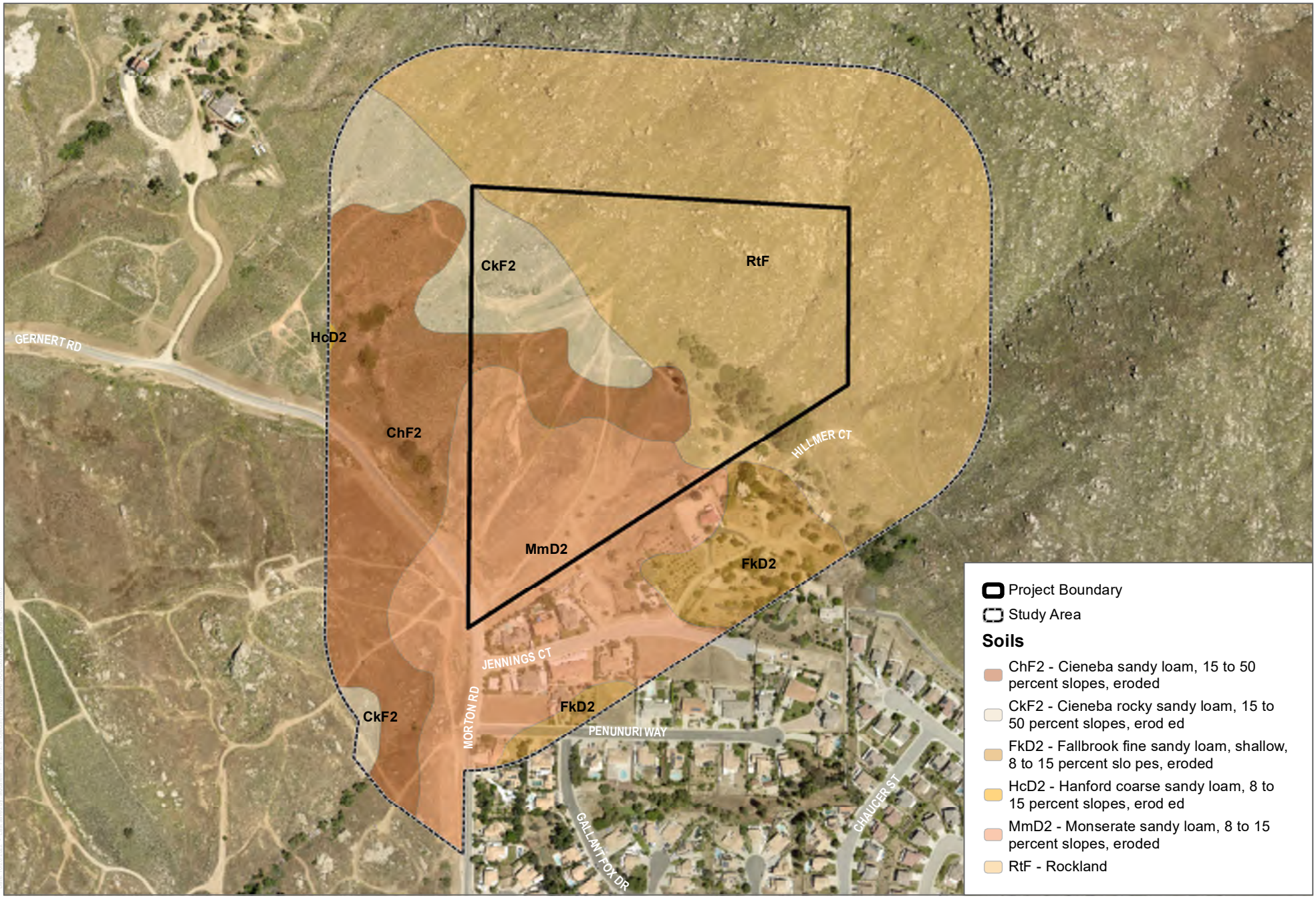
DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, California



SOURCE: USDA NRCS 2021; Riverside Aerial 2020

DUDEK

0 225 450 Feet

FIGURE 2

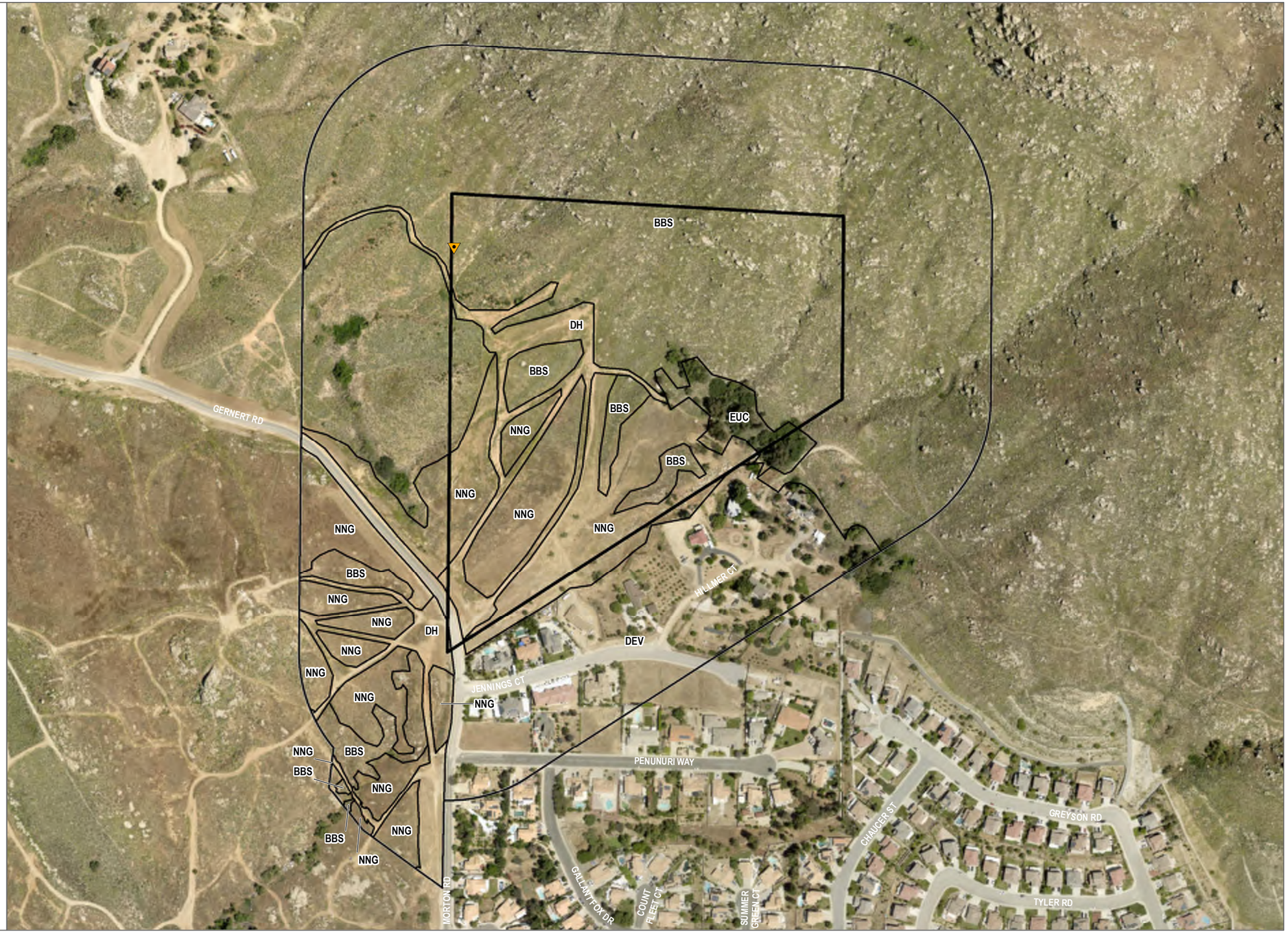
Soils

Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, California

- Project Boundary
- Study Area
- Vegetation Communities and Land Cover Types
  - BBS - Brittlebush Alliance
  - EUC - Eucalyptus Alliance
  - NNG - California Annual Grassland Alliance
  - DEV - Urban/Developed
  - DH - Disturbed Habitat

Special-Status Wildlife Observations

- Coastal California gnatcatcher



SOURCE: Riverside Aerial 2020

DUDEK

0 165 330 Feet

FIGURE 3

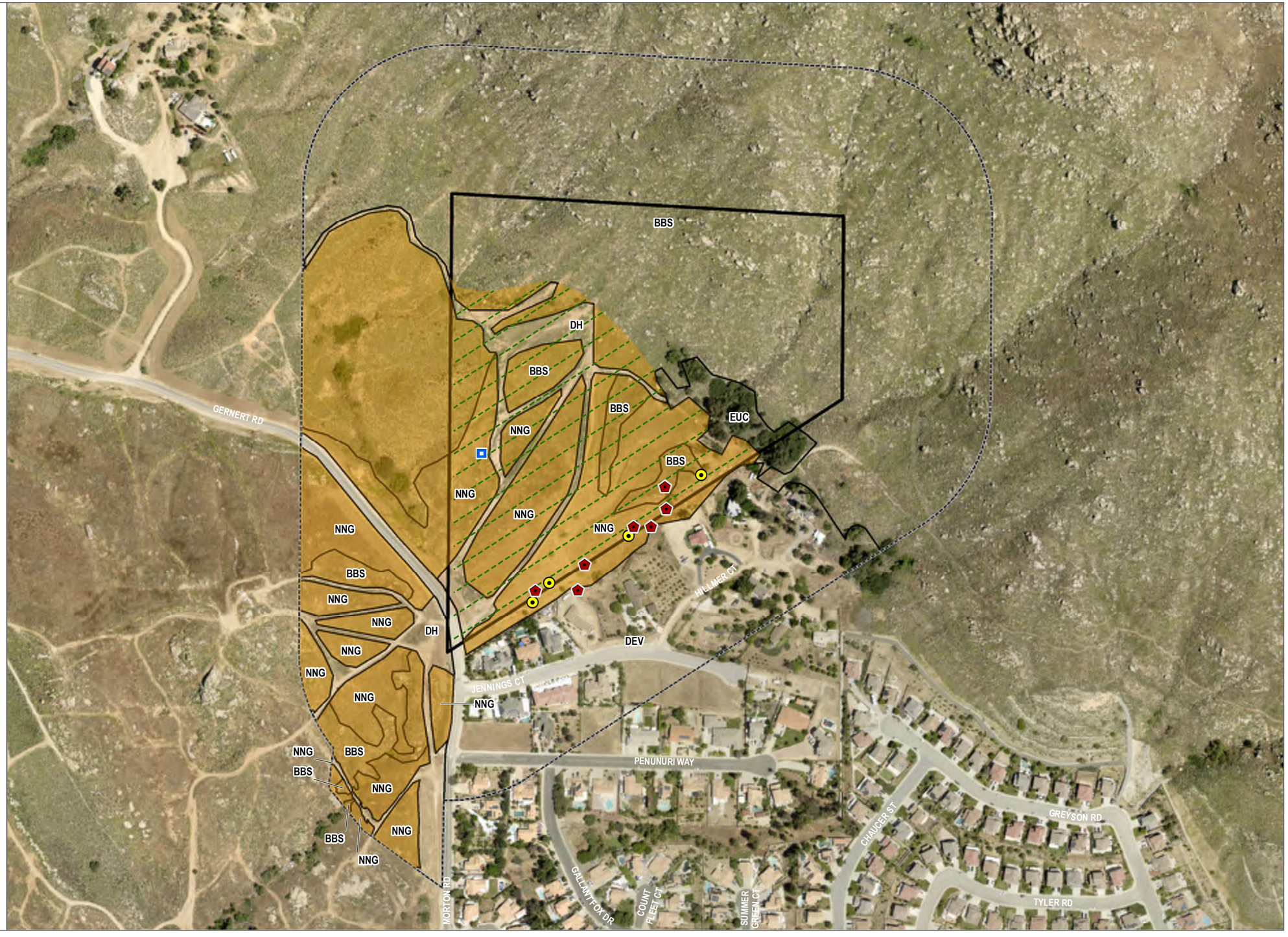
Biological Resources

Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, California

- Project Boundary
- Study Area
- Burrowing Owl Suitable Habitat
- Vegetation Communities and Land Cover Types
  - BBS - Brittlebush Alliance
  - EUC - Eucalyptus Alliance
  - NNG - California Annual Grassland Alliance
  - DEV - Urban/Developed
  - DH - Disturbed Habitat
- Survey Transects

Survey Results

- Burrow
- Erosional Feature
- Rock Outcrop



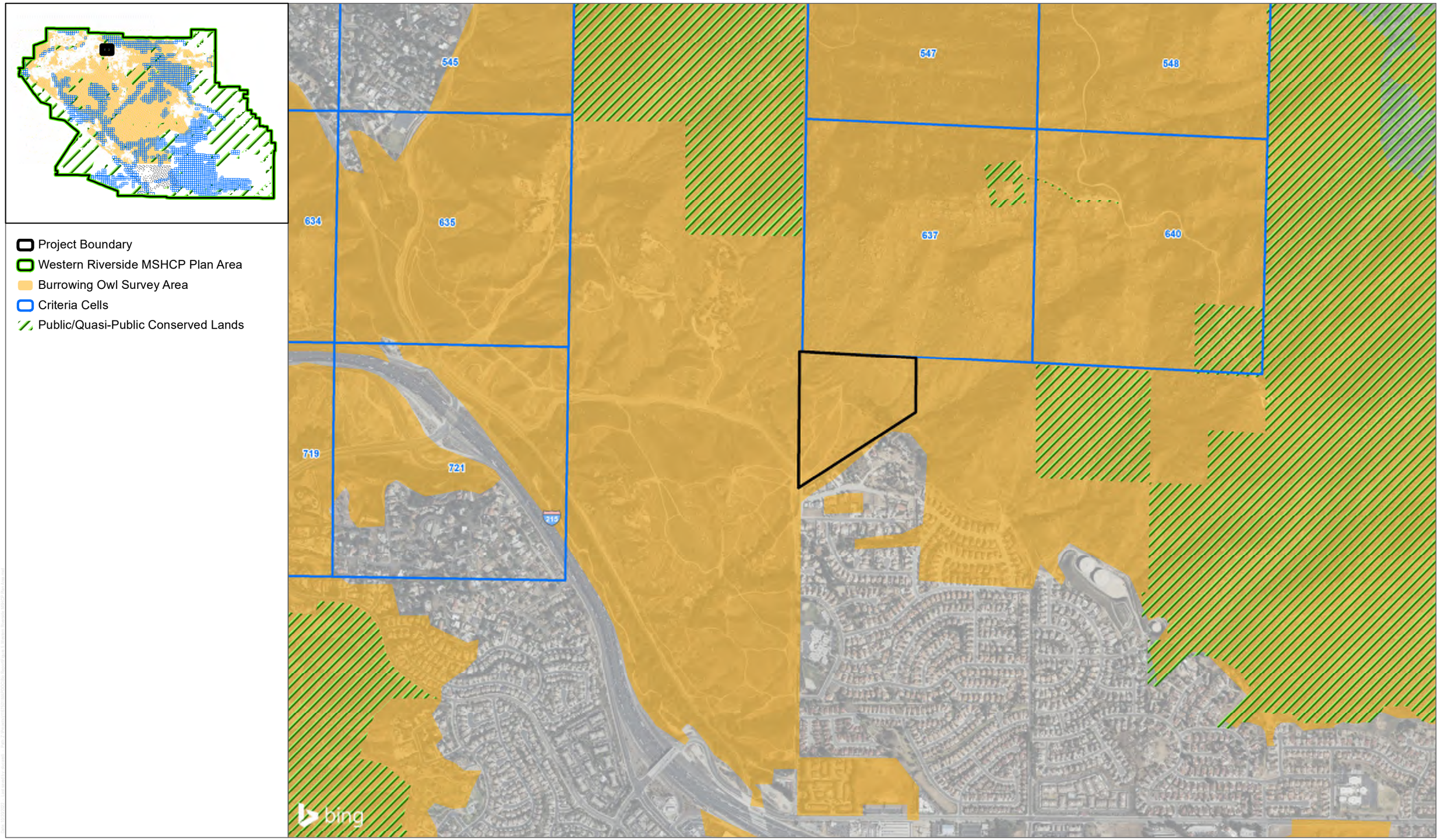
SOURCE: Riverside Aerial 2020

DUDEK 0 165 330 Feet

FIGURE 4

Burrowing Owl Focused Survey Results

Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, California



- Project Boundary
- Western Riverside MSHCP Plan Area
- Burrowing Owl Survey Area
- Criteria Cells
- Public/Quasi-Public Conserved Lands

SOURCE: Bing Maps 2021

DUDEK

0 500 1,000 Feet

FIGURE 5

Western Riverside MSHCP Plan Area

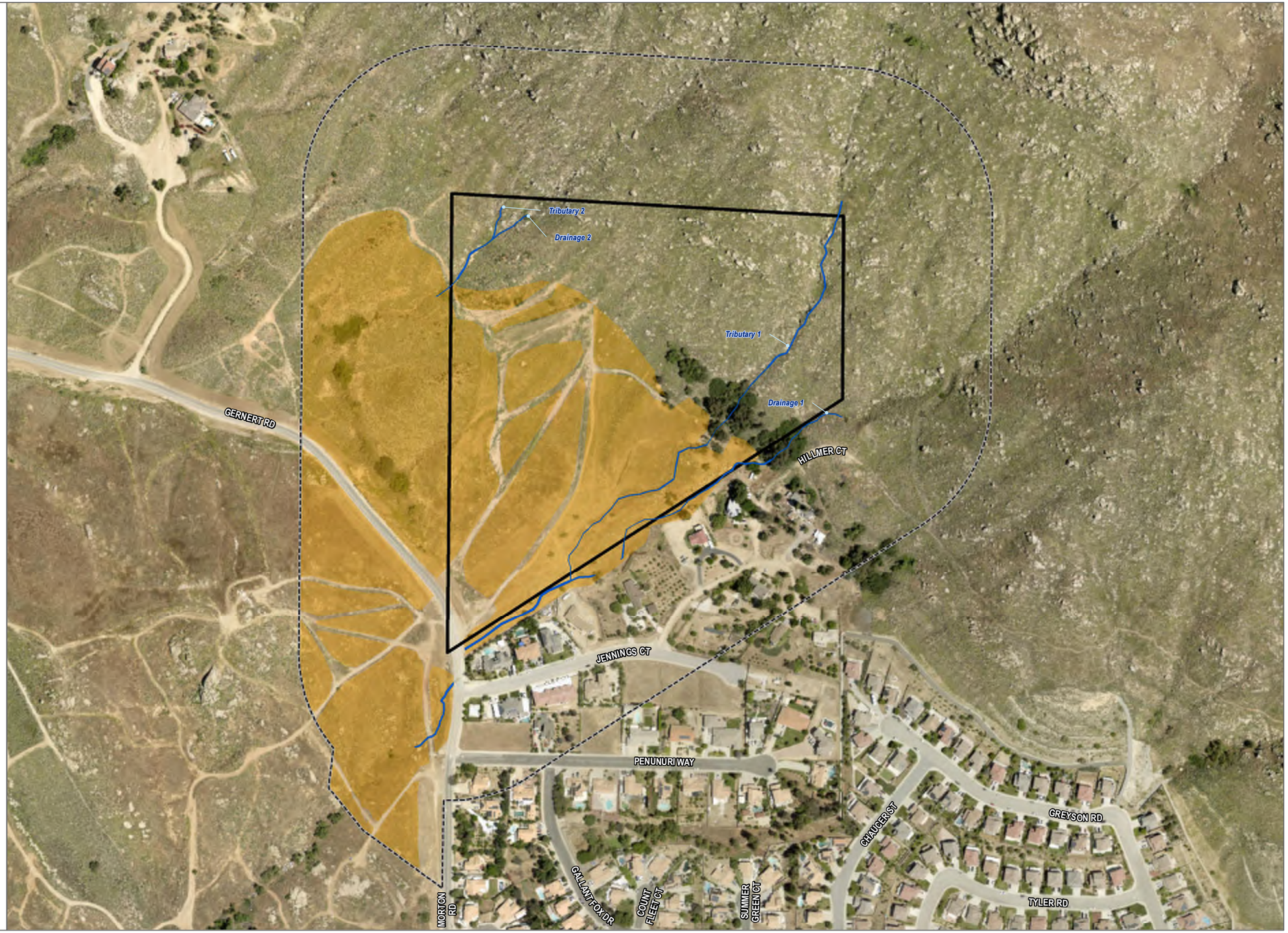
Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, California

Project Boundary

Study Area (500-Foot Buffer)

MSHCP Riverine Resources

Burrowing Owl Suitable Habitat



SOURCE: Bing Maps 2021

DUDEK

0 165 330 Feet

FIGURE 6

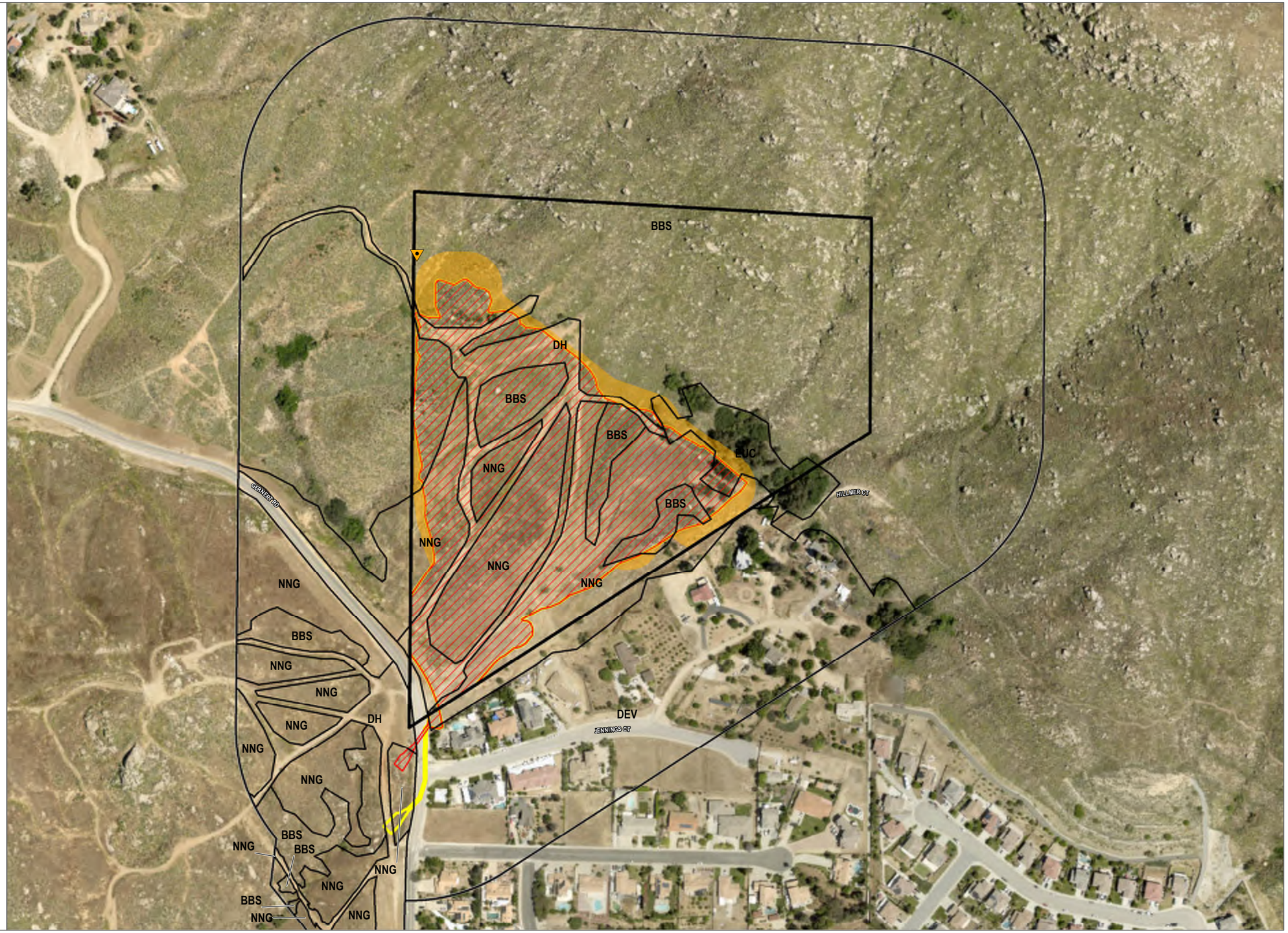
Western Riverside MSHCP Biological Resources

Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, California

- Project Boundary
- Biological Study Area (500-Foot
- Alternative 1 Impacts
- Alternative 2 Impacts
- Fuel Modification Permanent Impacts
- Vegetation Communities and Land Cover Types
  - BBS - Brittlebush
  - EUC - Eucalyptus
  - NNG - California Annual Grassland Alliance
  - DH - Disturbed Habitat
  - DEV - Urban/Developed

Special-Status Wildlife Observations

- Coastal California gnatcatcher



SOURCE: Bing Maps

DUDEK 0 140 280 Feet

FIGURE 7

Project Impacts

Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, California

Attachment B

Photo Documentation

Location 1: View of brittlebush alliance within northern portion of the project site, facing southwest.

Location 2: View of rocky outcrops within the brittlebush alliance within northern portion of the project site, facing northeast.

Location 3: View of eucalyptus alliance within northeastern portion of the project site, facing northeast.

Location 4: View of disturbed habitat (i.e., dirt roads) and erosional features within road, facing south.

Location 5: View of California annual grassland from central portion of the project site, facing west.

Location 6: View of ephemeral drainage within eastern portion of the project site, facing north.

Location 7: View of deeply incised erosional feature within southwestern portion of the project site, facing northeast.

Location 8: View of ponding within the southern portion of the project site on February 22, 2019. A site visit on March 13, 2019 after adequate rains and was confirmed to not hold water for 7 days.

Attachment C

Vascular Plant Species

Eudicots

Vascular Species

ADOXACEAE—MUSKROOT FAMILY

Sambucus nigra ssp. *caerulea*—blue elderberry

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Malosma laurina—laurel sumac

Rhus ovata—sugarbush

* *Schinus molle*—Peruvian peppertree

Toxicodendron diversilobum—poison oak

ASTERACEAE—SUNFLOWER FAMILY

Artemisia californica—California sagebrush

Baccharis salicifolia—mulefat

Corethrogyne filaginifolia—sand-aster

Deinandra fasciculata—clustered tarweed

Encelia farinosa—brittle bush

Helianthus annuus—common sunflower

Pseudognaphalium californicum—ladies' tobacco

* *Sonchus oleraceus*—common sowthistle

BORAGINACEAE—BORAGE FAMILY

Amsinckia intermedia—common fiddleneck

Pectocarya linearis—sagebrush combseed

Phacelia distans—distant phacelia

Phacelia minor—wild canterbury bells

Plagiobothrys collinus—Cooper's popcornflower

BRASSICACEAE—MUSTARD FAMILY

* *Brassica tournefortii*—Tournefort's mustard

* Hirschfeldia incana—shortpod mustard

Lepidium nitidum—shining pepperweed

* *Sisymbrium orientale*—Indian hedgemustard

CACTACEAE—CACTUS FAMILY

Cylindropuntia californica var. *parkeri*—brownspined pricklypear

Opuntia littoralis—coast prickly pear

CHENOPODIACEAE—GOOSEFOOT FAMILY

* *Chenopodium murale*—nettleleaf goosefoot

* *Salsola tragus*—prickly Russian thistle

CONVOLVULACEAE—MORNING-GLORY FAMILY

Calystegia macrostegia—island false bindweed

CUCURBITACEAE—GOURD FAMILY

Marah macrocarpa—Cucamonga manroot

EUPHORBIACEAE—SPURGE FAMILY

Croton setiger—dove weed

Stillingia linearifolia—queen's-root

FABACEAE—LEGUME FAMILY

Lupinus bicolor—miniature lupine

* *Parkinsonia aculeata*—Jerusalem thorn

GERANIACEAE—GERANIUM FAMILY

* *Erodium brachycarpum*—shortfruit stork's bill

* *Erodium cicutarium*—redstem stork's bill

LAMIACEAE—MINT FAMILY

Salvia columbariae—chia

Salvia mellifera—black sage

MALVACEAE—MALLOW FAMILY

* *Malva parviflora*—cheeseweed mallow

MYRTACEAE—MYRTLE FAMILY

* Eucalyptus camaldulensis—river redgum

* *Eucalyptus globulus*—Tasmanian bluegum

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Mirabilis laevis—desert wishbone-bush

ONAGRACEAE—EVENING PRIMROSE FAMILY

Clarkia purpurea—winecup clarkia

Epilobium canum—hummingbird trumpet

Eulobus californicus—California suncup

PAPAVERACEAE—POPPY FAMILY

Eschscholzia californica—California poppy

PLANTAGINACEAE—PLANTAIN FAMILY

* *Plantago lanceolata*—narrowleaf plantain

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

Platanus racemosa—California sycamore

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum fasciculatum var. *polifolium*—California buckwheat

SALICACEAE—WILLOW FAMILY

Salix lasiolepis—arroyo willow

ZYGOPHYLLACEAE—CALTROP FAMILY

* *Tribulus terrestris*—puncturevine

Monocots

Vascular Species

ARECACEAE—PALM FAMILY

* *Washingtonia robusta*—Washington fan palm

POACEAE—GRASS FAMILY

* *Arundo donax*—giant reed
* *Avena barbata*—slender oat
* *Bromus diandrus*—ripgut brome
* *Bromus madritensis*—compact brome
* *Hordeum murinum*—mouse barley
* *Schismus barbatus*—common Mediterranean grass

* signifies introduced (non-native) species

INTENTIONALLY LEFT BLANK

Attachment D
Wildlife Species

Bird

Blackbirds, Orioles and Allies

ICTERIDAE—BLACKBIRDS

Icterus bullockii—Bullock's oriole
Icterus cucullatus—hooded oriole
Sturnella neglecta—western meadowlark

Bushtits

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

Cardinals, Grosbeaks and Allies

CARDINALIDAE—CARDINALS AND ALLIES

Passerina amoena—lazuli bunting
Pheucticus melanocephalus—black-headed grosbeak
Piranga ludoviciana—western tanager

Falcons

FALCONIDAE—CARACARAS & FALCONS

Falco sparverius—American kestrel

Finches

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch
Spinus psaltria—lesser goldfinch

Flycatchers

TYRANNIDAE—TYRANT FLYCATCHERS

Tyrannus verticalis—western kingbird
Tyrannus vociferans—Cassin's kingbird

Hawks

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk

Buteo jamaicensis—red-tailed hawk

Hummingbirds

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna's hummingbird

Jays, Magpies and Crows

CORVIDAE—CROWS AND JAYS

Corvus brachyrhynchos—American crow

Corvus corax—common raven

Mockingbirds and Thrashers

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

Toxostoma redivivum—California thrasher

New World Quail

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

Old World Warblers and Gnatcatchers

SYLVIIDAE—SYLVIID WARBLERS

Polioptila californica californica—coastal California gnatcatcher

Pigeons and Doves

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

Swallows

HIRUNDINIDAE—SWALLOWS

Stelgidopteryx serripennis—northern rough-winged swallow

Wood Warblers and Allies

PARULIDAE—WOOD-WARBLERS

Cardellina pusilla—Wilson's warbler

Setophaga coronata—yellow-rumped warbler

Woodpeckers

PICIDAE—WOODPECKERS AND ALLIES

Dryobates nuttallii—Nuttall's woodpecker

Wrens

TROGLODYTIDAE—WRENS

Salpinctes obsoletus—rock wren

Thryomanes bewickii—Bewick's wren

New World Sparrows

PASSERELLIDAE—NEW WORLD SPARROWS

Melozone crissalis—California towhee

Pipilo maculatus—spotted towhee

Spizella atrogularis—black-chinned sparrow

Zonotrichia leucophrys—white-crowned sparrow

Mammal

Hares and Rabbits

LEPORIDAE—HARES AND RABBITS

Sylvilagus audubonii—desert cottontail

Squirrels

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

Ungulates

CERVIDAE—DEERS

Odocoileus hemionus—mule deer

Reptile

Lizards

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus orcutti—granite spiny lizard

Uta stansburiana—common side-blotched lizard

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Attachment E

Special-Status Plant Species Detected or Potentially Occurring in the Study Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Abronia villosa var. *aurita*	chaparral sand-verbena	None/None/1B.1	None	Chaparral, Coastal scrub, Desert dunes; sandy/annual herb/(Jan)Mar–Sep/ 245–5250	Low potential to occur. The site is located within the species' known elevation range and suitable coastal scrub is present; however, the nearest occurrence is approximately 11.5 miles southeast of the site (CDFW 2019). Furthermore, no genera of *Abronia* was detected during the late February 2019 site visit.
Allium munzii	Munz's onion	FE/ST/1B.1	Narrow Endemic Plant Species	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland; mesic, clay/perennial bulbiferous herb/Apr–May/ 970–3510	Not expected to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, the site lacks suitable clay soils to support this species. This species is restricted to clay soils with the exception of one population document to occur in association with pyroxenite outcrops (County Riverside 2003). The nearest occurrence is approximately 11 miles southwest of the site (CDFW 2019).
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1	Narrow Endemic Plant Species	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial	Not expected to occur. The site is outside of the species' known elevation range. The nearest occurrence is approximately 8 miles west

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
				rhizomatous herb/Apr–Oct/ 65–1360	of the site (CDFW 2019).
Arenaria paludicola	marsh sandwort	FE/SE/1B.1	None	Marshes and swamps (freshwater or brackish); sandy, openings/perennial stoloniferous herb/May–Aug/ 5–560	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Astragalus hornii var. *hornii*	Horn's milk-vetch	None/None/1B.1	None	Meadows and seeps, Playas; lake margins, alkaline/annual herb/May–Oct/195–2790	Not expected to occur. No suitable vegetation or alkaline soils present.
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	FE/None/1B.1	Criteria Area Survey Plant Species	Playas, Valley and foothill grassland (mesic), Vernal pools; alkaline/annual herb/ Apr–Aug/455–1640	Not expected to occur. The site is located within the species' known elevation rang and grasslands are present; however, this species is restricted to highly alkaline, silty-clay soils in association with Traver-Domino-Willow soil association (County of Riverside 2003) which are absent.
Atriplex pacifica	South Coast saltscale	None/None/1B.2	None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/ annual herb/Mar–Oct/0–460	Not expected to occur. The site is outside of the species' known elevation range.
Atriplex parishii	Parish's brittlescale	None/None/1B.1	Criteria Area Survey Plant Species	Chenopod scrub, Playas, Vernal pools; alkaline/annual herb/June–Oct/80–6235	Not expected to occur. No suitable vegetation or alkaline soils present.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/None/1B.2	Criteria Area Survey Plant Species	Coastal bluff scrub, Coastal scrub; alkaline/annual herb/Apr–Oct/30–655	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Berberis nevinii	Nevin's barberry	FE/SE/1B.1	Criteria Area Survey Plant Species	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub; sandy or gravelly/perennial evergreen shrub/(Feb)Mar–June/ 225–2705	Not expected to occur. The site is located within the species' known elevation range, coastal scrub is present, and the nearest occurrence is approximately 4.2 miles west of the site (CDFW 2019); however, species is associated with coarse rocky soils in chaparral and gravelly wash margins in alluvial scrub (County of Riverside 2003) which are absent. Furthermore, this conspicuous evergreen shrub would likely have been detected during the February 2019 site visit.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1	Criteria Area Survey Plant Species	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; often clay/perennial bulbiferous herb/Mar–June/ 80–3675	Not expected to occur. The site is located within the species' known elevation range and coastal scrub and grasslands are present; however, this species is associated with clay, or alkaline silty-clay soils (County of Riverside 2003) which are absent. The nearest occurrence is approximately 12.2 miles southeast of the site (CDFW 2019).
Calochortus plummerae	Plummer's mariposa lily	None/None/4.2	Covered[2]	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous	Moderate potential to occur. The site is located within the species' known elevation

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
				forest, Valley and foothill grassland; granitic, rocky/ perennial bulbiferous herb/ May–July/325–5575	range, suitable vegetation is present and rocky soils derived from granitic sources are present. The nearest occurrence is less than 1 miles north of the site (CDFW 2019).
Carex comosa	bristly sedge	None/None/2B.1	None	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland/ perennial rhizomatous herb/May–Sep/0–2050	Not expected to occur. The site is located within the species' known elevation range and grasslands are present; however, the nearest occurrence is approximately 6.6 miles north of the site and is from 1882 and has been extirpated (CDFW 2019). No other occurrences are recorded within the vicinity (i.e., CNDDB nine-quad search).
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1	Criteria Area Survey Plant Species	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; alkaline/annual herb/Apr–Nov/0–2100	Not expected to occur. The site is located within the species' known elevation range and grasslands are present; however, this species is known to occur on primarily alkaline soils (County of Riverside 2003) which are absent. The nearest occurrence is approximately 2.2 miles south of the site (CDFW 2019).

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/SE/1B.2	None	Coastal dunes, Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/ May–Oct(Nov)/0–100	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Chorizanthe parryi var. *parryi*	Parry's spineflower	None/None/1B.1	Covered[2]	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; sandy or rocky, openings/ annual herb/Apr–June/ 900–4005	Moderate potential to occur. The site is located within the species' known elevation range, suitable vegetation and soils are present, and the nearest occurrence is less than 1 miles north of the site (CDFW 2019).
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2	Covered	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; often clay/annual herb/ Apr–July/95–5020	Not expected to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, this species is often associated with clay soils which are absent. The nearest occurrence is approximately 9.3 miles southwest of the site (CDFW 2019).
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	None/None/2B.2	None	Marshes and swamps (freshwater)/annual vine (parasitic)/July–Oct/45–920	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1	None	Chaparral, Coastal scrub/ perennial stem succulent/ Apr–May/95–490	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Dodecahema leptoceras	slender-horned spineflower	FE/SE/1B.1	Narrow Endemic Plant Species	Chaparral, Cismontane woodland, Coastal scrub (alluvial fan); sandy/annual herb/Apr–June/655–2495	Not expected to occur. The site is located within the species' known elevation range and suitable soils are present; however, species is associated with alluvial fans. The coastal scrub present is not affiliated with an alluvial fan. The nearest occurrence is approximately 6.6 miles north of the site (CDFW 2019).
Dudleya multicaulis	many-stemmed dudleya	None/None/1B.2	Narrow Endemic Plant Species	Chaparral, Coastal scrub, Valley and foothill grassland; often clay/perennial herb/ Apr–July/45–2590	Not expected to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, this species is known to occur on clay soils (County of Riverside 2003) which are absent. The nearest occurrence is approximately 12.4 miles west of the site (CDFW 2019).
Eriastrum densifolium ssp. *sanctorum*	Santa Ana River woollystar	FE/SE/1B.1	Covered	Chaparral, Coastal scrub (alluvial fan); sandy or gravelly/ perennial herb/Apr–Sep/ 295–2000	Not expected to occur. The site is located within the species' known elevation range; however, the site is not located within an alluvial fan and alluvial coastal scrub is not present. The nearest occurrence is approximately 5.6 miles north of the site, associated with the Santa Ana River (CDFW 2019).

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Galium californicum ssp. *primum*	Alvin Meadow bedstraw	None/None/1B.2	Covered[2]	Chaparral, Lower montane coniferous forest; granitic, sandy/perennial herb/ May–July/4425–5575	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	None/None/1A	None	Marshes and swamps (coastal salt and freshwater)/ perennial rhizomatous herb/ Aug–Oct/30–5005	Not expected to occur. No suitable vegetation present.
Horkelia cuneata var. *puberula*	mesa horkelia	None/None/1B.1	None	Chaparral (maritime), Cismontane woodland, Coastal scrub; sandy or gravelly/ perennial herb/Feb–July(Sep)/ 225–2655	Low potential to occur. The site is located within the species' known elevation range and coastal scrub and suitable soils are present; however, the nearest occurrence is approximately 9.5 miles northwest of the site (CDFW 2019). Although a focused survey was not conducted, the February 2019 site visit was conducted during the species' known blooming period and no genera of *Horkelia* were observed.
Imperata brevifolia	California satintail	None/None/2B.1	None	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps (often alkali), Riparian scrub; mesic/ perennial rhizomatous herb/Sep–May/0–3985	Not expected to occur. The site is located within the species' known elevation range and coastal scrub is present; however, the site lacks alkali soils and the nearest occurrence is approximately 10.8 miles northeast of the site (CDFW 2019).

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1	Criteria Area Survey Plant Species	Marshes and swamps (coastal salt), Playas, Vernal pools/ annual herb/Feb–June/ 0–4005	Not expected to occur. No suitable vegetation or vernal pools present. Species is known on Traver, Domino, and Willows soils (County of Riverside 2003) which are absent.
Lycium parishii	Parish's desert-thorn	None/None/2B.3	None	Coastal scrub, Sonoran desert scrub/perennial shrub/ Mar–Apr/440–3280	Not expected to occur. The site is located within the species' known elevation range and coastal scrub is present; however, the nearest occurrence is approximately 10.3 miles north of the site (CDFW 2019) and this conspicuous perennial shrub would likely have been detected during the February 2019 site visit.
Malacothamnus parishii	Parish's bush-mallow	None/None/1A	None	Chaparral, Coastal scrub/ perennial deciduous shrub/ June–July/1000–1495	Not expected to occur. The site is outside of the species' known elevation range.
Monardella pringlei	Pringle's monardella	None/None/1A	None	Coastal scrub (sandy)/annual herb/May–June/980–1310	Not expected to occur. The site is outside of the species' known elevation range.
Nasturtium gambelii	Gambel's water cress	FE/ST/1B.1	None	Marshes and swamps (freshwater or brackish)/ perennial rhizomatous herb/Apr–Oct/15–1085	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Navarretia fossalis	spreading navarretia	FT/None/1B.1	Narrow Endemic Plant Species	Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas,	Not expected to occur. No suitable vegetation or vernal pools present. Species is

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
				Vernal pools/annual herb/ Apr–June/95–2150	known to occur on saline-alkaline soils (County of Riverside 2003) which are absent.
Phacelia stellaris	Brand's star phacelia	None/None/1B.1	Narrow Endemic Plant Species	Coastal dunes, Coastal scrub/ annual herb/Mar–June/ 0–1310	Not expected to occur. The site is outside of the species' known elevation range.
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/None/2B.2	None	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; sandy, gravelly/perennial herb/ (July)Aug–Nov(Dec)/0–6890	Low potential to occur. The site is located within the species' known elevation range and suitable vegetation and soils are present; however, the nearest occurrence is approximately 16.4 miles northwest of the site (CDFW 2019).
Ribes divaricatum var. *parishii*	Parish's gooseberry	None/None/1A	None	Riparian woodland/perennial deciduous shrub/Feb–Apr/ 210–985	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Senecio aphanactis	chaparral ragwort	None/None/2B.2	None	Chaparral, Cismontane woodland, Coastal scrub; sometimes alkaline/annual herb/Jan–Apr(May)/45–2625	Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, this species is often associated with alkaline soils which are absent. The nearest occurrence is approximately 1.5 miles north of the site (CDFW 2019).

Scientific Name	Common Name	Status (Federal/State/CRPR)	MSHCP	Primary Habitat Associations/Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Sidalcea neomexicana	salt spring checkerbloom	None/None/2B.2	None	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; alkaline, mesic/ perennial herb/Mar–June/ 45–5020	Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, this species is often associated with alkaline soils which are absent. The nearest occurrence is approximately 9.2 miles north of the site (CDFW 2019).
Sphenopholis obtusata	prairie wedge grass	None/None/2B.2	None	Cismontane woodland, Meadows and seeps; mesic/ perennial herb/Apr–July/ 980–6560	Not expected to occur. No suitable vegetation present.
Symphyotrichum defoliatum	San Bernardino aster	None/None/1B.2	None	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Valley and foothill grassland (vernally mesic); near ditches, streams, springs/perennial rhizomatous herb/July–Nov(Dec)/5–6695	Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, the site lacks vernally mesic conditions. The nearest occurrence is approximately 9.8 miles east of the site (CDFW 2019).
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	None/None/2B.1	Narrow Endemic Plant Species	Meadows and seeps, Marshes and swamps, Riparian forest, Vernal pools; alkaline/annual herb/May–Sep/15–1425	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

Federal
FE: Federally listed as endangered
FT: Federally listed as threatened

State
SE: State listed as endangered
ST: State listed as threatened
CRPR: California Rare Plant Rank
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Threat Rank
0.1 – Seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat)
0.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
0.3 – Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
MSHCP: Western Riverside County Multiple Species Habitat Conservation Plan
[2] These species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met (MSHCP Table 9-3).

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Attachment F

Special-Status Wildlife Species Detected or Potentially Occurring in the Study Area

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Amphibians					
Rana muscosa	mountain yellow-legged frog	FE/SE, WL	Covered	Lakes, ponds, meadow streams, isolated pools, and open riverbanks; rocky canyons in narrow canyons and in chaparral	Not expected to occur. The study area does not support suitable aquatic habitat to support this species.
Spea hammondii	western spadefoot	None/SSC	Covered	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Low potential to occur. The study area supports grasslands and coastal scrub; however, lacks vernal pools to support this species. Small areas of ponding where observed; however, the survey was conducted immediately following a moderate precipitation event. The nearest occurrence is approximately 2.5 miles east of the site (CDFW 2019).
Reptiles					
Actinemys marmorata	western pond turtle	None/SSC	Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter.	Not expected to occur. The study area does not support suitable aquatic habitat for this species.
Anniella stebbinsi	southern California legless lizard	None/SSC	None	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Low potential to occur. Sparse vegetation and loamy soils are present. The nearest occurrence is approximately 2.5 miles northeast of the site (CDFW 2019).
Arizona elegans occidentalis	California glossy snake	None/SSC	None	Commonly occurs in desert regions throughout Southern California. Prefers open sandy areas with scattered brush. Also found in rocky areas.	Low potential to occur. Open areas with scattered brush and rocky areas are present; however, commonly occur in desert regions. The nearest occurrence is approximately 3.3 miles west of the site (CDFW 2019).

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC	Covered	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Low potential to occur. No suitable chaparral or riparian areas are present. The site supports a minimal amount of Eucalyptus woodland. The nearest occurrence is approximately 4.9 miles south of the site (CDFW 2019).
Coleonyx variegatus abbotti	San Diego banded gecko	None/SSC	Covered	Rocky areas within coastal scrub and chaparral.	Moderate potential to occur. Suitable rocky areas within coastal scrub are present. The nearest occurrence is approximately 5.4 miles north of the site (CDFW 2019).
Crotalus ruber	red diamondback rattlesnake	None/SSC	Covered	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats.	High potential to occur. Suitable vegetation is present and there are numerous known occurrences within 1-mile of the site, with one occurrence overlapping the southwestern portion of the site (CDFW 2019).
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Covered	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats.	High potential to occur. Suitable open areas within coastal scrub and grasslands are present. There is known occurrence that overlaps the site with two other known occurrences within 5 miles of the site (CDFW 2019).
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC	None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites.	Low potential to occur. Shrubby vegetation is present; however, small mammal burrows were not detected during the February 2019 site visit.
Thamnophis hammondii	two-striped gartersnake	None/SSC	None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools.	Not expected to occur. The study area does not support suitable aquatic habitat for this species.

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Birds					
Agelaius tricolor (nesting colony)	tricolored blackbird	None/ST	Covered	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture.	Not expected to occur. The study area does not support freshwater or emergent wetland habitat that would support nesting for this species.
Asio otus (nesting)	long-eared owl	None/SSC	None	Nests in riparian habitat, live oak thickets, other dense stands of trees, edges of coniferous forest; forages in nearby open habitats	Low potential to occur. There is a minimal amount of suitable habitat present (i.e., dense stand of eucalyptus) and the nearest occurrence is approximately 10.7 miles south of the site (CDFW 2019).
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	None/SSC	Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows.	Moderate potential to occur. The study area supports grassland and scrub vegetation communities suitable for this species. However, no California ground squirrels or their burrows were observed on the project site. The project site does contain rock outcrops with marginal interstitial space that could provide refuge for this species. The nearest occurrence is approximately 3.5 miles south of the site (CDFW 2019).
Buteo swainsoni (nesting)	Swainson's hawk	None/ST	Covered	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture.	Low potential to nest; moderate potential to forage. The study area supports a minor amount of woodlands (i.e. eucalyptus) for nesting. Open areas suitable for foraging are present. The nearest occurrence is approximately 5.9 miles west of the site (CDFW 2019).
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT, BCC/SE, WL	Covered	Nests in dense, wide riparian woodlands and forest with well-developed understories.	Not expected to occur. The study area does not contain dense riparian woodlands that would support this species.

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Coturnicops noveboracensis	yellow rail	BCC/SSC	None	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	Not expected to occur. The study area does not contain aquatic habitats or suitable wetland vegetation that would support this species.
Elanus leucurus (nesting)	white-tailed kite	None/FP	Covered	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands.	Low potential to nest; moderate potential to forage. The study area supports a minor amount of woodlands (i.e. eucalyptus) for nesting. Open areas suitable for foraging are present. The nearest occurrence is approximately 11.7 miles east of the site (CDFW 2019).
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE	Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. The study area does not contain dense riparian habitats that would support this species.
Haliaeetus leucocephalus (nesting and wintering)	bald eagle	FD, BCC/SE, FP	Covered	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains.	Not expected to nest or forage. The study area does not support forested areas near aquatic habitat for this species to nest and/or winter.
Icteria virens (nesting)	yellow-breasted chat	None/SSC	Covered	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush.	Not expected to nest or forage. The project site does not contain dense riparian woodlands that would support this species.
Lanius ludovicianus (nesting)	loggerhead shrike	None/SSC	Covered	Nests and forages in open habitats with scattered shrubs, trees, or other perches.	Moderate potential to occur. The project site supports suitable habitat (shrubs with open habitat) for this species to nest. The nearest occurrence is approximately 3 miles south of the site (CDFW 2019).
Laterallus jamaicensis coturniculus	California black rail	BCC/FP, ST	None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. The study area does not contain dense riparian habitats that would support this species.

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Polioptila californica californica	coastal California gnatcatcher	FT/SSC, WL	Covered	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level.	Observed. Two individuals were observed within brittlebush scrub within the northwestern corner of the study area during the site visit conducted on February 22, 2019.
Setophaga petechia (nesting)	yellow warbler	BCC/SSC	Covered	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to occur. The study area does not contain dense riparian or other suitable habitats that would support this species.
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE, WL	Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season.	Not expected to nest or forage. The study area does not contain dense riparian thickets that would support this species.
Fishes					
Catostomus santaanae	Santa Ana sucker	FT/None	Covered	Small, shallow, cool, clear streams less than 7 meters (23 feet) in width and a few centimeters to more than a meter (1.5 inches to more than 3 feet) in depth; substrates are generally coarse gravel, rubble, and boulder	Not expected to occur. The study area does not support aquatic habitat for this species.
Gila orcuttii	arroyo chub	None/SSC	Covered	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud	Not expected to occur. The study area does not support aquatic habitat for this species.
Oncorhynchus mykiss irideus pop. 10	southern steelhead - southern California DPS	FE/None	None	Clean, clear, cool, well-oxygenated streams; needs relatively deep pools in migration and gravelly substrate to spawn	Not expected to occur. The study area does not support aquatic habitat for this species.

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	None/SSC	None	Headwaters of the Santa Ana and San Gabriel Rivers; may be extirpated from the Los Angeles River system	Not expected to occur. The study area does not support aquatic habitat for this species.
Mammals					
Antrozous pallidus	pallid bat	None/SSC	None	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees.	Low potential to roost, moderate potential to forage. The study area supports marginal rocky outcrops and trees for roosting. Open grassland and shrublands present for foraging.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/SSC	Covered	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland.	Low potential to occur. The study area is within the elevation range for this species and supports coastal scrub and annual grassland habitat suitable for this species; however, no small mammal burrows were observed on the project site. The nearest occurrence is approximately 3.1 miles south of the site (CDFW 2018).
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE/SSC	Covered	Sparse scrub habitat, alluvial scrub/coastal scrub habitats on gravelly and sandy soils near river and stream terraces	Low potential to occur. Sparse scrub habitat; however, alluvial habitat near river and stream terraces are absent. The nearest occurrence is approximately 3.3 miles north of the site (CDFW 2018).
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST	Covered	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas.	Moderate potential to occur. The study area is within the elevation range for this species and supports grassland habitat suitable for this species. However, no small mammal burrows were observed on the project site. Two historic occurrences (1988) partially overlap the outer edges of the study area.

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Eumops perotis californicus	western mastiff bat	None/SSC	None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels.	Not expected to roost, moderate potential to forage. No suitable canyons or cliffs are present for roosting. Suitable habitat (coastal scrub) is present for foraging.
Lasiurus xanthinus	western yellow bat	None/SSC	None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms.	Not expected to roost or forage. The study does not contain riparian habitat, desert wash, or palm habitat suitable for this species.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC	Covered	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands.	Low potential to occur. The study area contains open grasslands and coastal scrub suitable for this species; however, the site is located immediately adjacent to an urbanized area. The nearest occurrence is 5.5 miles east of the site (CDFW 2019).
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC	Covered	Coastal scrub, desert scrub, chaparral, cacti, rocky areas.	Low potential to occur. The study area supports suitable coastal scrub and rock habitat for this species; however, no woodrat middens were observed within the project site and the nearest occurrence is approximately 7.8 miles south of the site (CDFW 2019).
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC	None	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with dropoffs, caverns, and buildings.	Not expected to occur. The study area does not support desert riparian or desert wash habitats suitable for this species.

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Onychomys torridus ramona	southern grasshopper mouse	None/SSC	None	Grassland and sparse coastal scrub.	Low potential to occur. The study area supports suitable grassland and coastal habitat for this species. However, no small mammal burrows were observed on the project site. The nearest occurrence is approximately 2.7 miles south of the site (CDFW 2019).
Perognathus longimembris brevinasus	Los Angeles pocket mouse	None/SSC	Covered	Lower-elevation grassland, alluvial sage scrub, and coastal scrub.	Low potential to occur. The study area supports suitable grassland and coastal scrub habitat for this species. However, no small mammal burrows were observed on the project site. The nearest occurrence is approximately 2.9 east of the site (CDFW 2019).
Taxidea taxus	American badger	None/SSC	None	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Low potential to occur. The study area does support sparse grassland habitat with fine sandy soils; however, no small mammal burrows were observed on the project site and the site is located immediately adjacent to an urbanized area.
Invertebrates					
Euphydryas editha quino	quino checkerspot butterfly	FE/None	Covered	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, Antirrhinum coulterianum, and Plantago patagonica (Silverado Occurrence Complex)	Not expected to occur. The study area supports suitable habitat (coastal scrub and grasslands), but lacks cryptogamic crusts or clay soils. Additionally, no known host plants are present on the project site. The nearest occurrence is approximately 11.1 miles south of the site (CDFW 2019).
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	FE/None	Covered	Delhi fine sandy soils and dunes, scrub and ruderal vegetation in the sand verbena series with <50% cover	Not expected to occur. The study area lacks Delhi fine sandy soils to support this species.

Scientific Name	Common Name	Status (Federal/State)	MSHCP	Habitat	Potential to Occur
Streptocephalus woottoni	Riverside fairy shrimp	FE/None	Covered	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. The study area does not support vernal pools suitable for this species; however, the project site contains topographic variation that could lead to pooling and two pools of standing water were detected during the February 2019 site visit. However, these features were visited on March 13, 2019 after adequate rainfall to verify if these features held water for 7 days. The results of this visit confirmed these features were dry and therefore did not hold water for 7 days. These results in conjunction with the soils being well draining and not susceptible to prolonged inundation, this species is not expected to occur. The nearest occurrence is approximately 3.9 miles southeast of the site (CDFW 2019).

Status Legend
Federal
FD: Federally delisted; monitored for 5 years
FE: Federally listed as endangered
FT: Federally listed as threatened
State
FP: CDFW Fully Protected Species
SE: State listed as endangered
ST: State listed as threatened
SSC: California Species of Special Concern
MSHCP: Western Riverside County Multiple Species Conservation Plan

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DUDEK
3615 MAIN STREET, SUITE 103
RIVERSIDE, CALIFORNIA 92501

October 21, 2022 11675

Shizao Zheng
1378 West Zhorgshan Road
Ningbo City, Zhejiang Province
China

Subject: Jurisdictional Waters Delineation Update Report for the Gateway Heights Project, City of Moreno Valley, Riverside County, California

Dear Mr. Zheng:

This report documents the results of an update to a jurisdictional waters delineation for the Gateway Heights Project (project). This report was initially submitted in 2019 but has now been revised with an updated project name, footprint, and impact analysis. The 32.8-acre project site is comprised of Assessor's Parcel Numbers 256-150-001 and 256-040-009, as well as rights-of-way and is located north of Jennings Court and east of Morton Road in Riverside County (Figure 1, Project Location; figures are provided in Attachment A). The proposed project includes the residential development of 108 detached condominium units, parking, open space, utility lines, fuel modification zones, and storm drain lines. The study area consists of the proposed project and a 50-foot buffer. The project also includes an undercrossing beneath Morton Road. The collection system will begin on the east side of Morton Road and consist of a concrete lined drop in the channel bottom and concrete headwall structure to result in no increase to water surface elevation. As a result of negotiations with adjacent landowners, two alternatives for the outlet structure are proposed. In Alternative 1, the outlet structure will cross Morton Road directly across the street from the proposed Project into an existing channel. (Figure 2A, Alternative 1 Site Plan) In Alternative 2, the outfall structure will travel south along Morton Road for approximately 170 feet before depositing into an existing channel on the west side of Morton Road south of its intersection with Jennings Court (Figure 2B, Alternative 2 Site Plan). The headwall and concrete spillway will extend for approximately 40 feet. To aid in reducing downstream erosion, a rip rap apron will extend for an additional 40 feet. Photos of the jurisdictional features are provided in Attachment B.

Development of the project site was previously proposed by Kincaid Development as Tentative Tract 33626, for which a mitigated negative declaration was prepared in accordance with the California Environmental Quality Act (CEQA) and approved by the City of Moreno Valley on December 20, 2007. A Delineation of Jurisdictional Waters and Wetlands report was prepared in October 2007 (Archer 2007) in support of the CEQA document for Tentative Tract 33626. Tentative Tract 33626 has since expired and an updated site plan and CEQA document is being prepared. This letter report serves as an update to the 2007 Delineation of Jurisdictional Waters and Wetlands report and relies upon the 2007 report, provided as Attachment C, for background and existing conditions information.

This letter report is intended to (1) describe the existing conditions of jurisdictional waters within the study area, (2) quantify impacts to jurisdictional waters that would result from implementation of the proposed project, and (3) provide a discussion of potential water resource permits required for construction of the project.

1 Methods

1.1 Literature Review

The following available resources were reviewed to assess the potential for jurisdictional waters: aerial photographs (Google Earth 2019; Historic Aerials 2019); the U.S. Geological Survey 7.5-minute topographic quadrangle (USGS 2019); a Natural Resources Conservation Service soil map (USDA 2019); U.S. Environmental Protection Agency Watershed Assessment, Tracking & Environmental Results System (EPA 2019), which includes the National Hydrography Dataset; and the National Wetland Inventory (USFWS 2019).

The 2007 Delineation of Jurisdictional Waters and Wetlands was reviewed and relied upon for background and existing conditions information and is included within Attachment C of this report.

1.2 Jurisdictional Delineation

On February 22, 2019, Dudek biologists Anna Cassady and Britney Strittmater updated a delineation of jurisdictional waters within the proposed project, including a 50-foot buffer (study area), where access was available. Dudek Biologist Tracy Park conducted a biological survey of the study area associated with Alternative 2 on September 21, 2022, from 1:30 p.m. to 3:25 p.m. The study area was surveyed on foot and was surveyed for the following types of features:

- Waters of the United States, including wetlands, under the jurisdiction of the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the federal Clean Water Act
- Waters of the state under the jurisdiction of the California Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the federal Clean Water Act and the Porter-Cologne Water Quality Control Act, as wetlands or drainages
- Streambeds under the jurisdiction of the California Department of Fish and Wildlife (CDFW), pursuant to Section 1602 of the California Fish and Game Code

Non-wetland waters of the United States were delineated based on the presence of an ordinary high water mark (OHWM) as determined using the methodology in A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008a). The 2015 Clean Water Rule excludes "erosional features, including gullies, rills, and ephemeral features such as ephemeral streams that do not have bed and banks and ordinary high water mark" as "Waters of the United States" (80 FR 37053). Wetland waters of the United States were delineated based on methodology described in the 1987 Corps of Engineers Wetland Delineation Manual (USACE 1987) and the USACE Regional Supplement (USACE 2008b). Pursuant to the federal Clean Water Act, wetland waters of the United States include those supporting all three wetlands criteria described in the USACE manual: hydric soils, hydrology, and hydrophytic vegetation.

Areas regulated by the RWQCB are generally coincident with waters of the United States regulated by the USACE, but can also include isolated waters of the state that have evidence of surface water inundation pursuant to the state Porter-Cologne Water Quality Control Act. Isolated features are delineated at the OHWM, at the outer limits of hydrophytic vegetation, or at the outer rim of depressional features if relevant. The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Water Resources Control Board

2019) also implements the three parameters criteria (hydric soils, hydrology, and hydrophytic vegetation) for delineating wetland waters of the state.

Streambeds are typically delineated from top of bank to top of bank or the extent of associated riparian vegetation beyond the top of bank. For shallow drainages and washes that do not support riparian vegetation, the top-of-bank measurement may be the same as the OHWM measurement.

A map of the jurisdictional waters from the Delineation of Jurisdictional Waters and Wetlands prepared by Linda Archer in 2007 was reviewed in the field (Attachment C). All features mapped were reviewed and the project footprint was walked on foot to confirm jurisdictional waters mapped matched existing conditions. Updates to the boundaries of jurisdictional waters were made based on current existing conditions. Since none of the features meet the minimum criteria for wetland vegetation or hydrology, soils were not sampled. Photos of the jurisdictional features were taken in accordance with USACE guidelines and are provided in Attachment B.

2 Results of Survey

In 2007, as described in the Delineation of Jurisdictional Waters and Wetlands report (Attachment C), five features within the project site were determined to be jurisdictional waters: Drainage 1, Tributary 1, and Seeps 1 through 3. The 2007 report determined Drainage 1 to be waters of the United States under the jurisdiction of USACE, RWQCB, and CDFW. Tributary 1 was determined to be waters of the State under the jurisdiction of RWQCB and CDFW based on a significant nexus analysis. Three seeps were determined to be isolated waters under the jurisdiction of RWQCB. A non-jurisdictional upland swale was also mapped within the project site.

As further described below, Drainage 1 and Tributary 1 were identified within the study area during the 2019 survey and determined to be waters of the United States under the jurisdiction of USACE, RWQCB, and CDFW. The three seeps were not present at the time of the 2019 survey. Two features, Drainage 2 and Tributary 2, which were not delineated in 2007 as they were outside the impact area, were mapped during the 2019 survey as waters of the United States. Finally, several swales and erosional features were identified within the study area and determined to not be jurisdictional waters.

The 2019 limits of jurisdictional waters are provided in Figure 2, Jurisdictional Delineation. Representative photos are provided in Attachment B. Table 1 provides an acreages list of jurisdictional waters.

2.1 Jurisdictional Waters

Drainage 1

As discussed in the Delineation of Jurisdictional Waters and Wetlands report (Attachment C), Drainage 1 is an ephemeral drainage occurring along the southeastern project boundary. It originates off site in the hills to the northeast and flows southwest, meandering on and off site and ultimately flowing off site at the southwest corner of the project boundary and connecting to Box Springs Canyon Wash approximately 0.5 miles southwest of the study area. An OHWM is evident throughout most of the natural channel characterized by absence of vegetation, defined bed/bank, sediment deposition, and debris wracking. Within upstream portions of the channel the OHWM becomes obscured for short distances and includes evidence of sheet flow. Consistent with the 2007 delineation, an OHWM is not evident at the southern tip of the project, just north of Morton Road. Flows continue off site as sheetflow south along the west side of Morton Road. Flows

cross Morton Road following road-grading contours as discussed in Attachment C, ultimately connecting to Box Springs Canyon Wash, which flows to the Santa Ana River. The OHWM averages 1 to 6 feet in width.

Scattered vegetation throughout the drainage included upland species such as common Mediterranean grass (*Schismus barbatus*), bromes (*Bromus* spp.), redstem stork's bill (*Erodium cicutarium*), cheeseweed mallow (*Malva parviflora*), common fiddleneck (*Amsinckia intermedia*), and Tournefort's mustard (*Brassica tournefortii*). A single mulefat (*Baccaris salififolia*; Facultative [FAC]) and two California sycamores (*Platanus racemosa*; FAC) were observed within the downstream portions of the channel; however, these were not dominant species and did not meet the hydrophytic vegetation criteria to be considered a wetland.

Drainage 1 supports an OHWM and connects to Box Springs Canyon Wash, which ultimately flows to the Santa Ana River, which continues west, flowing into the Pacific Ocean. Based on the presence of OHWM indicators and connectivity to a waters of the United States, Drainage 1 was determined to be non-wetland waters of the United States under the jurisdiction of the USACE and RWQCB, and a streambed under the jurisdiction of CDFW.

Tributary 1

Tributary 1, a tributary to Drainage 1, is an unvegetated ephemeral drainage. In 2007, this feature was observed to originate on site immediately south of the eucalyptus (*Eucalyptus spp.*) alliance. However, the 2019 delineation observed OHWM indicators approximately 120 feet northeast of the eucalyptus alliance. Due to the steep topography, the remainder of this feature was mapped based on topography to the northeastern end of the project boundary. This feature appears to originate off site in the hills to the northeast, flowing northeast to southwest and connecting to Drainage 1 within the southern portion of the project site. An intermittent OHWM is evident throughout most of the natural channel based on bed/bank, absence of vegetation, sediment deposition, and some shelving. There is an area where the OHWM became obscured for a short distance just south of the eucalyptus alliance where it appears some disturbance has occurred resulting in a dirt path. This area includes evidence of sheet flow; however, the OHWM becomes more defined within the brittlebush (*Encelia farinosa*) alliance immediately south. Due to this feature being mapped for a shorter distance in 2007, it appears to have become more defined over time. The OHWM averages 1 to 4 feet in width. Scattered vegetation throughout the drainage included upland species such as bromes, redstem stork's bill, and common fiddleneck.

Tributary 1 supports an OHWM and connects to Box Springs Canyon Wash, which ultimately flows to the Santa Ana River, which continues west, flowing into the Pacific Ocean. As previously mentioned, the 2007 delineation determined Tributary 1 to be a waters of the state under the jurisdiction of RWQCB and CDFW, based on this feature being a second order tributary with no significant nexus. Since the 2007 delineation, changes have been implemented with respect to processing of jurisdictional determination. This delineation report is being prepared consistent with a Preliminary Jurisdictional Determination that does not include a significant nexus analysis. Therefore, based on the presence of OHWM indicators and connectivity to waters of the United States, Tributary 1 was determined to be non-wetland waters of the United States under the jurisdiction of the USACE and RWQCB, and a streambed under the jurisdiction of CDFW.

Drainage 2

This feature was not mapped during the 2007 delineation due to it being outside of the development footprint. Drainage 2 is an ephemeral drainage located within the northwestern portion of the study area. This feature appears to originate to the northeast, outside of the study area, within Box Springs Mountain. Flows continue southwest outside of the study area for approximately 820 feet, continuing to flow as sheetflow west along Morton Road. Flows cross Morton Road and

continue to flow west 0.45 miles under the railroad tracks through a culvert into Box Springs Canyon Wash. An OHWM is evident throughout most of the natural channel based on absence of vegetation, defined bed/bank, sediment deposition, shelving, and debris wracking. The OHWM averages 1 to 5 feet in width. The banks of the streambed were incised banks between 2 and 3 feet in height. Dominant vegetation outside of the OHWM included brittlebush.

Drainage 2 supports an OHWM and connects to Box Springs Canyon Wash, which ultimately flows to the Santa Ana River, which continues west, flowing into the Pacific Ocean. Based on the presence of OHWM indicators and connectivity to waters of the United States, Drainage 1 was determined to be potential non-wetland waters of the United States under the jurisdiction of the USACE and RWQCB, and a streambed under the jurisdiction of CDFW.

Tributary 2

This feature was not mapped during the 2007 delineation. Tributary 2 is located within the northwestern portion of the study area, originating from runoff from Box Springs Mountain. This feature is an unvegetated ephemeral drainage flowing northeast to southwest, originating off site and conveying flows to Drainage 2 within the northwest portion of the study area. The northern portion of this feature appears more erosional with deeply incised vertical banks approximately 3 feet in height; however, an intermittent OHWM is evident throughout most of the natural channel due to absence of vegetation, defined bed/bank, sediment deposition, and some debris wracking. There is an area where the OHWM became obscured for a short distance just west of the project site where it sheetflows across the dirt road; however, the OHWM becomes more defined within the brittlebush alliance immediately west. The OHWM averages 3 feet in width. Vegetation observed outside of the OHWM included brittlebush.

Tributary 2 supports an OHWM and connects to Box Springs Canyon Wash, which ultimately flows to the Santa Ana River, which continues west, flowing into the Pacific Ocean. Based on the presence of OHWM indicators and connectivity to waters of the United States, Tributary 2 was determined to be potential non-wetland waters of the United States under the jurisdiction of the USACE and RWQCB, and a streambed under the jurisdiction of CDFW.

2.2 Non-Jurisdictional Features

Upland Swales

An upland swale was mapped and discussed in the Delineation of Jurisdictional Waters and Wetlands report (Attachment C). This upland swale, hereafter referred to as Upland Swale 1, is described as a round-bottom feature with no OHWM. This feature appears to have become more incised and erosional since the 2007 delineation, with incised vertical banks approximately 2 to 3 feet in height. Runoff from a disturbed trail/road to the north appears to be contributing to the erosional nature of this feature and runoff conveyed by this feature terminates as sheetflow before reaching Tributary 1. Dense vegetation growth along the banks obscures this feature; this vegetation is comprised of brittlebush, common fiddleneck, and Tournefort's mustard. Based on its characteristics as an erosional feature, this feature is not considered jurisdictional waters under USACE, RWQCB, or CDFW.

Upland Swale 2 was not mapped during the 2007 delineation. This feature is a round-bottom topographic feature and does not contain OHWM indicators; therefore, this feature is not considered to be jurisdictional waters under USACE, RWQCB, or CDFW.

Erosional Features

The study area contains five erosional features. Erosional Features 1, 2, 3, and 4 are located within the central portion of the study area and appear to be associated with the natural topography of the site in conjunction with the dirt roads present; they appear to flow northeast to southwest. These features are deeply incised with vertical shelves averaging 2 to 3 feet in height. Erosional Feature 5 is located within the northwestern portion of the study area. Runoff from Box Springs Mountain appears to be contributing to this feature, directing flows northeast to southwest. It is approximately 1 foot wide with vertical shelves average 2 feet in height.

Erosional features are not considered to be jurisdictional waters under USACE, RWQCB, or CDFW.

Seeps

Three seeps were identified during the 2007 jurisdictional delineation, two within the project site and one off site. The jurisdictional delineation update did not locate any of these features during the February 2019 site visit. The approximate locations of the seeps were investigated and no saturation, standing water, or hydrophytic vegetation such as cattails (*Typha* spp.) or arroyo willow (*Salix laseolepis*) were observed. It is presumed that due to the time elapsed since the 2007 delineation and extended drought conditions, these areas are no longer supporting a high enough groundwater table to support hydrophytic vegetation or hydrology. Furthermore, the area received above average rainfall, with 3.78 inches of rain in February 2019. Specifically, the Riverside weather station located just southwest of the Interstate 215 and State Route 60 interchange received 1.10 inches on February 15, 2019, and 1.39 inches on February 14, 2019 (NRCS 2019). Based on this, it would have been evident if any depressions capable of retaining water were present. Therefore, it assumed the three seeps identified in 2007 are no longer present.

2.3 Jurisdictional Delineation Conclusion

The results of the updated jurisdictional delineation concluded there are approximately 0.29 acres of potential non-wetland waters of the United States under the jurisdiction of USACE and the RWQCB, and a streambed under the jurisdiction of CDFW. Table 1 summarizes the total acreage of these features within the study area. The features are depicted on Figure 2.

Table 1. Summary of Jurisdictional Waters within the Study Area

Feature	Vegetation Community and/or Land Cover	Non-Wetland Waters of the United States and State (USACE/RWQCB/CDFW) (Acres/Linear Feet)	Total Acreage/ Linear Feet*
Drainage 1	Brittlebush (*Encelia farinosa*) Alliance	0.01/210	0.01/210
	California Annual Grassland Alliance	0.12/1,316	0.12/1,316
	Eucalyptus (*Eucalyptus* spp.) Alliance	0.01/188	0.01/188
		Drainage 1 USACE/RWQCB/CDFW Total	*0.15/1,714*

Table 1. Summary of Jurisdictional Waters within the Study Area

Feature	Vegetation Community and/or Land Cover	Non-Wetland Waters of the United States and State (USACE/RWQCB/CDFW) (Acres/Linear Feet)	Total Acreage/ Linear Feet*
Tributary 1	Brittlebush Alliance	0.08/1,054	0.08/1,054
	California Annual Grassland Alliance	0.02/415	0.02/415
	Eucalyptus Alliance	0.01/250	0.01/250
		Tributary 1 USACE/RWQCB/CDFW Total	*0.11/1,720*
Drainage 2	Brittlebush Alliance	0.03/406	0.03/406
	Disturbed Habitat	<0.01/17	<0.01/17
		Drainage 2 USACE/RWQCB/CDFW Total	*0.03/423*
Tributary 2	Brittlebush Alliance	0.01/112	0.01/112
		Tributary 2 USACE/RWQCB/CDFW Total	*0.01/112*
		Grand Total*	**0.29/4,014**

Notes:
* Acreage may not total due to rounding.
USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife.

3 Impacts

The proposed project would construct a new residential development that would result in permanent impacts from construction of new residential homes and associated infrastructure. All potentially jurisdictional waters within the impact footprint were considered permanently impacted. No temporary impacts would result from the proposed project.

The permanent impacts to potential jurisdictional waters are summarized in Table 2 and depicted on Figure 3, Project Impacts. According to the draft Project Specific Water Quality Management Plan (Sikand Engineering Associates 2019), flows from Tributary 1, in addition to runoff from Box Springs Mountain, will be directed to a debris basin located within the northern portion of the proposed development. Stormwater within the project site will be directed and discharged into a water quality basin at the southwest corner of the project site.

The project also includes a 100-foot fuel modification zone that will protect most of the development units. In areas where the fuel modification zone encroaches on jurisdictional waters, the fuel modification zone would be modified to avoid direct impacts to these resources (Dudek 2021).

Table 2. Permanent Impacts to Jurisdictional Waters within the Project Site

Feature	Vegetation Community and/or Land Cover	Alternative 1 Non-Wetland Waters of the United States and State (USACE/RWQCB/ CDFW) (Acres/Linear Feet) *	Alternative 2 Non-Wetland Waters of the United States and State (USACE/RWQCB/ CDFW) (Acres/Linear Feet) *
Drainage 1	Brittlebush (*Encelia farinosa*) Alliance	—	—

Table 2. Permanent Impacts to Jurisdictional Waters within the Project Site

Feature	Vegetation Community and/or Land Cover	Alternative 1 Non-Wetland Waters of the United States and State (USACE/RWQCB/ CDFW) (Acres/Linear Feet) *	Alternative 2 Non-Wetland Waters of the United States and State (USACE/RWQCB/ CDFW) (Acres/Linear Feet) *
	California Annual Grassland Alliance	0.01/38	0.01/76
	Eucalyptus (*Eucalyptus* spp.) Alliance	—	<0.01/24
	Disturbed Habitat	—	—
	Urban/Developed	—	—
Drainage 1 USACE/RWQCB/CDFW Total		*0.01/38*	*0.01/100*
Tributary 1	Brittlebush Alliance	0.02/307	0.02/307
	California Annual Grassland Alliance	0.01/284	0.01/284
	Eucalyptus Alliance	<0.01/82	<0.01/82
Tributary 1 USACE/RWQCB/CDFW Total		*0.03/674*	*0.03/674*
Drainage 2	Brittlebush Alliance	—	—
	Disturbed Habitat	—	—
Drainage 2 USACE/RWQCB/CDFW Total		—	—
Tributary 2	Brittlebush Alliance	—	—
Tributary 2 USACE/RWQCB/CDFW Total		—	—
	Grand Total*	**0.04/712**	**0.05/774**

Notes:
* Acreage may not total due to rounding.
USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife.

4 Conclusion

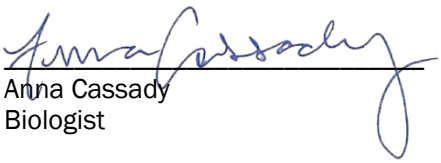
The proposed project includes the residential development of Gateway Heights and other project activities would impact jurisdictional waters.

The USACE requires a permit pursuant to Section 404 of the Clean Water Act (404 permit) prior to discharging fill into waters of the United States. Impacts associated with residential development projects are covered under Nationwide Permit 29, so long as impacts do not exceed 0.5 acres of waters of the United States. A pre-construction notification to the USACE is required for use of Nationwide Permit 29. A Water Quality Certification is required from the RWQCB pursuant to Section 401 of the Clean Water Act (401 Certification) for any federal action, including a

404 permit; therefore, an application for a 401 Certification must be submitted to the RWQCB. A notification of a Streambed Alteration Agreement to CDFW is also required prior to modification of jurisdictional streambeds. Mitigation will be required for permanent loss of waters or functions and values of waters.

Should you have any questions regarding this report or require additional information, please do not hesitate to contact me at 951.300.1088 or acassady@dudek.com.

Sincerely,



Anna Cassady
Biologist

Att.: *Attachment A – Figures*
Attachment B – Site Photos
Attachment C – Delineation of Jurisdictional Waters and Wetlands

5 References

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Attachment A

Figures

Attachment B

Site Photos

Attachment C

Delineation of Jurisdictional Waters and Wetlands

July 6, 2021

Jason Ackerman
Ackerman Law PC
3200 E. Guasti Road, Suite 100
Ontario, California 91761

VIA EMAIL
Jason.ackerman@ackermanlawpc.com

Subject: Results of Special Status Plant Surveys for the Gateway Heights Project in the City of Moreno Valley, Riverside County, California

Dear Mr. Ackerman:

This Letter Report presents the findings of special status plant surveys conducted in 2021 for the Gateway Heights Project (hereinafter referred to as "the Project"). The Project is located in an area that does not require focused surveys for Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Criteria Area or Narrow Endemic plant species. Pursuant to Mitigation Measure BIO-2 in the *Biological Resources Letter Report and MSHCP Consistency for Tentative Tract 37557, City of Moreno Valley, Riverside County, California* (Dudek 2019), focused surveys are required for Plummer's mariposa-lily (*Calochortus plummerae*) and Parry's spineflower (*Chorizanthe parryi* var. *parryi*). .

PROJECT LOCATION AND DESCRIPTION

The Project site is located approximately one mile north of the interchange between State Route 60 (SR-60) and Interstate 2015 (I-215) in the City of Moreno Valley in Riverside County, California (Figure 1). It is approximately 110 feet north of Jennings Court and immediately east of Morton Road. It is bounded on the north and west property lines by the Riverside County jurisdictional border. It is comprised of Tax Assessor Parcel Number 256-150-001. The Project site is depicted on the U.S. Geological Survey's (USGS') Riverside East 7.5-minute quadrangle at Township 2 South, Range 4 West, Section 34 (Figure 2).

