DUDEK

SOURCE: Bing 2013, SSURGO

FIGURE 8b

Jurisdictional Waters Impacts

8033

NORTH NORCO CHANNEL STAGE 11 PROJECT NO. 2-0-00140-11

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Mitigation for loss of waters of the United States is required at a minimum 1:1 ratio in accordance with the ACOE and RWQCB no net loss policy. Sometimes, permanent impacts are mitigated at a higher ratio to account for temporal losses. The Project would not permanently remove waters of the United States; rather, a portion of the existing waters is being converted to a concrete channel. This is considered a permanent impact due to loss of functions and values associated with groundwater recharge, sediment transport, and water quality. However, there would be no loss, either temporarily or permanently, with respect to surface flows. Additionally, the constructed earthen-bottom channel would provide 0.63 acre of waters of the United States within the Project site. Due to the limited loss of resource value, we determined a 1:1 mitigation ratio for permanent impacts to waters of the United States would reduce potential impacts to less than significant.

The banks of the channel are unvegetated, engineered slopes and have limited resource value. Similar to waters of the United States, the project would not result in a permanent loss of streambed but rather would convert the unvegetated slopes to concrete lined slopes. This would result in a reduction of functions and values for wildlife species including loss of habitat for burrowing owl and small mammals, and loss of foraging and nesting habitat for other avian species. Due to the lack of riparian resources and the low value of streambed present, mitigation at a 0.5:1 ratio for all impacts to CDFW jurisdictional streambed outside of the OHWM would result in less than significant impacts to jurisdictional streambed.

The earthen-bottom channel would create approximately 0.63 acre of waters of the United States. There are no other opportunities within the ROW for mitigation; therefore, mitigation would be completed off site. Table 3 provides a summary of proposed mitigation.

Table 3
Summary of Proposed Mitigation

Impact	Impact Acreage	On Site Creation	Total Net Loss	Mitigation Ratio	Off-Site Mitigation (Acres)
Permanent impacts, waters of the United States	1.01	0.53	0.48	1:11	0.48
Temporary impacts, waters of the United States	0.10	0.10	0	NA	NA
Permanent impacts, CDFW streambed2	3.11	0	3.11	0.5:1	1.56
Temporary impacts, CDFW streambed2	0.01	0.01	0	NA	NA
				Total Mitigation	**2.04**

Note:
1 The ACOE may determine a different mitigation ratio is appropriate based on the Final Mitigation Rule Checklist.
2 Please note this acreage is the CDFW-streambed outside of waters of the United States

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7 CONCLUSIONS

The North Norco Channel Stage 11 Project site supports waters of the United States and jurisdictional streambeds under jurisdiction of the ACOE, RWQCB, and CDFW, respectively. A 404 Individual Permit, 401 Water Quality Certification, and a Streambed Alteration Agreement will be required prior to initiation of construction activities. A total of 2.04 acres of off-site mitigation is proposed for permanent impacts to jurisdictional waters. A mitigation plan must be approved by the agencies, including a Habitat Mitigation and Monitoring Plan (HMMP) approved by the ACOE.

Should you have any questions regarding this report or require additional information, please do not hesitate to contact me at 909.677.3775 or larcher@dudek.com.

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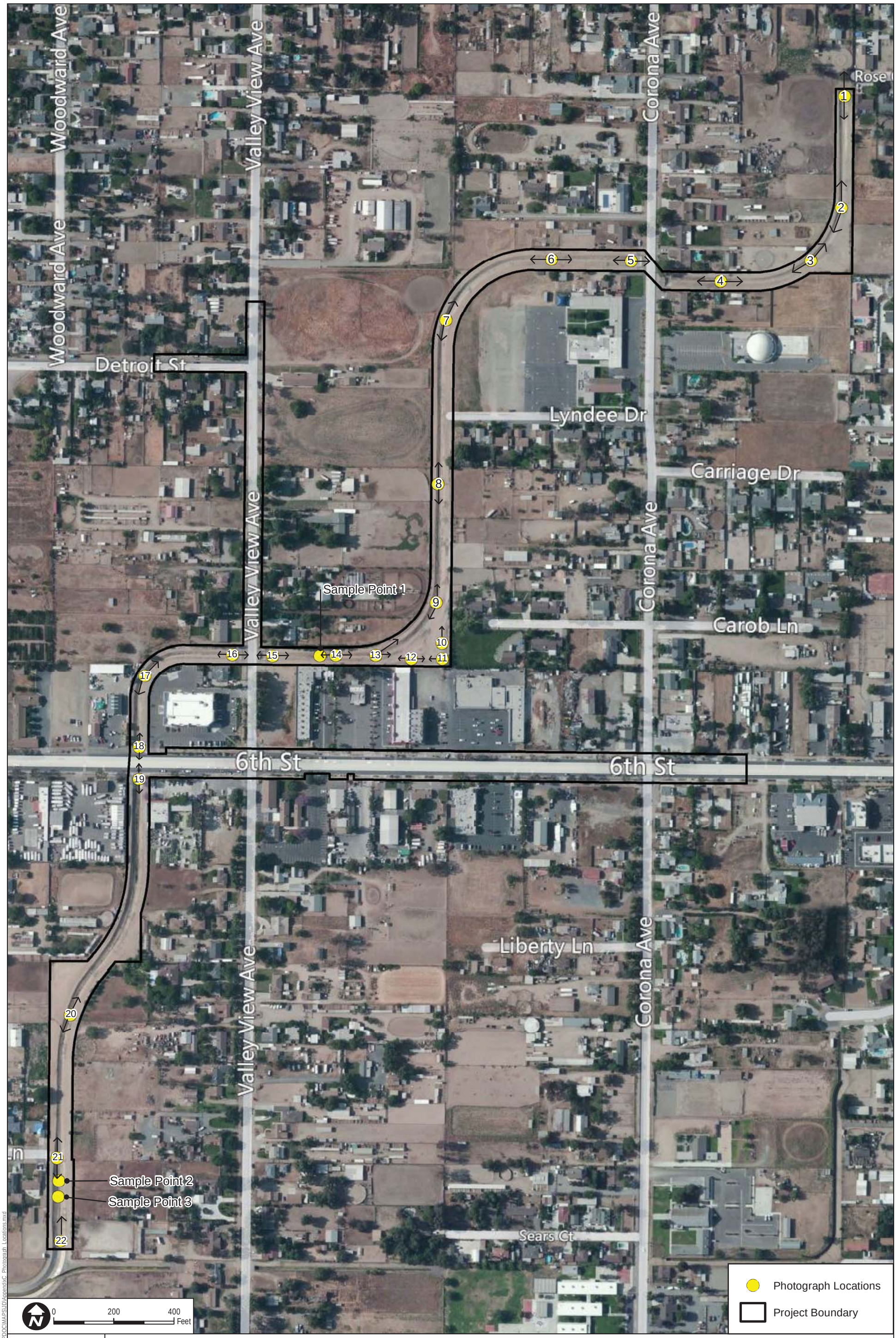
APPENDIX A

Photo Documentation



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8033

SOURCE: Bing 2014

Appendix A

Photograph Locations

NORTH NORCO CHANNEL STAGE 11 PROJECT NO. 2-0-00140-11 BIOLOGICAL RESOURCES TECHNICAL REPORT AND MSHCP CONSISTENCY ANALYSIS

DUDEK

APPENDIX A: PHOTO DOCUMENTATION

Project: North Norco Channel Stage 11 Project, Norco, Riverside County, California

Photo Date: October 17, 2013

Location 1: Facing north, upstream towards Seventh Street. Bed 8ft. Bank 28ft.

Location 1: Facing south, downstream. Bed 8ft. Bank 28ft.

Location 2: Facing north, upstream towards Seventh Street. Bed 9ft. Bank 25ft.

Location 2: Facing south, downstream. Bed 9ft. Bank 25ft.

APPENDIX A: PHOTO DOCUMENTATION

Location 3: Inlet 1 facing northeast, upstream.

Location 3: Inlet 1 facing west, downstream.

Location 4: Facing east, upstream. Bed 6ft. Bank 27ft.

Location 4: Facing west, downstream. Bed 6ft. Bank 27ft.

APPENDIX A: PHOTO DOCUMENTATION

Location 5: Facing east, upstream towards Corona Avenue. Bed 5ft. Bank 40ft.

Location 5: Facing west, downstream. Bed 5ft. Bank 40ft.

Location 6: Facing east, upstream towards Corona Avenue. Bed 7ft. Bank 36ft.

Location 6: Facing west, downstream. Bed 7ft. Bank 36ft.

APPENDIX A: PHOTO DOCUMENTATION

Location 7: Facing northeast, upstream. Bed 7ft. Bank 30ft.

Location 7: Facing southwest, downstream. Bed 7ft. Bank 30ft.

Location 8: Facing north, upstream. Bed 7ft. Bank 30ft.

Location 8: Facing south, downstream. Bed 7ft. Bank 30ft.

APPENDIX A: PHOTO DOCUMENTATION

Location 9: Facing north, upstream. Bed 5ft. Bank 34ft.

Location 9: Facing southwest, downstream. Bed 5ft. Bank 34ft.

Location 10: Swale – From center of swale facing north towards vegetated portion. Mexican sprangletop (*Leptochloa fusca* ssp. *uninervia*) in foreground.

Location 11: From center of swale facing west, downstream towards unvegetated area.

APPENDIX A: PHOTO DOCUMENTATION

Location 12: Swale facing west, downstream. Earthen ditch for nuisance flows. Broken bricks and concrete have been placed in the ditch.

Location 12: Swale facing east, upstream. Partially vegetated area with Mexican sprangletop.

Location 13: Swale, facing west. Earthen ditch created apparently to drain nuisance flow into the channel. RCP crosses under access road and outlets into channel.

Location 13: Swale, facing east. Earthen ditch created apparently to drain nuisance flow into the channel. Broken bricks and concrete have been placed in the channel presumably to reduce erosion.

Location 13: Facing northeast. Toards undeveloped area north of swale.

Location 14: Facing east, upstream. Bed 8ft. Bank 24ft.

Location 14: Facing west, downstream towards Valley View Avenue. Bed 8ft. Bank 24ft.

Location 15: East of Valley View – facing east, upstream.

APPENDIX A: PHOTO DOCUMENTATION

Location 15: East of Valley View – facing west, downstream towards Valley View Avenue.

Location 16: Facing east, upstream towards Valley View Avenue. Bed 7ft. Bank 23ft.

Location 16: Facing west, downstream. Bed 7ft. Bank 23ft.

Location 17: Facing northeast, upstream. Bed 8ft. Bank 28ft.

Location 17: Facing southwest, downstream towards Sixth Street. Bed 8ft. Bank 28ft.

Location 18: North of Sixth Street – facing north, upstream.

Location 18: North of Sixth Street – facing south, downstream towards Sixth Street.

Location 19: Flowing Water – facing north, upstream towards Sixth Street.

APPENDIX A: PHOTO DOCUMENTATION

Location 19: Flowing Water – facing south, downstream. Standing water is from inlet conveying nuisance flows into the channel.

Location 20: Facing northeast, upstream. Bed 9ft. Bank 26ft. Standing water is from nuisance flows.

Location 20: Facing southwest, downstream. Bed 9ft. Bank 26ft. Evidence of recent maintenance activities (scrape marks along channel slopes)

Location 21: Facing north, upstream. Bed 13ft. Bank 37ft.

APPENDIX A: PHOTO DOCUMENTATION

Location 21: Facing south, downstream. Bed 13ft. Bank 37ft. Wetland vegetation along toe of slope.

Location 22: Overview of Channel – facing north, upstream.

Sample Point 1: Soil pit soil.

Sample Point 1: Facing north towards wetland vegetation.

APPENDIX A: PHOTO DOCUMENTATION

Sample Point 1: Facing northeast towards wetland vegetation.

Sample Point 1: Facing southwest towards wetland vegetation.

Sample Point 2: Overview photograph facing north, upstream.

Sample Point 3: Overview photograph facing north, upstream.

Sample Point 3: Overview photograph facing south, downstream.