The Project involves construction of a total of 108 detached condominium units on 17.30 acres of the 32.70-acre Project site. The dwelling units would be organized in thirteen "clusters" of between eight and ten units each. The Project also includes a 3.1-acre park, detention basins, internal roads, public utilities, and a 100-foot-wide fuel modification zone along the northern and eastern boundaries of the Project site. The remaining 15.40 acres of the Project site would be rezoned to Open Space and dedicated as conservation land.

ENVIRONMENTAL SETTING

Topography consists of relatively steep slopes in the northeast half of the Project site with gentler slopes in the southwest corner. Elevations range from approximately 1,590 feet above mean sea level (msl) in the southwest corner to 2,080 feet above msl in the northeast corner. Several erosional features with deeply incised banks occur throughout the Project site and are the result of sheet flow off Box Springs Mountain. Soils mapped on the Project site include

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Cieneba sandy loam, 15 to 50 percent slopes, eroded; Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded; Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded; Monserate sandy loam, 8 to 15 percent slopes, eroded; and rockland (USDA NRCS 2021).

Vegetation on the Project site include brittlebush scrub, California annual grassland, and eucalyptus woodland; disturbed and urban/developed areas also occur (Dudek 2019). The eucalyptus woodland contains trees that are greater than 15 feet tall. Land uses in the vicinity consist of residential development to the south and undeveloped open space to the north, east, and west, including the Box Springs Mountain Park and Reserve.

METHODS

According to the Riverside County Regional Conservation Authority MSHCP Information Mapping Application, focused plant surveys are not required for Criteria Area or Narrow Endemic plant species on the Project site. As part of their literature review for the biological resources letter report, Dudek performed a literature search to identify special status plant species reported from the vicinity of the Project site that may require avoidance, minimization, or mitigation measures if present on the Project site. Sources reviewed include the USGS Fontana, San Bernardino South, Redlands, Riverside West, Riverside East, Sunnymead, Lake Matthews, Steele Peak, and Perris 7.5-minute quadrangles in the California Native Plant Society's Inventory of Rare and Endangered Plants, the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database, and the CalFlora Database (Dudek 2019).

Based on the literature review, two species have been reported in the Project vicinity that have moderate or higher potential to occur: Parry's spineflower and Plummer's mariposa-lily. Suitable habitat for both species is present on the Project site.

Rainfall received in the winter and spring determines the germination of many annual and perennial herb species. The region received approximately 3.5 inches of precipitation between May 2020 and April 2021 (data taken from Perris – Menifee – South Coast Valleys Station 240) (CIMIS 2021). The average annual precipitation in the region is 12.44 inches (data taken from Elsinore, CA US Station) (NOAA 2021). Plummer's mariposa-lily was observed blooming in early and mid-June 2021 along the Santa Ana River in San Bernardino County and in eastern Los Angeles County, respectively. Since this species was observed blooming, it can be inferred that on-site conditions were suitable for growth of this species during the field surveys. A reference population of Parry's spineflower in Fontana was checked on April 20; no individuals (vegetative or blooming) were observed. Because the species was not observed at the reference population, it cannot be determined whether on-site conditions were suitable for germination and growth at the time of the field surveys.

Botanical surveys conducted by Psomas in 2021 were floristic in nature and generally followed the protocols created by the CDFW (CDFW 2018). The botanical survey area included all suitable habitat within the proposed project footprint, including a 100-foot buffer (Figure 3). Surveys were conducted by Psomas Senior Biologist Allison Rudalevige on April 20 and June 7, 2021. The surveys covered approximately 20 acres and the total number of person-hours spent surveying was 2.5 hours.

A systematic survey was conducted by walking meandering transects through the survey area. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for later identification. Plants were identified using taxonomic keys, descriptions, and illustrations in Jepson Flora Project (2020) and Baldwin et al. (2012) to the taxonomic level necessary to determine whether they are a special status species. Nomenclature of plant taxa conform to the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021) for special status species and the Jepson eFlora (Jepson Flora

Project 2020) for all other taxa. A list of all plant species observed during special status plant surveys is included in Attachment A.

SURVEY RESULTS

Table 1 identifies the special status plants reported from the literature review with moderate or high potential to occur, along with their status, their potential to occur on the Project site, and the survey results.

One special status plant species, paniculate tarplant (*Deinandra paniculata*), a species with a CRPR of 4.2, was observed on the Project site.

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Calochortus plummerae Plummer's mariposa-lily	—	—	4.2	Perennial bulbiferous herb found in granitic or rocky soil of chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland at elevations between 330 and 5,580 feet above msl. Blooming Period: May – July.	Reported approximately 1 mile north of the Project site (CCH 2021).	Not expected to occur. Suitable habitat is present but species not observed during focused surveys occurring at a time when reference populations were blooming.
Chorizanthe parryi var. *parryi* Parry's spineflower	—	—	1B.1	Annual herb found in sandy or rocky openings of chaparral, cismontane woodland, coastal sage scrub, and valley and foothill grasslands at elevations between 900 and 4,005 feet above msl; Blooming Period: April – June.	Reported approximately 1 mile north of the Project site (CCH 2021).	Limited potential to occur. Suitable habitat is present but species not observed during focused surveys. (Note: the species was not observed at a reference population that was checked during the typical blooming period for the species).

TABLE 1
SPECIAL STATUS PLANT SPECIES REPORTED
FROM THE PROJECT SITE VICINITY

Species	Status			Species Background*	Nearest Reported Location	Potential to Occur/Results of Focused Surveys
	USFWS	CDFW	CRPR			
Deinandra paniculata paniculate tarplant	—	—	4.2	Annual herb found in coastal scrub, valley and foothill grassland, and vernal pools, usually in vernally mesic or sandy soil at elevations between 80 and 3,085 feet above msl. Blooming Period: April – November (occasionally in March).	Reported less than ½ mile south of the Project site (CCH 2021).	Observed during focused surveys. Approximately 350 individuals observed in ruderal openings along the disturbed area in the southwestern portion of the survey area. Approximately 20 percent vegetative, 50 percent blooming, and 30 percent fruiting. Associated with California encelia (*Encelia californica*), shortpod mustard (*Hirschfeldia incana*), and red brome (*Bromus rubens*).

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; CRPR: California Rare Plant Rank; msl: mean sea level.

* Source: CNPS 2021

LEGEND:
CRPR

1B Plants Rare, Threatened, or Endangered in California and elsewhere
4 Plants of limited distribution – A Watch List

CRPR Threat Code Extensions

.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 Fairly threatened in California (20–80% of occurrences threatened; moderate degree and immediacy of threat)

CONCLUSIONS

One special status plant species, paniculate tarplant, was observed on the Project site. This species is not covered by the MSHCP. As a species with a CRPR of 4.2, it is considered to be of limited distribution and on a "watch list". Multiple occurrences of this species are present within the Project region (CCH 2021). Species with a CRPR of 4.2 are not generally considered constraints on development and no mitigation would be required for impacts on this species.

Plummer's mariposa-lily and Parry's spineflower were not observed on the Project site during focused surveys. There is always a small chance for false negative survey results as species may not be detectable at the time of the surveys. Reference populations and regional rainfall amounts are monitored to ensure the scientific adequacy of focused surveys. Given the drought conditions during the 2020/2021 wet season, observations made at reference populations are important for determining whether survey results are valid. Plummer's mariposa-lily were observed blooming at reference populations, so conditions on the Project site during the surveys were likely suitable to detect this species, if present. The negative focused

survey results indicate that this species is absent from the Project site. Parry's spineflower, however, was not detected at a reference population. Therefore, the negative survey results do not reliably confirm the species' absence from the Project site.

Per the guidelines of the MSHCP, both Plummer's mariposa-lily and Parry's spineflower were originally designated by the Regional Conservation Authority (RCA) as covered species not adequately conserved. They are considered adequately conserved when certain species-specific conservation objectives have been met. For Plummer's mariposa-lily, the requirement is six localities with at least 500 individuals each preserved within the MSHCP Conservation Area. For Parry's spineflower, the requirement is 10 localities with at least 1,000 individuals each preserved within the MSHCP Conservation Area. The MSHCP conservation objectives for Plummer's mariposa-lily and Parry's spineflower were met in 2012 and 2013, per reporting prepared as part of the MSHCP monitoring program (RCA 2013, 2015). Because the RCA has demonstrated that the conservation objectives for both species continue to be met each year, they are considered adequately conserved and take is covered by participation in the MSHCP. Therefore, no additional measures are required.

If you have any comments or questions, please contact Steve Norton at Steve.Norton@psomas.com or 714.481.8037.

Sincerely,

PSOMAS

Steve Norton
Project Manager

Allison D. Rudalevige
Senior Biologist

Enclosures: Figure 1 – Project Location
Figure 2 – USGS 7.5-Minute Digital Quadrangle
Figure 3 – Survey Area
Attachment A – Plant Compendium

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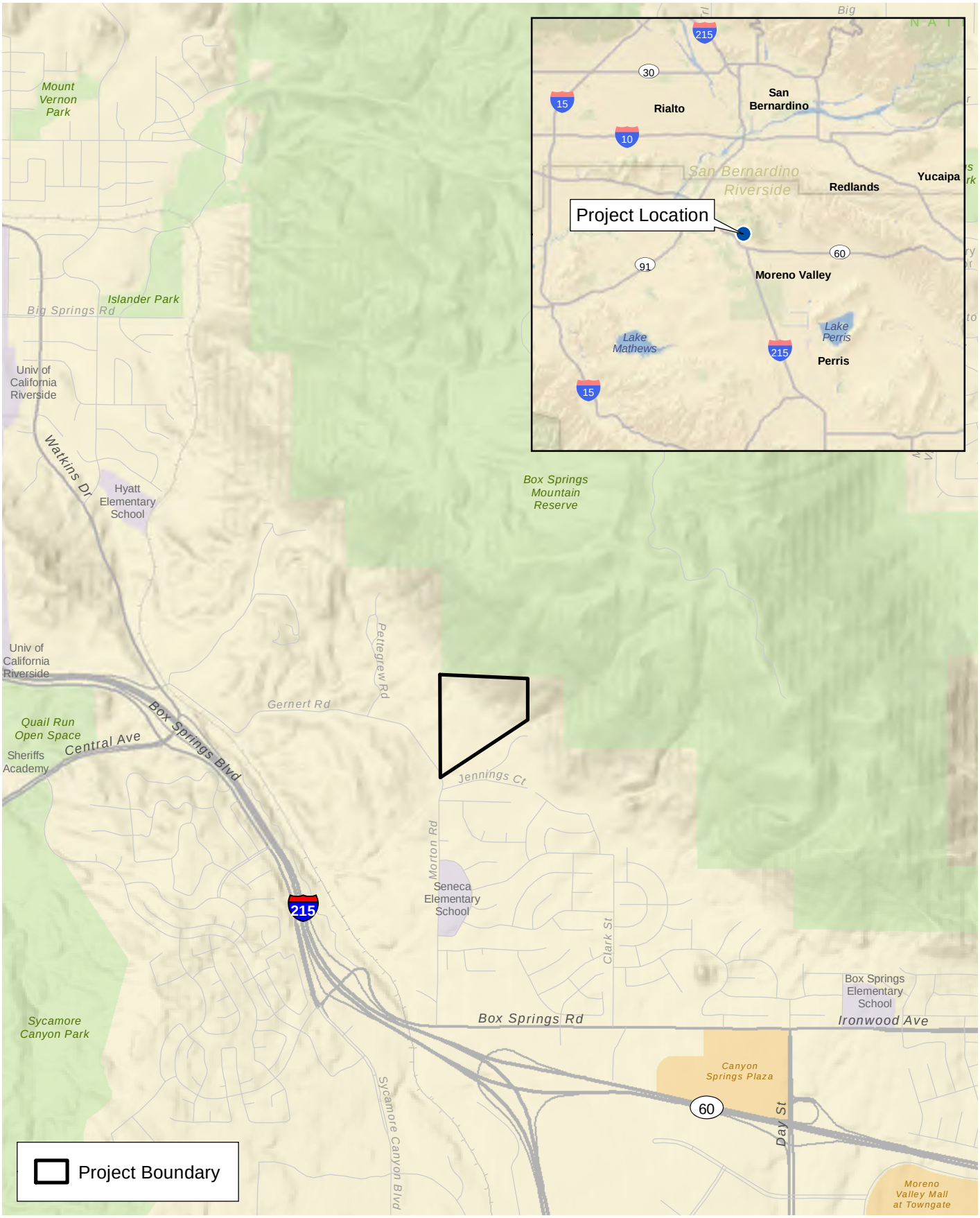

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Vicinity Map

Figure 1

Gateway Heights Project

N W E S

2,000 1,000 0 2,000 Feet

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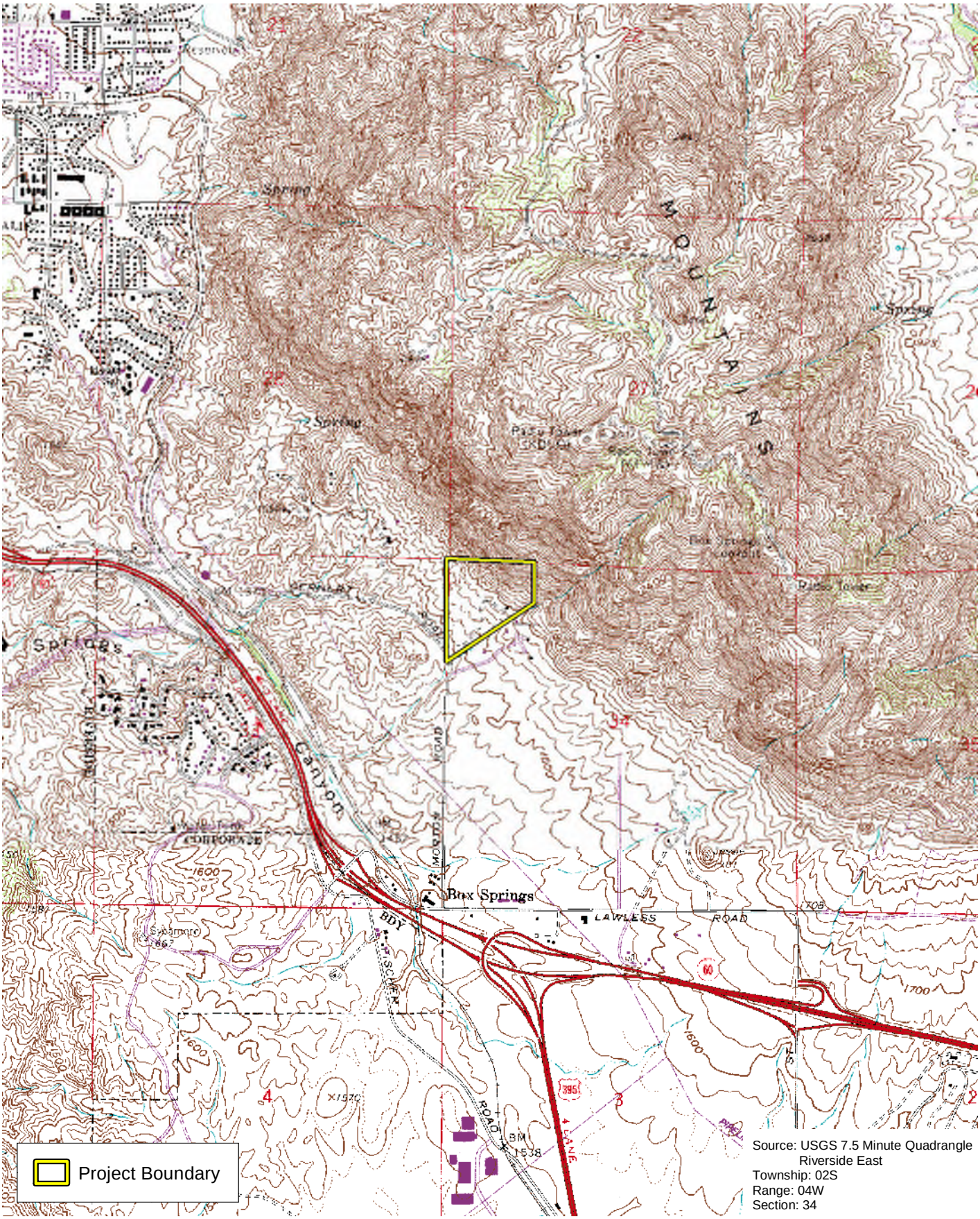

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Topographic Map

Figure 2

Gateway Heights Project

N
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S

2,000 1,000 0 2,000

Feet

PSOMAS

Aerial Source: Esri, Maxar 2018

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Survey Area

Figure 3

Gateway Heights Project

N
W E
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300 150 0 300

Feet

PSOMAS

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ATTACHMENT A

PLANT COMPENDIUM

PLANT SPECIES OBSERVED DURING SPECIAL STATUS PLANT SURVEYS

Species	
Scientific Name	**Common Name**
EUDICOTS	
ADOXACEAE – MUSKROOT FAMILY	
Sambucus nigra ssp. caerulea	blue elderberry
ANACARDIACEAE – SUMAC FAMILY	
Malosma laurina	laurel sumac
*Schinus molle**	pepper tree
*Schinus terebinthifolius**	Brazilian pepper tree
ASTERACEAE – SUNFLOWER FAMILY	
Ambrosia psilostachya	western ragweed
Artemisia californica	California sagebrush
Baccharis salicifolia ssp. salicifolia	mule fat
*Centaurea melitensis**	tocalote
Corethrogyne filaginifolia	filago-leaved sand-aster
*Cotula australis**	Australian cotula
Deinandra paniculata	paniculate tarplant
Encelia farinosa	brittlebush
Ericameria pinifolia	pine-bush
Erigeron foliosus	leafy fleabane
Helianthus annuus	annual sunflower
BORAGINACEAE – BORAGE FAMILY	
Amsinckia intermedia	common fiddleneck
Amsinckia menziesii	common fiddleneck
Pectocarya linearis ssp. ferocula	narrow-toothed pectocarya
Phacelia distans	distant phacelia
BRASSICACEAE – MUSTARD FAMILY	
*Hirschfeldia incana**	grayish shortpod mustard
*Sisymbrium irio**	London rocket
CACTACEAE – CACTUS FAMILY	
Cylindropuntia californica var. parkeri	cane cholla
Opuntia littoralis	seaside prickly-pear
CHENOPODIACEAE – GOOSEFOOT FAMILY	
*Chenopodium murale**	wall-growning pigweed
*Salsola tragus**	Russian thistle
CUCURBITACEAE – GOURD FAMILY	
Marah macrocarpa	chilicothe
EUPHORBIACEAE – SPURGE FAMILY	
Croton setiger	turkey-mullein
FABACEAE – LEGUME FAMILY	
Acmispon glaber	deerweed
*Parkinsonia aculeata**	Mexican palo verde
GERANIACEAE – GERANIUM FAMILY	
*Erodium cicutarium**	redstem filaree

PLANT SPECIES OBSERVED DURING SPECIAL STATUS PLANT SURVEYS

Species	
Scientific Name	**Common Name**
LAMIACEAE – MINT FAMILY	
*Marrubium vulgare**	common horehound
Salvia mellifera	black sage
MYRTACEAE – MYRTLE FAMILY	
*Eucalyptus camaldulensis**	red gum
*Eucalyptus globulus**	blue gum
NYCTAGINACEAE – FOUR O'CLOCK FAMILY	
Mirabilis laevis var. crassifolia	wishbone bush
PLATANACEAE – SYCAMORE FAMILY	
Platanus racemosa	western sycamore
POLYGONACEAE – BUCKWHEAT FAMILY	
Eriogonum fasciculatum	California buckwheat
SALICACEAE – WILLOW FAMILY	
Populus fremontii ssp. fremontii	Fremont cottonwood
SOLANACEAE – NIGHTSHADE FAMILY	
Datura wrightii	Wright's jimsonweed
*Nicotiana glauca**	tree tobacco
Solanum xanti	Xantus' nightshade
MONOCOTS	
ARECACEAE – PALM FAMILY	
*Washingtonia robusta**	Mexican fan palm
POACEAE – GRASS FAMILY	
*Arundo donax**	giant reed
*Avena barbata**	slender wild oat
*Avena fatua**	wild oat
*Bromus diandrus**	ripgut grass
*Bromus rubens**	red brome
*Hordeum murinum**	wall barley
*Pennisetum setaceum**	crimson fountain grass
*Schismus barbatus**	barbed Mediterranean grass
THEMIDACEAE – BRODIAEA FAMILY	
Dipterostemon capitatus	blue dicks
* Non-native or invasive species	

July 7, 2021

Jason Ackerman
Ackerman Law PC
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Ontario, CA 91761

VIA EMAIL
jason.ackerman@ackermanlawpc.com

Subject: Results of a Burrowing Owl Survey for the Gateway Heights Project, City of Moreno Valley, California

Dear Mr. Ackerman:

This Letter Report presents the results of a focused burrowing owl survey conducted for the Gateway Heights Project (hereinafter referred to as "the Project site"), located at Tax Assessor Parcel Number (APN) 256-150-001 in the City of Moreno Valley, Riverside County, California. The burrowing owl survey was conducted in accordance with the Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Area (Riverside 2006).

PROJECT LOCATION AND DESCRIPTION

The Project site is generally located north of the State Route 60 (SR-60) and Interstate 215 (I-215) interchange. It is specifically located approximately 110-feet north of Jennings Court and immediately east of Morton Road in the western portion of the City of Moreno Valley (Figure 1). Although the Project is located entirely within the City of Moreno Valley, it is bounded on the northerly and westerly property lines by the Riverside County jurisdictional border. The Project site is located in Section 34 of Township 2 South, Range 4 West, Riverside East US Geologic Survey 7.5-minute quadrangle map (Figure 2). The approximate center of the Project site is at longitude 117°17′39.77″W and latitude 33°57′34.95″N.

The Project involves construction of a total of 108 detached condominium units on 17.30 acres of the 32.70-acre Project Site approximately. The dwelling units would be organized in thirteen "clusters" of between eight and ten units each. The condominium units would range from 1,400 to 1,602 square feet in interior space. The remaining 15.40 acres of the Project Site would be rezoned to Open Space (OS) and dedicated as conservation land.

ENVIRONMENTAL SETTING

The Project site is characterized as open, vacant lands situated in the southwestern foothills of the Box Springs Mountains. Elevations in the Project site range from approximately 1,590 feet above mean sea level (amsl) in the southwest corner to 2,080 feet amsl in the northeast corner.

The Project site is surrounded by undeveloped land to the north, east, and west with residential development to the south. The Box Springs Mountain Park and Reserve is located north of the Project site, which is owned by several entities including the County of Riverside, University of California, and Western Riverside County Regional Conservation Authority.

Several erosional features with deep incised banks occur throughout the Project site and are the result of sheet flow off Box Springs Mountain.

Sometime between 1942 and 1955, the northeastern portion of the Project site was developed with residences, which were accessible from a dirt access road. Although the residences were previously removed, the dirt road remains along with eucalyptus trees, which are assumed to have been planted around the previous residences. Also, several dirt off-highway vehicle trails traverse the Project site.

REGULATORY BACKGROUND

As a project within the jurisdiction of the MSHCP, surveys for burrowing owl are required as part of the environmental review process. The MSHCP Additional Surveys Needs and Procedures identify a specific burrowing owl survey area within the MSHCP Plan Area. The MSHCP also identifies species-specific objectives for burrowing owl, namely Species-Specific Objectives 5 and 6, both of which require burrowing owl surveys if suitable habitat occurs on a proposed project site (Dudek 2003).

SURVEY METHODS

A survey protocol to address species-specific objectives for burrowing owl was developed for the MSHCP (Riverside 2006). This protocol identifies that surveys are to be conducted during the breeding season (March 1 through August 31) to describe if, when, and how the site is used by burrowing owls. Surveys shall be conducted in two parts: Part A includes focused burrow surveys and Part B includes focused burrowing owl surveys. Surveys should be conducted during weather that is conducive to observing owls outside their burrows and detecting burrowing owl sign. Surveys will not be accepted if they are conducted during rain, high winds (> 20 mph), dense fog, or temperatures over 90°F. Part B surveys should be conducted in the morning one hour before sunrise to two hours after sunrise or in the early evening two hours before sunset to one hour after sunset. Focused burrowing owl surveys will consist of site visits on four separate days. The first one may be conducted concurrent with the focused burrow survey. Pre-construction surveys shall be conducted within 30 days prior to ground disturbance to avoid direct take of burrowing owls, if any are present on the project site (MSHCP Species-Specific Objective 6).

Burrow Survey

Psomas Biologist Cristhian Mace conducted the focused burrow survey on March 13, 2021, and updated the results of that survey during the May 3, June 3, and 18, 2021. The burrow survey and subsequent updates were conducted concurrently with the focused burrowing owl surveys. The survey area included suitable habitat on the Project site and within a 500-foot buffer area (Figure 3). The Biologist walked the survey area in transects spaced approximately 100 feet (30 meters) apart to achieve 100 percent visual coverage. The weather conditions during the survey were suitable for bird activity and consisted of mild temperatures (i.e., 60 to 80 degrees Fahrenheit) with wind speeds no more than 11 miles per hour, and an absence of dense fog. Furthermore, the first survey was not conducted within five days following a rain event. The focused burrow survey conditions are summarized in Table 1.

TABLE 1.
FOCUSED BURROW SURVEY CONDITIONS

Date	Survey Type	Time Start/End	Temperature (°F) Start/End	Wind Speed (mph) Start/End	Cloud Cover (%) Start/End
3/31/2021	Burrow Survey 1	7:45 AM – 12:15 PM	56/77	1–4/4–7	0/0
5/13/2021	Burrow Survey Update 1	7:35 AM – 11:45 AM	56/73	6–7/9-11	0/0
6/3/2021	Burrow Survey Update 2	7:40 AM – 12:00 PM	55/80	0–1/2–5	0/0
6/18/2021	Burrow Survey Update 3	7:50 AM – 11:35 AM	57/78	0–1/2–5	0/0

Any natural or man-made cavities large enough to allow a burrowing owl to enter were inspected for evidence of occupation and mapped. Evidence of occupation may include prey remains, cast pellets, whitewash, feathers, and observations of owls adjacent to burrows. Binoculars were used to inspect burrows, crevices, and potential perches such as rocks, fence posts, and other elevated structures for the presence of this species. Any active, potentially active, or inactive burrows in the survey area were recorded in the field using handheld Global Positioning System (GPS) units. An active burrow is defined as a burrow with confirmed sign of active use (i.e., burrowing owl observed or fresh scat). A potentially active burrow is defined as a burrow that is structurally suitable for burrowing owl (with or without sign). An inactive burrow is one that appears old, is collapsing, and is structurally blocked so that an animal would need to physically modify the entrance to enter it. No burrows were altered during the burrow survey effort. The dimensions of each burrow were recorded and are included in Attachment B (Table B-1). All wildlife observed were recorded in field notes and are also listed in Attachment B (Table B-2).

Burrows that were marked as potentially suitable during the survey underwent a follow-up burrowing owl survey to determine if the burrows were occupied (see methods below).

Burrowing Owl Survey

The burrowing owl survey was conducted following Part B of the survey methods in the Western Riverside County MSHCP (Riverside 2006). The MSHCP recommends crepuscular surveys (i.e., occurring near dawn and dusk) to increase the potential of detecting an active burrowing owl. The purpose of this survey was to identify any active burrowing owl burrows within study area per the requirements in the MSHCP.

Psomas Biologist Cristhian Mace conducted the burrowing owl surveys on March 31, May 13, June 3, and 18, 2021. The survey area included a 500-foot buffer area around the proposed development footprint (Figure 3). The Biologist walked the survey area in transects spaced approximately 100 feet (30 meters) apart to achieve 100 percent visual coverage. The survey area was scanned for burrowing owl or sign of their presence (e.g., pellets, scat, prey remains, whitewash, decoration) using binoculars at the start of each transect and every 328 feet (100 meters). The surveys were conducted between one hour before sunrise and up to two hours afterward. The weather conditions during the survey were suitable for bird activity and consisted of mild temperatures (i.e., 60 to 80 degrees Fahrenheit) with wind speeds no more than 11 miles per hour.

As stated above, any natural or man-made cavities large enough to allow a burrowing owl to enter were inspected for evidence of occupation and mapped. Evidence of occupation may include prey remains, cast

pellets, whitewash, feathers, and observations of owls adjacent to burrows. Binoculars were used to inspect burrows, crevices, and potential perches such as rocks, fence posts, and other elevated structures for the presence of this species. Any active burrows with either the presence of burrowing owls or sign in the survey area were recorded in the field using handheld GPS units. No burrows were altered during the burrowing owl survey effort. All wildlife observed were recorded in field notes and are also listed in Attachment B (Table B-2). Survey conditions during the burrowing owl surveys are shown in Table 2.

TABLE 2
FOCUSED BURROWING OWL SURVEY CONDITIONS

Date	Survey Type	Time Start/End	Temperature (°F) Start/End	Wind Speed (mph) Start/End	Cloud Cover (%) Start/End
3/31/2021	Crepuscular BUOW (Morning) Survey 1	5:15 AM – 7:45 AM	55/61	0–2/1–4	0/0
5/13/2021	Crepuscular BUOW (Morning) Survey 2	5:15 AM – 7:35 AM	54/62	4–5/6–7	0/0
6/3/2021	Crepuscular BUOW (Morning) Survey 3	5:15 AM – 7:40 AM	53/63	0–1/0–1	0/0
6/18/2021	Crepuscular BUOW (Morning) Survey 4	5:15 AM – 7:50 AM	56/62	0–1/0–1	0/0

RESULTS

No burrowing owl or owl sign was observed in the survey area.

Three potentially suitable burrows were recorded during the surveys, however, all were determined to be unoccupied (Figure 3). Representative photographs of the burrows are included in Attachment A.

California gnatcatcher (*Polioptila californica*), federally-listed Threatened species and a California Species of Special Concern, was incidentally observed during the survey. California Natural Diversity Database (CNDDB) forms for this species are included in Attachment C.

Psomas appreciates the opportunity to assist on this project. If you have any comments or questions, please contact Steve Norton at Steve.Norton@psomas.com or (714) 481-8037.

Sincerely,
PSOMAS

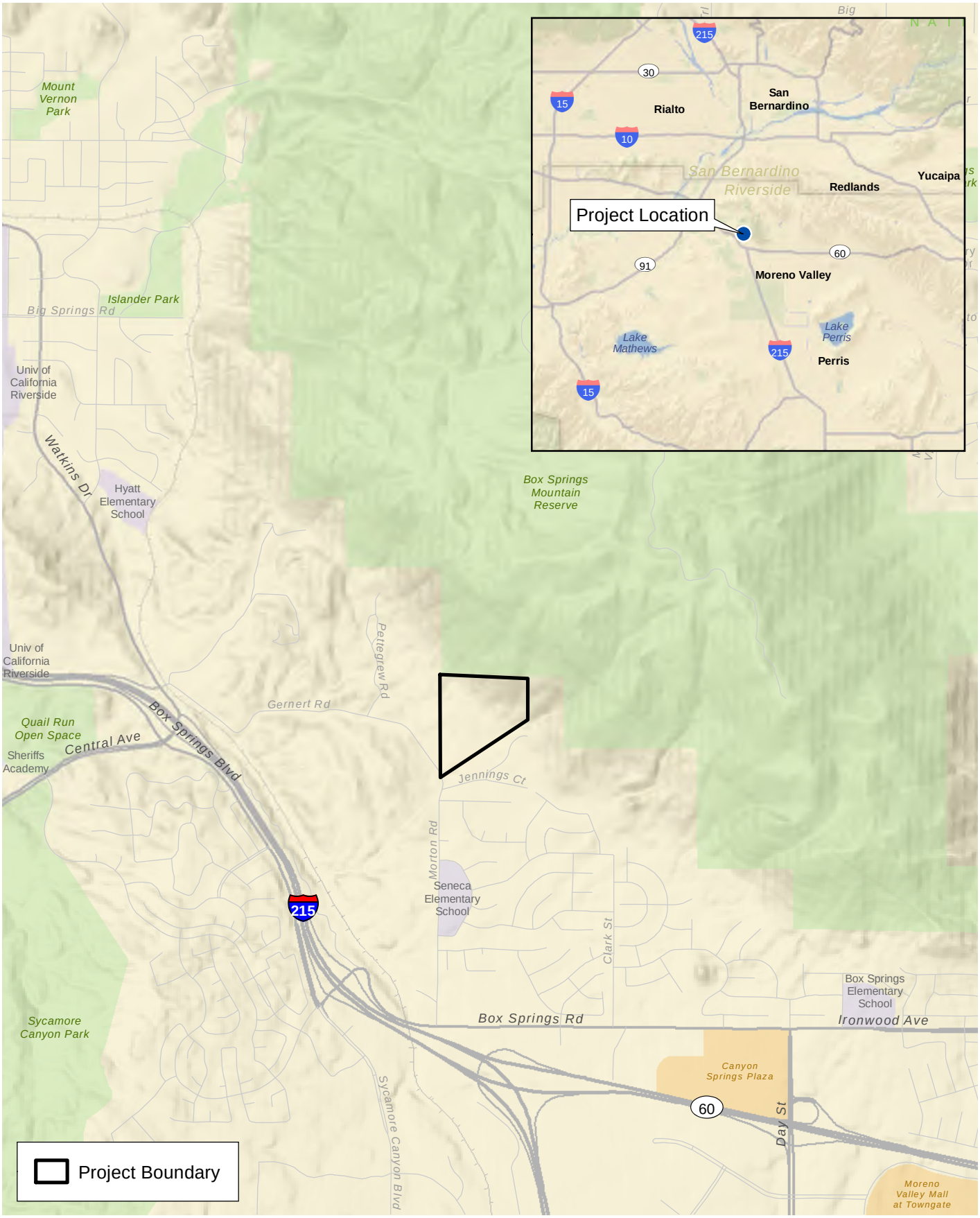
Steve Norton
Senior Biologist/Project Manager, Resource Management

Enclosures: Figures 1–3
Attachment A – Site Photographs
Attachment B – Burrows and Wildlife Observed
Attachment C – CNDDB Form

REFERENCES

Dudek and Associates, Inc. (Dudek). 2003. Western Riverside County Multiple Species Habitat Conservation Plan (Prepared for the Riverside County Integrated Project). Encinitas, CA: Dudek. http://www.wrc-rca.org/about-rca/multiple-species-habitat-conservation-plan/.

Riverside, County of. 2006 (March 29). Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area. Riverside, CA: the County.



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Vicinity Map

Figure 1

Gateway Heights Project

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

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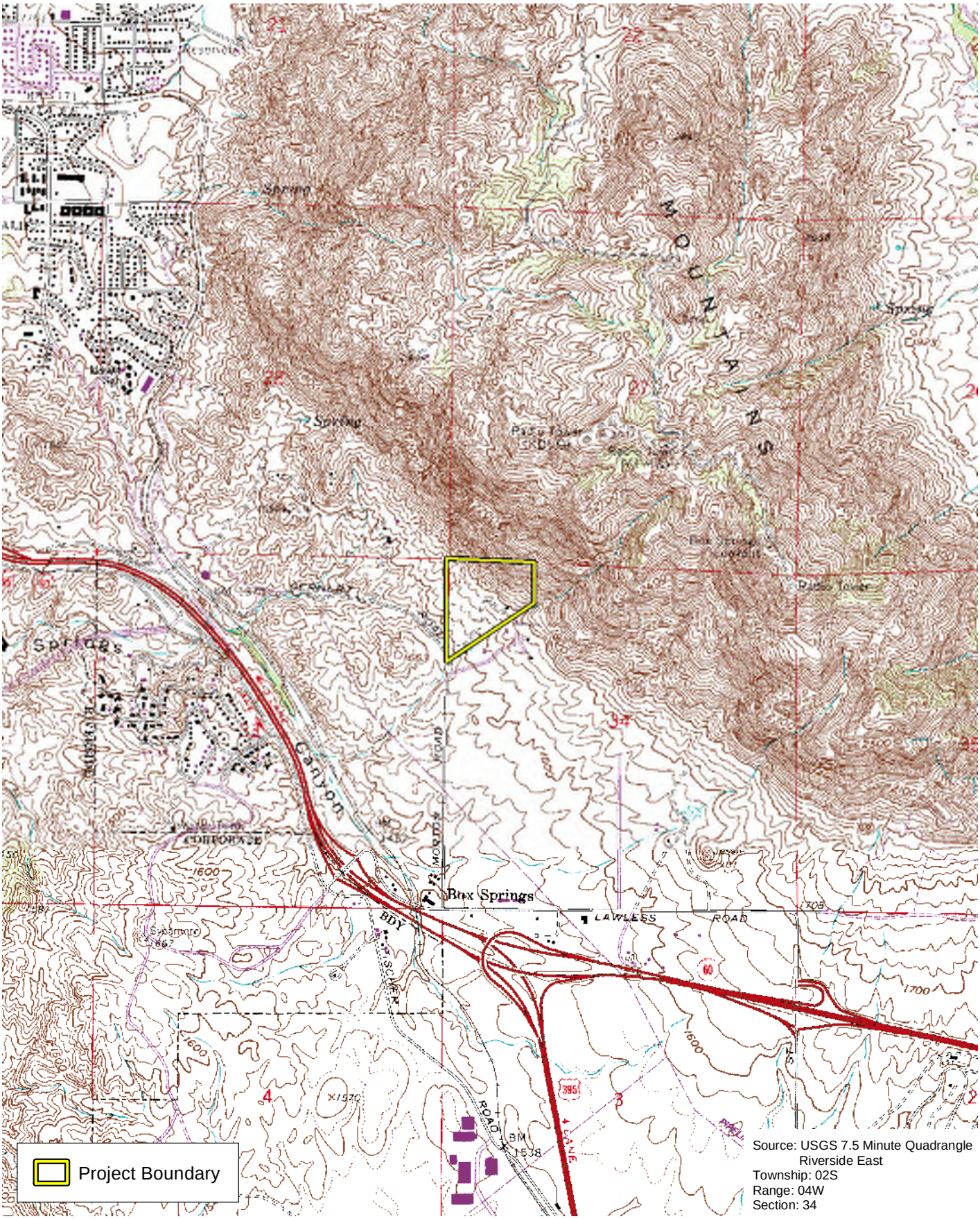

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Topographic Map

Figure 2

Gateway Heights Project

N W E S

2,000 1,000 0 2,000 Feet

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Survey Area

Figure 3

Gateway Heights Project

N
W E
S

500 250 0 500

Feet

PSOMAS

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ATTACHMENT A

SITE PHOTOGRAPHS

Photo of unoccupied potentially suitable burrow complex (Burrow 1) located onsite.

Up-close photo of suitable entrance to unoccupied Burrow 1.

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Site Photographs

Attachment A-1

Gateway Heights Project

PSOMAS

Photo of unoccupied potentially suitable burrow complex (Burrow 2) located onsite. Multiple entrances into the rocky outcrop.

Photo of the unoccupied potentially suitable Burrow 3 located in the survey buffer (offsite). Only one entrance observed.

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Site Photographs

Attachment A-2

Gateway Heights Project

PSOMAS

ATTACHMENT B

BURROWS AND WILDLIFE OBSERVED

TABLE B-1
BURROW DETAILS

Burrow ID	No. of Entrances	Easting	Northing	Burrow Dimensions (Width [in] x Height [in] x Length [in])	General Location	Notes
1	+10	33.957311	-117.296287	6 x 6 x 12 to 8 x 10 x 14	Onsite	Dirt mound with many newly dug California ground squirrel burrows provides potential burrows. However, the ground squirrel burrow complex is actively occupied by the squirrels. Burrowing owls would not be able to occupy unless squirrels vacated the complex.
2	4	33.957386	-117.295510	4 x 6 x 10 to 10 x 10 x 18	Onsite	Rocky outcrop with newly dug California ground squirrel burrows provides potential burrows. However, the ground squirrel burrow complex is actively occupied by the squirrels. Burrowing owls would not be able to occupy unless squirrels vacated the complex.
3	1	33.957008	-117.295866	10 x 8 x 18	Offsite within buffer	Water draining from backyard of private property has created a channel under a cinderblock wall creating a potential burrow.

TABLE B-2
WILDLIFE OBSERVED DURING SURVEYS

Species	
Scientific Name	**Common Name**
LIZARDS	
PHRYNOSOMATIDAE - SPINY LIZARD FAMILY	
Sceloporus occidentalis	western fence lizard
Uta stansburiana	common side-blotched lizard
TEIIDAE - WHIPTAIL LIZARD FAMILY	
Aspidoscelis tigris	western whiptail
BIRDS	
ODONTOPHORIDAE – NEW WORLD QUAILS	
Callipepla californica	California Quail
COLUMBIDAE - PIGEON AND DOVE FAMILY	
*Columba livia**	rock pigeon*
*Streptopelia decaocto**	Eurasian collared-dove*
Zenaida macroura	mourning dove
TROCHILIDAE - HUMMINGBIRD FAMILY	
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
CHARADRIIDAE - PLOVER FAMILY	
Charadrius vociferus	killdeer
CATHARTIDAE - NEW WORLD VULTURE FAMILY	
Cathartes aura	turkey vulture
ACCIPITRIDAE - HAWK FAMILY	
Circus cyaneus	northern harrier
Buteo jamaicensis	red-tailed hawk
FALCONIDAE - FALCON FAMILY	
Falco sparverius	American kestrel
TYRANNIDAE - TYRANT FLYCATCHER FAMILY	
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Myiarchus cinerascens	ash-throated flycatcher
Tyrannus vociferans	Cassin's kingbird
CORVIDAE - JAY AND CROW FAMILY	
Corvus brachyrhynchos	American crow
Corvus corax	common raven
AEGITHALIDAE - BUSHTIT FAMILY	
Psaltriparus minimus	bushtit
TROGLODYTIDAE - WREN FAMILY	
Salpinctes obsoletus	rock wren
Catherpes mexicanus	canyon wren
Troglodytes aedon	house wren
POLIOPTILIDAE - GNATCATCHER FAMILY	
Polioptila californica	California gnatcatcher
SYLVIIDAE - SILVIID WARBLERS FAMILY	
Chamaea fasciata	wrentit

TABLE B-2
WILDLIFE OBSERVED DURING SURVEYS

Species	
Scientific Name	**Common Name**
TURDIDAE - THRUSH FAMILY	
Sialia mexicana	western bluebird
MIMIDAE - MOCKINGBIRD AND THRASHER FAMILY	
Toxostoma redivivum	California thrasher
Mimus polyglottos	northern mockingbird
STURNIDAE - STARLING FAMILY	
*Sturnus vulgaris**	European starling*
PASSERIDAE - OLD WORLD SPARROW FAMILY	
*Passer domesticus**	house sparrow*
FRINGILLIDAE - FINCH FAMILY	
Haemorhous mexicanus	house finch
Spinus psaltria	lesser goldfinch
PASSERELLIDAE - NEW WORLD SPARROW FAMILY	
Aimophila ruficeps	rufous-crowned sparrow
Melozone crissalis	California towhee
Artemisiospiza belli	Bell's sparrow
Melospiza melodia	song sparrow
Zonotrichia leucophrys	white-crowned sparrow
ICTERIDAE - BLACKBIRDS AND ORIOLES	
Icterus bullockii	Bullock's oriole
PARULIDAE – WARBLER FAMILY	
Setophaga townsendi	Townsend's warbler
MAMMALS	
SCIURIDAE - SQUIRREL FAMILY	
Otospermophilus beecheyi	California ground squirrel
LEPORIDAE - HARE AND RABBIT FAMILY	
Sylvilagus audubonii	desert cottontail
CANIDAE - CANID FAMILY	
Canis latrans	Coyote (scat)
* non-native species	

ATTACHMENT C

CALIFORNIA NATURAL DIVERSITY DATABASE FORM

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code MAC21F0002
Quad code 3311783
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Polioptila californica californica*

Common name: coastal California gnatcatcher

Date of field work (mm-dd-yyyy): 06-18-2021

Comment about field work date(s): Field work was conducted on four dates: 03/31/21, 05/13/21, 06/3/21, and 06/18/21

OBSERVER INFORMATION

Observer: Cristhian Mace

Affiliation: Psomas

Address: 400 E California Blvd 5, Pasadena, CA 91106

Email: cristhian.mace@psomas.com

Phone: (310) 848-7714

Other observers:

DETERMINATION

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person: Steve Norton

Other:

Identification explanation: The individual was identified as a male California gnatcatcher due to the presence of a black cap and black tail that was narrowly edged white on the body. The male was singing the typical "mew" call associated with the species.

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort: The gnatcatcher was observed as the biologist was walking transects that were 100 feet apart through the project site as part of a protocol burrowing owl survey.

Total number of individuals: 1

Collection? **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Heard singing then seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	unknown
1				

Age class comment:

Bird site use:

☐ Nesting ☐ Rookery ☐ Nesting colony ☐ Burrow site ☐ Lek

☐ Non-breeding (over-wintering) ☐ Communal roost ☑ Other

Site use description: A non-breeding male was observed foraging and singing throughout the area.

What was the observed behavior? Foraging and singing

Describe any evidence of reproduction: No evidence of reproduction was observed. The male did not display any nesting behaviors and no female or other individuals were observed within the general vicinity.

SITE INFORMATION

Habitat description: Coastal sage scrub habitat dominated by Encelia sp. and Eriogonum fasciculatum, with Salvia mellifera and Sambucus nigra.

Slope: 15-20% Land owner/manager: Private

Aspect: West

Site condition + population viability: Fair

Immediate & surrounding land use: Open space and residential

Visible disturbances: Dirt roads, trash on site, evidence of grading

Threats: Off-highway vehicles were observed accessing the site. The area is scheduled for residential development.

General comments:

MAP INFORMATION

ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Riverside	Riverside East	1664	33.96055	-117.29577	472673	3757822	11
1	**Public Land Survey**	**Feature Comment**						
	S T02S R04W 34							

The mapped feature is accurate within: 5 m

Source of mapped feature: GSP

Mapping notes:

Location/directions comments:

Attachment(s):

DUDEK
3615 MAIN STREET, SUITE 103
RIVERSIDE, CALIFORNIA 92501

October 13, 2022 11675

Shizao Zheng
1378 West Zhorgshan Road
Ningbo City, Zhejiang Province
China

Subject: **Determination of Biologically Equivalent or Superior Preservation Report for the Gateway Heights Project, Moreno Valley, California**

Dear Shizao Zheng:

In compliance with Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), a determination of biologically equivalent or superior preservation analysis is required by projects that will impact on-site riparian/riverine resources, if avoidance of these resources is not feasible (County of Riverside 2003). This determination of biologically equivalent or superior preservation letter report serves to provide the City of Moreno Valley (City) the full scope of construction and operation activities for the Gateway Heights Project (project), as well as demonstrate that the project design and proposed mitigation measures address impacts in a manner that is equivalent or superior as compared to leaving the site undeveloped. A full review of the affected resources is summarized below and is provided in the jurisdictional delineation report (Dudek 2021a) and biological resources report (Dudek 2021b), both prepared by Dudek.

1 Introduction

1.1 Project Area

The 40.1-acre study area is comprised of Assessor's Parcel Numbers 256-150-001 and 256-040-009, as well as rights-of-way, and is located north of Jennings Court and east of Morton Road in Riverside County (Figure 1, Project Location; figures can be found in Attachment A, Figures). The project site occurs within U.S. Geological Survey 7.5-minute Riverside East quadrangle map, Section 34 of Township 2 South, Range 4 West. Specifically, the approximate center of the property is located at longitude 117°17′39.77″ W and latitude 33°57′34.95″ N.

1.2 Project Description

The proposed project includes the residential development of 108 detached condominium units, parking, open space, utility lines, fuel modification zones, and storm drain lines. The project also includes an undercrossing beneath Morton Road. The collection system will begin on the east side of Morton Road and consist of a concrete lined drop in the channel bottom and concrete headwall structure to result in no increase to water surface elevation. As a result of negotiations with adjacent landowners, two alternatives for the outlet structure are proposed. In Alternative 1, the outlet structure will cross Morton Road directly across the street from the proposed

Project into an existing channel. (Figure 2A, Alternative 1 Site Plan) In Alternative 2, the outfall structure will travel south along Morton Road for approximately 170 feet before depositing into an existing channel on the west side of Morton Road south of its intersection with Jennings Court (Figure 2B, Alternative 2 Site Plan). The headwall and concrete spillway will extend for approximately 40 feet. To aid in reducing downstream erosion, a rip rap apron will extend for an additional 40 feet.

1.3 Existing Conditions

1.3.1 Site Description

The project site is characterized as open, vacant lands situated at the southwestern foothills of Box Springs Mountain. Based on aerial imagery (Google Earth 2021), the central and southern portions of the site have been frequently disced, as recently as August 2021. This is presumed to have been intended for weed abatement and fire prevention. Discing has been conducted historically as a part of routine property management and will be halted after project construction. Any additional fuel modification will only occur within identified fuel modification zones within the property boundary. Elevations range from approximately 1,600 to 2,200 feet above mean sea level. The project site is surrounded by undeveloped land to the north, east, and west, with residential developments to the south. Numerous erosional features with deep incised banks occur throughout the study area and are the result of sheet flow off Box Springs Mountain. Numerous dirt roads bisect the project site and contain deep, eroded segments. Morton Road bisects the southwestern portion of the study area. Representative photographs of the project site are included in Attachment B, Site Photographs, in the biological resources letter report (Dudek 2021a).

Based on a review of historical topographic maps (Historic Aerials 2019), residences were built along a dirt access road in the northeastern portion of the project site sometime between 1942 and 1955. It is unclear when the residences were removed; however, the dirt road remains, along with eucalyptus trees, assumed to have been planted around the residences.

1.3.2 Vegetation Communities and Land Covers

Dudek Biologists Anna Cassady and Britney Strittmater conducted a general biological survey of the project site including a 50-foot buffer, collectively referred to as the study area, on February 22, 2019, from 6:40 a.m. to 12:30 p.m. Dudek Biologist Tracy Park conducted a biological survey of the study area associated with Alternative 2 on September 21, 2022, from 1:30 p.m. to 3:25 p.m. Natural vegetation communities were mapped in the field using the Vegetation Alliances of Western Riverside County (Klein and Evens 2006). Land cover types were described in accordance with Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). Three vegetation communities and two land cover types were documented within the study area: brittlebush scrub, California annual grassland, eucalyptus woodland, disturbed habitat, and urban/developed. Figure 3, Vegetation, illustrates the distribution of vegetation communities and land covers, and Table 1 provides a summary of each vegetation community and land cover's extent within the study area.

Table 1. Vegetation Communities and Land Covers within the Study Area

Vegetation Community/Land Cover	Acreage
Vegetation Communities	

Table 1. Vegetation Communities and Land Covers within the Study Area

Vegetation Community/Land Cover	Acreage
Brittlebush Alliance	22.5
California Annual Grassland Alliance	11.0
Eucalyptus Alliance	1.6
Non-Natural Land Covers	
Disturbed Habitat	3.7
Urban/Developed	1.3
Total*	**40.1**

* Acreage may not total due to rounding.

1.3.2.1 Brittlebush Alliance

The brittlebush (*Encelia farinosa*) vegetation alliance is an open-to-intermittent shrub layer where brittlebush dominates or co-dominates at a low-to-moderate cover. The shrub layer often occurs in two separate strata: low shrubs at 0–2 meters tall and tall shrubs at 1–5 meters tall. A variety of native or non-native species may make up the herb layer (Klein and Evens 2006).

Within the study area, brittlebush is located in the northern portion of the study area at the base of Box Springs Mountain. This area contains numerous rocky outcrops. This community also occurs within the foothills in the central portion of the study area at slightly lower covers. This species was dominant in the shrub layer and included a lower cover of shrubs including California sagebrush (*Artemisia californica*) and black sage (*Salvia mellifera*). The herbaceous layer included various non-native grasses and a mixture of annual herbs such as redstem stork's bill (*Erodium cicutarium*) and shortfruit stork's bill (*Erodium brachycarpum*).

1.3.2.2 California Annual Grassland Alliance

As defined by Klein and Evens (2006), California annual grassland alliance is usually dominated by an open-to-continuous herbaceous layer of native or non-native species at 0–1 meters tall, where emergent shrubs occur infrequently at 0.5–5 meters tall. Herbaceous non-native grasses may include compact brome (*Bromus madritensis*), ripgut brome (*B. diandrus*), slender oat (*Avena barbata*), or common Mediterranean grass (*Schismus barbatus*), with other herbaceous species such as slender Russian thistle (*Salsola tragus*), prickly lettuce (*Lactuca serriola*), and redstem stork's bill.

California annual grassland occupies the central and southern portions of the study area. This vegetation community is comprised primarily of weedy species including, but not limited to, brome species (*Bromus* spp.), short-podded mustard (*Hirschfeldia incana*), Tournefort's mustard (*Brassica tournefortii*), common Mediterranean grass, common fiddleneck (*Amsinckia intermedia*), distant phacelia (*Phacelia distans*), shining pepperweed (*Lepidium nitidum*), Indian hedgemustard (*Sisymbrium orientale*), miniature lupine (*Lupinus bicolor*), winecup clarkia (*Clarkia purpurea*), California poppy (*Eschscholzia californica*), redstem stork's bill, and shortfruit stork's bill. Scattered emergent brittlebush is located along the northern portions of the community; however, due to the low cover in these areas, it did not warrant its own vegetation community.

1.3.2.3 Eucalyptus Alliance

The eucalyptus alliance is dominated by eucalyptus (*Eucalyptus* spp.) in the tree canopy, forming an open-to-interment tree layer at 10–15 meters tall. Typically, more than one eucalyptus species comprises this alliance. Other emergent trees may include coast live oak (*Quercus agrifolia*) or non-native trees and shrubs such as date palm (*Phoenix dactylifera*), peppertree (*Schinus* spp.), and tamarisk (*Tamarix* spp.) at lower covers.

Within the study area, this alliance occurs within the northeastern portion of the study area and is dominated by various eucalyptus species. Scattered giant reed (*Arundo donax*), poison oak (*Toxicodendron diversilobum*), and laurel sumac (*Malosma laurina*) occur within the understory at low covers. A couple scattered California sycamores (*Platanus racemosa*) and a single Fremont cottonwood (*Populus fremontii*) were present but did not create a continuous canopy or high enough cover to warrant their own community. This area occurs at a topographic change in the slope of the Box Springs Mountain that appears to allow the water table to be close enough to the surface to support this vegetation; however, there was no evidence of wetland hydrology and, as described, plant species consisted of scattered individuals that did not create a continuous canopy.

1.3.2.4 Urban/Developed

Although not recognized by the Vegetation Alliances of Western Riverside County, urban/developed is defined by Oberbauer et al. (2008) as areas that have been constructed on or disturbed so severely that native vegetation is no longer supported. Urban/developed lands includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials.

Urban/developed land takes the form of rural residential development that is located within the 50-foot buffer to the south and paved roads including Morton Road, Jennings Court, and Penunuri Place. A very small portion of Morton Road occurs within the project site.

1.3.2.5 Disturbed Habitat

The classification of disturbed habitat is due to the predominance of bare ground, non-native plant species, and other disturbance-tolerant plant species. Oberbauer et al. (2008) describes disturbed habitat as areas that have been physically disturbed by previous human activity and are no longer recognizable as a native or naturalized vegetation association, but that continue to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native annual plant species.

Within the study area, disturbed land encompasses the dirt access roads occurring within the western portion of the project site and within the western and southwestern portions of the 50-foot buffer. While the disturbed land within the study area was composed primarily of bare ground, plant species observed within this land cover include redstem stork's bill and common Mediterranean grass.

2 Riparian/Riverine Impacts and Mitigation (per MSHCP Section 6.1.2)

2.1 Methods

Literature Review

The following available resources were reviewed to assess the potential for MSHCP riparian/riverine resources: aerial photographs (Google Earth 2019; Historic Aerials 2019); the U.S. Geological Survey 7.5-minute topographic quadrangle (USGS 2019); a Natural Resources Conservation Service soil map (USDA 2019b); U.S. Environmental Protection Agency Watershed Assessment, Tracking & Environmental Results System (EPA 2019), which includes the National Hydrography Dataset; and the National Wetland Inventory (USFWS 2019).

Field Delineation

On February 22, 2019, Dudek Biologists Anna Cassady and Britney Strittmater conducted a reconnaissance-level biological field survey and a delineation of jurisdictional waters including a 50-foot buffer of the project site. Dudek Biologist Tracy Park conducted a delineation of jurisdictional waters of the study area associated with Alternative 2 on September 21, 2022, Each survey was conducted on foot using visual and aural cues to document species incidence and site conditions.

The MSHCP defines riparian/riverine areas as "lands which contain habitat dominated by trees, shrubs, persistent emergent, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year." The MSHCP further clarifies those areas "demonstrating characteristics as described above which are artificially created are not included in these definitions" (County of Riverside 2003).

Given this definition, the maximum extent of streambed, as defined by the California Department of Fish and Wildlife, was used to aid in the delineation of MSHCP riparian/riverine resources. During the delineation of jurisdictional waters, Dudek delineated streambeds from the top of bank and/or the extent of the associated riparian vegetation.

2.2 Results/Impacts

2.2.1 Results

The study area contains two ephemeral drainages (Drainage 1 and Drainage 2) and two associated tributaries (Tributary 1 and Tributary 2) (Figure 4, MSHCP Riparian/Riverine). These features originate off site within the hills of Box Springs to the northeast and flow southwest through the project site. These features contained an inconsistent bed and bank, at times traversing the site via sheet flow. However, all features appeared to convey water towards Box Springs Canyon Wash, which has surface connection ultimately flowing to the Santa Ana River. Because these features convey water to downstream resources, they are considered riverine resources as defined by the MSHCP. There are approximately 0.29 acres of MSHCP riverine resources within the study area, as shown in Table 2.

The study area contains two additional upland swales and five erosional features. These features originate from natural topography of Box Springs Mountain or as a result of dirt roads and trails that intersect the project site. Runoff conveyed by these features ultimately sheet flows and dissipates. These features do not rely on a fresh water source and do not convey flows to downstream riverine resources; therefore, these are not considered riverine resources as defined by the MSHCP.

The project site supports a few scattered individuals of California sycamore, Fremont cottonwood, and mulefat (*Baccharis salicifolia*) as observed during the February 2019 field visit. This riparian vegetation is small in its extent, lacks understory or closed-canopy features, lacks continuity with higher quality habitat, and is not contiguous; therefore, these scattered individuals are not considered a riparian resource as defined by the MSHCP.

Table 2. MSHCP Riverine Resources within the Project Site

Feature	Vegetation Community and/or Land Cover	MSHCP Riverine Resources (Acres/Linear Feet)	Total Acreage/ Linear Feet*
Drainage 1	Brittlebush (*Encelia farinosa*) Alliance	0.01/210	0.01/210
	California Annual Grassland Alliance	0.12/1,316	0.12/1,316
	Eucalyptus (*Eucalyptus* spp.) Alliance	0.01/188	0.01/188
		Drainage 1 MSHCP Riverine Total	*0.15/1,714*
Tributary 1	Brittlebush Alliance	0.08/1,054	0.08/1,054
	California Annual Grassland Alliance	0.02/415	0.02/415
	Eucalyptus Alliance	0.01/250	0.01/250
		Tributary 1 MSHCP Riverine Total	*0.11/1,720*
Drainage 2	Brittlebush Alliance	0.03/406	0.03/406
	Disturbed Habitat	<0.01/17	<0.01/17
		Drainage 2 MSHCP Riverine Total	*0.03/423*
Tributary 2	Brittlebush Alliance	0.01/112	0.01/112
		Tributary 2 MSHCP Riverine Total	*0.01/112*
		Grand Total*	**0.29/4,014**

Notes: MSHCP = Multiple Species Habitat Conservation Plan
* Acreage may not total due to rounding.

2.2.2 Impacts

The project would result in direct impacts to riverine resources as defined by the MSHCP, as summarized in Table 3 and as depicted in Figure 5, Impacts. The project would avoid Drainage 2 and Tributary 2, as the edge of the development footprint is located approximately 20 feet away from the drainages at its nearest point and over 100 feet away at its furthest point. A deed restriction will be placed over the avoided features prior to issuance of a grading permit. The project component that is adjacent to the drainage is cut and fill slopes that are adjacent to the buildings and associated driveways. The distance and the nature of the project components near the drainages are both

expected to reduce indirect effects to these features. Nevertheless, further information regarding how the project intends to avoid indirect impacts to these features is provided below in Section 2.3.

The project also includes a 100-foot fuel modification zone that will protect most of the development units. In areas where the fuel modification zone encroaches on MSHCP riverine features, the fuel modification zone would be modified to avoid direct impacts to these resources. The avoided Drainage 2 and Tributary 2 in the upper portion of the southeastern property line are comprised of large boulders and limited vegetation, thereby acting as a protective barrier without added maintenance needs (Dudek 2021c). The deed restriction will identify buffer areas for avoided riverine features where native vegetation removal is precluded and weed abatement and fuel modification (if needed) will be conducted using hand tools. This buffer will be up to 50 feet, as depicted in Figure 6, Avoided Riverine Buffers. In areas where the riverine features are adjacent to project features, such as is the case with Drainage 1, a smaller buffer (minimum 25 feet) will be used due to the construction of Street A, which will be located between 8 and 75 feet from Drainage 1[1]. Despite the use of a smaller buffer, indirect impacts to Drainage 1 are not expected because Street A will act as a buffer for Drainage 1, as Street A and its associated landscaping will separate Drainage 1 from the residential community. In addition, associated runoff from Street A will be directed to a water quality basin that will filter the water before it leaves the site. Fuel modification activities will not occur between Street A and Drainage 1; all fuel modification activities associated nearby Drainage 1 are only proposed at the upstream reach, as is depicted in Figure 5, Impacts. As stated previously, fuel modification will avoid all riverine features and no native vegetation removal will occur adjacent to Drainage 1. Further information regarding how the project intends to avoid indirect impacts to these features is provided below in Section 2.3.

Impacts to Drainage 1 and Tributary 1 will occur from project development (Figure 5, Impacts). The project proposes to underground flows from Tributary 1 within a storm drain system that will intersect the project site before daylighting through a proposed outlet into Drainage 1. In existing condition, the terminus of Drainage 1 sheet flows south on Morton Road before flowing into Box Springs Canyon Wash. The proposed project intends to build a culvert that will contain the flows and prevent additional erosion to Morton Road. The terminus of Drainage 1 within the project site will be converted to a riprap-reinforced culvert that will convey flows beneath Morton Road and downstream to Box Springs Canyon Wash.

Table 3. Permanent Impacts to MSHCP Riverine Resources within the Project Site

Feature	Vegetation Community and/or Land Cover	Alternative 1 MSHCP Riverine Resources (Acres/Linear Feet) *	Alternative 2 MSHCP Riverine Resources (Acres/Linear Feet) *
Drainage 1	Brittlebush (*Encelia farinosa*) Alliance	—	—
	California Annual Grassland Alliance	0.01/38	0.01/76
	Eucalyptus (*Eucalyptus* spp.) Alliance	—	<0.01/24

[1] Note that the placement of Street A adjacent to Drainage 1 was imposed by the City fire marshal as a part of fire risk safety requirements.

Table 3. Permanent Impacts to MSHCP Riverine Resources within the Project Site

Feature	Vegetation Community and/or Land Cover	Alternative 1 MSHCP Riverine Resources (Acres/Linear Feet) *	Alternative 2 MSHCP Riverine Resources (Acres/Linear Feet) *
	Disturbed Habitat	—	—
	Urban/Developed	—	—
Drainage 1 MSHCP Riverine Total		*0.01/38*	*0.01/100*
Tributary 1	Brittlebush Alliance	0.02/307	0.02/307
	California Annual Grassland Alliance	0.01/284	0.01/284
	Eucalyptus Alliance	<0.01/82	<0.01/82
Tributary 1 MSHCP Riverine Total		*0.03/674*	*0.03/674*
Drainage 2	Brittlebush Alliance	—	—
	Disturbed Habitat	—	—
Drainage 2 MSHCP Riverine Total		—	—
Tributary 2	Brittlebush Alliance	—	—
Tributary 2 MSHCP Riverine Total		—	—
Grand Total*		**0.04/712**	**0.05/774**

Notes: MSHCP = Multiple Species Habitat Conservation Plan
* Acreage may not total due to rounding.

2.3 Mitigation and Equivalency

Direct Effects

The proposed project will impact 0.04 acres (Alternative 1) or 0.05 acres (Alternative 2) of MSHCP riverine resources. In its existing condition, the riverine habitat within the project site supports groundwater recharge, sediment transport, and nutrient cycling. It also serves as a hydrological connection to downstream resources. Due to the narrow width and minimal vegetation within the features on site, value as wildlife habitat is limited; however, water conveyance through these features can contribute to wildlife habitat downstream in Box Springs Canyon Wash, particularly for the area plan's planning species: Bell's sage sparrow (*Artemisiospiza belli*), cactus wren (*Campylorhynchus brunneicapillus*), loggerhead shrike (*Lanius ludovicianus*), rufous-crowned sparrow (*Aimophila ruficeps*), and bobcat (*Lynx rufus*). Box Springs Canyon Wash is not conserved or described for conservation; however, it does connect to the Santa Ana River, approximately 4.5 miles downstream, presumably through a series of storm drains following the terminus of Box Springs Canyon Wash in Quail Run Park. Given that the proposed project design will retain the hydrological connectivity downstream through the use of detention basins and culverts, many of the hydrological functions and values, including sediment transport and contribution to downstream wildlife habitat, will remain following project implementation. Groundwater recharge and nutrient cycling will be slightly

reduced due to the undergrounding of parts of Tributary 1 and the installation of riprap at the terminus of Drainage 1; however, some elements of these functions will remain following project implementation.

The Applicant proposes to compensate for impacts to MSHCP riverine areas by providing a 1:1 ratio of re-establishment credit at Riverpark Mitigation Bank, or at a 2:1 ratio of rehabilitation credits if re-establishment credits are not available. Re-establishment within Riverpark consists of the re-creation of alkali playa wetland habitat in areas where it once historically existed. Furthermore, re-establishment credits result in a return of hydrology, as well as plantings with riparian plant species. A purchase of credits at Riverpark is expected to create contiguous habitat that will provide wildlife habitat and support groundwater recharge, sediment transport, and nutrient cycling. Due to its location within the Plan Area, this habitat is expected to provide habitat for MSHCP planning species, including some of those listed in the Area Plan for this project. Given that implementation of the proposed project is expected to preserve hydrological functions and values, the reestablishment of both hydrology and species is expected to be equivalent preservation. Furthermore, the planting of riparian species serves as a functional lift as compared to what will be lost as a result of the project because the features lost as a result of the proposed project are unvegetated.

While the Applicant intends to purchase mitigation credits from Riverpark Mitigation Bank, if credits at Riverpark Mitigation Bank are not available prior to grading, the Applicant will compensate for impacts at a 2:1 ratio at off-site land within the MSHCP Plan Area for the purpose of in-perpetuity preservation, through the purchase of mitigation credits at an established off-site Mitigation Bank or In-lieu Fee Program, or as otherwise determined through coordination with the resource agencies. Mitigation proposed on land acquired for the purpose of in-perpetuity mitigation (that would not be part of an agency-approved Mitigation Bank or In-lieu Fee Program) shall include the preservation, rehabilitation, reestablishment, and/or creation of similar habitat within the Santa Ana Watershed pursuant to a Habitat Mitigation and Monitoring Plan. The Habitat Mitigation and Monitoring Plan shall be prepared prior to any impacts and it shall provide details as to the implementation of mitigation, maintenance, future monitoring, and management. The goal of the mitigation shall be to preserve, rehabilitate, reestablish, or create similar habitat with equal or greater function and value than the affected habitat. The Habitat Mitigation and Monitoring Plan would be provided to the following agencies for their review and approval, prior to any project ground disturbance: City, California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and Regional Water Quality Control Board.

Indirect Effects

While the proposed project intends to avoid direct effects to all of Drainage 2 and Tributary 2, and partially avoid direct effects to Drainage 1 and Tributary 1, there is potential for indirect effects both from project construction and project operations. Indirect effects can consist of unintended runoff that can lead to toxicants or invasive species spreading downstream, noise and light effects that can negatively affect planning species, or edge effects that can lead to proliferation of non-native species at the interface of native and human-modified habitats.

To combat these indirect effects, the proposed project will implement the Urban/Wildlife Interface Guidelines. Each of the Urban/Wildlife Interface Guidelines are further discussed below.

- Drainage/Toxics: The proposed project includes the construction of a debris basin and water quality basin. Furthermore, the project will include the development of a stormwater pollution prevention plan. With implementation of these measures, the project would be consistent with these requirements of the MSHCP

and no further actions are required. During project construction, the following best management practices will be implemented in order to avoid unintended drainage into avoided riverine features and other off-site areas:

- Construction limits shall be clearly flagged so that adjacent native vegetation and riverine features are avoided.
- Silt fencing and straw waddles will be employed at the edge of construction boundaries, including cut and fill slopes, in order to prevent unintended runoff from draining off-site.
- Construction work and operations areas shall be kept clean of debris, such as trash and construction materials. Fully covered trash receptacles that are animal-proof will be installed and used during construction to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Trash contained within the receptacles will be removed at least once a week from the proposed project site.
- Staging and storage areas for spoils, equipment, materials, fuels, lubricants, and solvents shall be located within the designated impact area or adjacent developed areas, away from riverine features.

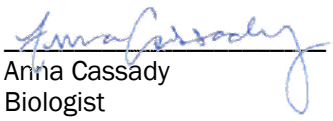
- Lighting/Noise: The project is located immediately north of existing residential development and adjacent to Morton Road. The project will incorporate a setback consisting of open space within the northern portion of the project site. Therefore, night lighting and noise will not impact existing or future MSHCP Conservation Areas and the project would be consistent with these requirements of the MSHCP.
- Barriers: The project does not include fencing or other barriers that would impede wildlife. Furthermore, the project site does not function as a corridor for wildlife. Additionally, the area is not identified as a wildlife movement corridor by the MSHCP; therefore, the project would be consistent with these requirements of the MSHCP.
- Grading/Land Development: No manufactured slopes extend within existing or planned Conservation Areas; therefore, the project would be consistent with these requirements of the MSHCP.
- Invasives: Invasive species provided in MSHCP Table 6-2 are not to be used in development or restoration plan activities for projects adjacent to conservation areas. As described in MM-BIO-4 of the biological resources report (Dudek 2021b), the project shall not use invasive species as defined in the MSHCP Table 6-2 within its landscape plan. With implementation of this measure, the project would be consistent with this requirement of the MSHCP.
- Fuel Modification: Weed abatement and fuel modification zones do not encroach into existing or planned Conservation Areas; therefore, the project would be consistent with these requirements of the MSHCP.

3 Conclusion

The proposed project will directly impact 0.04 acres (Alternative 1) or 0.05 acres (Alternative 2) of MSHCP riverine resources. The proposed mitigation of a purchase of re-establishment credits at a 1:1 ratio will provide biological equivalency for the resources lost. Furthermore, the implementation of the MSHCP Urban/Wildlife Interface Guidelines will avoid indirect impacts to MSHCP riverine resources.

If you have any questions regarding this determination of biologically equivalent or superior preservation letter report, please feel free to contact me at acassady@dudek.com or at 951.300.1088.