APPENDIX B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: North Norco Channel Stage 11 Project City/County: Norco/Riverside Sampling Date: 10/17/2013

Applicant/Owner: Riverside County Flood Control and Water Conservation District State: CA Sampling Point: 1

Investigator(s): L. Archer and H. Moine Section, Township, Range: 6, 03S, 06W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: Buchenau loam, slightly saline-alkali, 0 to 2 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [X] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [X] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area**
Wetland Hydrology Present?	Yes (●)	No ( )	**within a Wetland?** **Yes** (●) **No** ( )

Remarks: This area is a result of nuisance flows from adjacent commercial development entering the channel through a RCP.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Salix laevigata*	40	Yes	FACW
2. *Schinus molle*	1	No	FACU
3. *Ailanthus altissima*	5	No	FACU
4.			
5.			
Total Cover:	46 %		
Herb Stratum			
1. *Leptochloa fusca ssp. uninervia (SI from old list)*	30	Yes	FACW
2. *Typha sp.*	5	No	OBL
3. *Dactyloctenium aegyptium*	5	No	Not Listed
4. *Senecio vulgaris*	1	Yes	FACU
5. *Polygonum aviculare*	10	No	FACW
6. *Eleusine indica*	3	No	UPL
7.			
8.			
Total Cover:	54 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	80	x 2 =	160
FAC species		x 3 =	0
FACU species	7	x 4 =	28
UPL species	8	x 5 =	40
Column Totals:	100 (A)		233 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-1	7.5 YR 3/2	100	-	-			sand	
1-12	10 YR 4/3	100	-	-			sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Soils saturated for extended periods from adjacent inlet; inlet was releasing small amounts of water during site visit. Based on review aerial photographs in the office, it was later determined that this area remains inundated for a long period of time and meets the hydric soil criteria for a Recently Developed Wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 9
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 8-10

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

aerial photos, 2004 to 2014 annual aerials available on Google Earth

Remarks: Wetland hydrology is due to nuisance flow from commercial development; however, review of aerial photographs indicate this condition to be present for at least 10 years and was determined to be the normal circumstance.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: North Norco Channel Stage 11 Project City/County: Norco/Riverside Sampling Date: 10/17/2013

Applicant/Owner: Riverside County Flood Control and Water Conservation District State: CA Sampling Point: 2

Investigator(s): L. Archer and H. Moine Section, Township, Range: 6, 03S, 06W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: Greenfield sandy loam, 0 to 2 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: Areas adjacent to Sample Point 2 anthropogenically disturbed and void of vegetation. Riverside County Flood Control and Water Conservation District performs channel maintenance through the removal of vegetation with tracked long reach excavator. The small strip of vegetation within Sample Point 2 was not removed during maintenance.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Leptochloa fusca ssp. uninervia (SI from old list)*	4	Yes	FACW
2. *Typha angustifolia*	1	No	OBL
3. *Cyperus involucratus*	1	No	FACW
4. *Erigeron canadensis*	3	No	FACU
5. *Salix gooddingii*	1	No	FACW*
6. *Senecio vulgaris*	2	No	FACU
7.			
8.			
Total Cover:	12 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 95 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	6	x 2 =	12
FAC species		x 3 =	0
FACU species	5	x 4 =	20
UPL species		x 5 =	0
Column Totals:	12 (A)		33 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: Total vegetative cover is less than 5% and does not meet criteria for wetland delineation. Authorized maintenance occurs in this area; therefore, the maintained condition is the baseline.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: No soil pit excavated due to lack of vegetative cover. Assumed soils are hydric due to duration of soil saturation and hydric soil type (Greenfield sandy loam, 0 to 2 percent slopes).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ◉ No ○ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: North Norco Channel Stage 11 Project City/County: Norco/Riverside Sampling Date: 10/17/2013

Applicant/Owner: Riverside County Flood Control and Water Conservation District State: CA Sampling Point: 3

Investigator(s): L. Archer and H. Moine Section, Township, Range: 6, 03S, 06W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: Greenfield sandy loam, 0 to 2 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [X] Soil [X] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes ( ) No (•)

Are Vegetation [X] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (•)	
Hydric Soil Present?	Yes (•)	No ( )	**Is the Sampled Area within a Wetland?** Yes (•) No ( )
Wetland Hydrology Present?	Yes (•)	No ( )	

Remarks: Areas adjacent to Sample Point 2 anthropogenically disturbed and void of vegetation. Riverside County Flood Control and Water Conservation District performs channel maintenance through the removal of vegetation with tracked long reach excavator. Strip of vegetation within Sample Point 3 was not maintained.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Leptochloa fusca ssp. uninervia (SI from old list)*	70	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 30 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	70	x 2 =	140
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	70 (A)		140 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

[X] Dominance Test is >50%

[X] Prevalence Index is ≤3.0[1]

[ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

[ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (•)

Remarks: Vegetative cover is less than 5% and does not meet criteria for wetland delineation. Authorized maintenance occurs in this area; therefore, maintained conditions are the baseline.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: No soil pit excavated due to insufficient vegetation cover. Assumed soils are hydric due to duration of soil saturation and hydric soil type (Greenfield sandy loam, 0 to 2 percent slopes).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ◉ No ○ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX C

Paleontological Resources Assessment

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

PALEONTOLOGICAL RESOURCES ASSESSMENT FOR THE NORTH NORCO CHANNEL STAGE 11 PROJECT, CITY OF NORCO, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:
Riverside County Flood Control and Water Conservation District
1995 Market Street, Riverside, CA 92501

Authors:
Sherri Gust, Courtney Richards, and Victoria Harvey

Principal Investigator:
Sherri Gust
Riverside County Certified Paleontologist

December 2013

Cogstone Project Number: 2170-005
Type of Study: Paleontological Resources Assessment
Localities: None
USGS Quadrangle: Corona North 7.5-mi Quadrangle
Total Area: 13-acres
Fieldwork Dates: October 29 and 30, 2013
Key Words: Quaternary old alluvial fan, negative survey

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Federal Certifications 8(a), SDB, 8(m) WOSB
State Certifications DBE, WBE, SBE, UDBE

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EXECUTIVE SUMMARY

The purpose of this study is to determine the potential Project-related effects on paleontological resources during construction activities for channel improvements on roughly 13 acres in the City of Norco. The property consists of flood control channels and laterals located in the City of Norco between Sierra Ave to the west, Temescal Ave to the east, 7th Street to the north, and Mulberry Lane to the south. The Santa Ana River is located an average one-half of a mile north of the property. The Project as proposed will entail excavation ranging from 1 to 6 feet in depth along an existing channel and exaction of laterals under 6th Street, Detroit Street, and Valley View Avenue that will range from 5 to 11 feet in depth.

The surface of the Project Study Area (PSA) is mapped entirely as Quaternary old alluvial deposits, but may be underlain by Quaternary very old alluvial fan deposits and very old axial channel deposits. A paleontological records search for the project area was conducted by the San Bernardino County Museum (SBCM). No paleontological localities are recorded in the PSA or within a one mile radius of the PSA. However, similar Pleistocene sediments throughout Riverside County have produced significant fossils including mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, horses, camels, and bison.

An intensive pedestrian survey of the entire proposed Project area was conducted on October 29 and 30, 2013 by Victoria Harvey. The survey consisted of walking transects along both sides of the channel and within the channel when possible, closely inspecting the ground surface. The ground visibility for the Project area that included the channel averaged 50-percent to 100-percent along the upper banks, with visibility affected by gravel cover along some portions. Within the channel the visibility was very good, averaging 90-percent with dense vegetation near drain pipes. Along the three laterals and the slab bridge visibility was 0-percent as this area is currently covered by paved roads with sandy walkways and shoulders highly impacted by a variety of traffic. No paleontological resources were observed.

No paleontological resources are known within the PSA even though Pleistocene sediments are present. Despite extensive prior development in the vicinity, no fossils have been observed. No adverse effects/impacts to paleontological resources are anticipated.

If unanticipated paleontological resources are discovered during project construction activities, all work should halt within 50 feet of the find until it can be evaluated by a qualified paleontologist.

INTRODUCTION

PURPOSE OF STUDY

The purpose of this study is to determine the potential Project-related effects on paleontological resources during construction activities for channel improvements on approximately 13 acres [5,912 linear feet]. The Project is located in the City of Norco (Figure 1).

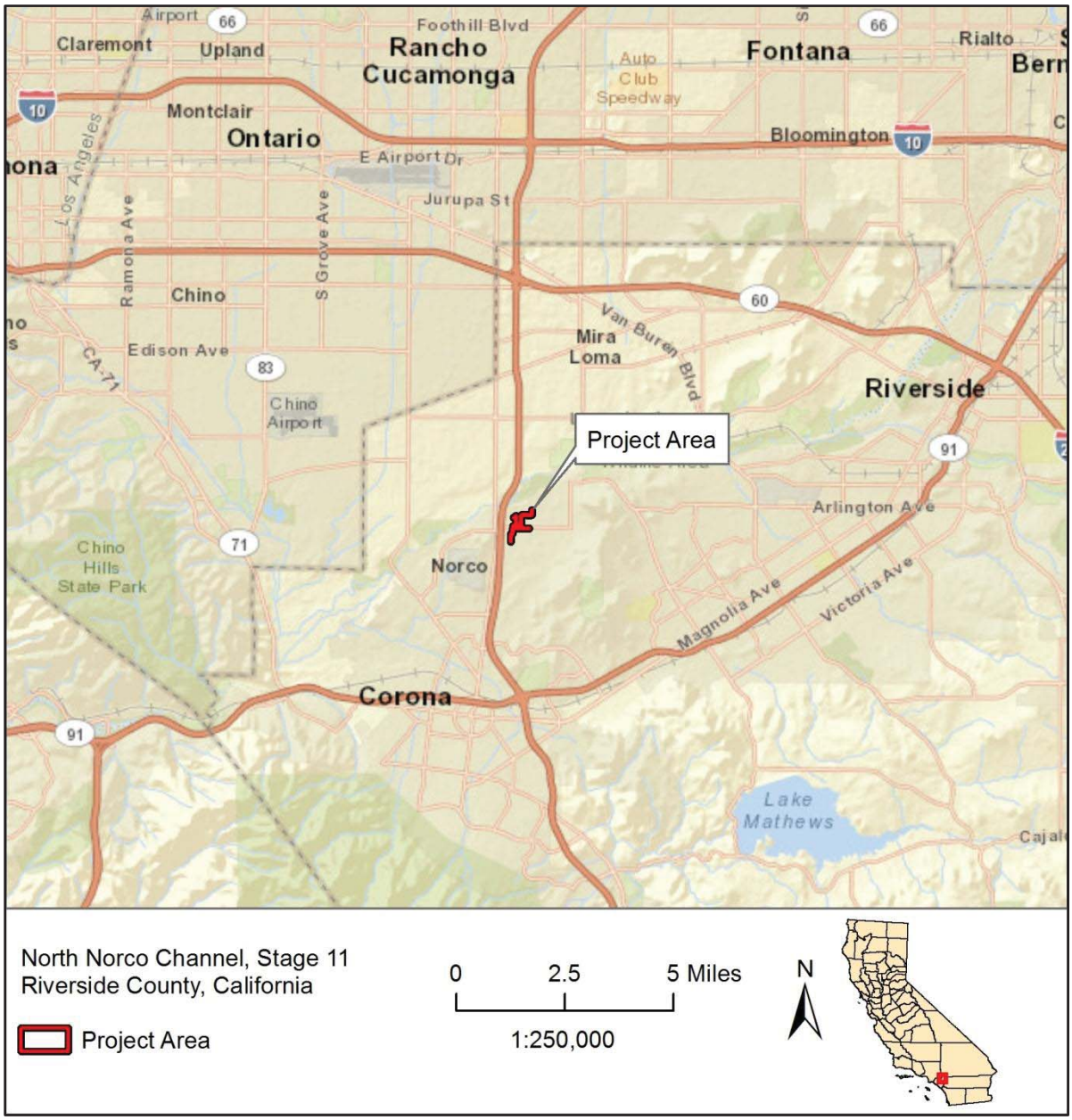

Figure 1. Project Vicinity

PROJECT DESCRIPTION

The Riverside County Flood Control and Water Conservation District proposes to make improvements within the North Norco Master Drainage Plan consisting of flood control channels and laterals located south of 7th Street and north of Mulberry Lane and east of Sierra Ave and west of Temescal Avenue in Norco, California (Figure 2). It is situated in Section 6 of Township 3 south, Range 6 west, on the Corona North, California 7.5' quadrangle.