Sincerely,



Anna Cassady
Biologist

4 References

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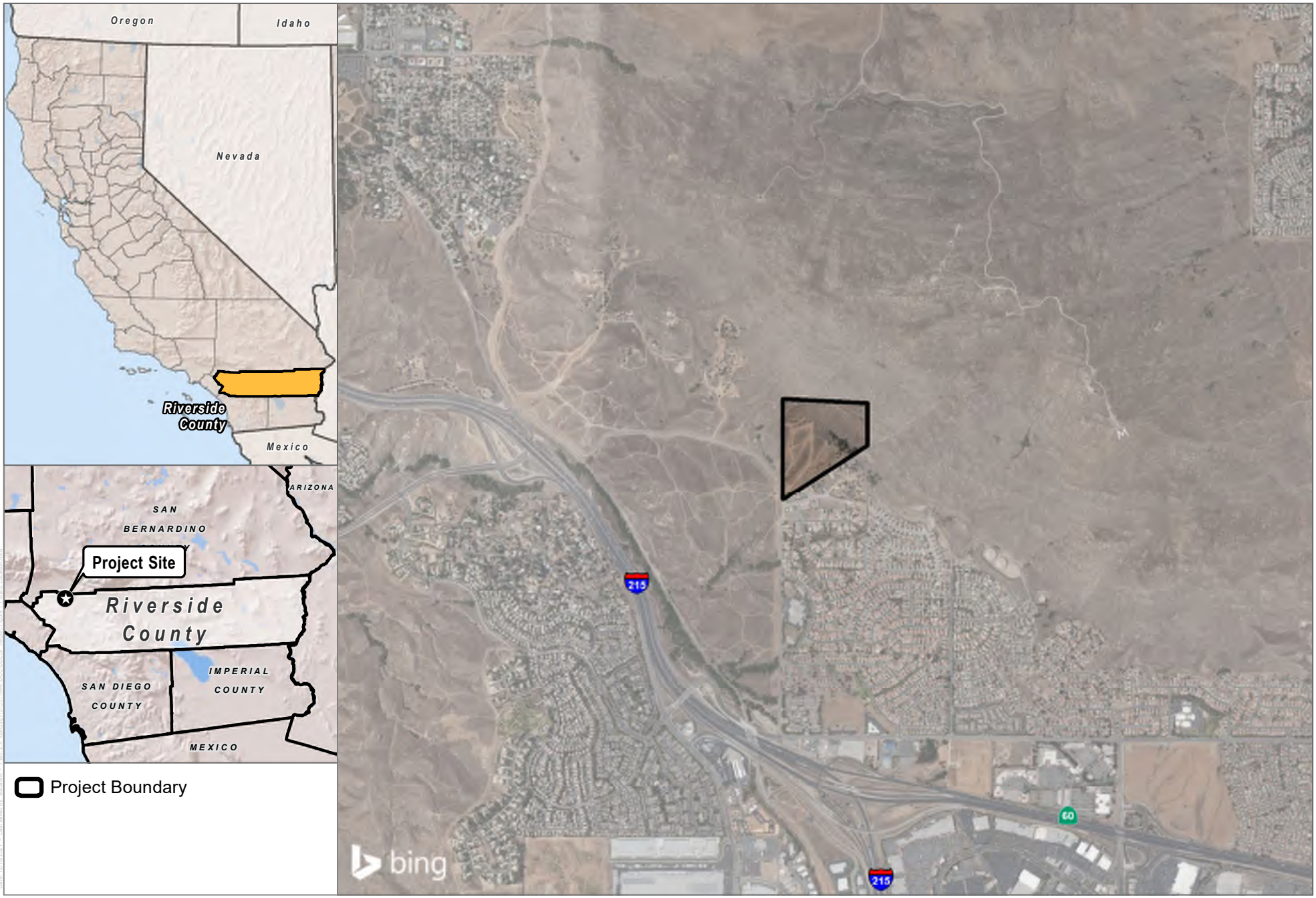
Attachment A

Figures



SOURCE: Bing Maps 2021

DUDEK

0 1,000 2,000 Feet

FIGURE 1

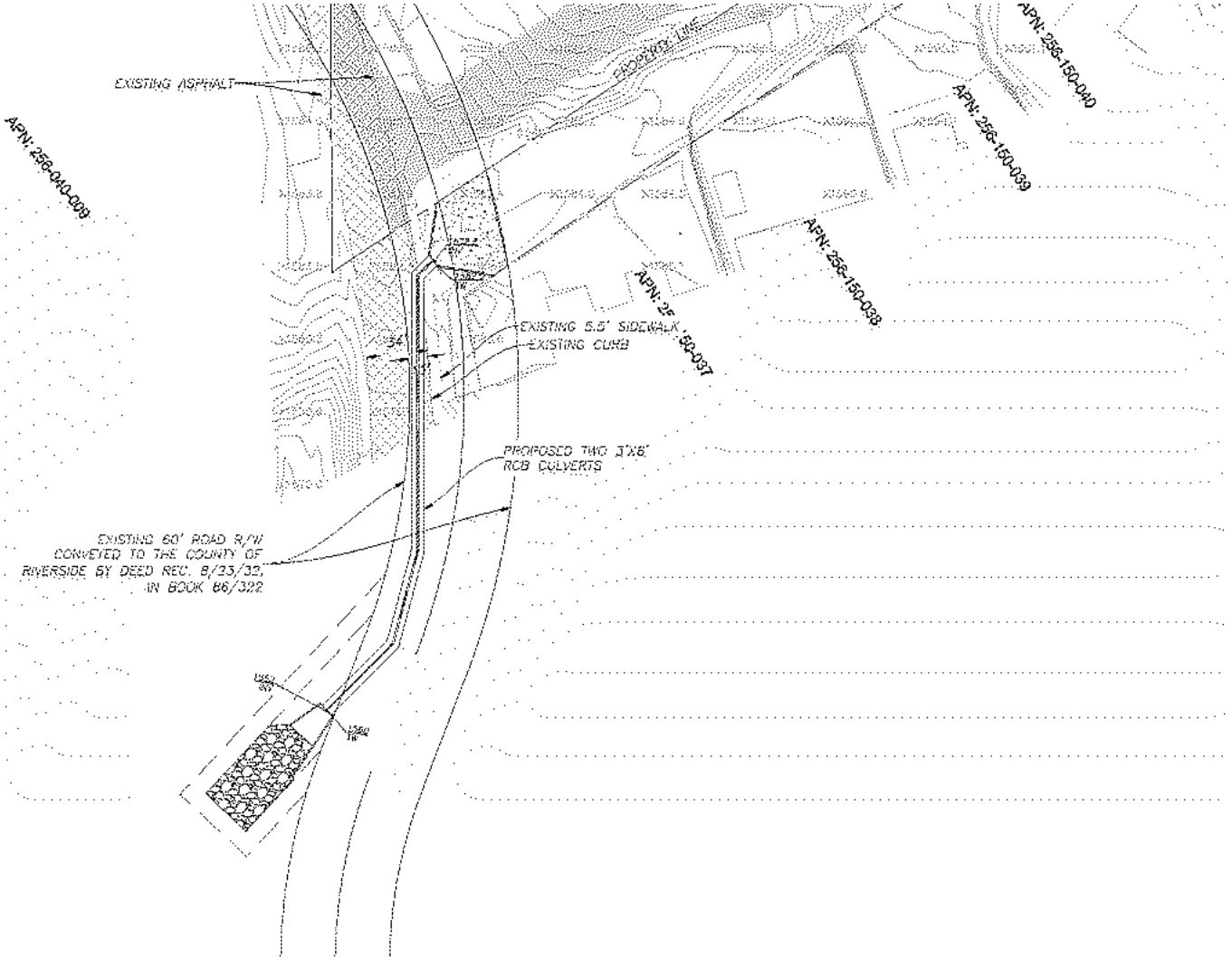
Project Location

Determination of Biologically Equivalent or Superior Preservation Report for the Gateway Heights Project

SOURCE: United Engineering Group 2022

FIGURE 2a

Alternative 1 Site Plan



SOURCE: United Engineering Group 2022

FIGURE 2b

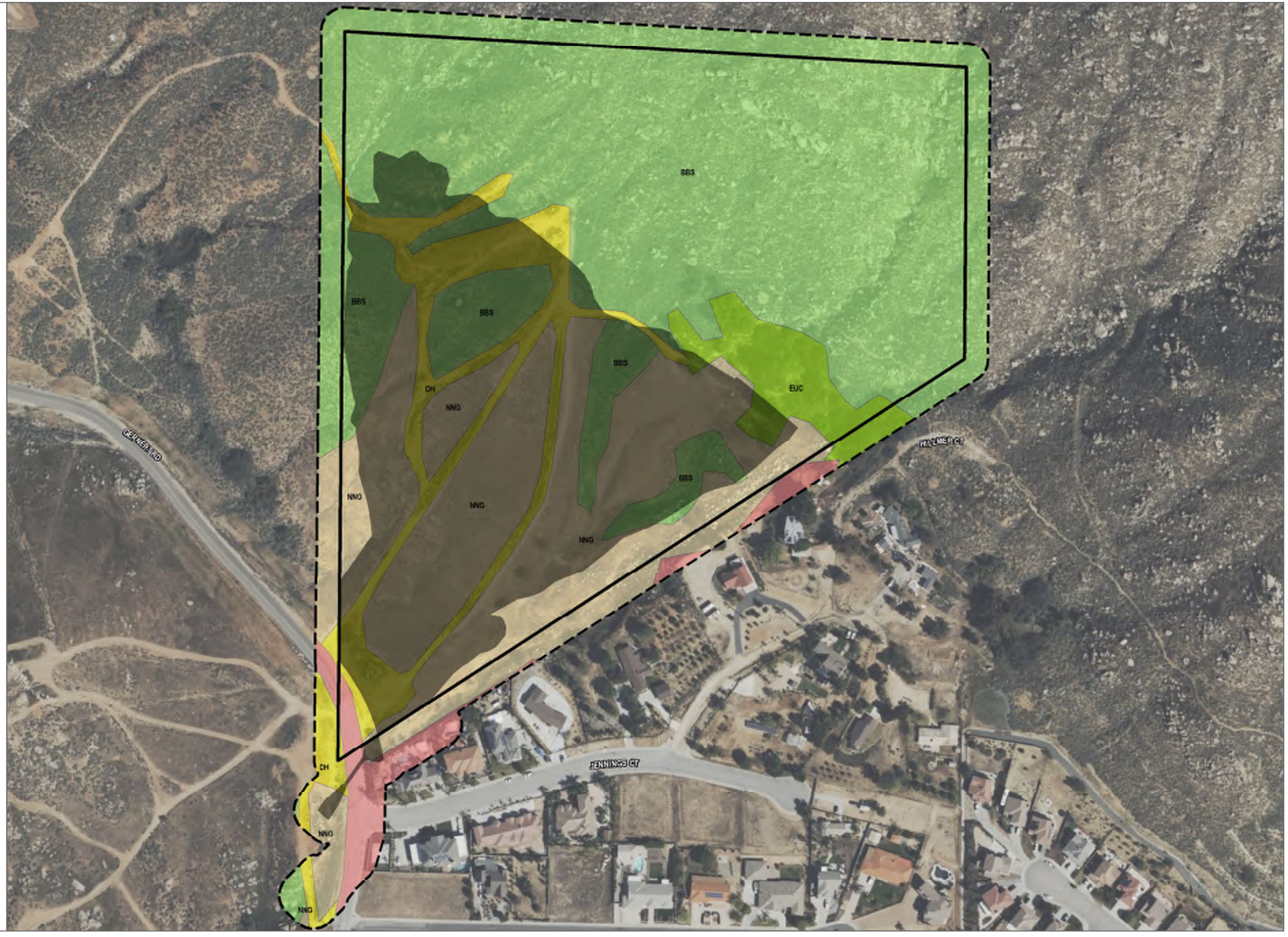
Alternative 2 Site Plan

Determination of Biologically Equivalent or Superior Preservation Report for the Gateway Heights Project

DUDEK

Z:\Projects\11975\01\MXD\CD\DBESP Report

- Project Boundary
- Project Footprint
- 50' Buffer of Project Areas
- BBS - Brittlebush Alliance
- EUC - Eucalyptus Alliance
- NNG - California Annual Grassland Alliance
- DH - Disturbed Habitat
- DEV - Urban/Developed



SOURCE: Bing Maps 2022

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0 105 210 Feet

FIGURE 3

Vegetation

Determination of Biologically Equivalent or Superior Preservation Report for the Gateway Heights Project

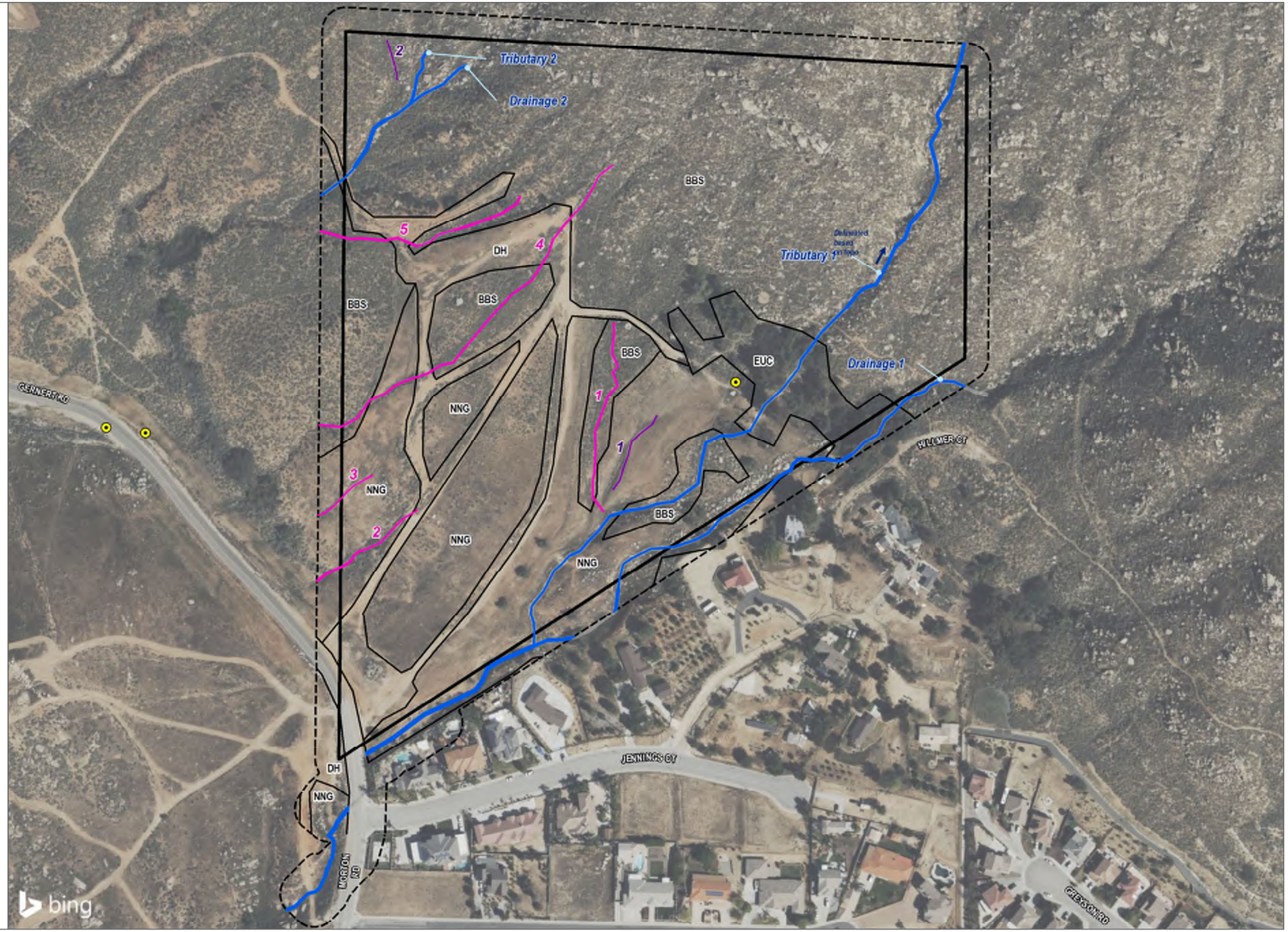
- Project Boundary
- Study Area (50-foot Buffer)

MSHCP Features

- MSHCP Riverine Resource

Non-MSHCP Features

- Erosional Features (1-5)
- Upland Swales (1-2)
- Culvert
- Vegetation Communities and Land Cover Types
  - BBS - Brittlebush Alliance
  - EUC - Eucalyptus Alliance
  - NNG - California Annual Grassland Alliance
  - DH - Disturbed Habitat
  - DEV - Urban/Developed



SOURCE: Bing Maps 2022

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FIGURE 4

MSHCP Riparian/Riverine

Determination of Biologically Equivalent or Superior Preservation Report for the Gateway Heights Project

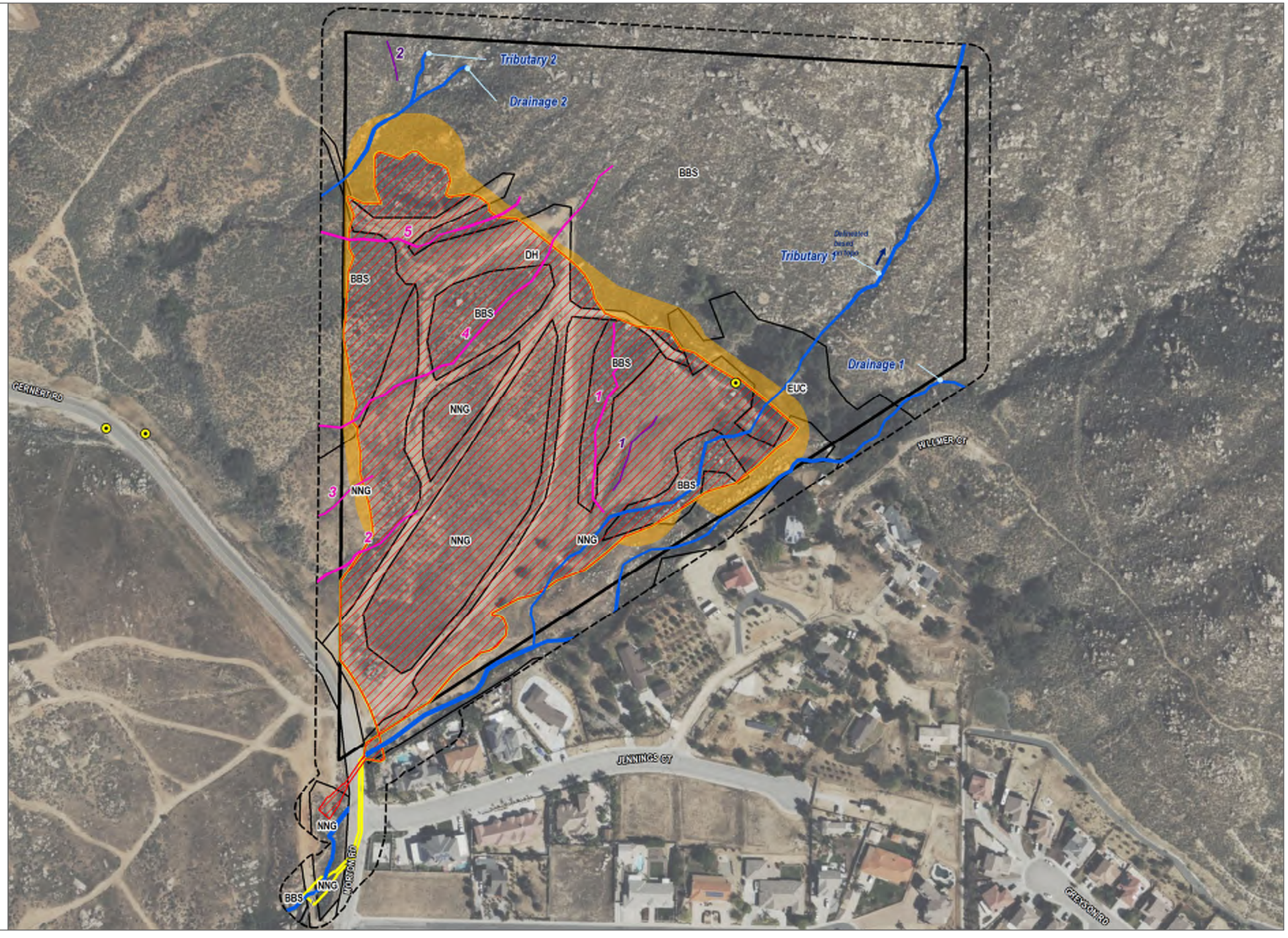
- Project Boundary
- Study Area (50-foot Buffer)
- Alternative 1 Impacts
- Alternative 2 Impacts
- Fuel Modification Permanent Impacts

MSHCP Features

- MSHCP Riverine Resource

Non-MSHCP Features

- Erosional Features (1-5)
- Upland Swales (1-2)
- Culvert
- Vegetation Communities and Land Cover Types
  - BBS - Brittlebush Alliance
  - EUC - Eucalyptus Alliance
  - NNG - California Annual Grassland Alliance
  - DH - Disturbed Habitat
  - DEV - Urban/Developed



SOURCE: Bing Maps 2022

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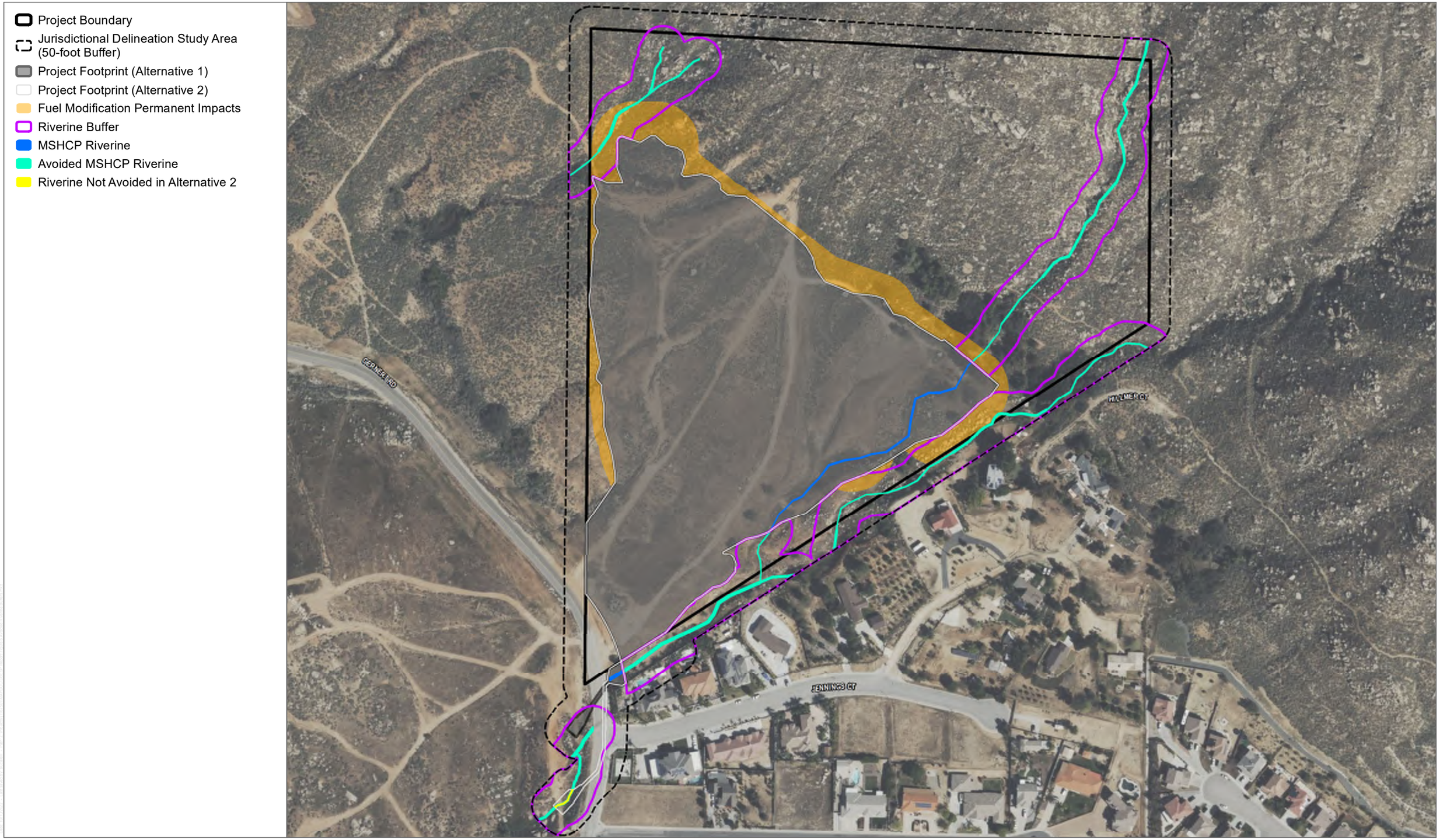
FIGURE 5

Impacts

Determination of Biologically Equivalent or Superior Preservation Report for the Gateway Heights Project



SOURCE: Bing Maps 2022

DUDEK

FIGURE 6

Avoided Riverine Buffers

Determination of Biologically Equivalent or Superior Preservation Report for the Gateway Heights Project

Appendix C

Cultural Reports

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

December 18, 2018

Shizao Zheng
1378 West Zhongshan Road
Ningbo City, Zhejiang Province
People's Republic of China

Re: Update to Previous Cultural Resources Studies
Tentative Tract Map No. 37557, Assessor's Parcel No. 256-150-001
City of Moreno Valley, Riverside County, California
CRM TECH Project #3411

Dear Mr. Zheng:

At your request, CRM TECH conducted a historical/archaeological resources records search, historical background research, and a field inspection on Assessor's Parcel No. 256-150-001 (Tentative Tract Map No. 37557, formerly Tentative Tract Map No. 33626) in the northwestern portion of the City of Moreno Valley, Riverside County, California. The subject property consists of approximately 36 acres of vacant land located to the north of the intersection of Morton Road and Jennings Court, in the northwest quarter of Section 34, T2S R4W, San Bernardino Baseline and Meridian (Figs. 1, 2). This letter presents a summary of the methods, results, and final conclusions of these research procedures.

Background

As you know, the project area was previously the subject of a standard Phase I cultural resources survey completed by CRM TECH in 2007 (Smallwood et al. 2007; see attachment). The scope of that study also included a records search, historical research, and a systematic field survey, along with consultation with Native American representatives. As a result of the survey, two archaeological sites, 33-015937 (CA-RIV-8274/H) and 33-015938 (CA-RIV-8275), and a prehistoric isolate, 33-015967, were identified and recorded within the project boundaries (*ibid.*:10-11). In order to evaluate their qualifications as "historical resources," as defined by the California Environmental Quality Act (CEQA), archaeological testing was recommended on the two sites (*ibid.*:14-15). The isolate was not considered a potential "historical resource" due to its lack of contextual integrity (*ibid.*:14).

Later that year, Sites 33-015937 and 33-015938 were treated with a testing program, which included surface collection of artifacts and the excavation of shovel test pits, standard archaeological units, and mechanical trenches (Sander and Daly 2007:10; see attachment). In the meantime, focused historical research was also completed on Site 33-015937 (Daly 2007a; 2007b). Throughout the excavations, no subsurface cultural remains were discovered (Sander and Daly 2007:15), and the historical research did not identify any significant persons or events associated with the sites, nor any other historical quality of distinction (Daly 2007a:n.p.; 2007b:2). Therefore, the two sites were determined not to meet CEQA definition of "historical resources" (Sander and Daly 2007:15).

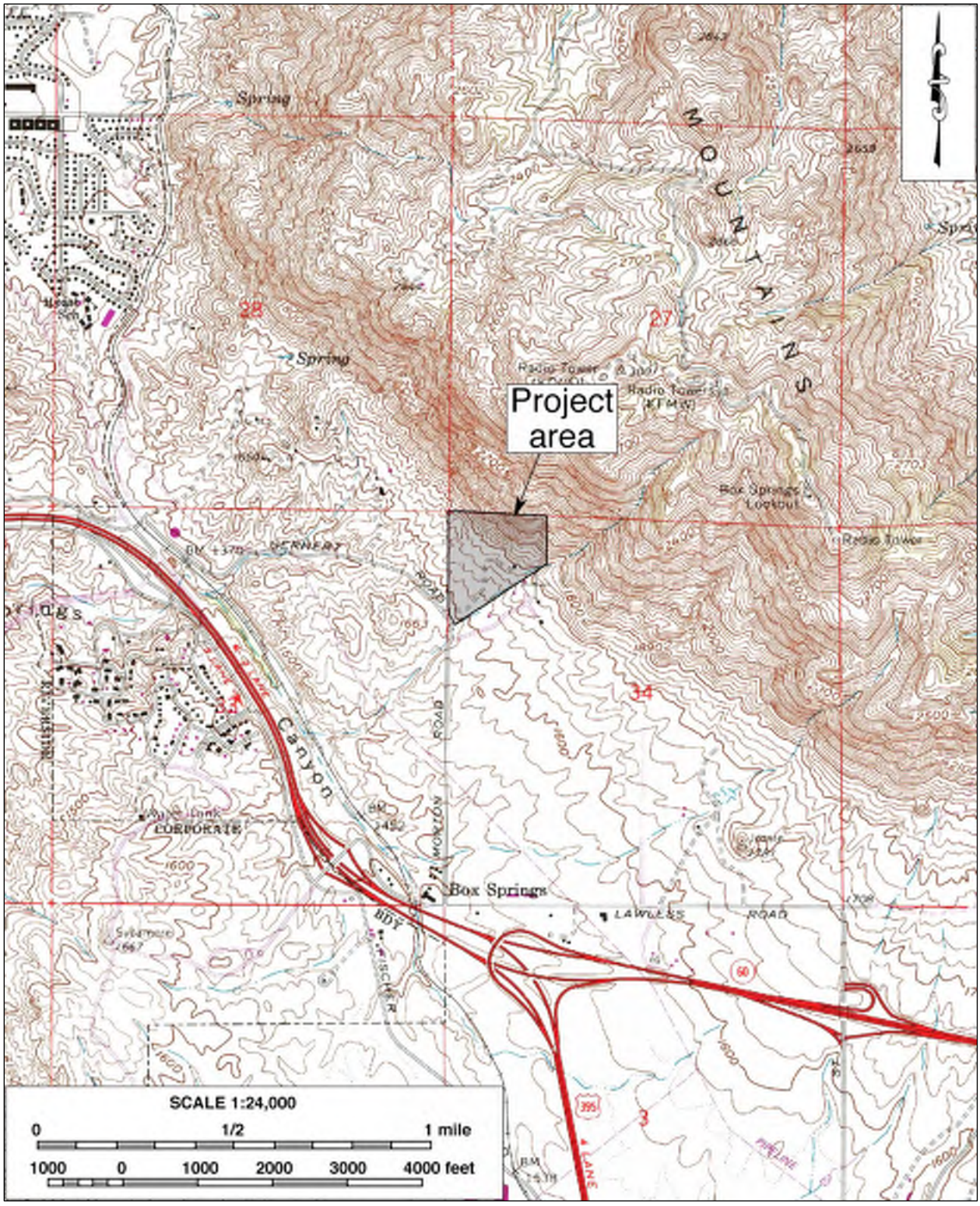


Figure 1. Location and configuration of the project area. (Based on USGS Riverside East, Calif., 7.5 quadrangle, 1980 edition)

Figure 2. Aerial image of the project area. (Based on Google Earth imagery)

However, at the conclusion of the testing program, archaeological monitoring was recommended for any ground-disturbing activities with 30 meters (100 feet) of the site boundaries (*ibid*.:16). Because the 2007 studies are now 11 years old, the research procedures implemented during this study are designed as an update to re-examine and confirm the findings.

Records Search

A standard one-mile-radius records search was conducted on November 14, 2018, by CRM TECH archaeologist Nina Gallardo, B.A., at the Eastern Information Center (EIC), University of Riverside, California. The results of the records search indicate that in addition to the survey and testing reports summarized above, another cultural resources survey also took place within the project boundaries in 2007 (Schmidt 2007). That survey was focused on the site of a wooden power pole that was slated to be replaced (#7264 in Fig. 3), and no cultural resources was identified in the vicinity (*ibid*.:2).

No other studies have occurred in the project area since 2007, according to EIC records, and Sites 33-015937 and 33-015938 and Isolate 33-015967 remain the only cultural resources recorded in the immediate vicinity. As stated above, all three of these known cultural resources were previously determined not to constitute "historic resources" under CEQA provisions. Since no new information has come to light that would necessitate a re-examination of the previous evaluation, Sites 33-015937 and 33-015938 and Isolate 33-015967 require no further consideration during this study.

Outside the project area but within the one-mile radius, EIC records show that as of today at least 35 other cultural resources studies have been completed on various tracts of land and linear features, compared to the 14 studies inventoried in 2007 (Smallwood et al. 2007:9). Meanwhile, eight additional historical/archaeological resources have been recorded into the California Historical Resources Inventory since 2007, bringing the total number of recorded cultural resources within the scope of the records search to 46, including Sites 33-015937 and 33-015938 and Isolate 33-015967. Other than these three, none of the localities was found in the immediate vicinity of the project area.

The vast majority of the recorded cultural resources were prehistoric—i.e., Native American—in origin, consisting predominantly of bedrock milling features but also including groundstone, chipped stone artifacts, and a rockshelter with midden soil. Seven sites and one isolate dated to the historic period and included buildings, a refuse scatter, a former military shooting range, and structural remains along a former Santa Fe Railway siding. Since none of these sites and isolates has any potential to be impacted by the proposed subdivision and development of the project area, they, too, require no further consideration.

Supplemental Historical Research

Historical background research for this study was conducted for the purpose of supplementing and updating the findings of the 2007 studies with information from sources that have become available since then, such as aerial photographs taken between 1966 and 2018, accessible at the Nationwide Environmental Title Research (NETR) Online website and through the Google Earth software. As mentioned in the 2007 survey report, an apparent homestead was once located in the northeast portion of the project area, at the location of Site 33-015937 (Smallwood et al. 2007:11-12). The

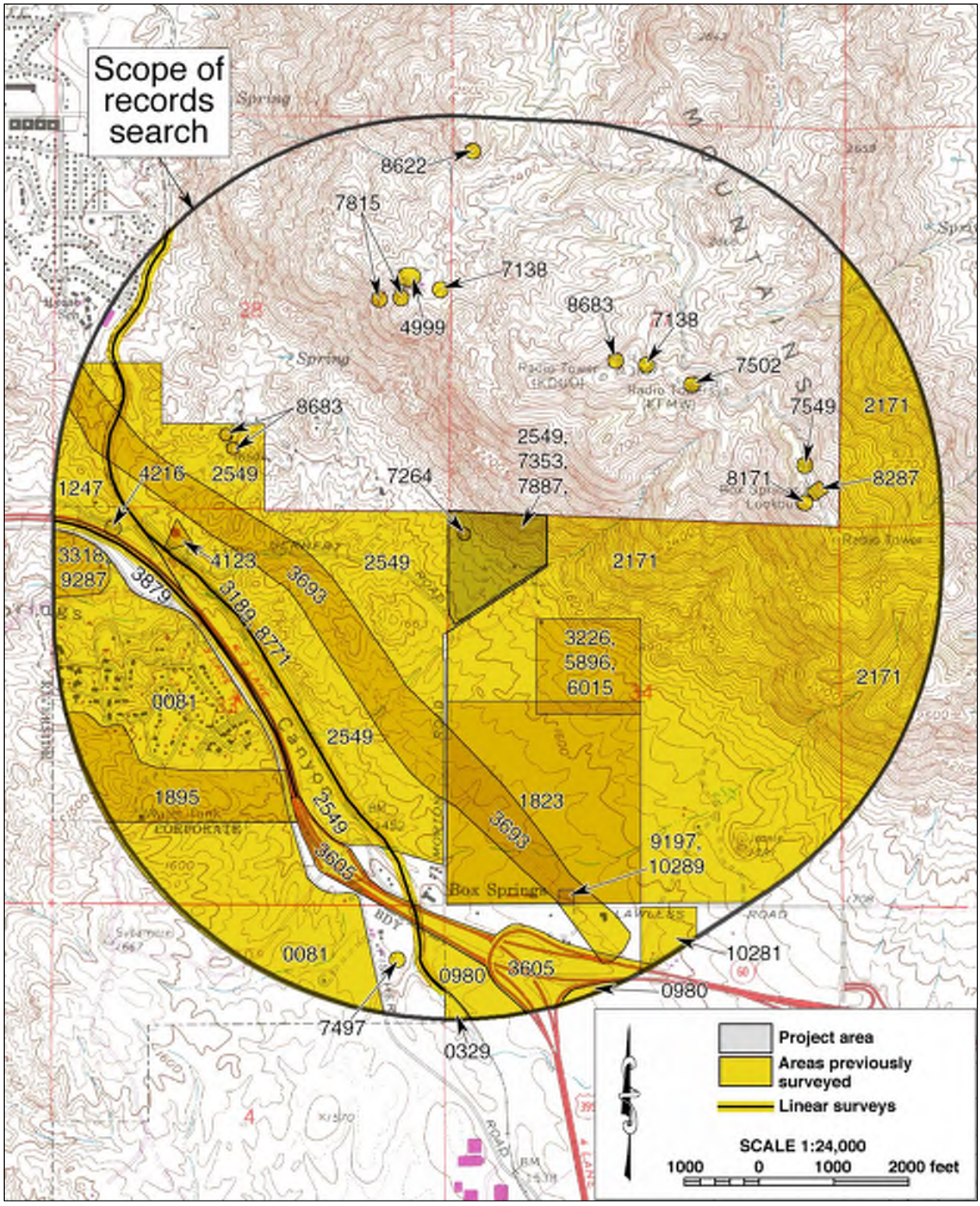


Figure 3. Previous cultural resources studies in the vicinity of the project area, listed by EIC file number. Locations of known historical/archaeological sites are not shown as a protective measure.

aerial photographs confirmed the presence of at least one residence and several ancillary structures at that location during the 1960s-1970s (NETR Online 1966-1978). By 1994, all of the buildings and structures had been removed, and some grading or clearing had occurred in the project area for unknown purposes (NETR Online 1994; Google Earth 1994). Since then, the property has remained entirely undeveloped to the present time, with only occasional vegetation clearing and off-road vehicle activities evident (NETR Online 2002-2014; Google Earth 2002-2018).

Field Inspection

On November 21, 2018, CRM TECH field director/archaeologist Daniel Ballester conducted a "spot-check" field inspection of the project area. The archaeological fieldwork was focused primarily on the locations of the three previously recorded cultural resources in order to update observations made in 2007, and the rest of the project area was inspected along the southern and western perimeters for an overview of the current conditions of the property. Ground visibility ranged from poor (as low as 5%) where dense vegetation grows around several springs to excellent (essentially 100%) where all vegetation has been removed (Fig. 4). The field inspection reveals that features of Sites 33-015937 and 33-015938, such as the bedrock milling features and the structural remains, are still present today and are in a similar condition as in 2007, but the groundstone artifact at Isolate 33-015967 could not be located. No other potential cultural resources were encountered within or adjacent to the project boundaries during the field inspection.

Figure 3. Current condition of the project area. (Photograph taken November 21, 2018; view to the northeast)

Conclusion and Recommendations

Based on the research results outlined above, CRM TECH present the following recommendations to the City of Moreno Valley:

- No “historical resources,” as defined by CEQA, are present within or adjacent to the project area, and thus proposed project will have *No Impact* on any “historical resources.”
- In light of the possibility for additional cultural remains to be unearthed during earth-moving operations at or near Sites 33-015937 and 33-015938, the 2007 recommendation for archaeological monitoring within 30 meters (100 feet) of the site boundaries remains valid and appropriate.
- If any subsurface cultural materials are encountered during earth-moving operations elsewhere in the project area, all work within 50 feet of the discovery should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

Thank you for this opportunity to be of service. If you have any questions or need further information regarding this study, please do not hesitate to contact our office.

Sincerely,

Bai “Tom” Tang, M.A.
Principal, CRM TECH

Reference Cited:

Daly, Pamela
2007a Historic Resources Assessment Report: APN 256-150-001-4, Moreno Valley, California 92555. On file, Eastern Information Center, University of California, Riverside (#RI-07887, Appendix A; see attachment).
2007b Kincaid Development Project: Results of an Archaeological Test Program at CA-RIV-8274/H and CA-RIV-8275, Moreno Valley, Riverside County, California. Letter to the City of Moreno Valley, dated September 3. On file, Planning Division, Community Development Department, City of Moreno Valley (Case #PA05-0073; see attachment).

Google Earth
1994-2018 Aerial photographs of the project vicinity; taken in 1994, 2002-2006, 2008, 2009, 2011-2014, and 2016-2018. Available through the Google Earth software.

NETR Online
1966-2014 Aerial photographs of the project vicinity; taken in 1966, 1967, 1978, 1994, 2002, 2005, 2009, 2010, 2012, and 2014. http://www.historicaerials.com.

Sander, Jay K., and Pamela Daly
2007 Kincaid Development Project: Results of an Archaeological Test Program at CA-RIV-8274/H and CA-RIV-8275, Moreno Valley, Riverside County, California. On file, Eastern Information Center, University of California, Riverside (#RI-07887; see attachment).

Schmidt, James J.
2007 DWO 6077-4800; AI # 7-4801, -4802, -4807, -4809, AI # 6-4800, -4884, -4886, -4887; Various Circuits, Riverside County; Idyllwild, San Jacinto Peak, Lakeview, Riverside East, and Lake Elsinore Quadrangles. On file, Eastern Information Center, University of California, Riverside (#RI-07264).

Smallwood, Josh, Mariam Dahdul, Daniel Ballester, and Laura H. Shaker
2007 Historical/Archaeological Resources Survey Report: Tentative Tract Map No. 33626, City of Moreno Valley, Riverside County, California. On file, Eastern Information Center, University of California, Riverside (#RI-07357; see attachment).

ATTACHMENT

2007 PHASE I CULTURAL RESOURCES SURVEY REPORT AND PHASE II ARCHAEOLOGICAL TESTING REPORT

HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT

TENTATIVE TRACT MAP NO. 33626

City of Moreno Valley
Riverside County, California

For Submittal to:

City of Moreno Valley Planning Department
14177 Frederick St.
Moreno Valley, CA 92553

Prepared for:

Joe Kincaid
Kincaid Development Corporation
17611 Wood Road
Riverside, CA 92508

Prepared by:

CRM TECH
1016 East Cooley Drive, Suites A/B
Colton, CA 92324

Michael Hogan, Principal Investigator
Bai "Tom" Tang, Principal Investigator

May 30, 2007
CRM TECH Contract No. 2060

NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

Author(s): Josh Smallwood, Archaeologist/Report Writer
Mariam Dahdul, Archaeologist/Report Writer
Daniel Ballester, Archaeologist/Field Director
Laura H. Shaker, Archaeologist/Native American Liaison

Consulting Firm: CRM TECH
1016 East Cooley Drive, Suites A/B
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(909) 824-6400

Date: May 30, 2007

Title: Historical/Archaeological Resources Survey Report: Tentative Tract Map No. 33626, City of Moreno Valley, Riverside County, California

For Submittal to: City of Moreno Valley Planning Department
14177 Frederick St.
Moreno Valley, CA 92553
(951) 413-3000

Prepared for: Joe Kincaid
Kincaid Development Corporation
17611 Wood Road
Riverside, CA 92508
(775) 628-8951

USGS Quadrangle: Riverside East, Calif., 7.5' quadrangle; Section 34, T2S R4W, San Bernardino Base Meridian

Project Size: Approximately 36 acres

Cultural Resources: Sites CA-RIV-7284/H (33-15937) and CA-RIV-7285 (33-15938); isolate

Keywords: Moreno Valley area, Riverside County; Phase I survey; Assessor's Parcel No. 256-150-001; prehistoric bedrock milling features; groundstone artifacts; historic-period structural remains; historic-period refuse; Phase II study recommended

MANAGEMENT SUMMARY

In April and May, 2007, at the request of Kincaid Development Corporation, CRM TECH performed a cultural resources study on approximately 36 acres of vacant land in the northwestern portion of the City of Moreno Valley, Riverside County, California. The subject property of the study, Tentative Tract Map No. 33626, consists of what is currently Assessor's Parcel No. 256-150-001, located east of Gernert Road and north of Jennings Court, in the northwest quarter of Section 34, T2S R4W, San Bernardino Base Meridian. The study is part of the environmental review process for the proposed subdivision of the property for residential development. The City of Moreno Valley, as Lead Agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA).

The purpose of the study is to provide the City of Moreno Valley with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any historical/archaeological resources that may exist in or adjacent to the project area, as mandated by CEQA. In order to identify and evaluate such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, consulted with Native American representatives, and carried out an intensive-level field survey.

As a result of these procedures, two archaeological sites, CA-RIV-7284/H (33-15937) and CA-RIV-7285 (33-15938), and one prehistoric isolate were identified within the project boundaries. CA-RIV-7284/H consists of both prehistoric and historic-period components, including bedrock milling features, building foundations, a well, a cistern, and a refuse deposit. CA-RIV-7285 contains two bedrock milling features. The isolate is a hand-held grinding stone that appears to have been used as a mano and a pestle.

The isolate, by definition, does not qualify as a significant archaeological resource due to the lack of contextual integrity and its limited ability to contribute information to the study of prehistory. However, because the artifact is situated in a disked area near natural springs, there is a possibility that additional buried artifacts could be present. Therefore, the excavation of a few shovel test pits is recommended for this locality.

The significance of Sites CA-RIV-7284/H and -7285 cannot be properly evaluated without further archaeological investigations. Since both sites are located in an area that will be impacted by the proposed development project, CRM TECH recommends that an archaeological testing and evaluation program be implemented to determine the presence or absence of any subsurface cultural deposits, and thereby the significance of the sites. The testing and evaluation program should consist of, at a minimum, surface collection of artifacts, excavation of archaeological test pits and units, laboratory analysis of recovered artifacts, preparation of report presenting the findings, and permanent curation of artifacts at an appropriate facility. It should also include additional historical background research on the historic-period component of Site CA-RIV-7284/H. Further recommendations regarding the final treatment of the sites will be formulated and presented on the basis of the results of the testing and evaluation program.

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INTRODUCTION

In April and May, 2007, at the request of Kincaid Development Corporation, CRM TECH performed a cultural resources study on approximately 36 acres of vacant land in the northwestern portion of the City of Moreno Valley, Riverside County, California (Fig. 1). The subject property of the study, Tentative Tract Map No. 33626, consists of what is currently Assessor's Parcel No. 256-150-001, located east of Gernert Road and north of Jennings Court, in the northwest quarter of Section 34, T2S R4W, San Bernardino Base Meridian (Fig. 2). The study is part of the environmental review process for the proposed subdivision of the property for residential development. The City of Moreno Valley, as Lead Agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.).

CRM TECH performed the present study to provide the City of Moreno Valley with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any historical/archaeological resources that may exist in or around the project area, as mandated by CEQA. In order to identify and evaluate such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, consulted with Native American representatives, and carried out an intensive-level field survey. The following report is a complete account of the methods, results, and final conclusion of the study.

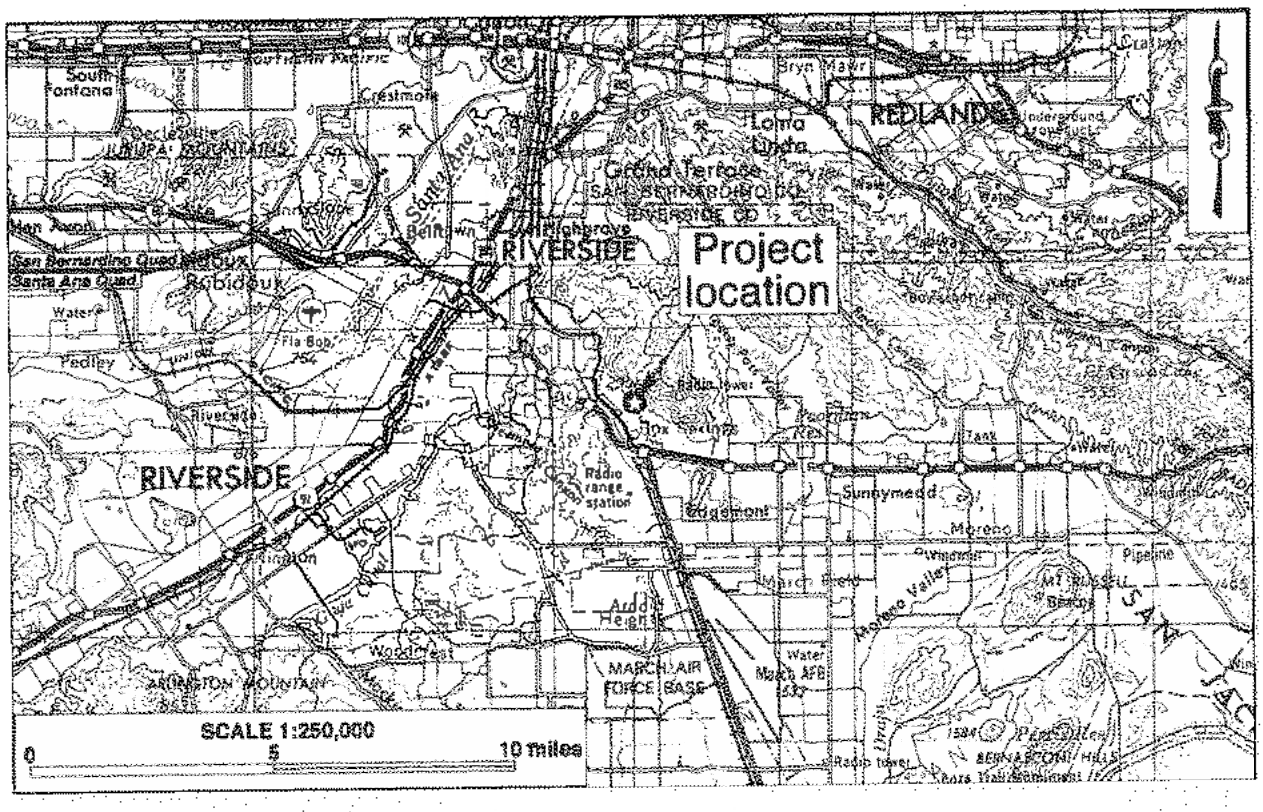

Figure 1. Project vicinity. (Based on USGS San Bernardino and Santa Ana, Calif., 1:250,000 quadrangles [USGS 1969; 1979])

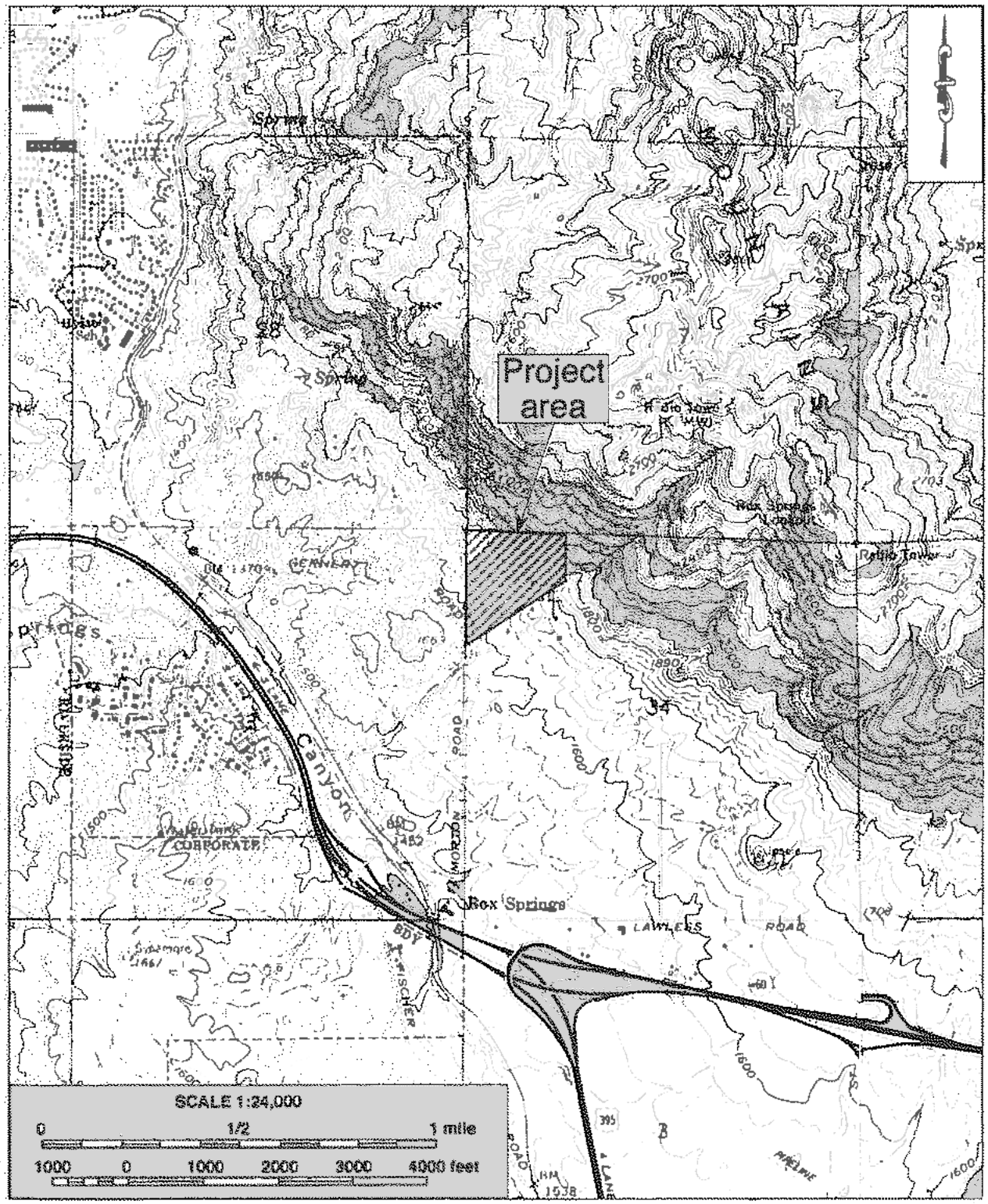

Figure 2.. Project area. (Based on USGS Riverside East, Calif., 1:24,000 quadrangle [USGS 1980])

SETTING

CURRENT NATURAL SETTING

The project area is situated on the southwestern edge of the Box Springs Mountains, near the boundary between the Cities of Moreno Valley and Riverside. The surrounding region often experiences some extreme temperatures, reaching over 100 degrees in summer and dipping below freezing in winter. The project area is bounded on the north, east, and west by undeveloped land, and on the south by an unnamed drainage and neighboring residential properties. Most of the western portion of the property has been recently disked to remove brush, but there are a number of eucalyptus trees and structural remains located in the eastern portion, indicative of past land use (Fig. 3). Several dirt off-highway vehicle trails traverse the property from the southwest to the northeast, and a motorcycle loop trail is found near the center of the property (Fig. 3).

The elevation of the property rises steeply from the west to the east, ranging between 1,580 and 2,080 feet above mean sea level. It is crossed by several minor drainages that course down from the western slope of the Box Springs Mountains, including one that contains a pool of water fed by a spring. Some other damp spots on the property also appear to be springs, as there are dense growths of vegetation around them, including poison oak, reeds, sycamore, eucalyptus, and pepper trees. Vegetation on the hillside above the springs is dominated by a species of *Encelia*, a native shrub that prefers drier soils.

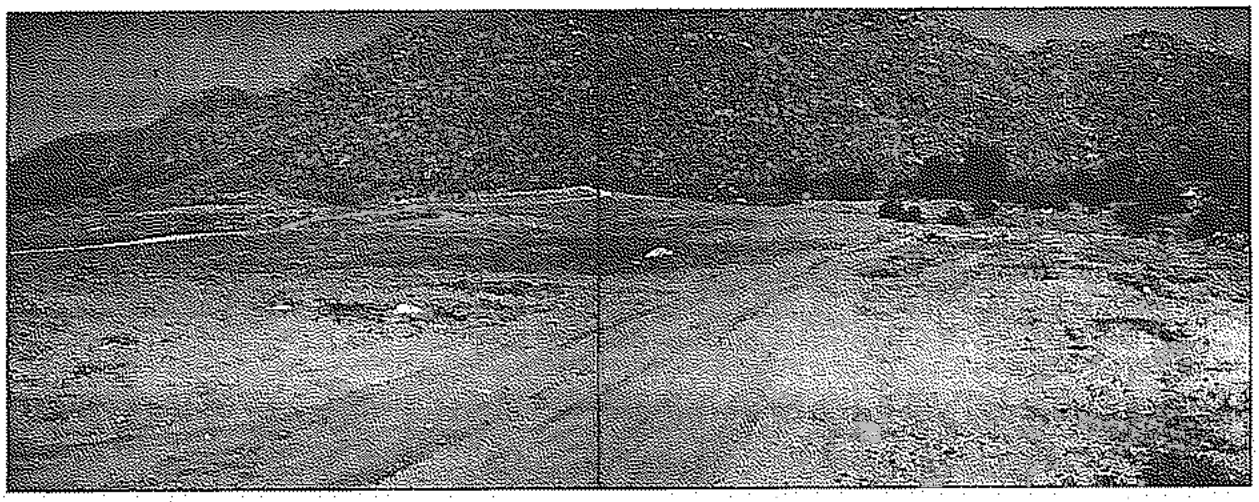

Figure 3. Typical landscapes in the project area. *Left*: view to the north toward the Box Springs Mountains; *right*: view to the northeast toward springs, eucalyptus trees, and structural remains.

CULTURAL SETTING

Prehistoric Context

It is widely acknowledged that human occupation in what is now the State of California began 8,000-12,000 years ago. In attempting to describe and understand the cultural processes that occurred in the ensuing years, archaeologists have developed a number of chronological frameworks that endeavor to correlate the technological and cultural changes that are observable in archaeological records to distinct time periods. Unfortunately, none of these chronological frameworks has been widely accepted, and none has been developed

specifically for the so-called Inland Empire, the nearest ones being for the Colorado Desert and Peninsular Ranges area (Warren 1984) and for the Mojave Desert (Warren and Crabtree 1986).

The development of an overall chronological framework for the region is hindered by the lack of distinct stratigraphic layers of cultural sequences that could be dated by absolute dating methods to provide concrete dates. Since results from archaeological investigations in this region have yet to be synthesized into an overall chronological framework, most archaeologists tend to follow a chronology adapted from a scheme developed by William J. Wallace in 1955 and modified by others (Wallace 1955; 1978; Warren 1968; Chartkoff and Chartkoff 1984; Moratto 1984). Although the beginning and ending dates of the different horizons or periods may vary, the general framework of prehistory in this region under this chronology consists of the following four periods:

- Early Hunting Stage (ca. 10,000 BC-6,000 BC), which was characterized by human reliance on big game animals, as evidenced by large, archaic-style projectile points and the relative lack of plant-processing artifacts;
- Millingstone Horizon (ca. 6,000 BC-AD 1,000), when plant foods and small game animals came to the forefront of subsistence strategy, and from which a large number of millingstones, especially well-made, deep-basin metates, were left;
- Late Prehistoric Period (ca. AD 1,000-1,500), during which a more complex social organization, a more diversified subsistence base—as evidenced by smaller projectile points, expedient millingstones and, later, pottery—and regional cultures and tribal territories began to develop;
- Protohistoric Period (ca. AD 1,500-1,700s), which ushered in long-distance contact with Europeans, and thereby led to the Historic Period.

Ethnohistoric Context

The subject property of this study lies in an area where the traditional territories of three Native American groups overlap: the Serrano of the San Bernardino Mountains, the Luiseño of the Perris-Elsinore region, and the Gabrielino of the San Gabriel Valley. Kroeber (1925:Plate 57) suggests that the Native Americans of the Riverside area were probably Luiseño, Reid (1968:8-9) states that they were Serrano, and Strong (1929:7-9, 275) claims that they were Gabrielino. In any case, there also occurred a late influx of Cahuilla during the 19th century (Bean 1978).

Whatever the linguistic affiliation, Native Americans in the Riverside/Moreno Valley area exhibited similar social organization and resource procurement strategies. Villages were based on clan or lineage groups. Their home/base sites are marked by midden deposits, often with bedrock mortar/metate features. During their seasonal rounds to exploit natural resources, small groups often ranged some distances in search of specific plants and animals. Their gathering strategies often left behind signs of special use sites, such as boulder slicks, at the locations of the resources.

Historic Context

In comparison to other nearby communities such as Riverside and San Jacinto, the City of Moreno Valley is a "late-boomer" both in early development in the 19th century and in urban growth in the 20th. By the mid-19th century, the area that constitutes present-day

Moreno Valley remained essentially uninhabited, despite its location on a plain surrounded by several large Mexican land grants. In 1853-1855, when the U.S. government initiated the first official land survey in southern California, the only man-made features observed in the area were a few roads crisscrossing the desert floor, including a wagon road from San Bernardino to Temecula, a second one leading to San Jacinto, and several unidentified roads or trails.

The Moreno Valley area remained unclaimed public land until 1870, when a large tract of 13,471 acres was purchased from the U.S. government in one single transaction. It was on this vast acquisition that the 11,560-acre Alessandro Tract and the town of Alessandro, where the March Air Reserve Base lies today, were laid out and offered to settlers in 1887 (Gunther 1984:11), during a land boom that swept through southern California in the 1880s. After this initial development scheme failed, the developers of Redlands in San Bernardino County, fresh from their acclaimed success in creating the Bear Valley reservoir and the thriving Redlands colony, took over the Alessandro Tract with the intention of irrigating the land with an elaborate water system (*ibid.*).

Water from the Bear Valley reservoir reached the Moreno Valley area in 1891, ushering in a few years of prosperity in the early 1890s. Two more communities came into being in the vicinity during this brief boom: New Haven, soon to be renamed Moreno, and Midland, also known as Armada (Gunther 1984:323, 333). However, the boom soon turned to bust during the drought of the late 1890s, when Bear Valley water was no longer delivered to the Moreno Valley area. As a result, the budding towns in the area became largely abandoned, and many of the buildings were taken up and moved to Riverside (*ibid.*:13, 334).

During the early 20th century, the Moreno Valley area began to recover slowly. In 1912, a 1,100-acre portion of the original Alessandro Tract was re-subdivided as the Sunnymead Orchard Tract (County Surveyor 1912), thus bestowing on the community formerly known as Midland or Armada the new name of Sunnymead. Closer to the project location, a series of development projects began in 1923 to the west of Sunnymead, which ultimately resulted in the establishment of the community of Edgemont (Gunther 1984:171-172).

Despite these development efforts, Moreno Valley's economic prospect was severely hampered by the lack of reliable water supply until 1973, after the completion of the California Aqueduct and its southern terminus, Lake Perris (Gunther 1984:334). Since then, the promise of affordable housing brought an influx of commuters to the Moreno Valley area, setting off a period of rapid growth and urbanization. By 1984, when residents in the communities of Moreno, Sunnymead, and Edgemont voted to incorporate as the City of Moreno Valley, the new city had already become the second most populous in Riverside County (*ibid.*), thanks mainly to its attraction as a "bedroom community."

RESEARCH METHODS

RECORDS SEARCH

On April 18, 2007, CRM TECH archaeologist Nina Gallardo (see App. 1 for qualifications) conducted the historical/archaeological resources records search at the Eastern Information Center (EIC), University of California, Riverside. The EIC is the State of California's official cultural resource records repository for the County of Riverside, and a part of the

California Historical Resources Information System established and maintained under the auspices of the California Office of Historic Preservation.

During the records search, Gallardo examined maps and records on file at the EIC for previously identified cultural resources in or near the project area, and existing cultural resources reports pertaining to the vicinity. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or Riverside County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Information System.

NATIVE AMERICAN PARTICIPATION

As part of the research procedures, CRM TECH contacted the State of California's Native American Heritage Commission on April 17, 2007, to request a records search in the commission's sacred lands file. Following the commission's recommendations, CRM TECH further contacted a total of 16 Native American representatives in the region in writing on April 18 to solicit local Native American input regarding any possible cultural resources concerns over the proposed project. The correspondences between CRM TECH and the Native American representatives are attached to this report in Appendix 2.

FIELD SURVEY

On April 21 and 24, 2007, CRM TECH archaeologists Daniel Ballester and Clarence Bodmer (see App. 1 for qualifications) carried out the intensive-level, on-foot field survey of the project area. During the survey, Ballester and Bodmer walked parallel north-south transects spaced 15 meters (approx. 50 feet) apart across most of the property, where the ground surface was moderately to slightly sloped. On the steeper slopes of the easternmost portion of the parcel, where the incline exceed 30%, the survey team walked transects along the contours of the slope. The numerous boulder outcrops found in the project area were closely examined for any indications of past Native American use or modification.

Using these survey methods, the ground surface in the entire project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years ago or older). Ground visibility was excellent (90-100%) across most of the parcel since the surface vegetation was recently removed. In contrast, dense vegetation around many of the bedrock outcrops and in the areas where springs and structural ruins were found made for poor (0-30%) ground visibility at these locales.

When features or artifacts were identified, their locations were marked with survey flags and the surrounding area inspected for any artifacts or additional features. The survey team noted each location on field maps and flagged the area to facilitate further recordation after the completion of the survey. An appropriate level of recordation was completed for all potential archaeological resources identified during the field survey, including, at minimum, a description of the resource, a scaled sketch, and its location on a USGS map. The field maps and descriptions were then compiled into standard site record and site record update forms and submitted to the EIC for inclusion in the California Historical Resources Information System.

HISTORICAL RESEARCH

Historical background research for this study was conducted by CRM TECH principal investigator/historian Bai "Tom" Tang (see App. 1 for qualifications) on the basis of published literature in local and regional history, archival records of the U.S. Bureau of Land Management (BLM), and historic maps of the project area. Among maps consulted for this study was the U.S. General Land Office's (GLO) land survey plat maps dated 1855-1877 and the U.S. Geological Survey's (USGS) topographic maps dated 1901-1967. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the BLM, located in Moreno Valley.

RESULTS AND FINDINGS

RECORDS SEARCH

According to records on file at the Eastern Information Center, the project area was apparently covered by two large-scale cultural resources studies completed in the 1980s (Fig. 4), but no historical/archaeological sites were found within or adjacent to the present project area (McCarthy 1987; Drover 1989). While both of the 1980s studies included field inspections, the field methods used in these studies, described as an "intuitive survey" in one (Drover 1989:6) and consisting of 30-meter transects in the other (McCarthy 1987:7), do not appear to be consistent with today's standard for an intensive-level survey. In any event, since both of those studies are now nearly 20 years old, a systematic resurvey was deemed necessary for this study.

Outside the project boundaries but within a one-mile radius, EIC records show a total of 14 other previous cultural resources studies covering various tracts of land and linear features (Fig. 4). In all, more than 50% of the land within the one-mile radius has been surveyed, resulting in the identification of 37 historical/archaeological sites and one isolate—i.e., site with fewer than three artifacts (Table 1). Seven of these sites, CA-RIV-3245/H, -4182H, -4183, -4184, -4185, -4187, and -4188, were later combined and re-assigned a new designation, CA-RIV-6943/H, to form a large site with both prehistoric and historic-period components, including nine bedrock milling stations and a number of features associated with a late-19th century homestead (Table 1).

The other 29 recorded sites within the scope of the records search included 23 prehistoric—i.e., Native American—sites, 3 historic-period sites, and 2 historic-period buildings. One of the prehistoric sites contained a boulder dotted with cupules, and another was a rock-shelter with midden soils, milling slicks, and scattered groundstone and chipped-stone artifacts. Twenty-one of the prehistoric sites were bedrock milling features consisting of milling slicks or metates and at least one mortar, but no visible surface artifacts.

The three historic-period sites included a former military shooting range, concrete slabs and footings along a former Santa Fe Railroad siding, and an early 20th century trash scatter. The two historic-period buildings were both described as early 20th century Mediterranean/Spanish Revival-style residences. The isolate identified within the scope of the records search consisted of three 19th century coins found together.

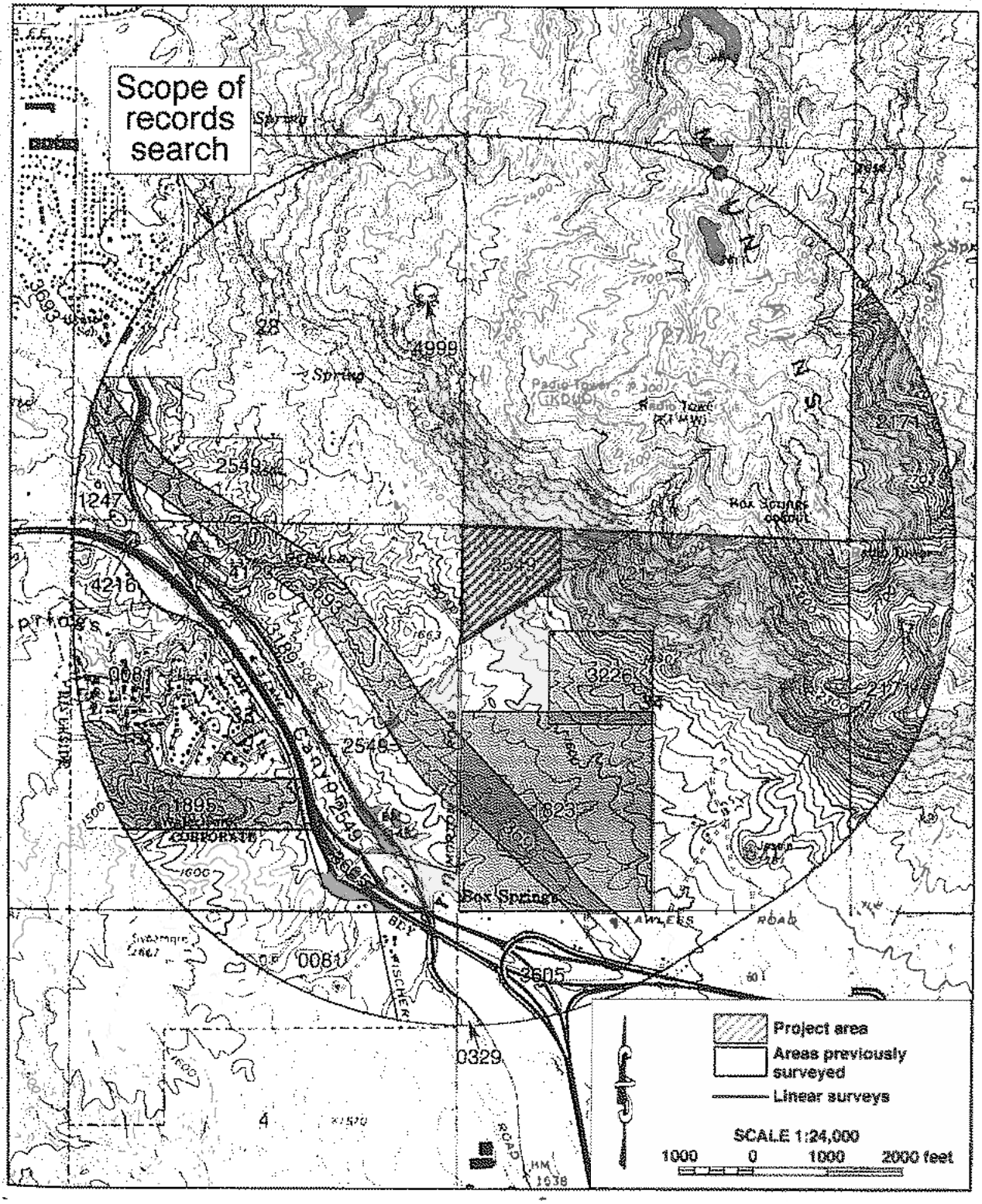

Figure 4. Previous cultural resources studies in the vicinity of the project area, listed by EIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

Table 1. Previously Recorded Cultural Resources within the Scope of the Records Search		
Site No.	Recorded by/Date	Description
CA-RIV-1194	Gardner 1973; Voast and Sundberg 1989, 1991	One bedrock metate and one bedrock mortar on a single rock outcrop
CA-RIV-1200	Gardner 1973	Two bedrock metates on a single rock outcrop
CA-RIV-1203	Gardner 1973	Two bedrock milling surfaces on a single rock outcrop
CA-RIV-1206	Gardner 1973	One milling surface on a single rock outcrop
CA-RIV-2868	Drover 1984	One milling slick on a single rock outcrop
CA-RIV-2869	Drover 1984	Two milling slicks on two boulders
CA-RIV-3241	Pinto 1987	Three milling slicks on two boulders
CA-RIV-3242	Pinto 1987	One milling slick on a single boulder
CA-RIV-3243	Pinto 1987	One milling slick on a single boulder
CA-RIV-3244	Pinto 1987	Seven milling slicks on five boulders
CA-RIV-3245/H	Keller 1991; Ballester 2002	Three boulders containing one milling slick each; re-designated as Feature 19 of CA-RIV-6943/H in 2002
CA-RIV-3246	Pinto 1987	One boulder with one slick, and one boulder with three slicks
CA-RIV-3264	Parr et al. 1987	One boulder with one slick
CA-RIV-3265	Swope et al. 1987	Five milling slicks on a single boulder outcrop
CA-RIV-3266	Parr and Neiditch	Four milling slicks on two boulders
CA-RIV-3267	Parr et al. 1987	Rock shelter, midden soil, milling slicks, lithic scatter
CA-RIV-3268	Parr et al. 1987	Boulder with slick and cupules
CA-RIV-3269	Parr et al. 1987	One boulder with one slick
CA-RIV-3272H	Parr et al. 1987	Military shooting/target range
CA-RIV-3815	Drover and Jackson 1989	One milling surface on a single rock outcrop
CA-RIV-3816	Drover and Jackson 1989	Five bedrock milling surfaces on three rock outcrops
CA-RIV-3817H	Gerry and Oglesby 1989	Concrete slabs and footings along a former Santa Fe Railroad siding
CA-RIV-4181	Keller 1991; Ballester 2002	Four bedrock milling slicks on a single rock outcrop
CA-RIV-4182H	Keller 1991; Ballester 2002	Two rock walls and remains of house foundation known as Webbe's House, re-designated as Features 1-9b of CA-RIV-6943/H in 2002
CA-RIV-4183	Keller 1991; Ballester 2002	One boulder with one grinding slick, re-designated as Feature 11 of CA-RIV-6943/H in 2002
CA-RIV-4184	Keller 1991; Ballester 2002	One boulder with one shallow mortar, re-designated as Feature 15 of CA-RIV-6943/H in 2002
CA-RIV-4185	Keller 1991; Ballester 2002	One boulder with three grinding slicks, re-designated as Feature 14 of CA-RIV-6943/H in 2002
CA-RIV-4186	Keller 1991	One boulder with one grinding slick
CA-RIV-4187	Keller 1991; Ballester 2002	One boulder with one grinding slick, re-designated as Feature 12 of CA-RIV-6943/H in 2002
CA-RIV-4188	Keller 1991; Ballester 2002	One boulder with four grinding slicks, re-designated as Feature 10 of CA-RIV-6943/H in 2002
CA-RIV-4189	Keller 1991	One boulder with one grinding slick
CA-RIV-4195	Schmidt et al. 1990	Four bedrock milling slicks on four boulders
CA-RIV-5669	Keller 1995	Three milling slicks on a single boulder
CA-RIV-5670	Keller 1995	Scattered historic-period glass, ceramic, metal, and garment fragments
CA-RIV-6943/H	Ballester 2002	A total of 19 features, including many that were previously recorded and designated as individual sites; nine bedrock milling features with slicks on boulders; structural remains associated with the late 19th century homestead of Cecil R.G. Webbe
33-11825	Warner 1983	Mediterranean/Spanish Revival-style residence, ca. 1937
33-11826	Warner 1983	Mediterranean/Spanish Revival-style residence, ca. 1937
33-13608	Gardner 1973	Isolated find: three 19th century coins found together—a Mexican peso, a Swedish öre, and a Canadian penny

The presence of these previously recorded sites and artifacts in the vicinity of the subject property suggests that similar cultural features could be found within the project boundaries. However, none of these recorded cultural resources was found within or immediately adjacent to the project area. Therefore, none of them requires further consideration during this study.

NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the Native American Heritage Commission reports that the sacred lands record search identified no Native American cultural resources in the vicinity of the project area. However, noting that "the absence of specific site information in the Sacred Lands File does not guarantee the absence of cultural resources in any 'area of potential effects'," the commission recommends that local Native American representatives be consulted for additional information, and provided a list of potential contacts (see App. 2).

Upon receiving the Native American Heritage Commission's response, CRM TECH contacted all 13 individuals on the list and the organizations they represent. In addition, Dale Foster, Cultural Analyst for the Temecula Band of Luiseño Mission Indians, Erica Helms, Cultural Resources Administrator for the Soboba Band of Luiseño Indians, and John Gomez, Cultural Resources Coordinator for the Ramona Band of Cahuilla Indians, were also contacted. As of this time, two written responses have been received (see App. 2).

Britt Wilson, Cultural Resources Coordinator for the Morongo Band of Mission Indians, replied by e-mail on April 18, 2007. In the e-mail, Mr. Wilson identifies the project location as a part of the Morongo Tribe's Traditional Use Area. He states that he has no specific information retaining to the project area but that "there are substantial and numerous Native American cultural resources within very close proximity to this site." Therefore, he recommends archaeological monitoring, with at least one Native American monitor from the Morongo Band, during ground-disturbing activities. If any Native American cultural resources or human remains are discovered during such activities, Mr. Wilson requests that proper procedures be followed in accordance with state law and regulations. Furthermore, on behalf of the Morongo Band, Mr. Wilson requests a copy of any cultural resources reports generated in relation to this project and further consultations as part of any treatment plan necessitated by archaeological discoveries (see App. 2).

In the letter dated April 30, 2007, Erica Helms also requests that cultural resource monitor(s) be present during any ground-disturbing activities in the project area. In addition, she requests copies of cultural resource documentation generated through this study, as well as further consultation regarding the proposed project (see App. 2).

POTENTIAL HISTORICAL RESOURCES IN THE PROJECT AREA

As a result of the field survey, two previously unknown archaeological sites and one isolate were identified within the boundaries of the project area. The sites have since been designated as CA-RIV-7284/H (33-15937) and -7285 (33-15938) by the Eastern Information Center (see App. 3 for site and isolate records).

Site CA-RIV-7284/H (33-15937): This site, which consists of both a prehistoric and historic-period component, is located approximately 1,280 feet east of Gernert Road and 480 feet

north of Jennings Court. The southern half of the site is situated near the southern boundary of the project area, on a low ridge near the confluence of two natural drainages. The northern portion lies on a relatively level natural terrace at the foot of the Box Springs Mountains. The prehistoric element of CA-RIV-7284/H occurs in the south part of the site and contains eight bedrock milling features with a total of 14 grinding slicks found on the bedrock surfaces. Two manos—i.e., hand-held grinding stones—were found among boulders with unmodified surfaces.

The historic-period component of the site occurs to the north and consists mainly of several structural features and refuse scatters, possibly associated with a late 19th century or early to mid-20th century homestead. The features at the site include dry-lain rock alignments, a rock-and-cement-walled cellar, two small concrete foundations, a concrete step, a well, a cistern, and a dirt access road. A prehistoric stone metate, used as construction material, was observed in the wall of the cellar. The refuse deposit found at the site contains rusted cans of various sizes and shape, ceramic sherds, one complete ink bottle, and blue, clear, and amethyst glass shards.

Site CA-RIV-7285 (33-15938): This site is located approximately 1,600 feet east of Gernert Road and 1,040 feet north of Frankhale Road, near the base of the Box Springs Mountains. It lies near the eastern boundary of the property, partially within an area that is reserved for open space. The site consists of two bedrock milling features with a total of three milling slicks found on the bedrock surfaces, and measures approximately 33 meters north-south and 8 meters east-west, with the features located at each end of the site.

Isolate: The isolate recorded in the project area is a single groundstone piece that may have been used both as a mano and as a pestle. It was found in the southern portion of the property, to the west of Site CA-RIV-7284/H. The artifact may have been unearthed during disking in the area, and its presence suggests that additional cultural material may exist as buried deposits at that location.

HISTORICAL RESEARCH RESULTS

Based on historic sources consulted for this study, the project vicinity had evidently experienced some settlement activities at least by the 1870s. As Figure 5 shows, a few man-made features were observed in the vicinity in the 1850s-1870s, including a "Road to San Diego," "Webb's House," and "Quinn's House." The project area itself, however, apparently remained unsettled at that time (Fig. 5). According to records of the Bureau of Land Management, the project area was included in a homestead patent granted by the U.S. government to Cecil R.G. Webbe, an early settler in the Box Springs area, in the early 1880s (BLM n.d.).

By the late 1890s, several additional roads and buildings had appeared in the vicinity, including one building, presumably a residence, in the southeastern portion of the project area that closely matches the location of structural ruins found at Site CA-RIV-7284/H during the field survey (Fig. 6; App. 3). Historic maps of the area reveal that a building, possibly the same one, existed at that location in the 1930s, the 1950s, the 1960s, and probably as late as 1978 (Figs. 2, 7, 8). The building no longer survives today, as discovered during the field survey, and the bulk of the land within the project area, except for a road that traversed northeasterly to the residence, was vacant and undeveloped throughout the historic period (Figs. 5-8).

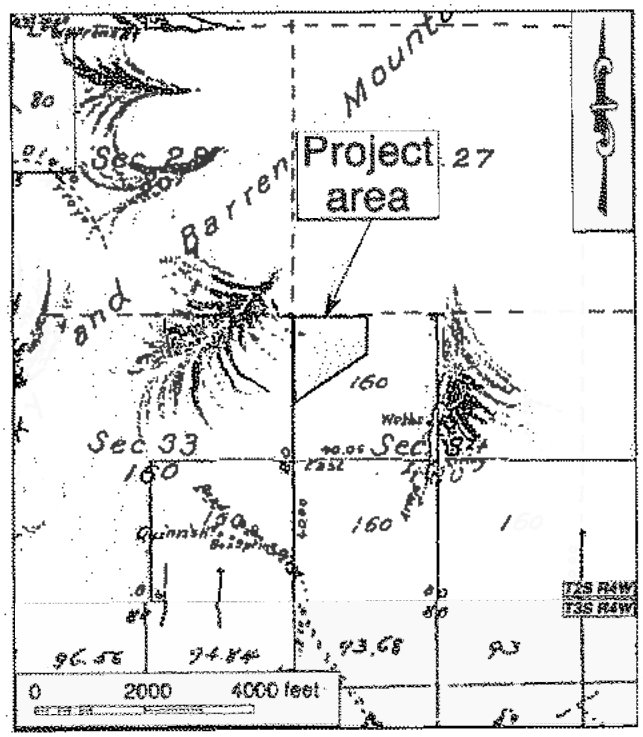

Figure 5. The project area and vicinity in 1853-1877. (Source: GLO 1855; 1877)

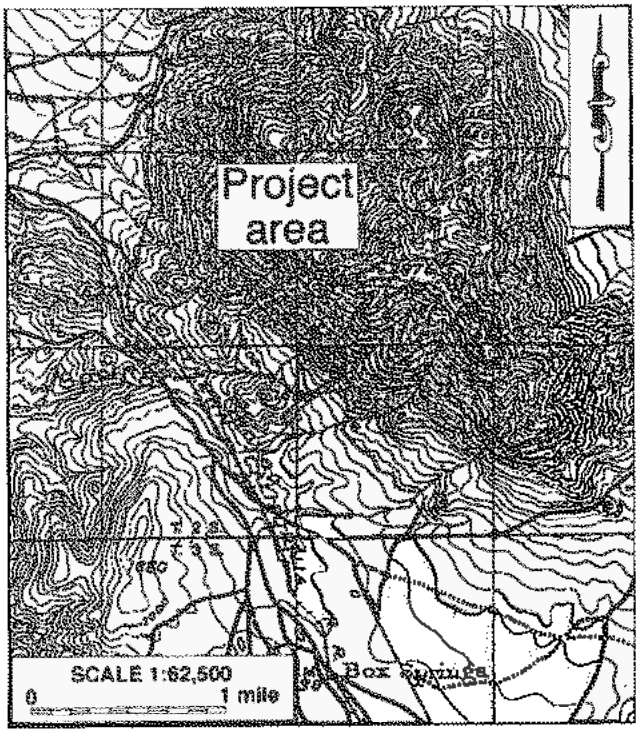

Figure 6. The project area and vicinity in 1897. (Source: USGS 1901)

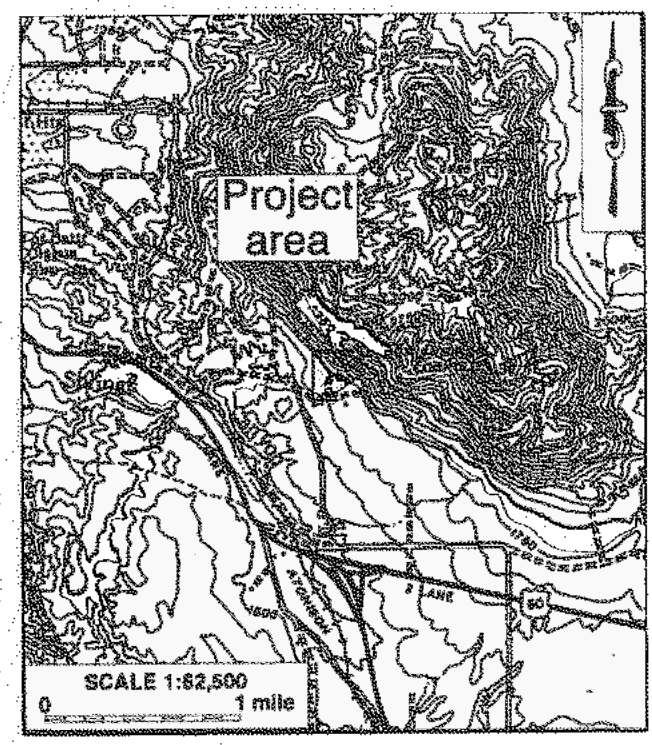

Figure 7. The project area and vicinity in 1939. (Source: USGS 1942)

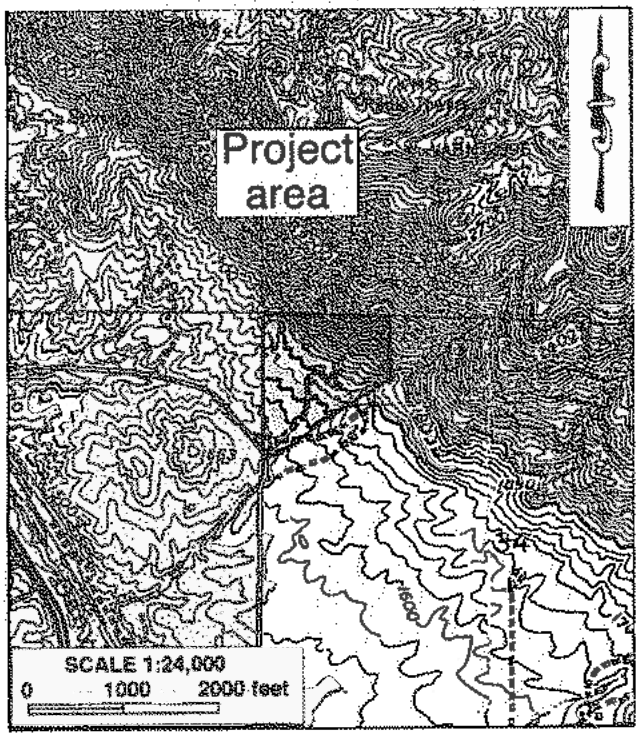

Figure 8. The project area and vicinity in 1951-1953. (Source: USGS 1953)

DISCUSSION

The purpose of this study is to identify any cultural resources within or adjacent to the project area, and to assist the City of Moreno Valley in determining whether such resources meet the official definition of "historical resources," as provided in the California Public Resources Code, in particular CEQA.

DEFINITION

According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR §15064.5(a)(1)-(3)).

Regarding the proper criteria of historical significance, CEQA guidelines mandate that "a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

Pursuant to these statutory and regulatory guidelines, the cultural resources in the project area are evaluated under the California Register criteria. The results of the evaluation are discussed below.

EVALUATIONS

Site CA-RIV-7284/H

Site CA-RIV-7284/H contains cultural elements dating to both the prehistoric and historic periods. The prehistoric component of the site consists of eight bedrock milling stations with grinding slicks on their surface, and two hand-held grinding stones. The milling stations occur along the edge of the Box Springs Mountains, where natural springs and seasonal drainages would have afforded prehistoric peoples a suitable environment for gathering and processing vegetal and animal resources. As the records search results showed, many similar prehistoric sites have been identified in the vicinity, some of which contained subsurface cultural deposits. Because the milling features at CA-RIV-7284 occur on gradual slopes with a build-up of alluvium from steeper inclines of the Box Springs

Mountains, there is a good possibility that the area may contain buried deposits that could yield additional information regarding the true nature of the site.

The historic-period component of CA-RIV-7284/H include rock alignments, foundations, a cellar, a well, a cistern, and a refuse deposit possibly associated with a late 19th century or early to mid-20th century homestead. More in-depth historical research may yield information regarding the exact age and historical association of these remains as well as a chronology of events occurring at the site. At this time, there is insufficient information to relate these features to a specific person or event in history, or to ascertain the existence or absence of buried cultural deposits.

Because of the possibility of undetected subsurface cultural deposits from both the prehistoric and the historic periods, the archaeological data potential of Site CA-RIV-7284/H is unclear. As a result, the historical significance of the site cannot be determined without further archaeological investigations, including subsurface excavations, as well as more detailed historical background research. In order to adequately evaluate the significance of the site, additional research procedures will be necessary, as outlined below.

Site CA-RIV-7285

CA-RIV-7285 consists of two bedrock milling features exhibiting three grinding slicks. Like the prehistoric element of CA-RIV-7284/H, the milling stations at this site are located on the edge of the Box Springs Mountains, where there is some buildup of alluvium. Thus, there is a possibility that buried artifacts may be present at this site as well. Because of the uncertainty of its data potential, the historical significance of CA-RIV-7285 cannot be determined without further archaeological investigations.

Isolate

The isolate identified within the project area consists of a hand-held grinding stone that appears to have been used both as a mano and as a pestle. The artifact was found in a disked area near some natural springs, which suggests that additional cultural material may be present as buried deposits. Isolates, or localities with fewer than three artifacts, by definition do not constitute archaeological sites due to the lack of contextual integrity, and thus are not considered potential "historical resource." This particular artifact, similarly, requires no further consideration in the CEQA-compliance process. However, the location where it was discovered appears to warrant some limited additional archaeological investigation to ascertain the existence or absence of buried cultural artifacts in the area.

CONCLUSION AND RECOMMENDATIONS

The foregoing report has provided background information on the project area, outlined the methods used in the current study, and presented the results of the various avenues of research. As a result of these procedures, two archaeological sites, CA-RIV-7284/H (33-15937) and CA-RIV-7285 (33-15938), and one prehistoric isolate were identified within the project boundaries. The isolate, by definition, does not qualify as a significant archaeological resource. However, because the artifact is situated in a disked area near natural springs, there is a possibility that additional buried artifacts could be present. Therefore, the excavation of a few shovel test pits is recommended for this locality.

The significance of Sites CA-RIV-7284/H and -7285 cannot be properly evaluated without further archaeological investigations. Since both sites are located in an area that will be impacted by the proposed development project, CRM TECH recommends that an archaeological testing and evaluation program be implemented to determine the presence or absence of any subsurface cultural deposits, and thereby the significance of the sites. The testing and evaluation program should consist of, at a minimum, surface collection of artifacts, excavation of archaeological test pits and units, laboratory analysis of recovered artifacts, preparation of report presenting the findings, and permanent curation of artifacts at an appropriate facility. It should also include additional historical background research on the historic-period component of Site CA-RIV-7284/H. Further recommendations regarding the final treatment of the sites will be formulated and presented on the basis of the results of the testing and evaluation program.

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1877 Plat Map: Township No. 2 South Range No. 4 West, San Bernardino Meridian; surveyed in 1853-1877.

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USGS (United States Geological Survey, U.S. Department of the Interior)
1901 Map: Riverside, Calif. (15', 1:62,500); surveyed in 1897.
1942 Map: Riverside, Calif. (15', 1:62,500); aerial photographs taken in 1939.
1953 Map: Riverside East, Calif. (7.5', 1:24,000); aerial photographs taken 1951, field-checked in 1953.
1969 Map: San Bernardino, Calif. (1:250,000); 1958 edition revised.
1979 Map: Santa Ana, Calif. (1:250,000); 1959 edition revised.
1980 Map: Riverside East, Calif. (7.5', 1:24,000); 1967 edition photorevised in 1978.

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1968 Cultural Traditions and Ecological Adaptations on the Southern California Coast. In *Archaic Prehistory in Western United States*, edited by Cynthia Irwin-Williams; pp. 1-14. Eastern New Mexico University Contributions in Anthropology 1(3). Portales, New Mexico.
1984 The Desert Region. In *California Archaeology*, edited by Michael J. Moratto; pp. 339-430. Academic Press, Orlando, Florida.

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APPENDIX 1:
PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, UC Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, UC Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, UC Riverside.
1988-1993	Research Assistant, American Social History, UC Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

1988-1990	University of California Graduate Fellowship, UC Riverside.
1985-1987	Yale University Fellowship, Yale University Graduate School.
1980, 1981	President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (With Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

Membership

California Preservation Foundation.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	Section 106—National Historic Preservation Act: Federal Law at the Local Level. UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands.
1992-1998	Assistant Research Anthropologist, University of California, Riverside
1992-1995	Project Director, Archaeological Research Unit, U. C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, UC Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U. C. Riverside.
1984-1998	Archaeological Technician, Field Director, and Project Director for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1986.

Memberships

Register of Professional Archaeologists, Society for American Archaeology, Society for California Archaeology, Pacific Coast Archaeological Society, Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Josh Smallwood, B.A.

Education

1998	B.A., Anthropology, Humboldt State University, Arcata, California.
1997	Archaeological Field School, Fort Ross Historic District, Fort Ross, California.
	Archaeological Field School, Coastal Test and Mitigation Projects, Arcata, California.
1996	Archaeological Field School, Mad River Watershed Surveys, Blue Lake, California.
1994	A.A., Anthropology, Palomar College, San Marcos, California.
1993	Archaeological Field School, San Pasqual Battlefield, San Pasqual, California.
	Archaeological Field School, Las Flores Asisténcia, Camp Pendleton, CA.
1992	Archaeological Field School, Palomar College Campus Late Prehistoric Sites, San Marcos, California.
1994-2002	Extensive study of lithic resource procurement strategies, reduction technology, tool manufacture, and reproduction.
	"Historical Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base.
2001	"CEQA and Section 106 Basics," presented by Richard Carrico, Principal Investigator, Brian F. Mooney & Associates, San Diego.
	"OSHA Safety Training for Construction Monitors," presented by OSHA and City of San Diego.
2000	"HABS/HAER Recording Methods for Historic Structures," presented by Robert Case, Historic Archaeologist, Mooney & Associates, San Diego.
1998	"Unexploded Ordinance Training," presented by EOD officers, Fort Irwin Army Training Facility, Barstow.
1997	"Obsidian Sourcing through Characterization," presented by Thomas Origer, Sonoma State University.

Professional Experience

2002- Project Archaeologist/Report Writer, CRM TECH, Riverside, California.

- Writer/co-author of cultural resource reports for BLM, FCC, and Caltrans-review, city general plans, commercial, and residential development projects.
- Field-director, archaeological field work, historic-period building surveys and recordation, historical archaeologist, and lithic analysis.
- Historical research based on published literature, historic maps, oral interviews, county and city archival records, internet sources, and consultation with local historical societies.

1997-2002 Archaeologist for several cultural resource management/environmental consultants, Department of Defense subcontractors, and Humboldt State University.

Cultural Resources Management Reports

Co-author of and contributor to numerous CEQA and Section 106 compliance studies since 1997.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Mariam Dahdul, M.A., RPA*

Education

2002	M.A., Anthropology, California State University, Fullerton.
1993	B.A., Geography, California State University, Fullerton.
2003	"Ceramics Analysis," graduate seminar presented by Dr. Delaney-Rivera, California State University, Fullerton.
2002	"Section 106-National Historic Preservation Act: Federal Law at the Local Level," presented by UCLA Extension.
2002	"Historic Archaeology Workshop," presented by Richard H. Norwood, Base Archaeologist, Edwards Air Force Base.

Professional Experience

2000- Project Archaeologist, CRM TECH, Riverside.
- Preparing cultural resources management reports, maps, and site records;
- Analyzing beads, ornaments, and shell;
- Conducting archaeological field surveys;
- Participating in various archaeological testing and mitigation programs.

Laboratory and Field Experience

2001 Archaeological field school under the direction of Dr. Brian Byrd.
- Test excavations of sites at the San Elijo Lagoon Reserve, including flotation of soil samples and sorting and cataloguing of artifacts.

2000 Archaeological field class under the direction of Dr. Claude Warren.
- Excavated units at Soda Lake in the Mojave Desert and produced lake bottom stratigraphic profiles.

1999-2000 Archaeology Laboratory, CSU, Fullerton.
- Assisted in the cataloguing of artifacts.

1999 Field survey course under the direction of Dr. Phyllisa Eisentraut.
- Surveyed and mapped prehistoric site in the Mojave Desert.

Papers Presented

2002	"Shell Beads from the Coachella Valley," Sixth Annual Symposium of the Coachella Valley Archaeological Society.
2002	"Shell Beads from the Coachella Valley," Kelso Conference on the Archaeology of the California and Mojave Deserts.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources management study reports since 2000.

* Register of Professional Archaeologists

PROJECT ARCHAEOLOGIST/FIELD DIRECTOR
Daniel Ballester, B.A.

Education

1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside.

Professional Experience

2002-	Field Director, CRM TECH, Riverside. • Report writing, site record preparation, and supervisory responsibilities over all aspects of fieldwork and field crew.
1999-2002	Project Archaeologist, CRM TECH, Riverside. • Survey, testing, data recovery, monitoring, and mapping.
1998-1999	Field Crew, K.E.A. Environmental, San Diego. • Two and a half months of excavations on Topomai village site, Marine Corp Air Station, Camp Pendleton.
1998	Field Crew, A.S.M. Affiliates, Encinitas. • Two weeks of excavations on a site on Red Beach, Camp Pendleton, and two weeks of survey in Camp Pendleton, Otay Mesa, and Encinitas.
1998	Field Crew, Archaeological Research Unit, University of California, Riverside. • Two weeks of survey in Anza Borrego Desert State Park and Eureka Valley, Death Valley National Park.

PROJECT ARCHAEOLOGIST
Clarence Bodmer, B.A.

Education

2000-2002	Graduate Program in Archaeology, University of Kentucky, Lexington.
1996	B.A., Archaeology, University of California, Santa Barbara.

Professional Experience

2006-	Archaeologist/Report Writer, CRM TECH, Riverside, California.
2006	Archaeologist, Tetra Tech, San Bernardino, California.
2005-2006	Archaeologist, Discovery Works, Long Beach, California.
2004-2005	Archaeological Technician, Statistical Research, Inc., Redlands, California.
2003	Archaeological Technician, Wilbur Smith & Associates, Lexington, Kentucky.
2000-2004	Archaeologist, Kentucky Archaeological Survey, Lexington, Kentucky.

Honors and Awards

2001-2002	Research Assistant, Department of Anthropology, University of Kentucky.
1995-1996	Grant, University of California, Santa Barbara.
1995-1996	Dean's Honor List, University of California, Santa Barbara.

Research Interests

Organization of complex societies, ceramic analysis, settlement patterns, spatial analysis using GIS and remote sensing applications.

Memberships

Society for American Archaeology.
Society for California Archaeology.

NATIVE AMERICAN LIAISON
Laura Hensley Shaker, B.S.

Education

1998	B.S., Anthropology (with emphasis in Archaeology), University of California, Riverside.
1997	Archaeological Field School, University of California, Riverside.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside.
1999	"Unexploded Ordinance Training," presented by EOD officers; Fort Irwin Army Training Facility, Barstow.

Professional Experience

1999-	Project Archaeologist, CRM TECH, Riverside.
1999	Archaeological survey and excavation at Vandenburg Airforce Base; Applied Earthworks, Lompoc.
1999	Archaeological survey at Fort Irwin Army Training Facility, Barstow; A.S.M. Affiliates, Encinitas.
1998-1999	Paleontological fieldwork and laboratory procedures, Eastside Reservoir Project; San Bernardino County Museum, Redlands.
1998	Archaeological survey at the Anza-Borrego State Park; Archaeological Research Unit, U.C. Riverside.
1997-1998	Archaeological survey and excavation at the Twentynine Palms Marine Corps Air and Ground Combat Center; Archaeological Research Unit, U.C. Riverside.

PROJECT ARCHAEOLOGIST
Nina Gallardo, B.A.

Education

2004	B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004-	Project Archaeologist, CRM TECH, Riverside. • Surveys, excavations, mapping, and records searches.

Honors and Awards

2000-2002 - Dean's Honors List, University of California, Riverside.

APPENDIX 2:

CORRESPONDENCES WITH NATIVE AMERICAN REPRESENTATIVES*

* A total of 16 local Native American representatives were contacted; a sample letter is included in this report.

CRM TECH

FAX COVER SHEET

4472 Orange Street
Riverside, CA 92501
951·784·3051·Tel
951·784·2987·Fax

To:
Native American Heritage Commission

Fax:
(916) 657-5390

From:
Laura Hensley Shaker

Date:
April 17, 2007

Number of pages (including this cover sheet):
2

HARDCOPY:

_____ will follow by mail

_√_ will not follow unless requested

RE: Sacred Land records search

This is to request a Sacred Lands records search

Name of project:
Tract 33626; APN 256-150-001
CRM TECH #2060

Project Size:
36 acres

Location:
In the City of Moreno Valley
Riverside County

USGS 7.5' quad sheet data:
Riverside East, Calif.
Section 34, T2S R4W, SBBM

Please call if you need more information or have any questions.

Results may be faxed to the number above.

I appreciate your assistance in this matter.

Map included

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
916 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

April 17, 2007

Ms. Laura Hensley Shaker
CRM TECH
4472 Orange Street
Riverside, CA 92501

Sent by FAX to: 951-784-2987
Number of pages: 3

Re: Cultural Resource Identification Study/Sacred Lands File Search for Proposed Tract 33626 Project in City of Moreno (CRM TECH #2060); Riverside County, California

Dear Ms. Hensley Shaker: Laura

The Native American Heritage Commission was able to perform a record search of its Sacred Lands File (SLF) for the affected project area. The SLF failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the Sacred Lands File does not guarantee the absence of cultural resources in any 'area of potential effect (APE).'

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the nearest tribes that may have knowledge of cultural resources in the project area. A List of Native American contacts are attached to assist you. The Commission makes no recommendation of a single individual or group over another. It is advisable to contact the person listed; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area (APE).

Lack of surface evidence of archeological resources does not preclude the existence of archeological resources. Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.6 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contact List

Native American Contacts
Riverside County
April 17, 2007

Cahuilla Band of Indians
Anthony Madrigal, Jr., Interim-Chairperson
P.O. Box 391760 Cahuilla
Anza , CA 92539
tribalcouncil@cahuilla.net
(951) 763-2631

(951) 763-2632 Fax

Santa Rosa Band of Mission Indians
John Marcus, Chairman
P.O. Box 609 Cahuilla
Hemet , CA 92546
srtribaloffice@aol.com
(951) 658-5311
(951) 658-6733 Fax

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resource Center
P.O. Box 1477 Luiseno
Temecula , CA 92593
(951) 308-9295
(951) 676-2768
(951) 695-1778 Fax

Morongo Band of Mission Indians
Britt W. Wilson, Cultural Resources-Project Manager
49750 Seminole Drive Cahuilla
Cabazon , CA 92230 Serrano
britt_wilson@morongo.org
(951) 755-5206
(951) 755-5200/323-0822-cell
(951) 922-8146 Fax

Ramona Band of Mission Indians
Joseph Hamilton, vice chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

San Manuel Band of Mission Indians
Ann Brierty, Environmantal Department
101 Pure Water Lane Serrano
Highland , CA 92346
abrierty@sanmanuel-nsn.gov
(909) 863-5899 EXT-4321

(909) 862-5152 Fax

San Manuel Band of Mission Indians
Henry Duro, Chairperson
26569 Community Center Drive Serrano
Highland , CA 92346
(909) 864-8933
(909) 864-3370 Fax

Soboba Band of Luiseño Indians
Bennae Calac, Cultural Resource Director
P.O. Box 487 Luiseno
San Jacinto , CA 92581
(951) 663-8332
(951) 654-4198 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American with regard to cultural resources for the proposed Tract 33626 Project ; APN 256-150-001 (CRM TECH #2060); City of Moreno Valley; Riverside County, California for which a Sacred Lands File search was requested.

Native American Contacts
Riverside County
April 17, 2007

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula , CA 92593
tbrown@pechanga-nsn.gov
(951) 676-2768
(951) 695-1778 Fax

Cahuilla Band of Indians
Maurice Chacon, Cultural Resources
P.O. Box 391760 Cahuilla
Anza , CA 92539
cbandodian@aol.com
(951) 763-2631

(951) 763-2632 Fax

Willie Pink
48310 Pechanga Road Luiseno
Temecula , CA 92592
wipink@hotmail.com
(909) 936-1216
Prefer e-mail contact

Serrano Band of Indians
Goldie Walker
6588 Valeria Drive Serrano
Highland , CA 92346
(909) 862-9883

Soboba Band of Luiseno Indians
Harold Arres, Cultural Resources Manager
P.O. Box 487 Luiseno
San Jacinto , CA 92581
harres@soboba-nsn.gov
(951) 654-2765
FAX: (951) 654-4198

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American with regard to cultural resources for the proposed Tract 33626 Project ; APN 256-150-001 (CRM TECH #2060); City of Moreno Valley; Riverside County, California for which a Sacred Lands File search was requested.

April 18, 2007

Ann Brierty, Cultural Resource Coordinator
San Manuel Band of Mission Indians
101 Pure Water Lane
Highland, CA 92346

RE: 36 Acres in APN 256-150-001; Tract 33626
In the City of Moreno Valley, Riverside County
CRM TECH Contract #2060

Dear Ms. Brierty:

CRM TECH is conducting a cultural resources study on the property referenced above. In the meantime, I am writing to request your input on potential Native American cultural resources on or near the property. Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional significance within or near the project area that we should be aware of before conducting the field survey. The lead agency for this project is the City of Moreno Valley in the CEQA review process. Please note that this project is not under the provision of SB18.

The property is located just north of the northern end of Morton Road and east of the eastern end of Gernert Road, in the City of Moreno Valley, Riverside County. The accompanying map, based on the USGS Riverside East, Calif., 7.5' quadrangle, depicts the location of the project area in the northwest corner of Section 34, T2S R4W, SBBM.

Any information, concerns or recommendations regarding cultural resources in the vicinity of the project area may be forwarded to CRM TECH by telephone, email, facsimile or standard mail. Thank you for the time and effort in addressing this important matter.

Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: Project location map

Subject: 36-acre project in Moreno Valley
Date: Wednesday, April 18, 2007 5:31 PM
From: Britt Wilson <britt_wilson@morongo.org>
To: Laura Hensley-Shaker <laura.shaker@crmtech.us>
Cc: Britt Wilson <britt_wilson@morongo.org>
Conversation: 36-acre project in Moreno Valley

Thank you for contacting the Morongo Band of Mission Indians concerning cultural resource information relative to the above referenced project(s). Due to the high number of information requests the Tribe has been receiving, we are only able to respond via email.

The project(s) is outside of the Tribe's current reservation boundaries but within an area that may be considered a traditional use area or one is which the Tribe has cultural ties (e.g. Cahuilla/Serrano territory). Although the Tribe has no specific information on your site, **there are substantial and numerous Native American cultural resources within very close proximity** to this site. In that light, the Tribe recommends the following:

- Archaeological site monitoring with at least one monitor being a Native American representing Morongo. The project developer can contact Britt Wilson to coordinate contract, etc.;
- In accordance with state law, the County coroner should be contacted if any human remains are found during earthmoving activities;
- If Native American cultural resources are uncovered during earthmoving activities, work in the immediate vicinity of the find shall cease and an archaeologist meeting Secretary of Interior standards shall be retained to assess the find. If the find is significant enough to require a Treatment Plan, the Morongo Band of Mission Indians asks that it be contacted again to provide further consultation.

[SPECIAL NOTE (for projects other than cell towers): *If* this project is associated with a city or county specific plan or general plan action it is subject to the provisions of SB18-Traditional Tribal Cultural Places (law became effective January 1, 2005) and will require the city or county to participate in **formal, government-to-government** consultation with the Tribe. If the city or county are your client, you may wish to make them aware of this requirement. By law, they are required to contact the Tribe. This email does ***not*** constitute consultation under SB18.]

Thank you for the opportunity to comment on the project.

Sincerely,

Britt W. Wilson
Project Manager - Cultural Resources
Morongo Band of Mission Indians
49750 Seminole Drive (Casino Morongo Bldg)
Cabazon, CA 92230
Office: (951) 755-5200 Direct: (951) 755-5206
Mobile: (951) 323-0822
Fax: (951) 922-8146 E-mail: Britt_wilson@morongo.org

Wayta' Yawa' (always believe)

Mission:

Educate and communicate the rich heritage of Soboba peoples; Lead and assist individuals, organizations and communities in understanding the needs and concerns of Native American monitoring of traditional sites; Advocate Native American participation in state agencies and boards; Advocate legislation and enforcement of laws affecting Native American peoples and protecting historical and archaeological resources.

April 30, 2007

Attn: Laura Shaker
CRM TECH
4472 Orange Street
Riverside, Ca 92501

Re: Contract # 2060

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project(s) has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does falls within the bounds of our Tribal Traditional Use Areas.

Soboba Band of Luiseño Indians is requesting the following:

1. Further **government to government** consultation.
2. Copies of archeological and/or cultural resource documentation.
3. Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests Cultural Resource Monitor(s) to be present during any ground disturbing proceedings.

[SPECIAL NOTE (for projects other than cell towers): *If* this project is associated with a city or county specific plan or general plan action it is subject to the provisions of SB18-Tradtional Tribal Cultural Places (law became effective January 1, 2005) and will require the city or county to participate in **formal, government-to-government** consultation with the Tribe. If the city or county are your client, you may wish to make them aware of this requirement. By law, they are required to contact the Tribe.]

Sincerely,

Erica Helms
Soboba Band of Luiseño Indians
Phone (951) 487-8268
Cell (951) 663-8333
ehelms@soboba-nsn.gov

APPENDIX 3

SITE/ISOLATE RECORDS
(Confidential)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 33-15937
HRI #
Trinomial CA-RIV-7284/H
NRHP Status Code 7
Other Listings
Review Code Reviewer Date

Page 1 of 4 *Resource Name or # (Assigned by recorder) CRM TECH 2060-1

P1. Other Identifier:

*P2. Location: √ Not for Publication ___ Unrestricted *a. County Riverside

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Riverside East, Calif. Date 1980

T2S; R4W; NW 1/4 of NW 1/4 of Sec 34; S.B.B.M.

Elevation: Approximately 1,640-1,720 feet above mean sea level

c. Address N/A City Moreno Valley Zip

d. UTM: (Give more than one for large and/or linear resources) Zone 11 ; 472,937 mE/ 3,757,387 mN

UTM Derivation: ___ USGS Quad √ GPS; NAD 1927

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) The site is located approximately 1,280 feet east of Gernert Road and 480 feet north of Jennings Court.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of both prehistoric and historic-period components. The prehistoric element occurs in the southern part of the site and contains eight bedrock milling features with a total of 14 grinding slicks found on the bedrock surfaces. Two manos were found among boulders with unmodified surfaces.

The historic-period component of the site occurs to the north and consists mainly of several structural features and refuse scatters, possibly associated with a late 19th century or early to mid-20th century homestead. The features at the site include dry-lain rock alignments, a rock-and-cement-walled cellar, two small concrete foundations, a concrete step, a well, a cistern, and a dirt access road. A prehistoric stone metate, used as construction material, was observed in the wall of the cellar. The refuse deposit found at the site contains rusted cans of various sizes and shape, ceramic sherds, one complete ink bottle, and blue, clear, and amethyst glass shards.

*P3b. Resource Attributes: (List attributes and codes) AP4-Bedrock-milling features; AH2-Foundations/structure pads; AH4-Trash scatter; AH5-Well/cistern

*P4. Resources Present: ___ Building ___ Structure ___ Object √ Site ___ District ___ Element of District ___ Isolate ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #)

*P6. Date Constructed/Age and Sources: ___ Historic ___ Prehistoric √ Both

*P7. Owner and Address: Unknown

*P8. Recorded by: (Name, affiliation, and address) Daniel Ballester, CRM TECH, 1016 East Cooley Drive, Suites A/B, Colton, CA 92324

*P9. Date Recorded: April 24, 2007

*P10. Survey Type: (Describe) Intensive-level survey for CEQA-compliance purpose

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Josh Smallwood, Mariam Dahdul, Daniel Ballester, and Laura H. Shaker (2007): Historical/Archaeological Resources Survey Report: Tentative Tract Map No. 33626, City of Moreno Valley, Riverside County, California. On file, Eastern Information Center, University of California, Riverside.

*Attachments: ___ None √ Location Map √ Sketch Map ___ Continuation Sheet ___ Building, Structure, and Object Record √ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

State of California–The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHAEOLOGICAL SITE RECORD

Primary # 33-15937
Trinomial CA-RIV-7284/H

*Resource Name or # (Assigned by recorder) CRM TECH 2060-1

A1. Dimensions: a. Length 140 m (E-W) b. Width 130 m (N-S)
Method of Measurement: ___ Paced ___ Taped ___ Visual estimate √ Other: Range-finder
Method of Determination (Check any that apply.): √ Artifacts √ Features ___ Soil ___ Vegetation ___ Topography ___ Cut bank ___ Animal burrow ___ Excavation ___ Property boundary ___ Other (Explain):
Reliability of Determination: ___ High √ Medium ___ Low Explain:
Limitations (Check any that apply): ___ Restricted access ___ Paved/built over ___ Site limits incompletely defined ___ Disturbances ___ Vegetation ___ Other (Explain):

A2. Depth: ___ ___ None √ Unknown Method of Determination:

***A3. Human Remains:** ___ Present √ Absent ___ Possible ___ Unknown (Explain):

***A4. Features:** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.) See item P3a.

***A5. Cultural Constituents:** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.) See item P3a.

***A6. Were Specimens Collected?** √ No ___ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)

***A7. Site Condition:** ___ Good √ Fair ___ Poor (Describe disturbances.):

***A8. Nearest Water** (Type, distance, and direction.): The site is located on a low ridge near the confluence of two intermittent drainages. Several springs are located in the immediate vicinity, along the base of the Box Springs Mountains.

***A9. Elevation:** Approximately 1,640-1,720 feet above mean sea level

A10. Environmental Setting: (Describe vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): The vegetation noted in the vicinity of the site includes eucalyptus, pepper, sycamore, *Encelia* sp., poison oak, and wild mustard. The terrain in the area is nearly level, but inclines to the east towards the western slope of the Box Springs Mountains.

A11. Historical Information: A building was known to be present at this location at least by the 1890s, and may have survived into the recent decades. The area was included in a homestead patent issued to Cecil R.G. Webbe, an early settler in the Box Springs area, in the early 1880s.

***A12. Age:** √ Prehistoric ___ Protohistoric ___ 1542-1769 ___ 1769-1848 ___ 1848-1880 √ 1880-1914 √ 1914-1945 ___ Post 1945 ___ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations: (Discuss scientific, interpretive, ethnic, and other values of site, if known) The site is situated in an area where the traditional territories of three Native American groups overlapped: the Serrano, the Luiseño, and the Gabrielino. The bedrock milling features may have been used to process vegetal and/or animal resources that were gathered/hunted from the surrounding area. The historic-period remains may be associated with a late 19th century or early to mid-20th century homestead.

A14. Remarks: The historical significance of the site cannot be determined without further archaeological investigations, including subsurface excavations.

A15. References: (Documents, informants, maps, and other references.): See Item P11.

A16. Photographs: (List subjects, direction of view, and accession numbers or attach a Photograph Record.):
Original Media/Negatives Kept at: CRM TECH, 41016 East Cooley Drive, Suites A/B, Colton, CA 92324

***A17. Form Prepared by:** John J. Eddy **Date:** May 3, 2007
Affiliation and Address: CRM TECH, 1016 East Cooley Drive, Suites A/B, Colton, CA 92324

*Required information

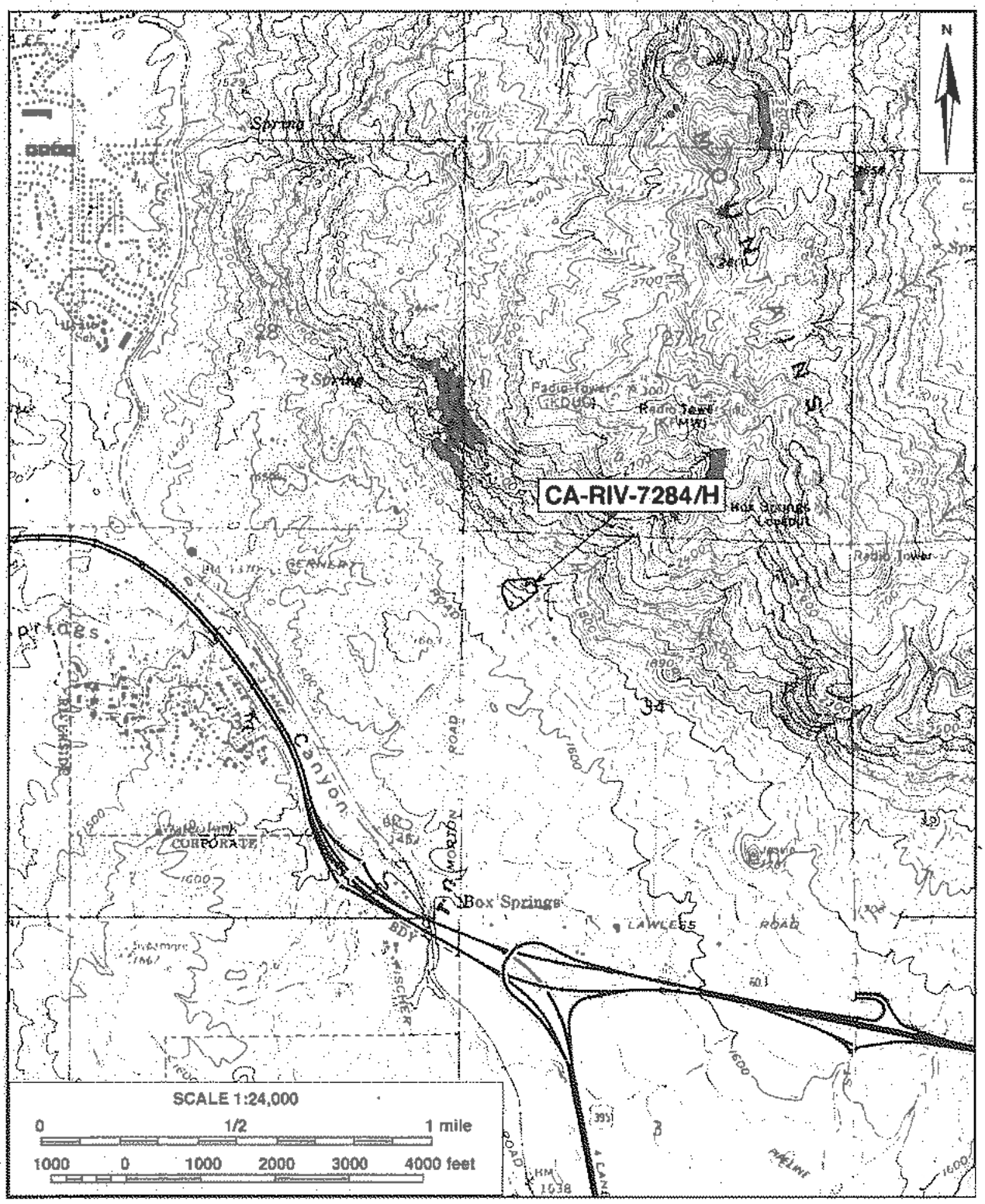
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 33-15937
HRI #
Trinomial CA-RIV-7284/H

Page 3 of 4 *Resource Name or # (Assigned by recorder) CRM TECH 2060-1

*Map Name: Riverside East, Calif. *Scale: 1:24,000 *Date of Map: 1980



DPR 523J (1/95)

*Required Information

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(Confidential)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 33-15938
HRI #
Trinomial CA-RIV-7285
NRHP Status Code 7
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 2060-2

P1. Other Identifier:
*P2. Location: √ Not for Publication ___ Unrestricted *a. County Riverside
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Riverside East, Calif. Date 1980
T2S; R4E; NE 1/4 of NW 1/4 of NW 1/4 of Sec 34; S.B.B.M.
Elevation: Approximately 1,740 feet above mean sea level
c. Address N/A City Moreno Valley Zip
d. UTM: (Give more than one for large and/or linear resources) Zone 11 ; 473,033 mE/ 3,757,468 mN
UTM Derivation: ___ USGS Quad √ GPS; NAD 1927
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) The site is located approximately 1,600 feet east of Gernert Road and 1,040 feet north of Frankhale Road.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of two bedrock milling features situated near the base of the Box Springs Mountains. A total of three milling slicks are found on the bedrock surfaces.

*P3b. Resource Attributes: (List attributes and codes) AP4: Bedrock milling features
*P4. Resources Present: ___ Building ___ Structure ___ Object √ Site ___ District ___ Element of District
___ Isolate ___ Other
P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)
P5b. Description of Photo: (view, date, accession #)
*P6. Date Constructed/Age and Sources: ___ Historic √ Prehistoric ___ Both
*P7. Owner and Address: Unknown

*P8. Recorded by: (Name, affiliation, and address) Daniel Ballester, CRM TECH, 1016 East Cooley Drive, Suites A/B, Colton, CA 92324
*P9. Date Recorded: April 24, 2007
*P10. Survey Type: (Describe) Intensive-level survey for CEQA-compliance purpose

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Josh Smallwood, Mariam Dahdul, Daniel Ballester, and Laura H. Shaker (2007): Historical/ Archaeological Resources Survey Report: Tentative Tract Map No. 33626, City of Moreno Valley, Riverside County, California. On file, Eastern Information Center, University of California, Riverside.

*Attachments: __None √ Location Map √ Sketch Map __Continuation Sheet __Building, Structure, and Object Record
√ Archaeological Record __District Record ___Linear Resource Record __Milling Station Record ___Rock Art Record
___Artifact Record __Photograph Record __Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHAEOLOGICAL SITE RECORD

Primary # 33-15938
Trinomial CA-RIV-7285

*Resource Name or # (Assigned by recorder) CRM TECH 2060-2

A1. **Dimensions:** a. Length 33 m (N-S) b. Width 8 m (E-W)
Method of Measurement: ___Paced ___Taped ___Visual estimate √ Other: Range-finder
Method of Determination (Check any that apply.): ___Artifacts √ Features ___Soil ___Vegetation ___Topography ___Cut bank ___Animal burrow ___Excavation ___Property boundary ___Other (Explain):
Reliability of Determination: ___High √ Medium ___Low Explain:
Limitations (Check any that apply): ___Restricted access ___Paved/built over ___Site limits incompletely defined ___Disturbances ___Vegetation ___Other (Explain):

A2. **Depth:** ___None √ Unknown Method of Determination:

*A3. **Human Remains:** ___Present √ Absent ___Possible ___Unknown (Explain):

*A4. **Features:** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.) Two bedrock-milling features, designated Features 1 and 2, were recorded at the site. Feature 1 exhibited a single milling slick measuring 23 x 23 cm, while Feature 2 exhibited two milling slicks measuring 80 x 20 cm and 30 x 20 cm.

*A5. **Cultural Constituents:** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.) None.

*A6. **Were Specimens Collected?** √ No ___Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)

*A7. **Site Condition:** ___Good √ Fair ___Poor (Describe disturbances.):

*A8. **Nearest Water** (Type, distance, and direction.): The site is adjacent to an intermittent drainage. Several springs are located in the immediate vicinity, along the base of the Box Springs Mountains.

*A9. **Elevation:** Approximately 1,740 feet above mean sea level

A10. **Environmental Setting:** (Describe vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): Vegetation in the site area consists predominately of *Encelia* sp. The terrain inclines steeply to the east towards the western slope of the Box Springs Mountains.

A11. **Historical Information:**

*A12. **Age:** √ Prehistoric ___Protohistoric ___1542-1769 ___1769-1848 ___1848-1880 ___1880-1914 ___1914-1945 ___Post 1945 ___Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. **Interpretations:** (Discuss scientific, interpretive, ethnic, and other values of site, if known) The site is situated in an area where the traditional territories of three Native American groups overlapped: the Serrano, the Luiseño, and the Gabrielino. The bedrock milling features may have been used to process vegetal and/or animal resources that were gathered/hunted from the surrounding area.

A14. **Remarks:** The historical significance of the site cannot be determined without further archaeological investigations, including subsurface excavations.

A15. **References:** (Documents, informants, maps, and other references.): See Item P11.

A16. **Photographs:** (List subjects, direction of view, and accession numbers or attach a Photograph Record.):
Original Media/Negatives Kept at: CRM TECH, 1016 East Cooley Drive, Suites A/B, Colton, CA 92324

*A17. **Form Prepared by:** John J. Eddy **Date:** May 3, 2007
Affiliation and Address: CRM TECH, 1016 East Cooley Drive, Suites A/B, Colton, CA 92324

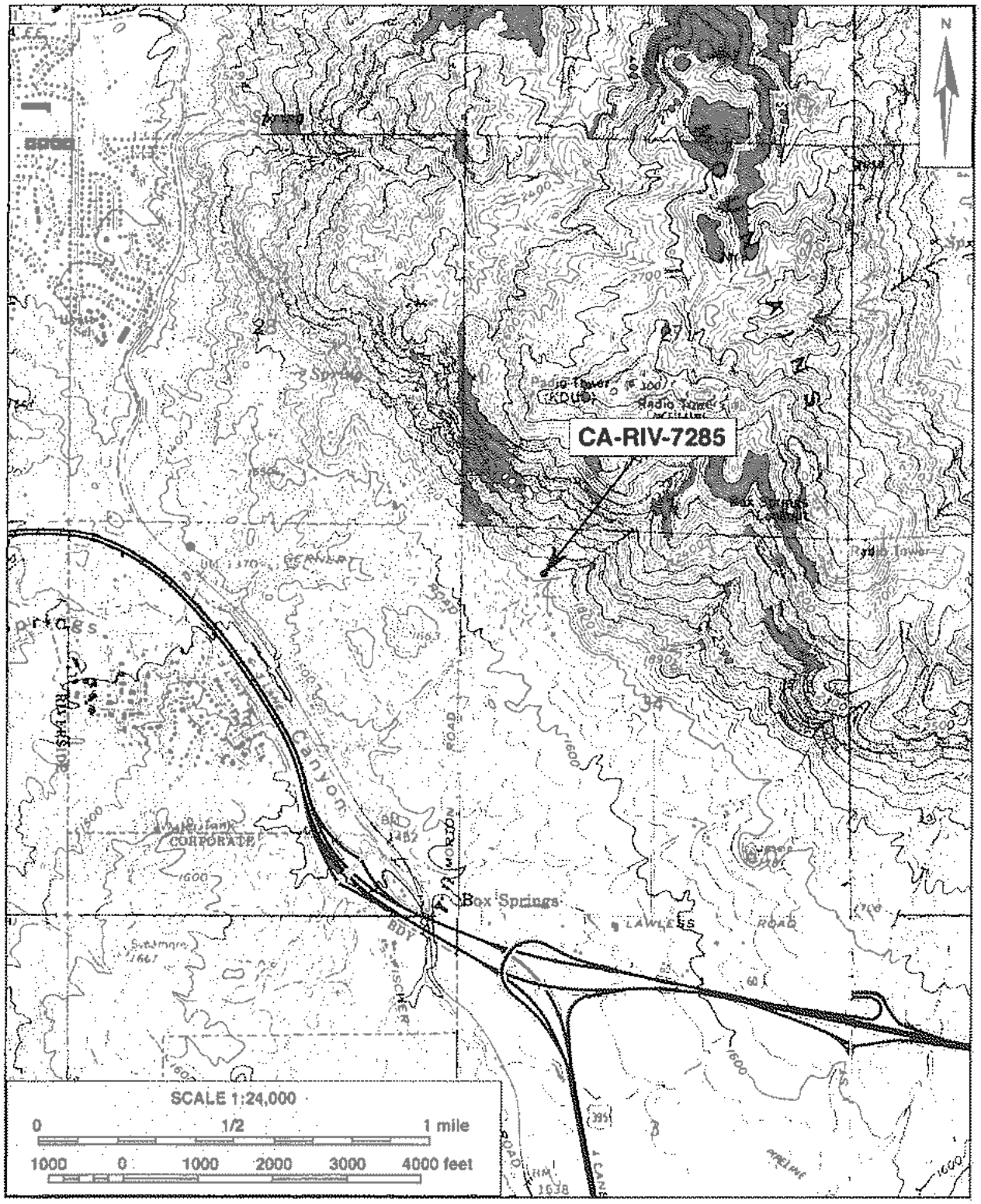
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 33-15938
HRI #
Trinomial CA-RIV-7285

*Resource Name or # (Assigned by recorder) CRM TECH 2060-2

*Map Name: Riverside East, Calif. *Scale: 1:24,000 *Date of Map: 1980



*Required Information

Intentionally Left Blank

(Confidential)

State of California–The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) Isolate 2060-1

P1. Other Identifier:

*P2. Location: √ Not for Publication ___ Unrestricted *a. County Riverside

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Riverside East, Calif. Date 1980

T2S; R4W; SE 1/4 of NW 1/4 of NW 1/4 of Sec 34; S.B.B.M.

Elevation: Approximately 1,640 feet above mean sea level

c. Address N/A City Zip

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 472,806 mE/ 3,757,379 mN

UTM Derivation: ___ USGS Quad √ GPS (NAD 27)

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) The isolate is located approximately 720 feet east of Gernert Road and 640 feet north of Jennings Court.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The isolate consists of hand-held grinding stone that appears to have been used both as a mano and as a pestle

*P3b. Resource Attributes: (List attributes and codes) AP16. Other (isolated groundstone)

*P4. Resources Present: ___ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District √ Isolate ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #)

*P6. Date Constructed/Age and Sources: ___ Historic √ Prehistoric ___ Both

*P7. Owner and Address:

*P8. Recorded by: (Name, affiliation, and address) Daniel Ballester, CRM TECH, 1016 East Cooley Drive, Suites A/B, Colton, CA 92324

*P9. Date Recorded: April 24, 2007

*P10. Survey Type: (Describe) Intensive-level survey for CEQA-compliance purpose

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Josh Smallwood, Mariam Dahdul, Daniel Ballester, and Laura H. Shaker (2007): Historical/ Archaeological Resources Survey Report: Tentative Tract Map No. 33626, City of Moreno Valley, Riverside County, California. On file, Eastern Information Center, University of California, Riverside.

*Attachments: ___ None √ Location Map ___ Sketch Map ___ Continuation Sheet ___ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required Information

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(Confidential)

From: Kay White <eickw@ucr.edu>
Sent: Tuesday, July 17, 2007 2:00 PM
To: crmtech@crmtech.us
Subject: Numbers

Mike/Tom: It is really a good thing that I retired. Maybe I should not have come back to work at all.!!!!! I gave you incorrect trinomials for this project. I have corrected them in blue below. Please correct your records. Sorry about this. kay

****

Josh: We did get these records and sent you numbers on May 10, 2007. Here they are again.

****

Hi John:

We have assigned the following primary numbers and trinomials to the records you recently submitted. Please submit one hard copy of each record complete with numbers on every page.

CRM TECH 2060-1/H = 33-15937 and CA-RIV-7284 should be CA-RIV-8274
CRM TECH 2060-2 = 33-15938 and CA-RIV-7285 should be CA-RIV-8275

Thanks.