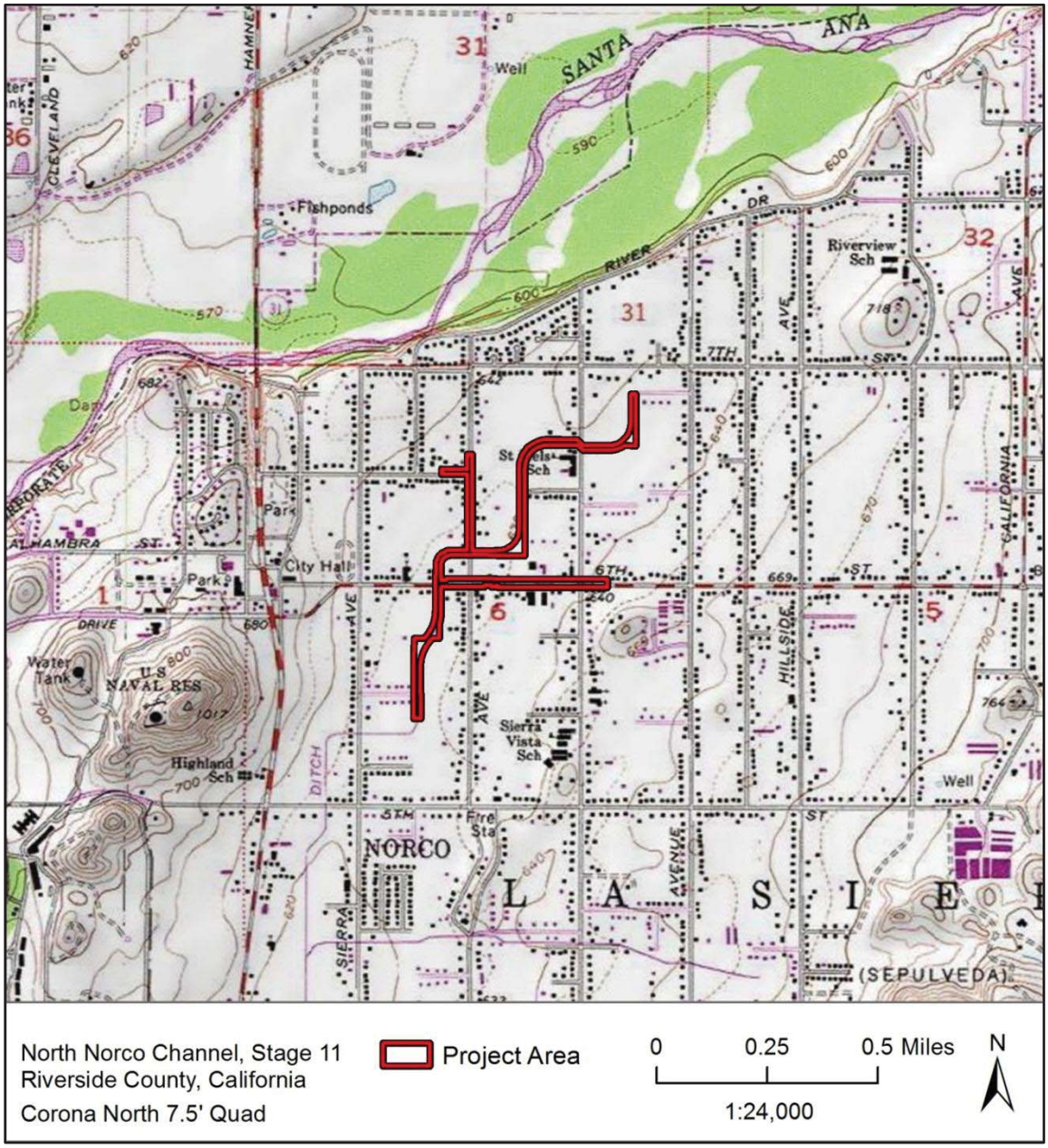

Figure 2. Location Map

The purpose of the Project is to reduce flood risk in the area with improvements to an existing 5,912 lineal foot channel. Construction Activities along the route would include:

- Improvements to the existing earthen channel consisting of a combination of earthen bottom and concrete lined channel. Specifically, a concrete rectangular channel measuring 24 foot at the base with an 8 foot depth in segments west of Valley View Avenue and a trapezoidal channel with an earthen bottom and concrete side slopes measuring 18 feet wide at the base with depths between 6 and 7 feet east of Valley View Avenue.
- Three lateral lines within the right-of-way of existing roadways (6th Street, Valley View Avenue and Detroit Avenue) for underground storm drain facilities.
- A slab bridge at Sixth Street and double reinforced concrete box (RCB) culverts at both Valley View Avenue and Corona Avenue.

PROJECT STUDY AREA

The Project Study Area (PSA) was defined by the Riverside County Flood Control and Water Conservation District with concurrence by the Army Corps of Engineers (Figure 3). The PSA includes all areas which may be adversely affected by construction impacts including staging areas. The vertical PSA extends 11 feet below the current surface.

PROJECT PERSONNEL

Cogstone Resource Management Inc. (Cogstone) conducted the cultural resources studies. Sherri Gust served as the Principal Investigator for the project, supervised all work, edited the report, and prepared the recommendations. Gust is a Riverside County Certified Paleontologist. She has a M.S. in Anatomy (Evolutionary Morphology) from the University of Southern California, a B.S. in Anthropology from the University of California at Davis and over 30 years of experience in California.

Courtney Richards prepared portions of this report. Richards has an M.S. in Biological Sciences with an emphasis in Paleontology from Marshall University. Victoria Harvey performed the field survey and wrote the results. Harvey has a M.A. in Anthropology from California State University, Bakersfield, and a B.A. in Anthropology from California State University, Bakersfield and is cross-trained in paleontology. She has over 13 years of experience in California.

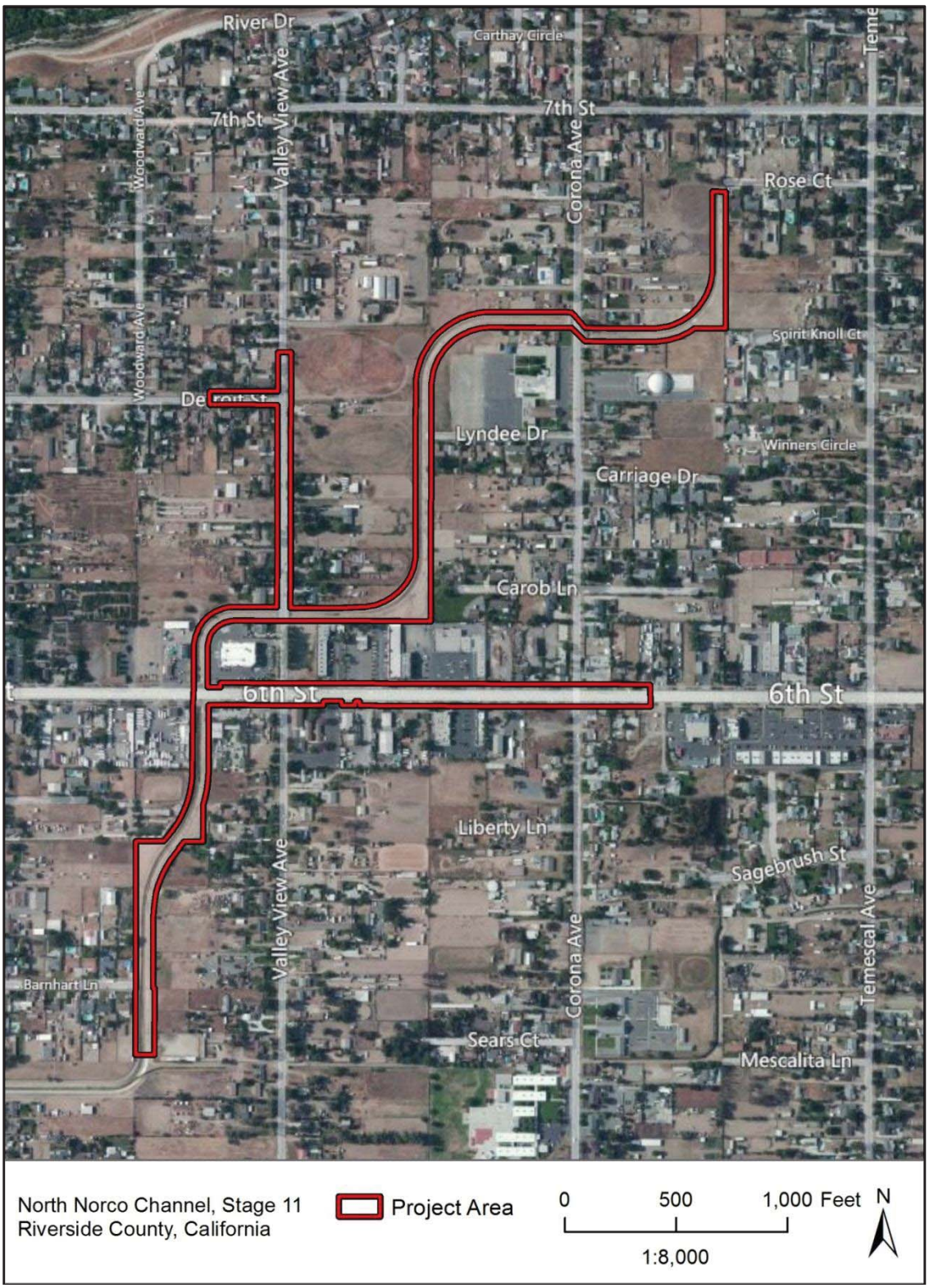

Figure 3. PSA Map

REGULATORY ENVIRONMENT

FEDERAL LAWS AND REGULATIONS

ANTIQUITIES ACT

The Antiquities Act of 1906 states, in part: That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the Act itself, or in the Act's uniform rules and regulations [Title 43 Part 3, Code of Federal Regulations (CFR)], "objects of antiquity" has been interpreted to include fossils by the National Park Service, the Bureau of Land Management, the Forest Service, and other Federal agencies.

NATIONAL ENVIRONMENTAL POLICY ACT

National Environmental Policy Act (NEPA) directs federal agencies to use all practicable means to "Preserve important historic, cultural, and natural aspects of our national heritage…". If the presence of a significant environmental resource is identified during the scoping process, federal agencies and their agents must take the resource into consideration when evaluating project effects. Consideration of paleontological resources may be required under NEPA when a project is proposed for development on federal land, or land under federal jurisdiction. The level of consideration depends upon the federal agency involved.

STATE LAWS AND REGULATIONS

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered.

CEQA includes historic and archaeological resources as integral features of the environment. If paleontological resources are identified as being within the proposed project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

PUBLIC RESOURCES CODE

Public Resources Code (PRC) Section 5097.5 states that no person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

RIVERSIDE COUNTY GENERAL PLAN, OPEN SPACE ELEMENT

The following policies provide direction for paleontological resources:

> OS 19.8 Whenever existing information indicates that a site proposed for development may contain biological, paleontological, or other scientific resources, a report shall be filed stating the extent and potential significance of the resources that may exist within the proposed development and appropriate measures through which the impacts of development may be mitigated.
>
> OS 19.9 This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site grading activities, with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department documenting any paleontological resources that are found during the course of site grading.
>
> OS 19.10 Transmit significant development applications subject to CEQA to the San Bernardino County Museum for review, comment, and/or preparation of recommended conditions of approval with regard to paleontological resources.
> (online at http://www.rctlma.org/genplan/content/gp/chapter05.html#TOC2_7)

DEFINITION OF SIGNIFICANCE FOR PALEONTOLOGICAL RESOURCES

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003; Scott et al. 2004).

BACKGROUND

REGIONAL GEOLOGY

The PSA lies within the Peninsular Ranges Geomorphic Province which consists of fault bounded northwest/southeast trending mountain ranges and valleys. The San Andreas Fault Zone in the Salton Trough/Salton Sea area and subparallel faults west of the San Andreas Fault Zone have locally built up the San Jacinto and Santa Ana mountains and contributed to the shapes of the intervening valleys. The PSA lies between the San Jacinto and Elsinore fault zones which are both taking up much of the strain caused by the bend in the San Andreas Fault Zone to the north of Hemet from the Salton Trough in the east to the Cajon Pass in the west.

STRATIGRAPHY

The PSA is mapped entirely as Quaternary old alluvial fan deposits. However, these deposits may be underlain by Quaternary very old alluvial fan deposits and very old axial channel deposits, which are mapped at the surface near the PSA (Figure 4; Morton 2004).

QUATERNARY OLD ALLUVIAL FANS

The alluvial fan deposits at the surface of the PSA were laid down during the middle Pleistocene (781,000 to 126,000 years ago). These sediments are described as consolidated, slightly dissected, reddish brown sandy alluvium (Morton 2004).

QUATERNARY VERY OLD ALLUVIAL FANS

While not mapped at the surface, early to middle Pleistocene (2.588 million years to 126,000 years old) very old alluvial fan sediments may underlie the surficial old alluvial fan deposits at depth. These deposits are similar to the old alluvial fan deposits, but are well-consolidated and well-dissected (Morton 2004).

QUATERNARY VERY OLD AXIAL CHANNEL DEPOSITS

This early to middle Pleistocene (2.588 million years to 126,000 years old) deposit may also underlie the surficial old alluvial fan deposits within the PSA. Sediments consist of well-indurated, dissected, reddish-brown gravel, sand, and silt (Morton 2004).