kay

~~~~~~~~~~~~~~~~~~~~~~
Kay H. White
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c/o Department of Anthropology
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~~~~~~~~~~~~~~~~~~~~~~

RI-7887

KINCAID DEVELOPMENT PROJECT: RESULTS OF AN ARCHAEOLOGICAL TEST PROGRAM AT CA-RIV-~~7284/H~~ 8274 AND CA-RIV-~~7285~~ 8275 MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA

By:

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July 2007

Chambers Group®

MANAGEMENT SUMMARY

A test program was completed at two archaeological sites as part of the proposed Kincaid Development Project of 36 acres identified as Tentative Tract 33626, Assessor's Parcel Number (APN) 256-150-001, Moreno Valley, Riverside County, California. The two sites, CA-RIV-7284/H (33-15937) and CA-RIV-7285 (33-15938), were discovered in 2007 during the cultural resources survey for the Kincaid Development project. The purpose of the test program was to evaluate the sites for eligibility for the California Register of Historical Resources. The test program at each site consisted of recording of surface cultural material, shovel test pits (STPs), and two 1-by-1-meter excavation units at CA- RIV-7284. No cultural material was found subsurface at either CA-RIV-7284/H or CA-RIV-7285. Because of the lack of subsurface cultural material that could be used to address research topics, the two sites are evaluated as not eligible for the California Register of Historical Resources. Therefore, because both are evaluated as not eligible, mitigation through data recovery is not necessary. However, grading monitoring by a qualified archaeologist is recommended.

The trinomials in this report are incorrect, however, the primary numbers are correct. They should be:

33-15937 (CA-RIV-8274 not CA-RIV-7284)
33-15938 (CA-RIV-8275 not CA-RIV-7285)

EIC (8/15/08)

LIST OF FIGURES

SECTION 1 - INTRODUCTION

The Kincaid Development project involves work on approximately 36 acres of vacant land in the vicinity of the southwestern edge of the Box Springs Mountains in the city of Moreno Valley in Riverside County, California. Kincaid Development retained CRM Tech to perform a records/literature review of cultural resources known to exist in the project area as well as an intensive survey to identify any previously unrecorded cultural resources that could be impacted by the project (Smallwood and Dahdul 2007). As a result of the field survey, two prehistoric sites were documented and temporarily designated as CRM Tech 2060-1 and CRM Tech 2060-2 (Figure 1). Later, CRM Tech 2060-1 was formally designated as CA-RIV-7284/H (33-15937) and CRM Tech 2060-2 as CA-RIV-7285 (33-15938). A test program was subsequently performed by Chambers Group, Inc. (Chambers Group) to evaluate the eligibility of the two sites for the California Register of Historical Resources (CRHR). This report presents the results of archaeological testing at the two sites and an evaluation of the eligibility of the two sites for the CRHR.

1.1 LOCATION AND ENVIRONMENTAL SETTING

The study area of the Kincaid project is located on privately owned land on the southwestern edge of the Box Springs Mountains, north of Moreno Valley. The Assessor's Parcel Number (APN) is 256-150-001. It is within Section 34 of Township 2 South, Range 4 West, as depicted on the U.S. Geological Survey (USGS) 7.5-minute Riverside East topographic quadrangle. The area ranges in elevation from approximately 1,650 to 1,7400 feet above mean sea level.

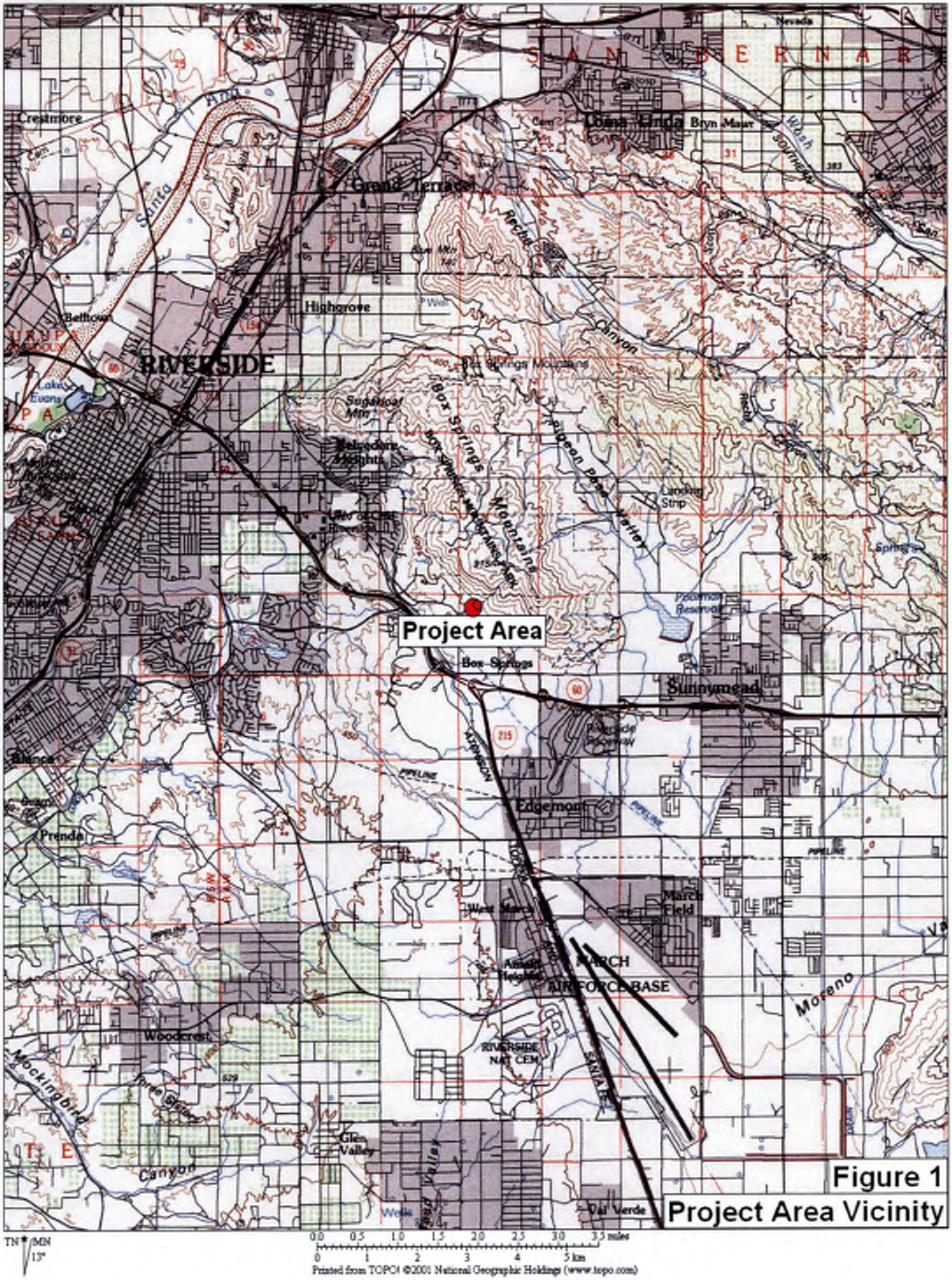
The project area is situated on a low ridge near the confluence of two intermittent drainages. Slope angles vary from level to approximately 45 degrees on some of the more severe hills. There are several springs within the immediate vicinity, along the base of the Box Springs Mountains. The dominant native vegetation species is brittlebush (*Encelia* sp.). Non-native species observed include eucalyptus, pepper tree, sycamore, and wild mustard. Bedrock outcrops of granite occur throughout the area. The project area has been disturbed by erosion and by the construction, maintenance, and subsequent demolition of a small residence that formerly stood on the property.

CA-RIV-7284/H consists of both prehistoric and historic-period components. It is located approximately 1,280 feet east of Gernert Road and 480 feet north of Jennings Court. The prehistoric component of the site is comprised of eight bedrock milling features with 8 grinding surfaces (slicks) on them. Two manos were found on the surface of the site in association to the bedrock features (Smallwood and Dahdul 2007:11).

The historic-period component of the site is comprised of structural features, an electric well pump, and a trash scatter that is dominated by 1940–1960s refuse. Also noted were a few fragments of sun-colored amethyst glass which dates to between the late 1800s and early 1900s. The structural features include dry-lain rock alignments, a concrete and rock wall built into the side of a hill, two small concrete slabs, and a concrete cistern surrounding a natural spring.

CA-RIV-7285 consists of two bedrock milling features about 98 feet apart with three grinding slicks. The site is on a slope above CA-RIV-7284/H, located 1,600 feet east of Gernert Road and 1,040 feet north of Frankhale Road. No artifacts were found on the surface of the site.

Both of these sites are situated on gradual slopes that may have contained buried cultural deposits covered by erosion and the build-up of alluvium (Smallwood and Dahdul 2007:13). For this reason, archaeological testing of the site was recommended. The goal of testing was to determine whether there was intact subsurface archaeological deposits that may contribute to the significance of this cultural resource.


Project Area
Figure 1
Project Area Vicinity
RIVERSIDE
Grand Terrace
Highgrove
Loma Linda
Bryn Mawr
Crestmore
Box Springs Mountains
Sugarloaf Mtn
Belvedere Heights
Box Springs
Sunnymead
Edgemont
March Field
MARCH AIR FORCE BASE
West March
RIVERSIDE NAT CEM
Woodcrest
Mockingbird Canyon
Glen Valley
Val Verde
Moreno
PIPELINE
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 miles
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TN MN 13°
Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

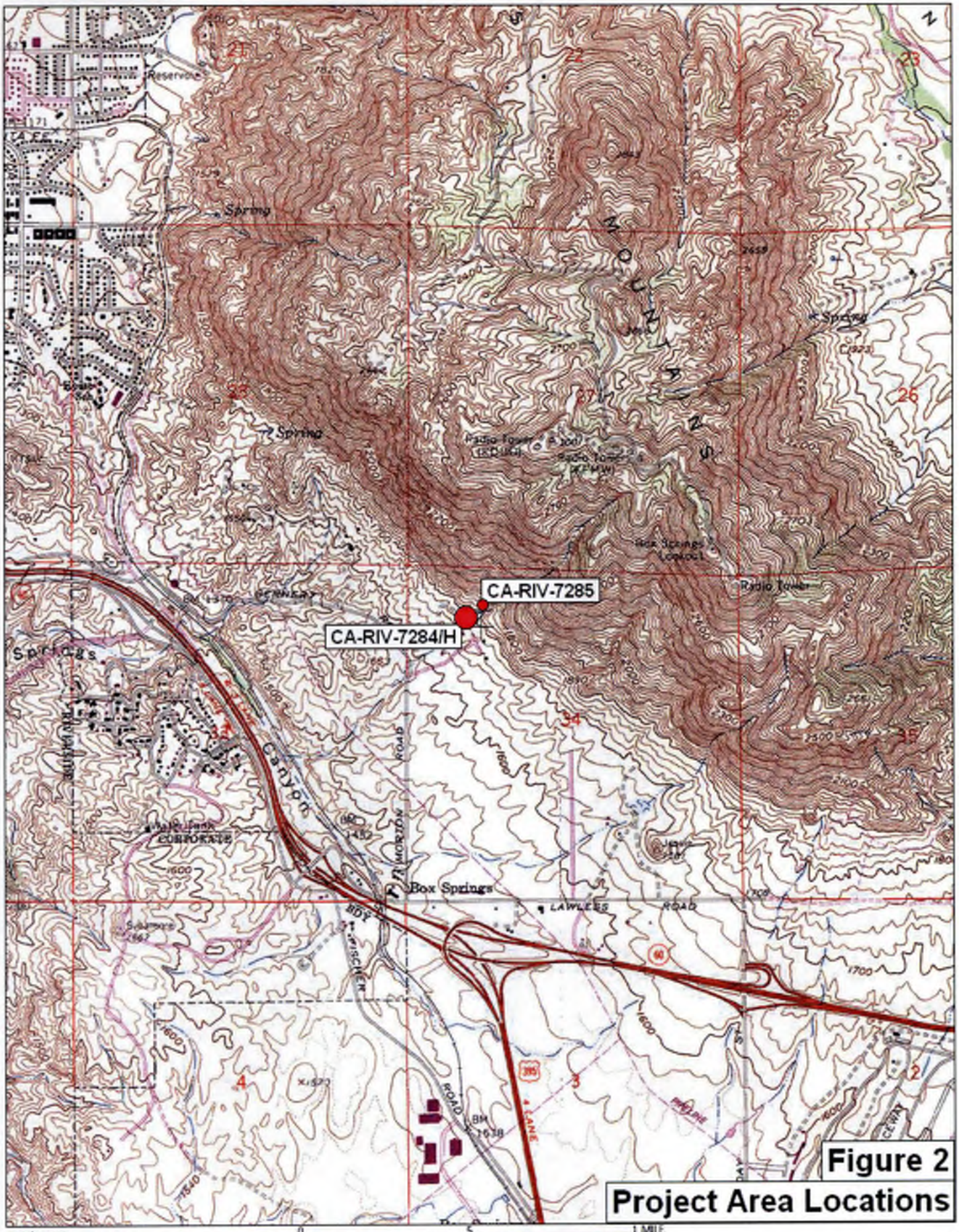


Figure 2

Project Area Locations

1.2 PREHISTORIC AND HISTORIC BACKGROUND

1.2.1 Prehistory

At this time, no chronological synthesis has been developed specifically for the interior valleys and mountains that include the region surrounding the current project area. Instead, researchers have generally come to rely on typological cross-dating from either the coastal or desert sequences (McDougall et al 2003). For this reason, a brief outline of generally accepted Southern California chronology (both desert and coastal combined) is presented below.

It is generally believed that human occupation of southern California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 6,000 years BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found, but cannot definitely be associated with human artifacts. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and vegetal foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that most groups included only small numbers of individuals who did not often stay in one place for extended periods (Wallace 1978). There is some evidence to suggest that there were groups during this time period that did have a semi sedentary lifestyle along the coast (Koerper et al 1991), but there only two sites of this type in the inland regions of western riverside county (Grenda 1997; Horne et al n.d.)

Around 6,000 years BP, there was a shift in focus from hunting towards a greater reliance on vegetal resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 3,000 years BP, is sometimes referred to as the "Millingstone Horizon" (Wallace 1978). Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to before 6,000 years BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

In sites dating to after about 3,000 years BP, archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked stone tools became more refined and specialized, and bone tools were more common. During this period, new peoples from the Great Basin began entering southern California. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. The exact time of their entry into the region is not known; however, they were present in southern California during the final phase of prehistory. During this period, known as the "Late Period," population densities were higher than before and settlement became concentrated in villages and communities along the coast and interior valleys (Erlandson 1994; McCawley 1996). Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups encountered by the first Europeans during the eighteenth century (Wallace 1978). Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction (Erlandson 1994). The introduction of the bow and arrow into the region sometime around 1,500 to 1,000 years BP is indicated by the presence of small projectile points (Moratto 1984).

1.2.2 Ethnohistory

The project area is located in a disputed region known to have been utilized by three different Native American Groups: the Cahuilla of the deserts and San Bernardino Valley, the Luiseno of the Perris-Lake Elsinore region, and the Serrano of the San Bernardino Mountains area. All three groups probably utilized the region at times; therefore, each group is described in more detail below.

Cahuilla

Cahuilla territory was bounded on the north by the San Bernardino Mountains, on the east by the Orocopia Mountains, on the west by the Santa Ana River, the San Jacinto Plain and the eastern slope of the Palomar Mountains, and on the south by Borrego Springs and the Chocolate Mountains (Bean 1978).

The diversity of the territory provided the Cahuilla with a variety of foods. It has been estimated that the Cahuilla exploited more than 500 native and non-native plants (Bean and Saubel 1972). Acorns, mesquite, screw beans, piñon nuts, and various types of cacti were used. A variety of seeds, wild fruits and berries, tubers, roots, and greens were also a part of the Cahuilla diet. A marginal agricultural existence provided corn, beans, squashes, and melons. Rabbits and small animals were also hunted to supplement the diet. During high stands of Ancient Lake Cahuilla, fish, migratory birds, and marshland vegetation were also taken for sustenance and utilitarian purposes (Bean 1978).

Structures within permanent villages ranged from small brush shelters to dome-shaped or rectangular dwellings. Villages were situated near water sources, in the canyons near springs, or on alluvial fans at man-made walk-in wells (Bean 1972). Mortuary practices entailed cremation of the dead. Upon a person's death, the body was bound or put inside a net and then taken to a place where the body would be cremated. Secondary interments also occurred. A mourning ceremony took place about a year after a person's death. During this ceremony, an image of the deceased was burned along with other goods (Lando and Modesto 1977; Strong 1929).

Precontact Cahuilla population has been estimated as low as 2,500 to as high as 10,000. At the time of first contact with Europeans, around 1774, the Cahuilla numbered approximately 6,000. Although they were the first to come into contact with the Cahuilla, the Spanish had little to do with those of the desert region. Some of the Cahuilla who lived in the plains and valleys west of the desert and mountains, however, were missionized through the *asistencia* located near present day San Bernardino. Cahuilla political, economic, and religious autonomy was maintained until 1877 when the United States government established Indian reservations in the region. Protestant missionaries came into the area to convert and civilize the Native American population. During this era, traditional cultural practices, such as cremation of the dead, were prohibited. Today, the Cahuilla reside on eight separate reservations in southern California, located from Banning in the north to Warner Springs in the south and from Hemet in the west to Thermal in the east (Bean 1978).

Luiseño

The project area is located in the territory known ethnographically to have been occupied by the Luiseño, a Takic-speaking people. The Spanish gave the name Luiseño to the native groups who were living in the area under influence of Mission San Luis Rey (Bean and Shipek 1978).

The Luiseño lived in sedentary and autonomous village groups, each with specific subsistence territories encompassing hunting, collecting, and fishing areas. Villages were typically located in valley bottoms, along streams, or along coastal strands near mountain ranges where water was available and village defense was possible. Inland populations had access to fishing and gathering sites on the coast, which they used during the winter months (Bean and Shipek 1978).

Luiseño subsistence was centered on the gathering of acorns, seeds, greens, bulbs, roots, berries, and other vegetal foods. This was supplemented with hunting mammals such as deer, antelope, rabbit, woodrat, ground squirrels, and mice, as well as quail, doves, ducks, and other birds. Bands along the coast also exploited marine resources, such as sea mammals, fish, crustaceans, and mollusks. Inland, trout and other fish were taken from mountain streams (Bean and Shipek 1978).

Hunting was done both individually and by organized groups. Tool technology for food acquisition, storage, and preparation reflects the size and quantity of items procured. Small game was hunted with the use of curved throwing sticks, nets, slings, or traps. Bows and arrows were used for hunting larger game. Dugout canoes, basketry fish traps, and shell hooks were used for near-shore ocean fishing. Coiled and twined

baskets were made for food gathering, preparation, storing, and serving. Other items used for food processing included large shallow trays for winnowing chaff from grain, ceramic and basketry storage containers, manos and metates for grinding seeds, and ceramic jars for cooking (Bean and Shipek 1978).

Villages had hereditary chiefs who controlled religious, economic, and territorial activities (Bean and Shipek 1978; Boscana 1933). An advisory council of ritual specialists and shamans was consulted for environmental and other knowledge. Large villages located along the coast or in inland valleys may have had more complex social and political structures than settlements controlling smaller territories (Bean and Shipek 1978; Strong 1929).

Most Luiseño villages contained a ceremonial structure enclosed by circular fencing located near the center of the village. Houses were semisubterranean and thatched with locally available brush, bark, or reeds. Earth-covered semisubterranean sweathouses were also common and were used for purification and curing rituals (Bean and Shipek 1978).

The Luiseño first came into contact with Europeans in 1769 when the expedition led by Gaspar de Portolá arrived in their territory. That same year, the San Diego Mission was established just to the south, followed by the San Juan Capistrano Mission in 1776 and the San Luis Rey Mission in 1798. Poor living conditions at the missions and introduced European diseases led to a rapid decline of the Luiseño population. Following the Mission Period (1769-1834), Luiseño Indians scattered throughout southern California. Some became serfs on the Mexican ranchos, others moved to newly founded pueblos established for them, some sought refuge among inland groups, and a few managed to acquire land grants. Later, many moved to or were forced onto reservations. Although many of their cultural traditions had been suppressed during the Mission Period, the Luiseño were successful at retaining their language and certain rituals and ceremonies. Starting in the 1970s, there was a revival of interest in the Luiseño language and classes were organized. Since then, traditional games, songs, and dances have been performed, traditional foods have been gathered and prepared, and traditional medicines and curing procedures have been practiced (Bean and Shipek 1978).

Serrano

Ethnographic accounts indicate that the Serrano were the dominant group of Native Americans in the region that includes the project area. The Serrano occupied an area in and around the San Bernardino Mountains between approximately 1,500 and 11,000 feet above mean sea level. Their territory extended west into the Cajon Pass, east as far as Twentynine Palms, north to Victorville, and south to the Yucaipa Valley. The Serrano were mainly hunters and gatherers who occasionally fished. Game that was hunted included mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Vegetable staples consisted of acorns, piñon nuts, bulbs and tubers, shoots and roots, berries, mesquite, barrel cacti, and Joshua tree (Bean and Smith 1978a).

A variety of materials were used for hunting, gathering, and processing food, as well as for shelter, clothing, and luxury items. Shells, wood, bone, stone, plant materials, and animal skins and feathers were used for making baskets, pottery, blankets, mats, nets, bags and pouches, cordage, awls, bows, arrows, drills, stone pipes, musical instruments, and clothing (Bean and Smith 1978a).

Settlement locations were determined by water availability, and most Serranos lived in small villages near water sources. Houses and ramadas were round and constructed of poles covered with bark and tule mats (Kroeber 1925). Most Serrano villages also had a ceremonial house used as a religious center. Other structures within the village might include granaries and sweathouses (Bean and Smith 1978a).

The Serrano were loosely organized along patrilineal lines and associated themselves with either the *Tukum* (wildcat) or the *Wahilyam* (coyote) moiety. Organization of individual bands of Serrano was considered by Kroeber (1925) to be similar to political groups. Tribes, as opposed to bands, were larger in numbers, and were distinguished from each other by having distinct dialects. Unlike, bands, tribes often had names that were more than merely a designation for the place where they lived (Kroeber 1925).

Partly due to their mountainous inland territory, contact between Serrano and European-Americans was minimal prior to the early 1800s. In 1819, a *Capilla* (chapel) was established near present-day Redlands and was used to help relocate many Serrano to Mission San Gabriel. However, small groups of Serrano remained in the area northeast of the San Gorgonio Pass and were able to preserve some of their native culture. Today, most Serrano live either on the Morongo or San Manuel reservations (Bean and Smith 1978a).

Tongva (Gabrielino)

Ethnographic accounts of Native Americans indicate that the Tongva (or Gabrielino) once occupied the region that encompasses the project area. At the time of contact with Europeans, the Tongva were the main occupants of the southern Channel Islands, the Los Angeles basin, much of Orange County, and extended as far east as the western San Bernardino Valley. The term "Gabrielino" came from the group's association with Mission San Gabriel Arcangel, established in 1771, However, today the group prefers to be known by their ancestral name, Tongva. The Tongva are believed to have been one of the most populous and wealthy Native American tribes in southern California prior to European contact, second only to the Chumash (Bean and Smith 1978b; McCawley 1996; Moratto 1984).

The Tongva occupied numerous villages with populations ranging from 50 to 200 inhabitants. Residential structures within the villages were domed, circular, and made from thatched tule or other available wood. Kinship groups, with each group composed of several related families who together owned hunting and gathering territories, organized Tongva society. Settlement patterns varied according to the availability of floral and faunal resources (Bean and Smith 1978b; McCawley 1996; Miller 1991)

Vegetal staples consisted of acorns, chia, seeds, piñon nuts, sage, cacti, roots, and bulbs. Animals hunted included deer, antelope, coyote, rabbits, squirrels, rodents, birds, and snakes. The Tongva also fished (Bean and Smith 1978b; McCawley 1996; Miller 1991).

By the late 18th century, Tongva population had significantly dwindled due to introduced diseases and dietary deficiencies. Tongva communities near the missions disintegrated as individuals succumbed to Spanish control, fled the region, or died. Later, many of the Tongva fell into indentured servitude to Anglo-Americans. By the early 1900s, few Tongva people had survived and much of their culture had been lost (Bean and Smith 1978b; McCawley 1996; Miller 1991). However, in the 1970s, a revival of the Tongva culture began which continues today with growing interest and support.

1.2.3 History

The first significant European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions (including the San Bernardino Asistencia, built around 1830 as a branch of the San Gabriel Mission) and 4 presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated economic and political life over the majority of the California region during this period. The purpose of the missions was primarily Indian control, along with economic support to the presidios, forced assimilation of the Indians to Hispanic society, and conversion of the native population to Spanish Catholicism (Castillo 1978; Cleland 1941).

The Mexican Period (1821 to 1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the vast land holdings of the missions in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978).

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848 to present). The discovery of gold the same year initiated the 1849 California Gold Rush, bringing thousands of miners and settlers to California, most of whom settled in the north. For those settlers who chose to come to southern California, much of their economic prosperity was fueled by

cattle ranching rather than by gold. This prosperity, however, came to a halt in the 1860s as a result of severe floods and droughts, which put many ranchos into bankruptcy (Castillo 1978; Cleland 1941).

1.2.4 Project Area History

In 1850, California became a state and the large Spanish land grant of San Jacinto Nuevo y Potrero became public land, developed by ranchers and traveled over by John Butterfield's legendary but short-lived Overland Mail Company. His Tucson-to-San Francisco stage, via San Diego and Los Angeles, opened up the Temescal approach to Los Angeles, passing through the oak groves of what is now Perris Valley, continuing through what is now Moreno Valley, and over Reche Canyon into Redlands.

In 1883, Frank E. Brown formed the Bear Valley Land and Water Company. Brown ("Brown" is "Moreno" in Spanish) built a dam at Bear Valley in the San Bernardino Mountains and contracted to provide water to the tiny, and new communities of Moreno and Alessandro.

Histories of the Moreno Valley area state that when water was piped from Bear Dam in Big Bear Lake to the Moreno region in 1891 by the Bear Valley and Alessandro Development Co., land was sold for ten times the price of what it had been just months before and there was a veritable "land boom" as the population reached 500 residents. By 1893, Moreno had four brick buildings, a weekly newspaper, a $5,000 school building, a hotel, livery stable, two churches, a pharmacy and a literary society. Groves of orange trees, olives, apricots, peaches and garden crops were established around farmsteads that had been built in the region. The water stopped flowing in the early 1900s.

As a result of the loss of water delivery, many of the over 500 residents of Moreno Valley were forced to leave the area in search of a more livable environment. The more expensive homes were removed from their foundations, and moved in their entirety by steam-powered tractors. Many of them were relocated to the city of Riverside. Others, stolen during the owner's absence, were relocated to parts unknown. By 1901, few people resided in the Moreno Valley, and those who remained turned primarily to the dry farming of hay, grain, and grapes. Mr. Brown had lost his dream, and the valley named after him remained as a reminder of the regions vulnerability to such simple needs as water.

SECTION 2 - OBJECTIVES AND METHODS

2.1 OBJECTIVES

As stated in the Introduction, the purpose of the test programs at CA-RIV-7284/H and CA-RIV-7285 was to determine whether the sites were significant and, if so, to obtain information necessary to plan a data recovery program, if avoidance is not feasible. The CEQA guidelines (California Code of Regulations, Section 15064.5) state that a project that causes a substantial adverse change in the significance of an historical resource is considered to have a significant effect on the environment unless mitigated. Historical resources are defined as buildings, structures, districts, sites, or objects that are eligible for the California Register of Historical Resources. The eligibility criteria for the California Register are similar to those for the National Register of Historic Places. CRHR Criterion D states that eligible sites are those that have "yielded, or may be likely to yield, information important in prehistory or history." In practice, this means that sites that have the potential to yield data relevant to important research questions are eligible. The CEQA guidelines state that the CEQA lead agency makes the determination of eligibility for the California Register based on the results of the test program.

2.1.1 Research Topics

Given the lack of previous problem-oriented research for the Late Period in this area of Riverside County, not enough information is available to formulate specific research questions. However, the sites can be considered eligible for the California Register if they have the potential to yield significant data with which to address at least some of the following research topics:

- Site type and activities
- Internal site organization
- Subsistence
- Chronology
- Trade and exchange

Site Type and Activities

Beginning in the Millingstone Period there appears to have been a shift from relatively mobile groups to that of increasingly formal territories with a seasonal round (Altschul and Grenda 2002). By the Late Period there were, perhaps, four site types: base villages, summer villages, temporary resource procurement camps, and bedrock mortar grinding stations with no evidence for overnight stays. In order to determine site type and reconstruct some of the activities performed at sites, the variety and density of artifacts and subsistence remains and the number and variety of features will be investigated.

Internal Site Organization

Different activities may have been performed in different areas within a site. Were male and female activities performed in different areas of the site? Were ceremonial activities segregated from subsistence tasks? Internal spatial organization is studied by plotting the spatial distribution of artifact categories and types, subsistence remains, and features. If a site is small and there are few categories that do not vary spatially, this domain cannot be addressed.

Subsistence

Subsistence refers to the foods consumed and how they were procured and processed. What animal and plant foods were processed and consumed at the site? Was there specialization in a particular kind of food? Is there evidence for intensification of food production? Specialization would be indicated by large numbers of the remains of a single species. Intensification is indicated by reliance on resources that require greater amounts of labor to procure or process. These are added to the diet when population increases and procurement activities are limited to a local territory. To address questions about

subsistence, a reliable sample of plant or animal subsistence remains is necessary.

Chronology

It has been assumed that sites in this area were occupied during the Late Period by the Luiseno, Serrano, or the Tongva. The period of occupation can be addressed if sufficient charcoal is present for radiocarbon dating.

Trade and Exchange

The occupants of sites in the Inland Empire had access to items from other regions. These items included obsidian from the northeast and southeast interior, and shell beads from the California coast and possibly from the Gulf of California. The source of obsidian can be determined through geochemical tests. It can be ascertained whether *Olivella* shell beads came from the California coast or the Gulf of California by determining whether they were manufactured from *Olivella biplicata* shells (California coast) or *Olivella dama* shells (Sea of Cortes).

Summary

The results from the test program at each site will not directly address these research domains, but the test program results will be used to evaluate whether the site has the potential to yield data with which to address them during a data recovery program. If so, the site will be considered eligible for the California Register. The test program is also designed to provide information on subsurface site boundaries, the integrity of subsurface deposits, and the internal distribution of concentrations of subsurface cultural material. This information is necessary to adequately plan a data recovery program if one should become necessary.

2.2 METHODS

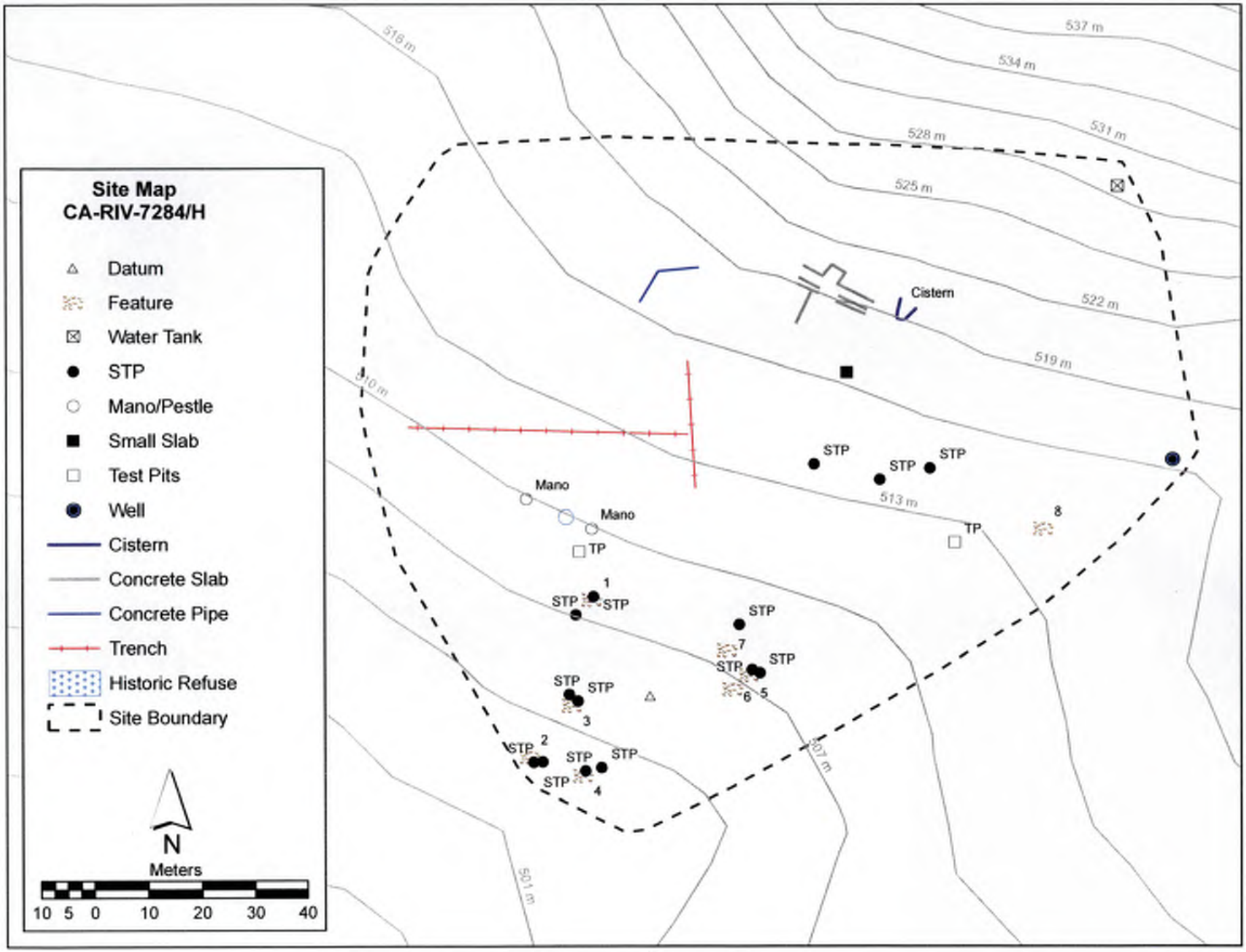
The methods for the test programs at CA-RIV-7284/H and CA-RIV-7285 included a surface collection, documentation of all milling features, excavation of shovel test pits (STPs), excavation of 1-by-1-meter test units (at CA-RIV-7284/H), mechanical trenching (also at CA- RIV-7284/H only), and cataloging and analysis of the recovered artifacts. The fieldwork at CA-RIV-7284/H and CA-RIV-7285 was performed between June 26 and 28, 2003, and was directed by Jay Sander, M.A., Chambers Group Senior Archaeologist and Field Director. Other project personnel are listed in Section 7.

2.2.1 CA-RIV-7284/H

Where possible, two STPs were excavated at judgmentally placed locations adjacent to each of the granite boulder milling stations. A total of 15 STPs were excavated in 25-centimeter (cm) levels to a maximum depth of 50 cm or until bedrock was encountered. Three STPs, not associated with any features, were placed 10 meters apart in a judgmentally selected area between the historic and prehistoric features. No STPs were placed in the vicinity of Feature 6 due to a paucity of soil and none were placed near Feature 8; instead, a 1-by-1-meter test unit was excavated near the southwest edge of that feature. Additionally, a second 1-by-1-meter test unit was placed in-between the two manos that were found on the ground surface. Finally, two backhoe trenches were placed in the vicinity of the historic-period component of the site (see Figure 3).

Excavated material was passed through 1/8th inch mesh. All material remaining in the screen was carefully sorted in the field for identification and potential cataloging.

All bedrock milling features were mapped, measured, and photographed. For each bedrock outcrop with milling features, a map was made of the surface of the outcrop showing the relationship and sizes of the milling features.

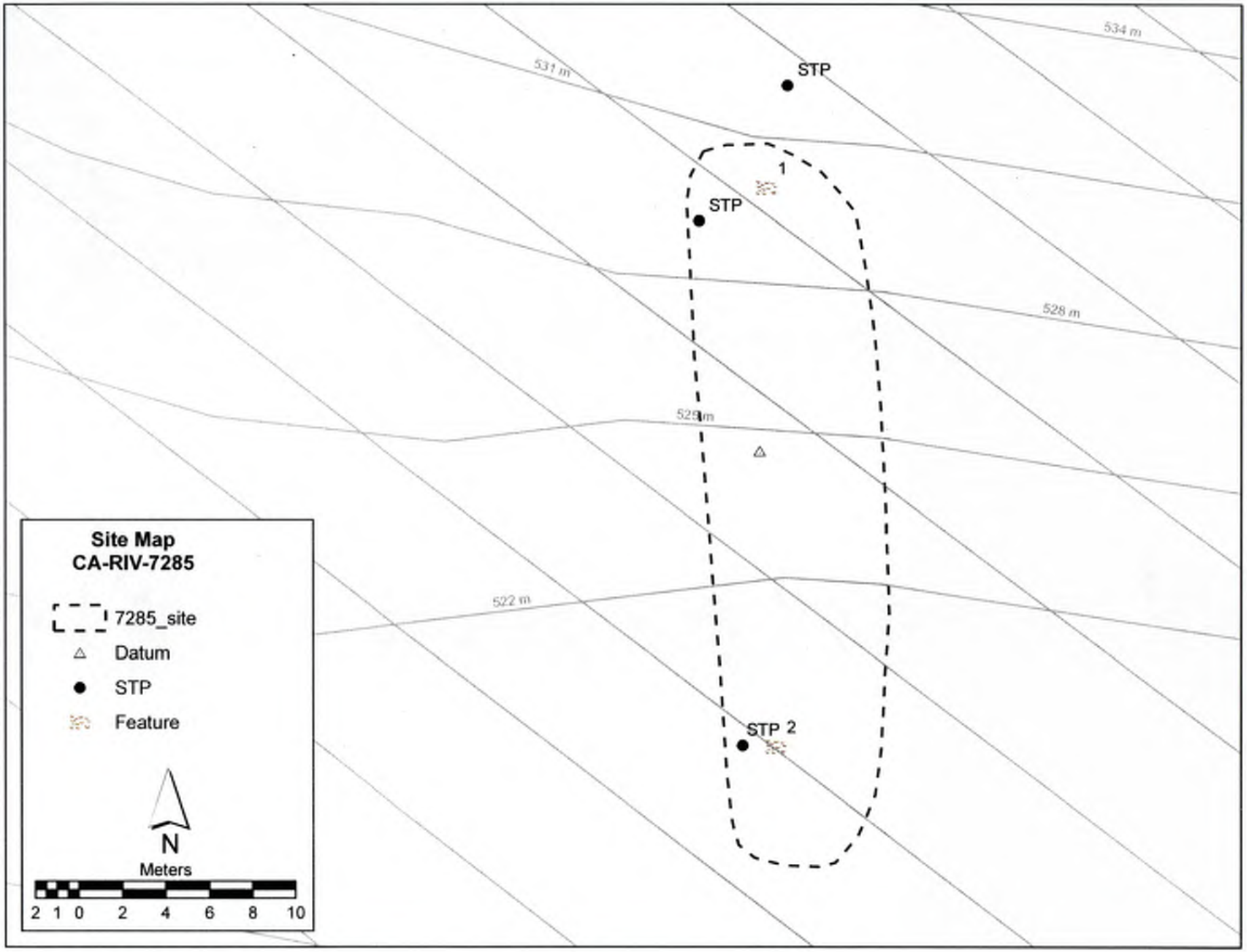

Site Map
CA-RIV-7284/H
Datum
Feature
Water Tank
STP
Mano/Pestle
Small Slab
Test Pits
Well
Cistern
Concrete Slab
Concrete Pipe
Trench
Historic Refuse
Site Boundary
N
Meters
10 5 0 10 20 30 40
516 m
537 m
534 m
531 m
528 m
525 m
522 m
519 m
513 m
510 m
507 m
501 m
Cistern
Mano
Mano
TP
TP
TP
STP
1
2
3
4
5
6
7
8

2.2.2 CA-RIV-7285

Three STPs were excavated at CA-RIV-7285. These included one each adjacent to the two granite outcrops (Features 1 and 2) containing milling features, as well as one at the base of an outcrop near Feature 1 that could conceivably have been used as a small sun or wind shelter (see Figure 4).

Excavated material was passed through 1/8th inch mesh. All material remaining in the screen was carefully sorted in the field for identification and potential cataloging.

All bedrock milling features were mapped, measured, and photographed. For each bedrock outcrop with milling features, a map was made of the surface of the outcrop showing the relationship and sizes of the milling features.


534 m
531 m
STP
1
STP
528 m
529 m
522 m
STP 2
Site Map
CA-RIV-7285
7285_site
Datum
STP
Feature
N
Meters
2 1 0 2 4 6 8 10

SECTION 3 - RESULTS

3.1 CA-RIV-7284/H

There are eight milling stations at this site. Feature 1 is on the west side and Features 2 through 8 form an arc from the southwest corner to the east edge of the site. The boulders range in size from 10 cm to 300 cm high and from 90 cm to 400 cm across. None of the eight features exhibited more than one slick. In general, most of the slicks appeared to only be moderately well formed.

Surface items collected from the surface of CA-RIV-7284/H included one unifacial granite mano fragment and one granite cobble with both a single ground surface and a moderately well-battered end. Neither artifact appeared to be shaped other than through casual use. No flaked stone was observed at the site.

The historic-period component of the site is comprised of structural features, an electric well pump, and a trash scatter that is dominated by 1940–1960s refuse. Also noted were a few fragments of sun-colored amethyst glass which dates to between the late 1800s and early 1900s. The structural features include dry-lain rock alignments, a concrete and rock wall built into the side of a hill, two small concrete slabs, and a concrete cistern surrounding a natural spring. One of the stones used as building material in the dry-lain rock wall is a prehistoric metate made from locally available schist. These remaining features all appear to be fairly insubstantial.

None of the 15 STPs yielded cultural material. The soil was found to be extremely disturbed sandy silt, often with modern trash well into the second 25 cm level. Of the 12 STPs associated with features, six went down 50 cm and the remaining encountered bedrock at between 9 and 32 cm below ground surface. All three STPs not associated with milling features were excavated to 50 cm below surface.

Unit 1 was located next to Feature 8. The unit was excavated through loose to moderately-well compacted sandy silt using a mattock and shovel to a depth of 40 cm below surface where decomposing granite was encountered. One abalone shell button was found in the 10 to 20 cm level. Aside from that, no prehistoric or historic-period artifacts were found. No discernible stratigraphy was apparent in the unit sidewalls.

Unit 2 was located between the two manos found on the surface, next the western end of the site. The unit was excavated through loose to moderately-well compacted sandy silt using a mattock and shovel to a depth of 30 cm below surface where granite bedrock was encountered. No cultural material was found and no discernible stratigraphy was apparent in the unit sidewalls.

The site was likely used as a temporary resource procurement and processing location. The ephemeral nature of the milling features and near-total absence of artifacts suggests that it is not likely that people stayed overnight and that this location was not used often.

3.2 CA-RIV-7285

There are a total of two outcrops that contain milling features at CA-RIV-7285, as well as one boulder large enough to serve as a wind or sun shelter. Feature 1, the larger outcrop of the two, measures 4.5 meters in diameter. There is one milling slick measuring 50 by 60 cm. The most interesting ting about this boulder is that it has split in two pieces with the brake running through the middle of the slick. The smaller of the two portions has since shifted 50 cm away from the larger. Feature 2 measures 3.2 meters in diameter and contains two slicks, one of which is nearly 1 meter across.

One STP was placed adjacent to each of the 2 bedrock milling features. A third STP was placed next to the boulder that appeared to have potential as a temporary shelter. All three STP were excavated down to 50 cm below surface. None yielded cultural remains of any type. Also, no artifacts were found on the surface of the site. A-RIV-7285 appears to be a limited-use bedrock mortar grinding station no evidence for overnight stays.

SECTION 4 - SIGNIFICANCE

4.1 CA-RIV-7284/H

Almost all cultural material at CA-RIV-7284/H was found on the surface—none of it prehistoric. The cultural material on the surface of the site has already been analyzed and the bedrock milling features have been recorded. If there is any subsurface cultural material remaining at CA-RIV-7284/H, it likely has very limited research potential. The recovered cultural material is not sufficient to address the research topics discussed in Section 2.1. The site type and activities topic has been adequately addressed using the data already recovered from the surface (see Section 3.1). The unit and STP results indicate that subsurface data are not present with which to address the research topics of internal site organization, subsistence, chronology, and trade and exchange. The distribution of the two manos would not provide sufficient information to investigate internal site organization at CA- RIV-7284/H. No animal bone was found, suggesting that data from further subsurface investigation would be inadequate to address the subsistence research topic. It is likely that this site dates to the Late Period and was used by people ancestral to either the Cahuilla, Serrano, or Tongva people. No items that would have been traded or exchanged were recovered from CA- RIV-7284/H.

Because the site type and activities topic has been adequately addressed using data from the test program and the data potential is not adequate to address the other research topics, CA- RIV-7284/H is evaluated as not eligible for the California Register of Historical Resources.

The in-depth property research carried out for the parcel (see Appendix A) similarly demonstrates that the historic component of the site fails to meet any of the criteria for inclusion to the NRHP or CHRP. For this reason, again, CA-RIV-7284/H is evaluated as not eligible for the California Register of Historical Resources.

4.2 CA-RIV-7285

No cultural material was found subsurface at CA-RIV-7285. Because the site type and activities topic has been adequately addressed using data from the surface of the site and there is no additional subsurface data potential with which to address other research topics, CA-RIV-7285 is evaluated as not eligible for the California Register of Historical Resources.

SECTION 5 - RECOMMENDATIONS

Because CA-RIV-7284/H and CA-RIV-7285 do not appear to be eligible for the California Register of Historical Resources, mitigation through preservation or data recovery is not necessary. Furthermore, the results of the test program showed that there is no significant subsurface cultural material associated with the sites. However, any trenching, grading, or other ground surface-disturbing activity within 30 meters (100 feet) of the site boundaries should be monitored by a qualified archaeologist who shall have the power to divert or halt grading if features or other potentially important cultural material are encountered. Such features or material should then be evaluated and recovered, if necessary.

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APPENDIX A HISTORIC RESOURCES ASSESSMENT REPORT

HISTORIC RESOURCES ASSESSMENT REPORT

APN: 256-150-001-4
Moreno Valley, California 92555

Historic Resources Survey and Evaluation

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Sr. Architectural Historian
Chambers Group Inc.
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July 2007

1. INTRODUCTION

A. INTRODUCTION

This assessment report documents and evaluates the federal, state, and local significance and eligibility of the historic agricultural features located at Gernert Road, Moreno Valley, Riverside County, California. The report includes a discussion of the survey methodology used, a brief historic context of the property and surrounding area, and the identification and formal evaluation of the subject property.

The subject features consists a site with both prehistoric and historic resources located approximately 1,280 feet east of Gernert Road and 480 feet north of Jennings Court. (See Figure 1.) The historic–period features of the site have been surveyed (CRM Tech, 2007) and are considered to be associated with a late 19th-century or early 20th-century homestead. The features include dry-laid rock walls, a cellar constructed of large rocks and mortar, two small, formed concrete foundations, a well, a cistern, metal pipes, and concrete culvert pipe.

The site is reached by going north on Morton Road from the intersection with Box Spring Road, until the road bears to the left (west). There is a dirt driveway heading north up towards the base of the hills at the point where Morton Road heads west. The driveway goes up (north) the hillside and then heads to the east for 200 feet. The drive ends at the site. (See Figure 2.)

B. BACKGROUND INFORMATION

The subject property was previously surveyed and identified as a historic resource by CRM Tech in April 2007 and identified by the Eastern Information Center as site CA-RIV-7284/H (33-15937). The historic resources were included in the survey for identification purposes only and were not evaluated for eligibility for listing in the National Register of Historic Places, California Register of Historical Resources, or for designation under a local ordinance.

In 2002, CRM Tech prepared an archaeological mitigation report for Tentative Tract 26901 (containing site CA-RIV-6943/H), Project No. PO 1-005, City of Moreno Valley, Riverside County. This report was prepared in anticipation of a housing development that was planned, and later constructed, immediately to the east of the property under investigation in the current project. The historic resources investigated in the 2002 report were found to be the remains of a late nineteenth-century homestead owned by Cecil R. G. Webbe.

C. METHODOLOGY

This historic resource assessment was conducted by Pamela Daly, M.S., Senior Architectural Historian. In order to identify and evaluate the subject property as a potential historic resource, a multi-step methodology was utilized. Site inspections, and

review of tax assessor records of the prior existing buildings were performed to document existing conditions and assist in assessing and evaluating the property for significance. An intensive-level pedestrian survey of the property, including photography and background research, was also conducted. The National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), and the City of Moreno Valley Landmark or Structure of Merit criteria were employed to evaluate the significance of the property. In addition, the following tasks were performed for the study:

- The National Register of Historic Places, the California Historical Resources Inventory, and the City of Moreno Valley Historic Resources Inventory were searched.

- Site-specific research was conducted on the subject property utilizing maps, city directories, newspaper articles, historical photographs, and other published sources.

Ordinances, statutes, regulations, bulletins, and technical materials relating to federal, state, and local historic preservation, designation assessment processes, and related programs were reviewed and analyzed.

2. REGULATORY FRAMEWORK

Historic resources fall within the jurisdiction of several levels of government. Federal laws provide the framework for the identification, and in certain instances, protection of historic resources. Additionally, states and local jurisdictions play active roles in the identification, documentation, and protection of such resources within their communities. The National Historic Preservation Act (NHPA), of 1966 as amended, and the California Register of Historical Resources (CRHR), are the primary federal, state, and local laws and regulations governing the evaluation and significance of historic resources of national, state, regional, and local importance. A description of these relevant laws and regulations are presented below.

A. FEDERAL LEVEL

1. National Register of Historic Places

First authorized by the Historic Sites Act of 1935, the National Register of Historic Places (National Register) was established by the National Historic Preservation Act of 1966, as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment."[1] The National Register recognizes properties that are significant at the national, state and local levels. Further discussion of National Register criteria and guidelines is provided in Section III, Environmental Setting, of this document.

B. STATE LEVEL

The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the National Historic Preservation Act (NHPA) on a statewide level. The OHP also carries out the duties as set forth in the Public Resources Code (PRC) and maintains the California Historic Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the state's jurisdictions.

1. California Register of Historical Resources

Created by Assembly Bill 2881, which was signed into law on September 27, 1992, the California Register of Historical Resources (California Register) is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change."[2] The criteria for eligibility for the California Register are based upon National Register criteria.[3] Certain resources are determined by the statute

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[1] *Code of Federal Regulations (CFR), 36 § 60.2.*

[2] *California Public Resources Code § 5024.1(a).*

[3] *California Public Resources Code § 5024.1(b).*

to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places.[4]

The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register of Historic Places and those formally Determined Eligible for the National Register of Historic Places;
- California Registered Historical Landmarks from No. 770 onward;
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.[5]

Other resources which may be nominated to the California Register include:

- Individual historical resources;
- Historical resources contributing to historic districts;
- Historical resources identified as significant in historical resources surveys with significance ratings of Category 1 through 5;
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone.[6]

C. LOCAL LEVEL

1. City of Moreno Valley

The City of Moreno Valley, through provisions in the Moreno Valley Municipal Code, has established processes to preserve its designated historic resources. The provisions of the Moreno Valley Municipal Code relative to historic preservation (Title 7 Cultural Preservation), present a planning tool to promote the public health, safety and general welfare of its constituents by providing for the preservation, identification, protection, enhancement and perpetuation of existing historic resources.

Section 7.01.010 of the Ordinance defines a historic resource as any site, building, structure, area or place, signs, objects, features, districts, neighborhoods, streets and natural features having special cultural, historical, archaeological,

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[4] *California Public Resources Code § 5024.1(d).*

[5] *California Public Resources Code § 5024.1(d).*

[6] *California Public Resources Code § 5024.1(e).*

architectural or community value in the city. Section 7.05.010 defines a Landmark or Structure of Merit as any site, including significant trees or other significant permanent landscaping located thereof, place, building, structure, street, improvement, natural feature or other object having a special historical, archaeological, paleontological, cultural, architectural or community value in the city.

Listing a Landmark or Structure of Merit in the City of Moreno Valley does not preclude a historic resource from being removed from the local Register, nor from being altered or demolished. The City of Moreno Valley Director of Development and the Cultural Preservation Advisory Committee and its staff review recommendations and permits to delete, alter, relocate or demolish these historic resources. Sections 7.05.020 through 7.05.100 of the City of Moreno Valley Municipal Code must be implemented if the rescission or modification of the landmark status of a historic resource and/or historic district is intended.

3. EVALUATION

A. HISTORIC CONTEXT

1. Moreno Valley [7]

In 1850, California became a state and the large Spanish land grant of San Jacinto Nuevo y Potrero became public land, developed by ranchers and traveled over by John Butterfield's legendary but short-lived Overland Mail Company. His Tucson-to-San Francisco stage, via San Diego and Los Angeles, opened up the Temescal approach to Los Angeles, passing through the oak groves of what is now Perris Valley, continuing through what is now Moreno Valley, and over Reche Canyon into Redlands.

In 1883, Frank E. Brown formed the Bear Valley Land and Water Company. Brown ("Brown" is "Moreno" in Spanish) built a dam at Bear Valley in the San Bernardino Mountains and contracted to provide water to the tiny, and new communities of Moreno and Alessandro.

Histories of the Moreno Valley area state that when water was piped from Bear Dam in Big Bear Lake to the Moreno region in 1891 by the Bear Valley and Alessandro Development Co., land was sold for ten times the price of what it had been just months before and there was a veritable "land boom" as the population reached 500 residents. By 1893, Moreno had four brick buildings, a weekly newspaper, a $5,000 school building, a hotel, livery stable, two churches, a pharmacy and a literary society.[8] Groves of orange trees, olives, apricots, peaches and garden crops were established around farmsteads that had been built in the region. "It was a booming area in the late 1890's and early 1900's until the water was taken from the valley."[9]

As a result of the loss of water delivery, many of the over 500 residents of Moreno Valley were forced to leave the area in search of a more livable environment. The more expensive homes were removed from their foundations, and moved in their entirety by steam-powered tractors. Many of them were relocated to the city of Riverside. Others, stolen during the owner's absence, were relocated to parts unknown. By 1901, few people resided in the Moreno Valley, and those who remained turned primarily to the dry farming of hay, grain, and grapes. Mr. Brown had lost his dream, and the valley named after him remained as a reminder of the regions vulnerability to such simple needs as water.

2. Cecil R. G. Webbe

There are five facts known about Cecil R. G. Webbe, who owned the parcel of land that is currently being investigated.

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[7] *Excerpted from Moreno Valley, California, In the Beginning. Hamner, V.F. Page 123-126.*

[8] *Riverside County, California, Place Names, Gunther, Jane D. page33.*

[9] *The Mabel Stoddard Story, compiled by Moreno Valley Jaycees, 1967.*

1) A homestead with the name "Webbs" was identified on the GLO map dated 1853 – 1877. The homestead was located just to the east and south of the site presently being investigated.[10]On February 20, 1884, Cecil R. G. Webbe was granted a 160 acre tract of land in Section 34, Township 2-South, Range 4-West, San Bernardino Meridian.[11] Webbe would have been granted the patent after a 3 to 5 year application process. (The patent application and yearly "proof" interviews can be valuable documents for learning more about the person/s applying for the patent. Due to the 60 to 90 day length of time to receive a copy of the file from the National Archives, the applicant file information will be amended to this report after they are received.)

2) Cecil R. G. Webbe is listed in the Schedule of the Twelfth Census of the United States, June 1, 1900, as living in Moreno Township, Riverside County, California. He is recorded as the "Head of Household", Single, born in July 1827, 72 years old. He was born in Ireland, and gained citizenship to the United States in 1873.[12]

3) Webbe deeded his property to Charles H. Vosburg, a carpenter, living on Walnut Street near Tenth, in the city of Riverside, California.[13] The transfer was made between 1895 and 1899.[14]

4) On September 11, 1908, Cecil R. G. Webb, age 82, United State citizen, and rancher in Riverside, California, was traveling on the steamship City of Pueblo from Victoria, Canada to San Francisco, California. He had three pieces of baggage which may have meant that he had taken a journey of some length.[15]

Out of these five facts, we can only conjecture a history of Cecil R. G. Webbe.[16] According to Canadian immigration records, there was a large group of individuals with the last name of Webbe, which emigrated from Great Britain to Canada in 1871. This may be where Cecil's siblings settled, while he ventured into the United States, arriving here in 1873.

It appears that shortly thereafter, he settled on the land in Moreno Valley, establishing a small homestead. The navel orange had just been cultivated in 1873, and it sparked a booming citrus industry in the Riverside area. The land that Webbe had settled on, and is on the parcel being investigated in this report, had a natural

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[10] *General Land Office map; 1855 to 1877.*

[11] *Bureau of Land Management, General Land Office Records. http://www.glorecords.blm.gov.*

[12] *Twelfth Census of the United States, Riverside County, Moreno Township, Sheet 5.*

[13] *Twelfth Census of the United States, Riverside County, Riverside Township, Sheet 6.*

[14] *CRM TECH, Archaeological Mitigation Report Tentative Tract 26901. Page 36.*

[15] *Pacific Coast Steamship Company, S.S. City of Pueblo, passenger manifest, September 11, 1908.*

[16] *This possible history is based on a review of all the records available on Ancestry.com. Records include census and immigration information for the United States, Great Britian and Canada; ship manifests, and other public records.*

spring which would have been able to provide the needed irrigation in an area not serviced by the Redlands Water Co. or Gage canals. Webbe stayed with the parcel until the late 1890s when he sold the land to Charles H. Vosburg.

Webbe may have stayed on the land even after selling it to Vosburg, which would explain why he is listed on the 1900 Census as living in Moreno Township, and then why in 1908 on the ships manifest, he still refers to himself as a "rancher" in Riverside County. The ships manifest is used to support the theory that Cecil Webbe still had family in Canada. (The ships manifest also shows that Cecil was a man of considerable stamina, for he made this voyage from Riverside to San Francisco to Canada, and back again, when he was 82 years old.)

Unfortunately, no further information was found about Cecil after 1908. What we do know is that although Cecil Webbe was an industrious and adventurous immigrant to America, and would have braved many hardships establishing a homestead in the area that would become Riverside County and Moreno Valley; he is not noted as a person who made an impact on the early history of the region.

B. CRITERIA FOR EVALUATION OF HISTORIC RESOURCES

In analyzing the historic significance of the subject property, criteria for designation under federal, State, and local landmark programs were considered. Additionally, the Office of Historic Preservation (OHP) survey methodology was used to survey and rate the relative significance of the property.

1. National Register of Historic Places

To be eligible for listing in the National Register, the quality of significance in American history, architecture, archaeology, engineering, or culture must be in a district, site, building, structure, or object that possesses integrity of location, design, setting, materials, workmanship, feeling and association, and:[17]

A. is associated with events that have made a significant contribution to the broad patterns of our history; or

B. is associated with the lives of persons significant in our past; or

C. embodies the distinctive characteristics of a type, period, or method of construction or that represents the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. yields, or may be likely to yield, information important to prehistory or history.

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[17] *Guidelines for Completing National Register Forms, National Register Bulletin 16, U.S. Department of the Interior, National Park Service, September 30, 1986 ("National Register Bulletin 16"). This bulletin contains technical information on comprehensive planning, survey of cultural resources, and registration in the National Register of Historic Places.*

A property eligible for listing in the National Register must meet one or more of the four criteria (A-D) defined above. In addition, unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for National Register listing.

In addition to meeting the criteria of significance, a property must have integrity. "Integrity is the ability of a property to convey its significance."[18] According to *National Register Bulletin 15*, within the concept of integrity, the National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity. To retain historic integrity a property will always possess several, and usually most, of these seven aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance.[19] The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. The following is excerpted from *National Register Bulletin 15,* which provides guidance on the interpretation and application of these factors.

- Location is the place where the historic property was constructed or the place where the historic event occurred.[20]
- Design is the combination of elements that create the form, plan, space, structure, and style of the property.[21]
- Setting is the physical environment of a historic property.[22]
- Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.[23]
- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.[24]

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[18] *National Register Bulletin 15, page 44.*

[19] *Ibid.*

[20] *"The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of historic property, complemented by its setting is particularly important in recapturing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved." Ibid.*

[21] *"A property's design reflects historic functions and technologies as well as aesthetics. It includes such considerations as the structural system; massing; arrangement of spaces; pattern of fenestration; textures and colors of surface materials; type, amount, and style of ornamental detailing; and arrangement and type of plantings in a designed landscape." Ibid.*

[22] *National Register Bulletin 15, page 45.*

[23] *"The choice and combination of materials reveals the preferences of those who created the property and indicated the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place." Ibid.*

[24] *"Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. In can be based on common traditions or innovative period techniques." Ibid.*

- Feeling is property's expression of the aesthetic or historic sense of a particular period of time.[25]

- Association is the direct link between an important historic event or person and a historic property.[26]

In assessing a property's integrity, the National Register criteria recognize that properties change over time; therefore, it is not necessary for a property to retain all its historic physical features or characteristics. The property must, however, retain the essential physical features that enable it to convey its historic identity.[27]

For properties that are considered significant under National Register criteria A and B, *National Register Bulletin 15* states that a property that is significant for its historic association is eligible if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person(s).[28]

In assessing the integrity of properties that are considered significant under National Register criterion C, National Register Bulletin 15 provides that a property important for illustrating a particular architectural style or construction technique must retain most of the physical features that constitute that style or technique.[29]

The primary effects of listing in the National Register on private property owners of historic buildings is the availability of financial and tax incentives.[30] In addition, for projects that receive federal funding, the Section 106 clearance process must be completed. State and local laws and regulations may apply to properties listed in the National Register. For example, demolition or inappropriate alteration of National Register eligible or listed properties may be subject to the California Environmental Quality Act (CEQA).

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[25] *"It results from the presence of physical features that, taken together, convey the property's historic character." Ibid.*

[26] *"A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to the observer. Like feeling, associations require the presence of physical features that convey a property's historic character...Because feeling and association depend on individual perceptions, their retention alone is never sufficient to support eligibility of a property for the National Register." Ibid.*

[27] *National Register Bulletin 15, page 46.*

[28] *Ibid.*

[29] *"A property that has lost some historic materials or details can be eligible if it retains the majority of the features that illustrate its style in terms of the massing, spatial relationships, proportion, patter of windows and doors, texture of materials, and ornamentation. The property is not eligible, however, if it retains some basic features conveying massing but has lost the majority of features that once characterized its style." Ibid.*

[30] *See 36 CFR 60.2(b) (c).*

2. California Register of Historical Resources

To be eligible for the California Register, a historic resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Additionally, a historic resource eligible for listing in the California Register must meet one or more of the criteria of significance described above and retain enough of its historic character or appearance to be recognizable as a historic resource and to convey the reasons for its significance. Historical resources that have been rehabilitated or restored may be evaluated for listing.[31]

Integrity under the California Register is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. The resource must also be judged with reference to the particular criteria under which it is proposed for eligibility. It is possible that a historic resource may not retain sufficient integrity to meet criteria for listing in the National Register, but it may still be eligible for listing in the California Register.[32]

3. California Office of Historical Preservation Survey Methodology

The evaluation instructions and classification system prescribed by the California Office of Historic Preservation in its Instructions for Recording Historical Resources provide a three-digit evaluation rating code for use in classifying potential historic resources. The first digit indicates one of the following general evaluation categories for use in conducting cultural resources surveys:

1. Listed on the National Register or the California Register;
2. Determined eligible for listing in the National Register or the California Register;

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[31] *California Code of Regulations, California Register of Historical Resources (Title 14, Chapter11.5), Section 4852(c).*

[32] *Ibid.*

3. Appears eligible for the National Register or the California Register through survey evaluation;

4. Appears eligible for the National Register or the California Register through other evaluation;

5. Recognized as Historically Significant by Local Government;

6. Not eligible for any Listing or Designation; and

7. Not evaluated for the National Register or California Register or needs re-evaluation.

The second digit of the evaluation status code is a letter code indicating whether the resource is separately eligible (S), eligible as part of a district (D), or both (B). The third digit is a number that is used to further specify significance and refine the relationship of the property to the National Register and/or California Register. Under this evaluation system, categories 1 through 4 pertain to various levels of National Register eligibility. The California Register, however, may include surveyed resources with evaluation rating codes through level 5. In addition, properties found ineligible for listing in the National Register, California Register, or for designation under a local ordinance are given an evaluation status code of 6.

C. HISTORIC RESOURCES IDENTIFIED

The historic resources being surveyed in this report are rock alignments, foundations, a cellar, a well, and a cistern (Photograph 1). The features that are associated with water; the cistern, well and cellar, appear to date from the early homestead of Cecil Webbe established circa 1875. The rock walls may also derive from that period also. The foundations constructed of modern cement and concrete are most probably associated with the small house and barn that was constructed near the source of the water in 1940.

The features associated with the homestead of circa 1875 are made of large rough hewn stones. The cellar, well and cistern walls are constructed of stones and a mortar comprised of sand/dirt, water, lime and a small amount of hydraulic cement. The stone walls were dry laid and appear to serve to hold back soil (Photograph 2).

Photograph 1: Cistern

Photograph 2: Dry laid wall

According to the Riverside County Tax Assessors records for the project site (APN 256-150-001-4) a small house measuring 40 feet by 18 feet, that combined with the attached porches was 788 square feet, and built in 1940. It was a simple structure of frame construction, with a gable roof, sitting on a poured concrete foundation. The house had two bedrooms, a living room, kitchen and bathroom. The interior fixtures

were noted as being "few" and "cheap". The windows were casement and double-hung, with wood frames. The house was hooked up to the local electric power supply which powered a water heater, but no heating system is noted.

There was also a gable roofed barn measuring 22 feet by 32 feet that dated from 1940, and a small storage shed measuring 12 feet by 18 feet, located on the parcel. All of the buildings were demolished in 1989.

The modern concrete and cement blocks (Photograph 3) found in the project area would date from the 1940 to 1989 time period. There are also some long lengths of galvanized pipe that seem to be coming from the natural water source that could have been used to supply the house or barn with water.

Photograph 3: A block of modern concrete

3. Significance

The subject property, located on Gernert Road is located in the City of Moreno Valley. There is a collection of some historic features that are the remains of an early water system associated with the homestead and ranch of Cecil R. G. Webbe. The area surrounding the subject features, and the parcel it sits on, is quickly being converted to planned residential neighborhoods. At this point in time, there is still a rural feel to the area with many properties containing corrals, barns and sheds for horses or other livestock.

In assessing the subject property's historical significance federal, state, and local criteria was applied. The subject property is currently not listed on either the National

Register or the California Register, nor is it a designated City of Moreno Valley Historic Landmark or Structure of Merit.

Under the National Register or California Register criteria used to assess the historic features association with significant historical events exemplifying broad patterns of our history, the historic features were found not to be associated with any significant events in Moreno Valley, California or the United States.

Under the National Register or California Register criteria relating to a buildings association with persons of historic importance, the property investigated in this report has not been found to have been associated with any persons important in the local or national arena. The history of Cecil R. G. Webbe is interesting, but there has not been any information revealed that Cecil Webbe was of historic importance in national or local history.

Under the National Register or California Register criteria relating to the distinctive characteristics of a type, period, region, or method of construction, the subject features are not significant as they are the remnants of the water/irrigation system that was created by Cecil Webbe. The remaining features are unable to "make a picture" of the system Webbe created to take advantage of the artesian waters, and how he irrigated his crops or fruit trees. The features are interesting as they date from the last quarter of the nineteenth century, but they do not possess the integrity to relate the time, period or method used to construct them.

When Webbe constructed the cistern and well, he used a method of construction that was widely used throughout the United States and was not limited to the Moreno Valley area, or the State of California. The features, that are remnants of water system that Cecil R. G. Webbe constructed, have been severely compromised by the demolition of the remains of the historic homestead that was located to the south and east of the project area, and the demolition of the house and barn located on the subject area in 1989. The integrity has been lost that associate these features with a homestead that was one of the earliest in what is now Moreno Valley.

RESULTS

The historic features located on the site are not eligible for listing on the National Register of Historic Places, the California Register of Historical Resources or on the list of historic sites of Moreno Valley.

The archeological investigation performed as part of this investigation, and this report with what is known of Cecil R.G. Webbe, should serve to record the historic features for future research by historians interested in Moreno Valley history.

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APPENDICES

TWELFTH CENSUS OF THE UNITED STATES.

SCHEDULE No. 1.—POPULATION.

State: California
County: Placer?
Township or other division of county: Alpine? Township
Name of incorporated city, town, or village, within the above-named division:
Supervisor's District No. 6
Enumeration District No. 216
Sheet No. 5
Name of Institution:
Ward of city:
Enumerated by me on the 1 day of June, 1900, [illegible], Enumerator.

Line	Name	Relation	Sex	Place of birth	Father's birthplace	Mother's birthplace	Occupation
1	— Karl A	Son	M	California	Iowa	Pennsylvania	
2	— Edna	Daughter	F	California	Iowa	Pennsylvania	
3	— Edith	Daughter	F	California	Iowa	Arkansas	
4	Rice? Olin C	Head	M	Virginia	England	New York	Farmer
5	— Mary F	Wife	F	Missouri	Virginia	New York	
6	— Emma? A	Daughter	F	Missouri	Missouri	Missouri	
7	— Harry J	Son	M	Missouri	Missouri	Missouri	At school
8	— Olin C	Son	M	Missouri	Missouri	Missouri	At school
9	Knecht? Joseph	Head	M	Ohio	Germany	Germany	Farmer
10	Jackson Seymour	Head	M	New York	Vermont	New York	Farmer
11	— Anna?	Wife	F	Scotland	Scotland	Scotland	
12	— Minnie?	Daughter	F	California	New York	Scotland	
13	— Mary E	Daughter	F	California	New York	Scotland	
14	— Helen	Daughter	F	California	New York	Scotland	At school
15	Kerr? Marion	Widow?	F	Scotland	Scotland	Scotland	
16	Sanders Jeremiah?	Head	M	Vermont	New Hampshire	New Hampshire	Farmer
17	— Sarah E	Wife	F	Missouri	Virginia	[illegible]	
18	Lenkins? [illegible]	Boarder	F	Missouri	Kentucky	Missouri	
19	— Alma? E	Boarder	F	Missouri	Kentucky	Missouri	
20	Rothcasie? R G	Head	M	Ireland	Ireland	Ireland	
21	Johnson David?	Head	M	California	Ohio	[illegible]	Farmer
22	— Mary	Mother	F	Indiana	Unknown	Unknown	
23	Vorske? John	Head	M	Bohemia	Bohemia	Bohemia	Farmer
24	Stewart James	Head	M	Scotland	Scotland	Scotland	Post master?
25	— Charlotte?	Wife	F	England	England	England	
26	Carter? Ashman?	Head	M	Canada Eng	England	England	Farmer
27	Stone? Frank	Head	M	Illinois	Illinois	Illinois	Farmer
28	— Isabel K	Wife	F	Canada Eng	Canada Eng	Canada [illegible]	
29	— Earl B	Son	M	Illinois	Illinois	Canada Eng	
30	— James? W	Son	M	California	Illinois	Canada Eng	
31	— Viola? F	Daughter	F	California	Illinois	Canada Eng	
32	— Hugh F	Son	M	California	Illinois	Canada Eng	
33	McCarty? Roy	Head	M	Iowa	[illegible]	Unknown?	Miner?
34	— Edith L	Wife	F	Missouri	Tennessee	Illinois	
35	— Roy S	Son	M	Missouri	Missouri	Missouri	At school
36	— [illegible] L	Son	M	Missouri	Missouri	Missouri	At school
37	— Leo? F	Son	M	California	Iowa	Iowa	
38	McKitten? Robert	Head	M	Ohio	Pennsylvania?	Ohio	Farmer
39	— Sarah	Wife	F	Ohio	Ohio	Ohio	
40	— Ida? F	Daughter	F	Missouri	Ohio	Ohio	At school
41	— Margaret	Daughter	F	California	Ohio	Ohio	At school
42	Hatfield? [illegible]	Head	F	Ohio	Pennsylvania	Ohio	Farmer
43	— Ollie? F	Son	M	Missouri	Maryland	Ohio	At school
44	Bordwine? John C	Head	M	Ohio	Virginia	Ohio	Farmer
45	— Mary A	Wife	F	Ohio	Ohio	Indiana	
46	— Hazel A	Daughter	F	California	Ohio	Ohio	
47	Schellinger? [illegible]	Head	M	Ohio	Massachusetts	Massachusetts	Farmer
48	— [illegible]	Wife	F	[illegible]	New York	Vermont	
49	— [illegible] E	Son	M	[illegible]	Ohio	Ohio	
50	[illegible]	Head	M	[illegible]	New York	[illegible]	House carpenter?

TWELFTH CENSUS OF THE UNITED STATES.

B

PACIFIC COAST STEAMSHIP CO.

(B) PASSENGER LIST

District and Port of San Francisco

I, J J Shea, Master of the Steamship City of Puebla, do solemnly, sincerely and truly swear that the following List or Manifest, subscribed by me, and now delivered by me to the Collector of Customs of the Collection District of San Francisco, from which port said Steamship has now arrived; and is a full and perfect list of all the passengers taken on board the said Steamship at Victoria, B.C., the location of the compartment or space occupied by each during the passage, the that on said list is truly designated the age, the sex, and the calling of each of the said passengers, and that said List or Manifest truly sets forth the number of said passengers who have died on said country of citizenship of each, and also the destination or location intended by each; also of the pieces of baggage of each; also a true statement, so far as can be ascertained, with reference voyage, and the dates and causes of death, and the names and ages of those who died; also to the intention of each alien passenger as to a protracted sojourn in this country. So help me God.

J J Shea, Master

Sworn to this 11th day of Sept 1908 before me, ______ Collector

List or Manifest of all the passengers taken on board the Steamship City of Puebla whereof J J Shea is master, from Victoria B.C., burthen 1712 tons.

181 Name	Age Years	Age Months	Sex	Calling	Country of which they are Severally Citizens	Baggage Number of Pieces	Native Country of Emigrants	Intended Destination or Location	Location of Compartment or Space	Died on Voyage and Cause of Death
— First Class —										
1 Branahan, Mary	21	✓	f	Maid	Canada	1	Scotland	Los Angeles Cal	1st cabin	[illegible]
2 Crofman, Albert	48	✓	m	Restaurant Keeper	U.S.	—	U.S.	San Fran	—	5 yrs
3 Orricalls, Horace	23	✓	m	Rancher	Canada	1	England	Do	—	[illegible]
4 Coddington, Arthur	43	✓	m	Fruit grower	Do	5	[illegible]	Santa Cruz Cal	—	[illegible]
5 Coddington, Anna	33	✓	f	Housewife	Do	—	[illegible]	Do	—	"
6 Coddington, Felica	11	✓	f	none	Do	—	U.S.	Do	—	"
7 Coddington, Dudley	10	✓	m	Do	Do	—	U.S.	Do	—	"
8 Coddington, Jean	5	✓	m	Do	Do	—	U.S.	Do	—	"
9 Coddington, Albert	1	✓	m	Do	Do	—	U.S.	Do	—	
10 Carroll, James T	23	✓	m	Telegraph Operator	U.S.	1	U.S.	Goldfield Nev.	—	
11 Gardner, Sadie	29	✓	f	Stenographer	U.S.	1	U.S.	Los Angeles Cal	—	[illegible]
12 Watson, John W.	33	✓	m	Teacher	Canada	1	Canada	[illegible] Cal	[illegible]	[illegible] 1873
13 Kilpatrick, Alex. S	66	✓	m	Miller	U.S.	2	Scotland	Bish of Cal	—	
14 Kilpatrick, Tina	48	✓	f	Housewife	U.S.	—	U.S.	Do	—	
15 Kilpatrick, Guenieve	11	✓	f	none	U.S.	—	U.S.	Do	—	
16 Lund, Joshua	41	✓	m	Butcher	Canada	—	England	Los Angeles Cal	—	[illegible] 1 year
17 Lewis, Mrs. Dora	30	✓	f	Stenographer	U.S.	1	U.S.	Do	—	
18 Lafoint, Mrs Belle	51	✓	f	Housewife	U.S.	—	U.S.	San Fran	—	
19 Larson, Bertha	21	✓	f	none	Canada	—	Canada	Do	—	[illegible] 1 year
20 O'Brien, Mrs Jennie	34	✓	f	Waitress	U.S.	1	U.S.	Los Angeles Cal	—	
21 [illegible], Mrs Delphina	67	✓	f	Housewife	Canada	1	Canada	San [illegible] Cal	—	[illegible] years
22 Regua, Mrs. Anne	25	✓	f	Do	U.S.	1	U.S.	San Fran.	—	
23 Irons, Edward B.	35	✓	m	Rancher	U.S.	1	U.S.	Do	—	
24 Wills, Harry	23	✓	m	[illegible]	England	1	England	Do	Resident U.S. 4 yrs	Paid
25 Wooten, Henry C	37	✓	m	[illegible]	Canada	10	Do	Los Angeles Cal	—	[illegible] years
26 Wooten, E. W. C	36	✓	f	Housewife	Do	—	Do	Do	—	"
27 Wooten, Jeffrey	10	✓	m	none	Do	—	Do	Do	—	"
28 Wooten, Philip	7	✓	m	none	Do	—	Do	Do	—	"
29 Wooten, Cora	4	✓	f	none	Do	—	Do	Do	—	
30 Webb, Cecil R.G.	32	✓	m	Rancher	U.S.	3	Ireland	San Fran	—	2nd Papers Riverside Cal 1875
31 Huber, Clark	61	✓	m	Retired	Canada	4	U.S.	Los Angeles Cal	—	[illegible] 1 year
32 Huber, Louise	58	✓	f	Housewife	Do	—	England	Do	—	"
33 Huber, Georgina	19	✓	f	none	Do	—	Canada	Do	—	

Whole Number	
Exemptions	
Subject to head tax	
Transits	
Tourists	
Aliens returning	
Diseased	
Sex, Size, or Color	

Sept 11

The United States of America,

To all to whom these Presents shall come, Greeting:

Homestead Certificate No. 895
Application 6376

Whereas, There has been deposited in the General Land Office of the United States a Certificate of the Register of the Land Office at Los Angeles, California whereby it appears that, pursuant to the Act of Congress approved 20th May, 1862, "To secure Homesteads to actual Settlers on the Public Domain," and the acts supplemental thereto, the claim of Cecil R. G. Nibbe has been established and duly commuted, in conformity to law, for the west half of the north west quarter, the south east quarter of the north west quarter and the north east quarter of the south west quarter of section thirty four, in township twenty south, of range four west of San Bernardino Meridian, in California, containing one hundred and sixty acres

according to the Official Plat of the Survey of said Land, returned to the General Land Office by the Surveyor General.

Now know ye, that there is, therefore, granted by the United States unto the said Cecil R. G. Nibbe the tract of Land above described: To have and to hold the said tract of Land, with the appurtenances thereof, unto the said Cecil R. G. Nibbe and to heirs and assigns forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes; and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws, and decisions of courts, and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law.

In testimony whereof, I, Chester A. Arthur, PRESIDENT OF THE UNITED STATES OF AMERICA, have caused these letters to be made Patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the twentieth day of February, in the year of our Lord one thousand eight hundred and eighty four, and of the Independence of the United States the One Hundred and eighth.

L.S.

By the President: Chester A. Arthur

Wm. H. Crook, Secretary.

S. W. Clark, Recorder of the General Land Office.

Gernert

MORENO VALLEY
80-30 256-150-001-4
261-190-001-6
PARCEL 12-39-001-15
CODE
SHEET 2 OF 3 SHEETS

RESIDENTIAL BUILDING RECORD

ADDRESS OF PROPERTY: Gernert Rd
LEGAL DESC.: por
~~LOT NO.~~ SECTION 34 BLOCK TNSHIP 25 RANGE 4W

DESCRIPTION OF BUILDING

104.5B

CLASS & SHAPE: 1 D-4-5-A
ARCHITECTURE: 1 Stories
TYPE — USE: ✓ Single; Double; Duplex; Apartment; Flat - Court; Motel; Units
DESIGN: X

CONSTRUCTION: Light; X Sub-Standard; X Standard; Above Stand.; Special
FOUNDATION: X Concrete Med; Reinforced; Brick; Wood; Piers; Light; Heavy

STRUCTURAL: ✓ Frame; Box; X 2"X 4"; Sheathing; Concrete Blk.; Brick; Adobe; Stone; ✓ Floor Joist; 1st "X"; 2nd "X"; X Sub-Floor; Concrete Flr.; Insul. Ceiling; Insul. Walls

EXTERIOR: Stucco; X Siding 1"X 4"; B.&B.; ✓ T.&G.; Shingle; Brick Veneer; Stone Veneer; Gd.; Av.; Fr.
WINDOWS: X Camt.; X D.H.; Metal; ✓ Wood; Sliding; Louv.; Fixed; ✓ Scrns.

ROOF: Flat /4; Pitch; X G'ble /4; Hip /4; Shed /4; Cut-up; Dorm.; X Raft. 2"X 4"; Boxed Eaves; Gutters; ✓ Compo. Roll; Comp. Shingle; Shgle.; Shake; Tile; Ti. Trim; Built-up w/

LIGHTING — WIRING: X K.&T.; B.X.; Cable; Cond.
FIXTURES: ✓ Few; ✓ Cheap; Avg.; Med.; Many; Spec.; Rec.; 220
SPEC. BLT. INS.: B.I. Stove; B.I. Oven; B.I. Dishwr.; B.I.; Garb. Disp.

AIR CONDITION: Heat; Cool.; Gravity; Evap.; Forced; Refrig.; Radiant; Humid.; Wall Htr; Filter; Flr. Htr.; Central; Outs.; M-B.T.U.; Heat Pmp.; Tons; C.F.Mo.; Elect.; Thermostat; Fireplace; B-B-Q.

ROOM and FINISH DETAIL

ROOMS	FLOORS B	1	2	FLR. FIN. Mat'l.	Gr.	Trim	Walls PL.	Walls	Gr.	Ceilings PL.	Ceilings	Gr.
All		X		Pine	A	OP		T&G W.B.	A		W BD	A
Ent Hall												
Living		1										
Dining												
Bed		2										
Bed												
Kitchen		1										

'Base Cab. Metal ✓ O.P. Hwd. A Gr. ✓ W-Htr. D Sink
Drain Bd. & Cab. Top 'Tile X 'Plastic 'Metal

CONSTRUCTION RECORD

Permit No.	For	Amount	Date	Effec. Year	Appr. Year	Age	Rem. Life	Table	%	Cond.	Arch. Attr.	Func. Plan	Con-form.	Storage Sp. Cupbd	Closet	Work-mnshp	Mat'l.
				1940	1964	24	32	R??	65	A							A
					1975	35	29	R60	58								

NORMAL % GOOD — RATING (E, G, A, F, P)

BATH Fl.	No.	FINISH Floors	Walls	FIXTURES WC	La	Tub	Type	Grade	SHOWER St	D.T.	Gl. Dr.	Finish
1	1	Lino	DL	✓	✓	✓	M	A				

SPECIAL FEATURES
Crystal Gl. Windows ☐
Plate Gl. Windows ☐
Sliding Gl. Doors Ft.

MISCELLANEOUS STRUCTURES

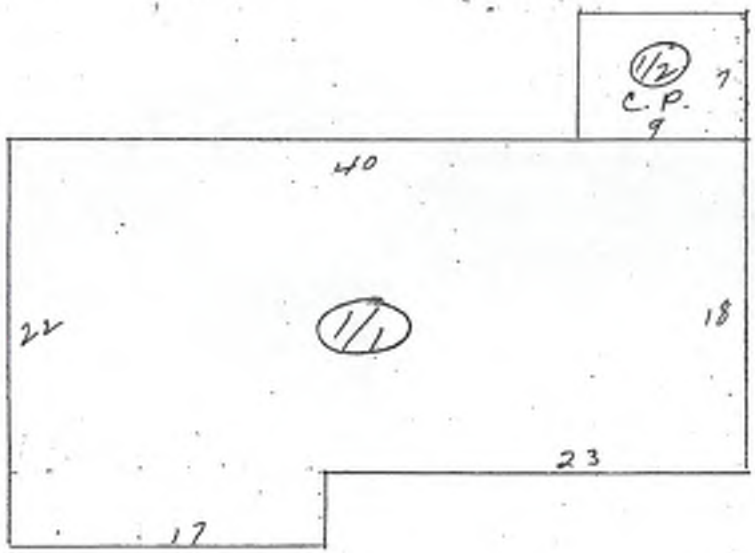
Structure	Found.	Constr.	Ext.	Roof	Floor	Int.	Size	Area	Cost @ Unit $	Cost
~~OCTTH~~							~~12x18~~	~~216~~	~~.35~~	~~76~~
~~BARN~~	~~Conc~~	~~FR~~	~~SID~~	~~G-Comp Roll~~	~~Conc~~	~~Unf.~~	~~22x22~~	~~484~~	~~2.00~~	~~1041~~ 2011

REMARKS

COMPUTATIONS

40 x 18 = 720
17 x 4 = 68
788
~~½ x 9 x 9 = 32~~
820

9 x 7 = 63 @ 0.50



01 of 02

RIVERSIDE COUNTY ASSESSOR

CAP RESIDENTIAL BUILDING RECORD

256-150-001-4

Site: 11120 MORTON Rd Legal Description: Lot Por SEC 34 Tract T 2S-R4W Parcel No. ~~261-190-001-6~~

1 2 4.5 B

RESIDENTIAL BUILDING DESCRIPTION

Foundation	Structural	Exterior	Roof	Roof Cover	Windows
☐ Concrete	☐ Frame	☐ Stucco	☐ Peaked	☐ Comp. Shgle.	☐ Metal
☐ C.B.	☐ Box	☐ B&B	☐ Flat	☐ Rock	☐ Wood
☐ Piers	☐ C.B.	☐ _____ Veneer	☐ Shed	☐ Shake	☐ Sliding
☐ Wood	☐ Brick	☐ Siding	☐ Mansard	☐ Tile	☐ Fixed
☐ Brick	☐ Stone	☐ Shgle.	☐ Boxed Eaves	☐ Shgle.	☐ Cont.
☐ Mudsill	☐ _____	☐ _____	☐ _____	☐ Comp. Roll	☐ D.H.
☐ _____	☐ _____	☐ _____	☐ _____	☐ Gravel	☐ _____
				☐ _____	

RESIDENTIAL EXTRAS

	Year		
	78		
R&O			
Garb. Disp.			
Dishwasher			
Tr. Compactor			
Inter-com			
_____			
Total	0		
Floor Htr.			
Wall Htr.			
For. Air Furn.			
Air Conditioning			
Ht. Pump			
_____			
Total	0		
Fireplace			
Fireplace			
_____			
_____			

CONSTRUCTION RECORD

No.	For	Date	Amt.
2682	Demo	4/21/89	—

INTERIOR DETAIL

	All	Ent. H.	Liv. Rm	Din. R.	Fam.	____ Bed	____ Bed			Kitch.
Flr. Cover										
Walls										
Ceiling										

Bath(s)	No.	Flr. Cover	Walls	Ceilings	WC	LA	TUB	St. Show.	O.T. Show.	Gl. Dr.	Finish

Kitchen: Drain Bd. & Cab. Top: Type: _____ LF Up. Cab. _____ LF Low Cab. _____ LF

POOL DESCRIPTION

Year Built _____

Dimensions _____ L.F

Pool Extras	Amount
☐ Slide	
☐ Heater	
☐ _____	
☐ _____	
Total	

GARAGE-CARPORT DESCRIPTION

Structure	Dimensions	Foundation	Exterior	Roof Cover	Interior	Floor	Yr. Blt.

REMARKS

MISCELLANEOUS STRUCTURES

Item No	Structure	Foundation	Exterior	Roof	Interior	Floor	Yr. Blt.	Dimensions	Area	Unit Cost	RCN	%GD	RCLD	Area	Unit Cost	RCN	%GD	RCLD
1	Barn	Conc	Fr Siding	Comp Shg	Fin AE	Conc	#40	22X32	704	11.01	7751	60	4651					
2	Storage Shed		Ply Wd			Slab		AE 12A18	216	NC			0					
										TOTAL	7751	60	4651		TOTAL			

YARD IMPROVEMENTS

Item No	Structure	Foundation	Exterior	Roof	Interior	Floor	Yr. Blt.	Dimensions	Area	Unit Cost	RCN	Area	Unit Cost	RCN	Area	Unit Cost	RCN

261-150-001-4

MISCELLANEOUS BUILDING RECORD

ADDRESS: GERNERT ROAD

PARCEL: ~~261-190-001-6~~

SHEET 3 OF 3 SHEETS

DESCRIPTION OF BUILDINGS

Bldg. No.	Structure	Size	Found.	Wall & Exterior	Roof Type	Roof Cover	Floor & Interior Detail	Second Story or Loft	Year Built	Est. Tot. Life Yrs.
1	BARN	22X32	CONC	FRAME - SIDING	GAB	COMP. SH.	CONC-FIN = 78 ~~CONC UNF~~	—	(46) 1940	50
							~~(BARN BEING CONV. TO LIVING AREA) 75 RC~~			
							~~144.0A (AE CLASS~~ - NO ENTRY R34)			

COMPUTATION

Appraiser-Date		RE 4/75			~~1978~~
Bldg. No.	Area	Unit Cost	Cost	% Good	R.C.N. L.N.D.
1	704	~~RC~~	~~2500~~	~~NC~~	~~2500~~
	(75CF)	11.01	7751	60	4651
Total					~~2500~~ 4651

Appraiser-Date					
Bldg. No.	Area	Unit Cost	Cost	% Good	R.C.N. L.N.D.
Total					

TWELFTH CENSUS OF THE UNITED STATES. **B**

SCHEDULE No. 1.—POPULATION.

State: California
County: Riverside
Supervisor's District No. 6
Enumeration District No. 207
Sheet No. 6

Township or other division of county: Riverside Township
Name of Institution: X
Name of incorporated city, town, or village, within the above-named division: Riverside City
Ward of city: Precinct 4

Enumerated by me on the 11th day of June, 1900, Frank G. Hall, Enumerator.

Line	Name	Relation	Place of birth of this person	Place of birth of father	Place of birth of mother	Occupation
51	Harris, Henry H.	Son	California	New York	Illinois	At School
52	Anna G.	Daughter	California	New York	Illinois	At School
53	Meredith	Son	California	New York	Illinois	
54	Mildred L.	Daughter	California	New York	Illinois	
55	[illegible]	Head	Michigan	New York	New York	[illegible]
56	[illegible]	Wife	New York	England	England	
57	Thrasher, Wilbert E.	Head	Michigan	Connecticut	Connecticut	[illegible]
58	Alice M.	Daughter	Michigan	Michigan	New York	
59	Edwards, Charles	Boarder	Connecticut	Connecticut	Connecticut	Carpenter
60	[illegible]	Boarder	Connecticut	Connecticut	Connecticut	Carpenter
61	[illegible]	Servant	Iowa	Denmark	Denmark	[illegible]
62	[illegible]	Head	Indiana	North Carolina	North Carolina	[illegible]
63	Martha E.	Wife	Indiana	Pennsylvania	Ohio	
64	Ethel	Daughter	Indiana	Indiana	Indiana	
65	Paul E.	Son	Indiana	Indiana	Indiana	[illegible]
66	Lillian A.	Daughter	California	Indiana	Indiana	
67	Edwards, Lucy	Boarder	Connecticut	Connecticut	Connecticut	
68	[illegible]	Head	Wisconsin	New York	New York	School Teacher
69	[illegible]	Wife	Minnesota	New York	New York	
70	Elder, Samuel	Head	Minnesota	Minnesota	Unknown	[illegible]
71	May	Wife	Ohio	Ohio	Ohio	Dressmaker
72	Frank	Son	Wisconsin	Minnesota	Ohio	At School
73	John M.	Son	California	Minnesota	Ohio	At School
74	[illegible]	Head	[illegible]	Germany	Germany	[illegible]
75	Lloyd, Robert	Head	England	England	England	[illegible]
76	[illegible]	Head	England	England	England	[illegible]
77	[illegible]	[illegible]	Ohio	Tennessee	Ohio	[illegible]
78	[illegible]	Head	Pennsylvania	Pennsylvania	Pennsylvania	[illegible]
79	[illegible]	Head	Sweden	Sweden	Sweden	Painter
80	[illegible]	Wife	California	England	England	[illegible]
81	[illegible]	Head	New York	New York	[illegible]	
82	[illegible]	Daughter	New York	New York	New York	Stenographer
83	[illegible]	Head	England	England	England	
84	[illegible]	Son	Canada Eng	Canada Eng	England	Orange Packer
85	Robert H.	Son	Canada Eng	Canada Eng	England	At School
86	[illegible]	Head	Canada Eng	England	Scotland	[illegible]
87	[illegible]	Wife	New York	Canada Eng	Ireland	
88	[illegible]	[illegible]	California	Canada Eng	New York	At School
89	[illegible]	[illegible]	Illinois	Kentucky	Kentucky	
90	[illegible]	Head	Ohio	Ohio	Ohio	[illegible]
91	Claude	Son	Iowa	Wisconsin	Ohio	At School
92	Estelle	Daughter	Iowa	Wisconsin	Ohio	Music Teacher
93	[illegible]	Head	New York	New York	Vermont	[illegible]
94	[illegible]	Wife	Maine	Maine	[illegible]	[illegible]
95	[illegible]	Head	Michigan	Holland	[illegible]	[illegible]
96	[illegible]	Wife	[illegible]	Holland	[illegible]	
97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
98	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PA05-0073
File copy

Chambers Group®
Solving Environmental Challenges

302 Brookside Avenue
Redlands, California 92373
909 • 335-7068 tel
909 • 335-6318 fax

September 3, 2007

Kathleen Dale
Associate Planner
City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92552

Re: KINCAID DEVELOPMENT PROJECT; RESULTS OF AN ARCHAEOLOGICAL TEST PROGRAM AT CA-RIV-7284/H AND CA-RIV-7285 MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA

Dear Ms. Dale;

In response to your request for an addendum to the report noted above, we are submitting this letter report with information gained from reviewing a copy of Cecil R. G. Webbe's General Land Entry file from the U.S. National Archives & Records, and research gained from a review of deeds and property records in San Bernardino County. We have also attached to this letter copies of the original patent and deed documents.

The General Land Entry (patent) file has copies of the documents and testimony that Webbe was required to file to obtain ownership of 160 acres of land in 1884, in what is now Moreno Valley, Riverside County. Webbe was still a citizen of Great Britain in 1880 when he applied for ownership of the parcel he had resided on since 1875, under the Homestead Land Act (as revised in 1877). His house was recorded on the General Land Office (GLO) map when the area was surveyed in 1877. In Webbe's patent application he had to swear that he would establish a homestead on the parcel and that he would become a citizen of the United States. As he had already constructed a homestead on the land in 1875, he was able to fulfill his requirements for ownership in only two years. Webbe's final testimony in1882 to the Los Angeles General Land Office states that he was 55 years old, was living with a maiden (unmarried) sister, was using the land for agricultural purposes, had settled on the land in March 1875, was still residing on the parcel, had made improvements consisting of a dwelling built in 1875, horse stables, other out buildings, a few vines and fruit trees, an apiary, water ditches, and that the cost of the improvements was approximately $300. He also stated that he had broken and cultivated about 10 acres of land for the planting of barley, corn and vegetables.

Webbe was awarded ownership of the land, (which prior to 1893, was considered part of San Bernardino County) in 1882, and the patent was recorded in 1884. No sooner did Webbe get ownership of the land, he decided to sell the eastern half of it, 80 acres, to Milton Santee of Los Angeles County in May 1883. He sold to Santee the southeast ¼ of the northwest quarter, and the northeast ¼ of the southwest quarter, of Section 34. There are no buildings or structures noted as belonging to the parcel. According to the 1880 census records, Milton Santee had been a 45 year old surveyor working in the forests of Lassen County, and was residing in

Jamesville Township. In 1900, he was recorded in that year's census as living in the 9th Precinct in Los Angeles. It does not appear that he ever established residency on the land, but he may have leased the land to local growers or homesteaders.

In 1891, Webbe sold the southwest ¼ of the northwest ¼, and the southwest ¼ of the northwest ¼ of the northwest ¼ of Section 34, to Charles M. Dexter. Included in the transfer deed (bill of sale) is a map of the parcel with the location of the natural springs and house of Cecil R.G. Webbe at its northeast corner. There is no notation on the deed map as to the location of the stables and outbuildings that Webbe had built when he claimed his patent. Charles M. Dexter, born in Ohio, had served in the 167th Regiment of the Ohio Infantry of the Union Army and had been discharged as a second lieutenant. In 1870 he was living with his mother, a brother and a sister in Delaware, Ohio, and working as a sewing machine superintendent. Charles and his mother were heading west, and in 1880 they were living in Colorado Springs, Colorado, where Charles was working as a machinist. He married shortly thereafter, and twenty years later in 1900, Charles and his wife were living on Eleventh Street in the city of Riverside. In 1910, at the age of 67, Charles and his wife are still living on Eleventh Street, and he is employed as a park superintendent in the city of Riverside. By 1920, only Charles' widow Rose is still living in Riverside on Eleventh Street.

After selling off the 80 acres to Milton Santee and 46 acres to Charles Dexter, Webbe would have only still owned 34 acres that were located in the most northern area of his original 160 acre parcel, along the southwest edge of the Box Spring Mountains. The landscape of this area is steep and rocky, not suited to agricultural purposes, nor does it have any natural aquifers.

For the time period of 1854 to 1916, we were unable to find any further transfers of land in San Bernardino County from Cecil R.G. Webbe, particularly from Webbe to Charles H. Vosburg in 1899. We did not review the records in Riverside County that would have started being kept in 1893. (The county of Riverside was created in 1893 from land previously associated with San Bernardino and San Diego counties.)

We have determined that although the project area is interesting in history of the settlement of Moreno Valley, it is not significant for its association with persons important in the history of the United States, California or Moreno Valley. This decision does not alter our conclusion as to the eligibility or significance of the project area and the historic features found there, as found in our report "Kincaid Development Report."

Very truly yours,

Pamela Daly, M.S.
Sr. Architectural Historian

Attach: Land Patent record of Cecil R.G. Webbe
Census pages for Charles M. Dexter and Milton Santee

I Cecil R. G. Webbe, for and in consideration of the sum of Five hundred Dollars to me in hand paid by Milton Santee of Los Angeles County California - Do Hereby grant, bargain and Sell unto the said Milton Santee all that Real property situated in the County of San Bernardino and State of California bounded and described as follows: All of the South East quarter (S.E¼) of the North West quarter (N.W¼) and the North East quarter (N.E¼) of the South West quarter (S.W¼) of Section Thirty four (34) in Township 2. South Range four (4) West San Bernardino Meridian, containing Eighty (80) acres more or less.

Witness my hand and Seal this 21st day of May 1883.

Cecil R. G. Webbe {L.S.}

Signed sealed & delivered in presence of
E. A. Nisbet

State of California }
County of San Bernardino } ss

On this 21st day of May 1883 before me W. F. Holcomb, County Clerk, Ex Officio Clerk of the Superior Court in and for the said County of San Bernardino County Cecil R. G. Webbe whose name is subscribed to the annexed instrument as party thereto, personally known to me to be the same person described in and who executed the said annexed instrument as a party thereto who duly acknowledged to me that he executed the same.

In Witness whereof I have hereunto set my hand and affixed my official Seal the day and year in this Certificate first above written.

{Seal}

W. F. Holcomb Co Clerk
By E. A. Nisbet Deputy

A full true and correct copy of original recorded at request of Milton Santee May 21st 1883 at 1.15 P.M.

W. F. Holcomb Co. Recorder
By E. A. Nisbet Deputy

Page No. 30

Schedule 1.—Inhabitants in Arlington Township, in the County of Phelps, State of Mo, enumerated by me on the 11 day of Aug, 1870.

Post Office: Rolla

E. P. Ferrell, Ass't Marshal.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		— Mary E	8	F	W	at home			Mo										
		— John F	2	M	"	"			"										
		— Jas E	7/12	"	"				"			Dec							
217	217	Robertson John	25	M	"	Farm Laborer			Ten									1	
		— Millie F	27	F	"	Keeping house		100	Ky						1	1			
218	218	[illegible] Mary F	35	"	"	"			Mo										
		— Jas C	13	M	"	work on farm			"					1					
219	219	Hawkins [illegible]	54	"	"	Farmer		285	Ten									1	
		— America	32	F	"	Keeping house			Ky										
		— Ewing	13	M	"	working on farm			Mo					1	1	1			
		— Jas	11	"	"	at home			"						1	1			
		— Millie	9	F	"	"			"										
		— Alex	6	M	"	"			"										
		— Mary	2	F	"	"			"										
220	220	O'Brien Pat	27	M	"	Farmer	1800	570	Ireland	1	1							1	
		— Mary	24	F	"	Keeping house			"	1	1					1			
		Harley Wm	6	M	"	at home			Mo	1	1								
		— Frances	3	"	"	"			"	1	1								
221	221	Brooks Eliza J	25	F	"	Keeping house		200	"										
		— Nancy M	10	"	"	at home			"					1					
		— Wm	8	M	"	"			"					1					
		Miller Nancy	34	F	"	lives with O.B.		400	Va										
221	222	Ferrell [illegible]	33	M	"	Farmer	[illegible]		Ind									1	
		— Emily A	26	F	"	Keeping house			Mo										
		— Wm E	4	M	"	at home			"										
		— Mary C	1	F	"	"			"										
222	223	[illegible] Mathew	31	M	"	Farmer	1100		"						1	1		1	
		— Amanda	24	F	"	Keeping house			Ten										
223	224	[illegible] Milt	35	M	"	Surveyor	1800	2500	Pa									1	
		— Julia	30	F	"	Keeping house			Ill										
		— Horace	5	M	"	at home			"										
		Flinn Kate	18	F	"	House Keeper			N.Y.										

I hereby Certify that I have taken the Census of Arlington Township Phelps County Missouri according to law and instructions.

E. P. Ferrell
Asst Marshal
1st District No. 76

1192

2

A

95

Page No. 19
Supervisor's Dist. No. 2
Enumeration Dist. No. 84

Note A.—The Census Year begins June 1, 1879, and ends May 31, 1880.
Note B.—All persons will be included in the Enumeration who were living on the 1st day of June, 1880. No others will. Children BORN SINCE June 1, 1880, will be OMITTED. Members of Families who have DIED SINCE June 1, 1880, will be INCLUDED.
Note C.—Questions Nos. 13, 14, 22 and 23 are not to be asked in respect to persons under 10 years of age.

SCHEDULE 1.—Inhabitants in Janesville Township, in the County of Lassen, State of California, enumerated by me on the 25th day of June, 1880.

A. G. [illegible], Enumerator.

Dwelling	Family	Name	Color	Sex	Age	Relationship	Occupation	Birthplace	Father's birthplace	Mother's birthplace
184	184	Burbank, Eli P.	W	M	45		Farmer	Me.		
		— Thomas	W	M	20	Son	Teamster	Me.	Me.	Me.
		— Mary B.	W	F	17	Daught	at Home	Cal.	Me.	Me.
		— [illegible]	W	M	13	Son		Cal.	Me.	Me.
		— Louis	W	M	11	Son		Cal.	Me.	Me.
		— James	W	M	8	Son		Cal.	Me.	Me.
		— Clyde	W	M	6	Son		Cal.	Me.	Me.
		— Claude	W	M	6	Son		Cal.	Me.	Me.
185	185	Parker, Sarah	W	F	74		Keeping House	Mass.	[illegible]	Mass.
		— Frank	W	M	35	Son	Farmer	Mass.	Mass.	Mass.
186	186	[illegible], Mary	W	F	26		Keeping House	Iowa	Ky.	Ohio
		— Pearl	W	F	4	Daught		Cal.	Iowa	Iowa
		— Lola M.	W	F	2	Daught		Cal.	Iowa	Iowa
		— William	W	M	1	Son		Cal.	Iowa	Iowa
		— Perry B.	W	M	41		Wagon Maker	Iowa	Iowa	N. J.
186	186	Whittier, William	W	M	45		Farmer	Me.	Me.	Me.
		— Lola	W	F	30	Wife	Keeping House	Iowa	N. H.	N. H.
187	187	[illegible], Patrick	W	M	41		Stonemason	Ireland	Ireland	Ireland
188	188	Bainbridge, H.	W	M	28		Shoemaker	N. Y.	Unknown	Unknown
189	189	[illegible], William	W	M	62		Farm Laborer	Me.	Me.	[illegible]
		— Mary	W	F	31	Wife	House Keeper	Ark.	[illegible]	[illegible]
		— Thomas	W	M	1	Son		Ark.	Me.	Ark.
		— Elizabeth	W	F	3	Daught		Ark.	Me.	Ark.
190	190	Palmer, William	W	M	33		Farm Laborer	Mich.	N. Y.	Vt.
		Arth, Grant	W	M	21		Farm Laborer	Me.	Me.	Unknown
191	191	Wood, James	W	M	22		Farmer	Canada	Canada	Canada
		— Benjamin	W	M	20	Brother	Farmer	Canada	Canada	Canada
192	192	White, Stephen	W	M	41		Farm Laborer	Me.	Ky.	Me.
193	193	Senter, Milton	W	M	40		Surveyor	[illegible]	[illegible]	[illegible]
194	194	Powell, Henry	W	M	40		Farm Laborer	Mass.	Mass.	Mass.
195	195	[illegible], Collins	W	M	56		Horse Trainer	Ky.	Ky.	Ky.
196	196	[illegible], [illegible]	W	M	60		Wheelwright	N. Y.	Canada	N. Y.
197	197	[illegible], Jacob	W	M	31		Lumberman	[illegible]	Germany	Germany
		— George	W	M	24	Brother	Lumberman	[illegible]	[illegible]	[illegible]
		Morris, [illegible]	W	M	30		Lumberman	Ind.	Ind.	Ind.
		Shearer, [illegible]	W	M	30		Sawyer	Ark.	Ky.	Ky.
198	198	[illegible], [illegible]	W	M	40		Teamster	Mo.	Va.	[illegible]
199	199	[illegible], Charles	W	M	60		Gen. Laborer	N. J.	N. J.	Ireland
		Bartlett, Albert	W	M	31		Stone Mason	Ohio	Unknown	Unknown
200	200	Davis, Henry	W	M	33		Gen. Laborer	Ohio	Ohio	[illegible]
		Porter, Abel	W	M	30		Gen. Laborer	N. Y.	Canada	Canada
201	201	[illegible], [illegible]	W	M	31		Farmer	Mich.	Mich.	Mich.
202	202	Kelly, T. R.	W	M	36		Farmer	Mich.	Unknown	[illegible]
203	203	Miller, William	W	M	33		Sheep Shearer	Texas	N. C.	N. C.
		— Andrew	W	M	27		[illegible]	Ark.	N. C.	N. C.
204	204	Adams, Amos	W	M	27		Sheep Shearer	Ohio	N. Y.	Unknown
		[illegible], Jack	W	M	18		Sheep Shearer	Cal.	Me.	Me.
		[illegible], [illegible]	W	M	24		Sheep Shearer	Canada	Unknown	Unknown
		Hammond, C. F.	W	M	39		Sheep Herder	Ind.	[illegible]	Canada
205	205	Fisher, James	W	M	27		Gen. Laborer	Mo.	Ohio	Ohio

EASTMAN IL

TWELFTH CENSUS OF THE UNITED STATES.

SCHEDULE No. 1.—POPULATION.

Supervisor's District No. 256 | Sheet No. 9 | A

Enumeration District No. 48

State: California

County: Los Angeles

Township or other division of county: Los Angeles Town[illegible] 9th Precinct

Name of Institution:

Name of incorporated city, town, or village, within the above-named division: Los Angeles City

Ward of city: 5th

Enumerated by me on the 2nd day of June, 1900, Wesley [illegible], Enumerator.

3492

Line	Dwelling No.	Family No.	Name	Relation	Sex	Place of birth of this person	Place of birth of father	Place of birth of mother	Occupation
1	167		Cotter, Lydia	Mother	F	N.H.	Vermont	N.H.	
2	[illegible]	49	49	Williams, [illegible]	Head	M	[illegible]	[illegible]	[illegible]	[illegible]
3			[illegible]	wife	F	Germany	Switzerland	France	
4	[illegible]	50	50	Cumming[illegible]	Head	M	Penn	[illegible]	Penn	[illegible]
5			—— Ida	wife	F	[illegible]	[illegible]	Ohio	
6			—— Dorothy	daughter	F	Ill.	[illegible]	Kansas	
7	[illegible]	51	51	Ashley, Charles	Head	M	England	England	England	[illegible]
8			—— Milicent	wife	F	English Canada	[illegible]	English Canada	
9			—— Emily	daughter	F	English Canada	England	English Canada	[illegible]
10			—— [illegible]	son	M	English Canada	England	English Canada	At school
11	[illegible]	52	52	Walk, Mary	Head	F	N.Y.	Mass	Mass	
12	[illegible]	53	53	M[illegible], Arthur B	Head	M	N.Y.	N.Y.	[illegible]	[illegible]
13			—— Miriam	wife	F	[illegible]	[illegible]	[illegible]	
14	[illegible]	54	54	[illegible], Susan	Head	F	[illegible]	Mass	Mass	
15			White, [illegible]	Boarder	M	N. Hampshire	N. Hampshire	N. Hampshire	[illegible]
16			—— Guy W	son	M	Maine	N. Hampshire	N. Hampshire	At school
17	[illegible]	55	55	Knapp, Edwin	Head	M	[illegible]	[illegible]	[illegible]	[illegible]
18			—— [illegible]	wife	F	[illegible]	Virginia	Ohio	
19			White, Marion L	[illegible]	M	Iowa	Indiana	Iowa	At school
20			Knapp, Ruby E	daughter	F	California	[illegible]	Iowa	At school
21			Knapp, Will. H	son	M	California	[illegible]	Iowa	At school
22	[illegible]	56	56	Parsons, [illegible]	Head	M	N.Y.	N.Y.	N.Y.	Lawyer
23			—— [illegible]	wife	F	Ill.	[illegible]	Ohio	
24			[illegible], James M	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
25			—— [illegible]	wife	F	Ohio	Mass	[illegible]	
26	[illegible]	57	57	[illegible], W. [illegible]	Head	M	Ohio	Ohio	Ohio	[illegible]
27			—— Bertha	wife	F	Ill.	Kentucky	Kentucky	
28			—— [illegible]	daughter	F	Ill.	Ohio	Ill.	At school
29	[illegible]	58	58	[illegible]	[illegible]	[illegible]	Ohio	West Virginia	[illegible]	[illegible]
30			[illegible]	[illegible]	F	Indiana	[illegible]	Virginia	[illegible]
31	[illegible]	59	59	[illegible]	[illegible]	F	Ohio	N.Y.	N.Y.	[illegible]
32			—— [illegible]	[illegible]	M	Ohio	[illegible]	[illegible]	[illegible]
33			—— [illegible]	son	M	[illegible]	Ohio	Ohio	At school
34	[illegible]	60	60	Gale, John [illegible]	Head	M	Kentucky	Kentucky	Kentucky	Physician
35			—— [illegible]	wife	F	[illegible]	[illegible]	[illegible]	
36			Foster, [illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	
37			—— [illegible]	daughter	F	[illegible]	[illegible]	[illegible]	
38			—— Chas. Walter	[illegible]	M	[illegible]	[illegible]	[illegible]	[illegible]
39			—— [illegible]	wife	F	[illegible]	[illegible]	[illegible]	
40	[illegible]	61	61	[illegible]	Head	M	California	English Canada	England	[illegible]
41			—— Mary F	wife	F	California	Ireland	Ireland	
42			—— [illegible]	son	M	California	California	California	At school
43			—— [illegible]	son	M	California	California	California	
44	[illegible]	62	62	[illegible]	Head	M	English Canada	England	England	[illegible]
45			—— [illegible]	wife	F	English Canada	[illegible]	[illegible]	
46			—— [illegible]	daughter	F	English Canada	[illegible]	[illegible]	
47			—— [illegible]	son	M	California	[illegible]	[illegible]	
48	[illegible]	63	63	[illegible]	Head	M	[illegible]	[illegible]	[illegible]	
49			[illegible]	wife	F	Kentucky	[illegible]	[illegible]	
50			[illegible]	[illegible]	[illegible]	Ill.	[illegible]	[illegible]	

certificate first above written.

(Notarial Seal)

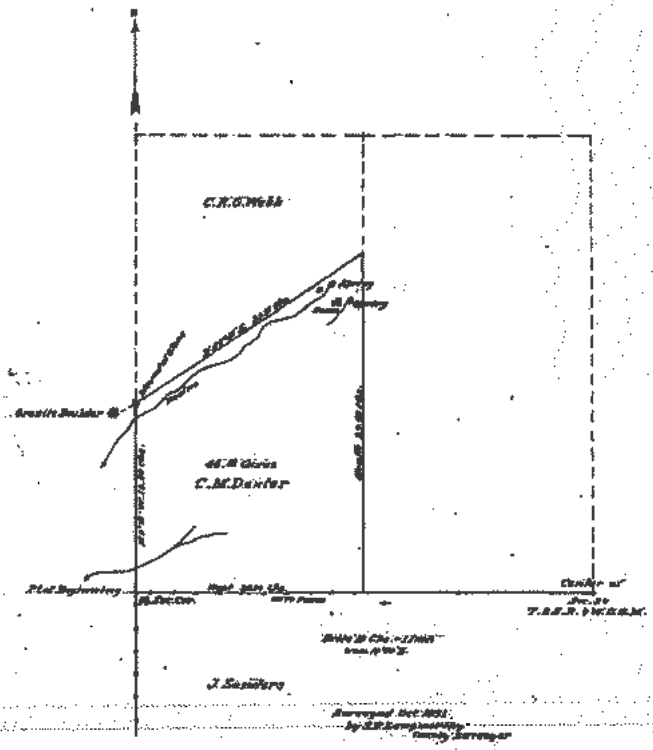
Jno. L. Merriam
Notary Public.

28 A full, true and correct copy of the original. Recorded at request of Jno. L. Merriam. Dec. 22nd 1891, at 4.21 P.M.

A. S. Davidson
County Recorder.
By C. O. Alkire
Deputy.

This Indenture, Made the Fifth day of October in the year of our Lord one thousand eight hundred and ninety-one Between Carl R. S. Webbe of San Bernardino County, California the party of the first part, and Charles M. Dexter of the same place the party of the second part, Witnesseth: That the said party of the first part for and in consideration of the sum of Sixteen Hundred Dollars, lawful money of the United States of America, to him in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, does by these presents grant, bargain, sell, convey and confirm, unto the said party of the second part, and to his heirs and assigns forever, all that certain lot, piece or parcel of land situate, lying and being in the County of San Bernardino, State of California, and bounded and particularly described as follows, to wit:

Beginning at the one quarter corner common to sections 33 and 34, Township Two (2) South Range Four (4) West, S. B. M. running thence North 0° 15' W. along the west line of said section 34, Sixteen and 50/100 (16.50) chains to a stake in mound of rock, thence N. 56° 31' E. along the north westerly side of a ravine Twenty-three and 91/100 (23 91/100) chains to intersection with the quarter quarter line running through the center of the N.W. one-quarter of said section 34, thence south along said line Twenty-nine and 60/100 (29.60) chains to the center line of said section 34; thence west along said center line Twenty (20) chains to point of beginning according to plat of said land annexed hereto and made a part of this instrument.



Together with the tenements, hereditaments and appurtenances thereto belonging, or in anywise appertaining, and also all estate, right, title and interest, at law and equity, therein or thereto, including ... To have and to Hold the same to the said Charles M. Dexter his heirs and assigns forever; and I do covenant with the said Charles M. Dexter and his legal representatives forever, that the said real estate is free from all encumbrances, and that I will and my heirs, executors and administrators shall warrant and defend the same to the said Charles M. Dexter his heirs and assigns forever, against the lawful claims and demands of all persons whomsoever. In Witness Whereof, the said party of the first part has hereunto set his hand and seal the day and year first above written.

Signed, Sealed and Delivered in the } Lewis A. Webb (Seal)
Presence of ... S. R. Langworthy }

State of [illegible] }
County of [illegible] }

hundred and 91, before me S. R. Longworthy, a Notary Public in and for said County of San Bernardino, residing therein, duly commissioned and sworn, personally appeared Cecil R. G. Webbe known to me to be the person described in, and whose name is subscribed to and who executed the within instrument, and he acknowledged to me that he executed the same. In Witness Whereof, I have hereunto set my hand and affixed my official seal, at my office in the County of San Bernardino, the day and year in this Certificate first above written.

(Notarial Seal)

S. R. Longworthy
Notary Public.

25 A complete true and correct copy of the original. Recorded at request of Riv. Banking Co. Dec. 22nd 1891, at 9:22 A.M.

A. S. Davidson
County Recorder.
By C. C. Alkire
Deputy

ancestry.com

U.S. Civil War Soldiers, 1861-1865

Name:	**Charles M. Dexter**
Side:	Union
Regiment State/Origin:	Ohio
Regiment Name:	167 Ohio Infantry
Regiment Name Expanded:	167th Regiment, Ohio Infantry (National Guard)
Company:	A
Rank In:	Second Lieutenant
Rank In Expanded:	Second Lieutenant
Rank Out:	Second Lieutenant
Rank Out Expanded:	Second Lieutenant
Film Number:	M552 roll 27

Source Information:
National Park Service. *U.S. Civil War Soldiers, 1861-1865* [database on-line]. Provo, UT, USA: The Generations Network, Inc., 2007. Original data: National Park Service, Civil War Soldiers and Sailors System, online <http://www.itd.nps.gov/cwss/>. acquired 2007.

Description:
This database contains the names of approximately 6.3 million soldiers who served in the American Civil War. In addition to their names, information that may be listed for each soldier includes regiment, company, and rank. Learn more...

Page No. 82

Schedule 1.—Inhabitants in Delaware, in the County of Delaware, State of Ohio, enumerated by me on the 17th day of June, 1870. Jno W. [illegible] Ass't Marshal.

Post Office: Delaware

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		— Hellena	9	F	W				Ohio	1									
		— Friedrich	6	M	W				Ohio	1									
		— Matilda	4	F	W				Ohio	1									
		— Emma	2	F	W				Ohio	1									
		Rose Jacob	28	M	W	Baker			Wurtemburg	1	1							1	1
		Nothwirth Henry	27	M	W	Baker			Prussia	1	1							1	1
225	225	Amann Otto	35	M	W	Laborer			Baden	1	1								
		— Pauline	29	F	W	Keeping House			Baden	1	1								
		— Mary	3	F	W				Indiana	1	1								
		Jenny	1/12	F	W				Ohio	1	1	Oct							
226	226	Prescott Jedidiah	57	M	W	Grocer Ret.	5000	1500	New Jersey									1	
		— Ely	39	F	W	Keeping House			New Jersey					1					
		— Emma	20	F	W	Attending School			Ohio										
227	227	Strauss Jacob	26	M	W	Cloth'g Merch't Ret.		5000	Wurtemburg	1	1							1	
		— Celia	25	F	W	Keeping House			New York	1	1								
		— Walter S	2	M	W				New York	1									
		McLane Mary	22	F	W	Domestic Serv't			Penna										
228	228	Rankin W F	81	M	W	Farmer	10000	300	Penna									1	
		— Sarah	64	F	W	Keeping House			Ohio										
		— Sarah	24	F	W				Penna										
229	229	Smith Alvy	70	M	W	Carpenter	4000	1000	Massachusetts									1	
		— Amelia	68	F	W	Keeping House			Massachusetts										
		— Allie	32	F	W	Teacher			Massachusetts										
		— William A	27	M	W	Clerk in Store			Massachusetts									1	
		James / John L	24	M	W	Stationer & Book Sel.			Massachusetts									1	
		— Delphine	21	F	W				Ohio										
		Lattimer Emma	10	F	W	Attending School			Ohio					1					
230	230	Pollard James W	29	M	W	Grocer Ret.	5000	3000	Ohio									1	
		— Rosy A	21	F	W	Keeping House			Ohio										
		Pugsley Howard	19	M	W	Attending College			Ohio					1					
231	231	Sutton Jane L	48	F	W	Keeping House			Ohio										
		— Adolph M	17	M	W	Attending School			Ohio					1					
		Ida Day	10	F	W	Attending School			Ohio					1					
		— Albert L	7	M	W				Ohio										
232	232	Stetson C S	46	F	W	Dress Maker	600		Vermont										
		— Charles	26	M	W	Sewing Mach'e Agt			Ohio									1	
		— Frank S	18	M	W				Ohio										
		— Allie A	14	F	W				Ohio					1					
233	233	Schaefer Mary	28	F	W	Dress Maker			Ohio										
		Betts Ralph	25	M	W	Laborer			Ohio									1	
8	8	No. of dwellings, 8; No. of white females, 23; No. of males, foreign born, 4; No. of families, 8; No. of colored males, ; No. of females, foreign born, 4; No. of white males, 17; No. of colored females, ; No. insane,					35,100	15,000	No. of idiotic,	13	9							11	2

Received July 31 1880.

Page No. 19
Supervisor's Dist. No. [illegible]
Enumeration Dist. No. 48

Note A.—The Census Year begins June 1, 1879, and ends May 31, 1880.
Note B.—All persons will be included in the Enumeration who were living on the 1st day of June, 1880. No others will. Children BORN SINCE June 1, 1880, will be OMITTED. Members of Families who have DIED SINCE June 1, 1880, will be INCLUDED.
Note C.—Questions Nos. 13, 14, 22, and 23 are not to be asked in respect to persons under 10 years of age.

SCHEDULE 1.—Inhabitants in Colo. Springs, in the County of El Paso, State of Colo, enumerated by me on the Fifth & Seventh day of June, 1880.

Cassie Kendall, Enumerator.

Dwelling No.	Family No.	Name	Color	Sex	Age	Relationship	Occupation	Months unemployed / Sickness	Place of birth	Father's birthplace	Mother's birthplace
		Effley Theron	W	M	3	Son	At Home		Mo	Ky	Mo
78	83	Butler E. J.	W	F	[illegible]	Mother	Canvasser		Pa	Conn	Conn
		— Charles H.	W	M	[illegible]	Son	Machinist		Ohio	Vt	Vt
79	84	Vose Harry	W	M	[illegible]	Husband	Freight Master R.R.	[illegible]	[illegible]	[illegible]	[illegible]
		— Lizzie T.	W	F	[illegible]	Wife	Keeping House		N.J.	Switzerland	N.J.
80	85	Martin R. H.	W	M	52	Husband	Farming	Dyspepsia	Mo	Vt	Ky
		— Gertrude	W	F	36	Wife	Keeping House		Mo	Va	Ohio
		Walker Mary	W	F	19	Daughter	At Home		Ill	Mo	Mo
		Martin Willie	W	M	15	Son	Drayman		Ill	Mo	Mo
		— Henry	W	M	8	Son	Attending School		Ill	Mo	Mo
		— Annie	W	F	5	Daughter	At Home		Ill	Mo	Mo
		Walker Bill	W	F	[illegible]	Niece	At Home		Colo	Mo	Mo
81	86	Hunter M. J. H.	W	F	26	Lady	Farming		Ill	Ky	Va
	87	Hoagland H. H.	W	M	36	Husband	Feed Store		N.J.	[illegible]	[illegible]
		— W. E.	W	F	26	Wife	Keeping House		Penn	Penn	Penn
		— Bessie F.	W	F	2	Daughter	At Home		Colo	Penn	Penn
82	88	Snider C. P.	W	M	[illegible]	Husband	Coal Dealer		Penn	Md	Penn
		— Priscilla	W	F	[illegible]	Wife	Keeping House		Ky	Va	Ky
		— Mary	W	F	20	Daughter	At Home		Ky	Penn	Ky
		— [illegible]	W	M	[illegible]	Son	At Home		Ky	Penn	Ky
		— Willie	W	M	11	Son	Attending School		Ky	Penn	Ky
		— Priscilla	W	F	6	Daughter	At Home		Colo	Penn	Ky
		Barker M.	B	F	22	Servant	General Servant		Ky	Ky	Ky
		— John	B	M	[illegible]	Son	At Home		Colo	[illegible]	Va
83	89	Wilson James	W	M	[illegible]	Husband	R.R. Agent		Ill	Va	Va
		— Lydia M.	W	F	36	Wife	Keeping House		Ill	N.Y.	Penn
		— Frank C.	W	M	16	Son	R.R. Brakeman		Ill	N.Y.	Ill
		Kimball Minnie	W	F	8	Daughter	Visiting		Ill	Ill	Ill
84	90	Brown Jos. P.	W	M	[illegible]	Husband	Mining		Ind	[illegible]	[illegible]
		— Minnie	W	F	[illegible]	Wife	Keeping House		Canada	Canada	Canada
85	91	Lewellen H. H.	W	M	[illegible]	Husband	Farming		Ind	Va	Va
		— Elizabeth	W	F	[illegible]	Wife	Keeping House		Ind	Va	Va
		— Jesse	W	M	[illegible]	Son	Laborer	2	Ind	Va	Va
		— Edwin	W	M	[illegible]	Son	Laborer	2	Ind	Va	Va
		— Fannie	W	F	[illegible]	Daughter-in-law	At Home		Ind	Ind	Ohio
		— Albert	W	M	[illegible]	Son	Laborer		Mo	Va	Va
		— Lucy	W	F	15	Daughter	At Home		Mo	Va	Va
		— [illegible]	W	F	[illegible]	Daughter	At Home		Mo	Va	Va
		— Austin	W	M	[illegible]	Grandson	At Home		Mo	Va	Va
86	92	Moore David	W	M	[illegible]	Husband	Blacksmith		Penn		
		— Harriet	W	F	[illegible]	Wife	Keeping House		Ohio	Switzerland	Switzerland
87	93	Bachus C. A.	W	M	[illegible]	Husband	Hotel Keeper		N.Y.	Va	N.Y.
		— M.	W	F	[illegible]	Wife	Keeping House		N.Y.	Canada	N.Y.
		Wass T. E.	W	M	[illegible]	Boarder	[illegible]		Tenn	N.C.	N.C.
		[illegible]	W	F	14	Boarder	Housework		Mo		
		Hungerford J. H.	W	M	[illegible]	Boarder	Carpenter	9	Conn	Conn	Conn
88	94	Austin John H.	W	M	[illegible]	Husband	Farmer		Mo	Mass	Mo
		— Emma	W	F	[illegible]	Wife	Keeping House		Mo	Va	Ky
		— Mary	W	F	[illegible]	Daughter	At Home		Mo	Mo	Mo
		— John	W	M	[illegible]	Son	At Home		Mo	Mo	Mo

TWELFTH CENSUS OF THE UNITED STATES.

SCHEDULE No. 1.—POPULATION.

State: California
County: Riverside
Supervisor's District No. 6
Enumeration District No. 207
Sheet No. 8
Township or other division of county: Riverside Township
Name of Institution: X
Name of incorporated city, town, or village, within the above-named division: Riverside City
Ward of city: Precinct 4
Enumerated by me on the 13 day of June, 1900, Frank G. Hall, Enumerator.

Line	Name	Relation	Color / Sex	Month of birth	Year of birth	Age	Marital	Birthplace	Father's birthplace	Mother's birthplace	Occupation
51	[illegible], Etta A.	Wife	W F	Apr	1853	47	M	New York	New York	New Hampshire	
52	——, Lillian L.	Daughter	W F	Oct	[illegible]	[illegible]	S	Illinois	Illinois	New York	At School
53	[illegible], Charles M.	Head	W M	[illegible]	[illegible]	[illegible]	M	Ohio	Vermont	Vermont	[illegible]
54	——, Rose P.	Wife	W F	Sept	[illegible]	[illegible]	M	Ohio	Pennsylvania	Ohio	
55	Boone, Alonzo [illegible]	Head	W M	Apr	[illegible]	[illegible]	M	Kentucky	Kentucky	Kentucky	[illegible]
56	——, Eliza [illegible]	Wife	W F	[illegible]	[illegible]	[illegible]	M	Indiana	Indiana	Kentucky	
57	——, Howard C.	Son	W M	Aug	1892	7	S	California	Kentucky	Indiana	At School
58	——, Alfred [illegible]	Son	W M	[illegible]	[illegible]	[illegible]	S	California	Kentucky	Indiana	
59	——, Althea [illegible]	Daughter	W F	Jan	[illegible]	[illegible]	S	California	Kentucky	Indiana	
60	Robertson, Cora [illegible]	[illegible]	W F	Jan	[illegible]	[illegible]	S	Illinois	Kentucky	Indiana	At School
61	[illegible], Alfred [illegible]	Head	W M	[illegible]	[illegible]	[illegible]	M	Nebraska	Pennsylvania	Iowa	[illegible]
62	——, Kate [illegible]	Wife	W F	[illegible]	[illegible]	[illegible]	M	Missouri	Kentucky	Virginia	
63	——, Ruth E.	Daughter	W F	May	[illegible]	[illegible]	S	California	Nebraska	Missouri	At School
64	——, Paul A.	Son	W M	[illegible]	[illegible]	[illegible]	S	California	Nebraska	Missouri	
65	[illegible], Joseph [illegible]	Head	W M	Jan	[illegible]	[illegible]	M	New York	Massachusetts	Pennsylvania	[illegible]
66	——, Hattie [illegible]	Wife	W F	[illegible]	[illegible]	[illegible]	M	New York	Massachusetts	New York	
67	——, Cora [illegible]	Daughter	W F	[illegible]	[illegible]	[illegible]	S	Iowa	New York	New York	
68	[illegible], Henry [illegible]	Head	W M	[illegible]	[illegible]	[illegible]	M	New York	Vermont	Vermont	[illegible]
69	——, Annette [illegible]	Wife	W F	Jan	[illegible]	[illegible]	M	New York	New York	New York	
70	Morrison, John [illegible]	Head	W M	July	[illegible]	[illegible]	S	Michigan	Unknown	Unknown	[illegible]
71	[illegible]	Head	W M	[illegible]	[illegible]	[illegible]	[illegible]	Scotland	Scotland	Scotland	[illegible]
72	[illegible], Louis [illegible]	Head	W M	[illegible]	[illegible]	[illegible]	S	Arizona	Unknown	Unknown	[illegible]
73	White, [illegible]	Head	W M	Oct	[illegible]	[illegible]	S	Louisiana	Unknown	Unknown	[illegible]
74	Mendoza, [illegible]	Head	W M	Nov	[illegible]	[illegible]	S	Mexico	Mexico	Mexico	[illegible] Laborer
75	[illegible]	Head	W M	July	[illegible]	[illegible]	[illegible]	Illinois	Unknown	Unknown	[illegible]
76	[illegible], Rose [illegible]	Head	W F	Aug	[illegible]	[illegible]	[illegible]	England	England	England	[illegible]
77	Barton, [illegible]	Lodger	W M	[illegible]	[illegible]	[illegible]	S	Massachusetts	Massachusetts	Massachusetts	Publisher
78	Runyon, Kate	Servant	W F	[illegible]	[illegible]	[illegible]	S	Canada Eng.	Ireland	Ireland	[illegible]
79	[illegible], [illegible]	Head	W M	Dec	[illegible]	[illegible]	M	Wisconsin	New York	Ohio	[illegible]
80	——, [illegible]	Wife	W F	Feb	[illegible]	[illegible]	M	Minnesota	California	Kentucky	
81	——, Amy N.	Daughter	W F	Sept	1890	[illegible]	S	Minnesota	Wisconsin	Minnesota	At School
82	——, Rachel E.	Daughter	W F	[illegible]	[illegible]	[illegible]	S	Minnesota	Wisconsin	Minnesota	At School
83	——, Grace	Daughter	W F	Oct	[illegible]	4	S	California	Wisconsin	Minnesota	
84	——, Stella	Daughter	W F	Oct	[illegible]	[illegible]	S	California	Wisconsin	Minnesota	
85	[illegible], Fred W.	Boarder	W M	[illegible]	[illegible]	[illegible]	S	Pennsylvania	Pennsylvania	Pennsylvania	[illegible]
86	[illegible], John [illegible]	Head	W M	[illegible]	[illegible]	[illegible]	M	Canada Eng.	Canada Eng.	Canada Eng.	[illegible]
87	——, Hannah [illegible]	Wife	W F	May	[illegible]	[illegible]	M	Maine	Canada Eng.	Canada Eng.	
88	——, [illegible]	Daughter	W F	[illegible]	[illegible]	15	S	Maine	Canada Eng.	Maine	At School
89	——, Marilla M.	Daughter	W F	Dec	[illegible]	7	S	California	Canada Eng.	Maine	At School
90	[illegible], [illegible]	[illegible]	W F	Oct	[illegible]	[illegible]	Wd	[illegible]	New York	Scotland	
91	[illegible], [illegible]	Head	W M	[illegible]	[illegible]	[illegible]	M	New York	New York	New York	[illegible]
92	——, Julia A. [illegible]	Wife	W F	Aug	[illegible]	[illegible]	M	New York	Rhode Island	New York	
93	——, [illegible]	Daughter	W F	Oct	[illegible]	[illegible]	S	Michigan	Michigan	Michigan	
94	[illegible], John H.	[illegible]	W M	[illegible]	[illegible]	[illegible]	M	Canada Eng.	England	England	Photographer
95	——, [illegible]	[illegible]	W F	[illegible]	[illegible]	[illegible]	M	[illegible]	New York	[illegible]	[illegible]
96	[illegible], Frederick [illegible]	[illegible]	W M	[illegible]	[illegible]	[illegible]	[illegible]	Wisconsin	New York	New York	[illegible]
97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	New York	[illegible]
98	[illegible]	Daughter	W F	[illegible]	[illegible]	[illegible]	S	Illinois	New York	[illegible]	At School
99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S	New York	New York	New York	[illegible]
100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S	[illegible]	New York	[illegible]	[illegible]

DEPARTMENT OF COMMERCE AND LABOR—BUREAU OF THE CENSUS

THIRTEENTH CENSUS OF THE UNITED STATES: 1910—POPULATION

STATE: California

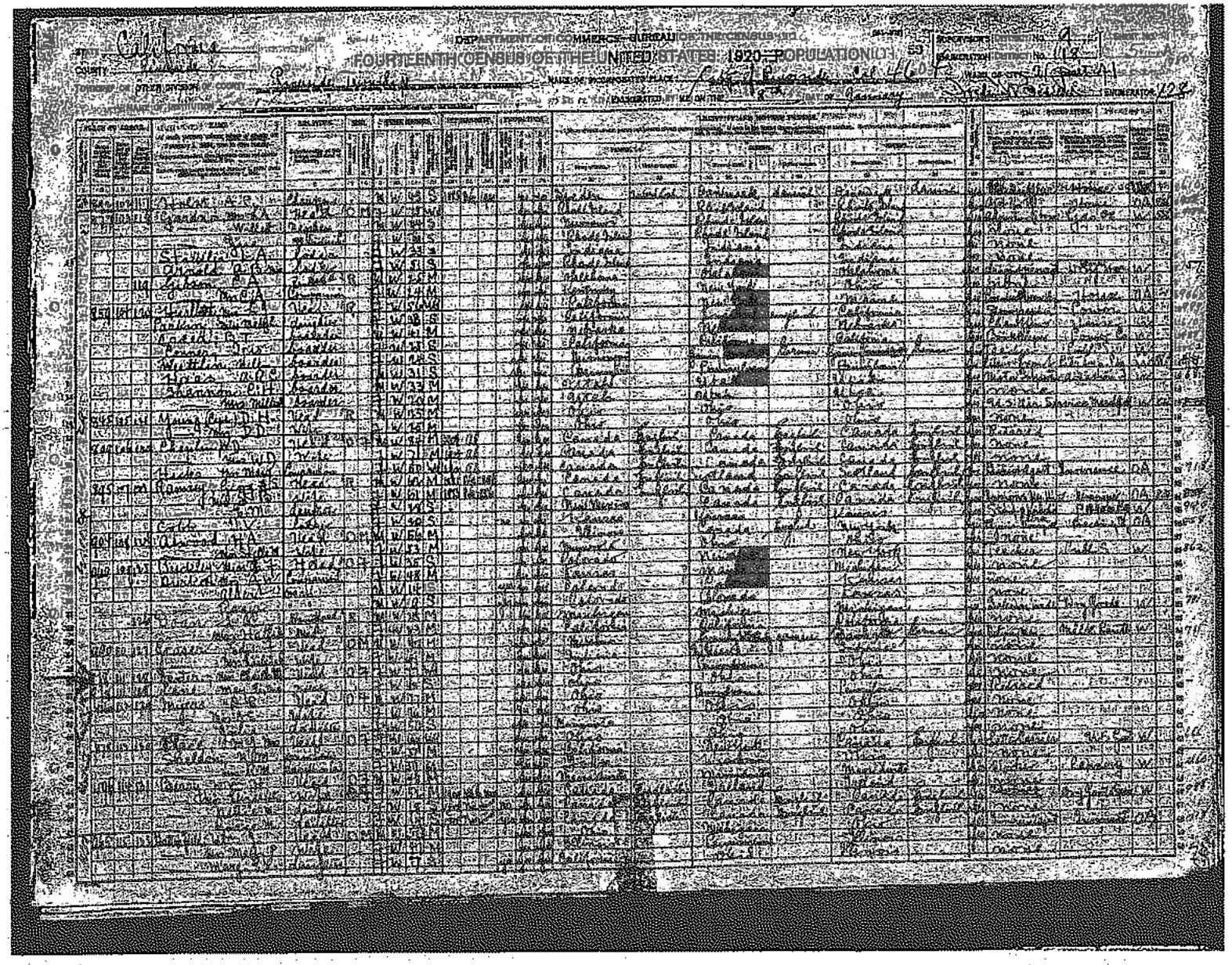
COUNTY: Riverside

TOWNSHIP OR OTHER DIVISION OF COUNTY: Riverside [illegible]

NAME OF INCORPORATED PLACE: [illegible]

NAME OF INSTITUTION: [illegible]

ENUMERATED BY ME ON THE [illegible] DAY OF April, 1910. [illegible], ENUMERATOR.



DEPARTMENT OF COMMERCE—BUREAU OF THE CENSUS

FOURTEENTH CENSUS OF THE UNITED STATES: 1920—POPULATION

Final Certificate No. 395

Homestead Application No. 1676

R & R. Mch 8, 1882

LAND OFFICE

AT

Los Angeles, Cal.

January 27, 1882

Sec. 34 Town 2 N Range 4 W

Approved Jan 2, 1884

[illegible] Clerk.

Division C

Patented Feb 20th 1884

Recorded Vol. 2 page 81

[illegible] 41258 [illegible]

[illegible] March 14 [illegible]

Recpt [illegible] March 14 1884

41258 C [illegible]

See letter to Milton Santee Oct 9th 1885 –

H. J. Rudisill [illegible] 1/87

(4—070.)

HOMESTEAD PROOF.

Final Affidavit Required of Homestead Claimants.

SECTION 2291 OF THE REVISED STATUTES OF THE UNITED STATES.

I, [illegible], having made a Homestead entry of the W 1/2 of NW 1/4 & SE 1/4 of NW 1/4 & NE 1/4 of NE 1/4 Section No. 34 in Township No. 2 S of Range No. 4 W, subject to entry at Los Angeles under section No. 2289 of the Revised Statutes of the United States, do now apply to perfect my claim thereto by virtue of section No. 2291 of the Revised Statutes of the United States; and for that purpose do solemnly swear that ~~I am a~~ [illegible] citizen of the United States; that I have made actual settlement upon and have cultivated said land, having resided thereon since the ______ day of March, 1875, to the present time; that no part of said land has been alienated, except as provided in section 2288 of the Revised Statutes, but that I am the sole *bona fide* owner as an actual settler; that I will bear true allegiance to the Government of the United States; and further, that I have not heretofore perfected or abandoned an entry made under the homestead laws of the United States.

[illegible signature]

I, H C Ralph Judge of the Superior Court of San ~~of the Land Office at~~ Bernardino Co. Cal., do hereby certify that the above affidavit was subscribed and sworn to before me this fifteth day of January, 1882.

H C Ralph
Judge Superior Court

Electros.

HOMESTEAD PROOF.

TESTIMONY OF CLAIMANT.

Cecil R. G. Webber, being called as a witness in Jin own behalf in support for Jin homestead entry for W. ½ of or W. ¼ and SE ¼ of or W ¼ and N. E. ¼ of S W ¼ of Sec 34 in Tp 2 S of R 24 W of 3 B Meridian, testifies as follows:

Ques. 1. What is your name? (Be careful to give it in full, correctly spelled, in order that it may be here written exactly as you wish it written in the patent which you desire to obtain.)

Ans. Cecil R G Webber

Ques. 2. What is your age?

Ans. Fifty-five years

Ques. 3. Are you the head of a family, or a single person; and, if the head of a family, of whom does your family consist?

Ans. Head of family consisting of one maiden sister

Ques. 4. Are you a native-born citizen of the United States? If not, have you declared your intention to become a citizen, and have you obtained a certificate of naturalization? *

Ans. Not Native but naturalized citizen of U.S. Have declared my intention to become a citizen

Ques. 5. Are there any indications of coal, salines, or minerals of any kind on the land embraced in your homestead entry above described? (If so, state what they are, and whether the springs or mineral deposits are valuable.)

Ans. No

Ques. 6. Is the land more valuable for agricultural than mineral purposes?

Ans. Yes

NOTE.—At the time of making proof the party should be required to surrender his original homestead duplicate receipt, or file an affidavit accounting for the same.

* In case the party has been naturalized, a certified copy of his certificate of naturalization must be furnished. In cases of commuted homesteads it is sufficient if the party has declared his intention to become a citizen, in which case a certified copy of his declaration of intention must be furnished.

you have, give, as nearly as you can, the date thereof, and description of the land, and state whether the entry still subsists, or, if it has been canceled, state the cause of its cancellation.)

Ans. No

Ques. 9. Have you sold the land or conveyed to any one your right and interest in the same; and, if so, to whom and for what purpose?

Ans. No

Ques. 10. Does any one except yourself claim the land under the homestead or pre-emption laws?

Ans. No

Ques. 11. When did you first make settlement on the said land?

Ans. In March 1875

Ques. 12. When did you first establish a residence upon the land?

Ans. In March 1875

Ques. 13. At the date you have given as being the date that you first established your residence upon the land, did you move thereon in person?

Ans. Yes

Ques. 14. Up to what time have you resided on the land?

Ans. To the present time

Ques. 15. Was your residence upon the land continuous during the period named?

Ans. Yes

Ques. 16. If you had a family during said period of residence on the homestead, did your family reside thereon?

Ans. Yes

Ques. 17. What improvements have you made or do you possess on the land? (Describe them.)

Ans. Dwelling House, stable and other out houses
few vines and trees planted, water ditches.

Final Certificate No. 395

Homestead Application No. 671

R & R. Mch 8, 1882

LAND OFFICE

AT

Los Angeles Calif.

January 7, 1882

Sec. 31, Town 2 S., Range 11 W.
S. B. Mer.

Approved Jan 2, 1884

W.M.S., Clerk.

Division C

Patented Feb. 20th, 1884

Recorded, Vol. 2, page 81

41,258

To Register March 14 – 1884
Rec'd ack. March 24 – 1884

41258 C 177

See letter to Milton Santee Oct 9th 1885 –
H. J. Rucrince Apr 1/97

(4—070.)

HOMESTEAD PROOF.

Final Affidavit Required of Homestead Claimants.

SECTION 2291 OF THE REVISED STATUTES OF THE UNITED STATES.

I, Cecil R. G. Noble, having made a Homestead entry of the W/2 of NW/4 & SE/4 of NW/4 & NE/4 of SW/4 Section No. 34 in Township No. 2 S of Range No. 4 W, subject to entry at Los Angeles under section No. 2289 of the Revised Statutes of the United States, do now apply to perfect my claim thereto by virtue of section No. 2291 of the Revised Statutes of the United States; and for that purpose do solemnly swear that ~~I am a~~ have declared my intention to become citizen of the United States; that I have made actual settlement upon and have cultivated said land, having resided thereon since the ___ day of March, 1875, to the present time; that no part of said land has been alienated, except as provided in section 2288 of the Revised Statutes; but that I am the sole *bona fide* owner as an actual settler; that I will bear true allegiance to the Government of the United States; and further, that I have not heretofore perfected or abandoned an entry made under the homestead laws of the United States.

Cecil R. G. Noble

I, H C Ralphs Judge of the Superior Court of San ~~of the Land Office at~~ Bernardino Co. Cal., do hereby certify that the above affidavit was subscribed and sworn to before me this fifth day of January, 1882.

H C Ralphs
Judge Superior Court

Electros.

HOMESTEAD PROOF.

TESTIMONY OF CLAIMANT.

Cecil R. G. Hebbe, being called as a witness in his own behalf in support for his homestead entry for W. ½ of N.W. ¼ and S.E. ¼ of N.W. ¼ and N.E. ¼ of S.W. ¼ of Sec 34 in Tp 2 S. of R 4 W of 3 B Meridian, testifies as follows:

Ques. 1. What is your name? (Be careful to give it in full, correctly spelled, in order that it may be here written exactly as you wish it written in the patent which you desire to obtain.)

Ans. Cecil R G Hebbe

Ques. 2. What is your age?

Ans. Forty-five years

Ques. 3. Are you the head of a family, or a single person; and, if the head of a family, of whom does your family consist?

Ans. Head of family consisting of one maiden sister

Ques. 4. Are you a native-born citizen of the United States? If not, have you declared your intention to become a citizen, and have you obtained a certificate of naturalization? *

Ans. Not Native but naturalized citizen of U.S. Have declared my intention to become a citizen

Ques. 5. Are there any indications of coal, salines, or minerals of any kind on the land embraced in your homestead entry above described? (If so, state what they are, and whether the springs or mineral deposits are valuable.)

Ans. No

Ques. 6. Is the land more valuable for agricultural than mineral purposes?

Ans. Yes

NOTE.—At the time of making proof the party should be required to surrender his original homestead duplicate receipt, or file an affidavit accounting for the same.

* In case the party has been naturalized, a certified copy of his certificate of naturalization must be furnished. In cases of commuted homesteads it is sufficient if the party has declared his intention to become a citizen, in which case a certified copy of his declaration of intention must be furnished.

you have, give, as nearly as you can, the date thereof, and description of the land, and state whether the entry still subsists, or, if it has been canceled, state the cause of its cancellation.)

Ans. No

Ques. 9. Have you sold the land or conveyed to any one your right and interest in the same; and, if so, to whom and for what purpose?

Ans. No

Ques. 10. Does any one except yourself claim the land under the homestead or pre-emption laws?

Ans. No

Ques. 11. When did you first make settlement on the said land?

Ans. In March 1875

Ques. 12. When did you first establish a residence upon the land?

Ans. In March 1875

Ques. 13. At the date you have given as being the date that you first established your residence upon the land, did you move thereon in person?

Ans. Yes

Ques. 14. Up to what time have you resided on the land?

Ans. To the present time

Ques. 15. Was your residence upon the land continuous during the period named?

Ans. Yes

Ques. 16. If you had a family during said period of residence on the homestead, did your family reside thereon?

Ans. Yes

Ques. 17. What improvements have you made or do you possess on the land? (Describe them.)

Ans. Dwelling House, Stable, and other out houses
few vines and fruit trees planted, water ditches.

Ursinistus County Cal

NOTE.—The officer before whom the testimony is taken should call the attention of the witness to the following section of the Revised Statutes, and state to him that it is the purpose of the Government, if it be ascertained that he testifies falsely, to prosecute him to the full extent of the law.

TITLE LXX.—CRIMES.—CH. 4.

SEC. 5392. Every person who, having taken an oath before a competent tribunal, officer, or person, in any case in which a law of the United States authorizes an oath to be administered, that he will testify, declare, depose, or certify truly, or that any written testimony, declaration, deposition, or certificate by him subscribed is true, willfully and contrary to such oath states or subscribes any material matter which he does not believe to be true, is guilty of perjury, and shall be punished by a fine of not more than two thousand dollars, and by imprisonment, at hard labor, not more than five years, and shall, moreover, thereafter be incapable of giving testimony in any court of the United States until such time as the judgment against him is reversed. [See §1750.]

State of California
San Bernardino County

I A F McKinney Clerk of the Superior court of said county of San Bernardino which is a court of record, do certify that H. C. Ralphs is and has been continuously since the 5th day of January 1880 the judge of said Superior Court duly authorized to administer oaths.

Witness my hand and the seal of said court affixed this 5th day of January 1882

A. F. McKinney
Clerk.
By S. M. Wall
Deputy

least, last past, and within the State of California for one year, at least, last past; and that during all of said time he has behaved as a man of good moral character, attached to the principles of the Constitution of the United States, and well disposed to the good order and happiness of the same; and it also appearing to the Court, by competent evidence, that the said applicant has heretofore, and more than two years since, and in due form of law, declared his intention to become a citizen of the United States; and having now here, before this Court, taken an oath that he will support the Constitution of the United States of America, and that he doth absolutely and entirely renounce and abjure all allegiance and fidelity to every foreign Prince, Potentate, State or Sovereignty whatever, and particularly to Victoria Queen of Great Britain & Ireland

It is therefore, Ordered Adjudged and Decreed, that the said Cecil R. G. Webbe be, and is hereby admitted and declared to be a **Citizen of the United States of America.**

A. C. Rolfe Judge.

Signature: C. R. G. Webbe

Office of the Clerk of the Superior Court, of the County of San Bernardino State of California. } SS.

I, W. F. Holcomb, Clerk of the Superior Court, of the County of San Bernardino State of California, said Court being a Court of Record, having a common law jurisdiction, and a Clerk and Seal, do certify that the above is a true copy of the act of Naturalization of Cecil R. G. Webbe as the same appears upon the Records of said Court now in my office in Book 3 of Minutes of said Court.

In Testimony Whereof, I have hereunto set my hand and affixed the Seal of said Court, this 30th day of November, in the year of our Lord one thousand eight hundred and eighty three and in the year of our Independence the one hundred and eighth

W. F. Holcomb, Clerk,

By Geo. L. Hixson, Deputy Clerk.

Bancroft's Blank, No. 284.—CERTIFICATE OF CITIZENSHIP.—ALIEN (C) (6-83-1000) A. L. BANCROFT & CO., PRINTERS AND STATIONERS, 721 MARKET ST.

Notice for Publication.

Land Office at Los Angeles, Cal.
December 30th, 1881.

Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and that said proof will be made before the Honorable Superior Judge at San Bernardino, Cal., on January 5th, 1882, viz: Cecil B. G. Webbe, Homestead No. 675, for the W. ½ of N. W. ¼ and S. E. ¼ of N. W. ¼ and N. E. ¼ of S. W. ¼, Section 34, Twp. 2 S., R. 4 W., S. B. M.

He names the following witnesses to prove his continuous residence upon, and cultivation of, said land, viz:

John Wilson, J. F. Greves, O. Wilson, E. M. Sheldon, of San Bernardino Co., Cal.

4-49-6t. CHAS. R. JOHNSON, Register.

(4—227.)

ATE AS TO POSTING OF NOTICE.

Land Office at Los Angeles Cal'a,
December 30th, 1881.

I, Chas. R. Johnson, Register, do hereby certify that a notice, a printed copy of which is hereto attached, was by me posted in a conspicuous place in my office for a period of thirty days, I having first posted said notice on the 30th day of December, 1881.

Chas. R. Johnson,
Register.

Appendix D

Energy Calculations

Energy Use Summary

Construction Phase (gallons/construction perioc	Gasoline	Diesel
Construction Vehicles	10,413	10,457
Worker Trips	4,373	19
Vendor Trips	1,070	17
Haul Trucks	15	12,642
Total	**15,871**	**23,135**

Operations Phase (gallons/year)		Gasoline	Diesel	Natural Gas (kBTU/yr)	Electricity (kWh/yr)
Condominiums		120,409	1,533	2,447,660	609,342
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
All Land Uses		120,409	1,533	2,447,660	609,342

Operations Onroad Energy Use

Year 2023

Vehicle Types	MPG by Fuel Type			Population by Fuel Type			
	GAS	DSL	ELEC	GAS	DSL	ELEC	Total
LDA	31.7	50.0		6,635,002	62,493	150,700	6,697,495
LDT1	27.2	22.9		758,468	361	7,123	758,828
LDT2	25.5	36.7		2,285,150	15,595	28,810	2,300,745
LHDT1	10.7	21.9		174,910	125,545		300,455
LHDT2	9.3	19.8		30,103	50,003		80,106
MCY	36.4			305,045			305,045
MDV	20.7	28.1		1,589,863	36,128	16,377	1,625,991
MH	5.2	10.7		34,680	13,123		47,802
MHDT	5.1	11.2		25,624	122,124		147,749
HHDT	4.3	7.1		75	109,819		109,894
OBUS	5.1	8.7		5,955	4,287		10,242
SBUS	9.2	7.7		2,784	6,672		9,455
UBUS	5.1	5.9		958	13	16	971

Trips/Day Land Use	Trips/day Weekday	Trips/day Saturday	Trips/day Sunday	Total Weekly	VMT/day Weekday	VMT/day Saturday	VMT/day Sunday	Trip Length
Condominiums	1,020.00	996.00	850.00	6946	9,572	9,347	7,977	9.38
Total	**1,020**	**996**	**850**					

Fleet Mix Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	Total
Condominiums	0.614215	0.040586	0.209252	0.126005	0	0	0	0	0.001578	0.001284	0.005047	0.001028	0.001005	100.0%

Vehicle Trips

Weekday Trips		LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	Obus	Ubus	MCY	Sbus	MH	Total	Daily VMT
Condominiums		626	41	213	129	0	0	0	0	2	1	5	1	1	1,020	9,571.84
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Total		**626**	**41**	**213**	**129**	**0**	**0**	**0**	**0**	**2**	**1**	**5**	**1**	**1**	**1,020**	

Saturday Trips		LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	Obus	Ubus	MCY	Sbus	MH	Total	Daily VMT
Condominiums		612	40	208	126	0	0	0	0	2	1	5	1	1	996	9,346.62
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Total		**612**	**40**	**208**	**126**	**0**	**0**	**0**	**0**	**2**	**1**	**5**	**1**	**1**	**996**	

Sunday Trips		LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	Obus	Ubus	MCY	Sbus	MH	Total	Daily VMT
Condominiums		522	34	178	107	0	0	0	0	1	1	4	1	1	850	7,976.53
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Total		**522**	**34**	**178**	**107**	**0**	**0**	**0**	**0**	**1**	**1**	**4**	**1**	**1**	**850**	

Gallons of Fuel

Gasoline		LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHD	Obus	Ubus	MCY	Sbus	MH	Total	
Condominiums		65,056	5,062	27,582	20,203	0	0	0	0	608	843	470	112	474	120,409	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		65,056	**5,062**	**27,582**	**20,203**	**0**	**0**	**0**	**0**	**608**	**843**	**470**	**112**	**474**	**120,409**	**Total Gallons**

Diesel		LDA	LDT1	LDT2	MDV	OBUS	LHDT2	MHDT	HHD	Obus	Ubus	MCY	Sbus	MH	Total	
Condominiums		388	3	131	337	0	0	0	0	256	10	0	320	87	1,533	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		388	**3**	**131**	**337**	**0**	**0**	**0**	**0**	**256**	**10**	**0**	**320**	**87**	**1,533**	**Total Gallons**

121,942 Total Gallons

28 Average MPG

Utilities

		NaturalGas Use	Electricity Use
Land Use		kBTU/yr	kWh/yr
Condominiums		2,447,660	609,342
	0		
	0		
	0		
	0		
	0		
Total		**2,447,660**	**609,342**

Offroad Construction Equipment Energy Use

PhaseName	OffRoadEquipmentType	OffRoadEquipmentUnitAmount	UsageHours	HorsePower	Load Factor	Horsepower Category	Num Days	Year	Fuel Consumption Rate (gal/hour)	Fuel Type	Total Fuel Consumption (gal/construction period)
Site Preparation	Rubber Tired Dozers	1	8	247	0.4	300	10	2022	4.5	Diesel	145
Site Preparation	Tractors/Loaders/Backhoes	0	8	97	0.37	100	10	2022	1.6	Diesel	0
Grading	Excavators	0	8	158	0.38	175	44	2022	2.9	Diesel	0
Grading	Graders	0	8	187	0.41	175	44	2022	3.2	Diesel	0
Grading	Rubber Tired Dozers	1	8	247	0.4	300	44	2022	4.5	Diesel	639
Grading	Scrapers	2	8	367	0.48	300	44	2022	5.6	Diesel	1,878
Grading	Tractors/Loaders/Backhoes	0	8	97	0.37	100	44	2022	1.6	Diesel	0
Building Construction	Cranes	1	7	231	0.29	300	264	2022	3.3	Diesel	1,760
Building Construction	Forklifts	3	8	89	0.2	100	264	2022	2.0	Diesel	2,539
Building Construction	Generator Sets	1	8	84	0.74	100	264	2022	5.2	Gasoline	8,123
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	100	264	2022	1.6	Diesel	3,263
Building Construction	Welders	1	8	46	0.45	50	264	2022	2.4	Gasoline	2,290
Paving	Pavers	1	8	130	0.42	100	10	2022	1.7	Diesel	58
Paving	Paving Equipment	1	8	132	0.36	100	10	2022	1.6	Diesel	47
Paving	Rollers	1	8	80	0.38	100	10	2022	1.7	Diesel	51
Architectural Coating	Air Compressors	1	6	78	0.48	100	20	2022	1.3	Diesel	76
									Total	**Gasoline**	**10,413**
									Total	**Diesel**	**10,457**

Onroad Construction Energy Use

Year 2022

Vehicle Types	MPG by Fuel Type			Population by Fuel Type			
	GAS	DSL	ELEC	GAS	DSL	ELEC	Total
LDA	30.8	48.7		6,542,832	58,938	127,533	6,601,770
LDT1	26.5	22.6		736,906	387	5,339	737,293
LDT2	24.7	35.7		2,246,303	14,235	22,590	2,260,537
LHDT1	10.5	21.6		175,903	119,381		295,284
LHDT2	9.2	19.5		30,010	47,336		77,346
MCY	36.4			295,960			295,960
MDV	20.0	27.4		1,579,640	33,349	11,658	1,612,989
MH	5.2	10.6		35,098	12,759		47,857
MHDT	5.1	10.7		25,445	123,310		148,755
HHDT	4.2	6.7		78	108,362		108,440
OBUS	5.0	8.5		5,959	4,274		10,234
SBUS	9.1	7.6		2,631	6,631		9,262
UBUS	4.9	6.0		952	14	17	966

Input							Gasoline Consumption			Diesel Consumption		
Phase Name	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker	Vendor	Haul	Worker	Vendor	Haul
Site Preparation	3	0	0	14.7	6.9	20						
Grading	8	0	4267	14.7	6.9	20						
Building Construction	25	12	0	14.7	6.9	20						
Paving	8	0	0	14.7	6.9	20						
Architectural Coating	16	0	0	14.7	6.9	20						
Adjusted												
Site Preparation	30	0	0	14.7	6.9	20	18	0	0	0	0	0
Grading	352	0	4267	14.7	6.9	20	208	0	15	1	0	12,642
Building Construction	6600	3168	0	14.7	6.9	20	3,909	1,070	0	17	17	0
Paving	80	0	0	14.7	6.9	20	47	0	0	0	0	0
Architectural Coating	320	0	0	14.7	6.9	20	190	0	0	1	0	0
Total							**4,373**	**1,070**	**15**	**19**	**17**	**12,642**

Appendix E

Geotechnical Report

LGC GEO-ENVIRONMENTAL, INC.

PRELIMINARY GEOTECHNICAL INVESTIGATION FOR THE PROPOSED SINGLE-FAMILY RESIDENTIAL DEVELOPMENT, TENTATIVE TRACT MAP NO. 37557, CITY OF MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA.

Dated: September 22, 2018
Project No. G18-1648-10

Prepared For:

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LGC GEO-ENVIRONMENTAL, INC.
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING • SWPPP

September 22, 2018

Project No. G18-1648-10

Shizao Zheng
1378 West Zhorgshan Road
Ningbo City, Zhejiang Province
China

Subject: ***Preliminary Geotechnical Investigation for the Proposed Single-Family Residential Development, Tentative Tract Map No. 37557, City of Moreno Valley, Riverside County, California.***

LGC Geo-Environmental, Inc. (LGC) is pleased to submit herewith our preliminary geotechnical investigation report for the proposed single-family residential development, Tentative Tract Map No. 37557, City of Moreno Valley, Riverside County, California.

This report presents the results of our review of published geologic/geotechnical reports, maps, and aerial photographs relative to the area that includes the site; our field exploration, geologic mapping, and laboratory testing; and geotechnical and geologic judgment, opinions, conclusions and preliminary recommendations associated with the proposed residential development.

Based on the results of the scope of our work and our review of the conceptual grading plan tract map, it is our opinion that the subject site is suitable for the proposed residential development, provided that the recommendations presented herein are incorporated into the design and implemented during grading and construction. LGC should review the final grading plans, as well as any foundation/structural plans when those become available, and revise the recommendations presented herein, if necessary.

LGC is pleased to have been retained to be of service to you during the design stages of this project. Should you have any questions regarding the contents of this report or should you require additional information, please do not hesitate to contact us.

Respectfully submitted,

LGC Geo-Environmental, Inc.

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1.0 INTRODUCTION

This report presents the results of LGC Geo-Environmental, Inc.'s (LGC) geotechnical investigation for the proposed single-family residential development, Conceptual Grading Plan Tract Map No. 37557, City of Moreno Valley, Riverside County, California. The purpose of this geotechnical investigation was to evaluate the soil engineering properties of the surface and subsurface soil conditions on the site, and to provide geotechnical recommendations with respect to grading, construction, foundation design and other relevant geotechnical aspects related to the proposed residential development. The referenced conceptual grading plan tract map which was provided to LGC, was utilized as the base map for our Geotechnical Map (Plate 1) of the site.

Our scope of services included:

- A review of available published geologic/geotechnical literature, geologic maps, and aerial photographs pertinent to the site (Appendix A).
- Geologic mapping of the site.
- Subsurface exploration consisting of the excavating, sampling, and logging of ten (10) exploratory trenches, TR-1 through TR-8 and IT-1 through IT-2, to depths ranging from approximately 3.0 to 13.5 feet below the existing ground surface. All of the trenches were excavated using a backhoe. The trenches were excavated to evaluate the general characteristics of the subsurface geologic/geotechnical conditions on the project site, including classification of site soil, determination of depth to groundwater (if present), and to obtain representative soil samples.
- Laboratory testing of representative soil specimens collected during our subsurface exploration (Appendix C).
- Geotechnical engineering and geologic analyses of the data with respect to the proposed single-family development.
- Preparation of General Earthwork and Grading Specifications (Appendix D).
- Preparation of this report presenting our findings, conclusions and preliminary geotechnical design recommendations for the proposed development.

1.1 Proposed Construction and Grading

The referenced conceptual grading plan tract map prepared by Sikand Engineering dated June 13, 2018 indicates that the proposed development will consist of 24 single-family residential lots with associated roadways, walk ways, and hardscape, landscape areas and a water quality basin and a debris basin. It is anticipated that the structures will be up to two-stories, with wood/steel frame and masonry wall construction and some masonry block walls. This type of construction provides for relatively moderate to heavy loads imposed on the underlying foundation soil.

The referenced 80-scale tentative tract map indicates proposed cut and fill depths will be generally be approximately 32 and 22 feet, respectively. Proposed maximum cut and fill slope heights are about 55 feet and 22 feet respectively, at slope ratios of 2:1 (h:v) or flatter.

1.2 Location and Site Description

The site is located north of Jennings Court, west of Morton Road and east of the mountains at the base, in the City of Moreno Valley, in Riverside County, California. The site is irregular in shape and is approximately 32.8-acres in size. The site is moderately covered with annual weeds and shrubs, some cluster of trees and scatter boulders, mainly at the base of the mountain. The site also contains some scattered trash and debris. The general location and configuration of the site is shown on the Site Location Map (Figure 1).

"© 2018 Google Inc., Google Earth, Aerial Imagery".

FIGURE 1
SITE LOCATION MAP

Project Name	TENTATIVE TRACT MAP NO. 37557
Project No.	G18-1648-10
Geol./ Eng.	RLG/JPN
Scale	NOT TO SCALE
Date	SEPTEMBER 2018

1.3 Topography and Drainage

The topography of the site is undulated with approximately four washes running down the site from the northeast. Elevations range from approximately 2,040 feet above mean sea level (msl) in the northeastern portion of the site to approximately 1,588 feet msl in the western portion of the site.

1.4 Existing Improvements and Vegetation

The site has not been previously developed. Vegetation consists of a moderate to dense cover of annual weeds/shrubs

1.5 Research of Previous Geological and Geotechnical Data

LGC researched published and unpublished geotechnical reports and geologic data (Appendix A). Pertinent site and geologic information were incorporated into the conclusions and recommendations presented in this report.

1.6 Aerial Photograph Analysis

Google Earth Pro aerial imagery (from 1994 to 2018) was evaluated for the subject site and surrounding vicinity. The available information, as it pertains to the geologic and geotechnical issues of the proposed single-family residence, has been incorporated into the conclusions and recommendations presented in this report.

Our review of the aerial photographs indicates that the site has been a vacant property from 1994 to the present.

2.0 FIELD INVESTIGATION

2.1 Geologic Mapping

Surface geologic mapping of the site and accessible surrounding areas was completed by a geologist from this firm during September 2018, utilizing the referenced Conceptual Grading Plan Tract Map No. 37557 for plotting geologic observations. This information is plotted on the enclosed Geotechnical Map (Plate 1).

2.2 Field Exploration

Ten (10) exploratory trenches, TR-1 through TR-8 and IT-1 through IT-2, were excavated with a backhoe on September 4, 2018 and September 6, 2018 to depths of approximately 3.0 to 13.5 feet below the existing ground surface. The trenches were excavated to evaluate the general characteristics of the subsurface geologic/geotechnical conditions beneath the site, those include classification of site soil and bedrock, determination of groundwater elevations (if present), and the collection of representative soil samples.

Prior to our subsurface work, an underground utilities clearance was obtained from Underground Services Alert of Southern California. At the conclusion of the subsurface exploration, the trenches were backfilled with on-site materials with some compactive effort. Minor settlement of the backfill soil may occur over time.

Earth materials recovered from beneath the site were classified and logged by a geologist from LGC in accordance with the visual-manual procedures of the Unified Soil Classification System. The approximate locations of the exploratory borings and trenches are shown on the Geotechnical Map (Plate 1) and descriptive logs are presented in Appendix B.

Bulk samples of soil associated with the exploratory trenches were collected for laboratory testing. Bulk samples consisted of selected soil and bedrock materials obtained at various depth intervals from the exploratory trenches.

2.3 Laboratory Testing

During our subsurface exploration, relatively undisturbed and bulk soil samples were retained for laboratory testing. Laboratory tests were performed on selected representative samples of onsite soil materials and included maximum dry density and optimum water content, expansion index, sulfate content, chloride content, pH, resistivity, and shear strength. A brief description of the laboratory test results and test data are presented in Appendix C.

3.0 FINDINGS

3.1 Regional Geologic Setting

The site is located in the Peninsular Ranges Geomorphic Province of California. The Peninsular Ranges are characterized by steep, elongated valleys that trend west to northwest. Locally the northwest-trending topography is controlled by the Elsinore fault zone, which extends from the San Gabriel River Valley southeasterly to the United States/Mexico border. The Santa Ana Mountains lie along the western side of the Elsinore fault zone, while the Perris Block is located along the eastern side of the fault zone. These mountainous regions are underlain by Pre-Cretaceous, metasedimentary and metavolcanic rocks and Cretaceous plutonic rocks of the Southern California Batholith. Tertiary and Quaternary rocks are generally comprised of non-marine sediments consisting of sandstone, mudstones, conglomerates, and occasional volcanic units. A map of the regional geology is presented on the Regional Geologic Map (Figure 2).

3.2 Local Geology and Soil Conditions

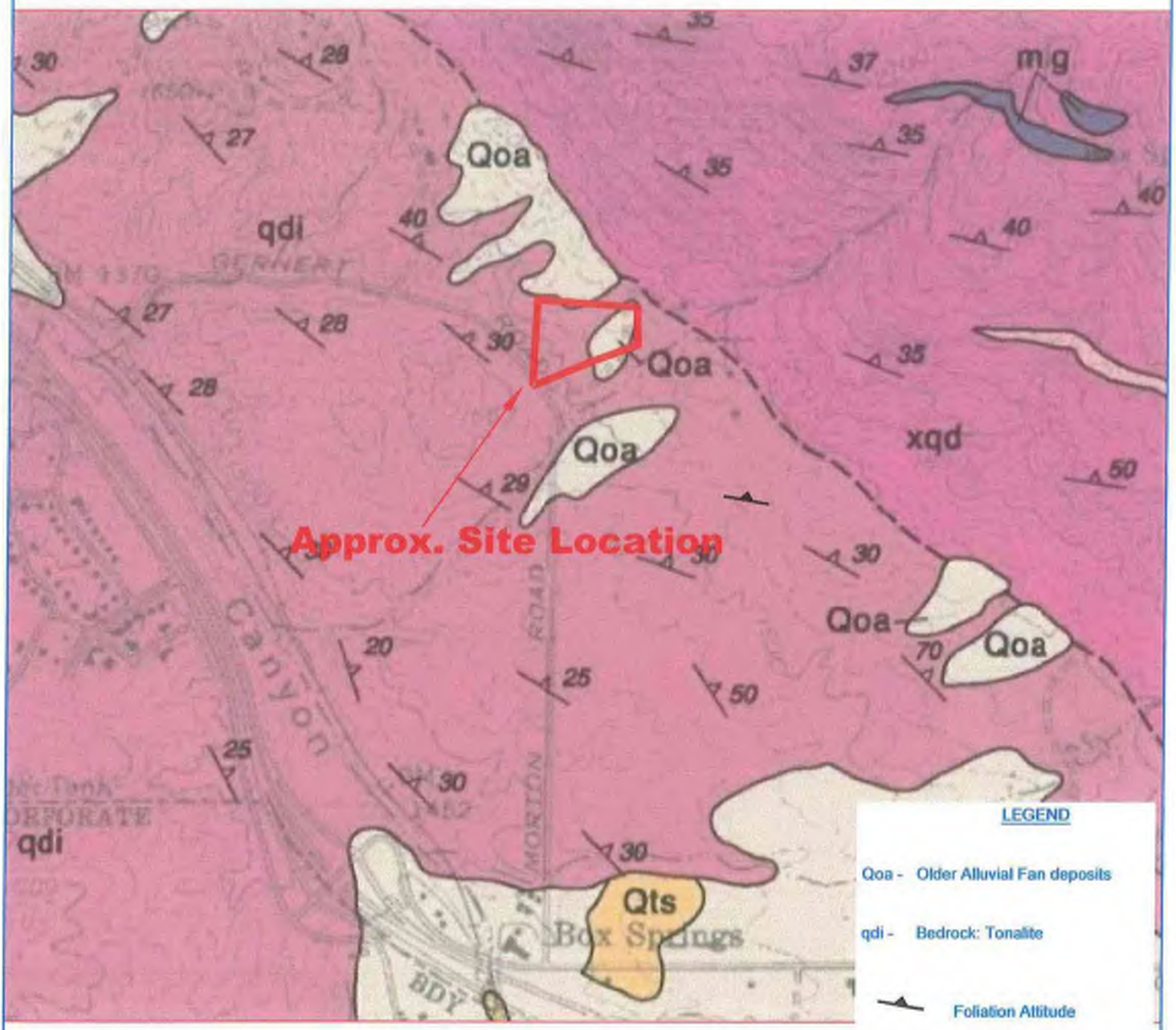
Based on our review of available geological and geotechnical literature, current field mapping, exploratory trenches and exploratory borings conducted at the site, it is our understanding that the site is primarily underlain by undocumented artificial fill, older alluvial fan deposits, and Bonzal Tonalite bedrock. Each unit is described in greater detail below and presented within the exploratory trench and boring logs (Appendix B). The approximate locations of the observed geologic units are depicted on the Geotechnical Map (Plate 1).

Artificial Fill, Undocumented (Afu): During our subsurface exploration, artificial fill (undocumented) was encountered down to depths ranging from approximately 2.0 feet to 5.5 feet. The artificial fill generally consists of silty sand and clayey silt and is various shades of brown, red and black; very fine to medium grained with some coarse grains; coarse and very coarse rock fragments; dry to damp; medium dense/firm; contains some pores; roothairs; desiccated; with traces of concrete pieces.

Topsoil (No Map Symbol): Topsoil was present within portions of the site overlying the older alluvial deposits or bedrock. The topsoil consisted of silty sand which was generally very fine to coarse grained, various shades of red and brown, dry to damp, loose to medium dense, desiccated with some pores and roots. These materials were generally 0.5 foot to 2.0 foot thick where explored.

Alluvium (Qal): Alluvium is present within drainage courses on the site and consist of silty sand which is generally very fine to coarse grained, various shades of read and brown, dry to damp, loose to medium dense with some rock fragments, pores, and roots. The alluvium where explored is about 2.0 feet to 7.0 feet deep and could be as much aa 10.0 feet deep.

Older Alluvial Fan Deposits (Qoa): Older alluvial fan deposits encountered on the site during our subsurface exploration, were observed to range from the surface approximately 2.0 feet to 6.5 feet deep to as deep as 12 feet. The older alluvial fan deposits generally consist of silty sand and is



GEOLOGIC MAP OF THE RIVERSIDE EAST/SOUTH 1/2 IF SAN BERNARDINO SOUTH QUADRANGLES, SAN BERNARDINO AND RIVERSIDE COUNTY, CALIFORNIA
By Thomas W. Dibble, Jr.. 2003 Edited by John A. Minch

FIGURE 2
REGIONAL GEOLOGIC MAP

Project Name	TENTATIVE TRACT MAP NO. 37557
Project No.	G18-1648-10
Geol./ Eng.	RLG/JPN
Scale	NOT TO SCALE
Date	SEPTEMBER 2018

characterized as being various shades of brown, green, gray, and red; dry; medium to very dense; very fine to medium grained with coarse grains; pinhole pores; roothairs; with oxidation staining. Portions of the upper 1.0 foot to 2.0 foot are weathered.

Bedrock: Bonzal Tonalite (Qdi) – Bedrock of the Peninsular Ranges was present at the near surface, but mostly below the topsoil, alluvium and older alluvial fan deposits at depths of about 0.5 feet to 12.0 feet. The bedrock consists of quartz diorite. The bedrock was slightly to moderately weathered; various shades of black, orange, gray, yellow, brown and white; dry to damp; moderately hard to very hard; friable; fine to very coarse grained; with oxidation staining; and manganese staining.

3.3 Landslides

Our review of geologic literature did not indicate the presence of landslides on or directly adjacent to the site.

3.4 Groundwater

Groundwater was not encountered during the subsurface exploration performed for this report. Our review of the California Department of Water Resources, Water Data Library 2018 online database indicates historical depths of groundwater approximately four miles away from the general site area is about 73 feet below the existing ground surface at an elevation of approximately 1,638 above mean sea level (Well ID: Station 335628N1171932W001).

3.5 Caving

Caving was not encountered in the exploratory trenches. Caving may occur within excavations made into the friable portions of the alluvium, older alluvial fan deposits and weathered bedrock.

3.6 Surface Water

Surface water runoff relative to project design is the purview of the project civil engineer and should be designed to be directed away from all structures and walls.

3.7 Faulting

The geologic structure of the Southern California area is mainly dominated by northwest-trending faults associated with the San Andreas system. Faults, such as the Whittier, Elsinore, San Jacinto and San Andreas, are major faults in this system and are known to be active and may produce moderate to strong ground shaking during an earthquake. In addition, the San Andreas, Elsinore and San Jacinto faults are known to have ruptured the ground surface in historic times.

The following table is comprised of a list of the significant faults located within 20 miles of the proposed project site. We have also included the Maximum Earthquake Magnitude predicted for each of these faults.

TABLE 1
Significant Faults in Proximity of the Project Site

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE (mi)	MAXIMUM EARTHQUAKE MAGNITUDE (Mw)
San Jacinto-San Bernardino	5.2	6.7
San Jacinto-San Jacinto Valley	5.6	6.9
San Andreas-San Bernardino	14.9	7.3
San Andreas-Southern	14.9	7.4
Elsinore-Glen Ivy	18.5	6.8
Chino-Central Ave (Elsinore)	19.0	6.7
Cucamonga	19.4	7.0

Source: EQFAULT for Windows Version 3.00b

Active, potentially active, or inactive faults are not known to project through the site. The site does not lie within an Alquist-Priolo Earthquake Fault Hazard Zone as defined by the State of California in the Alquist-Priolo Earthquake Fault Hazard Zoning Act or a Riverside County Fault Zone Map. The possibility of damage to structures or site improvements because of ground rupture is considered negligible because active faults are not known to cross the site.

3.8 Seismicity

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the southern California region, which may affect the site, include soil liquefaction and dynamic settlement. Liquefaction is a seismic phenomenon in which loose, saturated, granular soil behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: 1) groundwater within 50 feet of the ground surface 2) low density non-cohesive (granular) soil; and 3) high-intensity ground motion. Studies indicate that saturated, loose to medium dense, near surface cohesionless soil exhibit the highest liquefaction potential, while dry, dense, cohesionless soil and cohesive soil exhibit low to negligible liquefaction potential.

Other secondary seismic effects include shallow ground rupture, seiches, and tsunamis. In general, these secondary effects of seismic shaking are a possibility throughout the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. A risk assessment of these secondary effects is provided in the following sections.

3.9 Settlement Analysis

The results of our subsurface exploration and laboratory testing indicate the site is underlain by approximately 2 feet to 7 feet to possibly up to 10 feet of potentially compressible and/or hydro-collapsible soil, consisting of artificial fill, undocumented, topsoil, alluvium, weathered older alluvial fan deposits and weathered bedrock. These materials exhibit the potential to settle or hydro-consolidate under the surcharge of proposed fill loads and anticipated future structural loads.

In areas where overexcavation to competent underlying older alluvial fan deposits or bedrock is accomplished, total settlement of about 0.50-inch, and a differential settlement of about 0.25-inch over a distance of about 40 feet could be anticipated.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 General

Based on the results of our current geotechnical investigation, it is our opinion that the proposed residential development, as indicated on the conceptual grading plan tract map, is feasible from a geotechnical and geologic standpoint, provided that the following recommendations are incorporated into the design criteria and project specifications and implemented during site grading and during construction. When actual grading plans for the site and foundation/structural plans for the proposed development are available, a comprehensive plan review should be performed by LGC. Depending on the results, additional recommendations may be necessary to provide updated geotechnical design parameters for both earthwork and foundations. Grading should be conducted in accordance with local codes, the recommendations within this report, and future plan reviews. It is also our opinion that the proposed construction and grading will not adversely impact the geologic stability of adjoining properties.

The following is a summary of the primary geotechnical factors determined from our geotechnical investigation.

- The site is underlain by undocumented artificial fill, topsoil, alluvium, older alluvial fan deposits and bedrock.
- Landslides are not known to impact the site.
- Groundwater are not considered a constraint for the proposed development.
- The potential for liquefaction is considered negligible because of shallow depths to very dense older alluvial fan deposits and hard bedrock.
- Active or potentially active faults are not known to exist on the site.
- Laboratory test results of the upper soil and bedrock indicate a very low expansion potential and negligible potential for soluble sulfate effects on normal concrete and chloride effects on reinforcing steel.
- The majority of the site is underlain by approximately 2 feet to 7 feet to as much as 10 feet locally of undocumented artificial fill, topsoil, alluvium, weathered older alluvial fan deposits and weathered bedrock which may be prone to potential intolerable post-grading settlement and/or hydroconsolidation, under the surcharge of the future proposed structural loads and/or fill loads. These materials should be overexcavated to underlying competent older alluvial fan deposits or bedrock.
- The existing onsite soil from a geotechnical perspective, appear to be suitable material for use as fill, provided those are relatively free from rocks (larger than 12 inches in maximum dimension), construction debris, and organic material. It is anticipated that the onsite soil may be excavated with conventional heavy-duty construction equipment.

5.0 GEOLOGIC CONSIDERATIONS

5.1 Slopes

Cut slopes and fill slopes to the proposed slope heights and slope ratios of approximately 2:1 (H:V) or flatter and should be grossly and surficially stable.

5.2 Faulting

Geologic hazards related to fault rupture are not known or not detected during our field exploration and site reconnaissance to be present at the site.

5.3 Groundwater

Adverse effects on the proposed development resulting from groundwater are not anticipated.

5.4 Subsidence

In consideration of the anticipated grading, recommended overexcavations, proposed structures and improvements, and subsurface material types and their conditions, unfavorable ground subsidence is not anticipated. This should be confirmed with additional consolidation testing in the older alluvial fan deposits.

5.5 Landsliding

Landslides or surface failures were not observed at or directly adjacent to the site. As a result, the probability of the site being affected by landslides is considered nil.

5.6 Ground Rupture

Ground rupture because of active faulting is not likely to occur on site because of the absence of known active fault traces on the site. Cracking because of shaking from distant seismic events is not considered a significant hazard, although it is a possibility at any site.

5.7 Rock Fall

The potential for rock fall is considered moderate, due to the close proximity of the mountainside. See referenced report in Appendix A.

5.8 Tsunamis and Seiches

Based on the elevation of the site with respect to sea level and its distance from large open bodies of water, the potentials for seiche and/or tsunami is considered to be negligible.

6.0 SEISMIC-DESIGN CONSIDERATIONS

6.1 Ground Motions

The site will probably experience ground shaking from moderate to large size earthquakes during the life of the proposed development. Furthermore, it should be recognized that the Southern California region is an area of high seismic risk, and that it is not considered feasible to make structures totally resistant to seismic-related hazards.

Structures within the site should be designed and constructed to resist the effects of seismic ground motions as provided in the 2016 CBC, Section 1613. The method of design is dependent on the seismic zoning, site characterizations, occupancy category, building configuration, type of structural system, and building height.

The following seismic design parameters, presented in Table 2, were developed based on the CBC 2016 and should be used for the proposed structures. A site coordinate of 33.8066° N, 117.1195° W was used to derive the seismic parameters presented below.

TABLE 2
Seismic Design Soil Parameters

SEISMIC DESIGN SOIL PARAMETERS **(2016 CBC Section 1613)**	
Site Class Definition ASCE 7; Chapter 20 (Table 20.3-1)	D
Mapped Spectral Response Acceleration Parameter S_s (for 0.2 second) (Figure 1613.5.3.(1)	1.51
Mapped Spectral Response Acceleration Parameter, S_1 (for 1.0 second) (Figure 1613.5.3.(2)	0.64
Site Coefficient F_a (short period) [Table 1613.3.3.(1)]	1.0
Site Coefficient F_v (1-second period) [Table 1613.3.3.(2)]	1.5
Adjusted Maximum Considered Earthquake (MCE) Spectral Response Acceleration Parameter S_{MS} (short period) (Eq. 16-37)	1.51
Adjusted Maximum Considered Earthquake (MCE) Spectral Response Acceleration Parameter S_{M1} (1-second period) (Eq. 16-38)	0.96
Design Spectral Response Acceleration Parameter, S_{DS} (short period) (Eq. 16-39)	1.00
Design Spectral Response Acceleration Parameter, S_{D1} (1-second period) (Eq. 16-40)	0.64
Mean Peak Ground Acceleration (PGA_m)	0.59

6.2 Secondary Seismic Hazards

Secondary effects of seismic activity normally considered as possible hazards to a site include several types of ground failure, as well as induced flooding. Various general types of ground failures which might occur as a consequence of severe ground shaking of the site include liquefaction, landsliding, ground subsidence, ground lurching, and shallow ground rupture. The probability of occurrence of each type of ground failure depends on the severity of the earthquake, distance from faults, topography, subsoil and groundwater conditions, in addition to other factors. Based on the proposed grading and recommended overexcavation of potentially compressible materials within areas of proposed development, the secondary effects of liquefaction and other seismic activity noted above are considered unlikely at the site.

Seismically induced flooding, which might be considered a potential hazard to a site, normally includes flooding because of a tsunami (seismic sea wave), a seiche (i.e., a wave-like oscillation of the surface of water in an enclosed basin that may be initiated by a strong earthquake) or failure of a major reservoir or retention structure upstream of the site. The site is located several miles inland from the nearest coastline of the Pacific Ocean at an elevation in excess of approximately 1630 feet above msl, the potential for seismically induced flooding because of tsunami inundation is considered nonexistent. Enclosed bodies of water do not lie adjacent to the site, the potential for seiche induced flooding at the site is considered nonexistent.

7.0 GEOTECHNICAL DESIGN PARAMETERS

7.1 Shrinkage/Bulking and Subsidence

Volumetric changes in earth quantities occur when excavated onsite soil are replaced as properly compacted fill. The following table, Table 3, is an estimate of the shrinkage and bulking factors for the various geologic units present onsite. These estimates are based on in-place densities of the various materials and on the estimated average degree of relative compaction that will be achieved during grading.

TABLE 3
Estimated Shrinkage/Bulking

GEOLOGIC UNIT	***SHRINKAGE PERCENT***
Artificial Fill, Undoctumented	6% to 15%
Alluvium	10% to 15%
Topsoil	10% to 15%
Older Alluvial Fan Deposits (Qoa)	9% to 13%
GEOLOGIC UNIT	***BULKING PERCENT***
Bedrock: Bonzal Tonalite	0% TO 10%

Subsidence of the older alluvial fan deposits and bedrock, because of recompaction of exposed soil or bedrock prior to fill placement, and placement of proposed fills, is estimated to be about 0.15 to 0.20 feet.

The above estimates of shrinkage are intended as an aid for project engineers in determining earthwork quantities. **However, these estimates should be used with some caution since they are not absolute values.** These are preliminary rough estimates which may vary with depth of removal, stripping losses, field conditions at the time of grading, etc. Handling losses, and reduction in volume due to removal of oversized material, are not included in the estimates.

7.2 Excavation Characteristics

The following excavation characteristics of the various material types at the site have been developed based on LGC's geologic mapping and experience with these materials in the area and are presented in Table 4 below:

TABLE 4
Excavation Characteristics

GEOLOGIC UNIT	**Easy* Ripping**	**Moderately** Difficult Ripping**	**Oversized Material (>6 inches)**
Artificial Fill (Afu)	X	X	X
Topsoil	X		
Alluvium (Qal)	X		X
Alluvial Fan Deposits (Qf)	X	X	
Bedrock: Bonzal Tonalite (Qdi)		X	X

To better determine if rip-ability with conventional equipment is feasible or if alternative excavation methods such as blasting is necessary, we recommend a seismic refraction survey.

7.3 Compressible/Collapsible Soil

The results of our laboratory in-situ moisture and density testing indicate that the existing undocumented artificial fill, topsoil, alluvium and weathered portions of the older alluvial fan deposits and bedrock are susceptible to varying degrees of intolerable settlement and/or hydro-consolidation (collapse) when a load is applied, or the soil is saturated. Consequently, these materials should be collectively overexcavated to underlying competent older alluvial fan deposits or bedrock and replaced as engineered compacted fill.

8.0 SITE EARTHWORK

8.1 General Earthwork and Grading Specifications

Earthwork and grading should be performed in accordance with applicable requirements of the grading code of the County of Riverside and in accordance with the following recommendations prepared by this firm. Grading should also be performed in accordance with the applicable provisions of the attached "Standard Grading Specifications" prepared by LGC (Appendix D), unless specifically revised or amended herein. In case of conflict, the following recommendations shall supersede those included in as part of LGC's General Earthwork and Grading Specifications (Appendix D).

8.2 Geotechnical Observations and Testing

Prior to the start of grading, a meeting should be held on the site with the owner or his representative, developer, grading contractor, civil engineer and geotechnical consultant to discuss the work schedule and geotechnical aspects of the grading. Rough grading, which includes clearing, overexcavation, scarification/processing and fill placement, should be accomplished under the full-time observation and testing of the geotechnical consultant. Fills should not be placed without prior approval from the geotechnical consultant.

A representative of the project geotechnical consultant should also be present onsite on a full-time basis during grading operations to document proper placement and compaction of fills, as well as to document excavations and compliance with the other recommendations presented herein.

8.3 Clearing and Grubbing

Weeds/shrubs, grasses, boulders and trees in areas to be graded should be stripped and hauled offsite. Trees to be removed should be grubbed so that the stumps and major-root systems are removed and the organic materials hauled offsite. During site grading, roots, tree branches and other deleterious materials missed during clearing and grubbing operations should be removed from fill sources prior to placement.

The project geotechnical consultant or his qualified representative should be notified at the appropriate times to provide observation and testing services during clearing and grubbing operations to observe and document compliance with the above recommendations. In addition, buried structures, unusual or adverse soil conditions encountered that are not described or anticipated herein should be brought to the immediate attention of the geotechnical consultant. The existing drainage courses must be cleared of organics, debris, and sediment and widened to accommodate compaction equipment.

8.4 Private Sewage System Abandonment

Private sewage systems and/or other subsurface structures that may be encountered should be located, removed and/or properly abandoned. Abandonment and/or removal of septic systems that may exist should be in accordance with local codes. Seepage pits, if abandoned in-place, should be pumped clean, backfilled with gravel or clean sand jetted into place, and then capped with 2 feet or more of at least a 2-sack slurry for a minimum distance of 2 feet outside the edge of the seepage pit. The top of the slurry cap should be at least 10 feet below proposed grade.

8.5 Water-Well Capping

Unknown water wells that are encountered within the site, which are to be abandoned, should be abandoned and capped under permit by the appropriate governmental agency from Riverside County. In addition, a minimum 10-foot thick compacted fill blanket, below proposed grade, should be placed above the previously or newly-capped water wells.

8.6 Overexcavation and Ground Preparation

The site is underlain by approximately 2 feet to 7 feet and possibly as much as 10 feet of compressible materials. Existing undocumented artificial fill, topsoil, alluvium and weathered portions of the older alluvial fan deposits and bedrock are considered unsuitable for support of proposed fills, structures, and/or improvements, and should be overexcavated to expose underlying competent older alluvial fan deposits or bedrock. Where overexcavation and grading do not provide 5 feet or more of fill below finished pad-grade within areas for proposed structures, retaining walls, or fence walls, the area should be overexcavated to 5 feet or more below proposed grade or 2 feet or more below the bottom of footings for structures or walls, whichever is deeper. Actual depths of overexcavation should be evaluated upon review of final grading and foundation plans as well as during grading on the basis of observations and testing during grading by the project geotechnical consultant.

Prior to placing engineered fill, the exposed bottom surfaces in each overexcavated area should first be scarified to a depth of approximately 6 inches, watered or air-dried as necessary to achieve a uniform water content near optimum or slightly higher, and then compacted in place to a relative compaction of 90 percent or more (based on American Standard of Testing and Materials [ASTM] Test Method D1557).

The estimated locations, extent, and approximate depths for overexcavation of unsuitable materials are indicated on the enclosed Geotechnical Map (Plate 1). The geotechnical consultant should be provided with appropriate survey staking during grading to document that depths and/or locations of recommended overexcavation are adequate.

Sidewalls for overexcavations greater than 4 feet in height should not be steeper than 1:1 horizontal to vertical (h:v) and should be periodically slope-boarded during excavation to remove loose surficial debris and facilitate geologic mapping. Flatter excavations may be necessary for stability.

The grading contractor will need to consider appropriate measures necessary to excavate existing improvements adjacent to the site without endangering those because of caving or sloughing.

8.7 Subdrains

Following overexcavation of the topsoil, alluvium and weathered portions of the older alluvial fan deposits or bedrock, in the existing drainage course of the site a subdrain should be installed where the ultimate depth of fill below proposed grade exceeds approximately 10 feet. Tentative locations of the recommended subdrains should be evaluated once actual grading plans are developed. Actual locations should also be determined by the geotechnical consultant once conditions are exposed during grading. The subdrains will help mitigate potential buildup of hydrostatic pressures below compacted fill due to infiltration of sub-surface and surface waters.

8.8 Fill Suitability

Soil materials excavated during on-site grading are generally considered suitable for use as compacted fill provided that such soil does not contain significant amounts of trash, vegetation, organic material, construction debris, and oversize material.

8.9 Oversized Material

Oversized material that may be encountered during grading, greater than 6 inches, should be reduced in size or removed from the site

8.10 Cut/Fill Transitions and Differential Fill Thicknesses

To mitigate distress to structures and walls related to the detrimental effect of differential settlement, the cut portions should be eliminated from cut/fill transition areas in order that the entire structure or wall be founded on a approved uniform material. This should be accomplished by overexcavating the "cut" portions and shallow fill portions 5 feet or more below proposed pad grade or 2 feet below proposed

footings for structures or walls, whichever is deeper and replacing the excavated materials as properly compacted fill. Recommended depths of overexcavation are provided in the following table:

DEPTH OF FILL ("fill" portion)	*DEPTH OF OVEREXCAVATION ("cut" portion)*
Up to 15 feet	5 feet (minimum)
Greater than 15 feet	One-third the maximum thickness of fill placed on the "fill" portion (12 feet maximum)

8.11 Benching

Where compacted fills are to be placed on natural slope surfaces inclining at 5:1 (h:v) or greater, the ground should be excavated to create a series of level benches, which have at least a minimum height of 4 feet, excavated into competent bedrock or existing compacted engineered materials. Typical benching details are described in the attached LGC "Standard Grading Specifications" (Appendix D).

8.12 Fill Placement

Fills should be placed in lifts not greater than 6 inches in uncompacted thickness, watered or air-dried as necessary to achieve a uniform water content of at least optimum moisture content, and then compacted in place to relative compaction of 90 percent or more. Fills should be maintained in a relatively level condition. The laboratory maximum dry density and optimum moisture content for each change in soil type should be determined in accordance with ASTM Test Method D1557.

8.13 Inclement Weather

Inclement weather may cause rapid erosion during mass grading and/or construction. Proper erosion and drainage control measures should be in-place during periods of inclement weather in accordance with Riverside County and California State requirements.

9.0 SLOPE CONSTRUCTION

9.1 Slope Stability

Cut slopes and fill slopes at the proposed heights at slope ratios of approximately 2:1 (H:V) or flatter and should be grossly and surficially stable.

9.2 Fill Slopes

Following overexcavation of unsuitable materials, fill slopes and fill over cut slopes should be initiated on a minimum 15 feet wide key excavated into competent older alluvial fan deposits or bedrock if the ground gradient is steeper than 5:1 (H:V) as approved by LGC. The bottom of the fill keys should be tilted at 2 percent back into the slope.

9.3 Cut Slopes

Proposed cut slopes may expose low-density, dry and/or cohesionless soil or bedrock with out-of-slope planner features, which will likely require stabilization by overexcavation and replacement with compacted fill.

9.4 Temporary Excavations

Temporary excavations varying up to a height of approximately 2 feet to 10 feet below existing grades will be necessary to accommodate the recommended overexcavation of the unsuitable soil. Based on the physical properties of the onsite soil, temporary excavations exceeding 4 feet in height should be cut back at a ratio of 1:1 (h:v) or flatter, for the duration of the overexcavation and recompaction of unsuitable soil material. Temporary slopes excavated at the above slope configurations are expected to remain stable during grading operations. However, temporary excavations should be observed by a representative of the project geotechnical consultant for any evidence of potential instability. Depending on the results of these observations, revised slope configurations may be necessary.

Other factors which should be considered with respect to the stability of the temporary slopes include construction traffic and storage of materials on or near the tops of the slopes, construction scheduling, presence of nearby walls or structures on adjacent properties, and weather conditions at the time of construction. Applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1970, and the Construction Safety Act should also be followed.

10.0 POST-GRADING CONSIDERATIONS

10.1 Control of Surface Water and Drainage Control

Positive-drainage devices such as sloping sidewalks, graded-swales, and/or area drains, should be provided to collect and direct water away from the structure and slopes. Neither rain nor excess irrigation water should be allowed to collect or pond against building foundations. Drainage should be directed to adjacent driveways, adjacent streets or storm-drain faculties and maintained at all times. The site is in a semi-arid climate area, from a geotechnical standpoint, thus the ground surface adjacent to the structures should be sloped at a gradient of at least 2 percent for a distance of at least 10 feet. Each graded lot should be further maintained by a swale or drainage path at a gradient of at least 1 percent. Where necessary, drainage paths may be shortened by use of area drains and collector pipes. Planters with open bottoms adjacent to buildings should be avoided. Over watering must be avoided.

10.2 Utility Trenches

Utility-trench backfill within roadways, utility easements, under walls, sidewalks, driveways, floor slabs and any other structures or improvements should be mechanical compacted. The onsite soil should generally be suitable as trench backfill provided those are screened of rocks and other material over 3 inches in diameter and organic matter. Trench backfill should be compacted in uniform lifts (generally not exceeding 6 inches to 8 inches in uncompacted thickness) by mechanical means to at least 90 percent relative density (per ASTM Test Method D1557). Density testing, along with probing, should be performed by the project geotechnical consultant or his representative, to document proper compaction.

If trenches are shallow, the use of conventional equipment may result in damage to the utilities. Clean sand, having a sand equivalent (SE) of 30 or greater should be used to bed and shade the utilities. Sand backfill should be densified. The densification may be accomplished by jetting or flooding and then tamping to ensure adequate compaction. A representative from LGC should observe, probe, and test the backfill to verify compliance with the project specifications.

Utility-trench sidewalls deeper than 4 feet should be laid back at a ratio of 1:1 (h:v) or flatter or braced. A trench box may be used in lieu of shoring. If shoring is anticipated, LGC should be contacted to provide design parameters.

To avoid point-loads and subsequent distress to clay, cement or plastic pipe, imported sand bedding should be placed 1-foot or more above pipe in areas where excavated trench materials contain significant cobbles. Sand-bedding materials should be compacted and tested prior to placement of backfill.

Where utility trenches are proposed parallel to building footings (interior and/or exterior trenches), the bottom of the trench should not be located within a 1:1 (h:v) plane projected downward from the outside bottom edge of the adjacent footing.

11.0 PRELIMINARY FOUNDATION DESIGN RECOMMENDATIONS

11.1 General

Provided that site grading is performed in accordance with the recommendations of this report, conventional shallow foundations are considered feasible for support of the proposed residential structures. Tentative foundation recommendations are provided herein. However, these recommendations may require modification depending on existing as-graded conditions within the building sites upon completion of grading.

11.2 Allowable-Bearing Values

An allowable-bearing value of 2,500 pounds per square foot (psf) may be used for 12-inch wide or greater continuous footings or 24-inch square pad footings, founded completely within in competent compacted fill at a depth of 12-inches or more below the lowest adjacent compacted pad grade. This value may be increased by 20 percent for each additional foot of width and depth, to a value not greater than 3,500 psf. The recommended allowable-bearing value includes both dead and live loads. The bearing capacities should be re-evaluated when loads and footing sizes have been finalized.

11.3 Settlement

Based on the general settlement characteristics of compacted fill, the previous overexcavation recommendations in this report and anticipated loading, it is estimated the site would be subjected to a total settlement about 0.50-inch, and a differential settlement of about 0.25-inch over a distance of about 30 feet. It is anticipated that the majority of the settlement will occur during construction or shortly thereafter as building loads are applied.

The above settlement estimates are based on the assumption that a actual rough grading plan will be submitted to LGC for review, that additional soil tests may be deemed necessary, that revised settlement prediction may result and that grading will be performed in accordance with the final grading recommendations presented in a supplemental report and that the project geotechnical consultant will observe and/or test the soil conditions in the footing trenches.

11.4 Lateral Resistance

Lateral forces on footings should be resisted by passive earth resistance and friction at the bottom of the footing. Foundations should be designed for a passive earth pressure of 330 psf per foot of depth to a maximum value of 3,300 psf and a coefficient of friction of 0.40. The passive earth pressure incorporates a minimum factor of safety of 1.5. The above values may be increased by 1/3 when designing for short-duration wind or seismic forces.

The above values are based on footings placed directly against compacted fill. In the case where footing sides are formed, backfill placed against the footings should be compacted to 90 percent or more of maximum dry density as determined by ASTM D1557.

11.5 Footing Setbacks from Descending Slopes

Where structures are proposed near the tops of descending graded or natural slopes, the footing setbacks from the slope face should conform to the 2016 CBC, Figure 1808.7.1. The required setback is H/3 (one-third the slope height) measured along a horizontal line projected from the lower outside face of the footing to the slope face. The footing setbacks should be 5 feet or more where the slope height is 15 feet or less and vary up to 40 feet where the slope height exceeds 15 feet.

11.6 Building Clearances from Ascending Slopes

Building setbacks from ascending graded or natural slopes should conform with the 2016 CBC, Figure 1808.7.1, which requires a building clearance of H/2 (one-half the slope height) varying from 5 to 15 feet. The building clearance is measured along a horizontal line projected from the toe of the slope to the face of the building. A retaining wall may be constructed at the base of the slope to achieve the required building clearance.

11.7 Footing Observations

Footing trenches should be observed by the project geotechnical consultant to document that they have been excavated into competent bearing compacted fill soil. The foundation trenches should be observed prior to the placement of forms, reinforcement or concrete. The trenches should be trimmed neat, level and square. Loose, sloughed or moisture-softened soil should be removed prior to concrete placement.

Excavated materials from footing excavations should not be placed in slab-on-ground areas unless the soil are compacted to 90 percent or more of maximum dry density as determined by ASTM D1557.

11.8 Expansive Soil Considerations

Results of preliminary laboratory tests by LGC indicate onsite soil materials exhibit expansion potentials of **VERY LOW** in accordance with 2016 CBC, Chapter 18. Given that generally the expansion index of the onsite soil is **VERY LOW**, recommendations to mitigate the effects of expansive soil may not be required. However, expansive soil conditions of the near surface finish grade soil should be evaluated and tested for individual building pads on a pad-by-pad basis during and at the completion of rough grading to verify and/or modify the anticipated conditions. The design and construction details presented herein are intended to provide recommendations for the levels of expansion potential which may be evident at the completion of rough grading. Furthermore, it should be noted that additional slab thickness, footing sizes and/or reinforcement more stringent than the recommendations that follow should be provided as recommended by the project structural engineer.

11.9 Footing/Floor Slabs - Very Low Expansion Potential

The following are our recommendations where foundation soil exhibit **VERY LOW** expansion potential as classified in accordance with 2016 CBC. For this condition, it is recommended that footings and floors be constructed and reinforced in accordance with the following criteria. However, additional slab thickness, footing sizes and/or reinforcement may be required by the project architect or structural engineer.

- ***Footings***
  - Exterior continuous footings should be founded entirely in compacted engineered fill below the lowest adjacent final exterior pad grade at minimum depths of 12 inches and 18 inches deep for one-story and for two-story construction, respectively. Interior continuous footings may be founded at a depth of 12 inches or greater for one-story and two-story structures. Continuous footings should have a minimum width of 12 inches for one-story and 15 inches for two-story structures.

- Continuous footings should be reinforced with a minimum of two (2) No. 4 bars, one near the top and one near the bottom.
- Interior isolated pad footings should be 24 inches or more square and founded at a depth of 12 inches or more for one-story and two-story structures and 18-inches or more for three-story and four-story structures, below the lowest adjacent grade. Footings should be reinforced in accordance with the structural engineer's recommendation.
- Exterior pad footings should be 24 inches or more square and founded at a depth of 18 inches or more below the lowest adjacent grade. Isolated exterior footings should be connected with grade beams. Footings should be reinforced in accordance with the structural engineer's recommendations.

- ***Floor Slabs***
  - Concrete floor slabs should be 4 inches or more thick and reinforced with No. 3 bars spaced 24 inches or less on-centers, both ways. Slab reinforcement should be supported on concrete chairs or bricks so that the desired placement is near mid-depth.
  - Concrete floors should be underlain with a moisture-vapor retarder consisting of 15-mil thick vapor barrier. Laps within the membrane should be sealed and overlapped 12 inches. Two inches or more of clean sand should be placed above and below the membrane to promote uniform curing of the concrete.
  - Prior to placing concrete, subgrade soil should be thoroughly moistened to approximately 100% of optimum water content to promote uniform curing of the concrete and reduce the development of shrinkage cracks. The moisture content should penetrate to a minimum depth of 12 inches.

12.0 RETAINING WALLS

12.1 Lateral Earth Pressures and Retaining Wall Design Parameters

Conventional footings for retaining walls founded entirely in properly compacted fill should be embedded at least 18 inches below lowest adjacent grade. At this depth, an allowable uniform bearing capacity of 2,500 psf may be assumed for retaining walls founded in competent compacted fill.

The following are lateral earth pressures are recommended for retaining walls up to 10 feet high that may be proposed. The recommended lateral pressures for approved on-site or import soil **(with an expansion index of 20 or less and an angle of internal friction (phi) of at least 36 degrees)** for level or sloping backfill are presented in Table 5. Onsite soil should be screened of rocks and other material over 3 inches in diameter.

TABLE 5
Lateral Earth Pressures

CONDITIONS	*EQUIVALENT FLUID WEIGHT (pcf)*			
	Level Backfill (up to 6 feet)	*Level Backfill Dynamic (>6 feet to 10 feet)*	*2:1 Backfill Ascending (up to 6 feet)*	*2:1 Backfill Ascending-Dynamic (>6 feet to 10 feet)*
Active	35	55	50	70
At-Rest	55	75	80	100
Passive	330	330	190	190

The friction coefficient of 0.40 may be used at the concrete footing and soil interface for sliding resistance. Wall footings should be designed in accordance with structural considerations.

Embedded structural walls should be designed to resist the lateral earth pressures. Restrained structural walls should be designed for at rest conditions. The magnitude of those pressures depends on the amount of deformation that the wall can yield under load. If the wall can yield enough to mobilize the full shear strength of the soil, it can be designed for "active" pressure. If the wall cannot yield under the applied load, the shear strength of the retained soil cannot be mobilized and the earth pressure will be higher. Such walls should be designed for "at-rest" conditions. If a structure moves toward the soil, the resulting resistance developed by the soil is the "passive" resistance.

The equivalent fluid pressure values assume free-draining conditions and a soil expansion index of 20 or less. If conditions other than those assumed above are anticipated, revised equivalent fluid pressure values should be provided on an individual-case basis by the geotechnical engineer.

Surcharge loading effects from the adjacent structures should be evaluated by the geotechnical and structural engineers.

12.2 Footing Embedments

The base of retaining wall footings constructed on level ground should be founded at a depth of 18 inches or more below the lowest adjacent final grade. Where retaining walls are proposed on or within 15 feet from the top of an adjacent descending fill slopes, the footings should be deepened such that a horizontal clearance of H/3 or more (one-third the slope height) is maintained between the outside bottom edges of the footings and the face of the slope but not to exceed 15 feet nor be less than 5 feet. The above recommended footing setbacks are preliminary and may be revised based on site specific soil conditions. Footing or pier excavations should be observed by the project geotechnical representative to document that the footing trenches have been excavated into competent bearing soil and to the embedments recommended above. These observations should be performed prior to placing forms or reinforcing steel.

12.3 Drainage

All retaining wall structures should be provided with appropriate wall drainage and appropriately waterproofed. Outlet pipes should be sloped to drain to a suitable outlet. It should be noted that that recommended wall drains does not provide protection against seepage through the face of the wall and/or efflorescence. If such seepage or efflorescence is undesirable, retaining walls should be waterproofed to reduce this potential.

Weep holes or open vertical masonry joints should be provided in retaining walls 3 feet or less in height to reduce the likelihood of entrapment of water in the backfill. Weep holes, if used, should be 3 inches or more in diameter and provided at intervals of 6 feet or less along the wall. Open vertical masonry joints, if used, should be provided at 32-inch or less intervals. A continuous gravel fill, 12 inches by 12 inches, should be placed behind the weep holes or open masonry joints. The gravel should be wrapped in filter fabric to reduce infiltration of fines and subsequent clogging of the gravel. Filter fabric may consist of Mirafi 140N or equivalent.

In lieu of weep holes or open joints, for retaining walls less than 3 feet, a perforated pipe and gravel subdrain may be used. Perforated pipe should consist of 4-inch or more diameter PVC Schedule 40 or ABS SDR-35, with the perforations laid down. The pipe should be embedded in 1.5 cubic feet per foot of 0.75 or 1.5-inch open graded gravel wrapped in Mirafi 140N filter fabric.

Retaining walls greater than 3 feet high should be provided with a continuous backdrain for the mean full height of the wall. This drain could consist of geosynthetic drainage composite, such as Miradrain 6000 or equivalent, or a permeable drain material, placed against the entire backside of the wall. If a permeable drain material is used, the backdrain should be 1 or more feet thick. Caltrans Class II permeable material or open graded gravel or crushed stone may be used as permeable drain material. If gravel or crushed stone is used, it should have less than 5 percent material passing the No. 200 sieve. The drain should be

separated from the backfill with a geofabric. The upper 1-foot of the backdrain should be covered with compacted fill. A drainage pipe consisting of 4-inch diameter perforated pipe (described above) surrounded by 1 cubic foot per foot of gravel or crushed rock wrapped in a filter fabric should be provided along the back of the wall. The pipe should be placed with perforations down, sloped at 2 percent or more to discharge towards an appropriate outlet through a solid pipe. The pipe should outlet away from structures and slopes. The outside portions of retaining walls supporting backfill should be coated with an approved waterproofing compound to inhibit infiltration of moisture through the walls.

12.4 Temporary Excavations

Retaining walls should be constructed and backfilled as soon as possible after backcuts are excavated. Prolonged exposure of backcut slopes may result in localized slope instability. To facilitate retaining wall construction, the lower 4 feet of temporary slopes may be cut vertical and the upper portions exceeding a height of 4 feet should be cut back at a gradient of 1:1 (h:v) or flatter for the duration of construction. Temporary slopes should be observed by the project geotechnical consultant for evidence of potential instability. Depending on the results of these observations, flatter slopes may be necessary. The potential effects of various parameters such as weather, heavy equipment travel, storage near the tops of the temporary excavations and construction scheduling should also be considered in the stability of temporary slopes. Water should not be permitted to drain towards the slope. Surcharges from equipment, spoil piles, etc., should not be allowed within 10 feet of the top of the slope.

All excavations should be made in accordance with Cal/OSHA. Excavation safety is the sole responsibility of the contractor.

12.5 Retaining Wall Backfill

The retaining wall backfill soil (with an expansion index of 20 or less and an angle of internal friction of at least 36 degree) should be placed in 6 to 8 inch loose lifts, moisture-conditioned or air-dried as necessary to achieve near optimum water conditions, and compacted to at least 90 percent relative density (based on ASTM Test Methods D2922 and D3017).

13.0 MASONRY GARDEN WALLS

13.1 Construction on Level Ground

Where masonry screen walls or garden walls are proposed on level ground and 5 feet or more from the tops of descending slopes, the footings for these walls may be founded at a depth of 18 inches or more below the lowest adjacent final grade. These footings should also be reinforced with two No. 4 bars, one top and one bottom and in accordance with the structural engineer's recommendations.

13.2 Construction Joints

In order to mitigate the potential for unsightly cracking related to the effects of differential settlement, positive separations (construction joints) should be provided in the walls at horizontal intervals of approximately 25 feet and at each corner. The separations should be provided in the blocks only and not extend through the footings. The footings should be placed monolithically with continuous rebar to serve as effective "grade beams" along the full lengths of the walls.

14.0 CONCRETE FLATWORK

14.1 Nonstructural Concrete Flatwork

Concrete flatwork (such as walkways, driveways, patios, bicycle trails, etc.) has a high potential for cracking because of changes in soil volume related to soil-moisture fluctuations. To reduce the potential for excessive cracking and lifting, concrete should be designed in accordance with the minimum guidelines outlined in Table 6. These guidelines will reduce the potential for irregular cracking and promote cracking along construction joints, but will not eliminate all cracking or lifting. Thickening the concrete and/or adding additional reinforcement will further reduce cosmetic distress.

TABLE 6
Minimun Recommendations for Nonstructural Concrete Flatwork Over Very Low Expansive Soil

	Private Sidewalks	Private Drives	Patios/ Entryways	City Sidewalk Curb and Gutters
Minimum Thickness (in.)	4 (nominal)	4(full)	4 (full)	City/Agency Standard
Presaturation	Presoak to 12 inches	Presoak to 12 inches	Presoak to 12 inches	City/Agency Standard
Reinforcement	—	No. 3 at 24 inches on centers	No. 3 at 24 inches on centers	City/Agency Standard
Thickened Edge	—	8" x 8"	8" X 8"	City/Agency Standard
Crack Control	Saw cut or deep open tool joint to a minimum of 1/3 the concrete thickness	Saw cut or deep open tool joint to a minimum of 1/3 the concrete thickness	Saw cut or deep open tool joint to a minimum of 1/3 the concrete thickness	City/Agency Standard
Maximum Joint Spacing	5 feet	10 feet or quarter cut whichever is closer	6 feet	City/Agency Standard

14.2 Joint Spacing

To reduce the potential for unsightly cracking, concrete sidewalks and patio type slabs should be provided with construction or expansion joints every 6 feet or less. Concrete driveway slabs should be provided with construction or expansion joints every 10 feet or less, with an aspect ratio of 1.2, to provide rectangular shaped joint patterns.

14.3 Subgrade Preparation

As a further measure to reduce cracking of concrete flatwork, the upper 12 inches of subgrade soil below concrete-flatwork areas should first be compacted to a relative density of 90 percent of more and then thoroughly wetted to achieve a moisture content that is equal to or slightly greater than optimum moisture content. This moisture should extend to a depth of 12 inches or more below subgrade and maintained in the soil during placement of concrete. Pre-watering of the subgrade will promote uniform curing of the concrete and reduce the potential for the development of shrinkage cracks. A representative of the project geotechnical consultant should observe and document the density and moisture content of subgrade soil and depth of moisture penetration prior to placing concrete.

15.0 PLANTERS

Area drains should be extended into planters that are located within 5 feet of building walls, foundations, retaining walls and masonry garden walls to reduce excessive infiltration of water into the underlying foundation soil. The surface of the ground in these areas should be sloped at a gradient of 2 percent or more away from the walls and foundations. Drip-irrigation systems are also recommended to reduce overwatering and subsequent saturation of the adjacent foundation soil.

16.0 SOIL CORROSIVITY

16.1 Corrosivity to Concrete and Metal

The National Association of Corrosion Engineers (NACE) defines corrosion as "a deterioration of a substance or its properties because of a reaction with its environment". From a geotechnical viewpoint, the "environment" is the prevailing foundation soil and the "substances" are the reinforced concrete foundations or various buried metallic elements such as rebar, piles, pipes, etc., which are in direct contact with or within close vicinity of the foundation soil.

In general, soil environments that are detrimental to concrete have high concentrations of soluble sulfates. ACI 318R-05, Table 4.3.1 provides specific guidelines for the concrete mix design based on different amount of soluble sulfate content. The minimum amount of chloride ions in the soil environment that are corrosive to steel, either in the form of reinforcement protected by concrete cover, or plain steel substructures such as steel pipes or piles, is 500 ppm per California Test 532 and ACI 318R-05, Table 4.4.1.

The corrosion potential of the onsite materials was evaluated for its effect on steel and concrete. The corrosion potential was evaluated using the results of laboratory tests on representative samples obtained during our field exploration. Laboratory testing was performed to evaluate pH, minimum electrical resistivity and chloride and soluble sulfate content. Based on testing performed during this investigation within the project site, the onsite soil are classified as having a negligible sulfate exposure condition in accordance with ACI 318R-05, Table 4.3.1, and negligible chloride exposure condition in accordance with ACI 318R-05, Table 4.4.1. Based on laboratory testing of on-site soil it is also our opinion that onsite soil should be considered highly corrosive to buried metals due to the low resistivity. Metal piping should be corrosion-protected or consideration should be given to using plastic piping instead of metal or plastic sleeving around the metal pipe.

Despite the minimum recommendation above, LGC is not a corrosion-engineering firm. Therefore, we recommend that you consult with a competent corrosion engineer and conduct additional testing (if required) to evaluate the actual corrosion potential of the site and to provide recommendations to reduce the corrosion potential with respect to the proposed improvements. The recommendations of the corrosion engineer may supersede the above requirements.

These recommendations are based on the current and previous samples of the subsurface soil or bedrock. The initiation of grading at the site could blend various soil types and import soil may be used locally. These changes made to the foundation soil could alter sulfate-content levels. Accordingly, it is recommended that additional testing be performed at the completion of grading.

17.0 PLAN REVIEWS AND CONSTRUCTION SERVICES

This report is a preliminary geotechnical investigation prepared for the exclusive use of **Mr. Shizao Zheng** to assist the project engineer and architect in the design of the proposed development. It is recommended that LGC be engaged to review the actual grading plans, foundation plans and final design drawings and specifications prior to construction. This is to document that the recommendations contained in this report have

been properly interpreted and/or are incorporated into the project specifications. LGC's review of such plans and those that might result from the recommended reviews may indicate that additional subsurface exploration, laboratory testing and analysis should be performed to address areas of concern. If LGC is not accorded the opportunity to review those documents, LGC cannot take responsibility for misinterpretation of our recommendations.

We recommend that LGC be retained to provide geotechnical engineering services during both the rough grading and construction phases of the work. This is to document compliance with the design, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

If the project plans change significantly (e.g., building loads or type of structures or grading), LGC should be retained to review our original design recommendations and applicability to the revised construction. If conditions are encountered during construction that appear to be different than those indicated in this report, this office should be notified immediately. Design and construction revisions may be required.

18.0 LIMITATIONS

Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by engineers and geologists practicing in this or similar localities. The professional opinions contained herein were derived in accordance with current standards of practice for preliminary reports. Other warranties, expressed or implied, are not made or implied as to the conclusions and professional advice included in this report. The soil samples taken and submitted for laboratory testing, the observations made and the in-situ field testing performed are believed representative of the entire project; however, soil and geologic conditions can vary in characteristics between excavations, both laterally and vertically and may be different than our preliminary findings. If this occurs, the changed conditions must be evaluated by the project geotechnical engineer and engineering geologist and design adjustments may be required recommended.

This report is issued with the understanding that it is the responsibility of the owner, or of his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of the project engineers and incorporated into the plans, and that necessary steps are taken to assure that the contractor and/or subcontractor properly implements the recommendations in the field during construction. The contractor and/or subcontractor should notify the owner if they consider any of the recommendations presented herein to be unsafe.

The conclusions and opinions contained in this report are based on the results of our scope of work and represent our professional judgment. The findings, conclusions and recommendations presented in this report are to be considered preliminary only and subject to confirmation by LGC during the construction process. Without this confirmation, this report is to be considered incomplete; and LGC will not assume any responsibility for its use.

The conclusions and opinions contained in this report are valid up to a period of 2 years from the date of this report. Changes in the conditions of a property can and do occur with the passage of time, whether those be because of natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate codes or standards may occur, whether those result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside LGC's control. Therefore, pending such changes made or if the scope of this project changes, an update of this report should be completed.

This report was not prepared for use by parties or projects other than those named or designed above and is otherwise considered insufficient for other parties or other purposes.

APPENDIX A

REFERENCES AND AERIAL PHOTOGRAPHS

APPENDIX A

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SOURCE	FLIGHT DATE
Google Earth Pro.	2/2018
Google Earth Pro.	3/2017
Google Earth Pro.	10/2016
Google Earth Pro.	2/2016
Google Earth Pro.	4/2014
Google Earth Pro.	11/2013
Google Earth Pro.	11/2012
Google Earth Pro.	6/2012
Google Earth Pro.	3/2011
Google Earth Pro.	11/2009
Google Earth Pro.	6/2009
Google Earth Pro.	6/2008
Google Earth Pro.	12/2006
Google Earth Pro.	8/2006
Google Earth Pro.	1/2006
Google Earth Pro.	12/2005
Google Earth Pro.	10/2005
Google Earth Pro.	12/2004
Google Earth Pro.	1/2004
Google Earth Pro.	12/2003
Google Earth Pro.	11/2003
Google Earth Pro.	12/2002
Google Earth Pro.	6/2002
Google Earth Pro.	6/1994

APPENDIX B

EXPLORATORY TRENCH LOGS

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH IT-1
Project Number: G18-1648-10	Elevation: 1594'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/4/18 Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-2.0'	A ARTIFICIAL FILL, UNDOCUMENTED: Silty SAND/Clayey SILT; dark reddish brown to blackish brown, dry to damp, medium dense/firm, very fine to medium grained with some coarse to very coarse grains, coarse to very coarse rock fragments, some pores, roothairs, desiccated, oxidation staining	Afu	SM/ML	Bulk @ 0'-2.0' Nuke @1.0'	4.3	107.5
2.0'-5.0'	B OLDER ALLUVIAL FAN DEPOSITS: Silty SAND; greenish gray and reddish brown, dry, very dense, very fine to medium grained, with some coarse grains, pinhole pores, roothairs, stopped digging at 5.0 feet due to practical refusal	Qoa	SM			

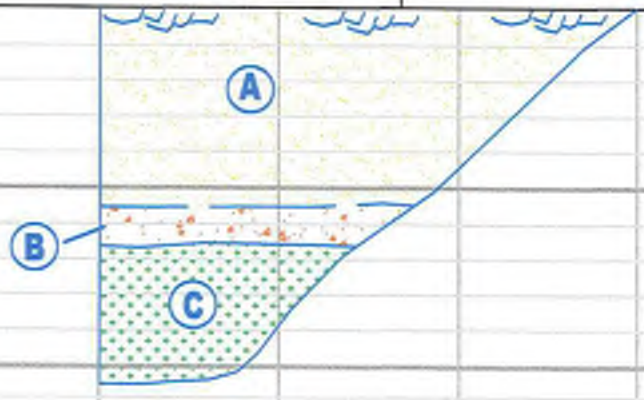
GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N19E

TOTAL DEPTH= 5.0 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH IT-2
Project Number: G18-1648-10	Elevation: 1592'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/4/18 Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-5.5'	A ARTIFICIAL FILL, UNDOCUMENTED: Silty SAND/Clayey SILT; dark reddish brown to blackish brown, dry to damp, medium dense, very fine to medium grained with some coarse to very coarse grains, coarse to very coarse rock fragments, some pores, roothairs, desiccated, pieces of concrete	Afu	SM/ML			
5.5'-6.5'	B OLDER ALLUVIAL FAN DEPOSITS: Silty SAND; greenish gray and reddish brown, dry, very dense, very fine to medium grained, with some coarse grains, pinhole pores, roothairs, oxidation staining	Qoa	SM			
6.5'-10.5'	C BEDROCK (TONALITE): Quartz diorite, grayish white, dry, hard to very hard, oxidation staining @10.0'; some moderately weathered sections at one bottom of trench	Kqdi				

GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N65E



TOTAL DEPTH=10.5 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-1
Project Number: G18-1648-10	Elevation: 1638'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/4/18 Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-2.0'	A Alluvium: Silty SAND; light reddish brown to gray brown, dry, loose, very fine to medium grained with some coarse grains, desiccated, roothairs and roots, pinhole pores and pores	Qal	SM			
2.0'-4.5'	B BEDROCK (TONALITE): Quartz Diorite, grayish white to blackish orange, dry to damp, moderately hard to hard, fine to very coarse grained, oxidation staining, moderately to very weathered, friable @3.0' moderately weathered	Kqd				

GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N30E

TOTAL DEPTH= 4.5 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-2
Project Number: G18-1648-10	Elevation: 1640'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/4/18 Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-7.0'	A ALLUVIUM: Silty SAND; dark reddish brown,dry to damp, loose to medium dense, very fine to medium grained with some coarse grains, occasional coarse rock fragments, pores, roothairs @2.0'; medium dense, desiccated	Qal	SM	Bulk @ 5.0'-7.0'		
7.0'-8.0'	B BEDROCK (TONALITE): Quartz Diorite, yellowish gray to blackish orange, dry to damp, hard, fine to very coarse grained, oxidation staining, manganese staining, slightly to moderately weathered, friable	Kqd				

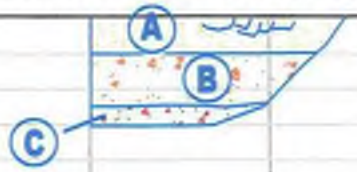
GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N28W

TOTAL DEPTH= 8.0 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-3
Project Number: G18-1648-10	Elevation: 1612'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/4/18	Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-1.0'	A	TOPSOIL: Silty SAND; light reddish brown to gray brown, dry, loose, very fine to medium grained with some coarse and very coarse grains, desiccated, roothairs and roots, pores		SM			
1.0'-2.5'	B	OLDER ALLUVIUM FAN DEPOSITS: Silty SAND; dark reddish brown, dry to damp, medium dense, very fine to coarse grained, clayey matrix, pores, root hairs, weathered	Qoa	SM			
2.5'-3.0'	C	Silty SAND; olive gray to dark reddish purple, dry to damp, very dense, very fine to coarse grained, with some very coarse grains, caliche stringers and coating, pores and pinhole pores, roothairs @ 3.0', stopped digging pratical refusal		SM			

GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N60E

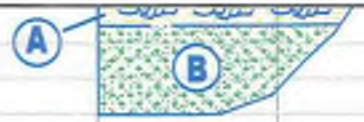


TOTAL DEPTH= 3.0 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-4
Project Number: G18-1648-10	Elevation: 1608'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/4/18	Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-0.5'	A	TOPSOIL: Silty SAND; reddish brown, loose, dry, very fine to medium grained with some coarse and very coarse grains, roots and roothairs, pores, desiccated		SM			
0.5'-4.5'	B	BEDROCK (TONALITE): Quartz Diorite, grayish white to blackish orange, dry to damp, moderately hard to hard, fine to very coarse grained, oxidation staining, very weathered, friable @ 2.0', moderately weathered	Kqd		Bulk @ 2.0'-4.5'		

GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N43E

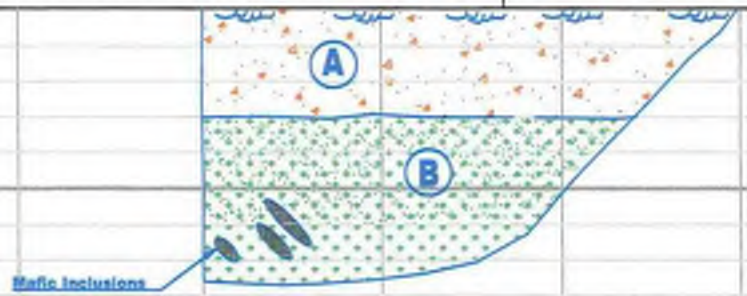


TOTAL DEPTH= 3.0 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-5
Project Number: G18-1648-10	Elevation: 1690'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/6/18	Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-1.5'	A	OLDER ALLUVIUM FAN DEPOSITS Silty SAND; dark reddish purple to dark red brown, dry, loose to medium dense, very fine to medium grained, with occasional coarse grains, pores and pinhole pores, roots and roothairs, oxidation staining, weathered, blocky	Qoa	SM	Bulk @ 0.0'-2.0'		
1.5'-3.0'	B	Silty SAND; reddish orange to light orange brown, dry, dense to very dense, very fine to medium grained with some coarse to very coarse grains, pinhole pores, roothairs, trace manganese staining					
3.0'-7.5'	C	BEDROCK (TONALITE): Quartz Diorite; grayish white to blackish orange, dry to damp, moderately hard to hard, fine to very coarse grained, oxidation staining, manganese staining, moderately weathered, friable @6.0'; slightly weathered, hard to very hard, practical refusal at 7.5'	Kqd				

GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N12W

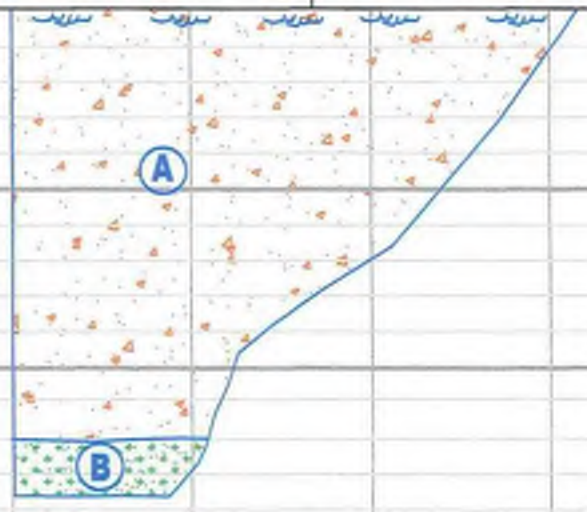


TOTAL DEPTH= 7.5 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-6
Project Number: G18-1648-10	Elevation: 1672'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/6/18 Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-6.0'	A OLDER ALLUVIUM FAN DEPOSITS: Silty SAND; dark brown to reddish brown, dry to damp, loose to medium dense, very fine to medium grained, with some coarse and very coarse grains, occasional coarse rock fragments, desiccated, pores, roots and roothairs, oxidation staining @3.0'; medium dense, trace rock fragments, caliche stringers and coating	Qoa	SM	Bulk @ 2.0'-6.0' Nuke @ 2.0'	2.6	106.2
6.0'-12.0'	B Silty SAND; reddish brown, dry, medium dense to dense, very fine to medium grained, with occasional coarse and very coarse grains, trace rock fragments, desiccated, pores, roots and roothairs, caliche stringers and coating		SM			
12.0'-13.5'	C BEDROCK (TONALITE): Quartz Diorite, blackish orange to yellow brown, dry to damp, hard, fine to very coarse grains, friable, oxidation staining, moderately weathered	Kqd				

GRAPHICAL REPRESENTATION: NORTH WALL | SCALE: 1" = 5' | SURFACE SLOPE: LEVEL | TREND: N4E



TOTAL DEPTH=13.5 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-7
Project Number: G18-1648-10	Elevation: 1624'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/6/18 Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-2.0'	A TOPSOIL: Silty SAND; reddish brown, dry to damp, medium dense, very fine to medium grained, with some coarse and very coarse grains, desiccated, pores, roothairs	Qoa	SM			
2.0'-4.5'	B WEATHERED BEDROCK (TONALITE): Well Grade GRAVEL; blackish orange to gray white, damp, moderately hard, fine to very coarse grained, highly weathered, oxidation staining, friable @3.0'; dry, very hard, slightly weathered @4.5', stopping digging practical refusal	Qdi	SM			

GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N13E

TOTAL DEPTH= 4.5 FEET
NO GROUNDWATER ENCOUNTERED

Project Name: SIKAND - MORENO VALLEY	Logged by: AJR	LOG OF TRENCH TR-8
Project Number: G18-1648-10	Elevation: 1612'	Engineering Properties
Equipment: BACKHOE	Location/Grid: SEE PLATE 1	

Depth	Date: 9/8/18 — Description:	Geologic Unit	USCS	Sample No.	Moisture (%)	Dry Density (pcf)
0.0'-2.0'	A TOPSOIL: Silty SAND; light reddish brown to gray brown, dry, loose, very fine to medium grained with some coarse and very coarse grains, desiccated, roothairs and roots, pores		SM			
2.0'-3.0'	B OLDER ALLUVIUM FAN DEPOSITS: Silty SAND; dark reddish purple to olive gray, dry to damp, dense to very dense, very fine to coarse grained, clayey matrix, pores, root hairs, caliche stringers and coating, weathered	Qoa	SM	Nuke @ 2.5'	5.8	105.7
3.0'-7.0'	C Silty SAND/Clayey SILT; dark brown to olive brown, damp, dense to very dense, very fine to medium grained with some coarse grains, occasional coarse and very coarse rock fragments, clayey matrix, oxidation staining, difficulty digging		SM/ML	Bulk @ 4.0'-6.0' Nuke @7.0'	8.3	117.8

GRAPHICAL REPRESENTATION: NORTH WALL	SCALE: 1" = 5'	SURFACE SLOPE: LEVEL	TREND: N62E

TOTAL DEPTH= 7.0 FEET
NO GROUNDWATER ENCOUNTERED

APPENDIX B

Field Exploration

B-1 General

Geologic mapping of the site was performed by LGC's personnel. The locations of the exploratory excavations were chosen to obtain site and trench specific subsurface information needed to achieve the objective for this investigation.

A visual survey was conducted to verify that the proposed excavations would not encounter any subsurface utility lines. Underground utilities were not encountered during the field exploratory program.

B-2 Excavation and Sampling

Surface geologic mapping of the site and accessible surrounding areas was completed by a geologist from this firm during September 2018, utilizing the referenced Conceptual Grading Plan Tract Map No. 37557 for plotting geologic units. This information is plotted on the enclosed Geotechnical Map (Plate 1).

Ten (10) exploratory trenches, TR-1 through TR-8 and IT-1 through IT-2, were excavated with a backhoe on September 4, 2018 and September 6, 2018 to depths of approximately 3.0 to 13.5 feet below the existing ground surface. The trenches were excavated to evaluate the general characteristics of the subsurface geologic/geotechnical conditions at the subject site, which consisted of classification of site soil, determination of groundwater elevations (if present), and collection of representative soil and bedrock samples.

Prior to our subsurface work, an underground utilities clearance was obtained from Underground Service Alert of Southern California. At the conclusion of the subsurface investigation, test pits were backfilled with native materials. Minor settlement of the backfill soil may occur over time.

During our subsurface investigation, representative bulk samples were retained for laboratory testing. Laboratory testing was performed on selected representative samples of onsite soil and/or bedrock materials and included maximum dry density and optimum water content, expansion index, sulfate content, chloride content, pH, resistivity, grain size analysis, and direct shear. A discussion of the tests performed and a summary of the results are presented in Appendix C. Moisture and density test results are presented on the trench logs which are presented on the following pages.

B-3 Miscellaneous

The trench logs describe the earth materials encountered, sampling method used, and the results of field and laboratory tests. The logs also show the test pit number, date of completion, and the name of the logger. A geologist logged the trenches in accordance with the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) ASTM D2488-93. The boundaries between soil types shown on the logs are approximate and the transition between different soil layers may be gradual. The logs of the trenches are presented on the following pages.

APPENDIX C

LABORATORY TESTING PROCEDURES AND TEST RESULTS

APPENDIX C

Laboratory Testing Procedures and Test Results

The laboratory testing program was directed towards providing quantitative data relating to the relevant engineering properties of the soil. Samples considered representative of site conditions were tested in general accordance with American Society for Testing and Materials (ASTM) procedure and/or California Test Methods (CTM), where applicable. The following summary is a brief outline of the test type and a table summarizing the test results.

Soil Classification: Soil were classified according the Unified Soil Classification System (USCS) in accordance with ASTM Test Methods D2487 and D2488. The soil classifications (or group symbol) are shown on the laboratory test data, and boring logs.

Maximum Dry Density Tests: The maximum dry density and optimum water content of typical materials were determined in accordance with ASTM test method D1557. The test results are presented in the table below:

SAMPLE LOCATION	SAMPLE DESCRIPTION (USCS)	MAXIMUM DRY DENSITY (% by weight)	OPTIMUM WATER CONTENT (%)
IT-1 @ 0-2'	Silty SAND/Clayey SILT (SM/ML)	135.9	7.0
TR-4 @ 2-4'	Bedrock; Quartz Diorite	133.2	7.0
TR-8 @ 4-6'	Silty SAND/Clayey SILT (SM/ML)	128.3	9.0

Expansion Index: The expansion potential of a selected sample was evaluated by the Expansion Index Test, U.B.C. Standard No. 18-2 and/or ASTM test method D4829. Specimens are molded under a given compactive energy at or near the optimum moisture content and approximately 50 percent saturation or approximately 90 percent relative compaction. The prepared 1-inch thick by 4-inch diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with tap water until volumetric equilibrium is reached. The results of these tests are presented in the table below:

SAMPLE LOCATION	*SAMPLE DESCRIPTION* (USCS)	*EXPANSION INDEX*	*EXPANSION POTENTIAL**
TR-8 @ 4-6'	Silty SAND/Clayey SILT (SM/ML)	19	Very Low

*Per ASTM D4829

Soluble Sulfates: The soluble sulfate content of selected samples was determined by standard geotechnical methods (CTM 417). The soluble sulfate content is used to determine the appropriate cement type and maximum water-cement ratios. The test results are presented in the table below:

SAMPLE LOCATION	*SAMPLE DESCRIPTION* (USCS)	*SULFATE CONTENT (ppm)*	*SULFATE EXPOSURE**
TR-8 @ 4-6'	Silty SAND/Clayey SILT (SM/ML)	Non-Detect	Negligible

*Per ACI 318R-05 Table 4.3.1

Chloride Content: Chloride content was tested with CTM 422. The results are presented below:

SAMPLE LOCATION	*SAMPLE DESCRIPTION* (USCS)	*CHLORIDE CONTENT (ppm)*
TR-8 @ 4-6'	Silty SAND/Clayey SILT (SM/ML)	128

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed with CTM 643. The results are presented in the table below:

SAMPLE LOCATION	SAMPLE DESCRIPTION (USCS)	pH	MINIMUM RESISTIVITY (ohm-cm)
TR-8 @ 4-6'	Silty SAND/Clayey SILT (SM/ML)	7.5	1,100

Direct Shear: Direct shear tests were performed on selected remolded samples, which were soaked for a minimum of 24 hours under a surcharge equal to the applied normal force during testing. After transfer of the sample to the shear box, and reloading the sample, pore pressures set up in the sample due to the transfer were allowed to dissipate for a period of approximately 1 hour prior to application of shearing force. The samples were tested under various normal loads, a motor-driven, strain-controlled, direct-shear testing apparatus at a strain rate of less than 0.001 to 0.5 inch per minute (depending upon the soil type). The graphical test results are presented in the table below:

SAMPLE LOCATION	SAMPLE DESCRIPTION	ANGLE OF INTERNAL FRICTION (degrees)	COHESION (psf)
TR-8 @ 4-6'	Silty SAND/Clayey SILT (SM/ML)	36	20

APPENDIX D

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

APPENDIX D

General Earthwork and Grading Specifications

1.0 General

1.1 Intent: These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record: Prior to commencement of work, the owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to confirm that the attained level of compaction is being accomplished as specified. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor: The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the project plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "equipment" of work and the estimated quantities of daily earthwork contemplated for the site prior to commencement of grading.

The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory

conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified. It is the contractor's sole responsibility to provide proper fill compaction.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing: Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 10 percent of organic matter. Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed. The contractor is responsible for all hazardous waste relating to his work. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Client should acquire the services of a qualified environmental assessor.

2.2 Processing: Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be overexcavated as specified in the following section. Scarification shall continue until soil are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Overexcavation: In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be overexcavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching: Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas: All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General: Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soil of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soil to achieve satisfactory fill material.

3.2 Oversize: Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import: If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers: Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning: Fill soil shall be watered, dried back, blended, and/or mixed, as necessary to attain relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557-91).

4.3 Compaction of Fill: After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557-91). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes: In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557-91.

4.5 Compaction Testing: Field tests for moisture content and relative compaction of the fill soil shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing: Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soil embankment. In addition, as a

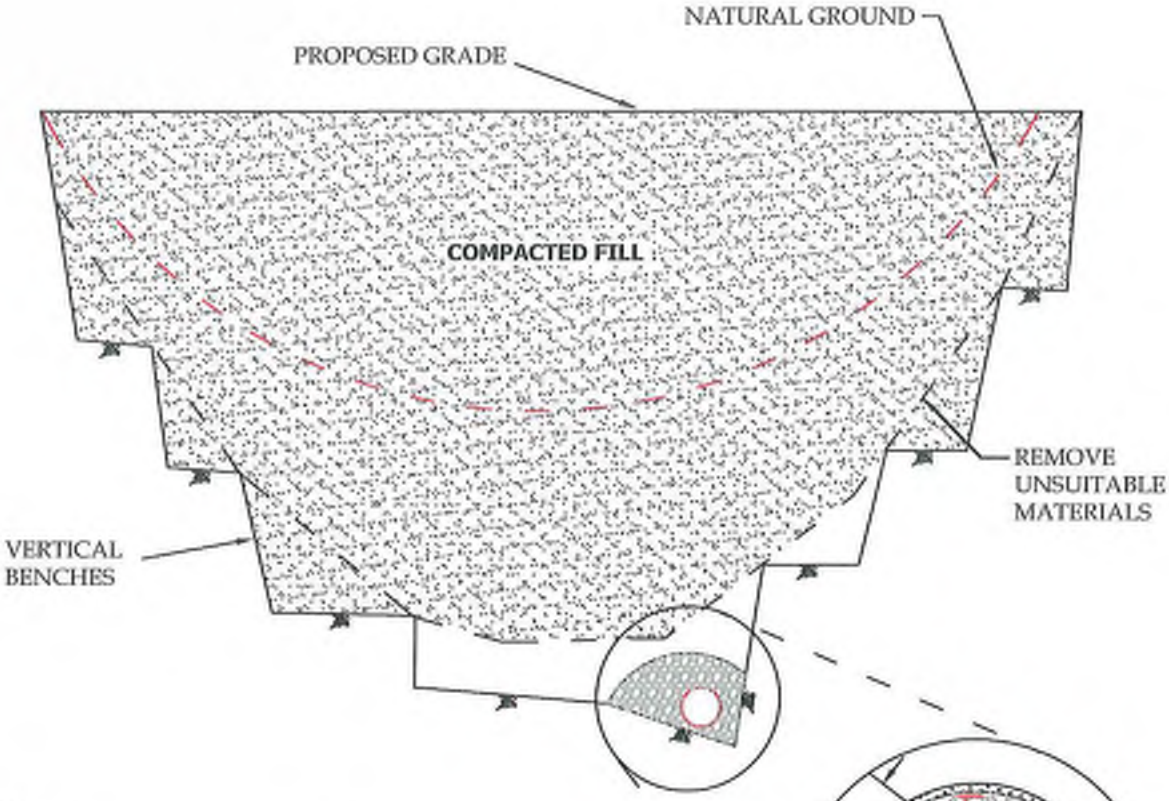
guideline, at least one (1) test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations:

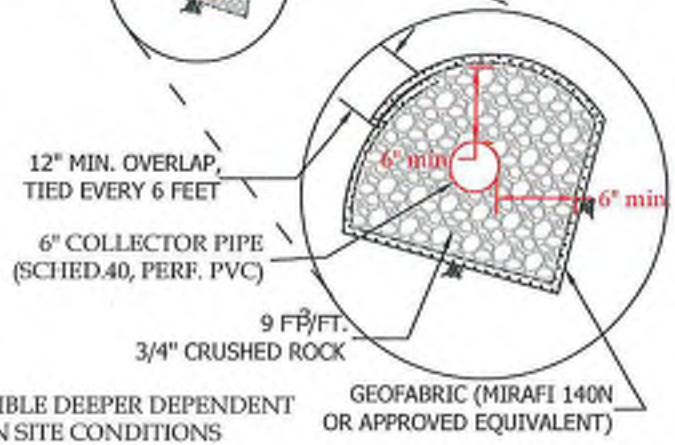
The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two (2) grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

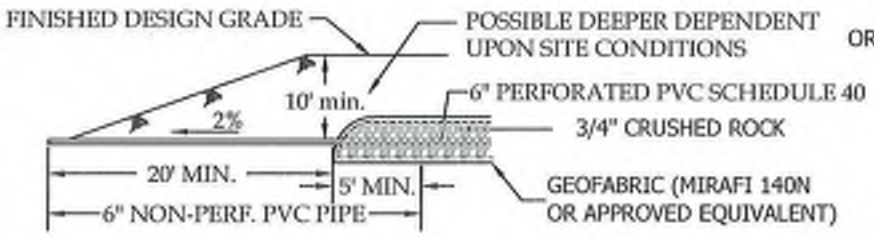
Subdrain systems shall be installed in accordance with the approved geotechnical report(s) and grading plan. The Geotechnical Consultant may recommend additional subdrain and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.



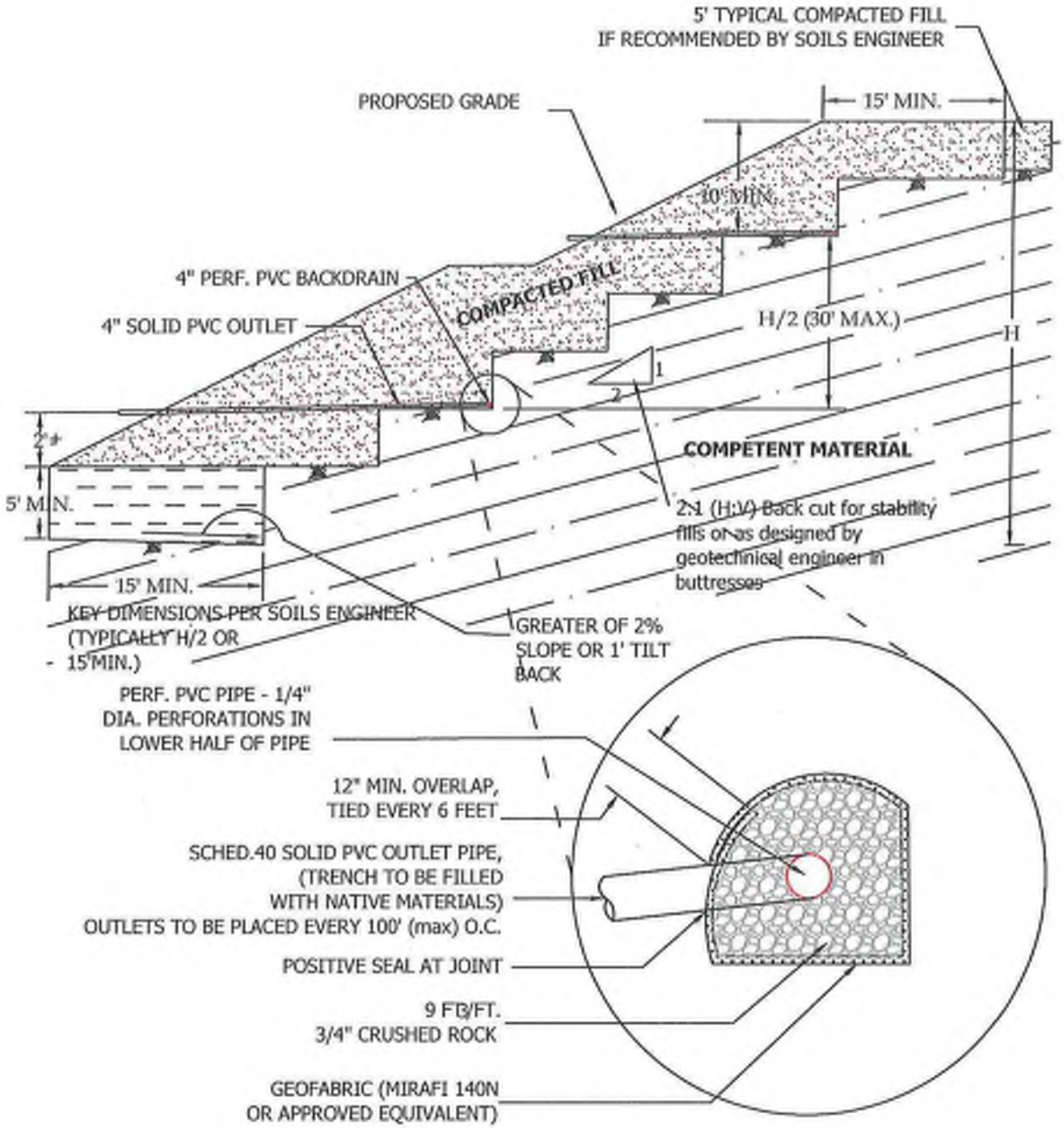
Notes:
1) Continuous runs in excess of 500' shall use 8" diameter pipe.
2) Final 20' of pipe at outlet shall be non-perforated and backfilled with fine-grained material.



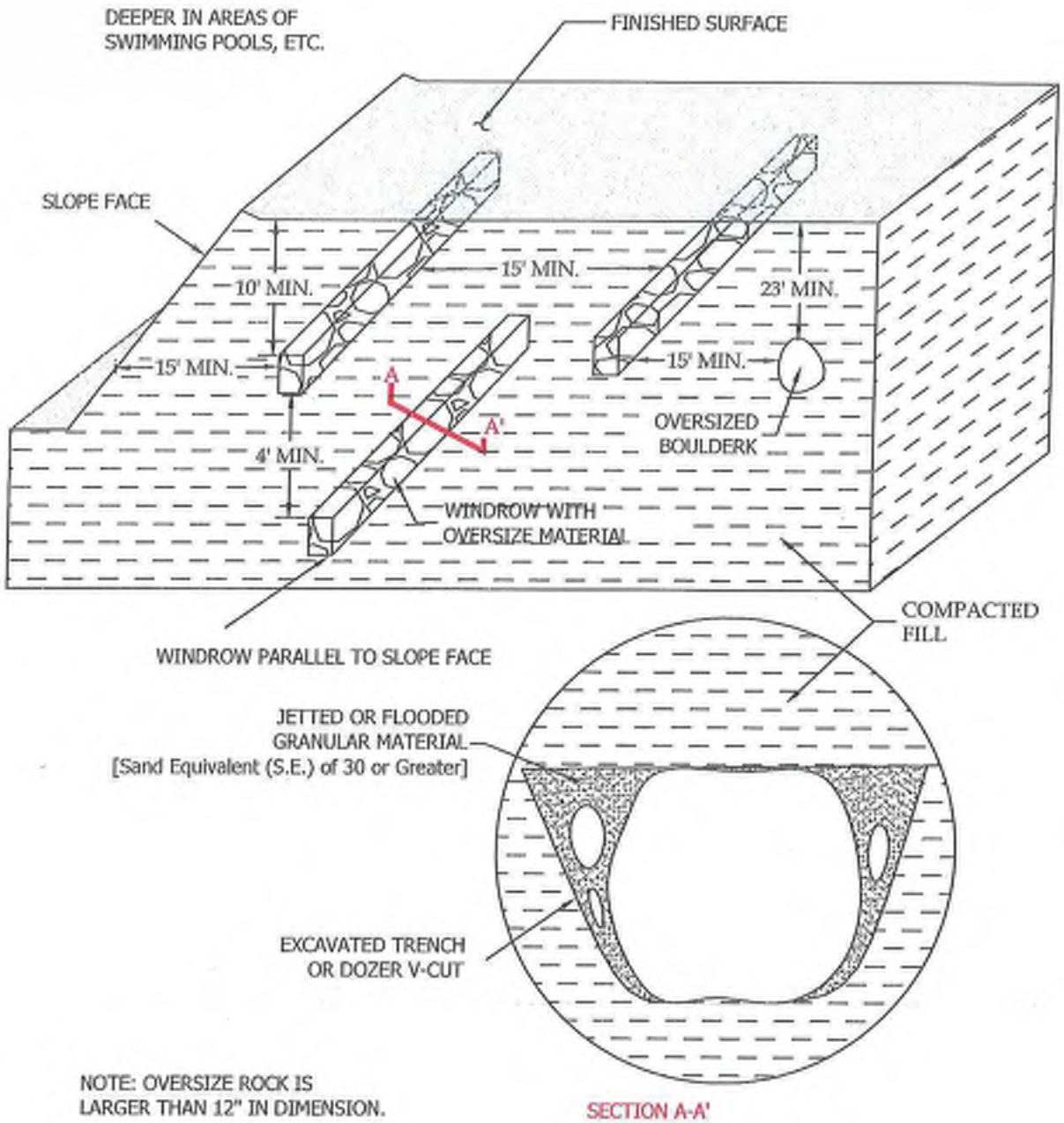
OUTLET DETAIL



CANYON & STREET SUBDRAINS



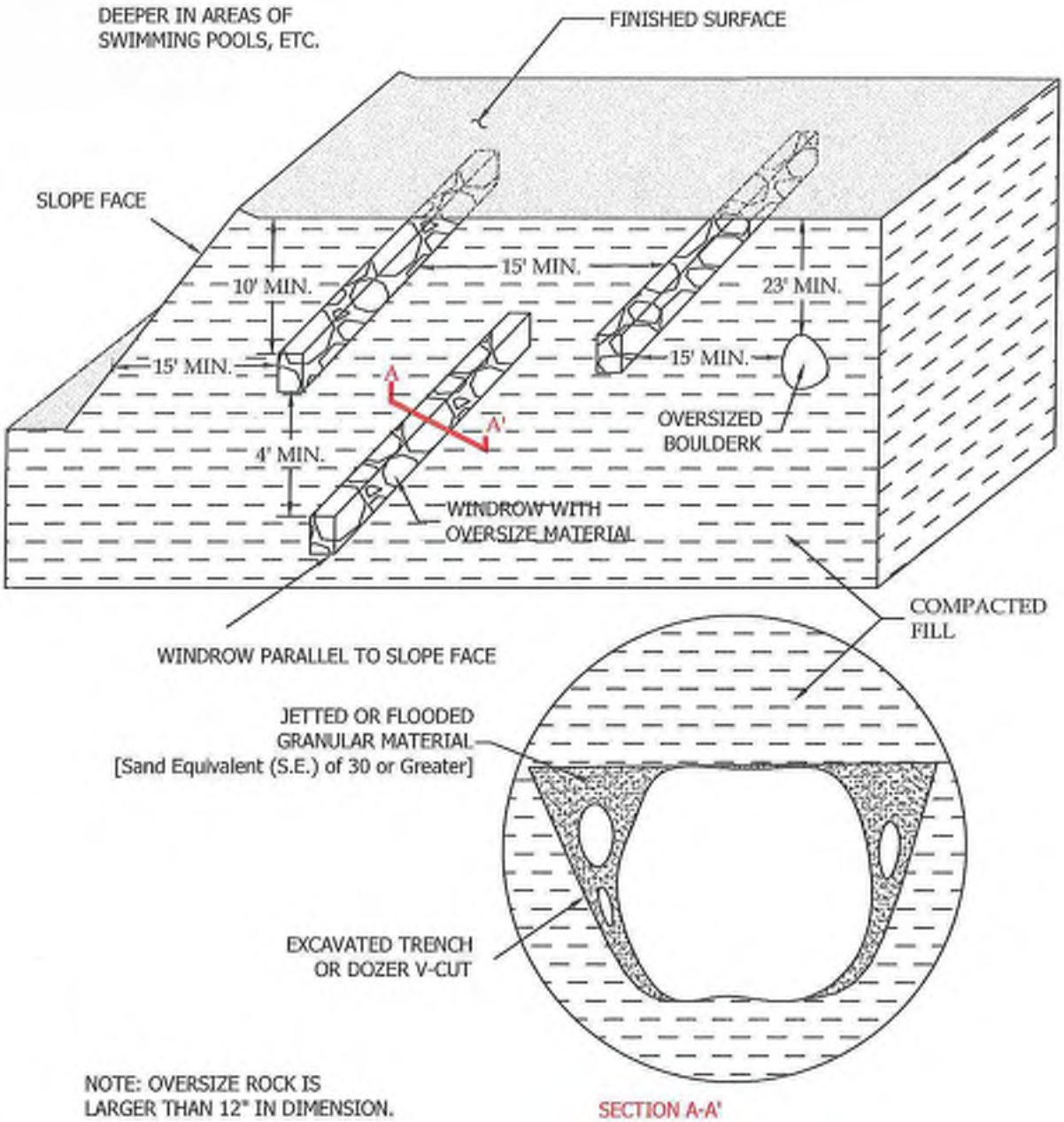
TYPICAL BUTTRESS/ STABILIZATION FILL DETAIL



NOTE: OVERSIZE ROCK IS
LARGER THAN 12" IN DIMENSION.

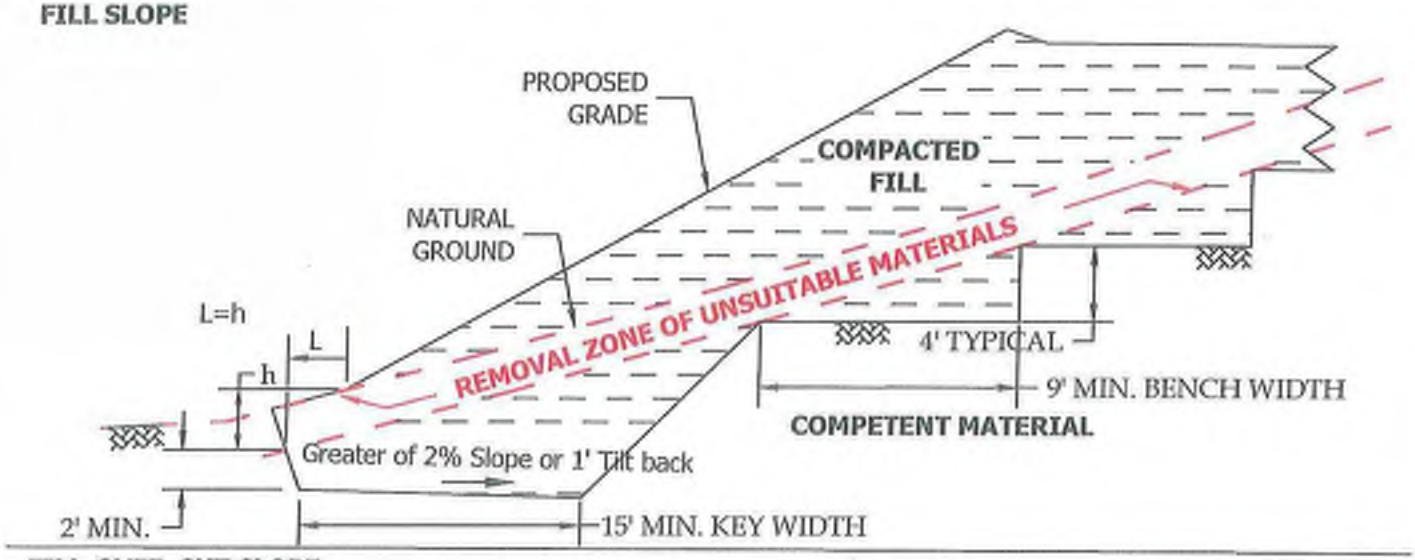
SECTION A-A'

OVERSIZE ROCK DISPOSAL

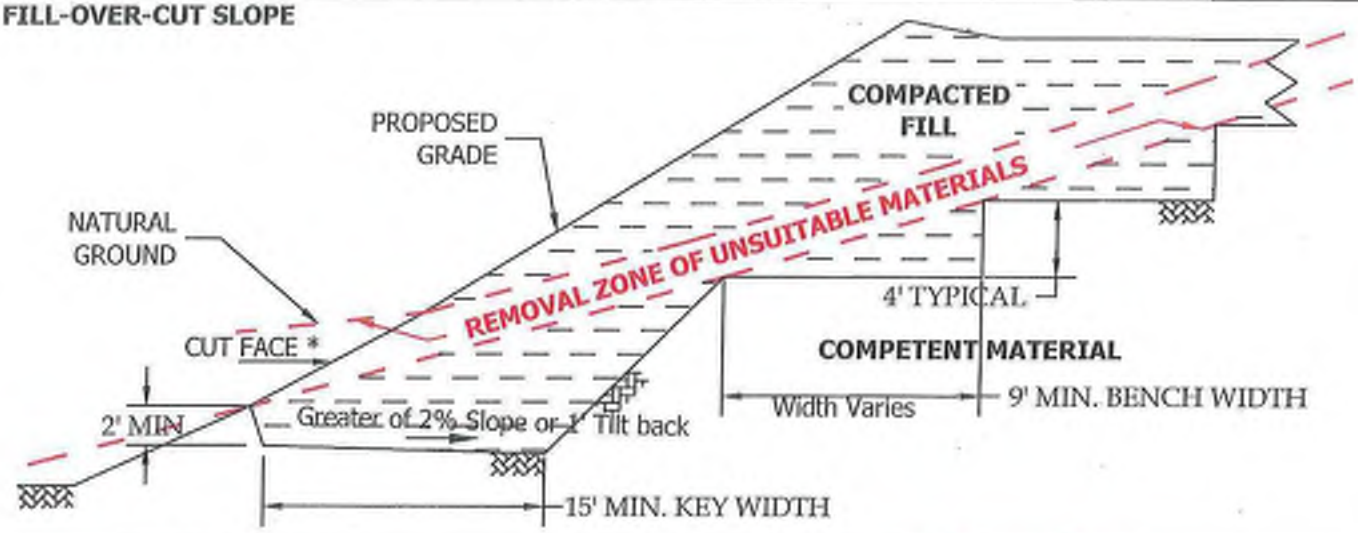


OVERSIZE ROCK DISPOSAL

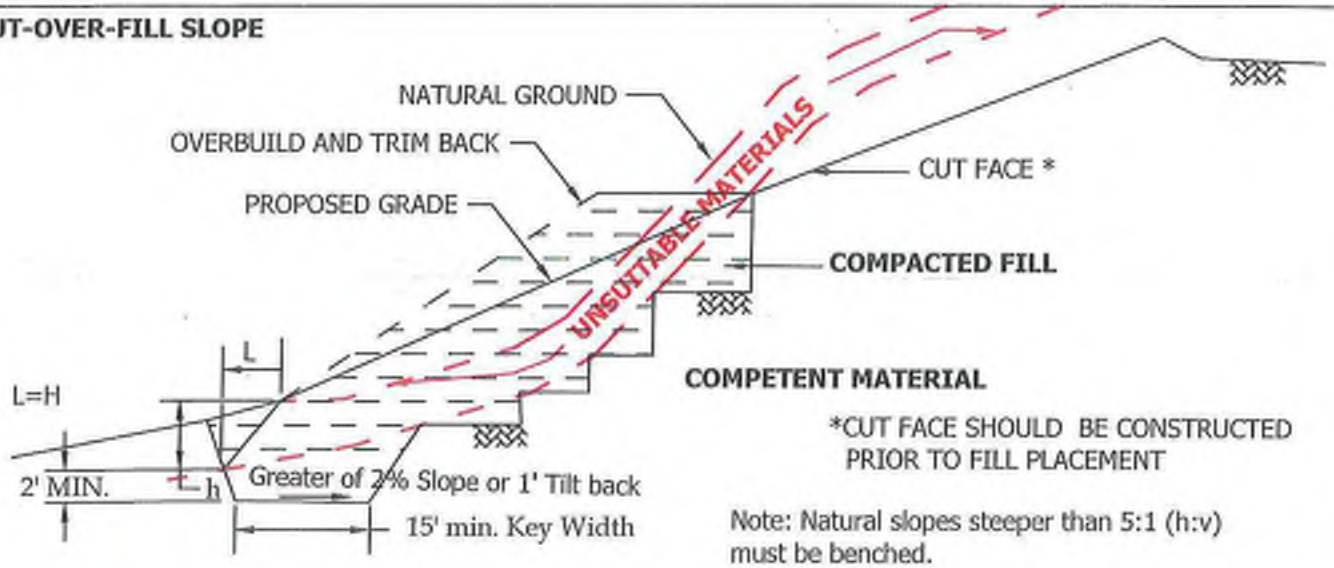
FILL SLOPE



FILL-OVER-CUT SLOPE



CUT-OVER-FILL SLOPE



*CUT FACE SHOULD BE CONSTRUCTED PRIOR TO FILL PLACEMENT

Note: Natural slopes steeper than 5:1 (h:v) must be benched.

KEYING AND BENCHING

Appendix F

Slope Stability Report

DGS

DYNAMIC GEOTECHNICAL SOLUTIONS

Geotechnical • Environmental • Materials Testing

GLOBAL STABILTIY ANALYSIS OF PROPOSED CUT AND FILL SLOPES, RELATIVE TO PROPOSED GATEWAY HEIGHTS, 108 CLUSTER UNIT DEVELOPMENT, CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, CALIFORNIA.

Dated: June 15, 2021
Project No. D21-1029-10

Prepared For:

Mr. Beau Cooper
United Engineering Group
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Rancho Cucamonga, California 91730

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Phone: (951) 297-2450 • Fax: (951) 719-2998

DGS DYNAMIC GEOTECHNICAL SOLUTIONS
Geotechnical • Environmental • Materials Testing

June 15, 2021 Project No. D21-1029-10

Mr. Beau Cooper
United Engineering Group
8885 Haven Ave, STE 195
Rancho Cucamonga, California 91730

Subject: ***Global Stability Analysis of Proposed Cut and Fill Slopes, Relative to Proposed Gateway Heights, 108 Cluster Unit Development, City of Moreno Valley, County of Riverside, California.***

1.0 Introduction

Dynamic Geotechnical Solutions, Inc. (DGS) is pleased to submit herewith our slope global stability report for the proposed cut and fill slopes, relative to proposed Gateway Heights, 108 Cluster Unit Development, City of Moreno Valley, County of Riverside, California. This report presents the results of our global stability analyses, conclusions, and recommendations pertaining to the proposed cut and fill slopes within the proposed residential development.

2.0 Background

There are proposed cut slopes and fills slopes, per the referenced conceptual grading plans by United Engineering Group, which have proposed maximum heights of 32 feet and 39 feet above grade. The most critical cut and fill slopes were evaluated during DGS's global stability analysis.

3.0 Laboratory Analysis

No additional laboratory testing was conducted for the global stability analysis. Parameters used in evaluating global stability for the subject cut and fill slopes were derived from previous laboratory testing presented in the referenced report by LGC Geo-Environmental (Appendix A).

4.0 Global Stability Analysis

A global stability analysis was performed for the cut slope above lots 10-12 and the fill slope below lots 4-5. The slopes were modeled in the depicted location per sheet 2 of the referenced conceptual grading plans. The global stability analysis was performed under static and pseudo-static conditions, as presented in Appendix B.

4.1 Static Condition

Static conditions that were modeled during the global stability analysis were intended to simulate the day-to-day functionality of the proposed graded slopes. These conditions do not incorporate earthquake loading into the analysis. Previous shear strength and cohesion values obtained from the referenced reports (Appendix A) were used in the global stability analysis.

4.2 Pseudo-Static Condition

Pseudo-static conditions attempt to model the proposed graded slopes when earthquake loads are imposed on the slope face. All pseudo-static conditions were modeled with an earthquake acceleration coefficient of 0.15 g. Previous shear strength and apparent cohesion values were used in the global stability analysis.

5.0 Results and Conclusions

Based on our slope global stability analyses, the proposed orientations, per the referenced conceptual grading plans, for proposed cut and fill slopes produce a minimum required factor of safety of 1.5 under static conditions, and a 1.15 factor of safety under pseudo-static (earthquake loading) conditions. Therefore, the proposed graded slopes are considered to be stable from a geotechnical engineering standpoint, provided the recommendations presented herein and the referenced geotechnical report are implemented.

6.0 Recommendations

All engineered graded slopes should be landscaped to prevent erosion over time of the slope face. During rough grading and composite wall installation, a geologist from LGC should be onsite to ensure that any adverse slope conditions do not arise, inspect fill slope keys, and to give in-field recommendations, as necessary. Additionally, all recommendations per the referenced conceptual grading plans and referenced report should be adhered to.

DGS should review any changes in the design prior to implementation to determine if future construction will conform to these report recommendations and the previous recommendations in the referenced geotechnical report.

7.0 Limitations

Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report. The findings of this report are valid as of the present date. However, changes in the conditions of a property can and do occur with the passage of time, whether they be due to natural processes or the works of man, on this or adjacent properties.

Closure

If you have any questions regarding the content of this report, please do not hesitate to contact this office at your earliest convenience.

Sincerely,

DYNAMIC GEOTECHNICAL SOLUTIONS, INC.

Robert Sargent, RCE 92011
President/Civil Engineer

RS

Distribution: (4) Addressee

Attachments: Appendix A – References *(Rear of Text)*
Appendix B – Global Stability Analysis and Results *(Rear of Text)*
Plate 1 – Global Stability Cross Sections Location Map

APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

LGC Geo-Environmental, Inc., "Preliminary Geotechnical Investigation for the Proposed Single-Family Residential Development, Tentative Tract Map 37557, City of Moreno Valley, Riverside County, California," dated September 22, 2018 (Project No. G18-1648-10).

Conceptual Grading Plan (Preliminary) Sheet 5 of 7, Tract 37153, Riverside, California, Scale: 1 inch = 40 feet dated November 30, 2018.

APPENDIX B

GLOBAL STABILITY ANALYSIS AND RESULTS

APPENDIX B

GLOBAL STABILITY ANALYSIS AND RESULTS

1.0 Approach

After a review of the referenced plans and reports, the two proposed segmental walls, labeled as Wall C and Wall E, were evaluated for the global stability analysis. The global stability analysis was conducted using the geotechnical program GSTABL7 with STEDwin (Version 2.002). The Modified Bishop's Method was used to analyze rotational failure modes. The slope face, segmental walls, and any the conditions above the segmental walls were modeled in GSTABL7 as per the referenced plans. Two separate conditions were modeled and evaluated in GSTABL7; a static condition in which there are no earthquake loads applied, and a pseudo-static condition, in which earthquake loads are applied to the model. A coefficient of horizontal acceleration of 0.15g was used for the pseudo-static stability analysis. Additionally, all the conditions were evaluated without the proposed wall grids in place. If the proposed design meets or exceeds the minimum factors of safety (F.S.) without the grids modeled, then the design F.S. will be much greater.

2.0 Results

Table 1
Preliminary Design Global Stability Analysis Summary

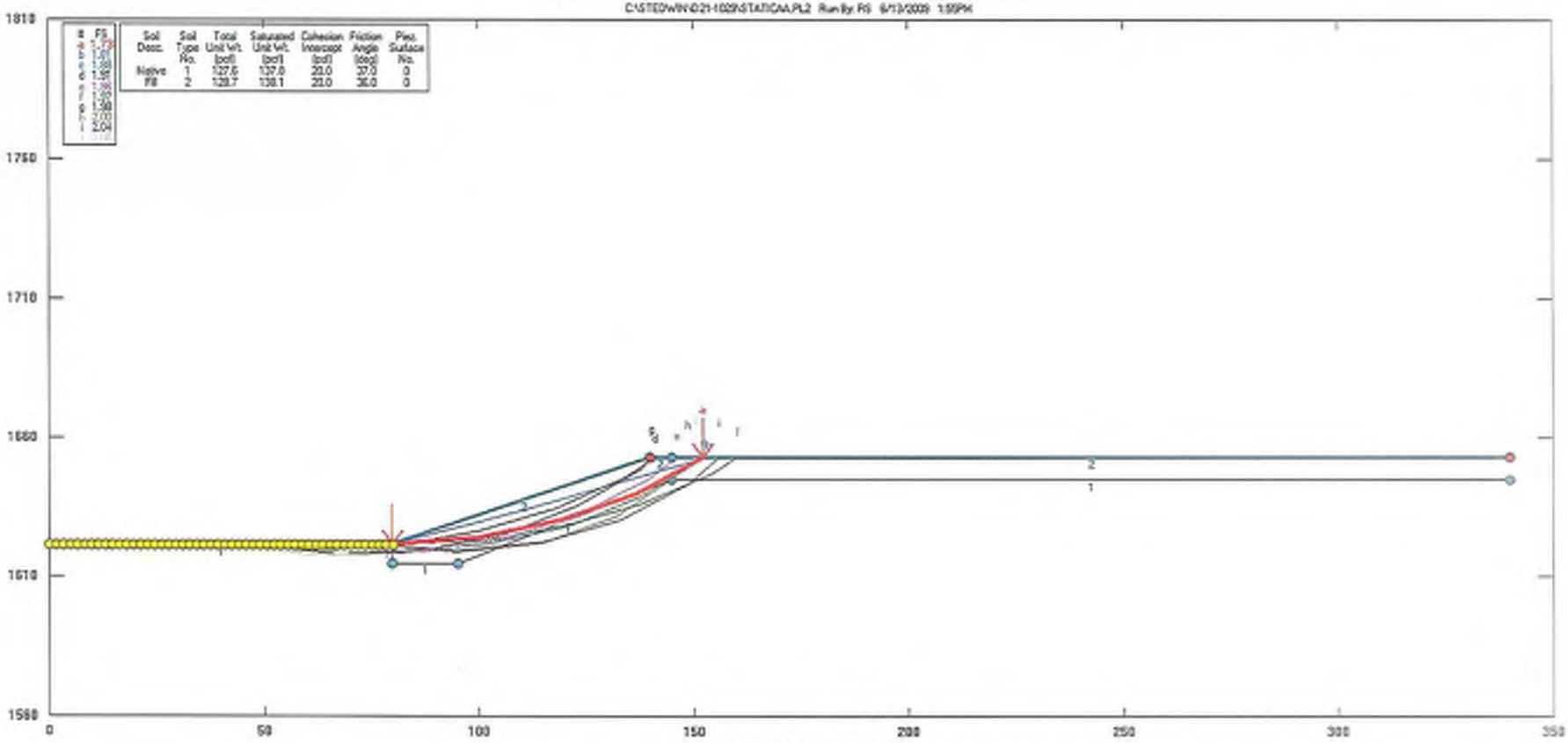
Section *(Section A-A')*		Section *(Section B-B')*	
Static	***Pseudo-Static***	***Static***	***Pseudo-Static***
F.S. = 1.73	F.S. = 1.23	F.S. = 1.79	F.S. = 1.28

3.0 Presentation of Analysis and Conclusions

A visual and textual summary of the slope stability analysis of LGC's proposed design, for both the static and pseudo-static conditions, are presented in the following pages. In conclusion, the proposed graded slopes is considered stable from a geotechnical engineering standpoint. Special care must be taken to ensure all drainage requirements are met and that erosion over time of the slope face does not occur.

Gateway Heights Moreno Valley Section A-A' Fill Slope Static Case

C:\STEDWIN\021-1029\STATICAA.PL2 Run By: RS 6/13/2009 1:55PM



GSTABL7 v.2 FSmin=1.73

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

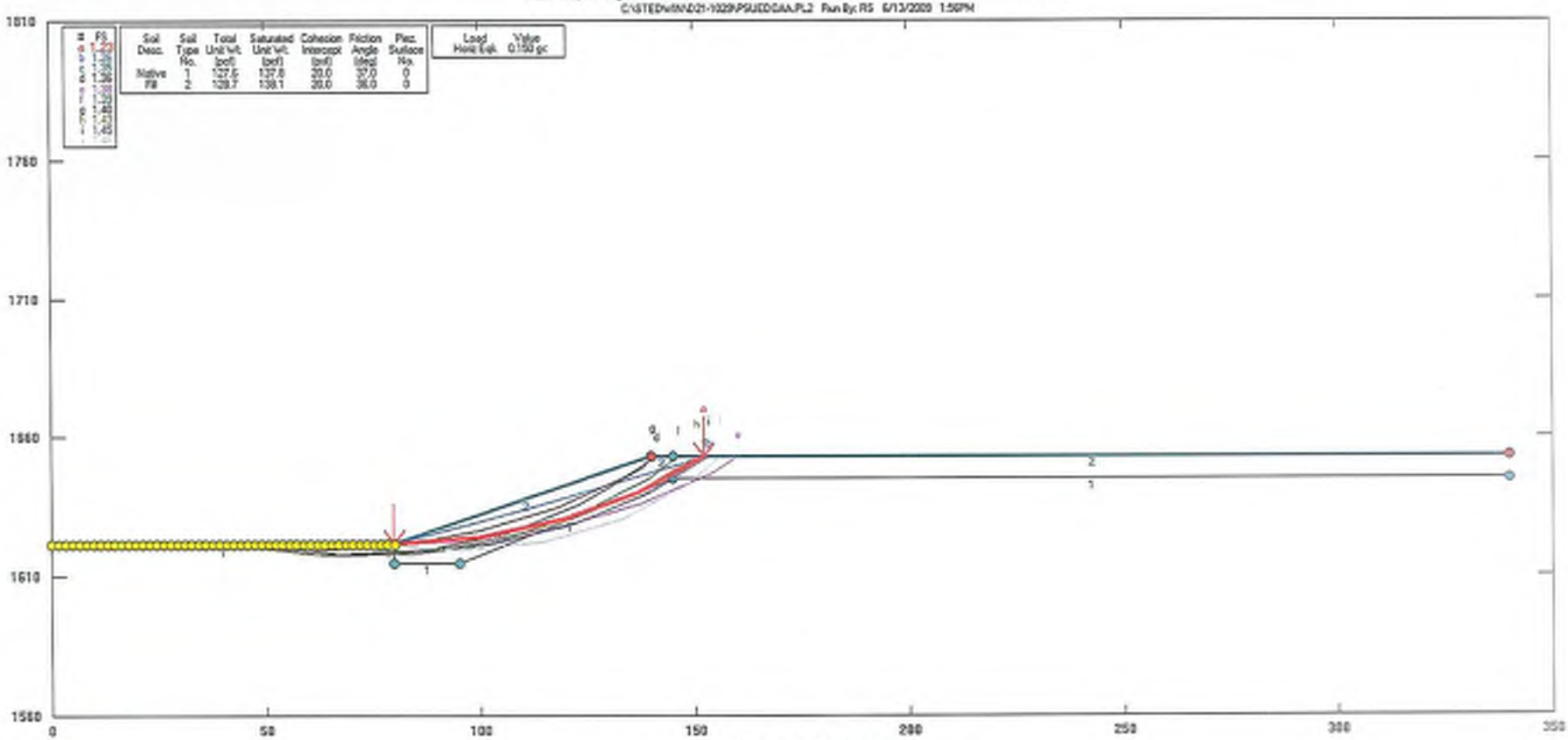
```
                                *** GSTABL7 ***
                        ** GSTABL7 by Garry H. Gregory, P.E. **
    ** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **
                    (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                        SLOPE STABILITY ANALYSIS SYSTEM
          Modified Bishop, Simplified Janbu, or GLE Method of Slices.
          (Includes Spencer & Morgenstern-Price Type Analysis)
          Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
          Nonlinear Undrained Shear Strength, Curved Phi Envelope,
          Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
          Surfaces, Pseudo-Static Earthquake, and Applied Force Options.
*******************************************************************************
Analysis Run Date:          6/13/2009
Time of Run:                1:55PM
Run By:                     RS
Input Data Filename:        C:staticaa.
Output Filename:            C:staticaa.OUT
Unit System:                English
Plotted Output Filename:    C:staticaa.PLT
PROBLEM DESCRIPTION:  Gateway Heights Moreno Valley
                      Section A-A' Fill Slope Static Case
BOUNDARY COORDINATES
    4 Top   Boundaries
    8 Total Boundaries
Boundary     X-Left     Y-Left     X-Right    Y-Right    Soil Type
   No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
    1          0.00    1621.50      80.00    1621.50        1
    2         80.00    1621.50     140.00    1653.00        2
    3        140.00    1653.00     145.00    1653.00        2
    4        145.00    1653.00     340.00    1653.00        2
    5         80.00    1621.50      80.00    1615.00        1
    6         80.00    1615.00      95.00    1615.00        1
    7         95.00    1615.00     145.00    1645.00        1
    8        145.00    1645.00     340.00    1645.00        1
User Specified Y-Origin =      1560.00(ft)
ISOTROPIC SOIL PARAMETERS
 2 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)   Param.    (psf)     No.
  1   127.6    137.8      20.0      37.0    0.00      0.0       0
  2   128.7    138.1      20.0      36.0    0.00      0.0       0
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
1000 Trial Surfaces Have Been Generated.
  20 Surface(s) Initiate(s) From Each Of    50 Points Equally Spaced
Along The Ground Surface Between  X =   0.00(ft)
                                  and X =  80.00(ft)
Each Surface Terminates Between   X = 140.00(ft)
                                  and X = 340.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is  Y =   1560.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Evaluated =  1000
      Statistical Data On All Valid FS Values:
         FS Max =  14.716   FS Min =   1.728   FS Ave =   5.601
         Standard Deviation =    2.335   Coefficient of Variation =   41.69 %
      Failure Surface Specified By  6 Coordinate Points
        Point      X-Surf      Y-Surf
        No.         (ft)        (ft)
         1         80.00     1621.50
         2         99.82     1624.18
```