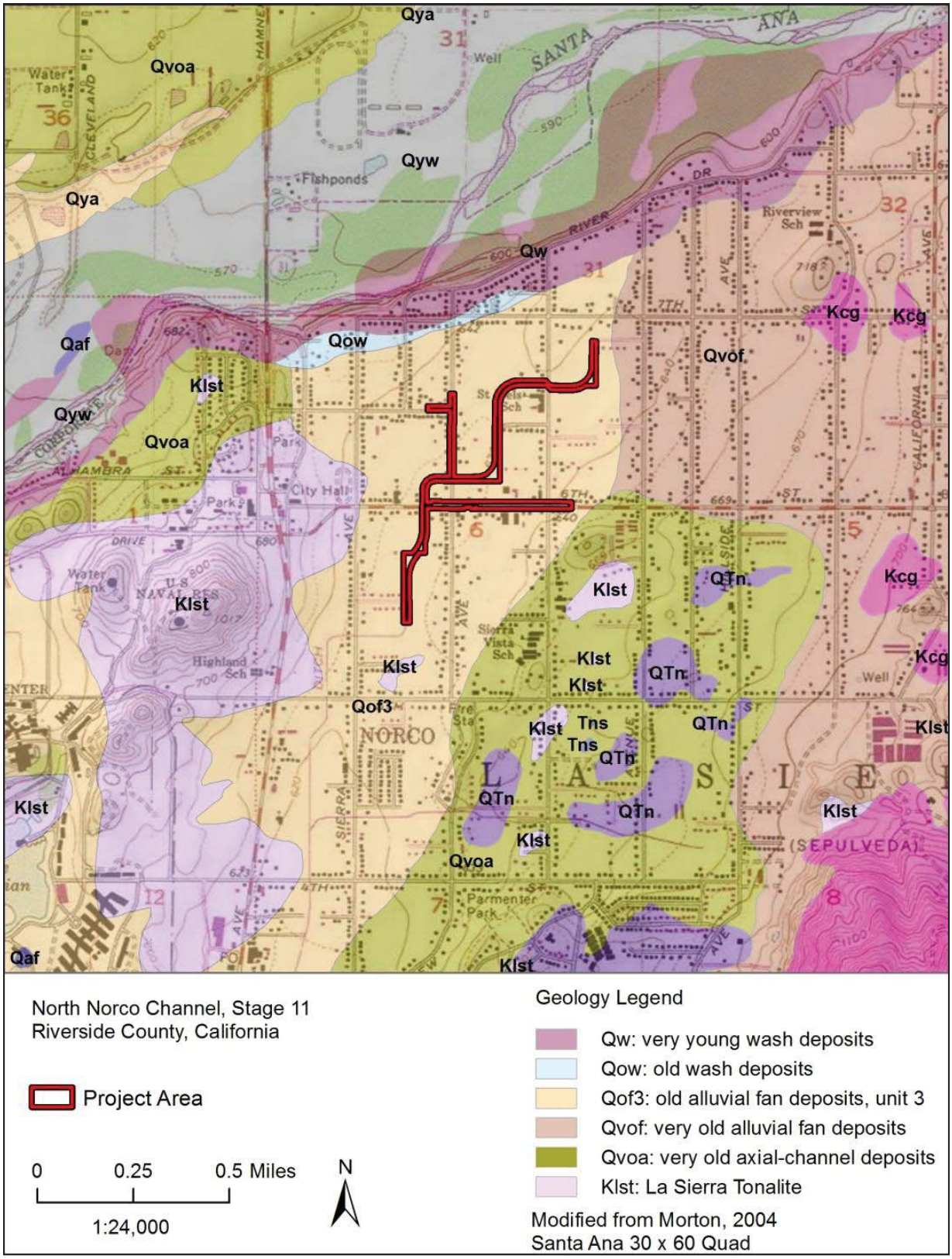

Figure 4. Project Geology

KNOWN RESOURCES

A paleontological records search for the project area was conducted by the San Bernardino County Museum (SBCM; Scott 2013; Appendix A). No paleontological localities are recorded in the PSA or within a one mile radius of the PSA. Similar Pleistocene sediments throughout Riverside County have produced significant fossils including mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, horses, camels, and bison (Scott 2013). Pleistocene fossils have been recovered from Riverside County from depths as shallow as 4 feet (Scott, pers. comm. 2013); however, they are typically collected from depths of 8 feet or greater.

SURVEY RESULTS

SURVEY METHODS

An intensive pedestrian survey of the entire proposed Project area was conducted on October 29 and 30, 2013 by Victoria Harvey. The survey consisted of walking transects along both sides of the channel and within the channel when possible, closely inspecting the ground surface. Along the paved roadways transects were walked along the unpaved sidewalks, first one side and then the opposite, closely inspecting the ground surface. The ground visibility for the Project area that included the channel averaged 50-percent to 100-percent along the upper banks, with visibility affected by gravel cover along some portions. Within the channel the visibility was very good, averaging 90-percent with dense vegetation near drain pipes. Along the three laterals and the slab bridge visibility was 0-percent as this area is currently covered by paved roads with sandy walkways and shoulders highly impacted by a variety of traffic.

SURVEY RESULTS

A pedestrian survey was conducted on both sides of the channel and within the channel when accessible. For the most part the channel was dry and the upper banks graded and compacted from use (Figures 5 and 6). The exception was the segment south of 6th Street, with deep banks and running water in the channel (Figure 7). Upper banks and the channels were inspected and the wider areas at the curves south of 6th, between Valley View Avenue and Detroit, and between Rose Court and Corona Avenue were walked in 5 m transects. In segments between 6th Street and Valley View Avenue and between Valley View Avenue and Corona Avenue there was a gravel cap on the upper banks for stabilization (Figure 8). Erosion and cuts exposing buried soils

were inspected for anomalies that might indict the presence of paleontological resources. No paleontological resources were observed.

Laterals are located on existing roadways and a pedestrian survey was conducted on both sides of the roads (Figures 9, 10, and 11). Traffic on the roadways was moderate on the two lane residential streets (Valley View Avenue and Detroit Avenue) and heavy on the three lane road, 6th Street, that allows direct access to the I-15 freeway (less than a mile west of the eastern end of the project area). The ground visibility in the project area is poor, as a portion encompasses paved roads. The walkways were unpaved, heavily trafficked sandy expanses roughly 10-12 feet wide. This walkway is used for pedestrian traffic, golf carts, and horse and riders and is impacted by these activities and groomed for maintenance. No paleontological resources were observed.

Figure 5. Channel, view north towards Rose Court

Figure 6. Channel, view east from Valley View

Figure 7. Channel, view south from 6th Street

Figure 8. East bank of channel that runs west from Corona Avenue

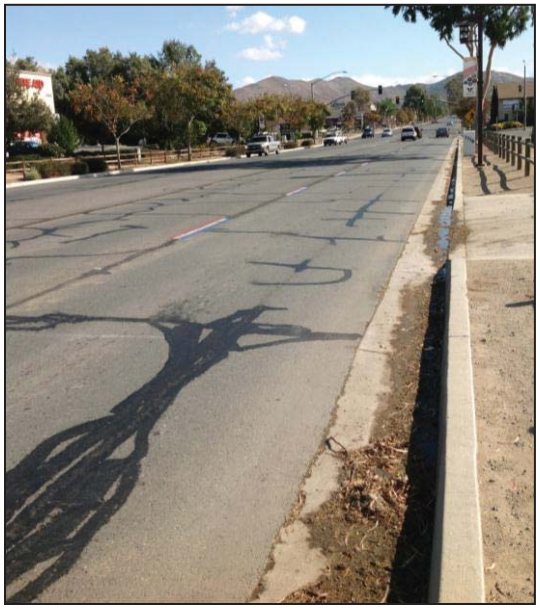

Figure 9. 6th Street, view east from channel

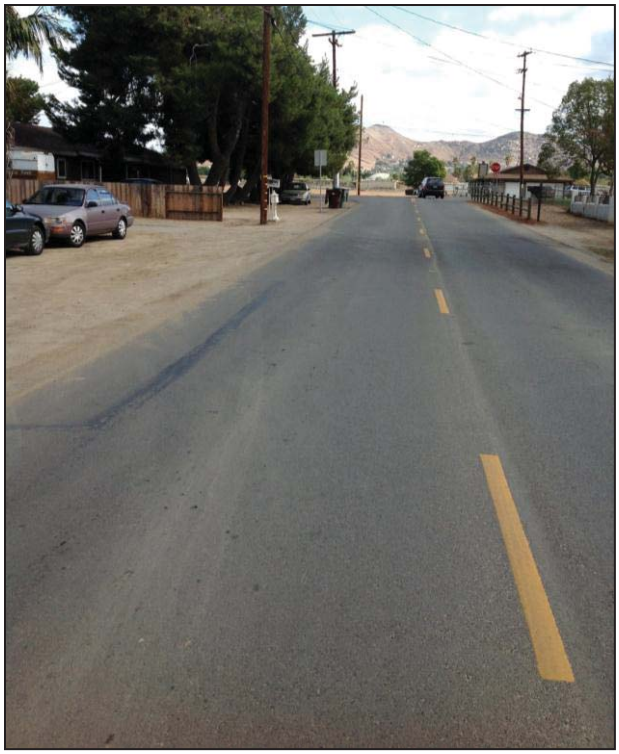

Figure 10. Detroit Avenue, view east to Valley View Avenue

Figure 11. Valley View Avenue, view north from 6th Street

FINDINGS AND RECOMMENDATIONS

No paleontological resources are known within the PSA. Pleistocene sediments are present in the PSA. However, despite extensive prior development in the vicinity, no fossils have been observed. No adverse effects/impacts to paleontological resources are anticipated.

If unanticipated paleontological resources are discovered during project construction activities, all work should halt within 50 feet of the find until it can be evaluated by a qualified paleontologist.

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Morton, D.M.
2004 Preliminary Digital Geologic Map of the Santa Ana 30' X 60' Quadrangle, southern California, version 2.0. *U.S. Geological Survey Open-File Report 99-182 version 2.0-2004*.

Scott, E.
2013 Paleontology Literature and Records Review, North Norco Channel, Stage 11, City of Norco, Riverside County, California. On file with Cogstone, Orange.

Scott, Eric
2013 Personal communications concerning fossil recoveries from the Diamond-Domenigoni Valley and Salt Creek areas southwest of Hemet.

APPENDIX A. QUALIFICATIONS

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

SHERRI GUST

Project Manager & Principal Investigator, Paleontology and Archaeology

EDUCATION

1994 M. S., Anatomy (Evolutionary Morphology), University of Southern California, Los Angeles
1979 B. S., Anthropology (Physical), University of California, Davis

SUMMARY QUALIFICATIONS

Gust has more than 30 years of experience in California, acknowledged credentials for meeting national standards, and is a certified/qualified principal archaeologist and paleontologist in all California cities and counties that maintain lists. Gust is an Associate of the Natural History Museum of Los Angeles County in the Vertebrate Paleontology and Rancho La Brea Sections. She is a Member of the Society of Vertebrate Paleontology, Society for Archaeological Sciences, Society for Historical Archaeology, the Society for California Archaeology and others. She has special expertise in the identification and analysis of human, animal and fossil bone. In addition, she is a Reader at the Huntington Library and is knowledgeable about archival research.

SELECTED PROJECTS

Caltrans District 8 Road Improvement Projects. Prepared Paleontological Identification Reports, Paleontological Evaluation Reports and Paleontological Mitigation Plan for projects including I10, SR58, SR138, SR247 and Ave 52 interchange. Supervised paleontological monitoring for SR138 and SR91, recovered significant fossils and prepared Paleontological Mitigation Reports. Principal Paleontologist and Task Manager. 2005-present.

Mojave Water Agency Ground Water Replenishment Project. Cultural and Paleontological Resources Management Plan was prepared, including an updated assessment, and submitted to SHPO. Cultural resources sensitivity training provided to all construction personnel and both archaeological and paleontological monitoring performed. Principal Archaeologist and Paleontologist and Project Manager. 2010-present

Eldorado-Ivanpah Transmission Line. Paleontological survey and Paleontological Resources Management Plan for 71 miles of electrical lines and associated telecommunications from Eldorado, NV to Ivanpah, CA across both BLM and private lands. Project Manager and Principal Paleontologist. 2010

Niland Solar Energy Project. Paleontological Assessment and Mitigation Sampling for a 1000 acre solar project in the Lake Cahuilla Beds in Imperial County. Project Manager and Principal Paleontologist. 2008-9.

Spring Trails Project. Archaeological and Paleontological Resources Assessment of 350 acre residential development with evaluation of previous work and Mitigation Plan in San Bernardino. Project Manager and Principal Paleontologist and Archaeologist. 2008-9.

Yucaipa Valley Water District Third St/Mytlewood Drive Pipeline. Archaeological and paleontological assessment and subsequent monitoring for 30-inch pipeline installation project along Third Street and Myrtlewood Drive between Wildwood Canyon and Calimesa Boulevard in Yucaipa. Project Manager and Principal Archaeologist and Paleontologist. 2005, 2006-2007

Jefferson Business Complex. Phases II and III Archaeological Excavations, artifact recovery, identification and analysis, curation and final interpretive report in Murrieta. Project Manager and Principal Archaeologist. 2007.

Coachella's Pioneer Cemetery. Archaeological and paleontological assessment of a 40 acre parcel with discovery of historic cemetery and preparation of proposed memorial and treatment plan to relocate the burials. Project Manager and Principal Archaeologist and Paleontologist. 2007-8.

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

COURTNEY RICHARDS
Paleontologist and Assistant Field Director

EDUCATION

2011	M.S., Biological Sciences, Marshall University
2006	B.S., Earth and Space Science, University of Washington

SUMMARY QUALIFICATIONS

Richards is a qualified paleontologist with research, field, and laboratory experience. She earned her Bachelor's degree in Earth and Space Science at the University of Washington and her Master's degree in Biological Sciences with a paleontology focus at Marshall University. Richards has published papers on dinosaur and marine reptile paleontology research. Richards has personal expertise in fossil salvage, stratigraphy, fossil preparation, database analysis and identification. She has two years of professional experience in California.

SELECTED PROJECTS

Merced Freeway Project, Caltrans District 10. Assistant Field Director. Conducted and supervised paleontological monitoring, fossil recovery, fossil preparation, and prepared portions of the monitoring compliance report for the 5 mile long State Route 99 expansion project south of Merced. 2012

Los Angeles International Airport (LAX) Northside Plan Update. Paleontology Technician. Performed a pedestrian survey and co-authored the subsequent paleontological resources assessment used to update regulations for future development within the Northside area of the LAX Specific Plan. 2012

State Route 91 Project. Paleontology Technician. Performed paleontological monitoring of sensitive sediments during HOV lane construction along a 6 mile segment of SR-91 in Riverside County. 2011-12

East San Fernando Valley Transit Corridor. Paleontology Technician. Conducted a paleontological survey and co-authored paleontological assessment and existing condition reports for a Metro project located in the cities of Los Angeles and San Fernando. 2011-present

Westside Exploratory Test Shaft. Paleontology Technician. Provided paleontological monitoring during drilling of test shafts for a subway project located in the La Brea Zone. Used a Trimble unit to map tar seeps within a 1 mile radius of the project area. 2012-present

Rancho Malibu Hotel Project. Paleontology Technician. Conducted a pedestrian survey and co-authored the subsequent paleontological assessment report for a 28 acre hotel construction project in Malibu. 2012

MTC Express Lanes, Alameda, Contra Costa, and Santa Clara Counties. Report Contributor. Prepared portions of a Paleontological Identification Report for a 2472 acre HOV lane to toll lane conversion project along portions of Interstates 580, 680, and 880 in Alameda, Contra Costa, and Santa Clara Counties. 2012-present

Pioneer High School Project. Report Contributor. Prepared paleontology and geology sections of a combined archaeological and paleontological resources assessment report for a stadium improvement project at Pioneer High School in Whittier, Los Angeles County. 2013.

Caltrans Fossil Sensitivity Mapping for Central California. Paleontology Technician. Performed geology research for an extensive project to map paleontological sensitivity characteristics for over 3000 miles of proposed construction activities along major freeways in 15 Counties. 2011-2012

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

VICTORIA HARVEY, M.A., R.P.A.

Archaeologist and Cross-Trained Paleontologist

EDUCATION

2011	M.A., Anthropology, California State University, Bakersfield
1999	B.A., *magna cum laude*, Anthropology/Archaeology, minor in History, California State University, Bakersfield

SUMMARY QUALIFICATIONS

Harvey is a Registered Professional Archaeologist and cross-trained paleontologist with more than 13 years of experience in cultural resources management. She earned her Master's and Bachelor's degrees in Anthropology from California State University, Bakersfield. She has experience in all aspects of archaeology including survey, excavation, wet-screening, mapping, site record production, monitoring, record search, and report writing. Harvey is familiar with the regulations and protocols for working on and with California State Lands and the Bureau of Land Management (BLM) Lands. She is experienced in leading field crews throughout southern California, particularly in the Mojave Desert and on BLM lands. She has completed more than 24 hours of Cogstone paleontology training and has experience as a paleontological monitor.

SELECTED PROJECTS

Eldorado-Ivanpah SCE Transmission Line. Southern CA & NV. Paleontology/Archaeology Field Coordinator**.** Supervised field operations, managed daily monitoring activities, and trained field personnel. Coordinated with SCE, construction crews, and field monitors in compliance with the project Paleontological Resources Management Plan. The project involves installation of SCE electrical lines and associated telecommunications from Eldorado, NV to Ivanpah, CA across both BLM and private lands. 2012-2013

Mojave Water Agency Operations Facility Project. San Bernardino County, California. Paleontology/Archaeology supervisor. Supervised dual monitoring of earthmoving for construction of new Operations Center and related educational facility in Apple Valley. 2012

Morongo Geotechnical Testing Project. San Bernardino County, California. Dual paleontology/archaeology monitor. Monitored geotechnical excavations related to proposed SCE electrical lines. 2011

Mojave Water Agency R3 Project. San Bernardino County, California. Paleontology/Archaeology surveyor. Intensive pedestrian survey for new water pipelines, facilities and detention basin in Apple Valley, Hesperia and Victorville. 2010

State Route 178 Widening Project. Kern County, California. Paleontology/Archaeology surveyor. Survey of project area along six linear miles east of Bakersfield. 2010

High Speed Rail Project. Kern and Los Angeles Counties. Paleontology field technician. Participated in paleontological survey of roughly 90-mile alignment for the California High Speed Rail, Bakersfield to Palmdale. 2009

Tehachapi Renewable Transmission Project (TRTP) Seg. 1, 2, 3, Los Angeles and Kern Counties. Paleontology/Archaeology Field Coordinator**.** Cultural resources monitoring for a large transmission line project spanning two counties on behalf of Southern California Edison. Work included preparing weekly summaries and spreadsheets for tracking employee duties, managing monitoring reports and associated paperwork, monitoring transmission line construction. Other duties include working with other companies and agencies to meet project goals. 2009

APPENDIX B. PALEONTOLOGICAL RECORDS SEARCH

21 November 2013

Cogstone Resource Management
attn: Molly Valasik
1518 W. Taft Avenue
Orange, CA 92865

re: **PALEONTOLOGY LITERATURE AND RECORDS REVIEW, NORTH NORCO CHANNEL, STAGE 11, CITY OF NORCO, RIVERSIDE COUNTY, CALIFORNIA**

Dear Ms. Valasik,

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) has completed a literature review and records search for the above-named project in the City of Norco, Riverside County, California. Specifically, the study area is located in section 6, Township 6 South, Range 3 West, San Bernardino Base and Meridian, as seen on the Corona North, California 7.5' United States Geological Survey topographic quadrangle map (1953 edition).

Previous geologic mapping (Rogers, 1965; Morton and Gray, 2002) indicates that the proposed study area is located entirely upon older alluvial fan deposits of middle to late Pleistocene age (= unit **Qof_a**). These deposits have high potential to contain significant vertebrate fossils, and so are assigned high paleontologic sensitivity. Similar older Pleistocene alluvial sediments elsewhere throughout Riverside and San Bernardino Counties and the Inland Empire have been reported to yield significant fossils of plants and extinct animals from the Ice Age (Jefferson, 1991; Reynolds and Reynolds, 1991; Anderson and others, 2002; Scott and Cox, 2008; Springer and others, 2009, 2010; Scott, 2010). Fossils recovered from these Pleistocene sediments represent extinct taxa including mammoths, mastodons, ground sloths, dire wolves, short-faced bears, sabre-toothed cats, large and small horses, large and small camels, and bison (Jefferson, 1991; Reynolds and Reynolds, 1991; Scott and Cox, 2008; Springer and others, 2009, 2010; Scott, 2010).

For this review, I conducted a search of the Regional Paleontologic Locality Inventory (RPLI) at the SBCM. The results of this search indicate that no previously-recorded paleontologic resource localities are present within the study area, nor from within at least one mile in any direction.

Recommendations

The results of the literature review and the search of the RPLI at the SBCM demonstrate that the above named study area is located on Pleistocene alluvial sediments with high potential to contain

paleontologic resources. A qualified vertebrate paleontologist must develop a program to mitigate impacts to nonrenewable paleontologic resources. This mitigation program must be consistent with the provisions of the California Environmental Quality Act (Scott and Springer, 2003), as well as with regulations implemented by the County of Riverside. This program should include, but not be limited to:

1. Monitoring of excavation into rock units having high potential to contain significant nonrenewable paleontologic resources. Based upon the results of this review, all Pleistocene older alluvial fan sediments present within the area of potential effect are considered to have high potential to contain such resources. Paleontologic monitors should be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors must be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens.

2. Preparation of recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils are essential in order to fully mitigate adverse impacts to the resources (Scott and others, 2004).

3. Identification and curation of specimens into an established, accredited museum repository with permanent retrievable paleontologic storage. These procedures are also essential steps in effective paleontologic mitigation (Scott and others, 2004) and CEQA compliance (Scott and Springer, 2003). The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not complete until such curation into an established, accredited museum repository has been fully completed and documented.

4. Preparation of a report of findings with an appended itemized inventory of specimens. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontologic resources.

References

Anderson, R.S., M.J. Power, S.J. Smith, K.B. Springer and E. Scott, 2002. Paleoecology of a Middle Wisconsin deposit from southern California. Quaternary Research 58(3): 310-317.

Jefferson, G.T., 1991. A catalogue of late Quaternary vertebrates from California: Part Two, mammals. Natural History Museum of Los Angeles County Technical Reports, No. 7.

Morton, D.M. and C.H. Gray, Jr., 2002. Geologic map of the Corona North 7.5' quadrangle, Riverside and San Bernardino Counties, California, version 1.0. United States Geological Survey Open-File Report 02-22. Digital preparation by K.R. Bovard and M. Dawson. 18 p.

Reynolds, S.F.B. and R.L. Reynolds, 1991. The Pleistocene beneath our feet: near-surface Pleistocene fossils in inland southern California basins. *In* M.O. Woodburne, S.F.B. Reynolds, and D.P. Whistler (eds.), Inland Southern California: the last 70 million years. Redlands, San Bernardino County Museum Special Publication 38(3&4), p. 41-43.

Rogers, T.H., 1965. Geologic map of California, Santa Ana sheet, scale 1:250,000. California Division of Mines and Geology Regional Geologic Map Series.

Scott, E. and S.M. Cox, 2008. Late Pleistocene distribution of *Bison* (Mammalia; Artiodactyla) in the Mojave Desert of southern California and Nevada. *In* X. Wang and L.G. Barnes (eds.), Geology and Vertebrate Paleontology of Western and Southern North America, Contributions in Honor of David P. Whistler. Natural History Museum of Los Angeles County Science Series No. 41, p. 359 - 382.

Scott, E. and K. Springer, 2003. CEQA and fossil preservation in southern California. The Environmental Monitor, Fall 2003, p. 4-10, 17.

Scott, E., K. Springer and J.C. Sagebiel, 2004. Vertebrate paleontology in the Mojave Desert: the continuing importance of "follow-through" in preserving paleontologic resources. *In* M.W. Allen and J. Reed (eds.), The human journey and ancient life in California's deserts: Proceedings from the 2001 Millennium Conference. Ridgecrest: Maturango Museum Publication No. 15, p. 65-70.

Springer, K., E. Scott, J.C. Sagebiel, and L.K. Murray, 2009. The Diamond Valley Lake local fauna: late Pleistocene vertebrates from inland southern California. *In* L.B. Albright III (ed.), Papers on geology, vertebrate paleontology, and biostratigraphy in honor of Michael O. Woodburne. Museum of Northern Arizona Bulletin 65:217-235.

Springer, K., E. Scott, J.C. Sagebiel, and L.K. Murray, 2010. Late Pleistocene large mammal faunal dynamics from inland southern California: the Diamond Valley Lake local fauna. *In* E. Scott and G. McDonald (eds.), Faunal dynamics and extinction in the Quaternary: Papers honoring Ernest L. Lundelius, Jr. Quaternary International 217: 256-265.

Please do not hesitate to contact us with any further questions you may have.

Sincerely,

Eric Scott, Curator of Paleontology
Division of Geological Sciences
San Bernardino County Museum

APPENDIX D

Environmental Hazards Report

ENVIRONMENTAL HAZARDS REPORT

North Norco Channel Improvements
Norco, California

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Nicole Peacock, PE, PG

JANUARY 2014

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FIGURES

APPENDICES

1 INTRODUCTION

This hazards report summarizes the potential environmental concerns associated with the North Norco Channel improvements. This environmental hazards review is based on a site visit and Environmental Data Resources (EDR) search for the North Norco Channel project area located in Norco, California (project area; Figure 1). The EDR search consists of a computerized database search of regulatory agency records and available historical source information to assess potential environmental impacts to the project area.

1.1 Site Description

The project area is situated along existing earthen flood control channels and public roadways east of I-15 at 6th Street (Figure 1). According to the City of Norco Zoning Map dated May 21, 2012, the project area is located within public roadways and areas zoned Limited Development (LD). Surrounding land uses include Commercial (C-4) Agricultural-Low Density 20,000 sq. ft. (A-1-20) zoned properties.

2 ENVIRONMENTAL SETTING

General topographic information for the site and the surrounding area was obtained from the EDR report and from the site visit (Appendix A). The elevation of the site ranges from approximately 640 feet above mean sea level (msl) in the northeast corner and 625 feet above msl in the southwest corner.