```
            3        118.82     1630.42
            4        136.37     1640.02
            5        151.88     1652.64
            6        152.18     1653.00
      Circle Center At X =    75.39 ; Y =  1730.52 ; and Radius =   109.12
            Factor of Safety
           ***    1.728   ***
          Individual data on the     7  slices
                          Water  Water      Tie      Tie      Earthquake
                          Force  Force     Force    Force        Force   Surcharge
Slice  Width   Weight     Top    Bot      Norm      Tan      Hor      Ver     Load
 No.    (ft)    (lbs)    (lbs)  (lbs)     (lbs)    (lbs)    (lbs)    (lbs)   (lbs)
  1     19.8    9855.1     0.0    0.0       0.       0.       0.0      0.0     0.0
  2     19.0   23462.4     0.0    0.0       0.       0.       0.0      0.0     0.0
  3     17.5   25453.1     0.0    0.0       0.       0.       0.0      0.0     0.0
  4      3.6    4931.1     0.0    0.0       0.       0.       0.0      0.0     0.0
  5      5.0    5143.4     0.0    0.0       0.       0.       0.0      0.0     0.0
  6      6.9    2794.4     0.0    0.0       0.       0.       0.0      0.0     0.0
  7      0.3       6.9     0.0    0.0       0.       0.       0.0      0.0     0.0
      Failure Surface Specified By  5 Coordinate Points
        Point      X-Surf      Y-Surf
         No.         (ft)        (ft)
          1         80.00     1621.50
          2         98.51     1629.09
          3        116.93     1636.87
          4        135.27     1644.84
          5        153.50     1653.00
      Circle Center At X =  -633.02 ; Y =  3386.80 ; and Radius =  1903.86
            Factor of Safety
           ***    1.811   ***
      Failure Surface Specified By  7 Coordinate Points
        Point      X-Surf      Y-Surf
         No.         (ft)        (ft)
          1         62.04     1621.50
          2         81.92     1619.26
          3        101.79     1621.47
          4        120.70     1628.00
          5        137.70     1638.53
          6        151.95     1652.56
          7        152.23     1653.00
      Circle Center At X =    81.99 ; Y =  1709.41 ; and Radius =    90.14
            Factor of Safety
           ***    1.885   ***
      Failure Surface Specified By  7 Coordinate Points
        Point      X-Surf      Y-Surf
         No.         (ft)        (ft)
          1         40.82     1621.50
          2         60.73     1619.64
          3         80.66     1621.30
          4         99.99     1626.43
          5        118.12     1634.87
          6        134.49     1646.36
          7        141.10     1653.00
      Circle Center At X =    61.30 ; Y =  1733.25 ; and Radius =   113.61
            Factor of Safety
           ***    1.909   ***
      Failure Surface Specified By  7 Coordinate Points
        Point      X-Surf      Y-Surf
         No.         (ft)        (ft)
          1         47.35     1621.50
          2         67.06     1618.12
          3         87.04     1618.96
          4        106.41     1623.96
          5        124.29     1632.92
          6        139.90     1645.42
          7        146.07     1653.00
      Circle Center At X =    73.12 ; Y =  1712.76 ; and Radius =    94.83
```