The site is within Santa Ana River Hydrologic Unit (801), Cajalco Hydrologic Sub-Area 801.33, as listed in the Regional Water Quality Control Board Santa Ana Hydrologic Basin Planning Area (1986).

3 EXISTING CONDITIONS

Information on existing hazardous materials conditions was obtained by a site reconnaissance and EDR database report. Chemical storage and known releases at the project area or at sites near the project area were obtained from review of the EDR report.

3.1 Site Reconnaissance

A site reconnaissance was conducted on November 16, 2013 by Susie Smith of Dudek. The site reconnaissance consisted of walking the site, taking notes on observations, and taking photographs. Photographs are presented in Appendix B.

The project area consists of an earthen channel and several paved roadways (Photographs 1 through 11). Concrete culverts and embankments were present in the locations where the

channel crossed under a roadway (Photographs 2, 5, and 10). Several PVC upside down "T" pipes were observed along the channel perimeter (Photograph12). The PVC "T"s were labeled as Riverside County Flood Control and Water Conservation. Blue crystalline material was observed in the PVC at several of the locations.

The 6th Street portion of the project area is surrounded by commercial properties on the north and south sides of the road. These properties include: trailer sales and maintenance, animal feed stores, equipment rental, restaurants, drug store, veterinarian, cleaners, and various other commercial businesses (Photographs 2, 4, and 13 through 18). The remainder of the project area is primarily surrounded by residential properties, many with horses and other livestock; one commercial property was located in the northeast portion of the project area (Photographs 11 and 14).

One neighboring property in the central section of the project area had 2 plastic 55-gallon drums laying on their side the soil (Photograph 19). Based on the location of the drums adjacent to horse pens, it is possible that these are used as feed troughs. Another neighboring property in the same area had multiple piles of dirt that were being moved with a backhoe (Photograph 20). A property located on the west side of the channel at the northeast end appeared to be used for equipment and debris storage (Photograph 21).

There was no indication of chemical storage or use within the project area. Dudek did not notice any abnormal odors within the project area. Additionally, no tanks were observed within the project area.

Several pole-mounted transformers were observed along the east side of Valley View Avenue and the north side of Detroit Street (Photographs 6 and 7). Based on the project boundary map, the transformers appear to be located within or adjacent to the project area. The transformers appeared to be in good condition without evidence of leaks.

3.2 EDR Report

A records review of federal, state, and local regulatory agency databases was also used to evaluate environmental conditions of potential concern with the project area and surrounding properties within a one-mile radius.

The project area was not listed in any of the federal, state, or local databases searched.

A total of 28 unique sites were identified to be within one mile of the project area.

Twenty of the 28 sites were listed in databases other than those that indicate a release has occurred at the site. As no release has been reported at these sites, it is unlikely that these sites have impacted the environmental conditions at the project area. One of the 20 sites is located

adjacent to the project area at 1188 6th Street and is listed in the historical cleaners database. A review of South Coast Air Quality Management District permits indicates that a dry cleaning machine has not been permitted at this site. Therefore, it is likely that this is a store front for off-site dry cleaning and is therefore unlikely to have impacted the project area.

One of the 28 sites, Norco Conservation Camp, was incorrectly mapped in the EDR report and was determined to be located more than 1 mile from the project area.

The remaining seven sites were listed in a database that indicates a release has occurred. The site information is summarized below:

- The Norco Mart (also reported as Norco ARCO and Frontier Fuel) is located at 1488 6th Street, approximately 0.14 miles west of the nearest section of the project area. This site is listed in the UST, LUST, SWEEPS UST, HIST UST, and EDR US Hist Auto Stat databases. The LUST database entry, the primary database entry reporting releases, details a release of gasoline to soil and groundwater reported in April 2000. A December 2013 report reviewed on Geotracker reports that the depth to groundwater in the wells at the Norco Mart site are approximately 20 feet below ground surface and the flow direction is toward the project area. The closest monitoring well to the project area (MW-33) is located approximately 30 feet west of the project area (the curved portion of the project area located south of 6th Street). MW-33 did not contain concentrations of gasoline-related compounds (total petroleum hydrocarbons (TPH), benzene, or methyl tert-butyl ether (MTBE)) during the most recent sampling event in October 2013. Based on the latest groundwater monitoring report, the TPH, MTBE, and benzene groundwater plumes do not extend to the project area. Additionally, no volatile organic compounds were detected in the headspace of soil samples collected while drilling the MW-33 boring. Therefore, it is not likely that the release from the Norco Mart site has impacted the environmental conditions at the project area.
- The City of Norco site is located at 3421 Valley View Avenue, approximately 0.21 miles southeast of the southernmost extension of the project area. This site is listed in the HIST CORTEST, LUST, and SWEEPS UST databases. The LUST database entry, the primary database entry reporting releases, reports a release of gasoline to soil. Groundwater sampling was conducted for 4 quarters and laboratory results indicated that none of the compounds were detected in groundwater samples. The case was closed in September 2004. Based on the non-detect groundwater sampling results, it is not likely that this release has impacted the environmental conditions at the project area.
- Norco Mobil (also reported as Norco Mobile Service and Mobil Norco Service) is located at 813 6th Street, approximately 0.38 miles southeast of the nearest section of the project area. This site is listed in the HIST UST, LUST, EDR Hist Auto Stat, HIST CORTESE,

and SWEEPS UST databases. The LUST database entry, the primary database entry reporting releases, reports a release of gasoline to groundwater. The final groundwater sampling at the site, conducted in March 2008, indicated residual concentrations of TPH and benzene in the groundwater at the edge of the site (approximately 0.4 miles from the project area). Site closure was granted in April 2008 due to decreasing concentrations in the site wells. Based on the case closure and distance from the project area, it is unlikely that this site has impacted the environmental conditions at the project area.

- ARCO #5556 is located at 3700 Hamner Avenue, approximately 0.34 miles west of the nearest section of the project area. This site is listed in the LUST database due to a release of gasoline to groundwater discovered in 2002. Groundwater sampling results from the three site wells did not contain TPH or VOCs at or above the laboratory reporting limits. Based on the non-detect groundwater sampling results and the distance from the proposed project, this site is not likely to have impacted the environmental conditions at the project area.
- Norco Ultramar (also reported as Norco Mobil) is located at 3840 Hamner Avenue, approximately 0.27 miles northwest of the nearest section of the project area. This site is listed in the LUST and UST databases. The LUST database entry reports a release of gasoline to groundwater discovered in 1989. Well MW-7, the downgradient well, was sampled in September 2012 and did not contain TPH or VOCs at or above the laboratory reporting limit. Although the case is reported as open, a draft case closure letter dated August 29, 2013 was prepared for the site pending the receipt of appropriate documentation. Based on the distance from the site and the lack of impacts in the downgradient well, it is not likely that this release has impacted the environmental conditions at the project area.
- Tune Up Masters is located at 3394 Hamner Avenue, approximately 0.41 miles southwest of the southernmost extent of the project area. This site is listed in the HIST CORTESE and LUST databases. The LUST database entry reports a release of oil to soil at the site. Closure was granted on December 1992 due to the tendency of the contaminant (waste oil) to not migrate. Based on the impacted media (soil), case closure, and the distance from the project area, it is not likely that this release has impacted the environmental conditions at the project area.
- PCW/Pipeline Contractors West is located at 3336 Hamner Avenue, approximately 0.46 miles southwest of the southernmost extent of the project area. This site is listed in the HIST CORTESE and LUST databases. The LUST database entries report a release of gasoline and diesel to soil from USTs. Site closure was granted for the site in October 1994. Based on the impacted media (soil only) and the distance from the site, it is not likely that this release has impacted the environmental conditions at the project area.

Due to inadequate address information, 20 sites were cited but unmapped. Based on address information supplied, 3 of the 20 unmapped sites were located within 1 mile of the project area. None of the 3 sites located within 1 mile were listed in databases that indicate a release occurred.

3.3 Site History

The history of the site was established by reviewing aerial photographs and topographic maps, obtained from EDR (Appendices C and D).

3.3.1 Aerial Photographs

The history of the project area and surrounding area was established by reviewing aerial photographs. Aerial photos for the years 1931, 1938, 1948, 1953, 1960, 1968, 1977, 1990, 1994, 2005, 2006, 2009, 2010, and 2012 were reviewed. Aerial photographs are presented as Appendix C.

Between 1931 and 1977, the project area appears to be located in a residential and agricultural area. Portions of the project area are located on properties developed for agriculture. Several small structures, likely residential- or farm-related out-buildings are located on and around the project area.

Starting in 1977, a storm water channel appears to be present in the southwestern portion of the project area, south of 6th Street.

By 1990, the Norco Channel in its current alignment is present as an earthen streambed in the project area.

Based on the aerial photograph review, portions of the project area were used for agricultural purposes. Although pesticides were likely used on the project area, the land has been redeveloped and graded for the initial construction of the channel so any pesticides would have likely been moved or removed during grading operations.

3.3.1 Topographic Maps

The history of the project area and surrounding area was also established by reviewing topographic maps. Topographic maps for the years 1901, 1902, 1947, 1954, 1967, 1973, and 1981 were reviewed. Topographic maps are presented as Appendix D.

On the 1901 and 1902 topographic maps, the scale is too large to easily discern details about the project area.

Between 1947 and 1967, the major roadways comprising and surrounding the project area are present.

By 1973, the southern extent of the project area (south of 6th Street) is labeled as a ditch on the map.

4 SIGNIFICANCE THRESHOLDS

The proposed project includes the extension and improvement of a flood control channel. Proposed depths of excavation range from less than 1 foot to 11 feet.

The following are used as criteria for determining the significance of an impact and are based on standards of significance established in *Appendix G* of the CEQA Guidelines. The project is considered to have a significant impact if it would do one or more of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (See Section 4.1.1)
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (See Section 4.1.2 and 4.1.3)
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (See Section 4.1.1)
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment (See Section 4.1.2)
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (See Section 4.1.4)

4.1 Findings

4.1.1 Potential Concerns during Construction

A variety of hazardous substances and wastes would be stored, used, and generated during construction of the proposed project. These would include fuels for machinery and vehicles, new and used motor oils, and storage containers and applicators containing such materials. Accidental spills, leaks, fires, explosions or pressure releases involving hazardous materials represent a potential threat to human health and the environment if not properly treated. Accident prevention and containment are the responsibility of the construction contractors, and provisions to properly manage hazardous substances and wastes are typically included in construction specifications.

Adherence to the construction specifications and applicable regulations regarding hazardous materials and hazardous waste, including disposal, would ensure that construction of the proposed project would not create a significant hazard to the public or the environment.

An existing school or learning center is located within ¼ mile of the northeastern portion of the project area. Federal, state and local regulations control the transportation, use, storage, generation and disposal of hazardous materials to minimize potential health and environmental hazards that could occur through accidental spills or leakage.

Hazardous materials shall not be disposed of or released onto the ground, the underlying groundwater, or any surface water. Totally enclosed containment shall be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products and other potentially hazardous materials, shall be removed to a waste facility permitted to treat, store, or dispose of such materials.

A hazardous substance management, handling, storage, disposal, and emergency response plan shall be prepared and implemented. Hazardous materials spill kits shall be maintained onsite for small spills.

4.1.2 Potential Concerns during Excavation

Based on review of the EDR report, the site is not included in the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese, LUST, Envirostor, solid waste disposal facilities, or clean-up sites).

As noted in Section 3.2, there are 28 sites, including 3 open release sites and 4 closed release sites) that are located near the proposed project area. The information reviewed indicates that it is unlikely that the sites have impacted the environmental conditions at the project area. Therefore, it is not anticipated that excavation activities within the project area will encounter hazardous materials concerns.

4.1.3 Hazardous Air Emissions

Construction-related emissions are discussed in the Air Quality Technical Report for the site. There are no hazardous air emissions associated with the operation of the proposed project.

4.1.4 Emergency Response Plan

The construction activities are limited to the proposed Norco Channel Stage 11 improvements. Several sections of the Norco Channel are proposed within current roadways. Sections of the Norco Channel located within roadways include areas within 6th Street in the central portion,

Detroit Street and Valley View Avenue in the northwest portion, and Corona Avenue in the northeast portion of the project area. The remainder of the proposed construction activities will be located within areas that are protected from public access. 6th Street is a major east-west roadway and construction activities may present traffic delays, thus creating delays in emergency response service. During construction activities, at least one traffic lane in each direction on 6th Street shall remain open. The remaining roadways are two-lane roads and may be closed to through traffic in order to accommodate construction equipment and activities. Additionally, public safety and emergency response personnel servicing the area should be notified of the construction schedule and any potential traffic delays during activities occurring in 6th Street and other project-related road closures.

North Norco Channel Stage 11:
Project Boundary and Depth of Excavation

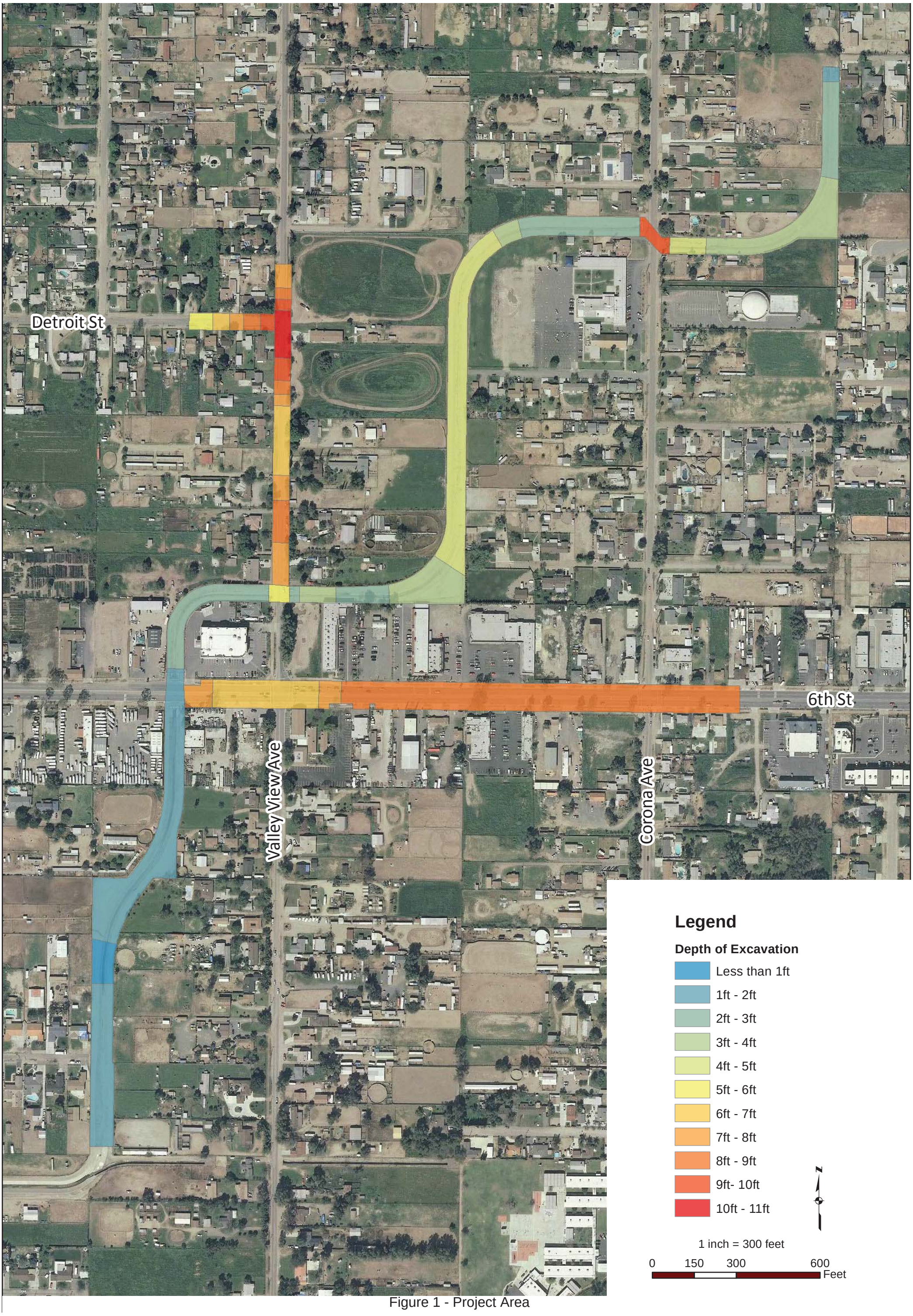

Figure 1 - Project Area

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APPENDIX A

EDR Report

North Norco Channel
Norco
Norco, CA 92860

Inquiry Number: 3784937.2s
November 13, 2013

The EDR Radius Map™ Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

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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 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NORCO
NORCO, CA 92860

COORDINATES

Latitude (North):	33.9410000 - 33° 56' 27.60''
Longitude (West):	117.5478000 - 117° 32' 52.08''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	449375.5
UTM Y (Meters):	3755555.0
Elevation:	633 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	33117-H5 CORONA NORTH, CA
Most Recent Revision:	1981

AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year:	2012
Source:	USDA

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

EXECUTIVE SUMMARY

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

Federal CERCLIS NFRAP site List

CERC-NFRAP ---------- CERCLIS No Further Remedial Action Planned

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-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls
LUCIS ---------- Land Use Control Information System

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

SLIC ---------- Statewide SLIC Cases
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

FEMA UST ---- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

VCP ---- Voluntary Cleanup Program Properties
INDIAN VCP ---- Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
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

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---- Clandestine Drug Labs
HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CDL ---- Clandestine Drug Labs
US HIST CDL ---- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ---- Facility Inventory Database

Local Land Records

LIENS 2 ---- CERCLA Lien Information
LIENS ---- Environmental Liens Listing
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

DOT OPS ---- Incident and Accident Data
DOD ---- Department of Defense Sites
CONSENT ---- Superfund (CERCLA) Consent Decrees

ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
CA BOND EXP. PLAN	Bond Expenditure Plan
UIC	UIC Listing
NPDES	NPDES Permits Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
HWT	Registered Hazardous Waste Transporter Database
Financial Assurance	Financial Assurance Information Listing
LEAD SMELTERS	Lead Smelter Sites
2020 COR ACTION	2020 Corrective Action Program List
US AIRS	Aerometric Information Retrieval System Facility Subsystem
PRP	Potentially Responsible Parties
WDS	Waste Discharge System
EPA WATCH LIST	EPA WATCH LIST
US FIN ASSUR	Financial Assurance Information
PCB TRANSFORMER	PCB Transformer Registration Database
PROC	Certified Processors Database
MWMP	Medical Waste Management Program Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

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.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS list

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System 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). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 04/26/2013 has revealed that there is 1 CERCLIS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NORCO DRUG	***1451 5TH STREET***	***SSW 1/8 - 1/4 (0.198 mi.)***	***28***	***48***

Federal RCRA generators list

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 07/11/2013 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHEVRON STATION NO 203621	***1501 6TH ST***	***WSW 1/8 - 1/4 (0.159 mi.)***	***F25***	***42***

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 09/05/2013 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
NORCO Status: Inactive - Needs Evaluation		SW 1/2 - 1 (0.853 mi.)	42	89

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 09/16/2013 has revealed that there are 12 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NORCO ARCO	***1488 SIXTH ST***	***WSW 1/8 - 1/4 (0.142 mi.)***	***F20***	***20***
Status: Open - Remediation				
NORCO ARCO	1488 6TH ST	WSW 1/8 - 1/4 (0.142 mi.)	F23	40
NORCO MOBILE SERVICE	813 6TH ST	ESE 1/8 - 1/4 (0.230 mi.)	G30	51
MOBIL NORCO SERVICE	***813 SIXTH ST***	***ESE 1/8 - 1/4 (0.230 mi.)***	***G32***	***53***
Status: Completed - Case Closed				
ARCO #5556	3700 HAMNER	SW 1/4 - 1/2 (0.298 mi.)	36	66
Status: Open - Eligible for Closure				
NORCO ULTRAMAR	***3840 HAMNER AVE***	***WSW 1/4 - 1/2 (0.335 mi.)***	***H37***	***71***
Status: Open - Eligible for Closure				
NORCO MOBIL SERVICE STATION	3840 HAMNER AVE	WSW 1/4 - 1/2 (0.335 mi.)	H38	81
TUNE UP MASTERS	***3394 HAMNER AVE***	***SW 1/4 - 1/2 (0.382 mi.)***	***39***	***83***
Status: Completed - Case Closed				
PCW/PIPELINE CONTRACTORS WEST	***3336 HAMNER AVE***	***SW 1/4 - 1/2 (0.422 mi.)***	***I40***	***85***
Status: Completed - Case Closed				
PIPELINE CONTRACTORS WEST, INC	3336 HAMNER AVE	SW 1/4 - 1/2 (0.422 mi.)	I41	87

Lower Elevation	Address	Direction / Distance	Map ID	Page
CITY OF NORCO	***3421 VALLEY VIEW AVE***	***S 1/8 - 1/4 (0.187 mi.)***	***27***	***45***
Status: Completed - Case Closed				
NORCO CONSERVATION CAMP	FIFTH ST	SW 1/4 - 1/2 (0.288 mi.)	35	64
Status: Completed - Case Closed				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 09/16/2013 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NORCO MART	1488 6TH ST	WSW 1/8 - 1/4 (0.130 mi.)	F19	19
CHEVRON SS #1883/203621	1501 6TH ST	WSW 1/8 - 1/4 (0.159 mi.)	F26	45

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 3 HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NORCO EQUINE HOSPITAL	985 6TH ST	ESE 0 - 1/8 (0.021 mi.)	14	18
FRONTIER FUEL	1488 6TH ST	WSW 1/8 - 1/4 (0.142 mi.)	F21	39
NORCO MOBIL	813 6TH ST	ESE 1/8 - 1/4 (0.230 mi.)	G29	50

SWEEPS UST: 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.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 3 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NORCO ARCO	***1488 SIXTH ST***	***WSW 1/8 - 1/4 (0.142 mi.)***	***F20***	***20***
MOBIL NORCO SERVICE	***813 SIXTH ST***	***ESE 1/8 - 1/4 (0.230 mi.)***	***G32***	***53***
Lower Elevation	**Address**	**Direction / Distance**	**Map ID**	**Page**
CITY OF NORCO	***3421 VALLEY VIEW AVE***	***S 1/8 - 1/4 (0.187 mi.)***	***27***	***45***

Other Ascertainable Records

RCRA NonGen / NLR: 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.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 07/11/2013 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BILL COOL TRUCKING	***1155 6TH ST***	***0 - 1/8 (0.000 mi.)***	***B8***	***13***

EXECUTIVE SUMMARY

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 12/31/2011 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
CORONA ANNEX		SW 1/2 - 1 (0.910 mi.)	43	90

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 03/08/2013 has revealed that there is 1 FINDS site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BILL COOL TRUCKING	***1155 6TH ST***	***0 - 1/8 (0.000 mi.)***	***B8***	***13***

HIST CORTESE: 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.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 4 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MOBIL NORCO SERVICE	***813 SIXTH ST***	***ESE 1/8 - 1/4 (0.230 mi.)***	***G32***	***53***
TUNE UP MASTERS	***3394 HAMNER AVE***	***SW 1/4 - 1/2 (0.382 mi.)***	***39***	***83***
PCW/PIPELINE CONTRACTORS WEST	***3336 HAMNER AVE***	***SW 1/4 - 1/2 (0.422 mi.)***	***I40***	***85***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CITY OF NORCO	***3421 VALLEY VIEW AVE***	***S 1/8 - 1/4 (0.187 mi.)***	***27***	***45***

HAZNET: 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 from non-California manifests & continuation sheets are not included at the present time. 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, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2012 has revealed that there are 11 HAZNET sites within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RICHARD LOPEZ CONSTRUCTION	1155 6TH ST	0 - 1/8 (0.000 mi.)	B2	9

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RICHARD LOPEZ CONSTRUCTION	1155 6TH ST	0 - 1/8 (0.000 mi.)	B7	12

Lower Elevation	Address	Direction / Distance	Map ID	Page
RITE AID #6469	1325 6TH ST	0 - 1/8 (0.000 mi.)	A1	8
KENDRA CHIROPRACTIC	1256 SIXTH ST	0 - 1/8 (0.000 mi.)	C3	9
RITE AID #6469	1325 6TH ST	0 - 1/8 (0.000 mi.)	A4	10
CHAMPION CONSTRUCTION AND REST	3988 VALLEY VIEW AVE	0 - 1/8 (0.000 mi.)	D5	11
PASTOR MOONEY	3988 VALLEY VIEW AVE	0 - 1/8 (0.000 mi.)	D6	12
NORCO RENTALS	1246 6TH STREET	0 - 1/8 (0.000 mi.)	C9	14
PRIME PLASTERING INC	1338 6TH ST	0 - 1/8 (0.000 mi.)	A10	14
NORCO EQUIPMENT RENTALS LLC	1246 6TH ST	0 - 1/8 (0.000 mi.)	C11	16
ALL AMERICAN TRAILERS, INC.	1374 6TH ST	0 - 1/8 (0.000 mi.)	E13	18

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 08/28/2013 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DOC - CALIFORNIA REHABLITATION	5TH ST AND WESTERN	WSW 1/2 - 1 (0.982 mi.)	44	91

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR US Hist Auto Stat: 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.

A review of the EDR US Hist Auto Stat list, as provided by EDR, has revealed that there are 8 EDR US Hist Auto Stat sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	4267 WOODWARD AVE	WNW 0 - 1/8 (0.082 mi.)	16	19
Not reported	3798 CHAPARRAL DR	SE 0 - 1/8 (0.089 mi.)	17	19
Not reported	1488 6TH ST	WSW 1/8 - 1/4 (0.142 mi.)	F22	40
Not reported	1501 6TH ST	WSW 1/8 - 1/4 (0.159 mi.)	F24	41
Not reported	813 6TH ST	ESE 1/8 - 1/4 (0.230 mi.)	G31	52
Not reported	811 6TH ST	ESE 1/8 - 1/4 (0.233 mi.)	G33	63

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1414 6TH ST	SW 0 - 1/8 (0.048 mi.)	E15	19

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1420 MULBERRY LN	SSW 0 - 1/8 (0.119 mi.)	18	19

EDR US Hist 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.

A review of the EDR US Hist Cleaners list, as provided by EDR, has revealed that there are 2 EDR US Hist Cleaners sites within approximately 0.25 miles of the target property.

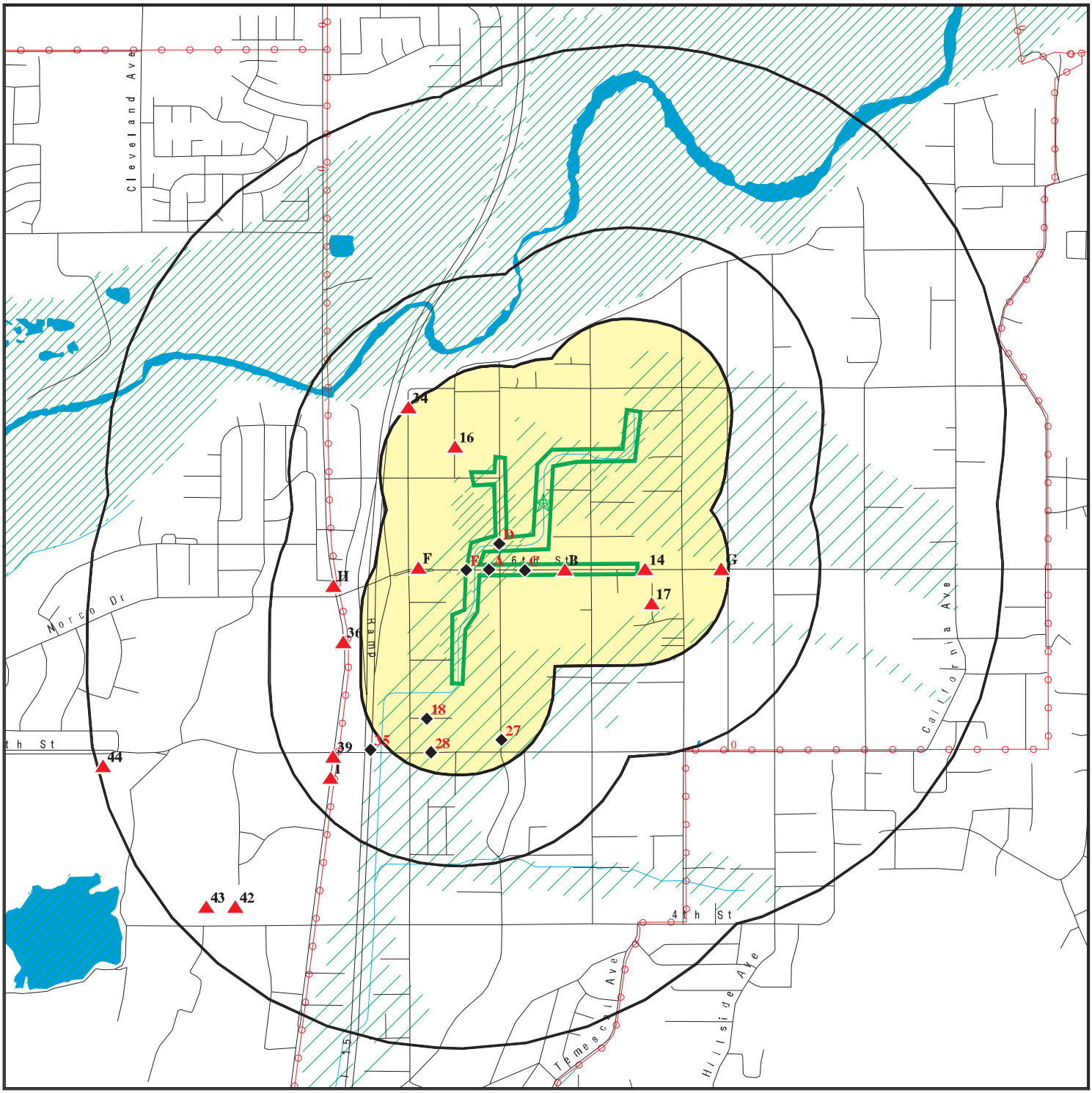
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1188 6TH ST	0 - 1/8 (0.000 mi.)	B12	17
Not reported	4367 SIERRA AVE	NW 1/8 - 1/4 (0.247 mi.)	34	63

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

Site Name	Database(s)
LOWER SANTA ANA RIVER CHANNEL REAC	NPDES
HORSE CREEK RIDGE TRACT 5338 PHASE	NPDES
HIDDEN VALLEY CENTER	NPDES
NORCO MDP LINE NA3 & NORTH NORCO C	NPDES
NORCO INDUSTRIAL PARK	NPDES
	CDL
	CDL
	CDL
NORCO CONSERVATION CAMP	LUST
NORCO	AST
LINE 2000 RECEIVER AT CHINO HILLS	HAZNET
FED EX FREIGHT WEST	HAZNET
INDUSTRIAL REPAIR	HAZNET
STATE LANDS COMMISSION - NORCO	FINDS
COACHELLA VALLEY AGGREGATE	US MINES
VULCAN MATERIALS CO.	US MINES
MINNESOTA MINING & MANUFACTURING C	US MINES
ALL AMERICAN AGGREGATES	US MINES
HANSON AGGREGATES WEST, INC.	US MINES
NORCO BATTERY	ICIS

OVERVIEW MAP - 3784937.2s

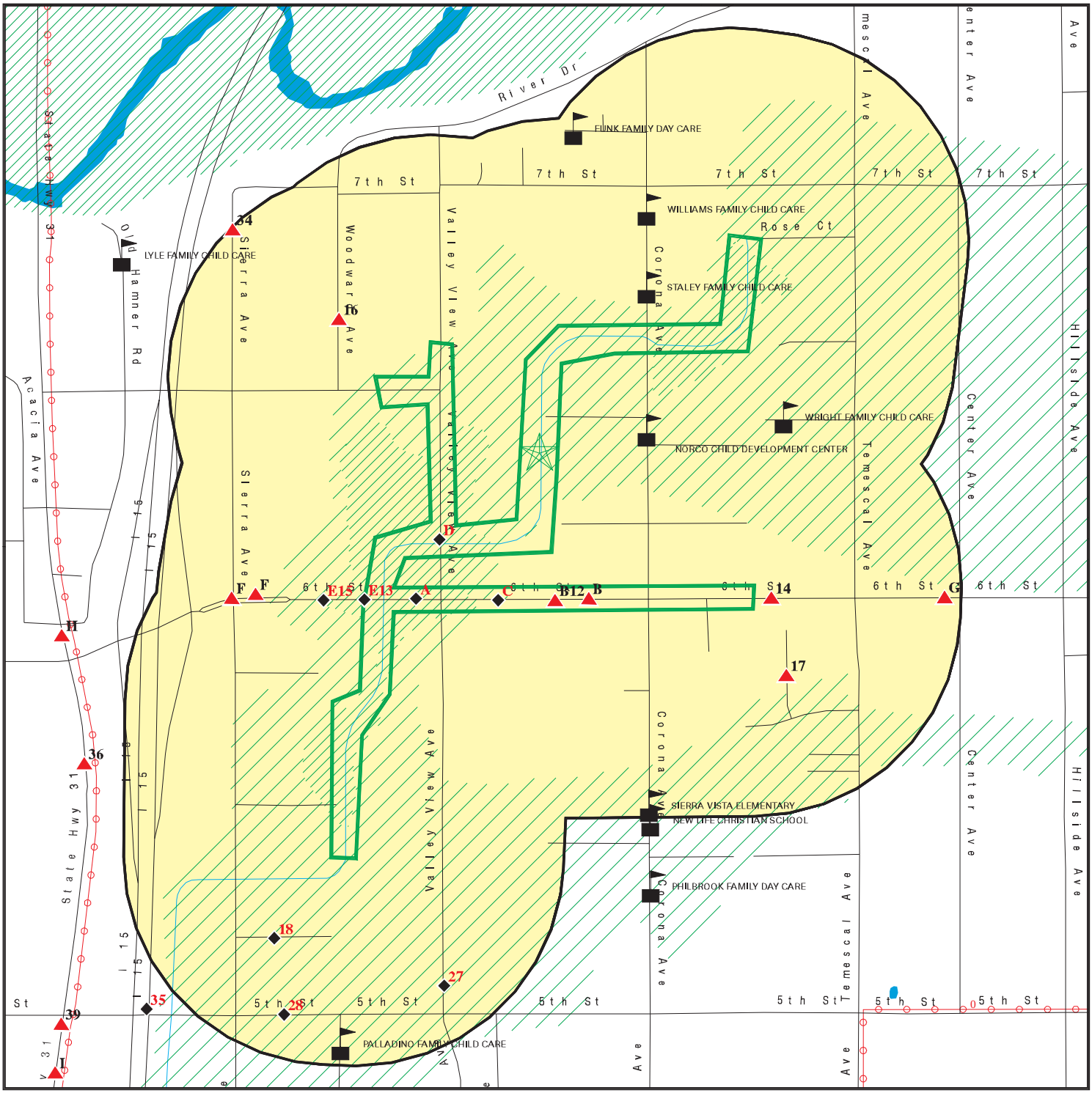


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- 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:	North Norco Channel	CLIENT:	Dudek & Associates
ADDRESS:	Norco Norco CA 92860	CONTACT:	Susie Smith
		INQUIRY #:	3784937.2s
LAT/LONG:	33.941 / 117.5478	DATE:	November 13, 2013 3:52 pm

DETAIL MAP - 3784937.2s



0 1/8 1/4 1/2 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
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- 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: North Norco Channel	CLIENT: Dudek & Associates
ADDRESS: Norco Norco CA 92860	CONTACT: Susie Smith
LAT/LONG: 33.941 / 117.5478	INQUIRY #: 3784937.2s DATE: November 13, 2013 3:57 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	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	1	0	NR	NR	1
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	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	1	NR	NR	NR	1
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	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	0	1	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	5	7	NR	NR	12

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
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	2	NR	NR	NR	2
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA 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
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
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
Local Lists of Hazardous waste / Contaminated Sites								
US 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
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
US HIST CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		1	2	NR	NR	NR	3
SWEEPS UST	0.250		0	3	NR	NR	NR	3
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
LIENS	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

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
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		1	0	NR	NR	NR	1
DOT OPS	0.001		0	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	1	NR	1
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
FINDS	0.001		1	NR	NR	NR	NR	1
RAATS	0.001		0	NR	NR	NR	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	2	2	NR	NR	4
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		11	NR	NR	NR	NR	11
EMI	0.001		0	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	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
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	1	NR	1
Financial Assurance	0.001		0	NR	NR	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
PCB TRANSFORMER	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
PROC	0.500		0	0	0	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		4	4	NR	NR	NR	8
EDR US Hist Cleaners	0.250		1	1	NR	NR	NR	2

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
< 1/8
1 ft.

Relative:
Lower

Actual:
630 ft.

RITE AID #6469
1325 6TH ST
NORCO, CA 92860

Site 1 of 3 in cluster A

HAZNET **S113803089**
N/A

HAZNET:

Year:	2012
Gepaid:	CAL000380352
Contact:	S A. CAIATI, SR. MGR EH&S
Telephone:	7177308225
Mailing Name:	Not reported
Mailing Address:	30 HUNTER LN
Mailing City,St,Zip:	CAMP HILL, PA 170110000
Gen County:	Riverside
TSD EPA ID:	INR000110197
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0125
Facility County:	Riverside

Year:	2012
Gepaid:	CAL000380352
Contact:	S A. CAIATI, SR. MGR EH&S
Telephone:	7177308225
Mailing Name:	Not reported
Mailing Address:	30 HUNTER LN
Mailing City,St,Zip:	CAMP HILL, PA 170110000
Gen County:	Riverside
TSD EPA ID:	INR000110197
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.001
Facility County:	Riverside

Year:	2012
Gepaid:	CAL000380352
Contact:	S A. CAIATI, SR. MGR EH&S
Telephone:	7177308225
Mailing Name:	Not reported
Mailing Address:	30 HUNTER LN
Mailing City,St,Zip:	CAMP HILL, PA 170110000
Gen County:	Riverside
TSD EPA ID:	INR000110197
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0015
Facility County:	Riverside