```
      Factor of Safety
     ***    1.957   ***
Failure Surface Specified By  6 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         80.00     1621.50
    2         99.94     1623.08
    3        119.32     1628.03
    4        137.58     1636.19
    5        154.19     1647.33
    6        160.14     1653.00
Circle Center At X =    81.16 ; Y =  1736.25 ; and Radius =   114.75
      Factor of Safety
     ***    1.968   ***
Failure Surface Specified By  7 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         47.35     1621.50
    2         67.09     1618.30
    3         87.04     1619.68
    4        106.16     1625.56
    5        123.44     1635.63
    6        137.97     1649.37
    7        140.36     1653.00
Circle Center At X =    71.10 ; Y =  1705.54 ; and Radius =    87.33
      Factor of Safety
     ***    1.981   ***
Failure Surface Specified By  6 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         75.10     1621.50
    2         94.90     1618.64
    3        114.58     1622.18
    4        132.14     1631.77
    5        145.76     1646.41
    6        148.77     1653.00
Circle Center At X =    93.84 ; Y =  1679.57 ; and Radius =    61.02
      Factor of Safety
     ***    2.003   ***
Failure Surface Specified By  6 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         75.10     1621.50
    2         95.01     1619.53
    3        114.76     1622.67
    4        133.07     1630.72
    5        148.74     1643.15
    6        156.14     1653.00
Circle Center At X =    92.74 ; Y =  1696.11 ; and Radius =    76.67
      Factor of Safety
     ***    2.041   ***
Failure Surface Specified By  7 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         40.82     1621.50
    2         60.51     1618.04
    3         80.51     1618.19
    4        100.15     1621.97
    5        118.78     1629.25
    6        135.79     1639.77
    7        150.39     1653.00
Circle Center At X =    69.64 ; Y =  1727.64 ; and Radius =   109.99
      Factor of Safety
     ***    2.051   ***
         **** END OF GSTABL7 OUTPUT ****
```

Gateway Heights Moreno Valley Section A-A'Fil Slope PsuedoStatic Case

C:\STEDWIN\2021-1029\PSUEDOAA.PL2 Run By: RS 6/13/2000 1:56PM



GSTABL7 v.2 FSmin=1.23

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

```
                              *** GSTABL7 ***
                        ** GSTABL7 by Garry H. Gregory, P.E. **
    ** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **
                  (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                        SLOPE STABILITY ANALYSIS SYSTEM
          Modified Bishop, Simplified Janbu, or GLE Method of Slices.
          (Includes Spencer & Morgenstern-Price Type Analysis)
          Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
          Nonlinear Undrained Shear Strength, Curved Phi Envelope,
          Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
          Surfaces, Pseudo-Static Earthquake, and Applied Force Options.
*******************************************************************************
Analysis Run Date:          6/13/2009
Time of Run:                1:56PM
Run By:                     RS
Input Data Filename:        C:psuedoaa.
Output Filename:            C:psuedoaa.OUT
Unit System:                English
Plotted Output Filename:    C:psuedoaa.PLT
PROBLEM DESCRIPTION:  Gateway Heights Moreno Valley
                      Section A-A'Fill Slope PsuedoStatic Case
BOUNDARY COORDINATES
    4 Top   Boundaries
    8 Total Boundaries
Boundary     X-Left     Y-Left     X-Right    Y-Right    Soil Type
   No.         (ft)       (ft)       (ft)       (ft)    Below Bnd
    1          0.00    1621.50      80.00    1621.50        1
    2         80.00    1621.50     140.00    1653.00        2
    3        140.00    1653.00     145.00    1653.00        2
    4        145.00    1653.00     340.00    1653.00        2
    5         80.00    1621.50      80.00    1615.00        1
    6         80.00    1615.00      95.00    1615.00        1
    7         95.00    1615.00     145.00    1645.00        1
    8        145.00    1645.00     340.00    1645.00        1
User Specified Y-Origin =      1560.00(ft)
ISOTROPIC SOIL PARAMETERS
 2 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.   (pcf)    (pcf)      (psf)     (deg)   Param.    (psf)     No.
  1   127.6    137.8       20.0      37.0    0.00       0.0      0
  2   128.7    138.1       20.0      36.0    0.00       0.0      0
A Horizontal Earthquake Loading Coefficient
Of0.150 Has Been Assigned
A Vertical Earthquake Loading Coefficient
Of0.000 Has Been Assigned
Cavitation Pressure =    0.0(psf)
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
1000 Trial Surfaces Have Been Generated.
  20 Surface(s) Initiate(s) From Each Of    50 Points Equally Spaced
Along The Ground Surface Between  X =   0.00(ft)
                                  and  X =  80.00(ft)
Each Surface Terminates Between   X = 140.00(ft)
                                  and  X = 340.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is  Y =   1560.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Evaluated =  1000
      Statistical Data On All Valid FS Values:
         FS Max =   5.101   FS Min =   1.234   FS Ave =   2.931
         Standard Deviation =    0.739   Coefficient of Variation =   25.21 %
```

Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	80.00	1621.50
2	99.82	1624.18
3	118.82	1630.42
4	136.37	1640.02
5	151.88	1652.64
6	152.18	1653.00

Circle Center At X = 75.39 ; Y = 1730.52 ; and Radius = 109.12

Factor of Safety

*** 1.234 ***

Individual data on the 7 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	19.8	9855.1	0.0	0.0	0.	0.	1478.3	0.0	0.0
2	19.0	23462.4	0.0	0.0	0.	0.	3519.4	0.0	0.0
3	17.5	25453.1	0.0	0.0	0.	0.	3818.0	0.0	0.0
4	3.6	4931.1	0.0	0.0	0.	0.	739.7	0.0	0.0
5	5.0	5143.4	0.0	0.0	0.	0.	771.5	0.0	0.0
6	6.9	2794.4	0.0	0.0	0.	0.	419.2	0.0	0.0
7	0.3	6.9	0.0	0.0	0.	0.	1.0	0.0	0.0

Failure Surface Specified By 5 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	80.00	1621.50
2	98.51	1629.09
3	116.93	1636.87
4	135.27	1644.84
5	153.50	1653.00

Circle Center At X = -633.02 ; Y = 3386.80 ; and Radius = 1903.86

Factor of Safety

*** 1.265 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	62.04	1621.50
2	81.92	1619.26
3	101.79	1621.47
4	120.70	1628.00
5	137.70	1638.53
6	151.95	1652.56
7	152.23	1653.00

Circle Center At X = 81.99 ; Y = 1709.41 ; and Radius = 90.14

Factor of Safety

*** 1.349 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	40.82	1621.50
2	60.73	1619.64
3	80.66	1621.30
4	99.99	1626.43
5	118.12	1634.87
6	134.49	1646.36
7	141.10	1653.00

Circle Center At X = 61.30 ; Y = 1733.25 ; and Radius = 113.61

Factor of Safety

*** 1.355 ***

Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	80.00	1621.50
2	99.94	1623.08
3	119.32	1628.03

4	137.58	1636.19
5	154.19	1647.33
6	160.14	1653.00

Circle Center At X = 81.16 ; Y = 1736.25 ; and Radius = 114.75

Factor of Safety

*** 1.376 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	47.35	1621.50
2	67.06	1618.12
3	87.04	1618.96
4	106.41	1623.96
5	124.29	1632.92
6	139.90	1645.42
7	146.07	1653.00

Circle Center At X = 73.12 ; Y = 1712.76 ; and Radius = 94.83

Factor of Safety

*** 1.387 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	47.35	1621.50
2	67.09	1618.30
3	87.04	1619.68
4	106.16	1625.56
5	123.44	1635.63
6	137.97	1649.37
7	140.36	1653.00

Circle Center At X = 71.10 ; Y = 1705.54 ; and Radius = 87.33

Factor of Safety

*** 1.403 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	40.82	1621.50
2	60.51	1618.04
3	80.51	1618.19
4	100.15	1621.97
5	118.78	1629.25
6	135.79	1639.77
7	150.39	1653.00

Circle Center At X = 69.64 ; Y = 1727.64 ; and Radius = 109.99

Factor of Safety

*** 1.434 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	44.08	1621.50
2	63.76	1617.95
3	83.76	1618.05
4	103.41	1621.81
5	122.03	1629.09
6	139.02	1639.66
7	153.61	1653.00

Circle Center At X = 73.20 ; Y = 1726.51 ; and Radius = 108.97

Factor of Safety

*** 1.454 ***

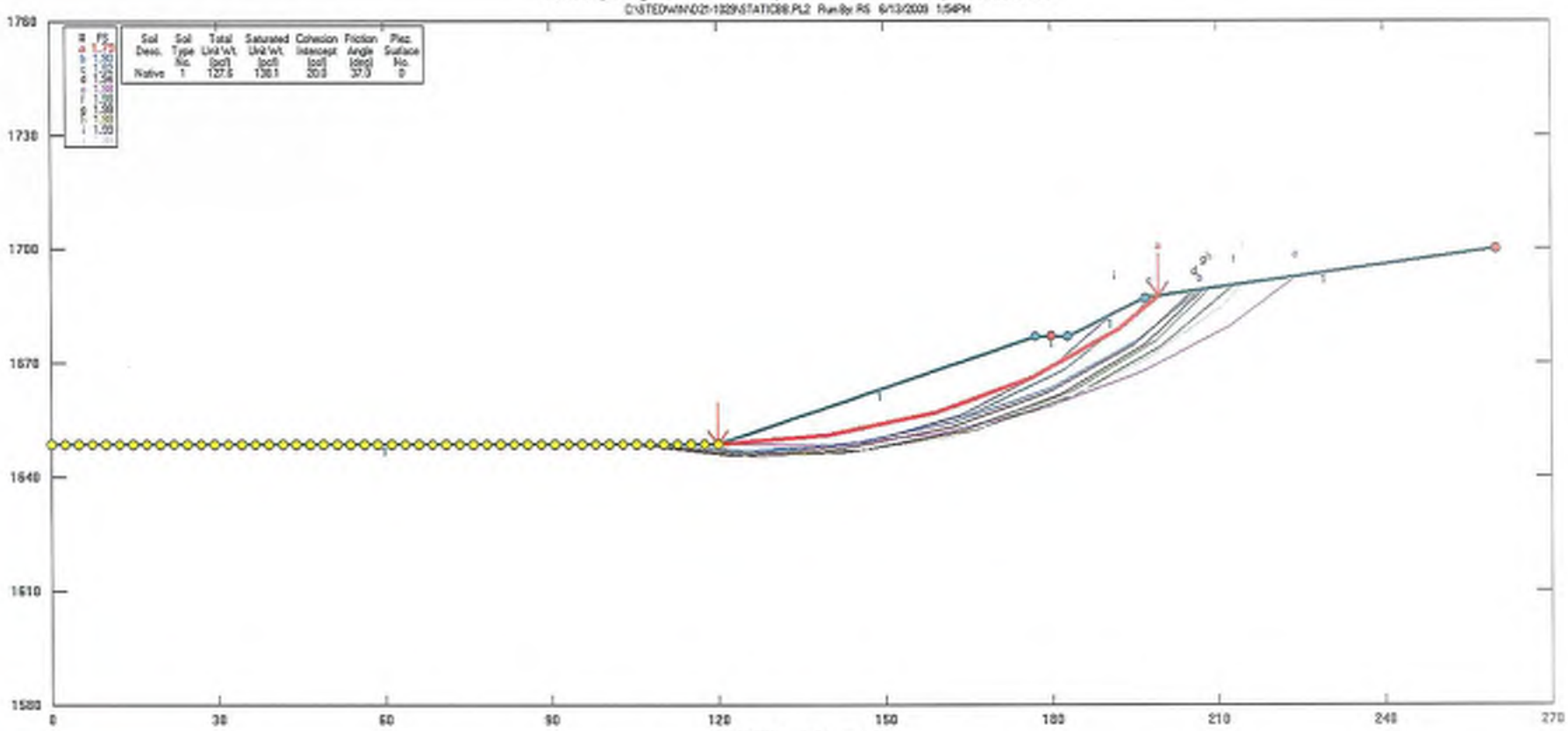
Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	75.10	1621.50
2	95.01	1619.53
3	114.76	1622.67
4	133.07	1630.72
5	148.74	1643.15
6	156.14	1653.00

```
Circle Center At X =    92.74 ; Y =  1696.11 ; and Radius =    76.67
       Factor of Safety
     ***    1.457   ***
         **** END OF GSTABL7 OUTPUT ****
```

Gateway Heights Moreno Valley Section B-B' Cut Slope Static Case

C:\STED\WINDOZ\1929\STATICBB.PL2 Run By: RS 6/13/2009 1:54PM



GSTABL7 v.2 FSmin=1.78

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

```
                              *** GSTABL7 ***
                        ** GSTABL7 by Garry H. Gregory, P.E. **
    ** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **
                  (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                        SLOPE STABILITY ANALYSIS SYSTEM
          Modified Bishop, Simplified Janbu, or GLE Method of Slices.
          (Includes Spencer & Morgenstern-Price Type Analysis)
          Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
          Nonlinear Undrained Shear Strength, Curved Phi Envelope,
          Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
          Surfaces, Pseudo-Static Earthquake, and Applied Force Options.
*******************************************************************************
Analysis Run Date:          6/13/2009
Time of Run:                1:54PM
Run By:                     RS
Input Data Filename:        C:staticbb.
Output Filename:            C:staticbb.OUT
Unit System:                English
Plotted Output Filename:    C:staticbb.PLT
PROBLEM DESCRIPTION:  Gateway Heights Moreno Valley
                      Section B-B' Cut Slope Static Case
BOUNDARY COORDINATES
    5 Top   Boundaries
    5 Total Boundaries
Boundary     X-Left     Y-Left     X-Right    Y-Right    Soil Type
   No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
    1          0.00    1648.50     120.00    1648.50        1
    2        120.00    1648.50     177.00    1677.00        1
    3        177.00    1677.00     183.00    1677.00        1
    4        183.00    1677.00     197.00    1687.00        1
    5        197.00    1687.00     260.00    1700.00        1
User Specified Y-Origin =      1580.00(ft)
ISOTROPIC SOIL PARAMETERS
 1 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
  1   127.6    138.1      20.0     37.0    0.00       0.0      0
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
1000 Trial Surfaces Have Been Generated.
  20 Surface(s) Initiate(s) From Each Of    50 Points Equally Spaced
Along The Ground Surface Between  X =   0.00(ft)
                                  and  X = 120.00(ft)
Each Surface Terminates Between   X = 180.00(ft)
                                  and  X = 260.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is  Y =  1600.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Evaluated =  1000
      Statistical Data On All Valid FS Values:
         FS Max =   8.363   FS Min =   1.790   FS Ave =   3.547
         Standard Deviation =    1.000   Coefficient of Variation =   28.20 %
      Failure Surface Specified By  6 Coordinate Points
        Point      X-Surf      Y-Surf
        No.         (ft)        (ft)
         1         120.00     1648.50
         2         139.87     1650.80
         3         158.95     1656.80
         4         176.56     1666.28
         5         192.07     1678.90
         6         199.25     1687.47
```

Circle Center At X = 118.31 ; Y = 1752.03 ; and Radius = 103.54

Factor of Safety

*** 1.790 ***

Individual data on the 8 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	19.9	9677.7	0.0	0.0	0.	0.	0.0	0.0	0.0
2	19.1	22900.2	0.0	0.0	0.	0.	0.0	0.0	0.0
3	17.6	24357.2	0.0	0.0	0.	0.	0.0	0.0	0.0
4	0.4	588.9	0.0	0.0	0.	0.	0.0	0.0	0.0
5	6.0	6064.1	0.0	0.0	0.	0.	0.0	0.0	0.0
6	9.1	5816.0	0.0	0.0	0.	0.	0.0	0.0	0.0
7	4.9	2137.7	0.0	0.0	0.	0.	0.0	0.0	0.0
8	2.3	319.3	0.0	0.0	0.	0.	0.0	0.0	0.0

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	102.86	1648.50
2	122.76	1646.48
3	142.67	1648.32
4	161.86	1653.95
5	179.62	1663.15
6	195.29	1675.58
7	206.75	1689.01

Circle Center At X = 123.22 ; Y = 1750.28 ; and Radius = 103.80

Factor of Safety

*** 1.896 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	107.76	1648.50
2	127.66	1646.56
3	147.47	1649.35
4	166.07	1656.70
5	182.42	1668.21
6	195.63	1683.23
7	197.68	1687.14

Circle Center At X = 125.86 ; Y = 1731.23 ; and Radius = 84.68

Factor of Safety

*** 1.918 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	102.86	1648.50
2	122.68	1645.80
3	142.62	1647.25
4	161.84	1652.77
5	179.51	1662.14
6	194.87	1674.95
7	205.82	1688.82

Circle Center At X = 125.71 ; Y = 1742.27 ; and Radius = 96.52

Factor of Safety

*** 1.939 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	120.00	1648.50
2	140.00	1648.41
3	159.74	1651.61
4	178.68	1658.04
5	196.30	1667.50
6	212.12	1679.74
7	223.99	1692.57

Circle Center At X = 130.57 ; Y = 1768.78 ; and Radius = 120.75

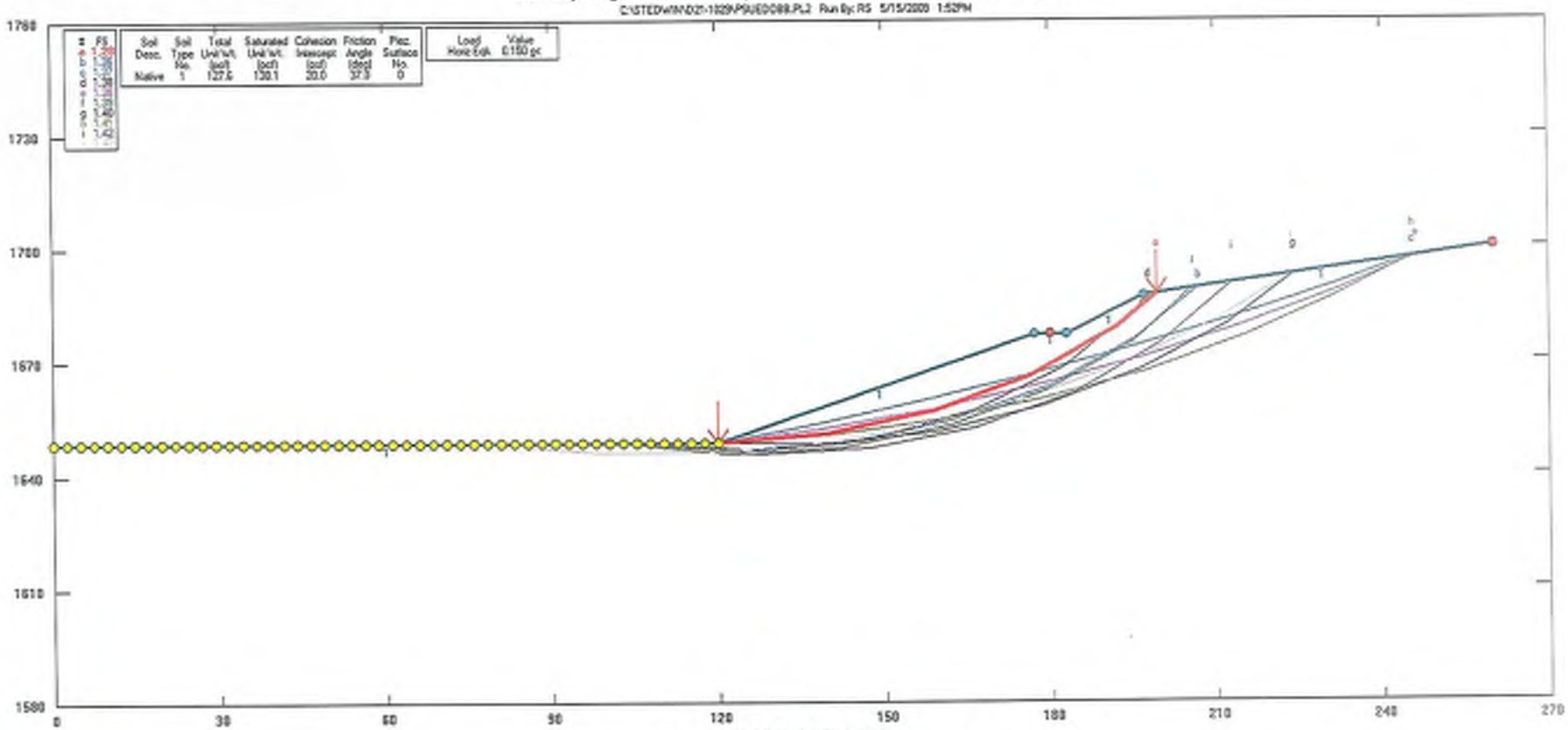
Factor of Safety

```
     ***    1.978   ***
Failure Surface Specified By  8 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1         107.76     1648.50
    2         127.56     1645.69
    3         147.51     1647.01
    4         166.78     1652.38
    5         184.53     1661.60
    6         200.01     1674.26
    7         212.57     1689.83
    8         212.79     1690.26
Circle Center At X =   131.21 ; Y =  1742.49 ; and Radius =    96.87
      Factor of Safety
     ***    1.980   ***
Failure Surface Specified By  7 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1         105.31     1648.50
    2         125.05     1645.33
    3         145.02     1646.53
    4         164.24     1652.04
    5         181.81     1661.61
    6         196.87     1674.77
    7         207.44     1689.15
Circle Center At X =   129.58 ; Y =  1736.61 ; and Radius =    91.39
      Factor of Safety
     ***    1.980   ***
Failure Surface Specified By  7 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1         107.76     1648.50
    2         127.52     1645.45
    3         147.47     1646.84
    4         166.62     1652.60
    5         184.03     1662.45
    6         198.83     1675.91
    7         208.20     1689.31
Circle Center At X =   131.28 ; Y =  1735.33 ; and Radius =    89.96
      Factor of Safety
     ***    1.984   ***
Failure Surface Specified By  6 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1         105.31     1648.50
    2         125.13     1645.85
    3         144.97     1648.37
    4         163.50     1655.89
    5         179.49     1667.91
    6         191.31     1682.94
Circle Center At X =   125.38 ; Y =  1722.98 ; and Radius =    77.14
      Factor of Safety
     ***    1.985   ***
Failure Surface Specified By  8 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1         102.86     1648.50
    2         122.62     1645.40
    3         142.60     1646.12
    4         162.09     1650.63
    5         180.36     1658.77
    6         196.74     1670.24
    7         210.65     1684.61
    8         214.56     1690.62
Circle Center At X =   128.91 ; Y =  1748.60 ; and Radius =   103.43
      Factor of Safety
     ***    1.994   ***
```

**** END OF GSTABL7 OUTPUT ****

Gateway Heights Moreno Valley Section B-B' Cut Slope PsuedoStatic Case

C:\STED\WIN\DZ\-1029\PSUEDO88.PL2 Run By: RS 5/15/2009 1:52PM



GSTABL7 v.2 FSmin=1.28

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

```
                              *** GSTABL7 ***
                        ** GSTABL7 by Garry H. Gregory, P.E. **
    ** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **
                  (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                        SLOPE STABILITY ANALYSIS SYSTEM
          Modified Bishop, Simplified Janbu, or GLE Method of Slices.
          (Includes Spencer & Morgenstern-Price Type Analysis)
          Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
          Nonlinear Undrained Shear Strength, Curved Phi Envelope,
          Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
          Surfaces, Pseudo-Static Earthquake, and Applied Force Options.
*******************************************************************************
Analysis Run Date:          5/15/2009
Time of Run:                1:52PM
Run By:                     RS
Input Data Filename:        C:psuedobb.
Output Filename:            C:psuedobb.OUT
Unit System:                English
Plotted Output Filename:    C:psuedobb.PLT
PROBLEM DESCRIPTION:  Gateway Heights Moreno Valley
                      Section B-B' Cut Slope PsuedoStatic Case
BOUNDARY COORDINATES
    5 Top   Boundaries
    5 Total Boundaries
Boundary     X-Left     Y-Left     X-Right    Y-Right    Soil Type
   No.         (ft)       (ft)       (ft)       (ft)    Below Bnd
    1          0.00    1648.50     120.00    1648.50        1
    2        120.00    1648.50     177.00    1677.00        1
    3        177.00    1677.00     183.00    1677.00        1
    4        183.00    1677.00     197.00    1687.00        1
    5        197.00    1687.00     260.00    1700.00        1
User Specified Y-Origin =      1580.00(ft)
ISOTROPIC SOIL PARAMETERS
 1 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)    Param.    (psf)     No.
  1   127.6    138.1      20.0     37.0    0.00       0.0       0
A Horizontal Earthquake Loading Coefficient
Of0.150 Has Been Assigned
A Vertical Earthquake Loading Coefficient
Of0.000 Has Been Assigned
Cavitation Pressure =    0.0(psf)
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
1000 Trial Surfaces Have Been Generated.
  20 Surface(s) Initiate(s) From Each Of    50 Points Equally Spaced
Along The Ground Surface Between  X =   0.00(ft)
                                  and  X = 120.00(ft)
Each Surface Terminates Between   X = 180.00(ft)
                                  and  X = 260.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is  Y =   1600.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Evaluated =  1000
      Statistical Data On All Valid FS Values:
         FS Max =   3.912   FS Min =   1.281   FS Ave =   2.294
         Standard Deviation =    0.472   Coefficient of Variation =   20.57 %
      Failure Surface Specified By  6 Coordinate Points
        Point      X-Surf      Y-Surf
        No.          (ft)        (ft)
         1         120.00     1648.50
```

2	139.87	1650.80
3	158.95	1656.80
4	176.56	1666.28
5	192.07	1678.90
6	199.25	1687.47

Circle Center At X = 118.31 ; Y = 1752.03 ; and Radius = 103.54

Factor of Safety

*** 1.281 ***

Individual data on the 8 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	19.9	9677.7	0.0	0.0	0.	0.	1451.7	0.0	0.0
2	19.1	22900.2	0.0	0.0	0.	0.	3435.0	0.0	0.0
3	17.6	24357.2	0.0	0.0	0.	0.	3653.6	0.0	0.0
4	0.4	588.9	0.0	0.0	0.	0.	88.3	0.0	0.0
5	6.0	6064.1	0.0	0.0	0.	0.	909.6	0.0	0.0
6	9.1	5816.0	0.0	0.0	0.	0.	872.4	0.0	0.0
7	4.9	2137.7	0.0	0.0	0.	0.	320.7	0.0	0.0
8	2.3	319.3	0.0	0.0	0.	0.	47.9	0.0	0.0

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	102.86	1648.50
2	122.76	1646.48
3	142.67	1648.32
4	161.86	1653.95
5	179.62	1663.15
6	195.29	1675.58
7	206.75	1689.01

Circle Center At X = 123.22 ; Y = 1750.28 ; and Radius = 103.80

Factor of Safety

*** 1.357 ***

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	120.00	1648.50
2	139.27	1653.85
3	158.35	1659.86
4	177.21	1666.51
5	195.83	1673.80
6	214.20	1681.72
7	232.29	1690.25
8	245.37	1696.98

Circle Center At X = -26.51 ; Y = 2213.72 ; and Radius = 583.90

Factor of Safety

*** 1.370 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	107.76	1648.50
2	127.66	1646.56
3	147.47	1649.35
4	166.07	1656.70
5	182.42	1668.21
6	195.63	1683.23
7	197.68	1687.14

Circle Center At X = 125.86 ; Y = 1731.23 ; and Radius = 84.68

Factor of Safety

*** 1.377 ***

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	120.00	1648.50
2	139.63	1652.35
3	158.99	1657.37

```
    4        178.01     1663.54
    5        196.63     1670.84
    6        214.79     1679.23
    7        232.40     1688.70
    8        246.05     1697.12
Circle Center At X =    65.95 ; Y =  1976.33 ; and Radius =   332.26
      Factor of Safety
     ***    1.379   ***
Failure Surface Specified By  7 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        102.86     1648.50
    2        122.68     1645.80
    3        142.62     1647.25
    4        161.84     1652.77
    5        179.51     1662.14
    6        194.87     1674.95
    7        205.82     1688.82
Circle Center At X =   125.71 ; Y =  1742.27 ; and Radius =    96.52
      Factor of Safety
     ***    1.389   ***
Failure Surface Specified By  7 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        120.00     1648.50
    2        140.00     1648.41
    3        159.74     1651.61
    4        178.68     1658.04
    5        196.30     1667.50
    6        212.12     1679.74
    7        223.99     1692.57
Circle Center At X =   130.57 ; Y =  1768.78 ; and Radius =   120.75
      Factor of Safety
     ***    1.399   ***
Failure Surface Specified By  8 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        120.00     1648.50
    2        139.90     1650.49
    3        159.53     1654.31
    4        178.73     1659.91
    5        197.34     1667.25
    6        215.19     1676.27
    7        232.14     1686.89
    8        245.37     1696.98
Circle Center At X =   108.50 ; Y =  1864.57 ; and Radius =   216.38
      Factor of Safety
     ***    1.410   ***
Failure Surface Specified By  8 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        107.76     1648.50
    2        127.56     1645.69
    3        147.51     1647.01
    4        166.78     1652.38
    5        184.53     1661.60
    6        200.01     1674.26
    7        212.57     1689.83
    8        212.79     1690.26
Circle Center At X =   131.21 ; Y =  1742.49 ; and Radius =    96.87
      Factor of Safety
     ***    1.418   ***
Failure Surface Specified By  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         78.37     1648.50
    2         98.22     1646.06
```

```
     3         118.22      1646.03
     4         138.08      1648.40
     5         157.50      1653.16
     6         176.22      1660.21
     7         193.94      1669.47
     8         210.43      1680.80
     9         223.70      1692.51
Circle Center At X =   108.48 ; Y =  1811.48 ; and Radius =   165.74
       Factor of Safety
      ***    1.419   ***
          **** END OF GSTABL7 OUTPUT ****
```

LEGEND
(Locations are Approximate)

Symbols

A — A' - Global Stability Cross Section Location for Composite Wall

N

0 150′ 300′

DYNAMIC GEOTECHNICAL SOLUTIONS
27570 Commerce Center Dr., #128, Temeculca, CA 92590
Phone: 951.297.2450 Fax: 951.719.2998

Robert Sargent
Civil Engineer

GLOBAL STABILITY CROSS SECTIONS LOCATION MAP

Gateway Heights, 108 Cluster Unit Development
City of Moreno Valley, County of Riverside, California

Name:	Gateway Heights
Project No.	D21-1029-10
Client:	United Engineering Group
Scale:	1"=150'
Date:	June 2021
Reference:	United Engineering Group, 2021, "Conceptual Grading Plan," Scale 1" = 60', dated March
Plate No.	1 of 1

Appendix G

EDR Radius Map Report

Gateway Heights Residential Project
Not Reported
Moreno Valley, CA 92557

Inquiry Number: 6541790.2s
June 17, 2021

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NOT REPORTED
MORENO VALLEY, CA 92557

COORDINATES

Latitude (North):	33.9593590 - 33° 57' 33.69''
Longitude (West):	117.2946020 - 117° 17' 40.56''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472780.5
UTM Y (Meters):	3757494.5
Elevation:	1680 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641312 RIVERSIDE EAST, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
NOT REPORTED
MORENO VALLEY, CA 92557

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	MARCH AFB RIFLE RANG		FUDS	Higher	1428, 0.270, East
A2	MARCH AFB RIFLE RANG		ENVIROSTOR	Higher	1428, 0.270, East

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROLS ..... Institutional Controls Sites List

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
UST ..... Active UST Facilities
AST ..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ..... Voluntary Cleanup Program Properties
INDIAN VCP ..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register

HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CERS HAZ WASTE ---- CERS HAZ WASTE
US CDL ---- National Clandestine Laboratory Register
PFAS ---- PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ---- SWEEPS UST Listing
HIST UST ---- Hazardous Substance Storage Container Database
CERS TANKS ---- California Environmental Reporting System (CERS) Tanks
CA FID UST ---- Facility Inventory Database

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data

CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
ECHO	Enforcement & Compliance History Information
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
ICE	ICE
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
CIWQS	California Integrated Water Quality System
CERS	CERS
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)
MINES MRDS	Mineral Resources Data System
HWTS	Hazardous Waste Tracking System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

EDR Hist Auto---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 01/25/2021 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MARCH AFB RIFLE RANG Facility Id: 80000313 Status: Inactive - Needs Evaluation		E 1/4 - 1/2 (0.270 mi.)	A2	9

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

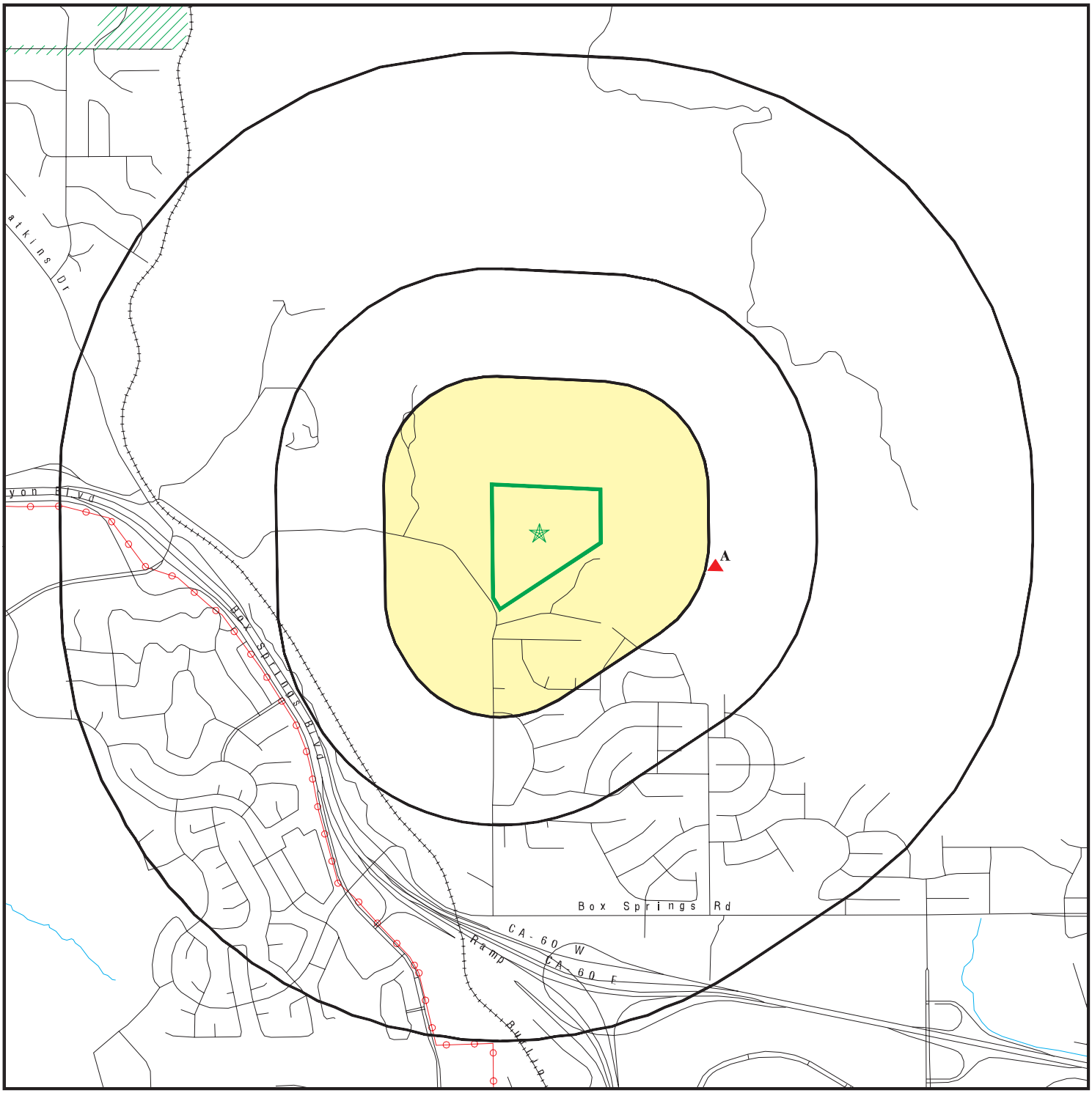
A review of the FUDS list, as provided by EDR, and dated 02/11/2021 has revealed that there is 1 FUDS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MARCH AFB RIFLE RANG		E 1/4 - 1/2 (0.270 mi.)	A1	9

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 6541790.2S



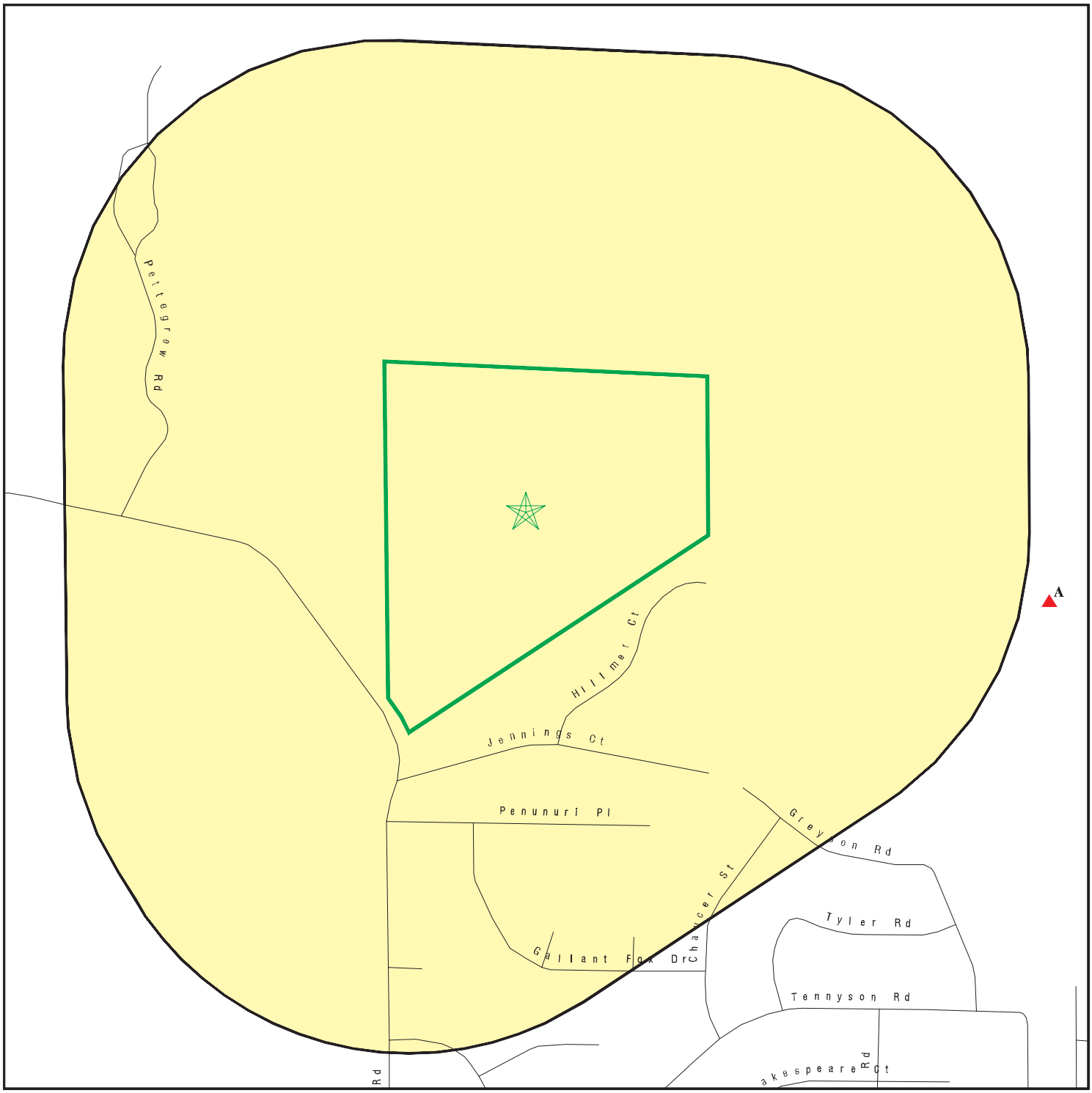
0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Gateway Heights Residential Project	CLIENT:	Psomas
ADDRESS:	Not Reported Moreno Valley CA 92557	CONTACT:	Sean Noonan
LAT/LONG:	33.959359 / 117.294602	INQUIRY #:	6541790.2s
		DATE:	June 17, 2021 3:46 pm

DETAIL MAP - 6541790.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Gateway Heights Residential Project	CLIENT: Psomas
ADDRESS: Not Reported Moreno Valley CA 92557	CONTACT: Sean Noonan
LAT/LONG: 33.959359 / 117.294602	INQUIRY #: 6541790.2s DATE: June 17, 2021 3:50 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	1	0	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	1	0	NR	1
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	0	0	2	0	0	2

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **MARCH AFB RIFLE RANGE** **FUDS** **1024903587**
East **N/A**
1/4-1/2 **RIVERSIDE, CA**
0.270 mi.
1428 ft. **Site 1 of 2 in cluster A**

Relative:
Higher

Actual:
2109 ft.

FUDS:

EPA Region:	9
Installation ID:	CA99799F551400
Congressional District Number:	41
Name:	MARCH AFB RIFLE RANGE
FUDS Number:	J09CA0476
City:	RIVERSIDE
State:	CA
County:	RIVERSIDE
Object ID:	1800
USACE Division:	SPD
USACE District:	Los Angeles District (SPL)
Status:	Properties without projects
Current Owner:	Not reported
EMS Map Link:	https://fudsportal.usace.army.mil/ems/ems/inventory/map/map?id=53550
Eligibility:	Ineligible
Has Projects:	No
NPL Status:	Not on the NPL
Property History:	Not reported
Project Required:	No
Feature Description:	Not reported
X Coord:	-117.28747559
Y Coord:	33.958435059000003
Latitude:	33.958333330000002
Longitude:	-117.28749999999999

A2 **MARCH AFB RIFLE RANGE** **ENVIROSTOR** **S107736670**
East **N/A**
1/4-1/2 **RIVERSIDE, CA**
0.270 mi.
1428 ft. **Site 2 of 2 in cluster A**

Relative:
Higher

Actual:
2109 ft.

ENVIROSTOR:

Name:	MARCH AFB RIFLE RANGE
Address:	Not reported
City,State,Zip:	RIVERSIDE, CA
Facility ID:	80000313
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2005
Site Code:	Not reported
Site Type:	Military Evaluation
Site Type Detailed:	FUDS
Acres:	0
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	61
Senate:	31
Special Program:	Not reported
Restricted Use:	NO

MARCH AFB RIFLE RANGE (Continued) **S107736670**

Site Mgmt Req: NONE SPECIFIED
Funding: DERA
Latitude: 33.95833
Longitude: -117.2875
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: Explosives (UXO, MEC
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CA99799F551400
Alias Type: Federal Facility ID
Alias Name: J09CA0476
Alias Type: INPR
Alias Name: 80000313
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inventory Project Report (INPR)
Completed Date: 09/28/1992
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 03/30/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/09/2021
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 39

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/05/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 02/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 02/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/15/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 7

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/25/2021
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/13/2021
Number of Days to Update: 77

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/23/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/25/2021
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/13/2021
Number of Days to Update: 77

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/23/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/08/2021
Date Data Arrived at EDR: 02/09/2021
Date Made Active in Reports: 05/03/2021
Number of Days to Update: 83

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/11/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/12/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/07/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/09/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/30/2020
Date Data Arrived at EDR: 12/22/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/02/2020
Date Data Arrived at EDR: 12/18/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 84

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/29/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 33
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/05/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/05/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 04/01/2021
Number of Days to Update: 23

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/09/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/02/2020
Date Data Arrived at EDR: 12/18/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 84

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/12/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/30/2020
Date Data Arrived at EDR: 12/22/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/07/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/25/2021
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/13/2021
Number of Days to Update: 77

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/23/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/15/2021
Date Data Arrived at EDR: 03/16/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/10/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 04/21/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/09/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/23/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/22/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 04/29/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 12/07/2020
Date Data Arrived at EDR: 12/09/2020
Date Made Active in Reports: 03/02/2021
Number of Days to Update: 83

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/22/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/25/2021
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/13/2021
Number of Days to Update: 77

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 04/23/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 01/20/2021
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 04/20/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 12/07/2020
Date Data Arrived at EDR: 12/09/2020
Date Made Active in Reports: 03/02/2021
Number of Days to Update: 83

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 02/24/2021
Date Data Arrived at EDR: 02/24/2021
Date Made Active in Reports: 05/14/2021
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 05/05/2021
Number of Days to Update: 83

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 01/20/2021
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/20/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 03/03/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/02/2021
Date Data Arrived at EDR: 03/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 77

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/16/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 85

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/24/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/20/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 04/05/2021
Number of Days to Update: 47

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/16/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/05/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 04/30/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/07/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/19/2021
Next Scheduled EDR Contact: 06/28/2021
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/17/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/20/2021
Date Data Arrived at EDR: 01/21/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 60

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/20/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 01/22/2021
Date Data Arrived at EDR: 02/18/2021
Date Made Active in Reports: 05/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/19/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/05/2021
Number of Days to Update: 50

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/19/2020
Date Data Arrived at EDR: 01/08/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 73

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/09/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 03/31/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/11/2021
Date Made Active in Reports: 05/11/2021
Number of Days to Update: 61

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/16/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 70

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/07/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 03/25/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 01/13/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 68

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/05/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 151

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/06/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/28/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/01/2021
Date Data Arrived at EDR: 02/24/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 05/27/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 14

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 05/26/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 12/11/2020
Date Data Arrived at EDR: 12/11/2020
Date Made Active in Reports: 03/02/2021
Number of Days to Update: 81

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/14/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/03/2021
Date Data Arrived at EDR: 03/03/2021
Date Made Active in Reports: 04/05/2021
Number of Days to Update: 33

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/13/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/02/2021
Date Data Arrived at EDR: 01/08/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 04/06/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/17/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/17/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 33

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/14/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 79

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/23/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 05/14/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 03/04/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 77

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Annually

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 02/26/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 02/23/2021
Date Data Arrived at EDR: 02/25/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 83

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 06/16/2020
Date Made Active in Reports: 08/28/2020
Number of Days to Update: 73

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/10/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/09/2021
Number of Days to Update: 79

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/20/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 01/25/2021
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/13/2021
Number of Days to Update: 77

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/08/2021
Date Data Arrived at EDR: 02/12/2021
Date Made Active in Reports: 05/05/2021
Number of Days to Update: 82

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/05/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/09/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/16/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 05/07/2021
Number of Days to Update: 79

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 05/14/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/16/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/14/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/05/2021
Date Data Arrived at EDR: 01/05/2021
Date Made Active in Reports: 03/18/2021
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/06/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 01/29/2021
Date Data Arrived at EDR: 03/03/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 78

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/08/2021
Date Data Arrived at EDR: 02/09/2021
Date Made Active in Reports: 05/04/2021
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/11/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 03/02/2021
Date Data Arrived at EDR: 03/03/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 78

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/09/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/12/2021
Date Data Arrived at EDR: 03/16/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 11/19/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 62

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/09/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/14/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 03/09/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 06/07/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 11/30/2020
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/12/2021
Number of Days to Update: 73

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 05/19/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 01/20/2021
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/20/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55
Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 03/31/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Semi-Annually

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/31/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Semi-Annually

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29
Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 03/31/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3
Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System
DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 04/08/2021
Date Data Arrived at EDR: 04/09/2021
Date Made Active in Reports: 04/20/2021
Number of Days to Update: 11
Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 04/05/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/31/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 03/17/2021
Date Data Arrived at EDR: 03/18/2021
Date Made Active in Reports: 03/25/2021
Number of Days to Update: 7

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/17/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List

Cupa Facility List

Date of Government Version: 02/02/2021
Date Data Arrived at EDR: 02/04/2021
Date Made Active in Reports: 04/23/2021
Number of Days to Update: 78

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 03/31/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 12/15/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 12/24/2020
Number of Days to Update: 8

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 01/25/2021
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/16/2021
Number of Days to Update: 80

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 04/20/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 12/17/2020
Date Data Arrived at EDR: 01/28/2021
Date Made Active in Reports: 04/16/2021
Number of Days to Update: 78

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 04/21/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/09/2021
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 05/05/2021
Number of Days to Update: 83

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 05/05/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/14/2021
Date Data Arrived at EDR: 01/15/2021
Date Made Active in Reports: 04/05/2021
Number of Days to Update: 80

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 04/01/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 2

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/10/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 01/19/2021
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/11/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 10/29/2020
Date Data Arrived at EDR: 10/30/2020
Date Made Active in Reports: 01/15/2021
Number of Days to Update: 77

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 01/19/2021
Date Data Arrived at EDR: 01/21/2021
Date Made Active in Reports: 01/28/2021
Number of Days to Update: 7

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 02/10/2021
Date Data Arrived at EDR: 02/12/2021
Date Made Active in Reports: 03/11/2021
Number of Days to Update: 27

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/07/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/11/2021
Date Data Arrived at EDR: 01/12/2021
Date Made Active in Reports: 03/25/2021
Number of Days to Update: 72

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/05/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/11/2021
Date Data Arrived at EDR: 01/12/2021
Date Made Active in Reports: 03/26/2021
Number of Days to Update: 73

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/13/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2021
Date Data Arrived at EDR: 02/18/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 81

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/07/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/26/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 02/04/2021
Date Data Arrived at EDR: 04/16/2021
Date Made Active in Reports: 04/21/2021
Number of Days to Update: 5

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 04/16/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/26/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 03/26/2021
Next Scheduled EDR Contact: 07/05/2021
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 10/19/2020
Date Data Arrived at EDR: 01/12/2021
Date Made Active in Reports: 03/26/2021
Number of Days to Update: 73

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/07/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 09/11/2020
Date Data Arrived at EDR: 10/07/2020
Date Made Active in Reports: 12/23/2020
Number of Days to Update: 77

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/23/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/12/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 03/25/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/21/2020
Date Data Arrived at EDR: 12/21/2020
Date Made Active in Reports: 03/10/2021
Number of Days to Update: 79

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/04/2021
Date Data Arrived at EDR: 02/09/2021
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 9

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/12/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 06/02/2021
Next Scheduled EDR Contact: 09/06/3021
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 01/08/2021
Date Data Arrived at EDR: 01/12/2021
Date Made Active in Reports: 03/25/2021
Number of Days to Update: 72

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 03/25/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/03/2021
Date Data Arrived at EDR: 02/04/2021
Date Made Active in Reports: 04/23/2021
Number of Days to Update: 78

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 04/21/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/01/2021
Date Data Arrived at EDR: 02/04/2021
Date Made Active in Reports: 04/23/2021
Number of Days to Update: 78

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 04/29/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/12/2021
Number of Days to Update: 9

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 04/29/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/01/2021
Date Data Arrived at EDR: 02/02/2021
Date Made Active in Reports: 04/20/2021
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 04/30/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/10/2021
Number of Days to Update: 55

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/10/2021
Number of Days to Update: 55

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/07/2021
Next Scheduled EDR Contact: 09/26/2021
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/31/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/24/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 78

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/01/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 04/29/2021
Date Made Active in Reports: 05/03/2021
Number of Days to Update: 4

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 05/19/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 06/07/2021
Number of Days to Update: 19

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/03/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/02/2021
Date Data Arrived at EDR: 03/03/2021
Date Made Active in Reports: 05/21/2021
Number of Days to Update: 79

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 05/05/2021
Number of Days to Update: 83

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 05/05/2021
Number of Days to Update: 83

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/07/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 05/14/2021
Number of Days to Update: 3

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/06/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/10/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/02/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 05/12/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 02/24/2021
Date Data Arrived at EDR: 02/26/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 82

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 05/12/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/12/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/12/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/23/2021
Date Data Arrived at EDR: 03/25/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 77

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/12/2021
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 12/15/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 12/23/2020
Number of Days to Update: 7

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/05/2021
Date Data Arrived at EDR: 01/06/2021
Date Made Active in Reports: 03/18/2021
Number of Days to Update: 71

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/09/2021
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 05/05/2021
Number of Days to Update: 83

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/21/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 01/19/2021
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 02/02/2021
Date Data Arrived at EDR: 02/04/2021
Date Made Active in Reports: 04/23/2021
Number of Days to Update: 78

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 04/27/2021
Next Scheduled EDR Contact: 08/16/2021
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/14/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/28/2020
Date Data Arrived at EDR: 01/29/2021
Date Made Active in Reports: 04/22/2021
Number of Days to Update: 83
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/19/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/25/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/05/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/29/2021
Date Data Arrived at EDR: 04/21/2021
Date Made Active in Reports: 04/23/2021
Number of Days to Update: 2
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/19/2021
Next Scheduled EDR Contact: 08/02/2021
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/21/2020
Date Data Arrived at EDR: 12/23/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 12
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/26/2021
Next Scheduled EDR Contact: 07/12/2021
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 04/21/2021
Date Data Arrived at EDR: 04/22/2021
Date Made Active in Reports: 05/12/2021
Number of Days to Update: 20

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 04/24/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 10/05/2020
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 82

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/11/2021
Next Scheduled EDR Contact: 08/23/2021
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/09/2021
Next Scheduled EDR Contact: 07/19/2021
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/30/2021
Next Scheduled EDR Contact: 08/09/2021
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/09/2021
Next Scheduled EDR Contact: 07/26/2021
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 02/24/2021
Number of Days to Update: 13

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/13/2021
Next Scheduled EDR Contact: 08/30/2021
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

GATEWAY HEIGHTS RESIDENTIAL PROJECT
NOT REPORTED
MORENO VALLEY, CA 92557

TARGET PROPERTY COORDINATES

Latitude (North):	33.959359 - 33° 57' 33.69''
Longitude (West):	117.294602 - 117° 17' 40.57''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472780.5
UTM Y (Meters):	3757494.5
Elevation:	1680 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5641312 RIVERSIDE EAST, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

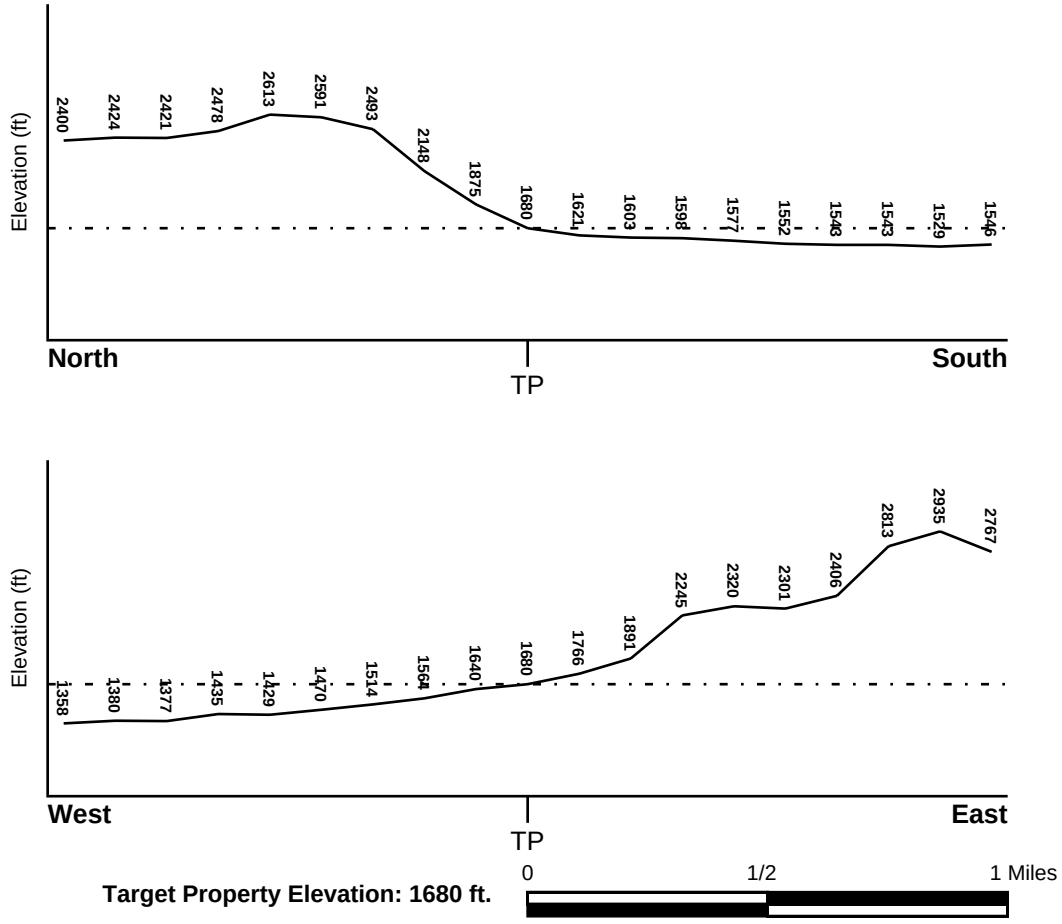
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
0650740005A	FEMA Q3 Flood data

Additional Panels in search area:	FEMA Source Type
06065C0731G	FEMA FIRM Flood data
0602450735A	FEMA Q3 Flood data
0602600020A	FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
A12	1/2 - 1 Mile SSW	Not Reported
1G	1/2 - 1 Mile SSW	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

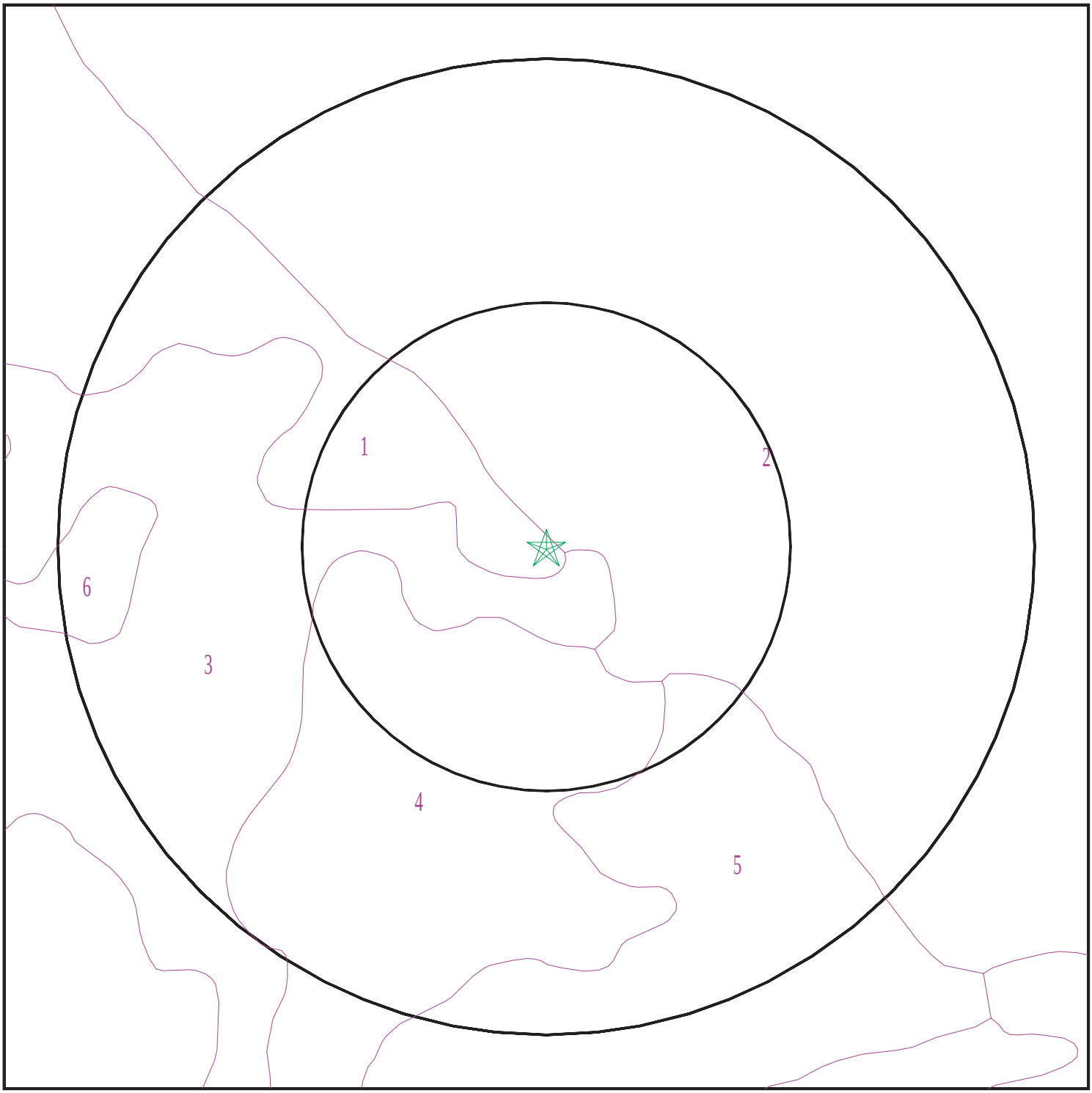
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6541790.2s



Target Property
SSURGO Soil
Water

SITE NAME:	Gateway Heights Residential Project	CLIENT:	Psomas
ADDRESS:	Not Reported Moreno Valley CA 92557	CONTACT:	Sean Noonan
LAT/LONG:	33.959359 / 117.294602	INQUIRY #:	6541790.2s
		DATE:	June 17, 2021 3:51 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Cieneba

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	14 inches	22 inches	weathered bedrock	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 2

Soil Component Name: ROCKLAND

Soil Surface Texture: unweathered bedrock

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class:

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	unweathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 3

Soil Component Name: CIENEBA

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	14 inches	22 inches	weathered bedrock	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 4

Soil Component Name: MONSERATE

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
2	9 inches	27 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	27 inches	44 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
4	44 inches	57 inches	cemented	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6
5	57 inches	70 inches	loamy coarse sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 8.4 Min: 6.6

Soil Map ID: 5

Soil Component Name: FALLBROOK

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	5 inches	18 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	18 inches	22 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 6

Soil Component Name: HANFORD

Soil Surface Texture: coarse sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6
2	7 inches	40 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6
3	40 inches	59 inches	stratified loamy sand to coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

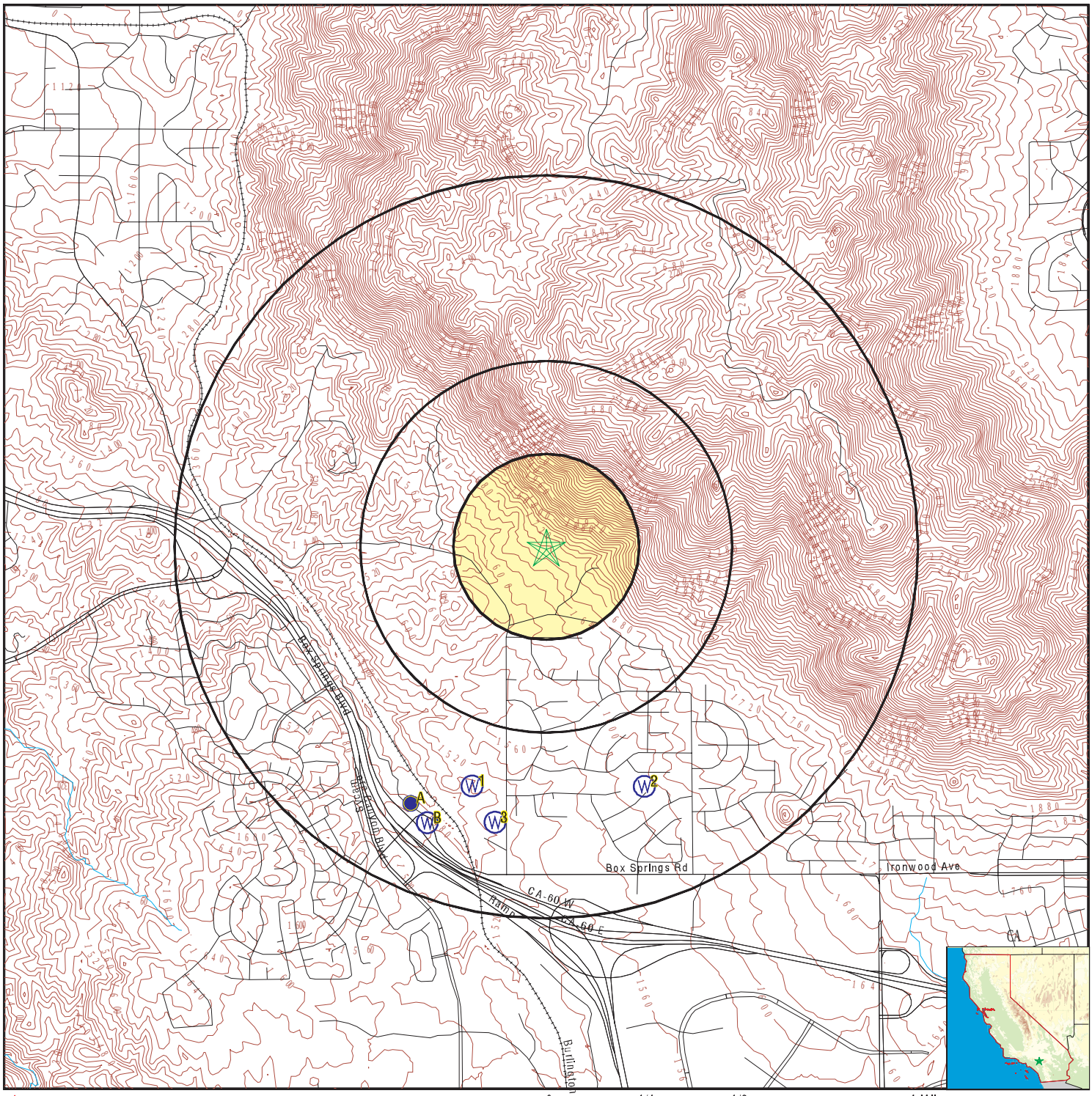
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	2462	1/2 - 1 Mile SSW
2	CADDW0000011940	1/2 - 1 Mile SSE
3	CADWR0000022168	1/2 - 1 Mile South
A4	CAEDF0000076199	1/2 - 1 Mile SSW
A5	CAEDF0000077278	1/2 - 1 Mile SSW
A6	CAEDF0000098441	1/2 - 1 Mile SSW
B7	CAEDF0000070472	1/2 - 1 Mile SSW
A8	CAEDF0000010312	1/2 - 1 Mile SSW
A9	CAEDF0000022883	1/2 - 1 Mile SSW
B10	CAEDF0000004686	1/2 - 1 Mile SSW
B11	CAEDF0000014192	1/2 - 1 Mile SSW
B13	CAEDF0000123281	1/2 - 1 Mile SSW
B14	CAEDF0000045914	1/2 - 1 Mile SSW
B15	CAEDF0000001717	1/2 - 1 Mile SSW
B16	CAEDF0000059545	1/2 - 1 Mile SSW
B17	CAEDF0000048095	1/2 - 1 Mile SSW
B18	CAEDF0000059972	1/2 - 1 Mile SSW
B19	CAEDF0000021016	1/2 - 1 Mile SSW
B20	CAEDF0000046543	1/2 - 1 Mile SSW
B21	CAEDF0000079557	1/2 - 1 Mile SSW
B22	CAEDF0000116487	1/2 - 1 Mile SSW
B23	CAEDF0000142393	1/2 - 1 Mile SSW
B24	CAEDF0000042577	1/2 - 1 Mile SSW

PHYSICAL SETTING SOURCE MAP - 6541790.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Gateway Heights Residential Project	CLIENT:	Psomas
ADDRESS:	Not Reported Moreno Valley CA 92557	CONTACT:	Sean Noonan
		INQUIRY #:	6541790.2s
LAT/LONG:	33.959359 / 117.294602	DATE:	June 17, 2021 3:51 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database | EDR ID Number

1
SSW
1/2 - 1 Mile
Lower

CA WELLS **2462**

Seq:	2462	Prim sta c:	02S/04W-33R04 S
Frds no:	3301053001	County:	33
District:	63	User id:	33C
System no:	3301053	Water type:	G
Source nam:	WELL 01	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	335700.0	Longitude:	1171750.0
Precision:	3	Status:	AR
Comment 1:	20860 BOX SPRINGS CANYON RD RIVERSIDE		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	3301053	System nam:	Box Springs Canyon Apts
Hqname:	Not Reported	Address:	Not Reported
City:	Not Reported	State:	Not Reported
Zip:	Not Reported	Zip ext:	Not Reported
Pop serv:	0	Connection:	0
Area serve:	Not Reported		

2
SSE
1/2 - 1 Mile
Lower

CA WELLS **CADDW0000011940**

Well ID:	3301053-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	WELL 01	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3301053-001&store_num=		
GeoTracker Data:	Not Reported		

3
South
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000022168**

Well ID:	02S04W33R002S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	02S04W33R002S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02S04W33R002S&store_num=		
GeoTracker Data:	Not Reported		

A4
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000076199**

Well ID:	T0606548431-MW-14	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-14

GAMA PFAS Testing: Not Reported
Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-14&store_num=
GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-14

A5
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000077278**

Well ID: T0606548431-MW-15 Well Type: MONITORING
Source: EDF Other Name: MW-15
GAMA PFAS Testing: Not Reported
Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-15&store_num=
GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-15

A6
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000098441**

Well ID: T0606548431-MW-13 Well Type: MONITORING
Source: EDF Other Name: MW-13
GAMA PFAS Testing: Not Reported
Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-13&store_num=
GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-13

B7
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000070472**

Well ID: T0606548431-MW-5 Well Type: MONITORING
Source: EDF Other Name: MW-5
GAMA PFAS Testing: Not Reported
Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-5&store_num=
GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-5

A8
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000010312**

Well ID: T0606548431-MW-16 Well Type: MONITORING
Source: EDF Other Name: MW-16
GAMA PFAS Testing: Not Reported
Groundwater Quality Data: https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-16&store_num=

GeoTracker Data: https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-16

A9
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000022883**

Well ID:	T0606548431-MW-12	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-12
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-12&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-12		

B10
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000004686**

Well ID:	T0606548431-MW-4	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-4		

B11
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000014192**

Well ID:	T0606548431-MW-6	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-6		

A12
SSW
1/2 - 1 Mile
Lower

AQUIFLOW **50782**

Site ID:	083302855T
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	40
Date:	04/1997

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B13
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000123281**

Well ID:	T0606548431-MW-3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-3		

B14
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000045914**

Well ID:	T0606548431-MW-9	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-9
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-9&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-9		

B15
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000001717**

Well ID:	T0606548431-MW-11	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-11
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-11&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-11		

B16
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000059545**

Well ID:	T0606548431-MW-8	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-8
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-8&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-8		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B17
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000048095**

Well ID:	T0606548431-MW-7	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-7		

B18
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000059972**

Well ID:	T0606548431-MW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-2		

B19
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000021016**

Well ID:	T0606548431-MW-10	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-10		

B20
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000046543**

Well ID:	T0606548431-MW-19	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-19
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-19&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-19		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B21
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000079557**

Well ID:	T0606548431-MW-17	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-17
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-17&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-17		

B22
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000116487**

Well ID:	T0606548431-MW-18	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-18
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-18&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-18		

B23
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000142393**

Well ID:	T0606548431-MW-20	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-20
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-20&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-20		

B24
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000042577**

Well ID:	T0606548431-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0606548431&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0606548431&assigned_name=MW-1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1G **SSW** **1/2 - 1 Mile** **Lower**	Site ID:	083302855T	**AQUIFLOW**	**50782**
	Groundwater Flow:	Not Reported		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	40		
	Date:	04/1997		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92557	8	0

Federal EPA Radon Zone for RIVERSIDE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION