File #: 18-2361

AGENDA REPORT
REQUEST FOR CITY COUNCIL ACTION

DATE: 12/10/2018

TO: Honorable Mayor and City Council Members

FROM: Community Development Department

SUBJECT:
City Council consideration of V2017-0101 a variance from Sections 17.70.060 (A) and 17.70.060 (F) (1) of the Corona Municipal Code to increase the height of a perimeter tube steel fence from five feet to eight feet within the front yard and from seven feet to eight feet within the side and rear yards for a new city water reservoir site located on the southeast corner of Nelson Street and Keith Street (3985 Nelson Street) in the R-1A (Single-Family Residential, 40,000 square-foot minimum lot size) Zone. (Applicant: City of Corona, Department of Water and Power)

RECOMMENDED ACTION:
That the City Council:

1. Take no action, thereby affirming the Planning and Housing Commission's action granting V2017-0101, based on the findings contained in the staff report and conditions of approval.

-OR-

2. Set the item for review at a subsequent meeting.

ANALYSIS:
The property owner and applicant of Variance 2017-0101 is the City of Corona Department of Water and Power, who is proposing to construct a 2.5 million gallon water reservoir at 3985 Nelson Street. The zoning of the property is R-1A, which allows the installation of public utility structures with a conditional use permit. The applicant is concurrently processing Conditional Use Permit 17-002 with this variance for the water reservoir. The scope of the variance is to allow an increase in the height of the perimeter fencing being constructed around the property for security purposes.

The City's fencing ordinance under Chapter 17.70 of the CMC permits a maximum allowable height of five feet for tube steel fencing within the required front yard setback area. For all areas behind the required front yard setback area, the maximum allowable height for fences is seven feet. Corona

DWP is proposing a fence height of eight feet to secure the property from trespassing and vandalism. The variance from the fence and walls ordinance would allow DWP to increase the height of the fence by three feet in the front yard and by one foot in the side and rear yards.

The applicant's justification for the request is that the eight-foot fence height is necessary to secure the site from vandalism, trespassing, and malicious activities such as contamination that may pose a potential threat to public health and safety which are significant concerns with respect to the design and construction of the potable water storage reservoir. The site's location warrants the need for additional security. The unmanned facility is surrounded by residential properties occupied by families that include children. There are currently no natural or manmade barriers such as freeways, hillsides, or buildings that can shield or separate the new water tank and its supporting infrastructure from the public other than the proposed fence which is why the height of the fence is critical for the site. Security is crucial not only for the safety of the facility itself but also for the existing and future residents living next to or nearby the facility. The northwest corner of the lot will contain an open concrete vault structure which poses a safety concern from potential unwanted trespassing.

Allowing the applicant to increase the perimeter fence height will not negatively impact the site's aesthetics or cause a degradation to the area as the site will be improved along Nelson Street and Keith Street with curb and gutter, sidewalk, and landscaping as shown by the applicant's conceptual landscape plan. Street trees and shrubs will be installed between the streets and fence, which will help soften the fence from street view.

Therefore, special circumstances do exist for the project site as the proposed use on the property is non-residential, which is different from the residential uses on the surrounding properties. The site's location and use warrants the need for additional security because the fence height would secure the site from vandalism, trespassing, and malicious activities.

COMMITTEE ACTION:
Not applicable.

STRATEGIC PLAN:
Not applicable.

FISCAL IMPACT:
All application fees associated with this utility project has been captured internally through payment made by the Department of Water and Power to the general fund.

ENVIRONMENTAL ANALYSIS:
Per Section 15070 of the State Guidelines for Implementing the California Environmental Quality Act (CEQA) and Section 6.02 of the City's Local Guidelines, a mitigated negative declaration was prepared by the city's consultant, Environmental Science Associates (ESA) for the project because the initial study identified that the project's potentially significant effects to the environment are capable of being mitigated to less than significant. Therefore, based on the mitigation measures identified in the mitigated negative declaration, there is no substantial evidence in light of the whole record before the City that the project may have a significant effect on the environment.

PLANNING AND HOUSING COMMISSION ACTION:

At its meeting of November 13, 2018, the Planning and Housing Commission considered the subject matter and took the following action:

Motion was made, seconded (Ruscigno/Jones) and carried unanimously, that the Planning and Housing Commission adopt Resolution No. 2524 granting V2017-0101 based on the findings contained in the staff report and conditions of approval. The minutes of the Planning and Housing Commission meeting are included as Exhibit 5.

PREPARED BY: JOANNE COLETTA, COMMUNITY DEVELOPMENT DIRECTOR

REVIEWED BY: KERRY D. EDEN, ASSISTANT CITY MANAGER/ADMINISTRATIVE SERVICES DIRECTOR

REVIEWED BY: MICHELE NISSEN, ASSISTANT CITY MANAGER

SUBMITTED BY: DARRELL TALBERT, CITY MANAGER

EXHIBITS

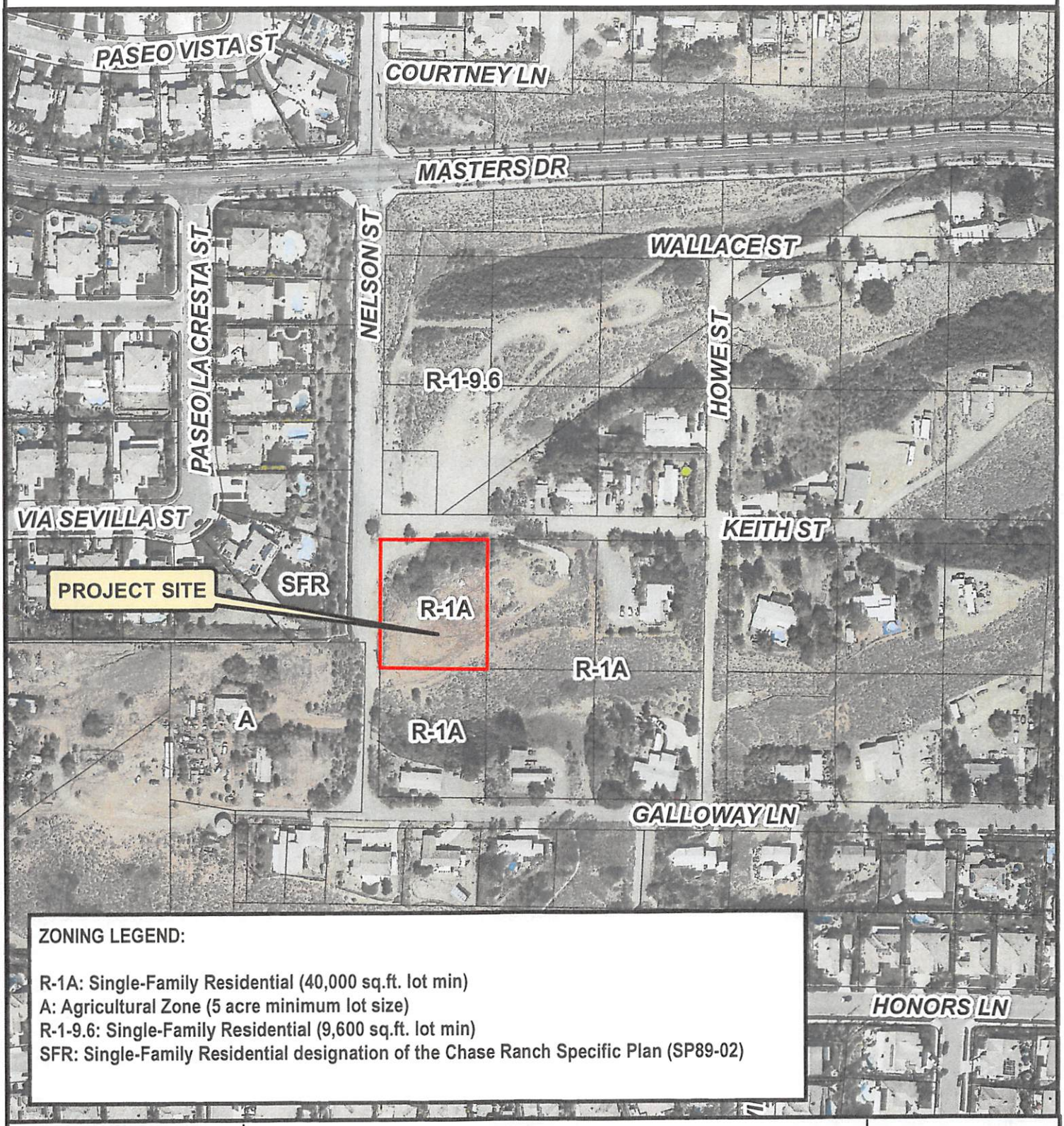
1. Locational and Zoning Map.
2. Site Plan for V2017-0101.
3. Conceptual landscape plan with fencing.
4. Planning and Housing Commission Staff Report
5. Draft Minutes of the Planning and Housing Commission meeting of November 13, 2018.

APPLICANT INFORMATION

Vernon Weisman, District Engineer, City of Corona, Department of Water and Power, 755 Public Safety Way, Corona, CA 92880

powered by Legistar™

LOCATIONAL & ZONING MAP



ZONING LEGEND:

R-1A: Single-Family Residential (40,000 sq.ft. lot min)
A: Agricultural Zone (5 acre minimum lot size)
R-1-9.6: Single-Family Residential (9,600 sq.ft. lot min)
SFR: Single-Family Residential designation of the Chase Ranch Specific Plan (SP89-02)

Date: 11/05/2018

3985 Nelson Street
CUP17-002 & V2017-0101

EXHIBIT 1

CONSTRUCTION NOTES

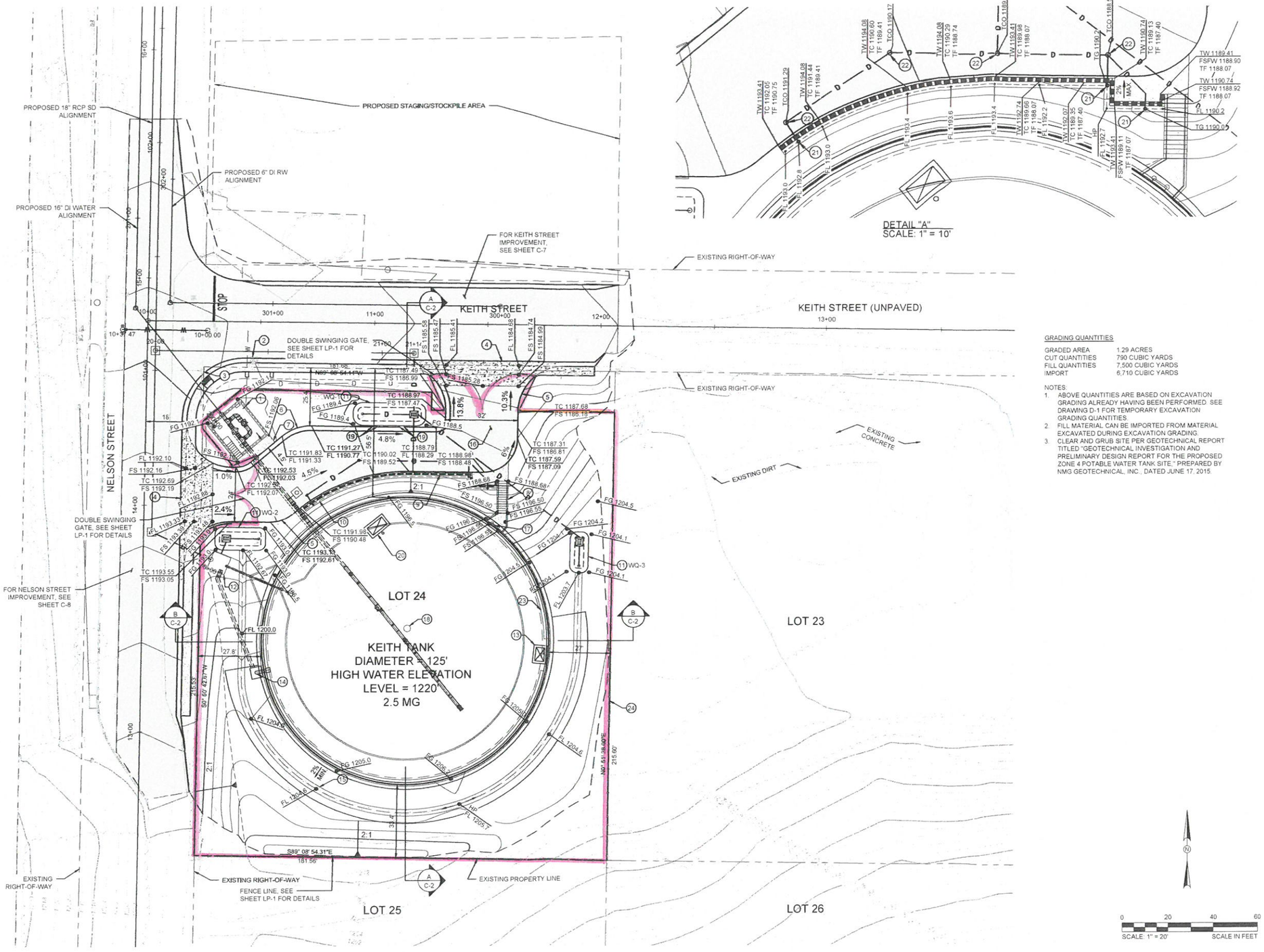
1. VALVE VAULT, SEE SHEET M-1 FOR DETAILS.
2. EXISTING ELECTRICAL VAULT TO BE RELOCATED BY OTHERS.
3. EXISTING UTILITY POLE TO BE REMOVED BY OTHERS.
4. DRIVEWAY PER CITY STD PLAN NUMBER 130.
5. 6" CURB PER CITY STD PLAN NUMBER 137.
6. 6" CURB AND GUTTER PER CITY STD PLAN NUMBER 135.
7. SIDEWALK PER CITY STD PLAN NUMBER 142.
8. 5' WIDE CONCRETE STAIRS PER DETAIL 4 ON SHEET C-18.
9. RETAINING WALL PER CITY BUILDING DEPARTMENT RETAINING WALL STANDARD DETAILS. FOR ELEVATIONS, SEE DETAIL "A" THIS SHEET.
10. BROW DITCH, SEE DETAIL 3 ON SHEET C-18.
11. BIORETENTION FACILITY, SEE DETAIL 5 ON SHEET C-18.
12. DRAIN VAULT, SEE DETAIL 1 ON SHEET C-6.
13. 4' x 6' ACCESS HATCH WITH LADDER, SEE DETAIL 4 ON SHEET C-19
14. OVERFLOW CATCH BASIN, SEE DETAIL 1 ON SHEET C-17.
15. CONCRETE DRAINAGE SWALE, SEE DETAIL 2 ON SHEET C-18.
16. PAVEMENT SHALL BE 4" OF ASPHALT CONCRETE ON TOP OF 6" AGGREGATE BASE.
17. LADDER, SEE DETAIL 3 ON SHEET C-20.
18. VENT, SEE DETAIL 8 ON SHEET S-8.
19. 2' WIDE CURB CUT TO ALLOW GUTTER FLOW INTO BIORETENTION BASIN.
20. 4'x8' ACCESS HATCH, SEE DETAIL 5/C-19
21. BEEHIVE GRATE BEHIND RETAINING WALL PER DETAIL 1 ON SHEET C-18.
22. CLEANOUT IN PAVEMENT PER DETAIL 6 ON SHEET C-18.
23. TANK RAILING PER DETAIL 5 ON SHEET C-19 AND DETAIL 1 SHEET A-3.0.
24. TUBULAR FENCE PER SHEET LP-1 AND SPECIFICATION 32 31 20

CONSTRUCTION NOTES

- - - - - - - - LIMIT OF GRADING

▭ LIMIT OF PAVEMENT

NOTES:
1. FOR ALL PIPING, SEE SHEETS C-3 THRU C-15.
2. FOR CONTINUATION OF WATER SERVICE, SEE IRRIGATION PLANS.
3. FOR EROSION CONTROL MEASURES, SEE PROJECT'S STORM WATER POLLUTION PREVENTION PLAN (SWPPP).



GRADING QUANTITIES

GRADED AREA	1.29 ACRES
CUT QUANTITIES	790 CUBIC YARDS
FILL QUANTITIES	7,500 CUBIC YARDS
IMPORT	6,710 CUBIC YARDS

NOTES:
1. ABOVE QUANTITIES ARE BASED ON EXCAVATION GRADING ALREADY HAVING BEEN PERFORMED. SEE DRAWING D-1 FOR TEMPORARY EXCAVATION GRADING QUANTITIES.
2. FILL MATERIAL CAN BE IMPORTED FROM MATERIAL EXCAVATED DURING EXCAVATION GRADING.
3. CLEAR AND GRUB SITE PER GEOTECHNICAL REPORT TITLED "GEOTECHNICAL INVESTIGATION AND PRELIMINARY DESIGN REPORT FOR THE PROPOSED ZONE 4 POTABLE WATER TANK SITE," PREPARED BY NMG GEOTECHNICAL, INC., DATED JUNE 17, 2015.

SCALE: 1" = 20' SCALE IN FEET

Underground Service Alert
Call: TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

24x36 FORMAT
IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED

12x18 FORMAT - WARNING
IF THIS BAR MEASURES ½" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed By | Drawn By | Checked By

PLANS PREPARED UNDER SUPERVISION OF

DATE: _____ R.C.E.: _____

Reference Plans for These Improvements

Date	By	Revisions	App'd

KLEINFELDER

APPROVED BY: PUBLIC WORKS

_____ DATE: _____

NELSON D. NELSON, P.E.
CITY ENGINEER
R.C.E. 54435

APPROVED BY: DEPARTMENT OF WATER AND POWER

_____ DATE: _____

VERNON R. WEISMAN, P.E.
DISTRICT ENGINEER
R.C.E. 41610

CITY OF CORONA

KEITH 1220-ZONE POTABLE WATER TANK

GRADING, DRAINAGE AND PAVING PLAN

17-0520

C-1

Sht. 4 of 57

EXHIBIT 2

EXHIBIT 3

KEITH 1220 - ZONE POTABLE WATER TANK

EAST VIEW W/ LANDSCAPE IMPROVEMENTS

bmla LANDSCAPE ARCHITECTURE
310 North Joy Street | Corona, CA 92879
T: 951.737.1124 | F: 951.737.6551
www.bmla.net

PREPARED FOR THE CITY OF CORONA
400 SOUTH VICENTIA AVENUE CORONA, CA 92882
JULY 1, 2016

File #: 18-2254

PLANNING AND HOUSING COMMISSION
STAFF REPORT

DATE: 11/13/2018

TO: Honorable Chair and Commissioners

FROM: Community Development Department

APPLICATION REQUEST:
V2017-0101: Application for a variance from Sections 17.70.060 (A) and 17.70.060 (F) (1) of the Corona Municipal Code to increase the height of a perimeter tube steel fence from five feet to eight feet within the front yard and from seven feet to eight feet within the side and rear yards for a new city water reservoir site located on the southeast corner of Nelson Street and Keith Street (3985 Nelson Street) in the R-1A (Single-Family Residential, 40,000 square-foot minimum lot size) Zone (Applicant: Vernon Weisman, District Engineer, City of Corona, Department of Water and Power, 755 Public Safety Way, Corona, CA 92880).

RECOMMENDED ACTION:
That the Planning and Housing Commission recommend adoption of the Mitigated Negative Declaration and Mitigation Monitoring Plan and Resolution No. 2524 GRANTING V2017-0101, based on the findings contained in the staff report and conditions of approval.

PROJECT SITE SUMMARY
Area of Property: 0.90 acres
Existing Zoning: R-1A (Single-Family Residential, 40,000 square-foot minimum lot size)
Existing General Plan: ER (Estate Residential, 1-3 du/ac)
Existing Land Use: Vacant land
Proposed Land Use: Utility water reservoir
Surrounding Land Use:
N: R-1-9.6 (Single-Family Residential, 9,600 square-foot minimum lot size)/Vacant land
E: R-1A (Single-Family Residential, 40,000 square-foot minimum lot size)/Vacant land
S: R-1A (Single-Family Residential, 40,000 square-foot minimum lot size)/Single-Family
W: SFR (Single-Family Residential) of the Chase Ranch Specific Plan (SP89-02)/Single-Family Residence, and A (Agriculture)/Single-Family Residence

BACKGROUND
The project site is 0.90 acres and is located in a residential area located on the southeast corner of

EXHIBIT 4

Keith Street and Nelson Street. The project site is currently undeveloped and consists of small trees and bushes on the northern portion of the site. The owner and applicant of V2017-0101 is the City of Corona Department of Water and Power, who is proposing to develop the site with a potable water storage reservoir. The proposed potable water storage reservoir is necessary to help upgrade the City's basic infrastructure and stay in pace with the City's growth. The proposed water storage tank will provide operational, emergency, and fire flow storage of 2.5 million gallons of potable water to the City's Zone 4 1220' Hydraulic Grade Line (HGL) pressure zone. Additionally, the water storage tank will help alleviate the additional storage required for the Arantine Hills development approved by the City of Corona City Council in 2012. It would also alleviate the predicted future deficiency of five million-gallon for the 1220-Zone storage in the year 2020 as shown in the City's 2005 Water Master Plan.

The reservoir's use, site plan, architecture, and landscaping are being reviewed under Conditional Use Permit (CUP17-002). Since the variance pertains to the site's perimeter fencing, both applications are being reviewed concurrently.

The project plans for the reservoir was reviewed by City Staff at the Project and Environmental Review Committee (PRC) meeting of December 7, 2017.

On June 8, 2016 and October 16, 2018, the City of Corona Department of Water and Power (DWP) held community public meetings at Eagle Glen Park located at 4190 Bennett Avenue to present information about the construction of the project. In response to the first meeting, DWP received a letter by a property owner in opposition to the proposed reservoir (Exhibit G). At the October 16, 2018 meeting, DWP presented a revised design to help address concerns from the residents related to the design of the proposed potable water reservoir and landscaping within the subject site.

PROJECT DESCRIPTION

As shown in Exhibit A, the proposed reservoir is centrally located on the project site and fronts Keith Street. The potable water reservoir will be setback 56 feet from the north property line, 33 feet from the south property line, and 27 feet from both the west and east property lines. The reservoir's associated piping and inlet/outlet altitude valve to control filling of the tank will be placed below ground in an open concrete vault structure at the northwest corner of the project site. New landscaping along with three new bioretention facilities will be provided on-site that will collect water run-off from the concrete drainage swale that surrounds the reservoir and paved areas. Additionally, the applicant is proposing to install an eight-foot high black tubular steel fence along the perimeters of the site to secure the facility.

The site is zoned R-1A and governed by the development standards prescribed by Chapter 17.10 (R-1A Single-Family Residential Zone) of the Corona Municipal Code (CMC). The subject zoning requires a minimum front yard setback of 25 feet, and a street side yard setback of 15 feet. The site is a corner lot with two street frontages. The frontage on Keith Street is the front yard while the frontage on Nelson Street is the side yard. The City's fencing ordinance under Chapter 17.70 of the CMC permits a maximum allowable height of five feet for tube steel fencing within the required front yard setback area. For all areas behind the required front yard setback area, the maximum allowable height for fences is seven feet. The eight-foot high perimeter fence proposed by DWP for the site would exceed the height limits permitted by the CMC for fencing. Therefore, DWP is seeking a variance to increase the height of the fence from five (5) feet to eight (8) feet along the property's frontage adjacent to Keith Street and seven (7) feet to eight (8) feet along the side and rear

perimeters of the site, which are the west, east, and south property lines.

The applicant's justification for the request is attached as Exhibit E, which states that the eight-foot fence height is necessary to secure the site from vandalism, trespassing, and malicious activities such as contamination that may pose a potential threat to public health and safety which are significant concerns with respect to the design and construction of the potable water storage reservoir. The site's location warrants the need for additional security. The unmanned facility is surrounded by residential properties occupied by families that include children. There are currently no natural or manmade barriers such as freeways, hillsides, or buildings that can shield or separate the new water tank and its supporting infrastructure from the public other than the proposed eight-foot high fence which is why the height of the proposed fence is critical for the site. Security is crucial not only for the safety of the facility itself but also for the existing and future residents living next to or nearby the facility. The northwest corner of the lot will contain an open concrete vault structure which poses a safety concern from potential unwanted trespassing.

Allowing the applicant to increase the perimeter fence height to a maximum height of eight feet will not negatively impact the site's aesthetics or cause a degradation to the area as the site will be improved along Nelson Street and Keith Street with curb and gutter, sidewalk, and landscaping as shown by the applicant's conceptual landscape plan attached as Exhibit D. Street trees and shrubs will be installed between the streets and fence, which will help soften the fence from street view. Also, there are no residential structures facing the site from the north, west, and south, and the adjacent property to the east is currently undeveloped.

ENVIRONMENTAL ANALYSIS

Per Section 15070 of the State Guidelines for Implementing the California Environmental Quality Act (CEQA) and Section 6.02 of the City's Local Guidelines, a mitigated negative declaration was prepared by the city's consultant, Environmental Science Associates (ESA) for the project because the initial study identified that the project's potentially significant effects to the environment are capable of being mitigated to less than significant. Therefore, based on the mitigation measures identified in the mitigated negative declaration, there is no substantial evidence in light of the whole record before the City that the project may have a significant effect on the environment. The Initial Study and Mitigated Negative Declaration prepared for the project are attached as Exhibit F.

FISCAL IMPACT

All application fees associated with this utility project has been captured internally through payment made by the Department of Water and Power to the general fund.

PUBLIC NOTICE AND COMMENTS

A 20-day public notice was mailed to all property owners within a 500-foot radius of the project site, as well as advertised in the Sentinel Weekly News and posted at the project site. As of the preparation of this report, the Community Development has not received any response from the public regarding the proposal.

STAFF ANALYSIS

Corona Municipal Code Section 17.96.020 (Variances) establishes that special circumstances applicable to the property, such as size, shape, topography, location or surroundings must exist in order for the Planning and Housing Commission to grant a variance. The Municipal Code also states that the strict application of the terms of the zoning regulations from which the variance is being

sought, deprives the subject property of privileges enjoyed by other properties in the vicinity and under identical zone classification. There are currently no natural or manmade barriers such as freeways, hillsides, or buildings that can shield or separate the new water tank and its supporting equipment from the public other than the proposed eight-foot high fence.

Special circumstances do exist for the project site as the proposed use on the property is non-residential, which is different from the residential uses on the surrounding properties. The site's location and use warrants the need for additional security because the fence height would secure the site from vandalism, trespassing, and malicious activities such as contamination that may pose a potential threat to public health and safety which are significant concerns with respect to the design and construction of the potable water storage reservoir. Security is crucial not only for the safety of the facility itself but also for the existing and future residents living next to or nearby the facility. The northwest corner of the lot will contain an open concrete vault structure which poses a safety concern from potential unwanted trespassing.

The variance will not adversely affect the property or use thereof in the vicinity of the project site because the project is designed to comply with all other development standards prescribed by the R-1A Zone, and all missing public improvements will be constructed adjacent to the site. Landscaping will also be installed within the public right-of-way along Keith Street and Nelson Street and within the site to help soften the new tube steel fence from street view.

The variance is not a granting of special privileges as the applicant has demonstrated that the site's location in a residential area pose special physical circumstances that apply to the subject site. Furthermore, approval of V2017-0101 is consistent with the General plan goals and policies to provide adequate, safe and orderly supply of potable water to meet the current and projected future daily and peak water demands of Corona. Therefore, V2017-0101 is recommended for approval based on the following findings and conditions of approval attached as Exhibit B.

FINDINGS FOR APPROVAL OF V2017-0101

1. An initial study (environmental assessment) has been conducted by the City of Corona so as to evaluate the potential for adverse environmental impacts. The environmental assessment identifies potentially significant effects on the environment, but:

   a. *The project applicant has agreed to revise the project to avoid these significant effects or to mitigate the effects to a point where it is clear that no significant effects would occur, as reflected in Conditions of Approval attached as Exhibit B.*

   b. *There is no substantial evidence before the City that the revised project may have a significant effect.*

2. The strict application of the terms of the zoning regulations from which the Variance is being sought deprives the subject property of privileges enjoyed by other properties in the vicinity and under identical zone classification because of the following special circumstances applicable to the property related to size, shape, topography, location or surroundings:

   a. *Special circumstances do exist for the project site as the proposed use on the property is non-*

residential, which is different from the residential uses on the surrounding properties. The site's location and use warrants the need for additional security because the fence height would secure the site from vandalism, trespassing, and malicious activities such as contamination that may pose a potential threat to public health and safety which are significant concerns with respect to the design and construction of the potable water storage reservoir. Security is crucial not only for the safety of the facility itself but also for the existing and future residents living next to or nearby the facility. The northwest corner of the lot will contain an open concrete vault structure which poses a safety concern from potential unwanted trespassing.

3. The approval of V2017-0101 does not constitute the granting of special privilege inconsistent with the limitations upon other properties in the vicinity and zone in which subject property is located for the following reason(s):

   a. *The variance is not a granting of special privileges as the applicant has demonstrated that the non-residential use of the property for the public's benefit in a residential zone pose special physical circumstances that are not applicable to other properties in the area.*

   b. *The proposed tubular steel fence is consistent with the city's code with respect to acceptable forms of fencing materials that are allowed in residential zones.*

4. The Variance will not adversely affect property and the use thereof in the vicinity of subject property or the public health, safety and general welfare for the following reason(s):

   a. *The Variance will not adversely affect the property in the vicinity, but rather will maximize the security of the site for the city's water infrastructure and thereby protect the city's public health and welfare.*

   b. *The proposed potable water storage reservoir has been designed in a manner that protects the public health, safety, and general welfare by securing the site from general entry with proper fencing and ample landscaping to buffer its appearance from Keith Street and Nelson Street as detailed in companion Conditional Use Permit (CUP17-002).*

PREPARED BY: HARALD LUNA, ASSOCIATE PLANNER

REVIEWED BY: SANDRA YANG, SENIOR PLANNER

SUBMITTED BY: JOANNE COLETTA, COMMUNITY DEVELOPMENT DIRECTOR

EXHIBITS

1. Resolution No. 2524
2. Locational and Zoning Map.
3. Exhibit A - Site Plan.
4. Exhibit B - Conditions of Approval.
5. Exhibits C1-C2 - Fence Plan and Details
6. Exhibit D - Landscape Plan

7. Exhibit E - Applicant's letter, dated October 12, 2018
8. Exhibit F - Environmental Documentation
9. Exhibit G - Letter of objection, dated June 22, 2016

Case Planner: Harald Luna (951) 736-2268

RESOLUTION NO. 2524

APPLICATION NUMBER: V2017-0101

A RESOLUTION OF THE PLANNING AND HOUISNG COMMISSION OF THE CITY OF CORONA, CALIFORNIA, GRANTING A VARIANCE FROM THE PROVISIONS OF CORONA MUNICIPAL CODE SECTIONS 17.70.060 (A) AND 17.70.060 (F) (1) OF THE CORONA MUNICIPAL CODE TO INCREASE THE HEIGHT OF A PERIMETER TUBE STEEL FENCE FROM FIVE FEET TO EIGHT FEET WITHIN THE FRONT YARD AND FROM SEVEN FEET TO EIGHT FEET WITHIN THE SIDE AND REAR YARDS FOR A NEW CITY WATER RESERVOIR SITE LOCATED ON THE SOUTHEAST CORNER OF NELSON STREET AND KEITH STREET (3985 NELSON STREET) IN THE R-1A (SINGLE-FAMILY RESIDENTIAL, 40,000 SQUARE-FOOT MINIMUM LOT SIZE) ZONE (APPLICANT: VERNON WEISMAN, DISTRICT ENGINEER, CITY OF CORONA, DEPARTMENT OF WATER AND POWER, 755 PUBLIC SAFETY WAY, CORONA, CA 92880).

WHEREAS, the application to the City of Corona, California, for a variance from Corona Municipal Code Section 17.70.060 has been made by Corona Department of Water and Power, duly submitted to said City's Planning and Housing Commission for decision after public hearing, for which proper notice was given, held on November 13, 2018, as required by law; and

WHEREAS, after close of said Hearing, the Commission by formal action, found that because of special circumstances applicable to subject property, including size, shape, topography, location or surroundings, the strict application of Section 17.70.060 deprives subject property of privileges enjoyed by other properties in the vicinity and under identical zone classification, based on the evidence presented to the Commission during said hearing;

WHEREAS, at the conclusion of said hearing the Planning and Housing Commission adopted the Mitigated Negative Declaration prepared for the Variance in compliance with the California Environmental Quality Act.

NOW, THEREFORE, BE IT RESOLVED by the Planning and Housing Commission of the City of Corona, California, in a regular session assembled this 13th day of November, 2018, that the aforesaid application for a variance per Section 17.96.020 is hereby granted in accordance with Exhibit A and approved for the following reasons:

1. An initial study (environmental assessment) has been conducted by the City of Corona so as to evaluate the potential for adverse environmental impacts. The environmental assessment identifies potentially significant effects on the environment, but:

a. *The project applicant has agreed to revise the project to avoid these significant effects or to mitigate the effects to a point where it is clear that no significant effects would occur, as reflected in Conditions of Approval attached as Exhibit B.*

b. *There is no substantial evidence before the City that the revised project may have a significant effect.*

2. The strict application of the terms of the zoning regulations from which the Variance is being sought deprives the subject property of privileges enjoyed by other properties in the vicinity and under identical zone classification because of the following special circumstances applicable to the property related to size, shape, topography, location or surroundings:

a. *Special circumstances do exist for the project site as the proposed use on the property is non-residential, which is different from the residential uses on the surrounding properties. The site's location and use warrants the need for additional security because the fence height would secure the site from vandalism, trespassing, and malicious activities such as contamination that may pose a potential threat to public health and safety which are significant concerns with respect to the design and construction of the potable water storage reservoir. Security is crucial not only for the safety of the facility itself but also for the existing and future residents living next to or nearby the facility. The northwest corner of the lot will contain an open concrete vault structure which poses a safety concern from potential unwanted trespassing.*

3. The approval of V2017-0101 does not constitute the granting of special privilege inconsistent with the limitations upon other properties in the vicinity and zone in which subject property is located for the following reason(s):

a. *The variance is not a granting of special privileges because the non-residential use of the property is for the public's benefit and pose special physical circumstances that are not applicable to other properties in the area.*

b. *The proposed tubular steel fence is consistent with the city's code with respect to acceptable forms of fencing materials that are allowed in residential zones.*

4. The Variance will not adversely affect property and the use thereof in the vicinity of subject property or the public health, safety and general welfare for the following reason(s):

a. *The Variance will not adversely affect the property in the vicinity, but rather will maximize the security of the site for the city's water infrastructure and thereby protect the city's public health and welfare.*

b. *The proposed potable water storage reservoir has been designed in a manner that protects the public health, safety, and general welfare by securing the site from general entry with proper fencing and ample landscaping to buffer its appearance from Keith Street and Nelson Street as detailed in companion Conditional Use Permit (CUP17-002).*

BE IT FURTHER RESOLVED that a copy of this resolution be delivered to the City Clerk of said City and a copy thereof be sent to the applicant therefore at the address of said applicant as set forth in the application for said variance.

Adopted this 13th day of November, 2018.

Mitchell Norton, Chair
Planning and Housing Commission
City of Corona, California

ATTEST:

Olivia Sanchez
Secretary, Planning and Housing Commission
City of Corona, California

I, Olivia Sanchez, Secretary to the Planning and Housing Commission of the City of Corona, California, do hereby certify that the foregoing resolution was regularly introduced and adopted in a regular session of said Planning and Housing Commission duly called and held on the 13th day of November, 2018, and was duly passed and adopted by the following vote, to wit:

AYES: Norton, Jones, Dunn, and Ruscigno

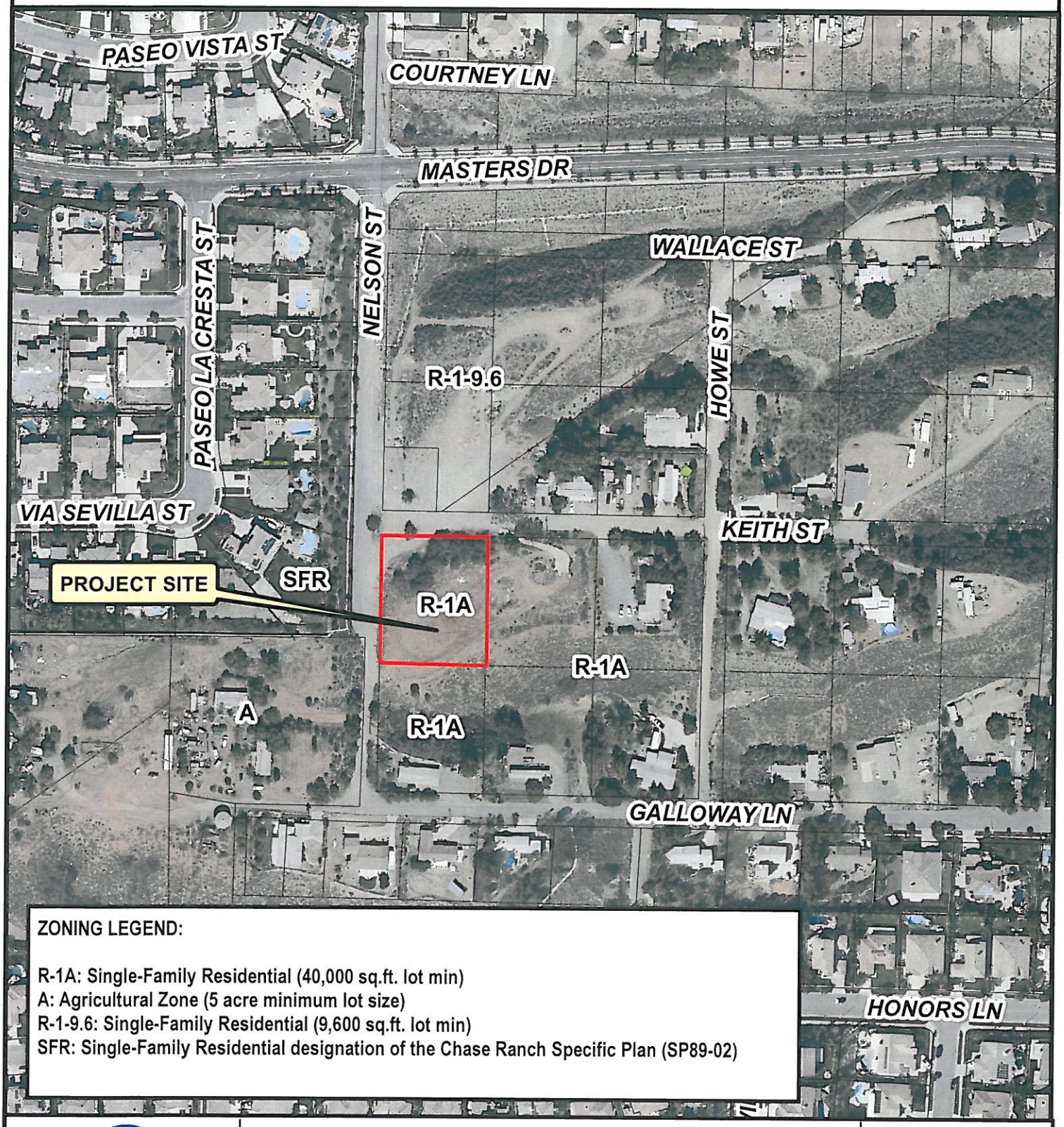
NOES: None

ABSENT: None

ABSTAINED: None

Olivia Sanchez
Secretary, Planning and Housing Commission
City of Corona, California

LOCATIONAL & ZONING MAP



ZONING LEGEND:

R-1A: Single-Family Residential (40,000 sq.ft. lot min)
A: Agricultural Zone (5 acre minimum lot size)
R-1-9.6: Single-Family Residential (9,600 sq.ft. lot min)
SFR: Single-Family Residential designation of the Chase Ranch Specific Plan (SP89-02)

Date: 11/05/2018

3985 Nelson Street
CUP17-002 & V2017-0101

N
W E
S

CONSTRUCTION NOTES

1. VALVE VAULT. SEE SHEET M-1 FOR DETAILS
2. EXISTING ELECTRICAL VAULT TO BE RELOCATED BY OTHERS
3. EXISTING UTILITY POLE TO BE REMOVED BY OTHERS
4. DRIVEWAY PER CITY STD PLAN NUMBER 130
5. 6" CURB PER CITY STD PLAN NUMBER 137
6. 6" CURB AND GUTTER PER CITY STD PLAN NUMBER 135
7. SIDEWALK PER CITY STD PLAN NUMBER 142
8. 5' WIDE CONCRETE STAIRS PER DETAIL 4 ON SHEET C-18
9. RETAINING WALL PER CITY BUILDING DEPARTMENT RETAINING WALL STANDARD DETAILS. FOR ELEVATIONS SEE DETAIL "A" THIS SHEET
10. BROW DITCH. SEE DETAIL 3 ON SHEET C-18
11. BIORETENTION FACILITY. SEE DETAIL 5 ON SHEET C-18
12. DRAIN VAULT. SEE DETAIL 1 ON SHEET C-6
13. 4' x 6' ACCESS HATCH WITH LADDER. SEE DETAIL 4 ON SHEET C-19
14. OVERFLOW CATCH BASIN. SEE DETAIL 1 ON SHEET C-17
15. CONCRETE DRAINAGE SWALE. SEE DETAIL 2 ON SHEET C-18
16. PAVEMENT SHALL BE 4" OF ASPHALT CONCRETE ON TOP OF 6" AGGREGATE BASE
17. LADDER. SEE DETAIL 3 ON SHEET C-20
18. VENT. SEE DETAIL 8 ON SHEET S-8
19. 2' WIDE CURB CUT TO ALLOW GUTTER FLOW INTO BIORETENTION BASIN
20. 4'x8' ACCESS HATCH. SEE DETAIL 5/C-19
21. BEEHIVE GRATE BEHIND RETAINING WALL PER DETAIL 1 ON SHEET C-18
22. CLEANOUT IN PAVEMENT PER DETAIL 6 ON SHEET C-18
23. TANK RAILING PER DETAIL 5 ON SHEET C-19 AND DETAIL 1 SHEET A-3 0
24. TUBULAR FENCE PER SHEET LP-1 AND SPECIFICATION 32 31 20

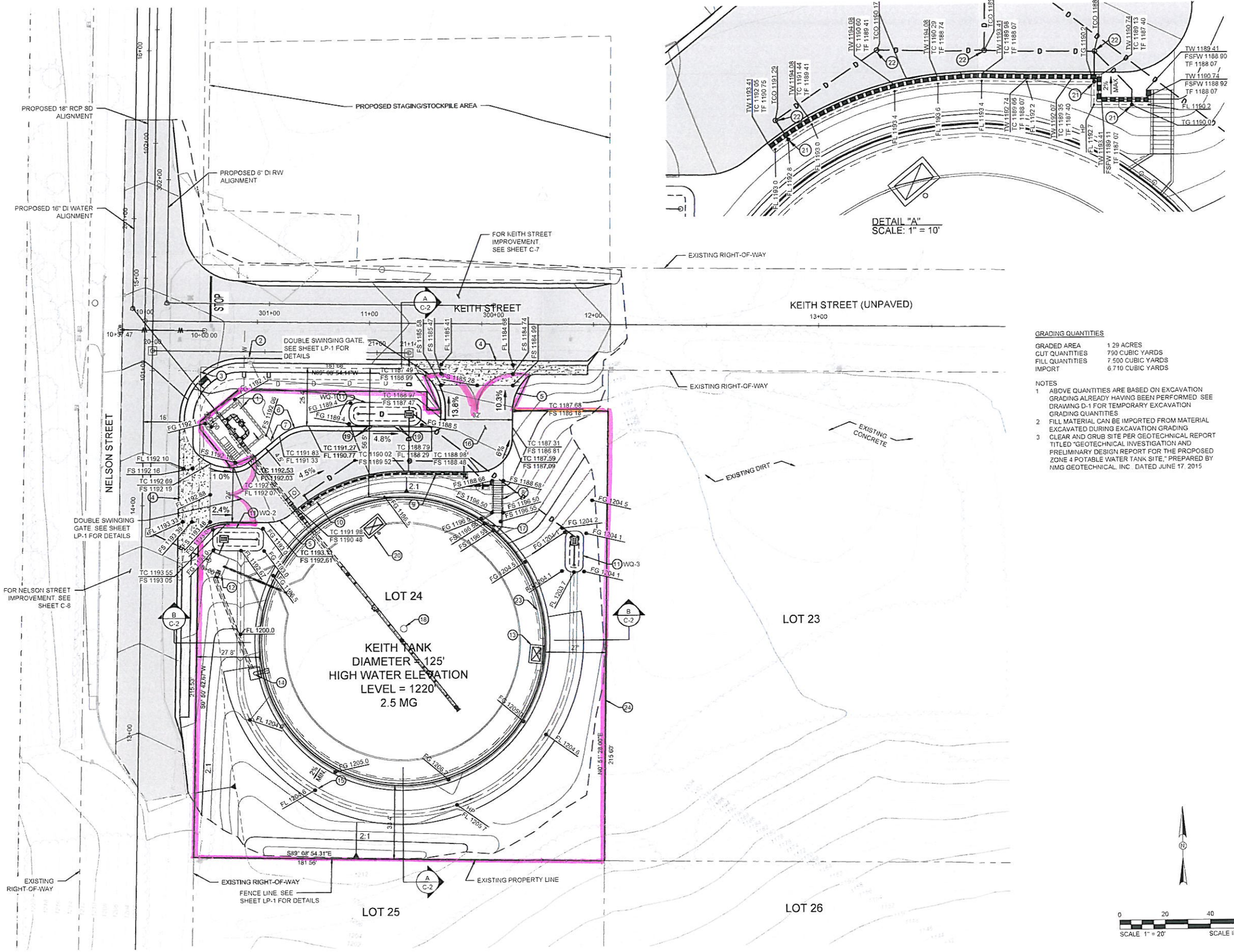
CONSTRUCTION NOTES

- - - - - - - - - LIMIT OF GRADING

▭ LIMIT OF PAVEMENT

NOTES

1. FOR ALL PIPING. SEE SHEETS C-3 THRU C-15
2. FOR CONTINUATION OF WATER SERVICE, SEE IRRIGATION PLANS
3. FOR EROSION CONTROL MEASURES. SEE PROJECT'S STORM WATER POLLUTION PREVENTION PLAN (SWPPP)



GRADING QUANTITIES

GRADED AREA	1.29 ACRES
CUT QUANTITIES	790 CUBIC YARDS
FILL QUANTITIES	7,500 CUBIC YARDS
IMPORT	6,710 CUBIC YARDS

NOTES

1. ABOVE QUANTITIES ARE BASED ON EXCAVATION GRADING ALREADY HAVING BEEN PERFORMED. SEE DRAWING D-1 FOR TEMPORARY EXCAVATION GRADING QUANTITIES
2. FILL MATERIAL CAN BE IMPORTED FROM MATERIAL EXCAVATED DURING EXCAVATION GRADING
3. CLEAR AND GRUB SITE PER GEOTECHNICAL REPORT TITLED "GEOTECHNICAL INVESTIGATION AND PRELIMINARY DESIGN REPORT FOR THE PROPOSED ZONE 4 POTABLE WATER TANK SITE," PREPARED BY NMG GEOTECHNICAL, INC., DATED JUNE 17, 2015

SCALE 1" = 20' — SCALE IN FEET

Underground Service Alert
Call: TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

24x36 FORMAT
IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED

12x18 FORMAT - WARNING
IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed By	Drawn By	Checked By

PLANS PREPARED UNDER SUPERVISION OF

DATE _____ R.C.E. _____

Reference Plans for These Improvements

Date	By	Revisions	Appd

KLEINFELDER
Bright People. Right Solutions.

APPROVED BY: PUBLIC WORKS

_____ DATE _____

NELSON D. NELSON, P.E.
CITY ENGINEER
R.C.E. 54435

APPROVED BY: DEPARTMENT OF WATER AND POWER

_____ DATE _____

VERNON R. WEISMAN, P.E.
DISTRICT ENGINEER
R.C.E. 41610

CITY OF CORONA

KEITH 1220-ZONE POTABLE WATER TANK

GRADING, DRAINAGE AND PAVING PLAN

C-1

Project Conditions
City of Corona

Project Number: V2017-0101

Description: **MAJOR VIRIANCE TO ALLOW THE INSTALLATION OF AN 8 FOOT FENCE**

Applied: **11/14/2017**

Approved:

Site Address: **3985 NELSON ST CORONA, CA 92881**

Closed:

Expired:

Status: **COMPLETE**

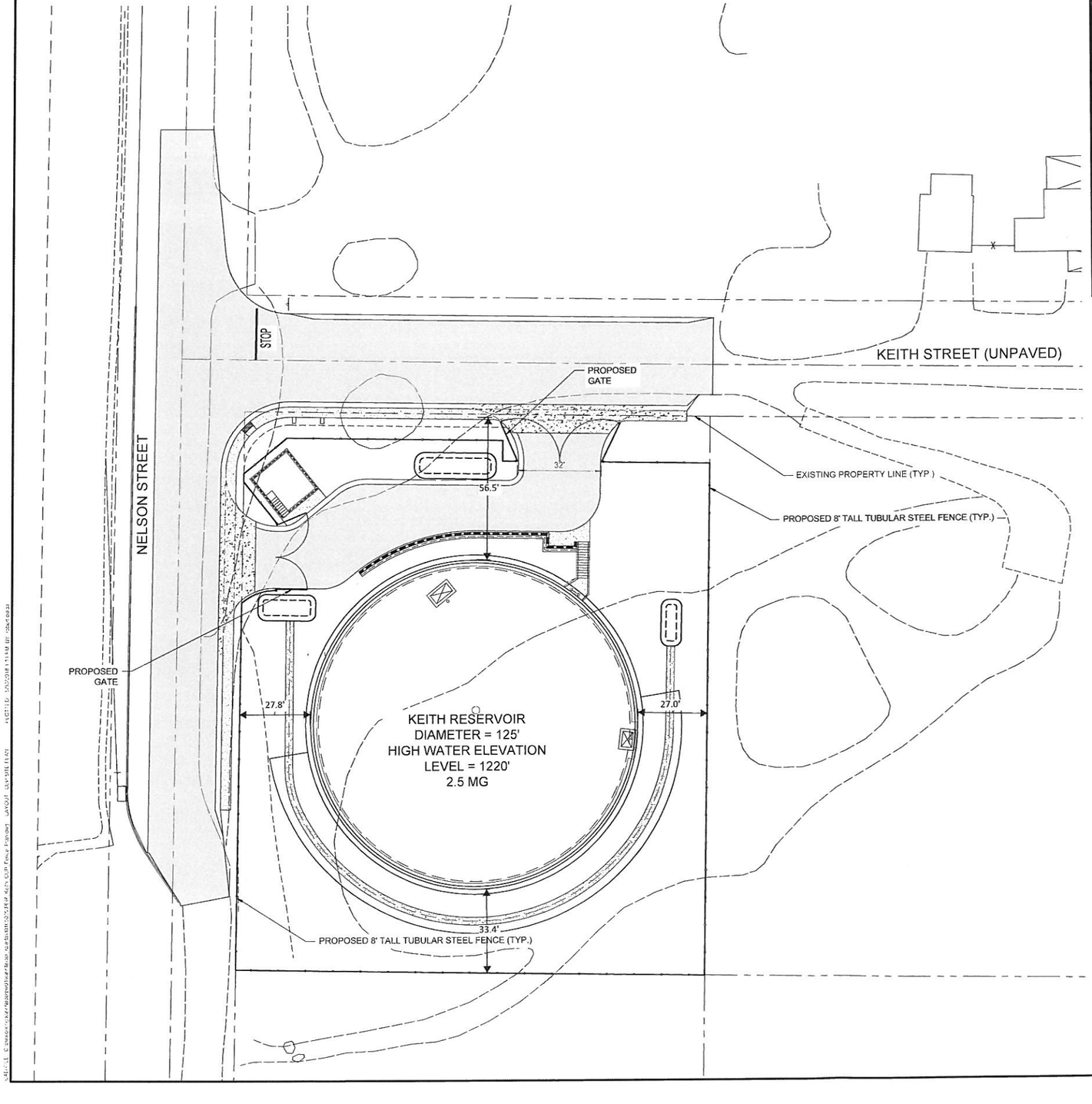
Applicant: **CITY OF CORONA DEPARTMENT OF WATER AND P 755 PUBLIC SAFETY WAY CORONA CA, 92880**

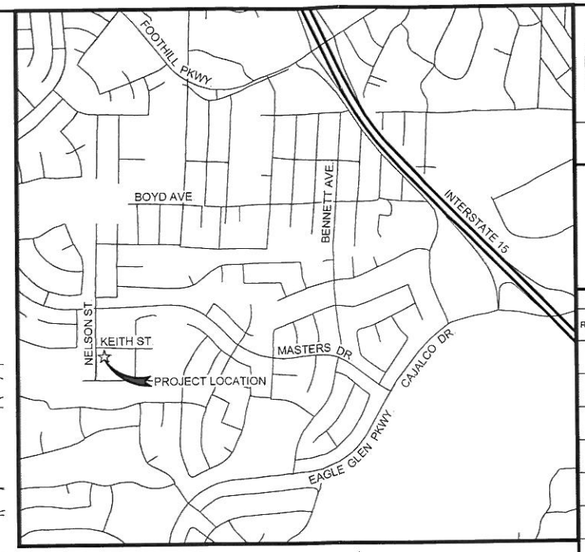
Parent Project:

Details:

LIST OF CONDITIONS	
DEPARTMENT	**CONTACT**
PLANNING	

1. To the fullest extent permitted by law, the applicant shall defend, indemnify and hold the City of Corona and its directors, officials, officers, employees, volunteers and agents free and harmless from any and all claims, demands, causes of action, proceedings, costs, expenses, liabilities, losses, damages or injuries of any kind, in law or equity, in any manner arising out of, pertaining to, or incident to any attack against or attempt to challenge, set aside, void or annul any approval, decision or other action of the City of Corona, whether such approval, decision or other action was by its City Council, Planning and Housing Commission or other board, director, official, officer, employee, volunteer or agent. To the extent that Government Code Section 66474.9 applies, the City will promptly notify the applicant of any claim, action or proceeding made known to the City to which Government Code Section 66474.9 applies and the City will fully cooperate in the defense. The Applicant's obligations hereunder shall include, without limitation, the payment of any and all damages, consultant and expert fees, and attorney's fees and other related costs and expenses. The City shall have the right to retain such legal counsel as the City deems necessary and appropriate.
2. Nothing herein shall be construed to require City to defend any attack against or attempt to challenge, set aside, void or annul any such City approval, decision or other action. If at any time Applicant chooses not to defend (or continue to defend) any attack against or attempt to challenge, set aside, void or annul any such City approval, decision or other action, the City may choose, in its sole discretion, to defend or not defend any such action. In the event that the City decides not to defend or continue the defense, Applicant shall be obligated to reimburse City for any and all costs, fees, penalties or damages associated with dismissing the action or proceeding. If at any time both the Applicant and the City choose not to defend (or continue to defend) any action noted herein, all subject City approvals, decisions or other actions shall be null and void. The Applicant shall be required to enter into any reimbursement agreement deemed necessary by the City to effectuate the terms of this condition.
3. The project shall comply with all applicable requirements of the Corona Municipal Code (CMC) and ordinances and the relevant Specific Plan, if any, including the payment of all required fees.
4. The applicant or his successor in interest shall comply with the Mitigated Negative Declaration prepared for the project.
5. This variance permit hereby allowed is conditional upon the privileges being utilized by the securing of the first permit thereof, or compliance with all conditions on the granting of this variance within two (2) years after the effective date thereof, and if they are not utilized, or construction work is not begun within said time and carried on diligently to completion, this authorization shall become void, and any privilege, permit, or variance granted shall be deemed to have lapsed.





VICINITY MAP
NOT TO SCALE

PROJECT INFORMATION	
A.P.N.:	116-113-001
SITE ADDRESS:	3985 NELSON STREET, CORONA, CA 92851
SITE ACREAGE:	0.9 ACRES
ZONE DESIGNATION:	R1A
PROPOSED USE:	UTILITY
GENERAL PLAN DESIGNATION:	ER - ESTATE RESIDENTIAL
LOT COVERAGE (STRUCTURE SIZE/LOT SIZE)	34%
STRUCTURE HEIGHT:	30-36 FEET, PARTIALLY BURIED
STRUCTURE GROSS FLOOR AREA:	13,478 SQUARE FEET

APPLICANT/OWNER:
CITY OF CORONA DWP
755 PUBLIC SAFETY WAY, CORONA, CA 92880

APPLICANT/OWNER CONTACT:
VERNON WEISMAN AND MAYRA CABRERA
PH: 951-739-4912/951-739-4842
EMAIL: VERNON.WEISMAN@CI.CORONA.CA.US AND MAYRA.CABRERA@CI.CORONA.CA.US

ENGINEER:
KLEINFELDER
550 W C STREET, SUITE 1200, SAN DIEGO, CA 92101

ENGINEER CONTACT:
MARC WEINBERGER
PH: 619-831-4600
EMAIL: MWEINBERGER@KLEINFELDER.COM

KLEINFELDER
Bright People. Right Solutions.
550 West C Street, Suite 1200
San Diego, CA 92101
Phone: 619-831-4600
www.kleinfelder.com

REVISIONS

REV	DESCRIPTION	DSN DWN	CHK APP	DATE

CORONA
"THE CIRCLE CITY"
Incorporated July 13, 1896
To Cherish Our Past - To Plan Our Future

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
0 1"
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

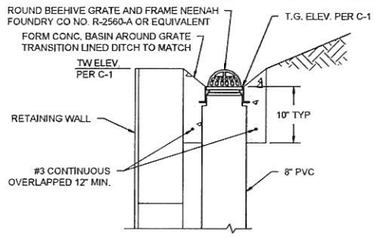
0 20 40 60
SCALE 1" = 20 SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

KEITH 1220-ZONE POTABLE WATER TANK

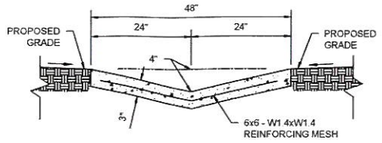
PRELIMINARY FENCE PLAN

PROJECT NO.	20170167.001A
ISSUE DATE	05/30/2018
CURRENT REVISION	1
DESIGNED BY	BO
DRAWN BY	BO
CHECKED BY	MW
APPROVED BY	MW
SHEET	of



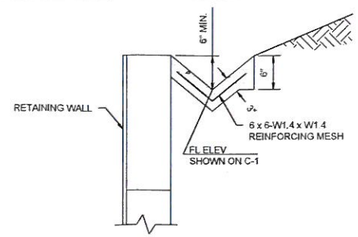
NOTE:
1. CONCRETE SHALL BE CLASS 470-C-2000.

1 - BEEHIVE GRATE BEHIND RETAINING WALL



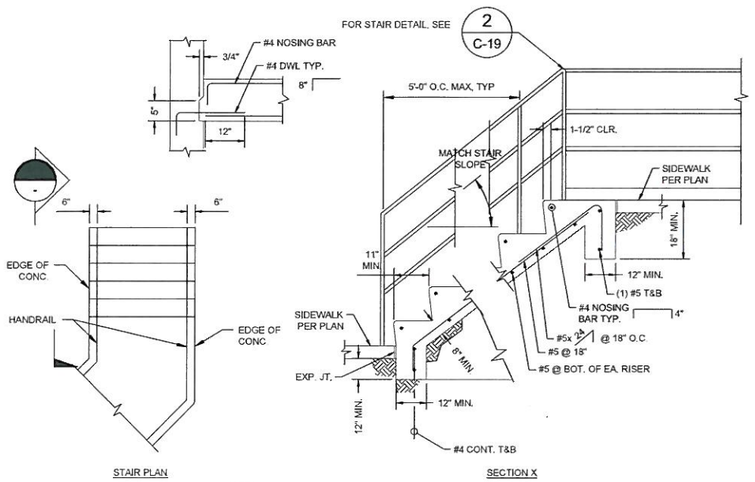
NOTE:
1. CONCRETE SHALL BE CLASS 560-C-3250.

2 - CONCRETE DRAINAGE SWALE



NOTE:
1. CONCRETE SHALL BE CLASS 470-C-2000.

3 - BROW DITCH

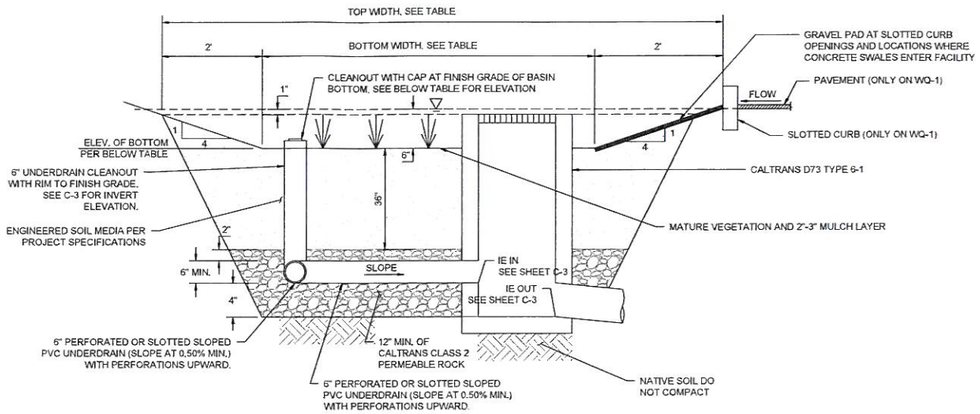


STAIR PLAN

SECTION X

NOTES:
1. BROOM FINISH ON TREADS, TROWEL FINISH ON ALL OTHER EXPOSED SURFACES.
2. RISERS ARE TO BE 4" MINIMUM, 7" MAXIMUM.
3. FROM NOSE OF EACH STEP, ADD A TYPICAL 3" BORDER OF HIGHLY CONTRASTING COLOR PLACED PARALLEL TO ADD NOT MORE THAN 1" FROM NOSE.
4. CONCRETE SHALL BE CLASS 560-C-3250.

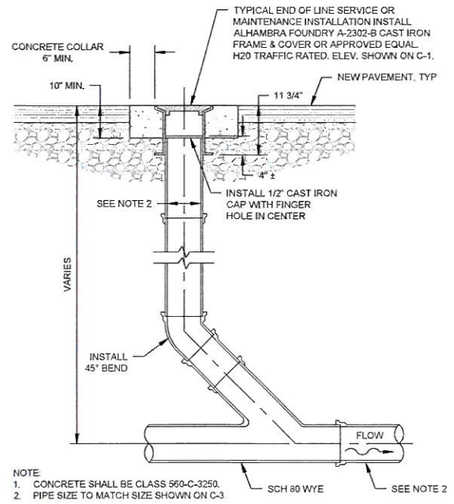
4 - TYP. CONCRETE STAIR ON GRADE



BIORETENTION FACILITY TABLE				
BMP ID	TOP WIDTH (FT)	BOTTOM WIDTH (FT)	TOP LENGTH (FT)	ELEV. OF BOTTOM (FT)
WQ-1	8	4	47.5	1187.9
WQ-2	12	8	17	1192.4
WQ-3	8	4	18	1203.5

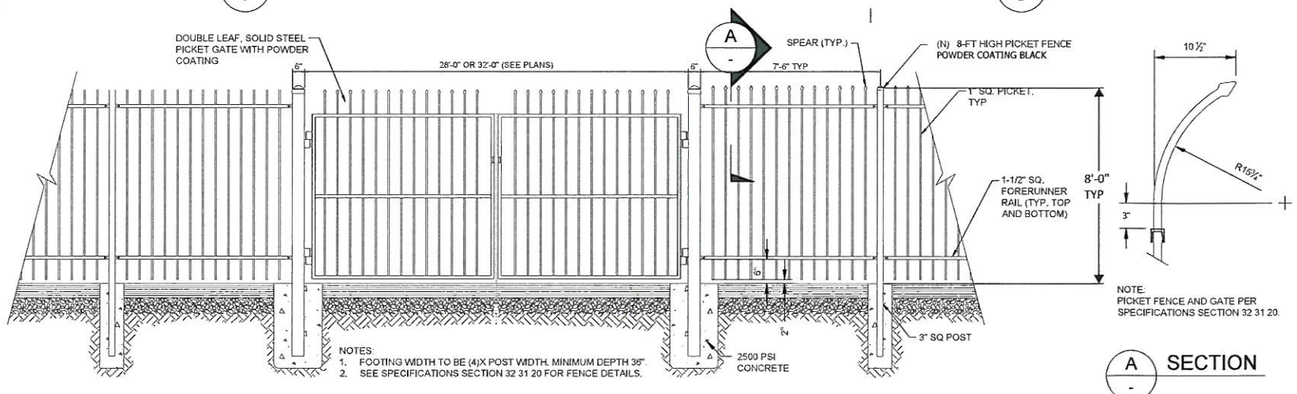
NOTES:
1. BOTTOM OF FACILITY TO BE FLAT.

5 - BIORENTENTION FACILITY



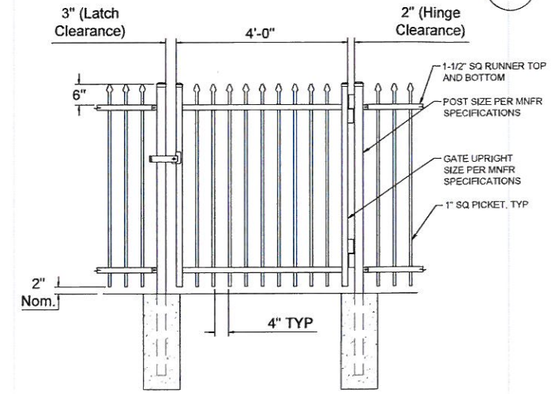
NOTE:
1. CONCRETE SHALL BE CLASS 560-C-3250.
2. PIPE SIZE TO MATCH SIZE SHOWN ON C-3

6 - CLEANOUT IN PAVEMENT



NOTES:
1. FOOTING WIDTH TO BE (4)X POST WIDTH, MINIMUM DEPTH 36".
2. SEE SPECIFICATIONS SECTION 32 31 20 FOR FENCE DETAILS.

7 - GATE ELEVATION



NOTE:
PICKET FENCE AND GATE PER SPECIFICATIONS SECTION 32 31 20.

A - SECTION

NOTE
PERSONNEL GATE PER SPECIFICATIONS SECTION 32 31 20, FOR INFORMATION NOT NOTED, SEE DETAIL 7

8 - PERSONNEL GATE

Underground Service Alert
Call: TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

24x36 FORMAT
IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED

12x18 FORMAT - WARNING
IF THIS BAR MEASURES ½" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed By	Drawn By	Checked By

PLANS PREPARED UNDER SUPERVISION OF

DATE _____ R.C.E. _____

Reference Plans for These Improvements

Date	By	Revisions	App'd

KLEINFELDER
Bright People. Right Solutions.

APPROVED BY: PUBLIC WORKS

_____ DATE: _____

NELSON D. NELSON, P.E.
PUBLIC WORKS DIRECTOR
R.C.E. 54435

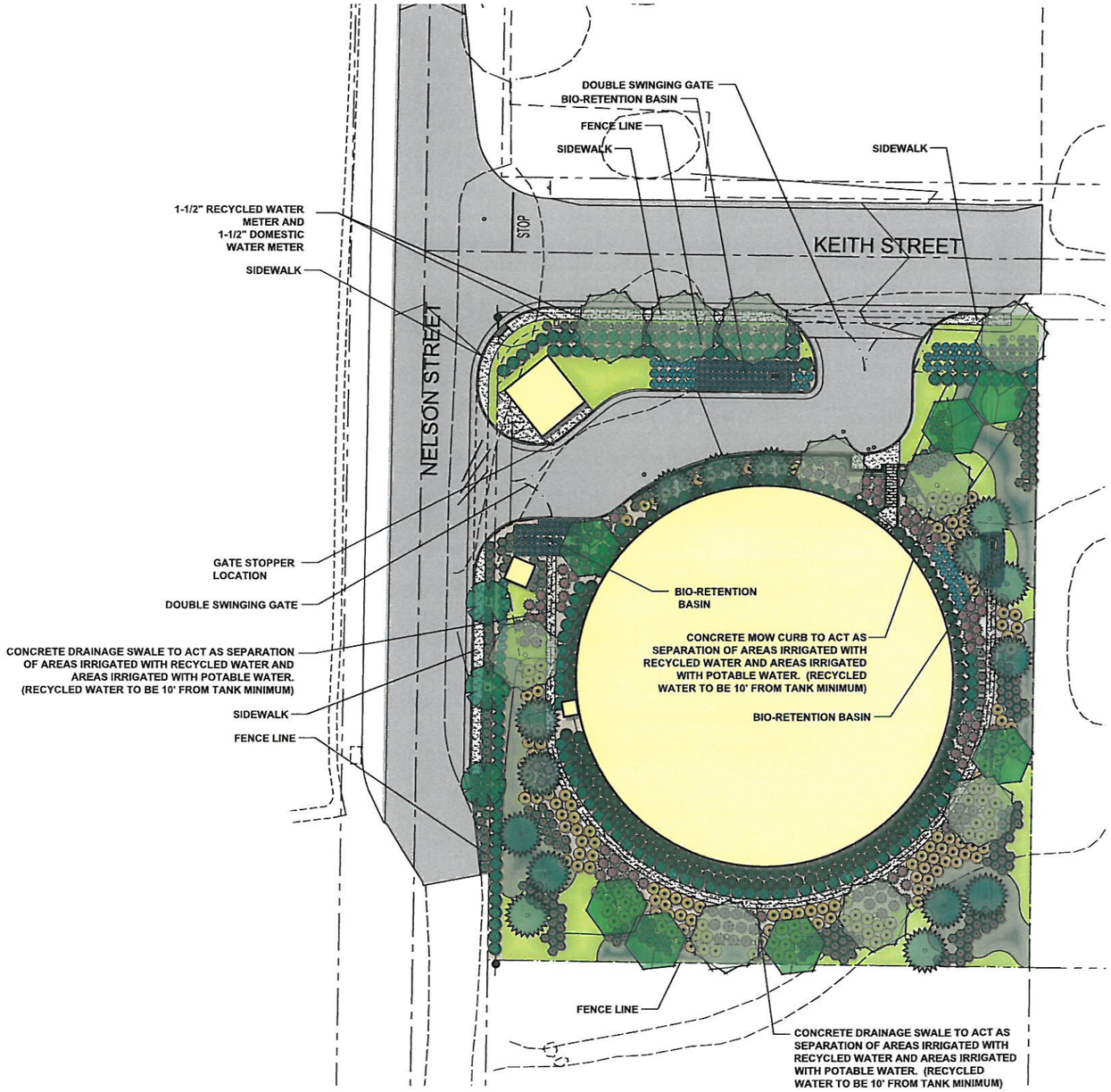
APPROVED BY: DEPARTMENT OF WATER AND POWER

_____ DATE: _____

VERNON R. WEISMAN, P.E.
DISTRICT ENGINEER
R.C.E. 41610

CITY OF CORONA
KEITH 1220-ZONE POTABLE WATER TANK
CIVIL DETAILS

C-18



PLANT SCHEDULE

TREES	BOTANICAL NAME / COMMON NAME	SIZE	WUCOLS		QTY	REMARKS
	KOELREUTERIA BIPINNATA / CHINESE FLAME TREE	24"BOX	L		3	
	PINUS ELDARICA / AFGHAN PINE	24"BOX	L		15	
	RHUS LANCEA / AFRICAN SUMAC	24"BOX	L		7	
	GEIJERA PARVIFLORA / AUSTRALIAN WILLOW MULTI-TRUNK	36"BOX	L		10	
SHRUBS	BOTANICAL NAME / COMMON NAME	SIZE	WUCOLS		QTY	REMARKS
	ACACIA REDOLENS / BANK CATCLAW	1 GAL	L		182	
	CALLISTEMON X `LITTLE JOHN` / DWARF CALLISTEMON	1 GAL	L		298	
	JUNCUS PATENS `ELK BLUE` / SPREADING RUSH	5 GAL	L		171	
	LEYMUS CONDENSATUS `CANYON PRINCE` / NATIVE BLUE RYE	5 GAL	L		58	
	PRUNUS ILICIFOLIA LYONII / CATALINA CHERRY	5 GAL	L		133	
	SALVIA LEUCANTHA `SANTA BARBARA` / MEXICAN BUSH SAGE	5 GAL	L		109	
	WESTRINGIA FRUTICOSA / COAST ROSEMARY	5 GAL	L		146	
GROUND COVERS	BOTANICAL NAME / COMMON NAME	SIZE	WUCOLS	SPACING	QTY	REMARKS
	BACCHARIS PILULARIS `PIGEON POINT` / COYOTE BRUSH	1 GAL	L	48" o.c.	2,703 SF	
	CEANOTHUS GRISEUS HORIZONTALIS `YANKEE POINT` / CALIFORNIA LILAC	1 GAL	L	48" o.c.	2,694 SF	
	MYOPORUM PARVIFOLIUM `PINK` / TRAILING MYOPORUM	1 GAL	L	48" o.c.	679 SF	

NOTES

1. A COMPREHENSIVE AGRONOMIC SOIL ANALYSIS IS REQUIRED FOLLOWING ROUGH GRADING. THE SOIL TEST SHALL ANALYZE TEXTURE, ORGANIC MATTER, ESTIMATED NITROGEN RELEASE, PHOSPHORUS (P1, P2), POTASSIUM, MAGNESIUM. CALCIUM, SOIL PH, CATION EXCHANGE CAPACITY, PERCENT BASE SATURATION, SOLUBLE SALTS, EXCESS LIME RATE, SODIUM, AND BORON. A COPY OF THE AGRONOMIC SOIL ANALYSIS SHALL BE FORWARDED TO THE DEPARTMENT OF WATER AND POWER.
2. SOIL SAMPLES SHALL BE ANALYZED BY A CERTIFIED LAB. CHECK WITH SOIL/PLANT LAB FOR TESTS FOR TURF, AND CERTIFICATIONS.
3. ALL NON-TURF PLANTER AREAS TO RECEIVE A 3" LAYER OF MEDIUM GRIND BARK MULCH
4. QUANTITIES PROVIDED ARE LISTED FOR CONVENIENCE ONLY. THE ACTUAL NUMBER OF PLANTS SHOWN ON THE PLAN TAKE PRECEDENCE OVER QUANTITIES LISTED.
5. ALL TREES PLANTED WITHIN 5' OF ANY STRUCTURE OR PAVING SHALL HAVE A ROOT BARRIER INSTALLED.

IRRIGATION SYSTEM DESIGN STATEMENT

A PERMANENT AUTOMATIC IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED TO IRRIGATE ALL PLANTING AREAS. THE DESIGN OF THE IRRIGATION SYSTEM SHALL EMPHASIZE WATER CONSERVATION AND PROVIDE EFFICIENT AND UNIFORM DISTRIBUTION OF IRRIGATION WATER. THE SYSTEM SHALL BE DESIGNED TO UTILIZE RECYCLED WATER WHEN IT BECOMES AVAILABLE, IN ACCORDANCE WITH STATE OF CALIFORNIA AND LOCAL WATER DISTRICT RULES AND REGULATIONS.

IN PLANTER AREAS WHERE APPROPRIATE, DRIP AND/OR BUBBLER IRRIGATION, OR OTHER LOW-VOLUME, LOW-PRESSURE, MICRO-IRRIGATION SYSTEM MAY BE INSTALLED TO PROVIDE WATER DIRECTLY TO THE ROOT ZONE OF PLANTS THE IRRIGATION SYSTEM MAY UTILIZE EFFICIENT ROTATOR NOZZLES IN LARGER PLANTING AREAS. THE AUTOMATIC IRRIGATION SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH THE CITY OF CORONA ORDINANCES AND REQUIREMENTS AND SHALL BE DESIGNED TO ACCOMMODATE RECYCLED WATER USING PURPLE COLORED IRRIGATION LINES AND VALVES.

A REDUCED PRESSURE BACKFLOW PREVENTER SHALL BE INSTALLED AS PART OF THE IRRIGATION SYSTEM TO PROTECT THE POTABLE WATER SUPPLY IN ACCORDANCE WITH STATE OF CALIFORNIA, CITY OF CORONA, AND LOCAL WATER DISTRICT STANDARDS AND REQUIREMENTS.

LANDSCAPE ARCHITECT SEAL

REGISTERED LANDSCAPE ARCHITECT — 10/31/13 — STATE OF CALIFORNIA

UNDERGROUND SERVICE ALERT

CALL TOLL FREE 811

AT LEAST TWO DAYS BEFORE YOU DIG

NORTH 0' 20' 40' 60'

bmla LANDSCAPE ARCHITECTURE — 310 NORTH ADAMS STREET | CORONA, CA. 92879 | T 951.737.1124 | F 951.737.1561

PROJECT No. JN 71010516

Designed by	Drawn by	Checked by
AN	AN	SS

PLANS PREPARED UNDER SUPERVISION OF

Date BAXTER MILLER

Reference Plans for these Improvements

Date	By	REVISIONS	Appd
		90% SUBMITTAL	
		100% SUBMITTAL	

BENCH MARK

Scale

Engineering

Parks

Approved By:
Nelson D. Nelson, P.E. Date
City Engineer
R.C.E. No. 54435

Approved By:
Vernon R. Weisman, P.E. Date
District Engineer
R.C.E. No. 41619

CITY OF CORONA
CORONA KEITH WATER TANK LANDSCAPE PLANS

KEITH 1220-ZONE POTABLE WATER TANK
SHEET TITLE: PLANTING PLAN

Drawing No. LP-1
Sh. 1 of 8

City of Corona
Department of Water and Power
"Protecting Public Health"

Office: 951.736.2234
Fax: 951.735.3786

755 Public Safety Way
Corona, CA 92880 – www.discovercorona.com

October 12, 2018

Planning and Housing Commission
City of Corona
400 S. Vincentia Ave
Corona, CA 92882
(951) 739-2262

Dear Planning and Housing Commission,

The City of Corona Department of Water and Power (DWP) submitted a variance application (V2017-0101) to the City on November 15, 2017 for the Keith 1220 Zone Tank capital improvement project. The variance would allow the City to increase the height of a perimeter tubular steel fence from five (5) feet to eight (8) feet along the frontage with Keith Street and seven (7) feet to eight (8) feet along the south and east property lines adjacent to private property and along Nelson Street. The project will include construction of a 2.5 MG partially-buried concrete potable water tank on a parcel located at the southeast corner of Keith Street and Nelson Avenue.

The Keith Tank project meets the granting criteria under Corona Municipal Code Section 17.96.020 (A) due to special circumstances. The proposed potable water tank is an essential public water facility providing operational, emergency and fire protection water storage. Security from trespass, vandalism, and malicious activities is a significant concern with respect to the design and construction of potable water facilities. An eight (8) foot high perimeter fence is a critical component of the site security design. In addition to protecting the public water supply from contamination and a potential threat to public health and safety, the facility will have high value electronics and communication equipment on-site representing an attractive theft target.

DWP is requesting this variance to provide security commensurate with the City's responsibility to protect the public water supply.

Feel free to contact me should you have any questions or concern at (951) 739-4912 or via email at Vernon.Weisman@CoronaCA.gov.

Sincerely,

Vernon R. Weisman

Vernon R. Weisman, P.E.
District Engineer

Draft

Keith 1220-Zone Potable Water Tank

Initial Study/Mitigated Negative Declaration

Prepared for
Kleinfelder and City of Corona Department
of Water and Power

October 2018

ESA

Draft

Keith 1220-Zone Potable Water Tank

Initial Study/Mitigated Negative Declaration

Prepared for
Kleinfelder and City of Corona Department of Water and Power

October 2018

2121 Alton Parkway
Suite 100
Irvine, CA 92606
949.753.7001
www.esassoc.com

ESA

Bend	Oakland	San Francisco
Camarillo	Orlando	Santa Monica
Delray Beach	Pasadena	Sarasota
Destin	Petaluma	Seattle
Irvine	Portland	Sunrise
Los Angeles	Sacramento	Tampa
Miami	San Diego	

150788.01

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

ESA

2121 Alton Parkway
Suite 100
Irvine, CA 92606
949.753.7001 phone
949.753.7002 fax

www.esassoc.com

ERRATA
IS/MND

This section contains revisions to the Draft IS/MND. The following corrections and changes are made to the Draft IS/MND and are incorporated herein as part of the IS/MND. These corrections and clarifications represent additional information or revisions that do no significantly alter the proposed project, change the IS/MND's significance conclusions, or result in significantly more sever environmental impacts associated with the proposed project.

The revisions that follow were made to the text of the Draft IS/MND. Amended text is identified by section and page number. Additions to the Draft IS/MND text are shown with underlining and text removed from the Draft IS/MND is shown with ~~strikethrough~~.

Changes to the Draft IS/MND

The following revisions to the text of the Draft IS/MND are made:

Chapter 2.3.1 Potable Water Storage Tank and Associated Components

Page 2-7, 2nd paragraph

The proposed water tank dimensions would be 125 feet in diameter and 33 feet in wall height, and would have a side water depth of 28 feet and a finish floor elevation of 1,192 feet amsl. The tank would require a maximum 4-foot tall retaining wall that extends approximately 70 feet along the northern perimeter of the tank. About 28.5 feet of the tank's north face would be visible, about 23.5 feet of the tank's west face would be visible and the remaining portion of the tank would be partially exposed with a depth of 19 feet. ~~The remaining portion of the tank would be partially exposed, ranging in depth from 4.5 feet to 14 feet..~~ A paved area for parking and access will be located north of the tank. Access to the top of the tank from the paved area would be via concrete stairs and a steel ladder along the eastern side of the tank. The tank site would also feature a drainage ditch, bioretention facility, overflow basin, and fencing (Figure 3a).

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SECTION 1
Introduction

The City of Corona Department of Water and Power (City) has determined the Keith 1220-Zone Potable Water Tank (project) is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA). This Initial Study addresses the indirect, direct, and cumulative environmental impacts associated with the proposed project. The proposed project includes the construction of a partially-buried potable water storage tank and associated utilities to help address the additional storage need for future development and predicted future storage deficiency in 2020. The project is also critical for the City to maintain consistent, reliable water pressure to its service area.

1.1 Statutory Authority and Requirements

In accordance with the CEQA (Public Resources Code Sections 2100-21177) and pursuant to Section 15063 of Title 14 of the California Code of Regulations (CCR), the City of Corona Department of Water and Power, acting in the capacity of Lead Agency, is required to undertake the preparation of an Initial Study to determine if the proposed project would have a significant environmental impact. If the Lead Agency finds that there is no evidence that the project, either as proposed or as modified to include the mitigation measures identified in the Initial Study, may cause a significant effect on the environment, the Lead Agency must find that the project would not have a significant effect on the environment and must prepare a Negative Declaration or Mitigated Negative Declaration for that project. Such determination can be made only if, "there is no substantial evidence in light of the whole record before the Lead Agency" that such impacts may occur (Section 21080(c), Public Resources Code).

The environmental documentation is intended as a document undertaken to provide an environmental basis for discretionary actions required to implement the project. The environmental documentation and supporting analysis is subject to a public review period. During this review, public agency comments on the document should be addressed to the City of Corona. Following review of any comments received, the City of Corona will consider these comments as part of the project's environmental review and include them with the Initial Study documentation for consideration by the Planning Commission and City Council of the City of Corona.

The preliminary determination by the City of Corona Department of Water and Power is that the preparation of a Mitigated Negative Declaration (MND) could be adequate to address the potential environmental issues associated with construction and operation of the proposed project. Therefore, this document is an Initial Study/MND (IS/MND). If the evaluation determines that a

significant impact cannot be reduce to less than significant, then an environmental impact report would be required.

1.2 Purpose

The City has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to provide the public and responsible agencies with information about the potential environmental impacts associated with implementation of the proposed Keith 1220-Zone Potable Water Tank. This IS/MND includes project-level analysis of the potential effects associated with the project.

This IS/MND was prepared in compliance with the content requirements in Section 15071 of the CEQA Guidelines of 1970 (as amended) and California Code of Regulations, Title 14, Division, Chapter 3. In accordance with Section 15071, this MND include a description of the proposed project, the location of the project, a proposed finding that the project will not have a significant effect on the environment, includes an Initial Study that documents reasons to support the finding, and includes mitigation measures to avoid potentially significant impacts.

SECTION 2
Project Description

2.1 Project Location

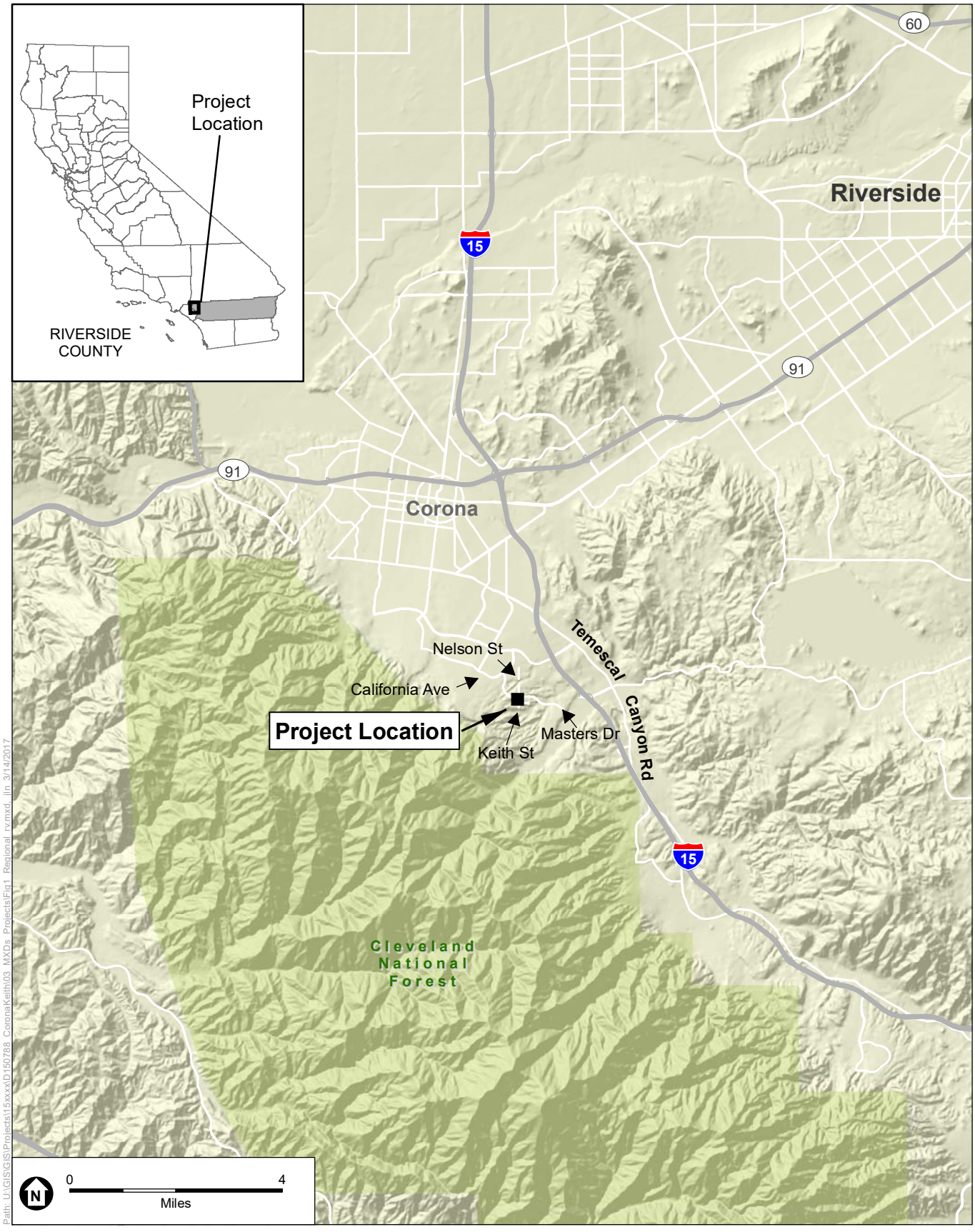
The project site is located in the southwestern portion of the City of Corona, in Riverside County. The site is approximately four miles south of State Route 91 and 1.5 miles west of Interstate-15 (**Figure 1**). Specifically, the project site includes multiple components. The site of the proposed water tank is located on the southeast corner of the intersection at Nelson Street and Keith Street in the City of Corona. The proposed construction staging and stockpile area is located on the northeast corner of the intersection of Nelson Street and Keith Street. The proposed utility lines (potable water, reclaimed water and drainage lines) extend from the proposed tank site along Nelson Street to Courtney Lane, east along Courtney Lane and north within Howe Street to Duncan Way.

2.2 Environmental Setting

The proposed tank would be placed within an undeveloped area of approximately 0.9 acres owned by the City of Corona (project site) (**Figure 2**). The elevations on the site vary from a maximum of approximately 1,214 feet above mean sea level (amsl) on the elevated mound of land in the center of the project area to a minimum of 1,190 feet amsl on the northwest portion of the site. The project site is currently completely undeveloped and consists of small trees and bushes on the northern portion of the site. There is one utility pole placed along the west side of the property.

The water tank area consists of a graded knoll area centrally located within the property that slopes moderately to the east at 6 percent or flatter. An existing south facing descending slope, up to 65 feet high, is present along the southern property line. Two additional slopes are present at the site, facing north and west that vary between 12 to 20 feet high.

The staging/stockpile area is undeveloped. The staging/stockpile area is generally flat with two ornamental trees (Figure 2).



SOURCE: ESRI

Keith 1220-Zone Potable Water Tank

Figure 1
Regional Location Map

ESA

SOURCE: ESRI; Kleinfelder 2017

Keith 1220-Zone Potable Water Tank

Figure 2
Project Site

ESA

The proposed drain line and proposed reclaimed water line would extend from the water tank site and north within Nelson Street to Masters Drive. There is a high point at Nelson Street and Courtney Lane and the street (Nelson Street) declines to Masters Drive. The proposed water line would extend from the tank site north within the high point from Nelson Street to Courtney Lane, east along Courtney Lane and north within Howe Street to Duncan Way. Nelson Street north of Masters Drive to Courtney Street has a slight incline, Courtney Street from Nelson Street to Howe Street also has a slight incline, and Howe Street from Courtney Street to Duncan Way has a slight incline. Each pipeline would be located within the existing paved streets (Figure 2).

2.2.1 General Plan and Zoning

General Plan

According to the City of Corona General Plan Land Use Map, the water tank site is designated as Estate Residential. The Estate Residential designation is intended to accommodate moderate to large size lots for single family detached housing units.

Zoning

The project site is currently zoned as Single Family Residential (R1-A). According to the City of Corona Municipal Code, the R1-A zoning designation is primarily intended for the development of single-family homes on large home sites.

2.2.2 Existing Surrounding Land Uses

Land uses surrounding the project site include single family residential homes (Figure 2). Land uses immediately adjacent to the project site consist of the following:

North: Keith Street and undeveloped land are located north of the project site.

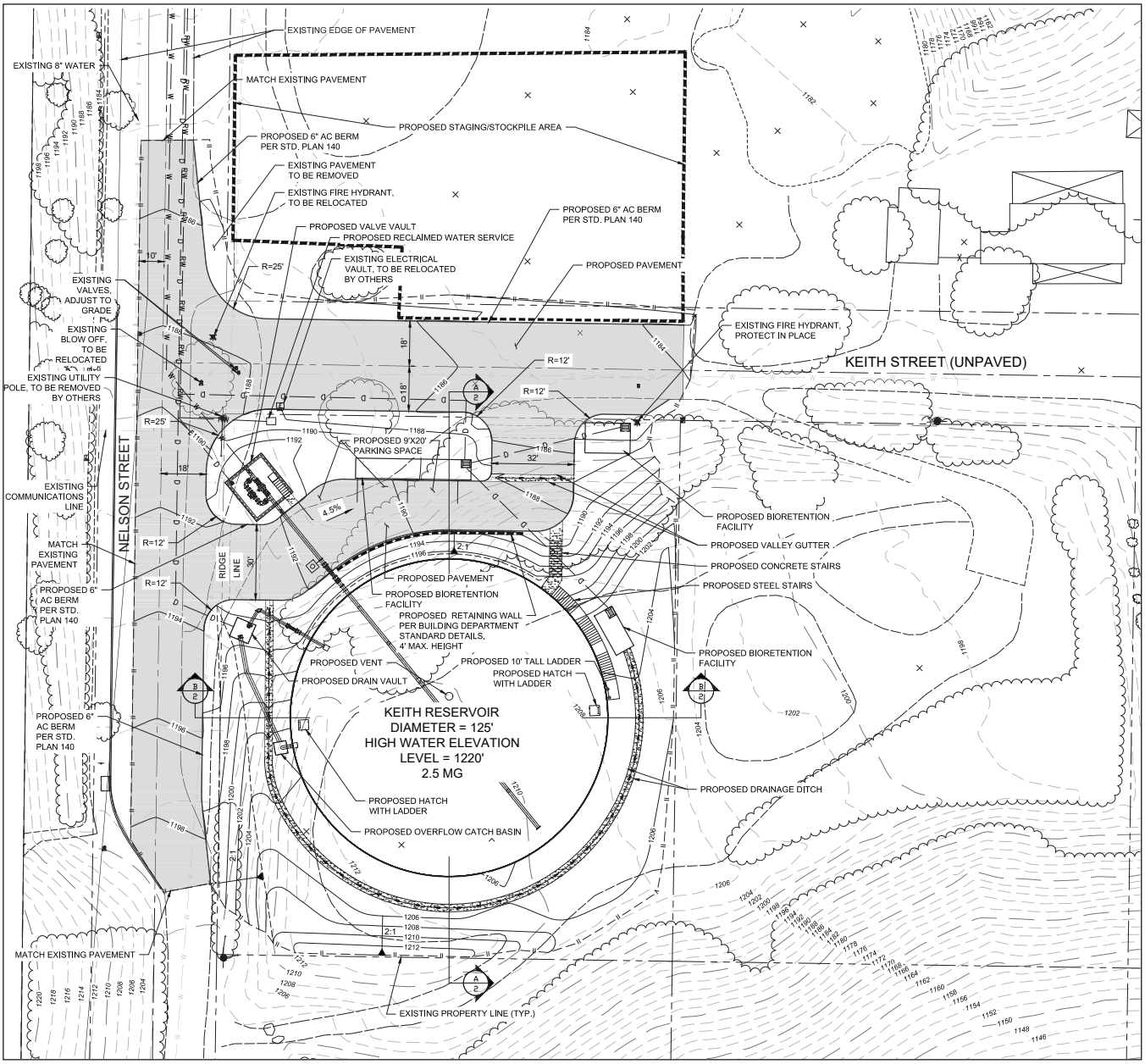
East: Undeveloped land and single family residences are located east of the project site.

South: An undeveloped hillside and low density residential uses are located south and down gradient of the project site.

West: Nelson Street and single family residences/tract neighborhood are located west of the project site.

2.3 Project Features

The proposed project includes the development of a 2.5 million gallon (MG) potable water storage tank, altitude valve and associated piping, , on- and offsite piping, and power to the site. Onsite power would be generated using solar panels, without power service from SCE. Approximately 28 feet of tank would be exposed on the northerly side. The project components are described further below and shown on **Figures 3a**, Site Plan and **Figure 3b**, Pipeline Plan.

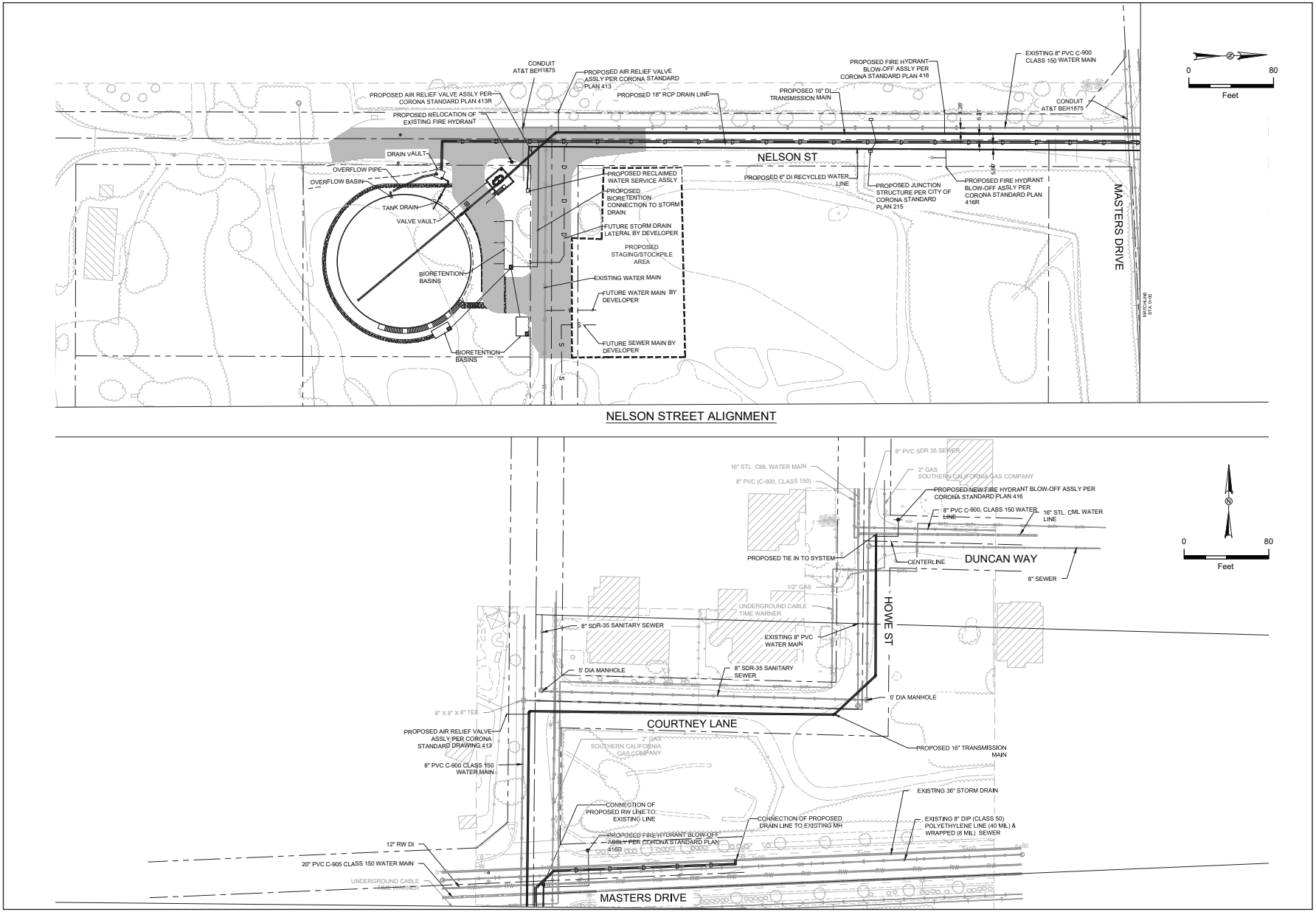


SOURCE: Kleinfelder

Keith 1220-Zone Potable Water Tank Project . 150788

Figure 3a

Preliminary Grading/Site Plan



SOURCE: Kleinfelder

Keith 1220-Zone Potable Water Tank Project . 150788

Figure 3b
Pipeline Plan

2.3.1 Potable Water Storage Tank and Associated Components

The City is proposing to construct a partially-buried Type I pre-stressed concrete potable water storage tank on the southeast corner of Nelson Street and Keith Street (**Figure 2**). The tank is identified as Keith 1220-Zone Potable Water Tank. The storage tank would provide operational, emergency and fire flow storage of 2.5 MG to the City's Zone 4 1220' Hydraulic Grade Line (HGL) pressure zone. This tank would help alleviate the additional storage required for the Arantine Hills development that was approved by the City of Corona City Council in 2012 and alleviate the predicted future deficiency of 5 MG for the 1220-Zone storage in the year 2020.

The proposed water tank dimensions would be 125 feet in diameter and 33 feet in wall height, and would have a side water depth of 28 feet and a finish floor elevation of 1,192 feet amsl. The tank would require a maximum 4-foot tall retaining wall that extends approximately 70 feet along the northern perimeter of the tank. About 28.5 feet of the tank's north face would be visible The remaining portion of the tank would be partially exposed, ranging in depth from 4.5 feet to 14 feet.. A paved area for parking and access will be located north of the tank. Access to the top of the tank from the paved area would be via concrete stairs and a steel ladder along the eastern side of the tank. The tank site would also feature a drainage ditch, bioretention facility, overflow basin, and fencing (Figure 3a).

The exposed north side of the tank creates a global unbalanced static and dynamic (seismic) load that the tank and its foundation must resist. To resist the unbalanced load, additional seismic cables would be placed between the wall and the foundation. A concrete 15-foot wide apron extending halfway around the tank and 17 feet outside the face of the tank would increase the sliding resistance of the tank, particularly while empty.

Inlet/Outlet Altitude Valve

An altitude valve would be installed on the tank inlet line to control filling of the tank. It will close in response to a determined high water level in the tank. The sensing line would be placed on a constant slope to the tank. The sensing line would be ¼-inch Type K copper line, and would be placed 12-inches off the bottom of the tank. The valve functions hydraulically through pilot valve settings and piping without the need for electrical power to the valve. This valve position would be monitored by sending a signal to the City's Supervisory Control and Data Acquisition (SCADA) system.

Altitude Valve Vault

The altitude valve would be placed below ground in an open concrete vault structure. The vault would be approximately 18 feet long by 16.7 feet wide by 6.5 feet deep, with an open concrete stairway to enter. The valve vault would have an approximate finished floor elevation of 1185.5 feet and a top elevation of 1192 feet.

2.3.2 Roadways

Street frontage on approximately 300 feet of Nelson Street and approximately 200 feet of Keith Street surrounding the tank will be improved and widened to a 36 feet wide paved roadway (Figures 2 and 3a) in accordance with City Standard 113 Rural Road. Existing high voltage power lines will be relocated underground along the Nelson Street frontage in conjunction with the street improvements. Once constructed, the area immediately surrounding the tank will be landscaped with planted vegetation.

2.3.3 Pipelines

Drain Pipeline

The proposed project would include an 18-inch diameter drain that would convey all water discharging from the storage tank to an existing storm drain manhole. The drain would carry flows from overflow, tank drain, underdrain and footing drain and collect discharge in a drain vault located immediately northwest of the storage tank. The pipeline alignment would convey drained discharge from the common drain vault for approximately 906 feet along Nelson Street and Masters Drive (Figure 3b). The drain pipeline would connect to an existing storm drain manhole on Masters Drive east of Nelson Street. The depth of the storm drain in Masters Drive will allow water from the tank to flow by gravity. The maximum flow through the drain pipe is calculated to be 4,502 gallons per minute (GPM) through the tank overflow.

Water Transmission Pipeline

A single 16-inch diameter inlet/outlet pipe would run from inside the tank up to the altitude valve. The pipe would be constructed three feet below ground surface.

The proposed project would include a new 16-inch diameter water transmission pipeline to convey water into the existing 1220-Zone distribution main. The pipeline alignment would be approximately 1,276 feet long and connect the storage tank to the existing Hayden Tank 16-inch transmission main. The proposed transmission pipeline would run north along Nelson Street, crossing Masters Drive, east on Courtney Lane, and north on Howe Street, connecting to an existing distribution main in Duncan Way.

Reclaimed Water Pipeline

The project includes a new 6-inch reclaimed water pipeline to convey reclaimed water to the site for irrigation and landscaping uses. The pipeline alignment would be approximately 641 feet long along Nelson Street and connect an existing 12-inch reclaimed water main along Masters Drive to the project site.

2.3.3 Power

The project is proposed to be a stand-alone solar powered system with batteries. A packaged solar power system would be placed on the tank roof. The system would include solar arrays, inverters, chargers, and batteries designed to carry the anticipated loads. Approximately six solar panels

would be mounted on the tank roof. The solar powered system would provide power for a period of five days without charging sun light.

2.3.4 Site Access

An access road with two entrances would allow drive-through access for trucks and other service equipment. The tank site driveways would allow a 40-foot long vehicle to access the proposed parking area from Keith Street and exit onto Nelson Street.

A paved area for parking and access would be located in front (north) of the tank. Access to the top of the tank from the paved area would be provided by stairs with handrails along the eastern side of the tank.

2.3.5 Drainage

Existing site runoff is conveyed from the south to the north towards Keith Street. Runoff from the proposed grading would be conveyed to the north also towards Keith Street. Runoff from south of the tank would be directed around the tank via a proposed concrete ribbon gutter. Runoff from the gutter would be discharged to proposed bioretention facilities. Runoff from the paved areas would also be directed to bioretention facilities. Three bioretention facilities are proposed for the project.

2.3.6 Security and Fencing

The tank site would be secured with a tubular steel fence on the southern and western sides of the site, with rolling gates at both entrances. Security lighting would include low emitting diode (LED) lighting that would be shielded and oriented down and away from residential uses.

2.3.7 Aesthetics and Landscaping

Aesthetically, the proposed water tank structure would be compatible with the surrounding existing characteristics and topography. The structure would be finished in earth tone colors to blend in with the colors of the surrounding natural landscape. The tank surface would be delineated horizontally and vertically by decorative pilasters and bands finished with plaster. The bands lend architectural character, depth and scale to the walls and activate the facades as the shadows generated by the bands move across the façade throughout the day. To additionally transition the effect of the tank against the natural landscape, the tank would be screened from view with layers of planted vegetation. The plantings could offer a field of landscape to soften the juxtaposition against the currently barren undeveloped land on the tank site.

Existing high voltage power lines along the Nelson Street frontage would be relocated underground so that safety and aesthetics of the surrounding area are improved.

Maintenance of the water tank exterior would generally involve cleaning with a high pressure spray annually. The exterior paint and the plaster surface would possibly require re-painting once every five to ten years due to fading over time.

2.3.8 Street Improvements

Approximately 300 feet of Nelson Street would be improved as part of the project. Improvements of Nelson Street include widening the eastern side of the street along the Tank property per City of Corona Standard Plan Number 113 for Rural Roads. An asphalt concrete berm would be constructed along the eastern side of the road. New pavement along the western side of the street would also be constructed 10 feet from the street centerline. The western side of Nelson Street currently has an asphalt concrete berm per Standard Plan Number 113. All proposed road slopes will be in accordance with Standard Plan Number 113. The resulting improvements would provide Nelson Street with a 36-foot wide paved roadway, where feasible, in front of the water tank site.

Approximately 200 feet of Keith Street would be improved as part of the project. This portion of Keith Street is currently unpaved. The street will be improved per City of Corona Standard Plan Number 113. Standard Plan Number 113 requires a street right-of-way width of 50 feet and 36 feet of pavement. However, Keith Street currently has a right-of-way width less than 50 feet. Although the right-of-way is less than 50 feet, the project includes a pavement width of 36 feet for Keith Street in front of the water tank site in accordance with Standard Plan Number 113. This full width (i.e., 36 feet) road is being proposed to allow vehicles exiting the site to travel on a paved roadway. Both sides of the street will have asphalt concrete curbs.

2.4 Construction Activities and Grading

Project construction would take place for approximately 12 months, from January 2019 through January 2020. The proposed project would take approximately 250 days to construct. In general, construction activities would occur between 7:00 a.m. and 7:00 p.m., Monday through Friday except on federal holidays. Construction of the new facilities would involve the use of a variety of heavy construction equipment onsite. The majority of the equipment and vehicles would be associated with the intensive earthwork and the structural and paving phases of construction. Large construction equipment including backhoes, compactors, cranes, excavators, haul trucks, pavers, and rollers would be used during the construction phase of the proposed project.

Clearing and grubbing of the site includes removal of weeds and miscellaneous abandoned material, and trash/debris that are to be disposed of offsite. Undocumented fill, trench backfill and deleterious materials (i.e., concrete, asphalt, pipelines and construction materials, etc.) encountered during grading operations would be removed and disposed of offsite. Once final site grading is complete, approximately 9,900 cubic yards of soil will be exported. Approximately 660 cubic yards of soil would be excavated during a peak construction day. Assumptions and air quality and greenhouse gas emissions modeling output are including in Appendix A.

2.4.1 Construction General Permit

The project would result in more than one acre of soil disturbance; therefore, the project would be subject to the requirements of the General Construction Permit and the City of Corona grading ordinance for erosion. The project would prepare a Storm Water Pollution Prevention Plan

(SWPPP) in compliance with the Construction General Permit and implement construction and post-construction Best Management Practices (BMPs) in compliance with the City regulations. The SWPPP would identify erosion control and sediment control BMPs that would be implemented to minimize the occurrence of soil erosion or loss of topsoil.

2.5 Project Approvals

The City of Corona, as Lead Agency for the project, has discretionary authority over the project. In order to implement this project, the project will require the following approvals and permits:

- Site Plan approval
- Approval of Plans and Specifications
- Approval of Financing the Construction and Operation of the Project

2.5.1 Other Public Agencies Whose Approval is Required

- Santa Ana Regional Water Quality Control Board – Region 8 NPDES permit

SECTION 3
Initial Study

1.	**Project Title:**	Keith 1220-Zone Potable Water Tank
2.	**Lead Agency Name and Address:**	City of Corona Department of Water and Power
3.	**Contact Person and Phone Number:**	Mayra A. Cabrera, Utility Engineer
4.	**Project Location:**	Corona, CA
5.	**Project Sponsor's Name and Address:**	City of Corona
6.	**General Plan Designation(s):**	Estate Residential (ER), 1-3 DU/AC
7.	**Zoning Designation(s):**	Single Family Residential (R1-A), 1 AC min.

Environmental Factors Potentially Affected

The environmental factors checked below include impacts that are "Less Than Significant with Mitigation Incorporated". There are no environmental factors that have an impact that is identified as a "Potentially Significant Impact" because all potential significant impacts can be reduced to less than significant with the incorporation of mitigation measures.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology, Soils and Seismicity
☐ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Land Use Planning	☐ Mineral Resources	☐ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☒ Transportation and Traffic	☐ Utilities and Service Systems	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Environmental Checklist

Aesthetics

Issues (and Supporting Information Sources):		Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
1.	**AESTHETICS — Would the project:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Environmental Analysis

Would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. A scenic vista is defined as a view of an area that is visually or aesthetically pleasing. Aesthetic components of a scenic vista include (1) scenic quality, (2) sensitivity level, and (3) view access. The project area is within a predominantly rural residential area. Based on a review of the City of Corona General Plan, the project site is not identified as a scenic vista (City of Corona, 2004). The City of Corona identifies several significant vistas surrounding the City, including views of the Prado Basin to the northwest, San Gabriel Mountains to the north, and Santa Ana Mountains to the south and west. The project site would not interfere with the viewshed of any significant vistas identified in the General Plan. Therefore, implementation of the project would not have an effect on a designated scenic view or vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. Based on a review of the California Department of Transportation's (Caltrans) List of scenic highways, the project site is not located along a State Scenic Highway. There are no officially designated state scenic highways in the vicinity of the project site (Caltrans, 2011). The nearest officially designated state scenic highway is a portion of State Route (SR)-91, approximately seven miles northwest of the project site. The nearest eligible, but not officially designated state scenic state highway, to the project site is Interstate 15, located approximately 1 mile northeast of the project site (Caltrans, 2011). No historic structures are located at the project site. Therefore, impacts related to scenic resources within a state scenic highway would not occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. The project site is located in a predominantly rural residential area with natural vegetation and exposed soil immediately surrounding the undeveloped, vacant site. The storage tank structure would be designed to fit in with the surrounding topography. The structure would be finished in earth tone colors to blend it in with the colors found in the surrounding natural landscape. To minimize the visual impact of the tank structure, the surface will be delineated horizontally and vertically by decorative pilasters and bands finished with plaster. The bands lend architectural character, depth and scale to the walls and activate the facades as the shadows generated by the bands move across the façade throughout the day. To additionally transition the effect of the tank against the natural landscape, the tank would be further screened from view with layers of planted vegetation. The plantings would offer a field of landscape to soften the juxtaposition against the currently barren undeveloped land on the project site. All pipelines would be constructed underground and would not be visible aboveground, resulting in no visual impacts. Although implementation of the proposed project would construct a new structure on the currently undeveloped site, the design, landscaping and architectural elements of the storage tank would be compatible with the visual character of the site and its surroundings. Therefore, impacts related to visual character would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?

Less than Significant Impact. Construction of the proposed project could potentially require security lighting during nighttime hours. However, should security lighting during construction be implemented, it would be considered temporary and would not create a permanent source of substantial light or glare in the project area. Therefore, temporary construction lighting would be considered a less than significant impact. Operation of the proposed storage tank would create any new source of light for security. The security lighting would include LED lighting that would be shielded and oriented down and away from residential uses. Therefore, no substantial light spillover would occur. In addition, the storage tank would be constructed with earth tone colors and non-reflective, plaster material, resulting in no new source of glare. Therefore, implementation of the proposed project would result in less than significant light and glare impacts.

References

City of Corona. 2004. *City of Corona General Plan*. Adopted March 17, 2004.

Caltrans. 2011. State Scenic Highways in Riverside County. Updated September 7, 2011. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/; accessed on March 1, 2017.

Agricultural and Forest Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
2. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project vicinity is located in a rural residential area of the city. The project site is located on land designated as Urban and Built-Up Land, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program (Department of Conservation, 2012). Therefore, no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. A Williamson Act Contract requires private landowners to voluntarily restrict their land to agricultural land and compatible open-space uses. As stated previously, the project area is void of agricultural uses. The project site does not include land enrolled in Williamson Act Contracts (California Department of Conservation, 2004) and therefore, would not conflict with a Williamson Act Contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The project site is zoned as Single Family Residential and is surrounded by lands zoned for agricultural uses to the southwest and residential uses to the west, north, east, and south. The City of Corona does not contain any land zoned as forest land, timberland, or for timberland production. Therefore, the implementation of the project would result in no forest land or timberland zoning impacts.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site and surrounding area contain no forest land. Thus, implementation of the proposed project would result in no impacts related to the loss or conversion of forest land to non-forest use.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. Although the project is located adjacent to an agricultural zoning designation, the project would not result in changes to any agricultural uses. There are no agricultural or forest uses in the vicinity of the project site. Therefore, the proposed project would not involve changes in the existing environment that could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

References

California Department of Conservation. 2015. Division of Land Resource Protection. Riverside County Important Farmland 2012. Map published February 2015.

_____. 2004. Agricultural Preserves 2014, Williamson Act Parcels, Orange County California. Available at: www.conservation.ca.gov/dlrp/lca; accessed on February 2017.

City of Corona. 2014. City of Corona Zoning and Specific Plans. Updated on August 11, 2014.

Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Environmental Evaluation

The air quality analysis was prepared in March 2017. The analysis assumed construction would occur in late 2017 through late 2018 when in fact it will not occur until 2019. The analysis concluded that the emissions from the construction activities would be less than significant for all criteria pollutants. Because the default construction fleet for 2017 as used in the analysis would result in greater estimated emissions than if a 2019 or newer default construction fleet was used, the analysis using 2017 is a more conservative, worst-case analysis. Remodeling to use a newer construction fleet would not change the significance findings, and therefore is not warranted.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The project site is located within the 6,745-square-mile South Coast Air Basin (SCAB). Air quality planning for the SCAB is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The project would be subject to the SCAQMD's Air Quality Management Plan (AQMP), which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the Southern California Association of Governments (SCAG).

Project construction would result in an increase in short-term or temporary employment compared to existing conditions. Being generally small in number and temporary in nature, construction jobs under the project would not conflict with the long-term employment projections upon which the AQMP is based. Control strategies in the AQMP with potential applicability to temporary emissions from construction activities include strategies denoted in the AQMP as ONRD-04 and OFFRD-01, which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating replacement of older, emissions-prone engines with newer engines meeting more stringent emission standards. In accordance to such strategies, the project would use a portion of the construction off-road heavy-duty equipment fleet that meets or exceeds stringent U.S. Environmental Protection Agency (USEPA) Tier 3 emissions standards, and a portion of the truck fleet would utilize long-haul trucks that meet or exceed USEPA model year 2010 emissions standards. Additionally, the project would comply with California Air Resources Board (CARB) requirements to minimize idling emissions from diesel-fueled vehicles. The project would also comply with SCAQMD regulations for controlling fugitive dust pursuant to SCAQMD Rule 403. Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities.

Based on the above discussion of applicable air quality plan, implementation of the project would result in less than significant impacts.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. As indicated above, the project site is located within the SCAB, which is characterized by relatively poor air quality. State and federal air quality standards are often exceeded in many parts of the SCAB, including those monitoring stations nearest to the project location. The project would contribute to local and regional air pollutant emissions during construction (short-term or temporary) and project operation (long-term). However, based on the following analysis, construction and operation of the project would result in less than significant impacts relative to the daily significance thresholds for regional criteria air pollutant emissions established by the SCAQMD for construction and operational phases.

Construction Impacts

Construction activities have the potential to create regional air quality impacts through the use of heavy-duty construction equipment, and through vehicle trips generated by construction workers and truck hauling to and from the project site. In addition, fugitive dust emissions would result from construction activities. During the finishing phase of construction, the application of architectural coatings (i.e., paints) and other building materials would release volatile organic compounds ("VOCs"). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for fugitive dust, the prevailing weather conditions.

Based on criteria set forth in the SCAQMD CEQA Air Quality Handbook, a project would have the potential to violate an air quality standard or contribute substantially to an existing violation and result in a significant impact with regard to construction emissions if regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: 75 pounds per day for VOCs, 100 pounds per day for nitrogen oxides (NOx), 550 pounds per day for carbon monoxide (CO), 150 pounds per day for sulfur oxides (SOx), 150 pounds per day for PM10, and 55 pounds per day for PM2.5.

Construction of the project would involve demolition of existing pavement, construction of a tank, pipeline installation and paving.

TABLE 1
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS

	Regional Emissions (Pounds per Day)[a]					
Construction Phase	**VOC**	**NO_x**	**CO**	**SO_2**	**PM_{10} [b]**	**$PM_{2.5}$ [b]**
Site Preparation-2017	4	40	23	<1	2.7	1.9
Grading - 2017	7	92	42	<1	5.2	3.7
Drainage/Utilities - 2017	4	42	23	<1	2.0	1.7
Tank Floor and Wall Footings - 2017	0	4	4	<1	0.4	0.2
Assemble Column & Wall forms, Pour Corewalls and Columns - 2018	2	19	12	<1	1.1	0.8
Construction Roof Shoring - 2018	1	4	3	<1	0.4	0.2
Vertical Wall Prestressing - 2018	1	4	3	<1	0.5	0.2
Roof Reinforcing, Bearing Pad Installation and Roof Pour - 2018	1	4	3	<1	0.5	0.2
Prestressing Mobilization - 2018	1	5	5	<1	0.8	0.4
Backfill Tank and Site - 2018	2	16	13	<1	1.1	0.9
Underground Piping and Structures (above tank floor) and Aboveground Piping - 2018	3	35	22	<1	1.8	1.5
Offsite Water, Reclaimed Water and Storm Drain Piping/Paving and Restoration - 2018	10	94	63	<1	5.1	4.3
Offsite Water, Reclaimed Water and Storm Drain Piping/Street Improvements - 2018	10	94	63	<1	5.1	4.3
Architectural Coating - 2018	39	7	7	<1	0.5	0.5
Maximum Regional Emissions	39	94	63	<1	5.2	4.3
SCAQMD Numeric Indicators	**75**	**100**	**550**	**150**	**150**	**55**
Over/(Under)	(36)	(6)	(487)	(150)	(145)	(51)
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

[a] The emissions shown in table include emissions reductions from SCAQMD Rule 403 requirements. Totals may not add up exactly due to rounding in the modeling calculations

SOURCE: ESA, 2017.

Construction activities would include demolition, excavation, construction, architectural coatings and paving. Construction would take place over approximately 12 months, anticipated to begin in fall 2017. Full build-out would occur in 2018. During construction, a variety of heavy-duty diesel-powered equipment would be used on-site. Building construction and finishing activities would require equipment, such as excavators, loaders, cranes, concrete pumps, and air compressors. Regional construction-related emissions associated with construction equipment were calculated using the SCAQMD-recommended California Emissions Estimator Model ("CalEEMod").

This analysis assumes that all construction activities would comply with SCAQMD Rule 403 regarding the control of fugitive dust. A summary of maximum daily regional emissions resulting from construction of the project is presented in **Table 1**, Maximum Regional Construction Emissions, along with the regional significance thresholds for each air pollutant. As shown therein, maximum regional emissions would not exceed the thresholds for VOC, NOx, CO, SOx, PM10, or PM2.5. Therefore, regional construction impacts would be less than significant, and mitigation measures would not be required.

Operational Impacts

Operation of the project is not expected to result directly in a material increase in emissions. The changes associated with the project are not expected to result in any significant net increases in vehicle trips when compared to existing baseline conditions. While the site is expected to have up to two trucks traveling from and to the site for maintenance purposes per day, daily emissions from such trips would be nominal. The project is also not expected to include activities which would increase emission compared to the existing baseline conditions. Therefore, operation of the project improvements would result in less than significant impacts.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. The SCAQMD's approach for assessing cumulative impacts related to operations is based on attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. As discussed earlier, the SCAQMD has developed a comprehensive plan, the 2012 AQMP, which addresses the region's cumulative air quality condition.

A significant impact may occur if a project were to add a cumulatively considerable contribution of a federal or state non-attainment pollutant. Because the SCAB is currently in nonattainment for ozone, PM10 and PM2.5, related projects could cause ambient concentrations to exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA and the SCAQMD. In particular, CEQA Guidelines Sections 15064(h)(3) provides guidance in determining the significance of cumulative impacts. Specifically, Section 15064(h)(3) states in part that:

> *"A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency…"*

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the project's incremental contribution to cumulative air quality impacts is determined based on compliance with the SCAQMD adopted 2012 AQMP. As discussed under Response III.a, the project would be consistent with the 2012 AQMP.

As the project is not part of an ongoing regulatory program, the SCAQMD also recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As discussed above, peak daily emissions of operation-related pollutants would not exceed SCAQMD regional significance thresholds. By applying SCAQMD's cumulative air quality impact methodology, implementation of the project would not result in an addition of criteria pollutants such that cumulative impacts would occur, in conjunction with related projects in the region. In addition, as discussed in Response 3.d, below, construction of the project is not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SCAQMD has established a localized impact threshold. Therefore, the emissions of non-attainment pollutants and precursors generated by the project in excess of the SCAQMD project-level thresholds would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Certain population groups are especially sensitive to air pollution and should be given special consideration when evaluating potential air quality impacts. These population groups include children, the elderly, persons with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. As defined in the SCAQMD CEQA Air Quality Handbook, a sensitive receptor to air quality is defined as any of the following land use categories: long-term health care facilities; rehabilitation centers; convalescent centers; retirement homes; residences; schools; parks and playgrounds; child care centers; and athletic fields.

The localized effects from the on-site portion of daily emissions were evaluated at sensitive receptor locations potentially impacted by the project according to the SCAQMD's localized daily significance threshold ("LST") methodology. Daily localized emissions caused by the project were compared to the LSTs in the SCAQMD's look-up tables to determine whether the emissions would cause violations of ambient air quality standards[1]. The current closest existing

[1] LSTs are only applicable to the following criteria pollutants: NOx, CO, PM10, and PM2.5

sensitive receptors to the project are single-family residential uses adjacent to and west of the site. Therefore, LSTs used were based on a one-acre site within 25 meters of the nearest sensitive receptor in Source Receptor Area 22, Corona/Norco Area. As shown in **Table 2**, Maximum Localized Construction Emissions, the maximum daily localized emissions would not exceed the LSTs for NOx, CO, PM10 or PM2.5.

TABLE 2
MAXIMUM LOCALIZED CONSTRUCTION EMISSIONS

	Localized Emissions (Pounds per Day)[a]			
Construction Phase	**NO_x**	**CO**	**PM_{10} [b]**	**$PM_{2.5}$ [b]**
Site Preparation-2017	39	23	2.6	1.9
Grading – 2017	64	36	3.5	3.1
Drainage/Utilities – 2017	39	22	1.8	1.6
Tank Floor and Wall Footings - 2017	3	3	0.2	0.2
Assemble Column & Wall forms, Pour Corewalls and Columns – 2018	16	10	0.7	0.7
Construction Roof Shoring - 2018	2	2	0.1	0.1
Vertical Wall Prestressing - 2018	2	2	0.1	0.1
Roof Reinforcing, Bearing Pad Installationm and Roof Pour – 2018	2	2	0.1	0.1
Prestressing Mobilization - 2018	3	2	0.2	0.2
Backfill Tank and Site - 2018	13	12	0.9	0.8
Underground Piping and Structures (above tank floor) and Aboveground Piping - 2018	33	20	1.5	1.3
Offsite Water, Reclaimed Water and Storm Drain Piping/Paving and Restoration - 2018	46	30	2.2	2.1
Offsite Water, Reclaimed Water and Storm Drain Piping/Street Improvements - 2018	46	30	2.2	2.1
Architectural Coating - 2018	7	7	0.5	0.5
Maximum Localized Emissions	64	36	3.5	3.1
SCAQMD Localized Significance Thresholds [c]	170	1007	6	5
Over (Under)	(106.12)	(971.25)	(2.52)	(1.86)
Exceed Threshold?	No	No	No	No

[a] Totals may not add up exactly due to rounding in the modeling
[b] PM10 and PM2.5 emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression.
[c] The SCAQMD LSTs are based on Source Receptor Area 22 (Corona/Norco Are) for a two-acre site within a 25-meter receptor distance.

SOURCE: ESA, 2017.

Construction Impacts

The greatest potential for toxic air contaminates (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. In addition, incidental amounts of toxic substances such as oils, solvents, and paints would be used, which would comply with all applicable SCAQMD rules for their manufacture and use. Construction activities associated with the project would be sporadic, transitory, and

temporary in nature. Given the temporary duration of the construction phases of the project, construction impacts associated with TACs are addressed qualitatively based on consistency with strategies and measures that limit, minimize, or reduce diesel emissions.

According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. The project would be subject to SCAQMD rules designed to limit exposure to TACs during construction activities. The project would be required to comply with the CARB Air Toxics Control Measure that limits diesel-powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation. The project would also comply with the requirements of SCAQMD Rule 1403, if asbestos is found during the renovation and construction activities. Compliance with the above regulatory requirements and standard would minimize emissions of TACs during construction and would not result in long-term health risks to existing off-site sensitive populations. Based on the above, impacts to off-site sensitive receptors from criteria pollutants and TACs would be less than significant, and no mitigation measures would be necessary.

Operational Impacts

Within an urban setting, vehicle exhaust is the primary source of CO. Consequently, the highest CO concentrations are generally found within close proximity to congested intersection locations. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increase. For purposes of providing a conservative, worst-case impact analysis, CO concentrations are typically analyzed at congested intersection locations, because if impacts are less than significant in close proximity to the congested intersections, impacts will also be less than significant at more distant sensitive receptor locations.

Operation of the project is not expected to result directly in a material increase in emissions. The changes associated with the project would include a nominal increase in vehicle trips when compared to existing baseline conditions because up to two maintenance trucks per day may be required to travel to and from the project site. There will be no impacts at congested intersection locations. Therefore, operation of the project improvements would result in no impacts in regards to CO.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents. According to the SCAQMD CEQA Air Quality Handbook, construction equipment is not a typical source of odors. SCAQMD Rule 1113 limits the amount of VOCs from architectural coatings and solvents. Through adherence with mandatory compliance with SCAQMD Rules, no construction activities or materials are proposed which would create objectionable odors. The nearest existing sensitive receptors are single-family residences to the west of the project site. However, the operation of the water tank would not typically generate nuisance odors at nearby sensitive receptors.

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The project would not involve elements related to these types of uses. While there is a potential for odors to occur, compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines would limit potential objectionable odor impacts to less than significant.

References

South Coast Air Quality Management District. 2012. Air Quality Significance Thresholds. Published March 2011. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf; accessed February 2017.

Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4.	**BIOLOGICAL RESOURCES — Would the project:**				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

Discussion

The following discussion is based on a habitat assessment survey conducted by ESA biologist Tommy Molioo on July 27, 2016, and subsequent focused burrowing owl surveys conducted by ESA biologist Matthew South between August 23 and September 14, 2016 (Appendix B). Relevant literature and natural resources databases were reviewed before and after the site visits to determine the potential for sensitive biological resources and special-status species (including burrowing owl) to occur within and immediately adjacent to the project site. Sources reviewed included:

- California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) records search for the Corona South, Corona North, Riverside West, Lake Mathews, Alberhill, Santiago Peak, El Toro, Blackstar Canyon, and Prado Dam quadrangles.
- The Riverside County Land Information System.
- Western Riverside County Regional Conservation Authority Conservation Summary Report Generator Results for the project APNs.

SOURCE: ESRI

Keith 1220-Zone Potable Water Tank

Figure 4
Vegetaton

ESA

The survey area to identify biological resources related to the proposed project is approximately 57 acres in size, which includes the proposed water tank, staging area, overflow and transmission lines, and a surrounding 500-foot buffer to account for adjacent areas that may indirectly be impacted by the project. Over half of the survey area consists of developed single-family residences and public roads. The proposed location of the water tank is in an area that was previously sheet graded. Native shrubs and grasses remain at the fringes of this graded area and on adjacent steep-sloped edges, but are absent from where the water tank will be constructed. The proposed staging area is also previously graded, with stockpiles of soil and debris. The proposed soils stockpile area for the water tank contains low-growing native shrubs and non-native grasses. These areas have been previously disturbed by grading, vehicle traffic on dirt roads, and dumping. The proposed transmission and overflow lines would be placed within existing roadway that is characterized by concrete and asphalt, adjacent to disturbed areas with bare ground. Native sage scrub communities occur on steep-slopes adjacent to the project site in areas located to the north and south of Masters Drive, and on the slope immediately to the south of the proposed water tank.

The project site is located within the Temescal Area Plan under the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), but is not within or adjacent to a Criteria Cell, a designated Cell Group, or a subunit within the Area Plan that requires conservation of land for inclusion in the MSHCP Conservation Area (County of Riverside, 2016). The project site and offsite areas are within the Burrowing Owl Survey Area; therefore, in compliance with the MSHCP, surveys are required for this species. The project site is not located within any other special survey areas or Special Cores or Linkages under the MSHCP. Further, the project site was not found to support Riparian/Riverine Areas or Vernal Pools as defined under Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools of the MSHCP.

Vegetation and Plant Communities

Plant communities are generally described by the assemblages of plant species that occur together in the same area forming habitat types. Descriptions of vegetation were generally characterized based on dominant species, according to Holland (1986) and Sawyer Keeler-Wolf (1995). Details of each habitat type, disturbed areas, and land uses observed within the survey area are described below. Plant names used in this report follow the Jepson Manual (Hickman, 1993).

The survey area consists largely of undeveloped but previously disturbed land, developed roadways and single-family residences. The majority of the project site where the tank and pipelines are proposed consists of previously graded bare ground and the occasional patch of disturbed California buckwheat scrub in areas where soils were not heavily graded or compacted. Much of the disturbed and previously graded areas in the project site are devoid of vegetation and only contain scattered non-native grasses and ruderal (weedy) forbs. Native scrub habitat is found surrounding the developed project area on steep north and south-facing slopes. These native scrub areas appear to be remnant vegetation communities prior to disturbance on and adjacent to the project site.

Developed Land

Developed land makes up the majority of the survey area. The developed land is characterized by paved surfaces associated with urban development and infrastructure. No native soils or vegetation exist within the developed land. Only landscaped ornamental trees and shrubs associated with residences and public roadsides were observed in areas mapped as developed land.

Disturbed Habitat

Disturbed habitat is found where previous grading removed native vegetation, compacted surface soils, and now are dominated by areas of bare ground. Areas of bare ground include the proposed tank installation site, the proposed stockpile area, and the dirt roads that lead to the proposed staging area. There are existing soil stockpiles and debris piles in the proposed staging area, and debris has been dumped along some of the dirt roads that are immediately northeast of the proposed staging area.

California Buckwheat Scrub

California buckwheat scrub occurs along the steep sloped portions of the survey area, surrounding the project site. The community is dominated by California buckwheat (Eriogonum fasciculatum), and subdominant shrubs include brittlebush (Encilia farinosa) and California sagebrush (Artemisia californica).

Disturbed California Buckwheat Scrub

Disturbed California buckwheat scrub occurs at the edges of the graded pads, at the eastern edge of Nelson Street, and in small patches between dirt roads in the proposed soil stockpile area. This community is dominated by California buckwheat, with a sub dominance of brittlebush and California sagebrush. The shrubs in this community have been degraded by vehicle traffic and making them shorter and less dense. Invasive species in this community include non-native grasses such as cheatgrass (Bromus tectorum), red brome (Bromus madritensis), and Sahara mustard (Brassica tournefortii).

Laurel Sumac Scrub

Laurel sumac scrub occurs as a small patch on the north-facing slope adjacent to the proposed water tank site. This community is dominated by a monoculture of laurel sumac (Malosma larina) that is approximately six feet high and forms a dense scrub habitat with only small openings.

Southern Mixed Riparian Woodland

A small stand of southern mixed riparian woodland habitat occurs within a basin installed for construction of the residential development north of Masters Drive. This native woodland habitat was created and intergrates with California buckwheat scrub on adjacent slopes. This community is associated with a drainage feature that parallels Masters Drive. Although this community is mapped within the survey area for the project site, it does not occur within any proposed impact areas.

Wildlife

Wildlife species observed or detected during the initial habitat assessment and focused surveys include common avian and mammal species typical of disturbed upland habitats and urban environments. Avian species observed or detected included common raven (Corvus corax) mourning dove (Zenaida macroura), rock dove (Columba livia), house finch (Carpodacus mexicanus), California towhee (Melozone crissalis), barn swallow (Hirundo rustica), Say's phoebe (Sayornis saya), Anna's hummingbird (Calypte anna), and Bewick's wren (Thyromanes bewickii). Mammal species observed includes California ground squirrel (Otospermophilus beecheyi) and desert cottontail (Sylvilagus audubonii). No amphibian or reptile species were observed during the assessment or focused surveys.

Environmental Evaluation

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation Incorporated. The project site occurs in an area that is highly disturbed from previous grading and is characterized mainly by disturbed habitat and developed land, with areas of native California buckwheat scrub and laurel sumac scrub. The majority of the project site is undeveloped and contains compacted bare ground, with native scrub habitat along the boundaries of the project site and scattered non-native vegetation throughout. Surrounding land uses include residential development and constrained undeveloped land to the north, south, east, and west. The areas of native vegetation on the project site and within the survey area are isolated and not connected to other offsite areas containing native habitat due to existing developments. Special-status species with a potential to occur on the project site include species that occur in urbanized areas characterized by upland disturbed habitat adjacent to native scrub habitat.

Special-status plant species with a potential to occur on or adjacent to the project site include: Plummer's mariposa-lily (*Calochortus plummerae*) a CRPR rank 4.2 species and MSHCP covered species, intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*) a CRPR rank 1B.2 species and MSHCP covered species, and Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) a CRPR rank 4.3 species. These special-status plant species typically occur in coastal sage scrub, chaparral, and grassland habitats. California buckwheat scrub vegetation occurs on a flat area and moderate slopes surrounding the proposed water tank location, as well as slopes adjacent to the proposed staging area for the project site. These native scrub areas are relatively limited and mainly occur in adjacent offsite areas that would not be impacted by the project. Additionally, the majority of the project site is disturbed from previous grading and vehicle traffic along Keith Street, as well as soils dumping from another property owner. The soils observed on the project site are compacted and have been altered from their natural composition further reducing the potential for these three plant species to occur on the project

site. Therefore, there is a low potential for these species to occur on the site and be impacted by the project. Further, Plummer's mariposa-lily and intermediate mariposa-lily are covered by the MSHCP with no additional survey or conservation requirements for the project site or off-site areas for these species. Therefore, potential impacts to these species, if present, would be considered less than significant with no additional mitigation required. Robinson's pepper-grass is not covered under the MSHCP; however, due to the highly disturbed condition of the project site, the lack of suitable microhabitat conditions (such as suitable soils, vegetation, and hydrology), and lack of previously recorded occurrences on the project site, the likelihood of this species occurring on the project site is considered low. Due to the limited amount of potentially suitable habitat to be removed and the level of existing disturbances, potential impacts to this species, if present, would not be expected to reduce population numbers below self-sustaining levels within the region. Therefore, impacts to this species are considered less than significant, and no mitigation measures are required.

Special-status wildlife species with a potential to occur on the project site include burrowing owl (*Athene cunicularia*) a California Species of Special Concern (SSC) and MSHCP covered species, northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) both SSC species, Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) a CDFW Watch List species, and Bell's sage sparrow (*Artemisiospiza belli belli*) a CDFW Watch List species. These special-status wildlife species are also considered covered species under the MSHCP. Burrowing owl occurs in low-growing grassland vegetation that intergrates with native scrub and disturbed habitat areas with plenty of open areas for foraging. The project site contains disturbed habitat adjacent to medium height native scrub with areas of dirt and debris piles that can be used as cover sites. A focused burrowing owl survey was conducted by ESA between August 23 and September 14, 2016 according to MSHCP protocol. No burrowing owls were observed on the project site and survey area during the focused surveys; however suitable habitat exists on the project site and burrowing owl could move onto the site prior to construction. Therefore, there is still a moderate potential for burrowing owl to occur on the project site. Project-related impacts to burrowing owls are considered significant.

During the initial site assessment and focused burrowing owl surveys, no observations of San Diego pocket mouse or San Diego black-tailed jackrabbit were recorded. However, due to the existing habitat and lack of current development on the project site, there is a potential for these species to occupy the project site prior to construction. Project-related impacts to species listed as SSC are not significant unless the potential impact would cause the population of the species to drop below self-sustaining levels. Further, these species are covered under the MSHCP and no additional mitigation is required for potential impacts. Therefore, due to the lack of observations of these species during the site surveys, it is not anticipated that a significant population of these species occurs on the project or that the project site is a known nursery site for these species. Potential project-related impacts to these species would not be considered significant, and no mitigation would be required.

Although Southern California rufous-crowned sparrow and Bell's sage sparrow are only listed as CDFW Watch List species and are covered under the MSHCP, they are further protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC) 3500 which protects resident avian species, their nests and eggs. Therefore, project-related activities that commence during the general avian nesting season of February through August could result in potentially significant impacts to avian species and their nests, including raptors.

Mitigation Measures

The following measures are required to reduce potential impacts to nesting special-status avian species and nesting common avian species

> **Mitigation Measure BIO-1:** No burrowing owls were observed on the project site during the focused burrowing owl surveys conducted in 2016. However, due to suitable habitat on the project site and current lack of development on the site, there is a potential for burrowing owls to move onto the site prior to the start of construction. Therefore, in accordance with the MSHCP survey protocol, a pre-construction clearance survey is required to be conducted to determine the presence or absence of burrowing owls within 30 days prior to the start of construction. The results of the pre-construction survey will be included in a MSHCP 30-Day Burrowing Owl Survey Report to be prepared and submitted to the City prior to the start of construction.
>
> **Mitigation Measure BIO-2**: If burrowing owls are determined to be present during the 30-day pre-construction survey, occupied burrows shall be avoided to the greatest extent feasible, following the guidelines in the Staff Report on Burrowing Owl Mitigation published by Department of Fish and Wildlife (March 7, 2012) including, but not limited to, conducting pre-construction surveys, avoiding occupied burrows during the nesting and non-breeding seasons, implementing a worker awareness program, biological monitoring, establishing avoidance buffers, and flagging burrows for avoidance with visible markers. If occupied burrows cannot be avoided, acceptable methods may be used to exclude burrowing owl either temporarily or permanently, pursuant to a Burrowing Owl Exclusion Plan that shall be prepared and approved by the County of Riverside Environmental Programs Department (EPD), in coordination with the CDFW. The Burrowing Owl Exclusion Plan shall be prepared in accordance with the guidelines in the Staff Report on Burrowing Owl Mitigation and the MSHCP.
>
> In accordance with the MSHCP, take of active nests will be avoided. Passive relocation (i.e., the scoping of the burrows by a burrowing owl biologist and collapsing burrows free of young) will occur when owls are present outside the nesting season. The EPD may require translocation sites for the burrowing owl to be created in the MSHCP reserve for the establishment of new colonies pursuant to MSHCP objectives for the species. Translocation sites, if required, will be identified in consultation with EPD and/or CDFW taking into consideration unoccupied habitat areas, presence of burrowing mammals, existing colonies, and effects to other MSHCP Covered Species.
>
> **Mitigation Measure BIO-3**: Project-related construction activities shall be conducted outside the general avian nesting season of February through August to reduce any potential impact to common and special-status avian species that may be nesting in close proximity to the project boundary. If avoiding the avian nesting season is not feasible,

then Mitigation Measure MM BIO-4 will be required to determine if avian species protected by the MBTA and CFG Code currently are nesting on the project site.

Mitigation Measure BIO-4: Prior to the issuance of a grading permit and start of construction within the general avian nesting season, a pre-construction nesting bird survey shall be conducted within 30-days prior to construction to determine the presence/absence of nesting birds within 500 feet of the project boundary. The nesting bird survey shall be conducted by a knowledgeable biologist within all suitable nesting habitat within 500 feet of the project boundary. If an active nest is observed, an appropriate buffer shall be established by the biologist around the nest based on sensitivity of the species and proximity to construction impact areas. The buffer shall be in place for the duration of the project or until the nest is no longer active. Monitoring during construction shall also be determined by the biologist and may be required to ensure nest failure does not occur. No project activities shall encroach into the buffer without the consent of the monitoring biologist when the nest is no longer active or if the proposed activities will not result in nest failure.

Significance after Mitigation

With the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4, construction of the proposed project would result in less than significant impacts on burrowing owl and other nesting birds.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No Impact. The project site is located in an upland area that is highly disturbed from previous grading and adjacent residential development. Vegetation communities identified on the project site include mainly disturbed habitat and developed land, with areas of California buckwheat scrub and laurel sumac scrub. The CNDDB identified twelve sensitive natural communities that have been documented in the vicinity of the project site including: California Walnut Woodland, Canyon Live Oak Ravine Forest, Riversidean Alluvial Fan Sage Scrub, Southern California Arroyo Chub/Santa Ana Sucker Stream, Southern Coast Live Oak Riparian Forest, Southern Cottonwood Willow Riparian Forest, Southern Interior Cypress Forest, Southern Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, Southern Willow Scrub, and Valley Needlegrass Grassland. A small stand (approximately 1,200 square feet) of Southern Willow Scrub habitat is located within a drainage feature to the immediate north of the project site. Additionally, a small stand (approximately 0.1 acre) of mulefat scrub habitat is located at the downstream end of the drainage feature to the east of the project site, and scattered throughout the drainage, that is similar in characteristics and functionality as Southern Riparian Scrub. However, these areas are outside of the proposed project footprint, and as currently designed, no project-related impacts would occur to these small off-site stands of Southern Willow Scrub and mulefat scrub vegetation. No other sensitive natural communities were identified on the project site or the surrounding survey area. Therefore, the proposed project would not impact a riparian habitat or other sensitive natural community.

c) Have a substantial adverse effect on federally protected wetlands or waters as defined by Sections 401 and 404 of the Clean Water Act, and Section 1600 of California Fish and Game Code (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. The project site is characterized by disturbed habitat and developed land, with areas of native upland scrub habitat. Three drainage features are located adjacent to the proposed project, in offsite areas downslope from the project site. The drainage to the south of the water tank site originates adjacent to Nelson Street and conveys upland runoff flows from the street and adjacent development downstream and terminates at Howe Street. The drainage to the east of the project site, and south of the proposed staging area, drains localized runoff downstream and appears to terminate at Howe Street. This drainage may have historically continued further downstream towards Riverstone Street, however, the installation of Howe Street has cut off downstream connectivity as no culvert was observed below Howe Street. The drainage to the north of the project site, just south of Masters Drive has been altered from previous grading and improvements to both Masters Drive and the area north of the proposed staging area. This drainage contains a small stand of Southern Willow Riparian habitat (approximately 1,200 square feet) and conveys localized runoff from the project vicinity and Nelson Street, as well as accepting flows from a concrete v-ditch, downstream for approximately 1,200 feet before entering the City's storm drain system.

These three drainage features display evidence of flow and may be potentially subject to regulatory agency jurisdiction (USACE, CDFW, and/or RWQCB). However, no state or federally protected wetlands were observed within any of the three drainage features. As currently designed, the project would not result in direct impacts to any of these drainage features that would require regulatory agency permitting. During the construction phase of the project, project protection measures would be implemented to ensure no indirect impacts occur to these features, including top soil erosion from the proposed stockpile area. A Stormwater Pollution Prevention Plan (SWPPP) would be implemented as a project design feature to prevent the spill of soils, toxics, pollutants, and other chemicals from entering into adjacent drainage features. Project implementation of the SWPPP would reduce potential indirect impacts to jurisdictional features. Impacts to federally protected wetlands or waters would be less than significant, and no mitigation or permitting is required.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. The project site is undeveloped and is located adjacent to several upland ephemeral drainages. These small areas of undeveloped land on the project site and survey area are surrounded by development and isolated from any larger blocks of habitat. The drainages adjacent to the project site drain local runoff and are fragmented by existing residential development and roads. These isolated drainages could function to facilitate wildlife movement

locally in and around the project site, but they do not function as a linkage to larger areas of undeveloped native habitat or as an undeveloped corridor within development between two blocks of habitat. A more substantial drainage feature is located approximately 500 feet south of the project site that could support the movement of wildlife from the City of Corona to the Cleveland National Forest to the west. No project-related impacts would occur to this offsite drainage feature. The project site is highly disturbed and does not contain suitable habitat to support a native wildlife nursery site. Additionally, the project site is not mapped within or adjacent to a MSHCP-designated Linkage. The nearest Linkage (Constrained Linkage 4) is located approximately two miles to the northeast and would not be impacted by the proposed project. Therefore, the proposed project would not result in any impacts to wildlife movement or corridors, or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The City of Corona has adopted a Community Forestry Program as described in Chapter 12.22 of the City's Municipal Code. The City of Corona has jurisdiction over the planning, planting, maintenance, alteration and removal of all trees, shrubs and landscape materials on public property in accordance with the provisions of Chapter 12.22. This Chapter requires a property owner to consult with the Director prior to any activity that may injure (e.g. trimming, altering, or removing) any tree on public or City property, including Landmark trees or parkway trees. Based on the current project design no trees, particularly those on public or City land, would be removed. Therefore, the project is considered consistent with the Community Forestry Program. No impacts would occur.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant with Mitigation Incorporated. The project site occurs within the western Riverside County Multiple Habitat Conservation Plan (MSHCP), specifically within the Temescal Canyon Area Plan. The project site does not occur within any Criteria Cells or Criteria Areas, including Core Areas, Habitat Blocks, or Linkages. However, the project site is located within a mandatory habitat assessment area for burrowing owl, and focused surveys are required if suitable habitat is present. Suitable habitat for burrowing owl was identified during a reconnaissance-level field survey conducted by ESA on July 27, 2016 (Appendix B). Four focused burrowing owl surveys were conducted by ESA from August 23 through September 14, 2016 according to accepted MSHCP Burrowing Owl Survey Protocol (EPD 2006). No burrowing owls were observed on the project site and surrounding 500-foot buffer during the focused burrowing owl surveys, and the site is currently considered absent of burrowing owls. However, due to the presence of suitable habitat on the project site, there is a potential for burrowing owls to move onto the project site prior to the start of construction, particularly if construction occurs during the breeding season from March 1 through August 31. If burrowing owl(s) are determined to occupy the project site prior to construction, project-related impacts would be significant. No

other mandatory assessment species were identified by the RCIP report generator and no suitable habitat occurs for any other MSHCP-covered species, including Criteria Area Species and Narrow Endemic Plants (NEPs).

Additionally, with payment of the current MSHCP development fee, the proposed project as currently designed will be considered consistent with the goals and provisions of the MSHCP.

Mitigation Measures

Implementation of Mitigation Measures BIO-1 and BIO-2 is required.

Significance after Mitigation

With the implementation of Mitigation Measures BIO-1 and BIO-2, project implementation would result in a less than significant impact on burrowing owls and the MSHCP.

References

California Department of Fish and Wildlife (CDFW). 2016. *California Natural Diversity Database*. RareFind 5 Online Database. Accessed December 2016.

California Native Plant Society (CNPS). 2016. *Inventory of Rare and Endangered Plants*. Online Database. Accessed December 2016.

County of Riverside. 2016. *Riverside County Integrated Project (RCIP) Report Generator*. Online Database. Accessed December 2016.

Environmental Programs Department (EPD). 2006. *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area*. Transportation and Land Management Agency. March 29, 2006.

Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
e) Cause a substantial adverse change in a significant tribal cultural resources as defined in §21074?	☐	☐	☐	☒

Discussion

The following analysis is based on the report *Cultural Resources Study for the Keith 1220-Zone Potable Water Tank Phase I Project* prepared by ESA on September 2, 2016 (Ehringer and Ortiz, 2016; Appendix C of this IS/MND). The study included a records search at the California Historical Resources Information System (CHRIS) Eastern Information Center (EIC), historic map and aerial photograph review, and pedestrian survey.

A records search for the project site was conducted on July 22, 2016 at the CHRIS-EIC housed at the University of California, Riverside. The records search included a review of all recorded historic-period built resources and archaeological resources within a 1/2-mile radius of the project site, as well as a review of cultural resources reports on file. The results of the records search indicate that 14 cultural resources studies have been previously conducted within 1/2-mile of the project site. Approximately 75 percent of the 1/2-mile records search radius and 40 percent of the project site have been included in previous studies. The records search results indicate that two historic-period archaeological resources (CA-LAN-3055H and CA-LAN-6197H) have been previously recorded within a 1/2-mile radius of the project site. No historic-period built resources or archaeological resources have been previously recorded within or immediately adjacent to the project site.

Historic maps and aerial photographs were reviewed in order to provide historical information about the natural topography and natural resources of the project site, and past uses and historic development of the project site. Two water sources are depicted in the vicinity of the project site as early as 1902 (USGS, 1902). Temescal Creek is depicted about two miles east of the project site and Bedford Wash is depicted about 950 feet south of the project site. The review indicates that the immediate vicinity of the project site remained largely undeveloped until the 1960s when development of nearby orchards began; an orchard is depicted about 100 feet northwest of the project site in 1966 (USGS, 1966). Nelson Street and Keith Street are depicted east and south of

the project site by 1975 (USGS, 1975; Historicaerials.com, 2016). Residential uses appear in the vicinity of the project site sometime between 1967 and 1980, and continue to expand into the 1990s and 2000s. The project site itself does not appear to have ever been developed, although sometime between 1967 and 1980 the area south of Keith Street appears to have been subject to some degree of vegetation clearing and grading (Historicaerials.com, 2016).

A pedestrian survey of the project site was conducted on July 27, 2016. The survey was aimed at identifying historic-period built resources or surface evidence of archaeological resources within or immediately adjacent to (within 100 feet of) project components. A systematic survey with transects spaced at five to ten meter intervals was conducted in undeveloped areas with flatter terrain and visible ground surface and an opportunistic survey was conducted in areas with steep terrain or less visible ground surface. Areas not surveyed include areas with no visible ground surface or private property where access was not obtained. Approximately 60 percent of the survey area was subject to a systematic survey, 25 percent was subject to an opportunistic survey, and 15 percent was not surveyed. No historic-period built resources or surface evidence of archaeological resources were identified during the survey.

Environmental Evaluation

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than Significant Impact with Mitigation Incorporated.

No historic-period built resources or archaeological resources were identified within or immediately adjacent to the project site. Given the amount of previous disturbances on the project site, the project site is considered to have a lower sensitivity for subsurface archaeological resources. Project-related ground disturbance, which will extend to a depth of over 20 feet below existing grade, has the potential to uncover subsurface archaeological resources that could qualify as historical resources, and the proposed project could cause a substantial adverse change in the significance of a historical resources as defined in §15064.5. Impacts to historical resources would be potentially significant.

Mitigation Measure

The following mitigation measure is required to reduce potential impacts to historical resources:

> **Mitigation Measure CUL-1 – Tribal Monitoring:** Prior to the issuance of a grading permit, the City of Corona Department of Water and Power (City) shall contact the consulting Native American Tribe(s) that have requested monitoring through consultation with the City during the AB 52 and/or the SB 18 process ("Monitoring Tribes"). The City shall coordinate with the Tribe(s) to develop individual Tribal Monitoring Agreement(s). A copy of the signed agreement(s) shall be filed at the City prior to the issuance of a grading permit. The Agreement shall address the treatment of any known tribal cultural resources (TCRs) including the project's approved mitigation measures and conditions of

approval; the designation, responsibilities, and participation of professional Tribal Monitors during grading, excavation and ground disturbing activities; project grading and development scheduling; terms of compensation for the monitors; and treatment and final disposition of any cultural resources, sacred sites, and human remains/burial goods discovered on the site per the Tribe(s) customs and traditions and the City's mitigation measures/conditions of approval. The Tribal Monitor will have the authority to stop and redirect grading in the immediate area of a find in order to evaluate the find and determine the appropriate next steps, in consultation with the Project Archaeologist.

Mitigation Measure CUL-2 – **Archaeological Monitoring:** At least 30-days prior to application for a grading permit and before any grading, excavation and/or ground disturbing activities on the site take place, the City shall retain a Secretary of Interior Standards qualified and RPA-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown archaeological resources/TCRs and assist with avoidance, preservation and/or mitigation per the City's Mitigation Measures on known resources.

1. The Project Archaeologist, in consultation with the Monitoring Tribe(s) and the City, shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the Plan shall include:
    a. Project grading and development scheduling;
    b. The Project Archeologist and the Monitoring Tribe(s) shall attend the pre-grading meeting with the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training will include a brief review of the cultural sensitivity of the project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that begin work on the project following the initial training must take the Cultural Sensitivity Training prior to beginning work and the Project Archaeologist and Monitoring Tribe(s) shall make themselves available to provide the training on an as-needed basis.
    c. The coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project Archaeologist, and the City;
    d. The protocols and stipulations that the City, Monitoring Tribe(s), and Project Archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

Mitigation Measure CUL-3 – Treatment and Disposition of Tribal Cultural Resources: In the event that TCRs are inadvertently discovered during the course of grading for this project, and avoidance of the TCRs is not feasible, the following procedures will be carried out for treatment and disposition of the discoveries:

1. **Temporary Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location onsite or at the

offices of the Project Archaeologist. The removal of any artifacts from the project site will need to be thoroughly inventoried with tribal monitor oversite of the process; and

2. **Treatment and Final Disposition*:*** The landowner(s) shall relinquish ownership of all cultural resources, including all archaeological artifacts and non-human remains as part of the required mitigation for impacts to Tribal Cultural Resources. Human remains, sacred/ceremonial items and burial goods will be addressed per State law, per the requirements under Mitigation Measure CUL-8 (Discovery of Human Remains), and if applicable, per the tribal monitoring agreement entered between the City and Tribe(s). The City shall relinquish the artifacts through one or more of the following methods through consultation with the Monitoring Tribe(s) and the City shall retain evidence of same:

    a. Professional curation, including a curation agreement with a qualified repository in Riverside County that meets federal standards per 36 CFR Part 79, and which shall be made available to all qualified researchers upon application. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation:

    b. Accommodate the process for onsite reburial of the discovered items with the Monitoring Tribe(s). This shall include measures and provisions to protect, in perpetuity, the reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed; and

    c. At the completion of grading, excavation and ground disturbing activities on the site, a Phase IV Monitoring Report shall be submitted to the City documenting monitoring activities conducted by the Project Archaeologist and Native Tribal Monitors within 60 days of completion of grading. This report shall document the impacts to the known resources on the property; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pregrade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced will be submitted to the City, Eastern Information Center, and Monitoring Tribe(s).

Mitigation Measure CUL-4 – Sacred Sites: All sacred sites, should they be encountered within the project area, shall be avoided and preserved as the preferred mitigation, if feasible.

Significance after Mitigation

With the implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4, project implementation would result in a less-than-significant impact involving an adverse change in the significance of a historical resource.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant Impact with Mitigation Incorporated. As discussed above, no archaeological resources were identified within or immediately adjacent to the project site. However, since the project includes ground-disturbing activities, there remains a potential for discovery of subsurface archaeological deposits that could qualify as unique archaeological resources under CEQA, and the proposed project could cause a substantial adverse change in the significance of an archaeological resources as defined in §15064.5.

Mitigation Measure

Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 is required.

Significance after Mitigation

With the implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 project implementation would result in a less-than-significant impact involving an adverse change in the significance of an archaeological resource.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation Incorporated. The following analysis is based on the report *Cultural Resources Study for the Keith 1220-Zone Potable Water Tank Phase I Project* prepared by ESA on October 19, 2016 (Bell, 2016; Appendix C). The study included records search from the Natural History Museum of Los Angeles County (LACM), geologic map and literature review, and pedestrian survey.

On July 1, 2016 ESA requested a database search from the LACM for records of fossil localities in the project site. The purpose of the museum records search was to: (1) determine whether any previously recorded fossil localities occur in the project site, (2) assess the potential for disturbance of these localities during construction, and (3) evaluate the paleontological sensitivity in the project site. No unique geologic features or sites are known to be located within the project site. The records search returned one known fossil locality (LACM 1207) which lies north-northwest of the project site on the west side of Cota Street in the Temescal Wash area where a Pleistocene deer fossil (Odocoileus) was recovered from older Quaternary deposits (McLeod, 2016).

Geological mapping by Gray et al. (2002) indicates that the surface of the project site is covered with very old alluvial fan deposits, which is derived from the more elevated Santa Ana Mountains terrain which lies to the southwest. These sediments date to the early Pleistocene and as such are old enough to contain fossil remains. Elsewhere in Southern California similar sediments have preserved an abundant collection of significant fossil material.

A pedestrian survey of the project site was conducted on July 27, 2016. Two invertebrate fossils were found during the course of the field survey; both impressions of bivalve shells. The fossil bivalve impressions were incomplete and not capable of being identified to a more precise taxonomic unit. The fossils were determined to be non-significant and do not qualify as unique paleontological resources under CEQA. However, their presence confirms that paleontological resources have been preserved in the project site, and therefore, significant resources that may qualify as unique paleontological resources under CEQA could be encountered during future ground disturbance. The proposed ground disturbance has the potential to impact unknown and undiscovered paleontological resources.

Mitigation Measures

The following mitigation measures are required to reduce potential impacts to paleontological resources:

> **Mitigation Measure CUL-5:** A qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010) shall be retained. The qualified paleontologist shall attend the pre-grading meeting with the construction manager and any contractors and will conduct a mandatory Paleontological Resources Worker Sensitivity Training to those in attendance. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project site and the procedures to be followed if they are found. All new construction personnel that begin work on the project following the initial Training must take the Paleontological Sensitivity Training prior to beginning work and the qualified paleontologist shall make themselves available to provide the training on an as-needed basis. The City of Corona Department of Water and Power shall retain documentation demonstrating that construction personnel attended the training.
>
> **Mitigation Measure CUL-6:** Full-time paleontological resources monitoring shall be conducted for all ground disturbance (i.e., vegetation/pavement removal, grubbing, grading, excavation, trenching, etc.). The qualified paleontologist, based on observations of subsurface soil stratigraphy or other factors, may reduce or discontinue monitoring, as warranted, if the qualified paleontologist determines that the possibility of encountering fossiliferous deposits is low. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (or cross-trained archaeological/paleontological monitor) under the direction of the qualified paleontologist. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The qualified paleontologist shall prepare a final monitoring and mitigation report to be submitted to City of Corona Department of Water and Power and filed with the local repository.
>
> **Mitigation Measures CUL-7:** If construction or other project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease until the qualified paleontologist has assessed the discovery and made recommendations as to the appropriate treatment.

Significance after Mitigation

Implementation of Mitigation Measures CUL-5, CUL-6 and CUL-7 would ensure the protection and proper handling of paleontological resources, should any unexpected resource be uncovered during ground disturbance activities. Impacts would be less than significant.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact with Mitigation Incorporated. No human remains are known to exist within or adjacent to the project site, and it is unlikely that the proposed project would disturb unknown human remains. However, because the proposed project involves ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. Disturbance of human remains would result in a potentially significant impact.

Mitigation Measure

Mitigation Measure CUL-8 – Discovery of Human Remains: In the event that human remains (or remains that may be human) are discovered at the project site during grading or earthmoving, the construction contractors, Project Archaeologist, and/or designated Native American Monitor shall immediately stop all activities within 100 feet of the find. The City shall then inform the Riverside County Coroner immediately, and the coroner shall be permitted to examine the remains as required by California Health and Safety Code Section 7050.5(b). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner has made the necessary findings as to origin. If human remains are determined to be Native American, the City shall comply with the State law relating to the disposition of Native American burials that fall within the jurisdiction of the Native American Heritage Commission (NAHC) (PRC Section 5097). The coroner shall contact the NAHC within 24 hours and the NAHC will make the determination of most likely descendant(s). The MLD shall complete his or her inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. Treatment and disposition of the remains shall be determined in consultation with the most likely descendant(s) to determine the most appropriate disposition of human remains and any associated grave artifacts. In the event that the applicant and the MLD are in disagreement regarding the disposition of the remains, State law will apply and the mediation process will occur with the NAHC, if requested (see PRC Section 5097.98(e) and 5097.94(k)). The specific locations of Native American burials and reburials are confidential and may not be disclosed to the general public. The locations will be documented by the Project Archaeologist in conjunction with the various stakeholders and a report of findings will be filed with the Eastern Information Center (EIC). A Sacred Lands File form will be submitted to the NAHC by the Project Archaeologist and the Monitoring Tribe(s).

According to the California Health and Safety Code, six or more human burials at one location constitutes a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052).

e) Cause a substantial adverse change in a significant tribal cultural resources as defined in §21074?

Less than significant impact with mitigation incorporated. The NAHC was contacted on July 21, 2016 to request a search of the Sacred Land File (SLF) for the project site. In a letter dated July 25, 2016, the NAHC indicated that the SLF search failed to indicate the presence of known prehistoric or Native American resources within the project vicinity (Totton, 2016). The City conducted consultation pursuant to Assembly Bill 52 (AB 52) with the three Tribes who requested consultation on this project: Soboba Band of Luiseño Indians (Soboba), Pechanga Band of Mission Indians (Pechanga), and Rincon Band of Luiseño Indians. The City held a consultation meeting with the Soboba on March 28, 2017 and with the Pechanga on April 25, 2017. At the request of Rincon Band of Luiseño Indians, the City sent additional documents to the tribe for review. No further comments were received from the Rincon Band of Luiseño Indians. Neither Tribe identified a known tribal cultural resource within the project site; however, both tribes expressed concerns about inadvertent discovery of subsurface resources and requested Tribal monitoring. Therefore, the City has determined that there could be a potential significant tribal cultural resource impact.

Mitigation Measures

Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, and CUL-8 is required.

Significance after Mitigation

With the implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, and CUL-8 project implementation would result in a less-than-significant impact to archaeological resources or human remains that could also qualify as tribal cultural resources.

References

Bell, Alyssa. 2016. *Paleontological Resources Study for the Keith 1220-Zone Potable Water Tank Phase I Project*, prepared by ESA.

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Gray, C. H., D. M. Morton, and F. H. Weber, Jr. 2002. *Geologic Map of the Coron South 7.5' Quadrangle, Riverside and Orange Counties, California.* U.S.G.S. California Divison of Mines and Geology, Open-File Report 02-21. 1:24,000.

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_____ 1902. Geologic map of the Corona South 15' quadrangle, Riverside County, CA.

_____ 1960. Geologic map of the Corona South 7.5' quadrangle, Riverside County, CA.

_____ 1966. Geologic map of the Corona South 7.5' quadrangle, Riverside County, CA.

_____ 1975. Geologic map of the Corona South 7.5' quadrangle, Riverside County, CA.

Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
6. GEOLOGY, SOILS, AND SEISMICITY — Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion

The following analysis is based on the report *Preliminary Geotechnical Investigation and Preliminary Design Report for the Proposed Zone 4 Potable Water Tank Site, 3985 Nelson Street, City of Corona, California* located in Appendix D of this IS/MND (NMG Geotechnical, Inc., 2015). The evaluation included the following:

- Review of geotechnical information pertaining to the subject site, including review of site geology, groundwater data, seismic hazard maps, historic aerial photographs, and topographic maps.
- Site reconnaissance to identify the existing site conditions and mark the boring locations.
- Notification of and coordination with Underground Service Alert to clear boring locations of existing underground utilities.
- A geophysical study was conducted to provide shear wave velocity profile to a depth of 30 meters (98 feet).

- Drilling, logging, and sampling of two bucket-auger borings to depths of approximately 29 to 71 feet below ground surface (bgs). Relatively undisturbed soil samples were obtained from the borings at five to ten foot intervals. Bulk samples from cuttings at various depths were collected during the Investigation. The borings were backfilled with the cuttings generated during drilling.
- Laboratory testing to classify the onsite soils and evaluate in-situ moisture and density, maximum dry density and optimum moisture content, grain-size distribution, sand equivalent, Atterberg limits, expansion index, soluble sulfate.
- Geotechnical analysis of subsurface information collected during the field investigation and laboratory testing to evaluate the geotechnical conditions that will impact the design and construction of the proposed improvements. This includes evaluation of temporary excavations and shoring, settlement analysis, remedial measures and design parameters for the water tank and other improvements.
- Report, figures and general earthwork and grading specifications.

Environmental Evaluation

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)

No Impact. The Alquist-priolo Earthquake Zoning Act requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development and prohibit construction on or near active fault traces to reduce hazards associated with fault rupture. The Alquist-Priolo Earthquake Fault Zones are the regulatory zones that include surface traces of active faults. There are no known active faults crossing the project site, and the site is not within an Alquist-Priolo Earthquake Fault Zone (California Department of Conservation, 2003 and NMG Geotechnical, Inc., 2015). The Glen Ivy Fault section of the Elsinore Fault Zone is located one mile southwest of the project site. The Glen Ivy Fault extends northwest from Lake Elsinore to west of Corona, and is located along the southwest boundary of the City. Other active or potentially active faults within the project area include the Chino-Central Avenue Fault, approximately two miles northwest of the project site, and Whittier Fault, approximately ten miles northwest of the project site. Therefore, there would be no impact associated with rupture of a known earthquake fault.

ii) Strong seismic ground shaking?

Less than Significant Impact. The largest earthquake magnitude within the project vicinity occurred in 1910 and was approximately nine miles south in the vicinity of

Temescal Valley with a 6.0 magnitude (Southern California Earthquake Data Center, 2013). The project site is subject to varying ground shaking intensities similar to other areas within the region. The City requires that all construction meet the latest standards of the California Building Code (CBC) which considers proximity to potential seismic sources and the maximum anticipated ground shaking possible. The construction of the proposed facilities on the project site would be in accordance with applicable City ordinances and policies and consistent with the most recent version of the CBC which requires structural design that can accommodate ground accelerations expected from known active faults.

In addition, the geotechnical investigation for the project includes recommendations for final design parameters for the tank pad, walls, and utilities. Compliance with these building safety design standards would reduce potential impacts associated with groundshaking. Impacts would be less than significant.

iii-iv) Seismic-related ground failure, including liquefaction, and landslides?

Less than Significant Impact. Liquefaction is a secondary earthquake-induced hazard that occurs when water-saturated soils lose their strength and liquefy during intense and prolonged ground shaking. According to the Riverside County General Plan Safety Element, the project site is located on land that has very low to low susceptibility for liquefaction and low to locally moderate susceptibility for seismically-induced landslides and rockfalls (County of Riverside, 2015). Adherence to the CBC and the City's Municipal Code requirements would implement proven geotechnical design measures that would minimize the potential for seismic-related hazards. Potential impacts from liquefaction or landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The proposed project would require excavation and grading that has the potential to result in topsoil loss and soil erosion by exposing bare and loosened soil to wind and rain. However, project construction would be required to comply with existing regulatory requirements that address soil erosion such as the National Pollutant Discharge Elimination System (NPDES) program. Any development site, such as the project site, that would disturb one or more acres would be required to develop and implement a SWPPP which includes the use of erosion control Best Management Practices (BMPs) to protect surface water and groundwater from the adverse effects of construction activities. The erosion control BMPs such as scheduling, preservation of existing vegetation, hydroseeding, sandbags, fiber rolls, and silt fences would prevent the exposure of soil to wind and water and reduce the threat of erosion during construction to less than significant.

Furthermore, implementation of the proposed project would need to comply with SCAQMD Rule 403 for dust control that would ensure the prevention and/or management of the loss of topsoils and erosion during construction. Therefore, potential loss of topsoil and substantial soil erosion during construction and operation of the proposed project would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact. Non-seismically-induced geologic hazards such as landslides, lateral spreading, settlement, and slope failure can be caused by unstable soils. The proposed project would be located within the western portion of Riverside County, which has undergone historical subsidence (Department of Water Resources, 2014). However, the proposed project would not result in the further withdrawal of groundwater which would exacerbate any existing subsidence issues. As discussed above, the project site is designated to have low landslide and liquefaction potential; therefore, soils in the project area would not likely be prone to damage from collapse or settlement. The development of the proposed project would be required to adhere to the CBC and City requirements. Site-specific design measures would be implemented to reduce the risk for geologic hazards, such as those from ground-failure, in accordance with the CBC. Therefore, the proposed project would not expose people or structures to potential adverse effects involving seismic-related ground failure, including liquefaction, and impacts would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than Significant Impact. The proposed project would be located on a variety of soil types, including Perkins gravelly loam and terrace escarpments of the Garrison series. These soil types are not known to contain significant amounts of clay, which is responsible for expansive behavior. However, the Perkins loam is known to be highly corrosive to unprotected steel and could cause damage to the proposed water tank or associated facilities constructed within the project area (United States Department of Agriculture, 2016). As previously discussed, the proposed project would be required to comply with the CBC and City requirements to ensure soil stability. Compliance with these requirements would reduce the potential impacts to less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The proposed project does not include septic tanks or alternative waste disposal systems. As a result, there is no potential for soil failure associated with the installation of septic tanks or alternative waste disposal systems.

References

California Department of Conservation (CDOC). 2003. Earthquake Fault Zones: Corona South Quadrangle. California Geological Survey. Map revised May 1, 2003.

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Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. State-regulated greenhouse gases (GHGs) include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). CO2 is the most abundant GHG in the atmosphere. Not all GHGs exhibit the same ability to induce climate change; as a result, GHG contributions are commonly quantified in equivalent mass of CO2, denoted as CO2e. Mass emissions are calculated by converting pollutant specific emissions to CO2e emissions by applying the proper global warming potential (GWP) value. These GWP ratios are available from the U.S. Environmental Protection Agency (USEPA) and are published in the California Climate Action Registry (CCAR) General Reporting Protocol. By applying the GWP ratios, project-related CO2e emissions can be tabulated in metric tons per year.

The City has not yet adopted a numerical significance threshold for assessing impacts related to GHG emissions, and has not formally adopted a local plan for reducing GHG emission. When no guidance exists under CEQA, the lead agency may look to and assess general compliance with comparable regulatory schemes[2]. In its January 2008 CEQA and Climate Change white paper, the California Air Pollution Control Officer's Association (CAPCOA) identified a number of potential approaches for determining the significance of GHG emissions in CEQA documents. CAPCOA suggests making significance determinations on a case-by-case basis when no significance thresholds have been formally adopted by a lead agency.

[2] See Protect Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal. App. 4th 1099, 1107 ["'[A] lead agency's use of existing environmental standards in determining the significance of a project's environmental impacts is an effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other environmental program planning and resolution.'"']. Lead agencies can, and often do, use regulatory agencies' performance standards. A project's compliance with these standards usually is presumed to provide an adequate level of protection for environmental resources. See, e.g., Cadiz Land Co. v. Rail Cycle (2000) 83 Cal.App.4th 74, 99 (upholding use of regulatory agency performance standard).

The Office of Planning and Research released a technical advisory on CEQA and climate change that provided some guidance on assessing the significance of GHG emissions, and states that "lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice," and that while "climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment" (OPR, 2008). Furthermore, the technical advisory states that "CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project."

On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary source/industrial projects where the SCAQMD is lead agency. However, the SCAQMD has yet to adopt a GHG significance threshold for land use development projects (e.g., residential/commercial projects) and formed a GHG Significance Threshold Working Group to further evaluate potential GHG significance thresholds (CARB, 2015). The Working Group released draft guidance regarding interim CEQA GHG indicators of significance in October 2008, proposing a tiered approach whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. Under Tier 1, Projects that are exempt from CEQA would be less than significant. Under Tier 2, projects that are consistent with an adopted GHG reduction plan would be less than significant. Under Tier 3, non-industrial projects with 3,000 metric tons of CO2e per year or less would be less than significant. Tier 4 uses performance standards, which requires projects to demonstrate a percent emission reduction target below an identified baseline level or an efficiency-based threshold such as GHG emissions on a per service population basis. The aforementioned Working Group was inactive in 2011 through 2015 and did not formally submit the thresholds to the Governing Board for approval.

"Tier 3," the primary tier by which SCAQMD currently determines the significance of stationary emission sources, relies on Executive Order S-3-05 as the basis for a screening level, and was established at a level that captures 90 percent of SCAB -wide land use GHG emissions. The SCAQMD proposed a screening level of 3,000 metric tons of carbon dioxide equivalents (MTCO2e) per year for commercial or mixed-use residential projects under which project impacts are considered less than significant, "to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors" (SCAQMD, 2008). In CAPCOA's January 2008 CEQA and Climate Change White Paper, CAPCOA suggested a possible quantitative threshold option that would capture 90 percent of GHG emissions from future discretionary development projects. According to CAPCOA, the "objective was to set the emission threshold low enough to capture a substantial fraction of future residential and nonresidential development that will be constructed to accommodate future statewide population and job growth, while setting the emission threshold high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions" (CAPCOA, 2008). A 90 percent capture rate would "exclude the smallest proposed developments from potentially burdensome requirements … to mitigate GHG emissions" (CAPCOA, 2008). The SCAQMD's proposed screening level of 3,000 MTCO2e per

year is a South Coast Air Basin-specific level that would meet CAPCOA's intent for the suggested quantitative threshold option. It should be noted that the SCAQMD has formally adopted a GHG significance thresholds of 10,000 MTCO2e per year for industrial/stationary source projects, where the SCAQMD is the lead agency based on a 90 percent capture rate for the industrial/stationary source sector. Given the lack of a formally adopted numerical significance threshold applicable to this project, the significance of the project is evaluated based on the SCAQMD's proposed screening level of 3,000 MTCO2e.

For purposes of this analysis, it is considered reasonable and consistent with criteria pollutant calculations to consider those GHG emissions resulting from project-related incremental (net) increase in the use of on-road mobile vehicles, electricity, and natural gas compared to existing conditions. This includes project construction activities such as demolition, hauling, and construction worker trips. This analysis also considers indirect GHG emissions from water conveyance, wastewater generation, and solid waste handling. Since potential impacts resulting from GHG emissions are long-term rather than acute, GHG emissions are calculated on an annual basis.

Operation of the project is not expected to result directly in a material increase in GHG emissions. The changes associated with the project are not expected to result in any significant net increases in vehicle trips, when compared to existing baseline conditions. While the site is expected to have up to two trucks traveling from and to the Site for maintenance purposes, emissions from such trips would be nominal. Therefore, only construction GHG emissions are quantitatively accounted for in this analysis.

The project's net increase in GHG emissions is estimated using CalEEMod, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered by the SCAQMD to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.

Construction of the project has the potential to generate temporary GHG emissions through the use of heavy-duty construction equipment and through vehicle trips generated from export and import of materials and from visitors and workers traveling to and from the project site. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source emissions factors. The emissions estimated from the CalEEMod (Version 2016.3.1) software is based on outputs from the OFFROAD and EMFAC models, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles and equipment. The output values used in this analysis were adjusted to be project-specific based on equipment types and the

construction schedule. Construction would take place over 12 months, anticipated to begin in fall 2017. Full build-out and occupancy would occur in 2018. The emissions of GHGs associated with construction of the project were calculated for each year of construction activity. The results are shown in **Table 3**, Construction Greenhouse Gas Emissions. It should be noted that the GHG emissions shown in Table 3 are based on construction equipment operating continuously throughout the work day. In reality, construction equipment tends to operate periodically or cyclically throughout the work day. Therefore, the GHG emissions shown reflect a conservative estimate. A complete listing of the equipment by phase, emission factors, and calculation parameters used in this analysis is included within the emissions calculation worksheets that are provided in Appendix A.

TABLE 3
CONSTRUCTION GHG EMISSIONS

Emission Source	CO_2e (Metric Tons/yr)
Construction Year 1 (2017)	166
Construction Year 2 (2018)	270
Total GHG Emissions	**436**
30-Years Amortized Emissions	**15**
Significance Threshold	*3,000*
Significant Impact	No

SOURCE: ESA, 2017.

The SCAQMD recommends that construction-related GHG emissions be amortized over a project's 30-year lifetime in order to include these emissions as part of a project's annualized lifetime total emissions, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. In accordance with this methodology, the estimated project's construction GHG emissions have been amortized over a 30-year period.

As shown in Table 3, the annual amortized project GHG emissions would not exceed the SCAQMD Tier 3 threshold of 3,000 MT CO2e. As a result, project construction would have a less than significant impact with respect to GHG emissions.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. The Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32, requires the State to achieve 1990 GHG emission levels by 2020 by setting statewide GHG reduction targets. To achieve these goals, CARB has established an emissions cap and developed a Climate Change Scoping Plan to identify mandatory strategies for reducing statewide GHG emissions. In addition, the California Climate Action Team (CAT) was formed, which consists of members of various state agencies tasked with identifying strategies to reduce GHG emissions. Several other bills have been passed as a companion to AB 32, which include Senate Bill (SB)

1368 (electricity generation standards), SB 97 (CEQA analysis for GHGs), Low Carbon Fuel Standards, and SB 375 (Regional Transportation Planning and GHG emissions), California's Green Building Code (CALGreen) building standards and others plans to achieve the goals of AB 32.

The State has promulgated regulations and programs for the purpose of reducing GHG emissions. The GHG emissions analysis in this MND was performed in accordance with SCAQMD and CARB guidance developed in compliance with, and as a result of those regulations and programs. The result of the analysis of the project's potential impacts in terms of GHG and global climate change indicates that the construction-related GHG emissions from the project alone would not be expected to cause a direct physical change in the environment. Therefore, the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHG.

In support of AB 32, the State has promulgated laws and strategies aimed at reducing GHG emissions, some of which are applicable to the project. Consistent with AB 32, the project would minimize construction-related GHG emissions by using equipment that meet stringent USEPA emissions standards, using low carbon vehicle fuels as required under state law, and prohibiting diesel-fueled commercial motor vehicle idling consistent with CARB requirements.

TABLE 4
APPLICABLE GHG REDUCTION STRATEGIES

Source	Description	Demonstration of Project Consistency
Low Carbon Fuel Standard	Establishes protocols for measuring life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels.	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with the implementation of this measure. Construction and operational vehicles association with the project would utilize low carbon transportation fuels as required under this measure.
CalGreen (2016) Requirements	Requires a minimum of 65 percent recycle or reuse of nonhazardous construction and demolition debris.	**Consistent.** The project would be consistent with this requirement via compliance with City ordinances and/or the CALGreen Code.
CARB ATCM	Reduce diesel-fueled commercial motor vehicle idling.	**Consistent**. Construction trucks would comply with CARB's anti-idling measure. As a result, the project would be consistent with this requirement.

SOURCE: ESA, 2017; Climate Action Team, Attorney General's Office, 2011.

Additionally, the project would be consistent with GHG reduction measures from other applicable regional plans. **Table 4**, Applicable GHG Reduction Strategies, contains a list of other state, regional, and local GHG-reduction strategies applicable to the project, the identified related projects, and future development similar in scope and location. Included are the regulations or

guidelines from which the strategies were developed. The project-level analysis highlights the manner by which the project intends to meet the applicable strategies. Because the project would not conflict with strategies to reduce GHG emissions, it would be consistent with the overarching regulation to reduce GHG emissions. Therefore, the project would not conflict with applicable plans, policies, or regulations to reduce GHG emissions, and no impact would occur.

References

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South Coast Air Quality Management District (SCAQMD). 2008. Board Meeting. December 5, 2008. Agenda No. 31, Interim GHG Significance Threshold Proposal – Key Issues/Comments Attachment D.

California Air Pollution Control Officer's Association (CAPCOA). 2008. *CEQA and Climate Change*. Published January 2008. Pages 42-44.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) 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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) 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?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Environmental Evaluation

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. The proposed construction activities would involve transport, use, and disposal of hazardous materials such as solvents, oils, grease, and cleaning fluids. In addition, hazardous materials may be needed for fueling and servicing construction equipment on the site. During construction of the proposed project, material safety data sheets for all applicable materials present at the project site would be made readily available to on-site personnel. All transport, handling, use and disposal of substances such as petroleum products related to construction would comply with all federal, state and local laws regulating the management and

use of hazardous materials. BMPs would be in place to ensure the lawful and proper storage and use of these materials.

Operation of the proposed project would involve the minor maintenance activities of the proposed water tank. This could include structural inspections, water quality testing, periodic minor repairs, periodic tank cleaning and exterior painting and general facility housekeeping including landscaping. Operational activities would involve limited amounts of hazardous materials used in and transported to the project site. The use of hazardous materials and substances during construction and operation activities would be subject to federal, state, and local health and safety requirements for handling, storage, and disposal. Therefore, hazardous material impacts related to construction and operation activities would be less than significant.

b) 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?

Less than Significant Impact. A Phase I Environmental Site Assessment for the project site was prepared in 2017 (ESA, 2017; Appendix E of this IS/MND). Based on the findings of the Phase I Environmental Site Assessment, no recognized environmental conditions were identified for the project site. As discussed above in discussion 8. a), limited quantities of hazardous materials such as gasoline, diesel, oils, and lubricants may be required to operate the construction equipment. Construction activities would be short-term, and the use of these materials would cease once construction is complete. The hazardous substances used during construction would be required to comply with existing federal, state and local regulations regarding the use and disposal of these materials. In the event of an accidental release during construction, containment and clean up would be in accordance with existing applicable regulatory requirements.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The nearest existing school to the project site is Woodrow Wilson Elementary School located approximately 0.44 miles south of the project site. Therefore, the proposed project would result in no hazardous material-related impacts to schools within a quarter-mile of the project.

d) 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?

No Impact. Pursuant to Government Code 65962.5, environmental regulatory database lists were reviewed to identify and locate properties with known hazardous substance contamination within the proposed project area (California Government Code, Section 65960 et seq.). A review of the Department of Toxic Substances Control's (DTSC) Hazardous Waste and Substances List – Site Cleanup (Cortese List) indicates that identified hazardous material sites are not located within the project area (DTSC, 2007). A review of the DTSC EnviroStor and the State Water Resources

Control Board GeoTracker online databases did not indicate any open cleanup sites or hazardous waste facilities within the vicinity of the project area. Therefore, since the project is not located on a list associated with hazardous materials, no impacts would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The nearest public airport to the project site is Corona Municipal Airport, approximately six miles northwest of the site. The proposed project is not located within the Airport Land Use Compatibility Plan for Corona Municipal Airport (Riverside County Airport Land Use Commission, 2004). No impacts to safety hazards for people residing or working in the project area would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The proposed project is not located within the vicinity of a private airstrip. The nearest private airstrip to the project site is the Corona Regional Medical Center Heliport approximately four miles northwest of the project site. No airstrip related hazard impacts would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact with Mitigation Incorporated. The Corona Fire Department prepared an Emergency Operations Plan (EOP) that was adopted by the City of Corona in 1999. This plan addresses the planned response to various emergency situations, including natural or human caused disasters and technological incidents, in the City. The project site is not located along any adopted emergency evacuation routes. All construction equipment would be stored in active grading areas and/or the proposed staging area. The project includes the construction of underground pipelines and transmission lines along Nelson Street, Masters Drive, Courtney Lane, Howe Street and Duncan Way north of the tank site. The open trenching to install new pipelines would require temporary closure of one or all lanes, which would cause congestion on the remaining open lanes, potentially causing traffic safety hazards. In the event of an emergency, lane closure could result in constrained traffic flow which could interfere with an evacuation route resulting in potentially significant impacts.

Once constructed, the proposed project does not include any uses or design features that would result in interference with any adopted emergency response plan or emergency evacuation plan. The design of the proposed project would provide adequate emergency access consistent with City requirements. Therefore, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and, thus, the project would result in no impact.

Mitigation Measure

Mitigation Measure TRA-1: The City's construction contractor shall prepare and implement a Traffic Control Plan subject to approval by the City prior to construction. The plan shall:

- Identify hours of construction and hours for deliveries;
- Include a discussion of haul routes, limits on the length of open trench, work area delineation, traffic control and flagging;
- Identify all access and parking restrictions, pavement markings and signage requirements (e.g., speed limit, temporary loading zones);
- Maintain access to residence and business driveways, public facilities, and recreational resources at all times to the extent feasible; Minimize access disruptions to businesses and residences;
- Layout a plan for notifications and a process for communication with affected residents and businesses prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints;
- Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times;
- Include a plan to coordinate all construction activities with the Corona-Norco Unified School District at least two months in advance. The Corona-Norco Unified School District shall be notified of the timing, location, and duration of construction activities. The City shall require its contractor to maintain vehicle, pedestrian, and school bus service during construction through inclusion of such provisions in the construction contract. The assignment of temporary crossing guards at designated intersections may be needed to enhance pedestrian safety during project construction. Also the following provisions shall be met:
  - Pipeline construction near schools shall occur when school is not in session (i.e., summer or holiday breaks). If this is not feasible, a minimum of two months prior to project construction, the implementing agencies shall coordinate with the Corona-Norco Unified School District to identify peak circulation periods at schools along the alignment(s) (i.e., the arrival and departure of students), and require their contractor to avoid construction and lane closures during those periods;
  - A minimum of two months prior to project construction, the implementing agencies shall coordinate with the Corona-Norco Unified School District to identify alternatives for the school busing routes and stop locations, and other circulation provisions, as part of the Traffic Control/Traffic Management Plan;
- Include the requirement that all open trenches be covered with metal plates at the end of each workday to accommodate traffic and access; and

- Specify the street restoration requirements pursuant to agreements with the local jurisdictions.

Mitigation Measure TRA-2: The City shall identify all roadway locations where special construction techniques (e.g., horizontal boring, directional drilling or night construction) will be used to minimize impacts to traffic flow.

Mitigation Measure TRA-3: The City shall develop circulation and detour plans to minimize impact to local street circulation, including bikeways. This may include the use of signing and flagging to guide vehicles and cyclists through and/or around the construction zone.

Mitigation Measure TRA-4: The City shall encourage construction crews to park at staging areas to limit lane closures in the public right-of-way.

Mitigation Measure TRA-5: Peak travel periods shall be avoided when considering partial road closures.

Significance after Mitigation

Implementation of Mitigation Measures TRA-1 through TRA-5 would reduce the short-term effects of construction activities on traffic flow and emergency response. Impacts would be less than significant with mitigation.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant Impact. As part of the incorporated City of Corona, the project site is located in an area classified as a "Very High Fire Hazard Severity Zone" by the California Department of Forestry and Fire Protection (CALFIRE, 2009). The proposed project would not include any habitable structures. Therefore, during long-term operations, impacts in this regard would be less than significant. During short-term construction activities, there is a potential for an increased exposure to wildfire hazards due to the operation of construction equipment and tools. Impacts would be potentially significant.

In accordance with the California Public Resource Code (PRC), the project would comply with the following requirements during construction activities:

- Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442).
- Appropriate fire suppression equipment shall be maintained during construction—from April 1 to December 1 (PRC Section 4428).
- On days during the year when a burning permit is required, flammable materials shall be removed to a distance of ten feet from any equipment that could produce a spark, fire, or flame, and the construction contractor shall maintain the appropriate fire suppression equipment (PRC Section 4427).

- On days during the year when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines shall not be used within 25 feet of any flammable materials (PRC Section 4431).

These measures would be included in the contractor's contract specifications, making the contractor responsible for the implementation and monitoring of all safety measures. Compliance with the requirements of the PRC would ensure that potential impacts due to construction-related wildland fires would be considered less than significant.

References

CALFIRE. 2009. Corona: Very High Fire Hazard Severity Zones in LRA. Updated December 21, 2009. Available at http://www.fire.ca.gov/fire_prevention/fhsz_maps/FHSZ/riverside/Corona.pdf; accessed on July 7, 2016.

DTSC. 2007. Hazardous Waste and Substances Site List. Updated 2007. Available at: http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type=CSITES; accessed on July 7, 2016.

PRC. 2016. Public Resources Code Section 4421-4446. Available at: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=prc&group=04001-05000&file=4421-4446; accessed on July 7, 2016.

Riverside County Airport Land Use Commission (RCALUC). 2004. *Riverside County Airport Land Use Compatibility Plan*. Volume 1. Adopted by RCALUC on October 14, 2004.

Hydrology and Water Quality

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9.	**HYDROLOGY AND WATER QUALITY — Would the project:**				
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Less than Significant Impact. The proposed project would require earthwork activities such as site preparation, grading, stockpiling of soils and excavation. These construction activities would involve the disturbance of surface soils. Once disturbed, these soils could be exposed to the effects of wind and water erosion causing sedimentation in stormwater runoff. Project

construction would also involve use of chemicals and solvents such as fuel and lubricating grease for motorized heavy equipment. Inadvertent spills or releases of such chemicals could cause an adverse water quality impact. Please refer to Section *2.8, Hazards and Hazardous Materials*, for additional information.

Project construction would encompass approximately one acre; therefore project construction would be subject to a General Construction Permit under the National Pollutant Discharge Elimination System (NPDES) permit program of the federal Clean Water Act. As required under the General Construction Permit, the contractor would prepare and implement a SWPPP. The SWPPP requires a submittal of a notice of intent (NOI) application to the Santa Ana Regional Water Quality Control Board (RWQCB) prior to construction activities. Implementation of the SWPPP would be consistent with the City of Corona Stormwater and Urban Runoff Pollution Prevention Program and Riverside County NPDES Permit, and would begin with the commencement of construction and continue through the completion of the project. The objectives of a SWPPP is to identify pollutant sources (such as sediment) that may affect the quality of stormwater discharge and to implement best management practices (BMPs) to reduce pollutants in stormwater.

The construction contractor would implement BMPs, such as those described in *The Construction Site Best Management Practices Manual* (California Department of Transportation, 2003). In particular, erosion control BMPs would be used to prevent the degradation of water quality in the construction area. Other BMPs that could be used to enhance erosion control include scheduling to avoid wet weather events; preservation of existing vegetation where feasible; hydraulic mulching; hydroseeding; using soil binders; straw mulching; using geotextiles, plastic covers, and erosion control blankets/mats; and wood mulching.

BMPs would also include practices for proper handling of chemicals such as avoidance of fueling at the construction site and overtopping during fueling, and installation of containment pans. Further, implementation of standard construction procedures and precautions as discussed in Section *2.8, Hazards and Hazardous Materials*, and compliance with the Riverside County Stormwater Program requirements regulating stormwater would also ensure that the water quality impacts related to the handling of hazardous materials from project construction would be less than significant.

Following construction, the operations would include the storage and delivery of potable water to the City's Zone 4 1220' HGL pressure zone. The pumped water would be in accordance with the water quality criteria set by the City. Surface water from the project site is proposed to be directed to one of three bioretention facilities. These bioretention facilities would result in the compliance with water quality standards by reducing potential pollutants from being conveyed offsite. Therefore, surface water quality impacts would be reduced to less than significant levels.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less than Significant Impact. The proposed project would not result in an impact to groundwater supplies. The site would be watered during dry and windy conditions to prevent dust and debris from migrating offsite. The demand for construction watering would be minor and temporary.

Groundwater was not encountered during the geophysical study drilling to a depth of 71 feet bgs (an elevation of approximately 1,143 feet amsl). Groundwater is not expected to be encountered during construction. The groundwater would be greater than 50 feet below the planned tank finished floor elevation of 1,192 feet amsl. Therefore, the proposed project would result in a less than significant impact to groundwater supplies.

c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than Significant Impact. The proposed project would include the construction of a water tank within a vacant parcel, and would not alter the course of a stream or river. Earth-moving activities would occur during construction that would slightly alter the topography of the project site. SWPPP erosion control measures would be implemented to reduce surface run-off impacts during construction. Implementation of the proposed water tank would add impervious surfaces that could affect current drainage patterns. However, the project would include an overflow drain that would convey potable water from the tank to the existing storm drain on Masters Drive. The proposed project would reduce the potential for erosion and siltation to less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less than Significant Impact. Earth-moving activities during construction would slightly alter the topography of the project site; however, SWPPP erosion control measures would be implemented to reduce surface run-off impacts during construction. Construction of the proposed water tank would add impervious surfaces that could affect current drainage patterns. However, the project would include an overflow drain pipe from the tank to the existing storm drain to reduce the risk of flooding. The proposed project would result in less than significant impacts regarding flooding.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. The design of the proposed project would include the potable water storage tank and associated piping, including 900 feet of overflow drain piping connecting the tank to the existing storm drain. In the event that the potable water storage tank receives more water than its capacity, excess potable water would be discharged through the drain pipe to the storm drain. The depth of the storm drain in Masters Drive would allow water from the tank to flow by gravity. The proposed drain pipe would adequately serve the project and project area. Surface runoff from the project site would flow to one of three proposed bioretention facilities onsite. Further, the project would not exceed other stormwater infrastructure facilities. Impacts regarding exceedance of storm drain systems and creation of polluted runoff would be less than significant.

f) Otherwise substantially degrade water quality?

Less than Significant Impact. Refer to response 9(a) above.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The proposed project includes construction of a water storage tank and associated piping, which are uninhabitable structures. According to the Federal Emergency Management Agency's (FEMA) Federal Insurance Rate Maps (FIRM), the project site would be located in an area outside the 100-year flood zone (FEMA, 2008). In addition, the proposed project would not include the construction of housing or habitable structures. Therefore, the proposed project would not place housing within a 100-year flood hazard area, and the proposed project would result in no flood hazard impacts.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The proposed project includes construction of a water storage tank and associated piping. According to the Federal Emergency Management Agency's (FEMA) Federal Insurance Rate Maps (FIRM), the project would be located in an area outside the 100-year flood zone (FEMA, 2008). Therefore, the proposed project would not place a structure in an area which would impede or redirect flood flow, and the proposed project would result in no flood hazard impacts.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The proposed project is not located near a hillside or an area where mudflow would occur. The nearest body of water to the project site is Lake Matthews. The proposed project is located approximately five miles west of Lake Mathews, but it is not within the dam inundation hazard area for Lake Mathews (Riverside County, 2012). In addition, the proposed project would not include any habitable structures and would not risk exposing people or structures to significant risk of loss, injury, or death involving flooding as a result of a levee or dam failure. The proposed project would result in no flood hazard impacts related to failure of a dam or levee.

j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project is not located near the ocean or an area that would be inundated by seiche, tsunami or mudflow. The proposed project is located approximately 30 miles inland from the Pacific Ocean coast. In addition, the proposed project would not include any habitable structures and would not risk exposing people or structures to significant risk of loss, injury, or death involving inundation by seiche, tsunami, and mudflow. The proposed project would result in no impacts associated with a seiche, tsunami, and mudflow.

References

California Department of Transportation. 2003. *Construction Best Management Practices Manual*. Published March 2003.

FEMA. 2008. Flood Insurance Rate Map – Panel 1360G. Effective August 28, 2008.

Riverside County. 2012. *Riverside County General Plan 2025*. Public Safety Element. Flood Hazard Areas Map. Amended November 2012.

Land Use and Land Use Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10. LAND USE AND LAND USE PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☒	☐	☐

Environmental Evaluation

Would the project:

a) Physically divide an established community?

No Impact. The project does not propose any action that could divide an established community. The physical division of an established community generally refers to the construction of a feature such as an interstate highway or railroad tracks, or removal of a means of access, such as a local road or bridge that would impact mobility within an existing community or between a community and outlying area. The project site is generally surrounded by low density residential communities in all directions from the project. The project site is not a designated form of access within the area. The proposed project would not physically divide the existing communities in the project area. Thus, implementation of the project would result in no impacts to the physical division of an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The proposed project is consistent with the existing City of Corona General Plan land use and zoning designations. The project site is designated as Estate Residential (ER) within the City's General Plan and zoned as Single Family Residential (R1-A) in the City's Municipal Code (City of Corona, 2004). Implementation of the proposed project would provide additional water storage for the approved Arantine Hills Specific Plan development. The water storage tank would directly support the residential development within the ER land use designation, and thus would be compatible with the City's General Plan.

According to the Corona Municipal Code, the R1-A zoning designation is primarily "intended for the development of single-family homes on large home sites." Public facility uses, such as a water storage tank, are not specifically identified as permitted uses of the R1-A zone; however, similar uses may be permitted by the City Planning Commission that are "in conformity with the intent of the purpose of this zone and not more obnoxious or detrimental to the public health, safety and welfare or other uses permitted in this zone." Chapter 17.92 of the Corona Municipal Code also allows public utility structures and installations in any zone, including the R1-A zone, by a conditional use permit. Since the proposed project would provide potable water storage for an approved development, the project would be compatible with the City zoning code. The project will not conflict with any applicable land use plans, therefore, the project would result in less than significant impacts to existing land use plans, policies or regulations.

c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?

Less than Significant with Mitigation Incorporated. The project site occurs within the Western Riverside County MSHCP, specifically within the Temescal Canyon Area Plan. The project site does not occur within any Criteria Cells or Criteria Areas, including Core Areas, Habitat Blocks, or Linkages. However, the project site is located within a mandatory habitat assessment area for burrowing owl, and focused surveys are required if suitable habitat is present. Suitable habitat for burrowing owl was identified during a reconnaissance-level field survey conducted by ESA on July 27, 2016 (Appendix B). Four focused burrowing owl surveys were conducted by ESA from August 23 through September 14, 2016 according to accepted MSHCP Burrowing Owl Survey Protocol (EPD 2006). No burrowing owls were observed on the project site and surrounding 500-foot buffer during the focused burrowing owl surveys and the site is currently considered absent of burrowing owls. However, due to the presence of suitable habitat on the project site, there is a potential for burrowing owls to move onto the project site prior to the start of construction, particularly if construction occurs during the breeding season from March 1 through August 31. If burrowing owl(s) are determined to occupy the project site prior to construction, project-related impacts would be significant. No other mandatory assessment species were identified by the RCIP report generator and no suitable habitat occurs for any other MSHCP-covered species, including Criteria Area Species and NEPs.

Additionally, with payment of the MSHCP development fee ($6,780 per acre), the proposed project, as currently designed, will be considered consistent with the goals and provisions of the MSHCP.

Mitigation Measures

Implementation of Mitigation Measures BIO-1 and BIO-2 is required.

Significance after Mitigation

With the implementation of Mitigation Measures BIO-1 and BIO-2, project implementation would result in a less than significant impact on burrowing owls and the MSHCP.

References

City of Corona. 2004. *City of Corona General Plan*. Adopted March 17, 2004.

City of Corona. 2016. Corona Municipal Code. Available at: http://library.amlegal.com/nxt/gateway.dll/California/corona/title17zoning?fn=altmain-nf.htm$f=templates$3.0; accessed on July 7, 2016.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No Impact. Based on the guidelines adopted by the California Geological Survey (CGS), areas known as Mineral Resource Zones (MRZ) are classified according to the presence or absence of significant mineral resource deposits. The City is required to respond to mineral resource recovery areas that have been designated by the State as MRZ-2 (significant existing or likely mineral deposits). These classifications indicate the potential for a specific area to contain significant mineral resources.

According to the CGS, the City of Corona does contain lands classified as Construction Aggregate Resource Areas or MRZ-2, which are generally located directly east of the Interstate 15 and State Route 91. The project site is not located on land classified as MRZ-2. The project site is designated MRZ-3 (County of Riverside, 2014). The proposed project involves the construction and operation of a potable water tank for water storage, and no mining operations would occur. No mining activities exist at the project site. Therefore, the proposed project would result in no loss of availability of known mineral resources valuable to the region or residents of the State, and no impact would occur.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. As discussed in 3.11a), The City of Corona General Plan classifies land with locally-important mineral resource deposits within the City as Construction Aggregate Resource Areas or MRZ-2 areas. The project site is not located on land classified as MRZ-2. The project site does not currently support mining operations. Therefore, the proposed project would not result in the loss of availability of a locally-important mineral resource recovery site delineated by any land use plan, and no impact would occur.

References

California Geologic Survey (CGS). 2016. Mineral Resource Mapping. Available at: http://www.conservation.ca.gov/cgs/geologic_resources/mineral_resource_mapping/Pages/Index.aspx; accessed on July 7, 2016.

County of Riverside, General Plan Update Project EIR. March 2014. Available at: http://planning.rctlma.org/Portals/0/genplan/general_plan_2015/DEIR%20521/04-14_MineralResources.pdf; accessed March 2017.

Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
12. NOISE — Would the project:				
a) Result in Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Result in Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Evaluation

Would the project:

a) Result in Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. The proposed project would generate noise levels that could affect nearby noise-sensitive land uses during both construction and operations.

Construction

Project construction would occur for approximately 12 months, from January 2019 through January 2020. The proposed project would require approximately 250 days for construction. In general, project construction activities would comply with Section 17.84.040 of the City of Corona Municipal Code that allows construction activities to occur between 7:00 a.m. and 8:00 p.m., Monday through Saturday. Construction of the new facilities would involve the use of a variety of heavy construction equipment onsite. The majority of the equipment and vehicles would be associated with the intensive earthwork, and the structural and paving phases of construction. Large construction equipment including backhoes, compactors, cranes, excavators, haul trucks, pavers, and rollers would be used during the construction phase of the proposed project.

Construction-related noise levels would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment associated with individual project components. Construction-related haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. The effect of construction noise would depend on how much noise would be generated by the equipment, the distance between construction activities and the nearest noise-sensitive uses, the existing noise levels at those uses, and the time of day in which construction activities would occur.

Construction activities associated with the proposed project would increase noise in the vicinity of the project site. Because the project site is located within the City, , the noise thresholds of the City's Municipal Code for construction activities were used.

For the City of Corona, construction noise is limited by time as well as by noise level. Section 17.84.040 of the City of Corona Municipal Code prohibits construction noise between the hours of 8:00 p.m. to 7:00 a.m., Monday through Saturday and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. The proposed project would comply with the Municipal Code requirement because the project includes construction activities between 7:00 a.m. to 8:00 p.m, Monday through Friday. Construction noise levels are also regulated in Section 17.84.040 of the City's Municipal Code. The noise standards vary depending on the land use of the affected property and include maximum permissible exterior and interior noise levels for four different land use categories. According to Section 17.84.040, the exterior maximum allowable noise level for residential uses is 55 dBA L50 during daytime (7:00 a.m. to 10:00 p.m.).

Table 5 shows both the maximum (Lmax) noise levels produced by various types of construction equipment based on a distance of 50 feet between the equipment and noise receptor. It should be noted that Lmax noise levels associated with the construction equipment would only be generated when the equipment is operated at full power. As such, the Lmax noise levels shown in Table 5 would only occur occasionally throughout the construction day.

Although the project's construction hours would comply with the construction noise regulations in the City's Municipal Code, the nearby land uses surrounding the project would still be subject to increased noise levels in their existing noise environment. During project construction, the nearest and most notable off-site sensitive receptors that would be exposed to increased noise levels would be the existing single-family residential uses located around the project site. Specifically, the nearest off-site noise sensitive receptors include the following:

- Estate residential uses are located to the east, west, and north of the project; and
- Low density residences are located immediately south of the project.

TABLE 5
CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Construction Equipment	Noise Level at 50 Feet (dBA, Lmax)
Air Compressor	78
Compactor (Ground)	83
Concrete Mixer Truck	79
Concrete Saw	90
Drill Rig Truck	79
Dumpers/Tenders	76
Excavator	81
Generator	81
Grader	85
Haul Truck	76
Off-Highway Tractor	80
Off-Highway Trucks	76
Paver	77
Paving Equipment	90
Roller	80
Rough Terrain Forklift	75
Rubber Tired Loader	79
Scrapers	84
Sweeper/Scrubbers	82
Trencher	85
Water Trucks	80
Welders	74

SOURCE: FHWA, 2006

Due to the proximity of these off-site sensitive uses to the project site, the proposed project's construction activities would expose these sensitive receptors to increased exterior noise levels. Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are being operated concurrently. Construction noise levels associated with the proposed project were estimated using the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) for the construction phase that employed the most and noisiest equipment, which, for the proposed project, would be the building phase. To conduct a conservative analysis, it was assumed that all pieces of construction equipment would be operating concurrently at the project site during each construction phase. Specifically, the project's estimated construction noise levels at the off-site sensitive receptors were based on the concurrent operation of up to 11 pieces of equipment on a peak construction day during the excavation phase for the proposed water tank. The construction equipment mix for all the other construction phases (e.g., site preparation, grading, etc.) would use either less overall equipment or less noisy equipment on a daily basis, and as such would generate lower noise levels.

The estimated temporary construction noise levels that would occur for the low density residences south of the project site during a peak construction day would be 70 dBA $L_{eq.}$ For the estate residences to the north, the noise levels would be 57[3]/83[4] dBA Leq. For the estate residences west of the project site, the noise level would be 76[3]/83[4] dBA Leq. For the estate residences east of the project site, the noise level would be 73 dBA Leq. The noise levels identified above are provided in Appendix F.

The project construction would comply with Section 17.84.040 of the City of Corona Municipal Code that allows construction activities to occur between 7:00 a.m. and 8:00 p.m., Monday through Saturday. Therefore, the project would result in less than significant impacts related to noise levels.

Operations

Long-term operations of the project would have a negligible effect on the community noise environment in the proximity of the project site. The existing noise environment in the project area is dominated by traffic noise from nearby roadways, as well as nearby residential activities. The project would not result in any increase in noise at the existing project site with stationary equipment such as the water tank and altitude valve, etc. It is also anticipated that required maintenance/inspections activities would occur. However, vehicular trips would be also a nominal effect on the community noise environment in the vicinity of the project site. As such, the project would not create a substantial permanent increase in ambient noise levels above those noise levels existing without the project. Therefore, operation of the project would not expose persons to, or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, and impacts would be less than significant.

b) Result in Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?

Foundations of Vibration

Less Than Significant Impact. Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures, which generally dissipate with distance from the vibration source. Because energy is lost during the transfer of energy from one particle to another, vibration becomes less perceptible with increasing distance from the source. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal in inches per second (in/sec), and is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS.

[3] Sensitive receptors are partially shielded by the existing buildings or topography; and such shielding is included in the analyses representing a 5 dBA reduction in noise levels.

[4] Construction activities for the Off-site Water, Reclaimed Water and Storm Drain Piping Phase.

Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures. These energy waves generally dissipate with distance from the vibration source. Because energy is lost during the transfer of energy from one particle to another, vibration becomes less perceptible with increasing distance from the source.

As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment (FTA 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

Construction

Groundborne vibration levels resulting from construction activities at the project site were estimated using data published by the FTA (FTA 2006).

In accordance with the City's Municipal Code, Section 17.84.050, construction vibration impact is evaluated in term of RMS (Root-Mean-Square). With regard to the proposed project, high levels of ground-borne vibration would be generated primarily during site clearing and grading activities, and by off-site haul-truck traveling on surface streets. As such, ground-borne vibration impacts are therefore usually confined to short distances (i.e., 50 feet or less) from the source. According to the Section 17.84.050, the vibration perception threshold shall be presumed to be more than 0.05 inches per second (in/sec) RMS vertical velocity.

Construction activities that would occur within the project site would include grading and excavation, which would have the potential to generate low levels of groundborne vibration. As such, the existing single-family residential uses located to the west of the project site could be exposed to the generation of excessive groundborne vibration or groundborne noise levels related to construction activities. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to structural damage at the highest levels. Site ground vibrations from construction activities very rarely reach the levels that can damage structures, but they may be perceived in buildings very close to a construction site. No pile-driving activities and other high-impact equipment (e.g., jackhammers) would be required for construction of the proposed project.

The various PPV and RMS velocity (in VdB) levels at distances from the general types of construction equipment that would operate during the construction of the proposed project are identified in **Table 6**. Based on the information presented in Table 6, vibration velocities could reach as high as approximately 0.089 in/sec PPV at 25 feet from the source activity, depending on the type of construction equipment in use. This corresponds to a RMS velocity level of 0.022 in/sec at 25 feet from the source activity.

TABLE 6
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

	Approximate PPV (in/sec)					Approximate RMS (in/sec)				
Equipment	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	0.022	0.008	0.008	0.004	0.003
Caisson Drilling	0.089	0.031	0.024	0.017	0.011	0.022	0.008	0.008	0.004	0.003
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	0.019	0.007	0.008	0.004	0.003
Jackhammer	0.035	0.012	0.009	0.007	0.004	0.009	0.003	0.008	0.002	0.001
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	0.001	0.0003	0.0002	0.0002	0.0001

SOURCE: FTA, 2006.

Construction activities associated with the proposed project would have the potential to impact the nearest surrounding off-site sensitive receptors to the project site, which include the single-family residential uses to the south, north, and east, and west of the project site. **Table 7** shows the construction-related groundborne vibration levels that would occur at the identified off-site sensitive uses during construction at the project site.

As shown in Table 7, the vibration velocities forecasted to occur at the off-site sensitive receptors could potentially reach up to 0.022 in/sec RMS at the single-family residence located north of the project site during the Off-site Water, Reclaimed Water and Storm Drain Piping construction phase, which would not exceed the significance threshold of 0.5 in/sec RMS. Therefore, impacts would be less than significant.

TABLE 7
GROUNDBORNE VIBRATION LEVELS AT OFF-SITE SENSITIVE USES

Off-site Sensitive Land Use	**Approximate Distance to project site (ft.)**[1]	**Estimated PPV (in/sec)**	**Estimated RMS Velocity Level (in/sec)**
Low density residences located south to project site.	130	0.0075	0.0019
Estate residences located north to project site.	600/25	0.0008/0.0089	0.0002/0.022
Estate residences located west to project site.	45	0.0369	0.0092
Estate residences located east to project site	170	0.005	0.0013

ft. = feet; in/sec = inches per second.
[1] The approximate distances are measured from the nearest project site boundary to the nearest off-site structure.

SOURCE: ESA, 2017

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. With regard to increases in A-weighted noise level, a change in ambient noise levels of 5 dBA is considered to be a readily perceivable difference (CalTrans 2013). The existing noise environment in the project area is dominated by traffic noise from nearby roadways, as well as nearby residential activities. Long-term operation of the project would not have a significant effect on the community noise environment in proximity to the project site. As discussed in Response 12.a.), project operational noise would not substantially increase ambient noise levels at sensitive receptor locations. Therefore, noise levels associated with on-site operations (e.g., the tank and altitude valve) are considered less than significant as discussed in Response 12.a.). As such, impacts from permanent increases in noise levels would be less than significant.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. The project would result in a temporary substantially increase in ambient noise near the project site during the construction period. However, as discussed in Response 12.a) above the project construction would comply with Section 17.84.040 of the City of Corona Municipal Code that allows construction activities to occur between 7:00 a.m. and 8:00 p.m., Monday through Saturday. Therefore, the project would result in less than significant impacts related to temporary increases in ambient noise levels.

e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?

No Impact. The project site is not located within an airport land use plan area or within two miles of a public airport or public use airport. Therefore, construction or operation of the project would not expose people to excessive airport related noise levels. No mitigation measures are necessary.

f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The project site is not located within the vicinity of a private airstrip, or heliport or helistop. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels from such uses. No mitigation measures are required.

References

California Department of Transportation. 2013. *Technical Noise Supplement* (TeNS). Section 2.1.1. Published September 2013.

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. Published May 2006.

Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*. Published January 2006.

Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
13. POPULATION AND HOUSING — Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Evaluation

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. A project could induce population growth in an area directly or indirectly. For example, direct population growth can occur by introducing new business or residential areas and indirect growth by extending roads or other infrastructure. The proposed project involves the construction of a water tank. The proposed project would not involve the construction of any homes, businesses, or other uses that would result in direct population growth. The proposed project would result in temporary employment during construction. The on-site workforce for construction is expected to be negligible for a short duration. The construction workers would likely come from the existing labor pool in the general vicinity. The implementation of the proposed project would not require additional long-term employment. The proposed water tank would provide domestic water to an approved development, the Arantine Hills Specific Plan. As such, the project would accommodate the growth that the City has already approved, and therefore, the project would not induce growth. The proposed project would not induce population growth, and no growth-inducing impact would occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The existing tank site is currently undeveloped. There are no existing residences on the project site, and no residences would be condemned or displaced by this project. Therefore, the proposed project would not displace people or housing, and there would be no impact.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As discussed above, the proposed project would not remove housing and would not displace people, necessitating the construction of replacement housing elsewhere. Therefore, no impacts would occur.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☐

Environmental Analysis

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a.i) Fire protection?

No Impact. The City of Corona Fire Department provides fire protection, prevention, and emergency medical services utilizing seven fire stations in the City. The nearest fire station is Fire Station #7 located approximately one mile east of the project site at 3777 Bedford Canyon Road. The proposed project would provide potable water storage for the future Arantine Hills development, also located approximately one mile east of the project site. The proposed project would not change existing demand for fire protection services because operation of the project would not result in a substantial increase in employees or population. The proposed project would provide emergency and fire flow storage to the City's Zone 4 1220' HGL pressure zone. The environmental impacts of this fire protection infrastructure is analyzed throughout this MND. Therefore, the implementation of the proposed project would not increase the need for new fire department staff or new facilities. Because the project would not require additional fire protection facilities, there would be no construction impacts associated with fire protection facilities. Impacts would be less than significant.

a.ii) Police protection?

No Impact. The Corona Police Department provides local police services within the City. The Corona Police Department headquarters is located approximately five miles north of the project site at 730 Public Safety Way. The proposed project does not include new homes or businesses that would require any additional services or extended response times for police protection services beyond those required with the existing onsite uses. Therefore, the Corona Police Department would not be required to expand or construct new police stations to serve the proposed project. No construction impacts would occur with the proposed project because additional fire protection facilities would not be needed.

a.iii) Schools?

No Impact. The Corona-Norco Unified School District (CNUSD) provides public educational services to the City of Corona, as well as the City of Norco and other unincorporated areas of Riverside County. The proposed project would not directly introduce new residents within the City. Therefore, the project would not increase the demand for school facilities. As a result, the proposed project would not require the CNUSD to provide new or physically altered school facilities. The project would result in no environmental impacts to new or physically altered school facilities because changes to school facilities would not be required.

a.iv) Parks?

No Impact. The Corona Recreation Services Departments maintains the parks and provides recreational services for the City. The nearest park is located approximately 0.5 mile east of the project site. The proposed project would not directly introduce new residents within the City. Therefore, the project would not increase the demand for park facilities. As a result, the proposed project would not require the City to provide new or physically altered park facilities because these facilities would not be required to serve the project. Therefore, the implementation of the proposed project would result in no environmental impacts to new or physically altered park facilities.

a.v) Other public facilities?

No Impact. The proposed project would not introduce new residents that would directly increase the City's population, and thus the project would result in no increase in the demand for other public services, such as libraries or hospitals. Therefore, the implementation of the proposed project would result in no environmental impacts to new or physically altered public facilities such as libraries and hospitals.

Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
15. RECREATION — Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Analysis

Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?

No Impact. As discussed in 14(d) above, the Corona Recreation Services Departments maintains the parks and provides recreational services for the City. The nearest park is located approximately 0.5 mile east of the project site. The proposed project would not directly introduce new residents within the City. Therefore, the project would not increase the use of existing parks within the City and would result in no impact to the physical deterioration of recreational facilities.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The proposed project includes the construction of a potable water storage tank for the approved Arantine Hills development. The implementation of the proposed project would not require recreational facilities to serve the project. Therefore, the project would not result in an adverse physical effect on the environment from the construction or expansion of additional recreational facilities because the project would not require recreational facilities.

Transportation and Traffic

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. TRANSPORTATION AND TRAFFIC — Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☒	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☒	☐	☐

Environmental Evaluation

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less than Significant Impact. Construction of the proposed project would temporarily increase local traffic due to the transport and delivery of construction equipment and materials as well as from daily worker trips. Project site access would be provided from Nelson Street, a two-lane roadway. No bus routes operate near the project area (City of Corona 2017a).

Direct traffic impacts, such as local congestion and disruption of traffic flow from construction of the project would be short-term and temporary, and limited to the 12-month construction period. Construction activities that would generate offsite traffic would include the delivery of construction vehicles and equipment to the project site, the daily arrival and departure of

construction workers, and the delivery of materials throughout the construction period. The estimated haul truck traffic would vary depending on the construction activity, but would peak at up to approximately three trucks per day. There would be up to 20 work personnel (construction workers and management staff) commuting to and from the work site per day.

Construction-generated traffic would be temporary, and therefore, would not result in any long-term degradation in operating conditions on local roadways used for the project. The primary impact of construction-related traffic would be a temporary and intermittent lessening of the capacities of the roads in the project area because of the slower movements of larger turning radii of construction trucks compared to passenger vehicles. Drivers could experience delay if they were traveling behind a heavy truck. The impact from project-generated traffic would be less than significant.

In addition to onsite construction, the proposed project would install new pipelines that would connect with (tie-in to) existing mains within Masters Drive and Howe Street. The open trenching along Nelson Street, Courtney Street and Howe Street would require temporary closure of one or both lanes. The open trenching along Masters Drive would require temporary closure of one or two lanes on the two-lane roadway and one median lane, which could cause congestion/delays on the remaining open lanes.

Mitigation Measure

Implementation of Mitigation Measures TRA-1 through TRA-5 is required.

Significance after Mitigation

Implementation of Mitigation Measures TRA-1 through TRA-5 would reduce the short-term effects of construction activities on traffic flow. Impacts would be less than significant with mitigation.

b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than Significant Impact. There would be no full-time employees on the project site after construction is completed, and the long-term increase in traffic generation as a result of the proposed project would be limited to monthly routine tank maintenance. Congestion management programs (and level of service [LOS] standards established by congestion management agencies) are intended to monitor and address long-term traffic conditions related to future development that generate permanent (on-going) traffic increases, and do not apply to temporary impacts associated with construction projects. Project construction would be transitory in nature, and effects on roadway operations would be temporary (see discussion under 16a above). The intermittent operational traffic resulting from the proposed project would not adversely affect LOS standards and travel demand measures for designated roads or highways. The impacts would be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?

No Impact. The nearest public airport to the project site is Corona Municipal Airport, approximately six miles northwest of the site. The proposed project is not located within the Airport Land Use Compatibility Plan for Corona Municipal Airport (Riverside County Airport Land Use Commission 2004). The proposed project does not involve any aviation components or structures at heights that would potentially pose an aviation concern. No project activities would alter the existing air traffic patterns, levels, or locations that result in safety risks. No impact would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact with Mitigation Incorporated. Neither project construction nor operation would adversely alter the physical configuration of the existing roadway network serving the area, and would not introduce unsafe design features. The project also would not introduce uses (types of vehicles) that are incompatible with existing uses already served by the area's road system. However, the open trenching along Nelson Street and Masters Drive to install new pipelines would require temporary closure of one or more lanes, which would cause congestion on the remaining open lanes, potentially causing traffic safety hazards.

Mitigation Measure

Implementation of Mitigation Measures TRA-1 through TRA-5 is required.

Significance after Mitigation

Implementation of Mitigation Measures TRA-1 through TRA-5 would reduce the short-term effects of construction activities on traffic flow. Impacts would be less than significant with mitigation. Once constructed, the proposed pipeline would be underground, and therefore, would not increase hazards due to design features or incompatible uses.

e) Result in inadequate emergency access?

Less than Significant Impact with Mitigation Incorporated. Access to the project area would be from Nelson Street. As described under 16a above, increased project-related traffic would not cause a significant increase in congestion.

During construction of the project, heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures in the event of an emergency (e.g., vehicles traveling behind the slow-moving truck). The project includes the construction of underground pipelines and transmission lines along Nelson Street, Masters Drive, Courtney Lane, Howe Street and Duncan Way north of the tank site. The open trenching to install new pipelines would require temporary closure of one or all lanes, which would cause congestion on the remaining open lanes, potentially causing traffic safety hazards. In the event of an emergency,

lane closure could result in constrained traffic flow which could interfere with an evacuation route resulting in potentially significant impacts.

Mitigation Measure

Implementation of Mitigation Measures TRA-1 through TRA-5 is required.

Significance after Mitigation

Implementation of Mitigation Measures TRA-1 through TRA-5 would reduce the short-term effects of construction activities on traffic flow and emergency response. Impacts would be less than significant with mitigation.

Onsite operational activities would involve minimal and infrequent (daily) traffic in and out of the project site and would not result in interference with emergency response access. The project's operations impacts would be less than significant.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less than Significant Impact with Mitigation Incorporated. As described under 16a above, no bus routes run near the project area. A Class II bike path is located eastbound along Masters Drive. Construction could result in short-term impacts to the existing bike paths.

Once implemented, the proposed project would neither directly nor indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., bike paths, lanes, etc.), including changes in polices or programs that support alternative transportation, nor construct facilities in locations which future alternative transportation facilities are planned. The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. The project's operations impact would be less than significant.

Mitigation Measure

Implementation of Mitigation Measures TRA-1 through TRA-5 is required.

Significance after Mitigation

Implementation of Mitigation Measures TRA-1 through TRA-5 would reduce the short-term effects of construction activities on bike paths. Impacts would be less than significant with mitigation.

References

City of Corona. 2017a. Corona Cruiser. Available at: http://www.discovercorona.com/City-Departments/Public-Works/Public-Services-and-Information/Corona-Cruiser.aspx#frservice; accessed February 2017.

_____. 2017b. Bikeway Network. Available at: http://www.discovercorona.com/CityOfCorona/media/Media/Public%20Works/Documents/Transportation/bike_map.pdf ; accessed February 2017.

Riverside County Airport Land Use Commission. 2004. *Riverside County Airport Land Use Compatibility Plan*. Volume 1. Adopted on October 14, 2004.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. During project construction, a minimal amount of wastewater would be generated by construction workers and collected by portable toilet facilities. All waste generated in portable toilets would be collected by a City-permitted portable toilet waste hauler and appropriately disposed of at one of the liquid waste disposal stations. These waste disposal stations have been appropriately permitted by the Regional Water Quality Control Board (RWQCB).

During project operation, the proposed project would store potable water for public use and would not require any full time resident employees or water for operation; therefore, operation would not generate wastewater. Therefore, the implementation of the proposed project would result in no impacts related to the exceedance of wastewater treatment requirements.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project includes the construction of a new potable water storage facility serving the project vicinity and the construction of drainage and water pipelines to connect to existing pipelines. No new water or wastewater treatment facilities would be constructed or expanded as a result of the proposed project. Therefore, implementation of the proposed project would result in no environmental impacts from construction of additional water or wastewater treatment facilities because no new facilities would be required.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project includes the construction of approximately 900 feet of storm drain pipe within Nelson Street from the tank to convey overflow water to the existing 36-inch storm drain in Masters Drive. The existing storm water drainage facilities on Masters Drive serve the area at a sufficient capacity and would not require expansion as a result of the proposed project. Therefore, implementation of the proposed project would result in no environmental impacts from construction of additional storm water drainage facilities because no new facilities would be required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. The City of Corona's water supply is provided by the City of Corona Department of Water and Power. The operation of the proposed project would require imported potable water supply from the City of Corona Department of Water and Power in order to fill the storage tank. However, the tank would address the additional storage needed for the approved Arantine Hills development and the predicted future deficiency of 5 MG for 1220-Zone storage in the year 2020 as identified in the 2005 Water Master Plan. Implementation of the proposed project would not require expanded entitlements because it would serve as planned water storage for the project vicinity. Thus, the project would not result in the need for new or expanded water supply entitlements, and no impacts would occur.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The City of Corona Department of Water and Power is the wastewater treatment provider, and the water supplier, for the project area. As discussed in above in 17 (a), operation of the proposed project would not generate any wastewater. Therefore, the proposed project would result in no impact to the wastewater treatment provider serving the project area.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact. The project site would be served by the solid waste facilities and landfills that are operated by Waste Management, Inc. The nearest landfill to the project location is the El Sobrante Landfill at 10910 Dawson Canyon Road in Corona, located approximately four miles southeast of the project site. The El Sobrante Landfill is permitted as a Class III landfill to receive a daily maximum of 16,054 tons per day. Class III landfills accept only non-hazardous municipal solid waste for disposal; no hazardous or liquid waste can be accepted. It is currently estimated to operate with adequate capacity until 2045. The landfill is required to comply with numerous landfill regulations from federal, state and local regulatory agencies (CalRecycle 2016).

Project implementation would result in the need for disposal of debris from construction and maintenance activities. Solid waste removed from the project site would be minimal and include dead or non-native vegetation. No demolition would be required prior to construction activities. Debris would be removed with construction equipment and transported to the landfill by haul trucks. There would be no solid waste generated during the operation of the proposed project. Given the project's scale, it is anticipated that the specified landfill would have the adequate capacity to accommodate the project's waste disposal needs. Therefore, the project would result in a less than significant impact to landfill capacity.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. Construction and operation of the proposed project would result in the minimal disposal of dead or non-native vegetation to the El Sobrante Landfill in Corona. The disposal of vegetation would comply with federal, state, and local statutes related to solid waste. No impact to these regulations would occur with project implementation.

References

CalRecycle. 2016. Facility Summary Details: El Sobrante Landfill. Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Detail/; accessed on July 26, 2016.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental Evaluation

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation. The proposed project may have the potential to impact sensitive wildlife species during construction activities. The project site does not occur within any Criteria Cells or Criteria Areas, including Core Areas, Habitat Blocks, or Linkages. However, the project site is located within a mandatory habitat assessment area for burrowing owl, and focused surveys are required if suitable habitat is present. Suitable habitat for burrowing owl was identified during a reconnaissance-level field survey conducted by ESA on July 27, 2016 (Appendix B). No burrowing owls were observed on the project site and surrounding 500-foot buffer during the focused burrowing owl surveys, and the site is currently considered absent of burrowing owls. However, due to the presence of suitable habitat on the project site, there is a potential for burrowing owls to move onto the project site prior to the start of construction, particularly if construction occurs during the breeding season from March 1 through August 31. If burrowing owl(s) are determined to occupy the project site prior to construction, project-related impacts would be significant. No other mandatory assessment species were identified by the RCIP report generator and no suitable habitat occurs for any other MSHCP-covered species, including Criteria Area Species and Narrow Endemic Plants (NEPs).

Additionally, with payment of the MSHCP development fee ($6,780 per acre), the proposed project as currently designed will be considered consistent with the goals and provisions of the MSHCP.

Although the project site has been previously disturbed, construction activities associated with the project could result in significant impacts to unknown archaeological and paleontological resources and human remains.

Mitigation Measure

Implementation of Mitigation Measures BIO-1 through BIO-4, CUL-1 through CUL-5 is required.

Significance After Mitigation

Implementation of the above referenced mitigation measures would reduce the project impacts on biological and cultural resources to less than significant.

b) Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant with Mitigation Incorporated. A cumulative impact could occur if the project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present and reasonably foreseeable future projects for each resource area. Because the project impacts are generally construction related, the cumulative study area is generally confined to the immediate vicinity or within a mile radius.

There are several past, present, and reasonably foreseeable projects identified in the City of Corona. Similar projects and projects within the City of Corona are listed in **Table 8** below.

Implementation of the proposed project would not impact any scenic vistas, state scenic highways, or generate substantial light and glare. Impacts related to visual character would be less than cumulatively considerable due to project design features including paint and landscaping designs. The project does not include any agricultural or mineral resources that could be impacted, and the project would have no impacts on general plan and zoning consistency, population, housing, public services, and recreation. As a result, cumulative impacts related to these resources would not occur.

TABLE 8
CUMULATIVE PROJECTS LIST

Project Name or Applicant	Location	Jurisdiction	Description	Status / Timeline
Jeffrey Holbrook West Coast Development	Southeast corner of Harrington Street and Lincoln Avenue	City of Corona	Proposed 148 multi-family units/7.3 acres Project downsized from 198 Units	Being Re-Entitled; PC Date 3/11/2016
Corona N. Main, Phase 2	West side of N. Main St., South of Rincon Street	City of Corona	464 multi-family units; 77,256 square feet commercial Mixed use project on 14.5 acres	Under construction Spring 2015; occupancy expected to commence starting 2016
Pecuniary Capital, LLC	North of Corona Ave., west of I-15 Fwy	City of Corona	60 townhome units (multi-family)/3.5 acres	Project entitled Inactive
Nova Homes	Laurel Canyon, northeast of Old Temescal	City of Corona	103 single family lots/61 acres	Mass Grading Commenced December 2015 No Builder at this time Anticipated 2017
ASTA/Strata	NW of Main and Parkridge	City of Corona	45 townhomes on 3.8 acres	Entitled; no activity
C & C Development	SS Sixth Street, west of Rimpau Avenue	City of Corona	86 affordable units	Entitlements expected Spring 2016
Sherborn, LLC	South of Magnolia Ave., west of Sherborn Street	City of Corona	29 industrial lots/76 acres	Map extended Inactive
Corona Regional Medical Center Expansion	South Main Street, north of Ninth Strmalleet	City of Corona	Phase 1 (2016): 72,000 square feet addition; 120,000 square feet Medical office building (possible, not positive); 870 space parking structure Phase 2 (2030): 140,000 square feet addition Phase 3 (2035): Re-purpose existing hospital to sub-acute care uses; no more floor area	Entitled; plan check through state architect
Roger Egge Private Realty Advisors	Malloy Court/Rincon Street	City of Corona	Four industrial buildings totaling 95,500 square feet	Needs Parcel Map
Lu and Ciccone Connor Commercial	NWC of East Sixth Street/Radio Road	City of Corona	Two industrial buildings totaling 216,072 square feet	Plan check Spring 2015

Project Name or Applicant	Location	Jurisdiction	Description	Status / Timeline
Vulcan Materials	Sherborn Street	City of Corona	Existing surface mine; expansion by 100 acres; extension of permit	Extension approved; DBESP under agency review Spring 2015
Berzansky/PB Devel.	NEC Grand & Third	City of Corona	2 medical office buildings 2.49 acres 39,200 square feet	Entitled but Inactive
Mangular Blending Facility	Southwest corner of Mangular Avenue and Ontario Avenue	City of Corona	Construct a new blending station to replace the existing pup and blending station equipment.	Fall 2014
State Route-91 Project	Between the Orange County/Riverside County line and Interstate 15, between State Route 71 and Interstate 15, and between the Interstate 15/State Route 91 interchange and Pierce Street	Caltrans/Riverside County Transportation Commission (RCTC)	Extend tolled express lanes on State Route 91 between the Orange County/Riverside County line and Interstate 15. Add one regular lane between State Route 71 and Interstate 15. Add one regular lane from the Interstate 15/State Route 91 Interchange to Pierce Street. Improve five local interchanges and the Interstate 15/State Route 91 interchange	Construction start: July 2014 Construction end: 2017
Limonite Avenue/Interstate-15 Interchange	A new 8-lane overcrossing, 3 through lanes in each direction plus 2 turn lanes, widening of the off ramps from 2 to 4 lanes, the addition of 2 new loop on ramps, and widening of Limonite to 4 lanes in each direction between Hamner Avenue and Wineville Avenue.	Riverside County Transportation Department	Just completed the PA/ED phase and is currently in final design phase	Construction scheduled to begin in December 2017
Corona Substation	Corona, California	CPUC	Replace (1) 66 kV circuit breaker	2016
Cleargen Substation	Corona, California	CPUC	Replace (3) 66 kV circuit breakers	2016
Jefferson Substation	Corona, California	CPUC	Install (1) 14.4 MVAR 66 kV capacitor	2019

Project Name or Applicant	Location	Jurisdiction	Description	Status / Timeline
Home Gardens Water District Well Collection Line	1 – East Sixth Street between Grant Street and El Sobrante Road; 2 – El Sobrante Road between Sixth Street and Quarry Street; 3 – Quarry Street between Third Street and El Sobrante Road; 4 – Third Street between Quarry Street and Joy Street	City of Corona	New well at Grant, and well collection pipeline	Proposed construction 2016
River Road Bluff Street to Reclaimed Water WRCRWA Plant	River Road between B luff Avenue and Baron	City of Corona	Construct reclaimed pipeline	Proposed construction 2016
River Road Reclaimed Waterline	River Road between Lincoln Avenue and Corydon	City of Corona	Construct reclaimed pipeline	Proposed construction 2016
Promenade Avenue Reclaimed Waterline	Promenade Avenue between Mckinley Avenue and Sixth Street	City of Corona	Construct reclaimed pipeline	Proposed construction 2016
Magnolia Avenue Bridge Widening	Magnolia Avenue from All American Way to El Camino	City of Corona	Widening the Bridge and Street, new median, rehab the street, construct sidewalk, and curb and gutter	Proposed construction 2018
1331 East Sixth Street and 150 Radio Road	Radio Street between Sixth Street and Quarry Street	City of Corona	New storm drain, waterline, curb and gutter, valves and street widening	Completed May 2016

SOURCE: CPUC, 2016; 2016; City of Corona, 2016a; City of Corona, 2016b

In addition, air quality, greenhouse gas, noise, hazardous material, water quality and traffic impacts that are generated by construction activities would be short-term and limited by minimal construction workers traveling to the site, and a short construction period. The minimal emissions, noise, traffic and water pollutants generated by the project would also be less than cumulatively considerable due to the location of the project and limited construction activities and duration occurring at the same time. The chemicals used onsite during project operation would comply with existing federal, state and local regulations pertaining to hazardous materials use, treatment, storage and disposal.

The project would result in potentially significant project-level impacts in the following areas: biological resources, cultural resources, hazards, Riverside County MSHCP consistency, and traffic. The project's contribution to cumulative impacts to biological resources, cultural resources, Riverside County MSHCP consistency, and noise could be cumulatively considerable, and therefore, could result in significant cumulative impacts.

Mitigation Measure

Implementation of Mitigation Measures BIO-1 through BIO-4, CUL-1 through CUL-5, TRA-1 through TRA-5.

Significance After Mitigation

Implementation of the above referenced mitigation measures would reduce the project's contribution to potential cumulative impacts to less than cumulatively considerable. Therefore, the proposed project would result in less than significant cumulative impacts after the implementation of the above mitigation measures.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant with Mitigation Incorporated. The proposed project would result in potentially significant project-level impacts in the following areas: biological resources, cultural resources, Riverside County MSHCP consistency, hazards, and traffic. However, the impacts that could result in significant adverse impacts on human beings include the impacts associated with noise.

Mitigation Measure

Implementation of Mitigation Measures TRA-1 through TRA-5 is required.

Significance After Mitigation

Implementation of the above referenced mitigation measures would reduce the project's potential adverse effects on human beings to less than significant.

References

California Public Utilities Commission (CPUC). 2016. *Southern California Edison's Riverside Transmission Reliability Project*. Available at: http://www.cpuc.ca.gov/Environment/info/panoramaenv/RTRP/index.html; accessed March 2017.

City of Corona. 2016a. Cumulative Project List. January 2016.

_____. 2016b. Corona Capital Improvement Projects for the Southern California Edison Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project. June 2016.

SECTION 4
Mitigation Monitoring Reporting Program

4.1 CEQA Requirements

The following is a Mitigation Monitoring and Reporting Program (MMRP) for the City of Corona Department of Water and Power (City) Keith 1220-Zone Potable Water Tank Project, which has been prepared pursuant to Section 15097 of the CEQA Guidelines and Section 21081.6 of the Public Resources Code. This MMRP lists all applicable mitigation measures from the Initial Study and Mitigated Negative Declaration (IS/MND). The appropriate timing of implementation and responsible party are identified to ensure proper enforcement of the mitigation measures from the IS/MND to reduce project impacts to less than significant levels. Mitigation measures are presented in the same order as they occur in the Initial Study/Mitigated Negative Declaration (IS/MND).

The columns in the MMRP table provide the following information:

- **Mitigation Measure(s):** The action(s) that will be taken to reduce the impact to less than significant.
- **Implementation Action:** The action(s) listed out, according to the identified mitigation measure that would be implemented by the responsible agency.
- **Responsible Implementation Agency:** The agency or private entity responsible for ensuring implementation of the mitigation measure. For the proposed Project, the City of Corona, as the CEQA Lead Agency, remains responsible for ensuring that implementation of the mitigation measures occur in accordance with the MMRP (CEQA Guidelines, Section 15097(a)).
- **Timing of Verification:** The general timing for implementing each mitigation measure.
- **Verification Date:** The date in which the mitigation measure has been completed.

The Mitigation Monitoring and Reporting Program will be kept on file at the following address:
City of Corona Planning Division, Community Development
400 S. Vicentia Ave.
Corona, CA 92882

TABLE 1
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE KEITH 1220-ZONE POTABLE WATER TANK

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
Biological Resources				
BIO-1: No burrowing owls were observed on the project site during the focused burrowing owl surveys conducted in 2016. However, due to suitable habitat on the project site and current lack of development on the site, there is a potential for burrowing owls to move onto the site prior to the start of construction. Therefore, in accordance with the MSHCP survey protocol, a pre-construction clearance survey is required to be conducted to determine the presence or absence of burrowing owls within 30 days prior to the start of construction. The results of the pre-construction survey will be included in a MSHCP 30-Day Burrowing Owl Survey Report to be prepared and submitted to the City prior to the start of construction.	• Biologist to conduct a pre-construction clearance survey prior to construction. • Prepare a MSHCP 30-Day Burrowing Owl Survey Report prior to construction activities. • Retain surveys and reports in the project file.	City of Corona; City Construction Contractor; Qualified Biologist	30 days Prior to Construction	
BIO-2: If burrowing owls are determined to be present during the 30-day pre-construction survey, occupied burrows shall be avoided to the greatest extent feasible, following the guidelines in the Staff Report on Burrowing Owl Mitigation published by Department of Fish and Wildlife (March 7, 2012) including, but not limited to, conducting pre-construction surveys, avoiding occupied burrows during the nesting and non-breeding seasons, implementing a worker awareness program, biological monitoring, establishing avoidance buffers, and flagging burrows for avoidance with visible markers. If occupied burrows cannot be avoided, acceptable methods may be used to exclude burrowing owl either temporarily or permanently, pursuant to a Burrowing Owl Exclusion Plan that shall be prepared and approved by the County of Riverside Environmental Programs Department (EPD), in coordination with the CDFW. The Burrowing Owl Exclusion Plan shall be prepared in accordance with the guidelines in the Staff Report on Burrowing Owl Mitigation and the MSHCP. In accordance with the MSHCP, take of active nests will be avoided. Passive relocation (i.e., the scoping of the burrows by a burrowing owl biologist and collapsing burrows free of young) will occur when owls are present outside the nesting season. The EPD may require translocation sites for the burrowing owl to be created in the MSHCP reserve for the establishment of new colonies pursuant to MSHCP objectives for the species. Translocation sites, if required, will be identified in consultation with EPD and/or CDFW taking into consideration unoccupied habitat areas, presence of burrowing mammals, existing colonies, and effects to other MSHCP Covered Species.	• If burrowing owls present during survey, City Construction Contractor/qualified Biologist to follow the guidelines of CDFW, EPD, and MSHCP.	City of Corona; City Construction Contractor; Qualified Biologist	Prior to and During Grading and/or Construction	

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
BIO-3: Project-related construction activities shall be conducted outside the general avian nesting season of February through August to reduce any potential impact to common and special-status avian species that may be nesting in close proximity to the project boundary. If avoiding the avian nesting season is not feasible, then Mitigation Measure MM BIO-4 will be required to determine if avian species protected by the MBTA and CFG Code currently are nesting on the project site.	• City Construction Contractor to avoid construction activities during avian nesting season if there are active nests.	City of Corona; City Construction Contractor	February through August	
BIO-4: Prior to the issuance of a grading permit and start of construction within the general avian nesting season, a pre-construction nesting bird survey shall be conducted within 30-days prior to construction to determine the presence/absence of nesting birds within 500 feet of the project boundary. The nesting bird survey shall be conducted by a knowledgeable biologist within all suitable nesting habitat within 500 feet of the project boundary. If an active nest is observed, an appropriate buffer shall be established by the biologist around the nest based on sensitivity of the species and proximity to construction impact areas. The buffer shall be in place for the duration of the project or until the nest is no longer active. Monitoring during construction shall also be determined by the biologist and may be required to ensure nest failure does not occur. No project activities shall encroach into the buffer without the consent of the monitoring biologist when the nest is no longer active or if the proposed activities will not result in nest failure.	• City qualified Biologist to prepare a pre-construction 30-Day Nesting Bird Survey Report prior to construction activities.	City of Corona; City Construction Contractor; Qualified Biologist	30-days Prior to Construction	
Cultural Resources				
CUL-1: Prior to the issuance of a grading permit, the City of Corona Department of Water and Power (City) shall contact the consulting Native American Tribe(s) that have requested monitoring through consultation with the City during the AB 52 and/or the SB 18 process ("Monitoring Tribes"). The City shall coordinate with the Tribe(s) to develop individual Tribal Monitoring Agreement(s). A copy of the signed agreement(s) shall be filed at the City prior to the issuance of a grading permit. The Agreement shall address the treatment of any known tribal cultural resources (TCRs) including the project's approved mitigation measures and conditions of approval; the designation, responsibilities, and participation of professional Tribal Monitors during grading, excavation and ground disturbing activities; project grading and development scheduling; terms of compensation for the monitors; and treatment and final disposition of any cultural resources, sacred sites, and human remains/burial goods discovered on the site per the Tribe(s) customs and traditions and the City's mitigation measures/conditions of approval. The Tribal Monitor will have the authority to stop and redirect grading in the immediate area of a find in order to evaluate the find and determine the	• City/City Construction Contractor to contact Native American Tribe(s) and/or coordinate to develop Tribal Monitoring Agreement(s). • City/City Construction Contractor to retain qualified tribal monitor. • City/City Construction Contractor retain Secretary of Interior Standards qualified and RPA-certified archaeologist	City of Corona; City Construction Contractor	Prior to issuance of grading permits	

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
appropriate next steps, in consultation with the Project Archaeologist.				
CUL-2: Archaeological Monitoring: At least 30-days prior to application for a grading permit and before any grading, excavation and/or ground disturbing activities on the site take place, the City shall retain a Secretary of Interior Standards qualified and RPA-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown archaeological resources/TCRs and assist with avoidance, preservation and/or mitigation per the City's Mitigation Measures on known resources. 1. The Project Archaeologist, in consultation with the Monitoring Tribe(s) and the City, shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the Plan shall include: a. Project grading and development scheduling; b. The Project Archeologist and the Monitoring Tribe(s) shall attend the pre-grading meeting with the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training will include a brief review of the cultural sensitivity of the project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that begin work on the project following the initial training must take the Cultural Sensitivity Training prior to beginning work and the Project Archaeologist and Monitoring Tribe(s) shall make themselves available to provide the training on an as-needed basis. c. The coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project Archaeologist, and the City; d. The protocols and stipulations that the City, Monitoring Tribe(s), and Project Archaeologist will follow in the event of inadvertent cultural resources discoveries,	• City/City Construction Contractor to retain qualified personnel to monitor grading; qualified construction archaeological monitor to submit final monitoring report to City. • Perform site inspections to ensure compliance with cultural sensitivity requirements. • Project Archaeologist to develop a Cultural Resources Monitoring Plan. • Retain all archeological and tribal inspection forms in the project file. • Retain copy of final archaeological report in the project file.	City of Corona; City Construction Contractor; RPA-certified Archaeological Monitor	30 days prior to grading permit application	

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.				
CUL-3: Treatment and Disposition of Tribal Cultural Resources. In the event that TCRs are inadvertently discovered during the course of grading for this project, and avoidance of the TCRs is not feasible, the following procedures will be carried out for treatment and disposition of the discoveries: **1. Temporary Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location onsite or at the offices of the Project Archaeologist. The removal of any artifacts from the project site will need to be thoroughly inventoried with tribal monitor oversite of the process; and **2. Treatment and Final Disposition*:*** The landowner(s) shall relinquish ownership of all cultural resources, including all archaeological artifacts and non-human remains as part of the required mitigation for impacts to Tribal Cultural Resources. Human remains, sacred/ceremonial items and burial goods will be addressed per State law, per the requirements under Mitigation Measure CUL-8 (Discovery of Human Remains), and if applicable, per the tribal monitoring agreement entered between the City and Tribe(s). The City shall relinquish the artifacts through one or more of the following methods through consultation with the Monitoring Tribe(s) and the City shall retain evidence of same: a. Professional curation, including a curation agreement with a qualified repository in Riverside County that meets federal standards per 36 CFR Part 79, and which shall be made available to all qualified researchers upon application. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation: b. Accommodate the process for onsite reburial of the discovered items with the Monitoring Tribe(s). This shall include measures and provisions to protect, in perpetuity, the reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed; and c. At the completion of grading, excavation and ground disturbing activities on the site, a Phase IV Monitoring	• City/City Construction Contractor/ RPA-certified Archaeological Monitor to ensure proper treatment and disposition of Tribal Cultural Resources.	City of Corona; City Construction Contractor; RPA-certified Archaeological Monitor	Prior to and during Construction and grading	

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
Report shall be submitted to the City documenting monitoring activities conducted by the Project Archaeologist and Native Tribal Monitors within 60 days of completion of grading. This report shall document the impacts to the known resources on the property; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pregrade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced will be submitted to the City, Eastern Information Center, and Monitoring Tribe(s).				
CUL-4: Sacred Sites. All sacred sites, should they be encountered within the project area, shall be avoided and preserved as the preferred mitigation, if feasible.	• City Construction Contractor will avoid and preserve sacred sites encountered	City of Corona; Construction Contractor	Prior to and during Construction	
CUL-5: A qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010) shall be retained. The qualified paleontologist shall attend the pre-grading meeting with the construction manager and any contractors and will conduct a mandatory Paleontological Resources Worker Sensitivity Training to those in attendance. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project site and the procedures to be followed if they are found. All new construction personnel that begin work on the project following the initial Training must take the Paleontological Sensitivity Training prior to beginning work and the qualified paleontologist shall make themselves available to provide the training on an as-needed basis. The City of Corona Department of Water and Power shall retain documentation demonstrating that construction personnel attended the training.	• City/City Construction Contractor to retain qualified personnel to monitor grading; monitor to submit final monitoring • Retain documentation demonstrating attendance of construction personnel to fossil discovery training.	City of Corona; City Construction Contractor; Qualified Paleontologist	Prior to and during Construction	

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
CUL-6: Full-time paleontological resources monitoring shall be conducted for all ground disturbance (i.e., vegetation/pavement removal, grubbing, grading, excavation, trenching, etc.). The qualified paleontologist, based on observations of subsurface soil stratigraphy or other factors, may reduce or discontinue monitoring, as warranted, if the qualified paleontologist determines that the possibility of encountering fossiliferous deposits is low. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (or cross-trained archaeological/paleontological monitor) under the direction of the qualified paleontologist. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The qualified paleontologist shall prepare a final monitoring and mitigation report to be submitted to City of Corona Department of Water and Power and filed with the local repository.	• City/City Construction Contractor/qualified Paleontologist shall monitor during all ground disturbance for paleontological resources. • Retain copies of all paleontological research and survey in the project file. • Paleontological monitoring shall cease only under the direction of the qualified paleontological monitor. • Qualified paleontological monitor shall have the authority to divert or halt work away from fossils. • Daily logs shall be prepared. • Final mitigation report shall be prepared and submitted to the City.	City of Corona; City Construction Contractor; Qualified Paleontologist	Prior to and during Construction	
CUL-7: If construction or other project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease until the qualified paleontologist has assessed the discovery and made recommendations as to the appropriate treatment.	• The City's Construction Contractor shall cease all work if a resource is found until the qualified Paleontologist has assessed discovery and determined the appropriate treatment.	City of Corona; City Construction Contractor; Qualified Paleontologist	Prior to and during Construction	
CUL-8: Discovery of Human Remains. In the event that human remains (or remains that may be human) are discovered at the project site during grading or earthmoving, the construction contractors, Project Archaeologist, and/or designated Native American Monitor shall immediately stop all activities within 100 feet of the find. The City shall then inform the Riverside County Coroner immediately, and the coroner shall be permitted to examine the remains as required by California Health and Safety Code Section 7050.5(b). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner has made the necessary findings as to origin. If human remains are determined to be Native American, the City shall comply with the State law relating to the disposition of Native American burials that fall within the jurisdiction of the Native American Heritage Commission (NAHC) (PRC Section 5097). The coroner shall contact the NAHC within 24 hours and the NAHC will make the determination of most likely descendant(s). The MLD shall complete his or her inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. Treatment and disposition of the remains shall be determined in consultation with the most likely descendant(s) to determine the most appropriate disposition of human remains and	• City Construction Contractor and qualified Archaeologist and/or designated Native American monitor shall halt all activities within 100 feet of human remains. • City shall inform the Riverside County Coroner • Retain NAHC correspondence in project files, if necessary. • Adhere to all pertinent regulations related to the treatment of human remains in consultation with the MLD. • Qualified Archaeologist would file a report of findings to the Eastern Information Center.	City of Corona; City Construction Contractor; RPA-certified Qualified Archaeologist and/or Tribal Monitor	Prior to and during Construction	

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
any associated grave artifacts. In the event that the applicant and the MLD are in disagreement regarding the disposition of the remains, State law will apply and the mediation process will occur with the NAHC, if requested (see PRC Section 5097.98(e) and 5097.94(k)). The specific locations of Native American burials and reburials are confidential and may not be disclosed to the general public. The locations will be documented by the Project Archaeologist in conjunction with the various stakeholders and a report of findings will be filed with the Eastern Information Center (EIC). A Sacred Lands File form will be submitted to the NAHC by the Project Archaeologist and the Monitoring Tribe(s). According to the California Health and Safety Code, six or more human burials at one location constitutes a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052).				
Hazards and Hazardous Materials/ Transportation and Traffic				
TRA-1: The City's construction contractor shall prepare and implement a Traffic Control Plan subject to approval by the City prior to construction. The plan shall: • Identify hours of construction and hours for deliveries; • Include a discussion of haul routes, limits on the length of open trench, work area delineation, traffic control and flagging; • Identify all access and parking restrictions, pavement markings and signage requirements (e.g., speed limit, temporary loading zones); • Maintain access to residence and business driveways, public facilities, and recreational resources at all times to the extent feasible; Minimize access disruptions to businesses and residences; • Layout a plan for notifications and a process for communication with affected residents and businesses prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints;	• City Construction Contractor to prepare a Traffic Control Plan	City of Corona; City Construction Contractor	Prior to Construction	

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
• Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times; • Include a plan to coordinate all construction activities with the Corona-Norco Unified School District at least two months in advance. The Corona-Norco Unified School District shall be notified of the timing, location, and duration of construction activities. The City shall require its contractor to maintain vehicle, pedestrian, and school bus service during construction through inclusion of such provisions in the construction contract. The assignment of temporary crossing guards at designated intersections may be needed to enhance pedestrian safety during project construction. Also the following provisions shall be met: • Pipeline construction near schools shall occur when school is not in session (i.e., summer or holiday breaks). If this is not feasible, a minimum of two months prior to project construction, the implementing agencies shall coordinate with the Corona-Norco Unified School District to identify peak circulation periods at schools along the alignment(s) (i.e., the arrival and departure of students), and require their contractor to avoid construction and lane closures during those periods; • A minimum of two months prior to project construction, the implementing agencies shall coordinate with the Corona-Norco Unified School District to identify alternatives for the school busing routes and stop locations, and other circulation provisions, as part of the Traffic Control/Traffic Management Plan; • Include the requirement that all open trenches be covered with metal plates at the end of each workday to accommodate traffic and access; and • Specify the street restoration requirements pursuant to agreements with the local jurisdictions.				

Mitigation Measure	Implementation Action	Responsible Implementation Agency/Party	Timing of Verification	Verification Date
TRA-2: The City shall identify all roadway locations where special construction techniques (e.g., horizontal boring, directional drilling or night construction) will be used to minimize impacts to traffic flow.	• City Construction Contractor to identify roadway locations where special construction techniques would take place and implement the plan during construction activities.	City of Corona; City Construction Contractor	Prior to Construction	
TRA-3: The City shall develop circulation and detour plans to minimize impact to local street circulation, including bikeways. This may include the use of signing and flagging to guide vehicles and cyclists through and/or around the construction zone.	• City Construction Contractor to develop circulation and detour plans.	City of Corona; City Construction Contractor	Prior to Construction	
TRA-4: The City shall encourage construction crews to park at staging areas to limit lane closures in the public right-of-way.	• City Construction Contractor to provide staging areas for construction crew parking.	City of Corona; City Construction Contractor	Prior to and during Construction	
TRA-5: Peak travel periods shall be avoided when considering partial road closures.	• City Construction Contractor shall avoid partial road closures during peak travel periods.	City of Corona; City Construction Contractor	During Construction	

Appendix A

Air Quality and Greenhouse Gas Emissions Data

ESA

Keith 1220-Zone Potable Water Tank Project
Initial Study / Mitigated Negative Declaration
Appendix, Air Quality Worksheets

.1 Construction Emissions

- Construction: CalEEMod Output (Summer)
- Construction: CalEEMod Output (Winter)

.2 South Coast Air Quality Management District Rule 403

Appendix .1
Construction Emissions

- Construction: CalEEMod Output (Summer)
- Construction: CalEEMod Output (Winter)

Corona Keith

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	13.00	1000sqft	0.30	13,000.00	0
Other Asphalt Surfaces	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Work days are correct

Off-road Equipment -

Off-road Equipment - Construction Data Needs document

Off-road Equipment - Consturction Data needs document

Off-road Equipment - construction data doc

Off-road Equipment - construction data document

Off-road Equipment - construction doc

Off-road Equipment - construction data

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Grading - Construction Data needs

Off-road Equipment - Construction Data needs

Trips and VMT - Drainange/Utils aka Underground Piping and Structures (below ground)

Architectural Coating - Construction Data needs-21587 sq ft, rounded up to 22,000 to be conservative

Water And Wastewater - Construction Data needs

Solid Waste -

Operational Off-Road Equipment - Construction Data needs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	6,500.00	22,000.00
tblArchitecturalCoating	ConstArea_Parking	6,000.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	220.00	15.00

tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	220.00	20.00
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tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	220.00	35.00
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tblConstructionPhase	NumDays	10.00	20.00
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tblGrading	AcresOfGrading	5.00	15.00
tblGrading	MaterialExported	0.00	9,900.00
tblGrading	MaterialExported	0.00	210.00
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tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	158.00	157.00

tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
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tblOffRoadEquipment	LoadFactor	0.38	0.57

tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
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tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
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tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Rough Terrain Forklifts

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2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2017	7.1170	91.5338	41.4058	0.1399	1.8472	3.5213	5.3685	0.4610	3.2691	3.7300	0.0000	14,612.1177	14,612.1177	2.6092	0.0000	14,677.3483
2018	39.3305	48.1037	32.8127	0.0739	0.5687	2.2700	2.8387	0.1536	2.0891	2.2426	0.0000	7,459.8662	7,459.8662	2.0584	0.0000	7,511.3252
Maximum	**39.3305**	**91.5338**	**41.4058**	**0.1399**	**1.8472**	**3.5213**	**5.3685**	**0.4610**	**3.2691**	**3.7300**	**0.0000**	**14,612.1177**	**14,612.1177**	**2.6092**	**0.0000**	**14,677.3483**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1170	91.5338	41.4058	0.1399	1.6723	3.5213	5.1936	0.4401	3.2691	3.7092	0.0000	14,612.1177	14,612.1177	2.6092	0.0000	14,677.3483
2018	39.3305	48.1037	32.8127	0.0739	0.5687	2.2700	2.8387	0.1536	2.0891	2.2426	0.0000	7,459.8662	7,459.8662	2.0584	0.0000	7,511.3252
Maximum	**39.3305**	**91.5338**	**41.4058**	**0.1399**	**1.6723**	**3.5213**	**5.1936**	**0.4401**	**3.2691**	**3.7092**	**0.0000**	**14,612.1177**	**14,612.1177**	**2.6092**	**0.0000**	**14,677.3483**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.24**	**0.00**	**2.13**	**3.39**	**0.00**	**0.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/18/2017	10/31/2017	5	10	
2	Grading	Grading	11/1/2017	11/21/2017	5	15	
3	Drainage/Utils	Building Construction	11/22/2017	12/12/2017	5	15	
4	Reservoir Floor and Wall Footings	Building Construction	12/13/2017	1/9/2018	5	20	
5	Assemble Column & Wall forms, Pour Corewalls and Columns	Building Construction	1/10/2018	1/30/2018	5	15	
6	Construction Roof Shoring	Building Construction	1/31/2018	2/13/2018	5	10	
7	Vertical Wall Prestressing	Building Construction	2/14/2018	2/20/2018	5	5	
8	Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Building Construction	2/21/2018	4/17/2018	5	40	
9	Prestressing Mobilization	Building Construction	4/18/2018	5/15/2018	5	20	
10	Backfill Reservoir and Site	Building Construction	5/23/2018	6/5/2018	5	10	
11	Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Building Construction	6/6/2018	7/24/2018	5	35	
12	Paving and Restoration	Paving	7/25/2018	8/14/2018	5	15	
13	Offsite Water, Reclaimed Water and Storm Drain Piping	Building Construction	7/25/2018	9/4/2018	5	30	
14	Street Improvements	Paving	8/15/2018	9/11/2018	5	20	
15	Architectual Coating	Architectural Coating	9/12/2018	9/18/2018	5	5	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 22,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Welders	0	8.00	46	0.45
Reservoir Floor and Wall Footings	Welders	0	8.00	46	0.45
Assemble Column & Wall forms, Pour Corewalls and Columns	Welders	0	8.00	46	0.45
Prestressing Mobilization	Welders	0	8.00	46	0.45
Backfill Reservoir and Site	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Loaders	1	8.00	87	0.54
Drainage/Utils	Cranes	0	8.00	231	0.29
Drainage/Utils	Forklifts	0	7.00	89	0.20
Drainage/Utils	Generator Sets	0	8.00	84	0.74
Drainage/Utils	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Drainage/Utils	Welders	0	8.00	46	0.45
Drainage/Utils	Excavators	1	8.00	157	0.57
Drainage/Utils	Off-Highway Trucks	2	8.00	381	0.57
Drainage/Utils	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Rough Terrain Forklifts	1	4.00	84	0.74
Assemble Column & Wall forms, Pour Corewalls and Columns	Off-Highway Trucks	1	8.00	381	0.57
Prestressing Mobilization	Air Compressors	2	4.00	78	0.48
Backfill Reservoir and Site	Excavators	1	8.00	157	0.57

Site Preparation	Dumpers/Tenders	1	8.00	187	0.41
Paving and Restoration	Pavers	1	8.00	130	0.42
Street Improvements	Pavers	1	8.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Street Improvements	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Street Improvements	Rollers	1	8.00	80	0.38
Backfill Reservoir and Site	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	367	0.48
Backfill Reservoir and Site	Rubber Tired Loaders	1	8.00	87	0.54
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Excavators	1	8.00	157	0.57
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Off-Highway Trucks	2	8.00	381	0.57
Grading	Off-Highway Trucks	2	8.00	381	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Rubber Tired Loaders	1	8.00	87	0.54
Grading	Excavators	1	8.00	157	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Tractors	1	8.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Welders	1	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Off-Highway Trucks	2	8.00	381	0.57
Backfill Reservoir and Site	Cement and Mortar Mixers	1	4.00	9	0.56
Offsite Water, Reclaimed Water and Storm Drain Piping	Rubber Tired Loaders	1	8.00	87	0.54

Offsite Water, Reclaimed Water and Storm Drain Piping	Welders	0	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Trenchers	1	8.00	78	0.50
Architectual Coating	Forklifts	2	8.00	89	0.20
Construction Roof Shoring	Welders	1	8.00	46	0.45
Vertical Wall Prestressing	Welders	1	8.00	46	0.45
Site Preparation	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Trucks	1	8.00	381	0.57
Grading	Generator Sets	1	8.00	84	0.74
Architectual Coating	Aerial Lifts	2	8.00	63	0.31
Paving and Restoration	Cement and Mortar Mixers	0	8.00	9	0.56
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Street Improvements	Cement and Mortar Mixers	0	8.00	9	0.56
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cranes	0	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cranes	0	8.00	231	0.29
Construction Roof Shoring	Cranes	0	8.00	231	0.29
Vertical Wall Prestressing	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Bore/Drill Rigs	1	4.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Cranes	0	8.00	231	0.29
Prestressing Mobilization	Cranes	0	8.00	231	0.29
Backfill Reservoir and Site	Cranes	0	8.00	231	0.29
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Forklifts	0	8.00	89	0.20

Assemble Column & Wall forms, Pour Corewalls and Columns	Forklifts	0	7.00	89	0.20
Construction Roof Shoring	Forklifts	0	7.00	89	0.20
Vertical Wall Prestressing	Forklifts	0	7.00	89	0.20
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Forklifts	0	7.00	89	0.20
Grading	Rubber Tired Loaders	2	8.00	87	0.54
Prestressing Mobilization	Forklifts	0	7.00	89	0.20
Backfill Reservoir and Site	Forklifts	0	7.00	89	0.20
Grading	Scrapers	1	8.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Assemble Column & Wall forms, Pour Corewalls and Columns	Generator Sets	0	8.00	84	0.74
Construction Roof Shoring	Generator Sets	0	8.00	84	0.74
Vertical Wall Prestressing	Generator Sets	0	8.00	84	0.74
Architectual Coating	Air Compressors	1	8.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Generator Sets	0	8.00	84	0.74
Prestressing Mobilization	Generator Sets	0	8.00	84	0.74
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Scrapers	0	8.00	367	0.48
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Reservoir Floor and Wall Footings	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Assemble Column & Wall forms, Pour Corewalls and Columns	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Offsite Water, Reclaimed Water and	Cranes	0	8.00	231	0.29

Storm Drain Piping					
Reservoir Floor and Wall Footings	Cement and Mortar Mixers	1	8.00	9	0.56
Assemble Column & Wall forms, Pour Corewalls and Columns	Cement and Mortar Mixers	1	8.00	9	0.56
Construction Roof Shoring	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Vertical Wall Prestressing	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Prestressing Mobilization	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Backfill Reservoir and Site	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Plate Compactors	1	4.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Concrete/Industrial Saws	1	8.00	81	0.73
Paving and Restoration	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Street Improvements	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Reservoir Floor and Wall Footings	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving and Restoration	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Street Improvements	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	10.00	1.00	1,238.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utils	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Floor and Wall Footings	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Architectual Coating	5	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Roof Reinforcing, Bearing Pad	1	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Prestressing Mobilization	2	40.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Backfill Reservoir and Site	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Underground Piping and Structures (above	4	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Offsite Water, Reclaimed Water and	5	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Assemble Column & Wall forms, Pour	3	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction Roof Shoring	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Vertical Wall Prestressing	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	6.00	0.00	26.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5931	0.0000	1.5931	0.1721	0.0000	0.1721			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923		4,981.3898	4,981.3898	1.5263		5,019.5470

Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**1.5931**	**1.9482**	**3.5413**	**0.1721**	**1.7923**	**1.9645**		**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0259	0.8657	0.1591	2.0900e-003	0.0454	4.6700e-003	0.0501	0.0125	4.4700e-003	0.0169		224.5467	224.5467	0.0157		224.9379
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0363	0.0266	0.3420	7.6000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		75.2611	75.2611	2.8400e-003		75.3320
Total	**0.0622**	**0.8923**	**0.5011**	**2.8500e-003**	**0.1125**	**5.2200e-003**	**0.1177**	**0.0302**	**4.9800e-003**	**0.0352**		**299.8077**	**299.8077**	**0.0185**		**300.2699**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6213	0.0000	0.6213	0.0671	0.0000	0.0671			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923	0.0000	4,981.3898	4,981.3898	1.5263		5,019.5470
Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**0.6213**	**1.9482**	**2.5695**	**0.0671**	**1.7923**	**1.8595**	**0.0000**	**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0259	0.8657	0.1591	2.0900e-003	0.0454	4.6700e-003	0.0501	0.0125	4.4700e-003	0.0169		224.5467	224.5467	0.0157		224.9379
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0363	0.0266	0.3420	7.6000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		75.2611	75.2611	2.8400e-003		75.3320
Total	**0.0622**	**0.8923**	**0.5011**	**2.8500e-003**	**0.1125**	**5.2200e-003**	**0.1177**	**0.0302**	**4.9800e-003**	**0.0352**		**299.8077**	**299.8077**	**0.0185**		**300.2699**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2867	0.0000	0.2867	0.0342	0.0000	0.0342			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253		7,330.8210	7,330.8210	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.2867**	**3.3710**	**3.6577**	**0.0342**	**3.1253**	**3.1595**		**7,330.8210**	**7,330.8210**	**2.1057**		**7,383.4630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8222	27.4803	5.0506	0.0662	1.4423	0.1482	1.5905	0.3953	0.1418	0.5371		7,127.9170	7,127.9170	0.4968		7,140.3374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.8876**	**27.6537**	**5.6541**	**0.0677**	**1.5605**	**0.1503**	**1.7108**	**0.4268**	**0.1438**	**0.5705**		**7,281.2967**	**7,281.2967**	**0.5035**		**7,293.8852**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1118	0.0000	0.1118	0.0133	0.0000	0.0133			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253	0.0000	7,330.8209	7,330.8209	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.1118**	**3.3710**	**3.4828**	**0.0133**	**3.1253**	**3.1387**	**0.0000**	**7,330.8209**	**7,330.8209**	**2.1057**		**7,383.4630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8222	27.4803	5.0506	0.0662	1.4423	0.1482	1.5905	0.3953	0.1418	0.5371		7,127.9170	7,127.9170	0.4968		7,140.3374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.8876**	**27.6537**	**5.6541**	**0.0677**	**1.5605**	**0.1503**	**1.7108**	**0.4268**	**0.1438**	**0.5705**		**7,281.2967**	**7,281.2967**	**0.5035**		**7,293.8852**

3.4 Drainage/Utils - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277		5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**		**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0920	2.4524	0.6375	4.9900e-003	0.1216	0.0212	0.1428	0.0350	0.0203	0.0553		530.9472	530.9472	0.0380		531.8980
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.1525**	**2.4968**	**1.2075**	**6.2500e-003**	**0.2334**	**0.0221**	**0.2555**	**0.0647**	**0.0211**	**0.0858**		**656.3823**	**656.3823**	**0.0428**		**657.4513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277	0.0000	5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**	**0.0000**	**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0920	2.4524	0.6375	4.9900e-003	0.1216	0.0212	0.1428	0.0350	0.0203	0.0553		530.9472	530.9472	0.0380		531.8980
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.1525**	**2.4968**	**1.2075**	**6.2500e-003**	**0.2334**	**0.0221**	**0.2555**	**0.0647**	**0.0211**	**0.0858**		**656.3823**	**656.3823**	**0.0428**		**657.4513**

3.5 Reservoir Floor and Wall Footings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704		484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**		**484.3751**	**484.3751**	**0.1382**		**487.8295**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0605**	**0.0443**	**0.5699**	**1.2600e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**125.4351**	**125.4351**	**4.7300e-003**		**125.5533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704	0.0000	484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**	**0.0000**	**484.3751**	**484.3751**	**0.1382**		**487.8295**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0605**	**0.0443**	**0.5699**	**1.2600e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**125.4351**	**125.4351**	**4.7300e-003**		**125.5533**

3.5 Reservoir Floor and Wall Footings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391		478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**		**478.1477**	**478.1477**	**0.1384**		**481.6070**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0539**	**0.0386**	**0.5018**	**1.2300e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**121.9352**	**121.9352**	**4.1600e-003**		**122.0391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391	0.0000	478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**	**0.0000**	**478.1477**	**478.1477**	**0.1384**		**481.6070**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0539**	**0.0386**	**0.5018**	**1.2300e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**121.9352**	**121.9352**	**4.1600e-003**		**122.0391**

3.6 Assemble Column & Wall forms, Pour Corewalls and Columns - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789		2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**		**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789	0.0000	2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**	**0.0000**	**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.7 Construction Roof Shoring - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

3.8 Vertical Wall Prestressing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

3.9 Roof Reinforcing, Bearing Pad Installationm and Roof Pour - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.10 Prestressing Mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007		375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**		**375.2647**	**375.2647**	**0.0357**		**376.1562**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.2155	0.1545	2.0070	4.9000e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		487.7407	487.7407	0.0166		488.1564
Total	**0.2964**	**2.4570**	**2.5804**	**9.8700e-003**	**0.5687**	**0.0204**	**0.5891**	**0.1536**	**0.0194**	**0.1730**		**1,017.1909**	**1,017.1909**	**0.0527**		**1,018.5076**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007	0.0000	375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**	**0.0000**	**375.2647**	**375.2647**	**0.0357**		**376.1562**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.2155	0.1545	2.0070	4.9000e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		487.7407	487.7407	0.0166		488.1564
Total	**0.2964**	**2.4570**	**2.5804**	**9.8700e-003**	**0.5687**	**0.0204**	**0.5891**	**0.1536**	**0.0194**	**0.1730**		**1,017.1909**	**1,017.1909**	**0.0527**		**1,018.5076**

3.11 Backfill Reservoir and Site - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195		1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**		**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195	0.0000	1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**	**0.0000**	**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

3.12 Underground Piping and Structures (above reservoir floor) and Aboveground Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451		4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**		**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451	0.0000	4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**	**0.0000**	**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.13 Paving and Restoration - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

3.14 Offsite Water, Reclaimed Water and Storm Drain Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299		5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**		**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299	0.0000	5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**	**0.0000**	**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.15 Street Improvements - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

3.16 Architectual Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681		1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**		**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0216	0.0155	0.2007	4.9000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		48.7741	48.7741	1.6600e-003		48.8156
Total	**0.0216**	**0.0155**	**0.2007**	**4.9000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**48.7741**	**48.7741**	**1.6600e-003**		**48.8156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681	0.0000	1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**	**0.0000**	**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0216	0.0155	0.2007	4.9000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		48.7741	48.7741	1.6600e-003		48.8156
Total	**0.0216**	**0.0155**	**0.2007**	**4.9000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**48.7741**	**48.7741**	**1.6600e-003**		**48.8156**

Corona Keith

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	13.00	1000sqft	0.30	13,000.00	0
Other Asphalt Surfaces	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Work days are correct

Off-road Equipment -

Off-road Equipment - Construction Data Needs document

Off-road Equipment - Consturction Data needs document

Off-road Equipment - construction data doc

Off-road Equipment - construction data document

Off-road Equipment - construction doc

Off-road Equipment - construction data

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Grading - Construction Data needs

Off-road Equipment - Construction Data needs

Trips and VMT - Drainange/Utils aka Underground Piping and Structures (below ground)

Architectural Coating - Construction Data needs-21587 sq ft, rounded up to 22,000 to be conservative

Water And Wastewater - Construction Data needs

Solid Waste -

Operational Off-Road Equipment - Construction Data needs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	6,500.00	22,000.00
tblArchitecturalCoating	ConstArea_Parking	6,000.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	220.00	15.00

tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	NumDays	220.00	10.00
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tblGrading	AcresOfGrading	5.00	15.00
tblGrading	MaterialExported	0.00	9,900.00
tblGrading	MaterialExported	0.00	210.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	16.00	187.00
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tblOffRoadEquipment	HorsePower	187.00	367.00
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tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	158.00	157.00

tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
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tblOffRoadEquipment	LoadFactor	0.38	0.57

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tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
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tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks

tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
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tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Welders	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
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tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
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tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Rough Terrain Forklifts

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tblProjectCharacteristics	OperationalYear	2018	2019
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tblTripsAndVMT	WorkerTripNumber	47.00	40.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00

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tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
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tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	3,006,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2017	7.1452	91.9574	41.7813	0.1387	1.8472	3.5236	5.3708	0.4610	3.2713	3.7323	0.0000	14,479.4588	14,479.4588	2.6323	0.0000	14,545.2655
2018	39.3324	48.1223	32.6851	0.0734	0.5687	2.2703	2.8390	0.1536	2.0893	2.2429	0.0000	7,413.3842	7,413.3842	2.0600	0.0000	7,464.8836
Maximum	**39.3324**	**91.9574**	**41.7813**	**0.1387**	**1.8472**	**3.5236**	**5.3708**	**0.4610**	**3.2713**	**3.7323**	**0.0000**	**14,479.4588**	**14,479.4588**	**2.6323**	**0.0000**	**14,545.2655**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1452	91.9574	41.7813	0.1387	1.6723	3.5236	5.1959	0.4401	3.2713	3.7114	0.0000	14,479.4587	14,479.4587	2.6323	0.0000	14,545.2655
2018	39.3324	48.1223	32.6851	0.0734	0.5687	2.2703	2.8390	0.1536	2.0893	2.2429	0.0000	7,413.3842	7,413.3842	2.0600	0.0000	7,464.8835
Maximum	**39.3324**	**91.9574**	**41.7813**	**0.1387**	**1.6723**	**3.5236**	**5.1959**	**0.4401**	**3.2713**	**3.7114**	**0.0000**	**14,479.4587**	**14,479.4587**	**2.6323**	**0.0000**	**14,545.2655**

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

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.24**	**0.00**	**2.13**	**3.39**	**0.00**	**0.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/18/2017	10/31/2017	5	10	
2	Grading	Grading	11/1/2017	11/21/2017	5	15	
3	Drainage/Utils	Building Construction	11/22/2017	12/12/2017	5	15	
4	Reservoir Floor and Wall Footings	Building Construction	12/13/2017	1/9/2018	5	20	
5	Assemble Column & Wall forms, Pour Corewalls and Columns	Building Construction	1/10/2018	1/30/2018	5	15	
6	Construction Roof Shoring	Building Construction	1/31/2018	2/13/2018	5	10	
7	Vertical Wall Prestressing	Building Construction	2/14/2018	2/20/2018	5	5	
8	Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Building Construction	2/21/2018	4/17/2018	5	40	
9	Prestressing Mobilization	Building Construction	4/18/2018	5/15/2018	5	20	
10	Backfill Reservoir and Site	Building Construction	5/23/2018	6/5/2018	5	10	
11	Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Building Construction	6/6/2018	7/24/2018	5	35	
12	Paving and Restoration	Paving	7/25/2018	8/14/2018	5	15	
13	Offsite Water, Reclaimed Water and Storm Drain Piping	Building Construction	7/25/2018	9/4/2018	5	30	
14	Street Improvements	Paving	8/15/2018	9/11/2018	5	20	
15	Architectual Coating	Architectural Coating	9/12/2018	9/18/2018	5	5	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 22,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Welders	0	8.00	46	0.45
Reservoir Floor and Wall Footings	Welders	0	8.00	46	0.45
Assemble Column & Wall forms, Pour Corewalls and Columns	Welders	0	8.00	46	0.45
Prestressing Mobilization	Welders	0	8.00	46	0.45
Backfill Reservoir and Site	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Loaders	1	8.00	87	0.54
Drainage/Utils	Cranes	0	8.00	231	0.29
Drainage/Utils	Forklifts	0	7.00	89	0.20
Drainage/Utils	Generator Sets	0	8.00	84	0.74
Drainage/Utils	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Drainage/Utils	Welders	0	8.00	46	0.45
Drainage/Utils	Excavators	1	8.00	157	0.57
Drainage/Utils	Off-Highway Trucks	2	8.00	381	0.57
Drainage/Utils	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and	Generator Sets	0	8.00	84	0.74

Storm Drain Piping					
Reservoir Floor and Wall Footings	Rough Terrain Forklifts	1	4.00	84	0.74
Assemble Column & Wall forms, Pour Corewalls and Columns	Off-Highway Trucks	1	8.00	381	0.57
Prestressing Mobilization	Air Compressors	2	4.00	78	0.48
Backfill Reservoir and Site	Excavators	1	8.00	157	0.57
Site Preparation	Dumpers/Tenders	1	8.00	187	0.41
Paving and Restoration	Pavers	1	8.00	130	0.42
Street Improvements	Pavers	1	8.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Street Improvements	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Street Improvements	Rollers	1	8.00	80	0.38
Backfill Reservoir and Site	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	367	0.48
Backfill Reservoir and Site	Rubber Tired Loaders	1	8.00	87	0.54
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Excavators	1	8.00	157	0.57
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Off-Highway Trucks	2	8.00	381	0.57
Grading	Off-Highway Trucks	2	8.00	381	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Rubber Tired Loaders	1	8.00	87	0.54
Grading	Excavators	1	8.00	157	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Excavators	1	8.00	157	0.57

Site Preparation	Off-Highway Tractors	1	8.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Welders	1	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Off-Highway Trucks	2	8.00	381	0.57
Backfill Reservoir and Site	Cement and Mortar Mixers	1	4.00	9	0.56
Offsite Water, Reclaimed Water and Storm Drain Piping	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Welders	0	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Trenchers	1	8.00	78	0.50
Architectual Coating	Forklifts	2	8.00	89	0.20
Construction Roof Shoring	Welders	1	8.00	46	0.45
Vertical Wall Prestressing	Welders	1	8.00	46	0.45
Site Preparation	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Trucks	1	8.00	381	0.57
Grading	Generator Sets	1	8.00	84	0.74
Architectual Coating	Aerial Lifts	2	8.00	63	0.31
Paving and Restoration	Cement and Mortar Mixers	0	8.00	9	0.56
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Street Improvements	Cement and Mortar Mixers	0	8.00	9	0.56
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cranes	0	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cranes	0	8.00	231	0.29
Construction Roof Shoring	Cranes	0	8.00	231	0.29
Vertical Wall Prestressing	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Bore/Drill Rigs	1	4.00	78	0.48

Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Cranes	0	8.00	231	0.29
Prestressing Mobilization	Cranes	0	8.00	231	0.29
Backfill Reservoir and Site	Cranes	0	8.00	231	0.29
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Forklifts	0	8.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Forklifts	0	7.00	89	0.20
Construction Roof Shoring	Forklifts	0	7.00	89	0.20
Vertical Wall Prestressing	Forklifts	0	7.00	89	0.20
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Forklifts	0	7.00	89	0.20
Grading	Rubber Tired Loaders	2	8.00	87	0.54
Prestressing Mobilization	Forklifts	0	7.00	89	0.20
Backfill Reservoir and Site	Forklifts	0	7.00	89	0.20
Grading	Scrapers	1	8.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Assemble Column & Wall forms, Pour Corewalls and Columns	Generator Sets	0	8.00	84	0.74
Construction Roof Shoring	Generator Sets	0	8.00	84	0.74
Vertical Wall Prestressing	Generator Sets	0	8.00	84	0.74
Architectual Coating	Air Compressors	1	8.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Generator Sets	0	8.00	84	0.74
Prestressing Mobilization	Generator Sets	0	8.00	84	0.74
Grading	Rubber Tired Dozers	0	8.00	247	0.40

Site Preparation	Scrapers	0	8.00	367	0.48
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Reservoir Floor and Wall Footings	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Assemble Column & Wall forms, Pour Corewalls and Columns	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cement and Mortar Mixers	1	8.00	9	0.56
Assemble Column & Wall forms, Pour Corewalls and Columns	Cement and Mortar Mixers	1	8.00	9	0.56
Construction Roof Shoring	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Vertical Wall Prestressing	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Prestressing Mobilization	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Backfill Reservoir and Site	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Plate Compactors	1	4.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Concrete/Industrial Saws	1	8.00	81	0.73
Paving and Restoration	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Street Improvements	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Reservoir Floor and Wall Footings	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Paving and Restoration	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Street Improvements	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	10.00	1.00	1,238.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utils	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Floor and Wall Footings	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectual Coating	5	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Roof Reinforcing, Bearing Pad	1	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Prestressing Mobilization	2	40.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Backfill Reservoir and Site	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Underground Piping and Structures (above	4	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Offsite Water, Reclaimed Water and	5	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Assemble Column & Wall forms, Pour	3	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction Roof Shoring	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Vertical Wall Prestressing	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	6.00	0.00	26.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Fugitive Dust					1.5931	0.0000	1.5931	0.1721	0.0000	0.1721			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923		4,981.3898	4,981.3898	1.5263		5,019.5470
Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**1.5931**	**1.9482**	**3.5413**	**0.1721**	**1.7923**	**1.9645**		**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0266	0.8789	0.1725	2.0500e-003	0.0454	4.7400e-003	0.0502	0.0125	4.5400e-003	0.0170		220.6461	220.6461	0.0164		221.0557
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0395	0.0292	0.3110	7.1000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		70.4189	70.4189	2.6600e-003		70.4854
Total	**0.0661**	**0.9080**	**0.4834**	**2.7600e-003**	**0.1125**	**5.2900e-003**	**0.1178**	**0.0302**	**5.0500e-003**	**0.0353**		**291.0650**	**291.0650**	**0.0190**		**291.5411**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6213	0.0000	0.6213	0.0671	0.0000	0.0671			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923	0.0000	4,981.3898	4,981.3898	1.5263		5,019.5470
Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**0.6213**	**1.9482**	**2.5695**	**0.0671**	**1.7923**	**1.8595**	**0.0000**	**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0266	0.8789	0.1725	2.0500e-003	0.0454	4.7400e-003	0.0502	0.0125	4.5400e-003	0.0170		220.6461	220.6461	0.0164		221.0557
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0395	0.0292	0.3110	7.1000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		70.4189	70.4189	2.6600e-003		70.4854
Total	**0.0661**	**0.9080**	**0.4834**	**2.7600e-003**	**0.1125**	**5.2900e-003**	**0.1178**	**0.0302**	**5.0500e-003**	**0.0353**		**291.0650**	**291.0650**	**0.0190**		**291.5411**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2867	0.0000	0.2867	0.0342	0.0000	0.0342			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253		7,330.8210	7,330.8210	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.2867**	**3.3710**	**3.6577**	**0.0342**	**3.1253**	**3.1595**		**7,330.8210**	**7,330.8210**	**2.1057**		**7,383.4630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8450	27.8992	5.4742	0.0651	1.4423	0.1506	1.5929	0.3953	0.1441	0.5394		7,004.1000	7,004.1000	0.5200		7,017.1000
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.9158**	**28.0773**	**6.0296**	**0.0665**	**1.5605**	**0.1527**	**1.7131**	**0.4268**	**0.1460**	**0.5728**		**7,148.6378**	**7,148.6378**	**0.5266**		**7,161.8025**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1118	0.0000	0.1118	0.0133	0.0000	0.0133			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253	0.0000	7,330.8209	7,330.8209	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.1118**	**3.3710**	**3.4828**	**0.0133**	**3.1253**	**3.1387**	**0.0000**	**7,330.8209**	**7,330.8209**	**2.1057**		**7,383.4630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8450	27.8992	5.4742	0.0651	1.4423	0.1506	1.5929	0.3953	0.1441	0.5394		7,004.1000	7,004.1000	0.5200		7,017.1000
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.9158**	**28.0773**	**6.0296**	**0.0665**	**1.5605**	**0.1527**	**1.7131**	**0.4268**	**0.1460**	**0.5728**		**7,148.6378**	**7,148.6378**	**0.5266**		**7,161.8025**

3.4 Drainage/Utils - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277		5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**		**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	2.4600	0.7047	4.8600e-003	0.1216	0.0215	0.1431	0.0350	0.0206	0.0556		516.2885	516.2885	0.0408		517.3088
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.1616**	**2.5086**	**1.2230**	**6.0400e-003**	**0.2334**	**0.0224**	**0.2558**	**0.0647**	**0.0214**	**0.0861**		**633.6532**	**633.6532**	**0.0453**		**634.7845**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277	0.0000	5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**	**0.0000**	**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	2.4600	0.7047	4.8600e-003	0.1216	0.0215	0.1431	0.0350	0.0206	0.0556		516.2885	516.2885	0.0408		517.3088
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.1616**	**2.5086**	**1.2230**	**6.0400e-003**	**0.2334**	**0.0224**	**0.2558**	**0.0647**	**0.0214**	**0.0861**		**633.6532**	**633.6532**	**0.0453**		**634.7845**

3.5 Reservoir Floor and Wall Footings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704		484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**		**484.3751**	**484.3751**	**0.1382**		**487.8295**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0658**	**0.0486**	**0.5183**	**1.1800e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**117.3648**	**117.3648**	**4.4400e-003**		**117.4757**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704	0.0000	484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**	**0.0000**	**484.3751**	**484.3751**	**0.1382**		**487.8295**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0658**	**0.0486**	**0.5183**	**1.1800e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**117.3648**	**117.3648**	**4.4400e-003**		**117.4757**

3.5 Reservoir Floor and Wall Footings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391		478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**		**478.1477**	**478.1477**	**0.1384**		**481.6070**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0586**	**0.0423**	**0.4541**	**1.1500e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**114.0679**	**114.0679**	**3.8900e-003**		**114.1652**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391	0.0000	478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**	**0.0000**	**478.1477**	**478.1477**	**0.1384**		**481.6070**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0586**	**0.0423**	**0.4541**	**1.1500e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**114.0679**	**114.0679**	**3.8900e-003**		**114.1652**

3.6 Assemble Column & Wall forms, Pour Corewalls and Columns - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789		2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**		**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789	0.0000	2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**	**0.0000**	**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.7 Construction Roof Shoring - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

3.8 Vertical Wall Prestressing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

3.9 Roof Reinforcing, Bearing Pad Installationm and Roof Pour - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.10 Prestressing Mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007		375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**		**375.2647**	**375.2647**	**0.0357**		**376.1562**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.2343	0.1693	1.8164	4.5800e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		456.2717	456.2717	0.0156		456.6609
Total	**0.3187**	**2.4756**	**2.4529**	**9.4100e-003**	**0.5687**	**0.0206**	**0.5894**	**0.1536**	**0.0196**	**0.1732**		**970.7089**	**970.7089**	**0.0543**		**972.0660**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007	0.0000	375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**	**0.0000**	**375.2647**	**375.2647**	**0.0357**		**376.1562**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.2343	0.1693	1.8164	4.5800e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		456.2717	456.2717	0.0156		456.6609
Total	**0.3187**	**2.4756**	**2.4529**	**9.4100e-003**	**0.5687**	**0.0206**	**0.5894**	**0.1536**	**0.0196**	**0.1732**		**970.7089**	**970.7089**	**0.0543**		**972.0660**

3.11 Backfill Reservoir and Site - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195		1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**		**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195	0.0000	1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**	**0.0000**	**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

3.12 Underground Piping and Structures (above reservoir floor) and Aboveground Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451		4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**		**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451	0.0000	4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**	**0.0000**	**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.13 Paving and Restoration - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

3.14 Offsite Water, Reclaimed Water and Storm Drain Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299		5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**		**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299	0.0000	5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**	**0.0000**	**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.15 Street Improvements - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

3.16 Architectual Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681		1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**		**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0234	0.0169	0.1816	4.6000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		45.6272	45.6272	1.5600e-003		45.6661
Total	**0.0234**	**0.0169**	**0.1816**	**4.6000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**45.6272**	**45.6272**	**1.5600e-003**		**45.6661**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681	0.0000	1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**	**0.0000**	**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0234	0.0169	0.1816	4.6000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		45.6272	45.6272	1.5600e-003		45.6661
Total	**0.0234**	**0.0169**	**0.1816**	**4.6000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**45.6272**	**45.6272**	**1.5600e-003**		**45.6661**

Appendix .6
South Coast Air Quality Management District Rule 403

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure		Guidance
Unpaved roads/parking lots	19-1	Stabilize soils to meet the applicable performance standards; and	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
	19-2	Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	
Vacant land	20-1	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

Corona Keith

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	13.00	1000sqft	0.30	13,000.00	0
Other Asphalt Surfaces	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Work days are correct

Off-road Equipment -

Off-road Equipment - Construction Data Needs document

Off-road Equipment - Consturction Data needs document

Off-road Equipment - construction data doc

Off-road Equipment - construction data document

Off-road Equipment - construction doc

Off-road Equipment - construction data

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Grading - Construction Data needs

Off-road Equipment - Construction Data needs

Trips and VMT - Drainange/Utils aka Underground Piping and Structures (below ground)

Architectural Coating - Construction Data needs-21587 sq ft, rounded up to 22,000 to be conservative

Water And Wastewater - Construction Data needs

Solid Waste -

Operational Off-Road Equipment - Construction Data needs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
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tblArchitecturalCoating	EF_Parking	100.00	0.00
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tblConstructionPhase	NumDays	220.00	15.00

tblConstructionPhase	NumDays	6.00	15.00
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tblOffRoadEquipment	HorsePower	158.00	157.00
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tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks

tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
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tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Cement and Mortar Mixers
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tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Off-Highway Trucks
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	47.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	23.00	10.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	9.00	4.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	40.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00

tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
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tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	3,006,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2017	7.1170	91.5338	41.4058	0.1399	1.8472	3.5213	5.3685	0.4610	3.2691	3.7300	0.0000	14,612.1177	14,612.1177	2.6092	0.0000	14,677.3483
2018	39.3305	48.1037	32.8127	0.0739	0.5687	2.2700	2.8387	0.1536	2.0891	2.2426	0.0000	7,459.8662	7,459.8662	2.0584	0.0000	7,511.3252
Maximum	**39.3305**	**91.5338**	**41.4058**	**0.1399**	**1.8472**	**3.5213**	**5.3685**	**0.4610**	**3.2691**	**3.7300**	**0.0000**	**14,612.1177**	**14,612.1177**	**2.6092**	**0.0000**	**14,677.3483**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1170	91.5338	41.4058	0.1399	1.6723	3.5213	5.1936	0.4401	3.2691	3.7092	0.0000	14,612.1177	14,612.1177	2.6092	0.0000	14,677.3483
2018	39.3305	48.1037	32.8127	0.0739	0.5687	2.2700	2.8387	0.1536	2.0891	2.2426	0.0000	7,459.8662	7,459.8662	2.0584	0.0000	7,511.3252
Maximum	**39.3305**	**91.5338**	**41.4058**	**0.1399**	**1.6723**	**3.5213**	**5.1936**	**0.4401**	**3.2691**	**3.7092**	**0.0000**	**14,612.1177**	**14,612.1177**	**2.6092**	**0.0000**	**14,677.3483**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.24**	**0.00**	**2.13**	**3.39**	**0.00**	**0.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/18/2017	10/31/2017	5	10	
2	Grading	Grading	11/1/2017	11/21/2017	5	15	
3	Drainage/Utils	Building Construction	11/22/2017	12/12/2017	5	15	
4	Reservoir Floor and Wall Footings	Building Construction	12/13/2017	1/9/2018	5	20	
5	Assemble Column & Wall forms, Pour Corewalls and Columns	Building Construction	1/10/2018	1/30/2018	5	15	
6	Construction Roof Shoring	Building Construction	1/31/2018	2/13/2018	5	10	
7	Vertical Wall Prestressing	Building Construction	2/14/2018	2/20/2018	5	5	
8	Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Building Construction	2/21/2018	4/17/2018	5	40	
9	Prestressing Mobilization	Building Construction	4/18/2018	5/15/2018	5	20	
10	Backfill Reservoir and Site	Building Construction	5/23/2018	6/5/2018	5	10	
11	Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Building Construction	6/6/2018	7/24/2018	5	35	
12	Paving and Restoration	Paving	7/25/2018	8/14/2018	5	15	
13	Offsite Water, Reclaimed Water and Storm Drain Piping	Building Construction	7/25/2018	9/4/2018	5	30	
14	Street Improvements	Paving	8/15/2018	9/11/2018	5	20	
15	Architectual Coating	Architectural Coating	9/12/2018	9/18/2018	5	5	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 22,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Welders	0	8.00	46	0.45
Reservoir Floor and Wall Footings	Welders	0	8.00	46	0.45
Assemble Column & Wall forms, Pour Corewalls and Columns	Welders	0	8.00	46	0.45
Prestressing Mobilization	Welders	0	8.00	46	0.45
Backfill Reservoir and Site	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Loaders	1	8.00	87	0.54
Drainage/Utils	Cranes	0	8.00	231	0.29
Drainage/Utils	Forklifts	0	7.00	89	0.20
Drainage/Utils	Generator Sets	0	8.00	84	0.74
Drainage/Utils	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Drainage/Utils	Welders	0	8.00	46	0.45
Drainage/Utils	Excavators	1	8.00	157	0.57
Drainage/Utils	Off-Highway Trucks	2	8.00	381	0.57
Drainage/Utils	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Rough Terrain Forklifts	1	4.00	84	0.74
Assemble Column & Wall forms, Pour Corewalls and Columns	Off-Highway Trucks	1	8.00	381	0.57
Prestressing Mobilization	Air Compressors	2	4.00	78	0.48
Backfill Reservoir and Site	Excavators	1	8.00	157	0.57

Site Preparation	Dumpers/Tenders	1	8.00	187	0.41
Paving and Restoration	Pavers	1	8.00	130	0.42
Street Improvements	Pavers	1	8.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Street Improvements	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Street Improvements	Rollers	1	8.00	80	0.38
Backfill Reservoir and Site	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	367	0.48
Backfill Reservoir and Site	Rubber Tired Loaders	1	8.00	87	0.54
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Excavators	1	8.00	157	0.57
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Off-Highway Trucks	2	8.00	381	0.57
Grading	Off-Highway Trucks	2	8.00	381	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Rubber Tired Loaders	1	8.00	87	0.54
Grading	Excavators	1	8.00	157	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Tractors	1	8.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Welders	1	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Off-Highway Trucks	2	8.00	381	0.57
Backfill Reservoir and Site	Cement and Mortar Mixers	1	4.00	9	0.56
Offsite Water, Reclaimed Water and Storm Drain Piping	Rubber Tired Loaders	1	8.00	87	0.54

Offsite Water, Reclaimed Water and Storm Drain Piping	Welders	0	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Trenchers	1	8.00	78	0.50
Architectual Coating	Forklifts	2	8.00	89	0.20
Construction Roof Shoring	Welders	1	8.00	46	0.45
Vertical Wall Prestressing	Welders	1	8.00	46	0.45
Site Preparation	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Trucks	1	8.00	381	0.57
Grading	Generator Sets	1	8.00	84	0.74
Architectual Coating	Aerial Lifts	2	8.00	63	0.31
Paving and Restoration	Cement and Mortar Mixers	0	8.00	9	0.56
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Street Improvements	Cement and Mortar Mixers	0	8.00	9	0.56
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cranes	0	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cranes	0	8.00	231	0.29
Construction Roof Shoring	Cranes	0	8.00	231	0.29
Vertical Wall Prestressing	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Bore/Drill Rigs	1	4.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Cranes	0	8.00	231	0.29
Prestressing Mobilization	Cranes	0	8.00	231	0.29
Backfill Reservoir and Site	Cranes	0	8.00	231	0.29
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Forklifts	0	8.00	89	0.20

Assemble Column & Wall forms, Pour Corewalls and Columns	Forklifts	0	7.00	89	0.20
Construction Roof Shoring	Forklifts	0	7.00	89	0.20
Vertical Wall Prestressing	Forklifts	0	7.00	89	0.20
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Forklifts	0	7.00	89	0.20
Grading	Rubber Tired Loaders	2	8.00	87	0.54
Prestressing Mobilization	Forklifts	0	7.00	89	0.20
Backfill Reservoir and Site	Forklifts	0	7.00	89	0.20
Grading	Scrapers	1	8.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Assemble Column & Wall forms, Pour Corewalls and Columns	Generator Sets	0	8.00	84	0.74
Construction Roof Shoring	Generator Sets	0	8.00	84	0.74
Vertical Wall Prestressing	Generator Sets	0	8.00	84	0.74
Architectual Coating	Air Compressors	1	8.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Generator Sets	0	8.00	84	0.74
Prestressing Mobilization	Generator Sets	0	8.00	84	0.74
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Scrapers	0	8.00	367	0.48
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Reservoir Floor and Wall Footings	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Assemble Column & Wall forms, Pour Corewalls and Columns	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Offsite Water, Reclaimed Water and	Cranes	0	8.00	231	0.29

Storm Drain Piping					
Reservoir Floor and Wall Footings	Cement and Mortar Mixers	1	8.00	9	0.56
Assemble Column & Wall forms, Pour Corewalls and Columns	Cement and Mortar Mixers	1	8.00	9	0.56
Construction Roof Shoring	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Vertical Wall Prestressing	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Prestressing Mobilization	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Backfill Reservoir and Site	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Plate Compactors	1	4.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Concrete/Industrial Saws	1	8.00	81	0.73
Paving and Restoration	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Street Improvements	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Reservoir Floor and Wall Footings	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving and Restoration	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Street Improvements	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	10.00	1.00	1,238.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utils	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Floor and Wall Footings	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Architectual Coating	5	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Roof Reinforcing, Bearing Pad	1	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Prestressing Mobilization	2	40.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Backfill Reservoir and Site	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Underground Piping and Structures (above	4	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Offsite Water, Reclaimed Water and	5	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Assemble Column & Wall forms, Pour	3	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction Roof Shoring	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Vertical Wall Prestressing	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	6.00	0.00	26.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5931	0.0000	1.5931	0.1721	0.0000	0.1721			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923		4,981.3898	4,981.3898	1.5263		5,019.5470

Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**1.5931**	**1.9482**	**3.5413**	**0.1721**	**1.7923**	**1.9645**		**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0259	0.8657	0.1591	2.0900e-003	0.0454	4.6700e-003	0.0501	0.0125	4.4700e-003	0.0169		224.5467	224.5467	0.0157		224.9379
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0363	0.0266	0.3420	7.6000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		75.2611	75.2611	2.8400e-003		75.3320
Total	**0.0622**	**0.8923**	**0.5011**	**2.8500e-003**	**0.1125**	**5.2200e-003**	**0.1177**	**0.0302**	**4.9800e-003**	**0.0352**		**299.8077**	**299.8077**	**0.0185**		**300.2699**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6213	0.0000	0.6213	0.0671	0.0000	0.0671			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923	0.0000	4,981.3898	4,981.3898	1.5263		5,019.5470
Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**0.6213**	**1.9482**	**2.5695**	**0.0671**	**1.7923**	**1.8595**	**0.0000**	**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0259	0.8657	0.1591	2.0900e-003	0.0454	4.6700e-003	0.0501	0.0125	4.4700e-003	0.0169		224.5467	224.5467	0.0157		224.9379
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0363	0.0266	0.3420	7.6000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		75.2611	75.2611	2.8400e-003		75.3320
Total	**0.0622**	**0.8923**	**0.5011**	**2.8500e-003**	**0.1125**	**5.2200e-003**	**0.1177**	**0.0302**	**4.9800e-003**	**0.0352**		**299.8077**	**299.8077**	**0.0185**		**300.2699**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2867	0.0000	0.2867	0.0342	0.0000	0.0342			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253		7,330.8210	7,330.8210	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.2867**	**3.3710**	**3.6577**	**0.0342**	**3.1253**	**3.1595**		**7,330.8210**	**7,330.8210**	**2.1057**		**7,383.4630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8222	27.4803	5.0506	0.0662	1.4423	0.1482	1.5905	0.3953	0.1418	0.5371		7,127.9170	7,127.9170	0.4968		7,140.3374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.8876**	**27.6537**	**5.6541**	**0.0677**	**1.5605**	**0.1503**	**1.7108**	**0.4268**	**0.1438**	**0.5705**		**7,281.2967**	**7,281.2967**	**0.5035**		**7,293.8852**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1118	0.0000	0.1118	0.0133	0.0000	0.0133			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253	0.0000	7,330.8209	7,330.8209	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.1118**	**3.3710**	**3.4828**	**0.0133**	**3.1253**	**3.1387**	**0.0000**	**7,330.8209**	**7,330.8209**	**2.1057**		**7,383.4630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8222	27.4803	5.0506	0.0662	1.4423	0.1482	1.5905	0.3953	0.1418	0.5371		7,127.9170	7,127.9170	0.4968		7,140.3374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.8876**	**27.6537**	**5.6541**	**0.0677**	**1.5605**	**0.1503**	**1.7108**	**0.4268**	**0.1438**	**0.5705**		**7,281.2967**	**7,281.2967**	**0.5035**		**7,293.8852**

3.4 Drainage/Utils - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277		5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**		**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0920	2.4524	0.6375	4.9900e-003	0.1216	0.0212	0.1428	0.0350	0.0203	0.0553		530.9472	530.9472	0.0380		531.8980
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.1525**	**2.4968**	**1.2075**	**6.2500e-003**	**0.2334**	**0.0221**	**0.2555**	**0.0647**	**0.0211**	**0.0858**		**656.3823**	**656.3823**	**0.0428**		**657.4513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277	0.0000	5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**	**0.0000**	**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0920	2.4524	0.6375	4.9900e-003	0.1216	0.0212	0.1428	0.0350	0.0203	0.0553		530.9472	530.9472	0.0380		531.8980
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.1525**	**2.4968**	**1.2075**	**6.2500e-003**	**0.2334**	**0.0221**	**0.2555**	**0.0647**	**0.0211**	**0.0858**		**656.3823**	**656.3823**	**0.0428**		**657.4513**

3.5 Reservoir Floor and Wall Footings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704		484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**		**484.3751**	**484.3751**	**0.1382**		**487.8295**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0605**	**0.0443**	**0.5699**	**1.2600e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**125.4351**	**125.4351**	**4.7300e-003**		**125.5533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704	0.0000	484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**	**0.0000**	**484.3751**	**484.3751**	**0.1382**		**487.8295**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0605**	**0.0443**	**0.5699**	**1.2600e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**125.4351**	**125.4351**	**4.7300e-003**		**125.5533**

3.5 Reservoir Floor and Wall Footings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391		478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**		**478.1477**	**478.1477**	**0.1384**		**481.6070**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0539**	**0.0386**	**0.5018**	**1.2300e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**121.9352**	**121.9352**	**4.1600e-003**		**122.0391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391	0.0000	478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**	**0.0000**	**478.1477**	**478.1477**	**0.1384**		**481.6070**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0539**	**0.0386**	**0.5018**	**1.2300e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**121.9352**	**121.9352**	**4.1600e-003**		**122.0391**

3.6 Assemble Column & Wall forms, Pour Corewalls and Columns - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789		2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**		**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789	0.0000	2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**	**0.0000**	**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.7 Construction Roof Shoring - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

3.8 Vertical Wall Prestressing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

3.9 Roof Reinforcing, Bearing Pad Installationm and Roof Pour - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.10 Prestressing Mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007		375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**		**375.2647**	**375.2647**	**0.0357**		**376.1562**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.2155	0.1545	2.0070	4.9000e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		487.7407	487.7407	0.0166		488.1564
Total	**0.2964**	**2.4570**	**2.5804**	**9.8700e-003**	**0.5687**	**0.0204**	**0.5891**	**0.1536**	**0.0194**	**0.1730**		**1,017.1909**	**1,017.1909**	**0.0527**		**1,018.5076**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007	0.0000	375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**	**0.0000**	**375.2647**	**375.2647**	**0.0357**		**376.1562**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.2155	0.1545	2.0070	4.9000e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		487.7407	487.7407	0.0166		488.1564
Total	**0.2964**	**2.4570**	**2.5804**	**9.8700e-003**	**0.5687**	**0.0204**	**0.5891**	**0.1536**	**0.0194**	**0.1730**		**1,017.1909**	**1,017.1909**	**0.0527**		**1,018.5076**

3.11 Backfill Reservoir and Site - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195		1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**		**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195	0.0000	1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**	**0.0000**	**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1347**	**2.3411**	**1.0752**	**6.2000e-003**	**0.2334**	**0.0177**	**0.2511**	**0.0647**	**0.0169**	**0.0816**		**651.3854**	**651.3854**	**0.0402**		**652.3902**

3.12 Underground Piping and Structures (above reservoir floor) and Aboveground Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451		4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**		**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451	0.0000	4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**	**0.0000**	**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.13 Paving and Restoration - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

3.14 Offsite Water, Reclaimed Water and Storm Drain Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299		5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**		**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299	0.0000	5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**	**0.0000**	**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0809	2.3025	0.5734	4.9700e-003	0.1216	0.0168	0.1384	0.0350	0.0161	0.0511		529.4503	529.4503	0.0360		530.3511
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1886**	**2.3798**	**1.5769**	**7.4200e-003**	**0.3452**	**0.0186**	**0.3638**	**0.0943**	**0.0177**	**0.1120**		**773.3206**	**773.3206**	**0.0444**		**774.4293**

3.15 Street Improvements - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

3.16 Architectual Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681		1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**		**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0216	0.0155	0.2007	4.9000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		48.7741	48.7741	1.6600e-003		48.8156
Total	**0.0216**	**0.0155**	**0.2007**	**4.9000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**48.7741**	**48.7741**	**1.6600e-003**		**48.8156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681	0.0000	1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**	**0.0000**	**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0216	0.0155	0.2007	4.9000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		48.7741	48.7741	1.6600e-003		48.8156
Total	**0.0216**	**0.0155**	**0.2007**	**4.9000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**48.7741**	**48.7741**	**1.6600e-003**		**48.8156**

Corona Keith

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	13.00	1000sqft	0.30	13,000.00	0
Other Asphalt Surfaces	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Work days are correct

Off-road Equipment -

Off-road Equipment - Construction Data Needs document

Off-road Equipment - Consturction Data needs document

Off-road Equipment - construction data doc

Off-road Equipment - construction data document

Off-road Equipment - construction doc

Off-road Equipment - construction data

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Grading - Construction Data needs

Off-road Equipment - Construction Data needs

Trips and VMT - Drainange/Utils aka Underground Piping and Structures (below ground)

Architectural Coating - Construction Data needs-21587 sq ft, rounded up to 22,000 to be conservative

Water And Wastewater - Construction Data needs

Solid Waste -

Operational Off-Road Equipment - Construction Data needs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	6,500.00	22,000.00
tblArchitecturalCoating	ConstArea_Parking	6,000.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	220.00	15.00

tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	220.00	35.00
tblConstructionPhase	NumDays	220.00	30.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	220.00	15.00
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	220.00	5.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	10.00	20.00
tblGrading	AcresOfGrading	22.50	3.00
tblGrading	AcresOfGrading	5.00	15.00
tblGrading	MaterialExported	0.00	9,900.00
tblGrading	MaterialExported	0.00	210.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	16.00	187.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	187.00	367.00
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tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	158.00	157.00

tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	124.00	97.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	221.00	78.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	367.00	97.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	8.00	89.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	100.00	84.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.41	0.48
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57

tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.44	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.50	0.48
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tblOffRoadEquipment	LoadFactor	0.48	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.43	0.20
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.40	0.74
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks

tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Welders	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType	Air Compressors	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Scrapers
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Rough Terrain Forklifts

tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	47.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	23.00	10.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	9.00	4.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	40.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00

tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	15.00	6.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	3,006,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2017	7.1452	91.9574	41.7813	0.1387	1.8472	3.5236	5.3708	0.4610	3.2713	3.7323	0.0000	14,479.4588	14,479.4588	2.6323	0.0000	14,545.2655
2018	39.3324	48.1223	32.6851	0.0734	0.5687	2.2703	2.8390	0.1536	2.0893	2.2429	0.0000	7,413.3842	7,413.3842	2.0600	0.0000	7,464.8836
Maximum	**39.3324**	**91.9574**	**41.7813**	**0.1387**	**1.8472**	**3.5236**	**5.3708**	**0.4610**	**3.2713**	**3.7323**	**0.0000**	**14,479.4588**	**14,479.4588**	**2.6323**	**0.0000**	**14,545.2655**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	7.1452	91.9574	41.7813	0.1387	1.6723	3.5236	5.1959	0.4401	3.2713	3.7114	0.0000	14,479.4587	14,479.4587	2.6323	0.0000	14,545.2655
2018	39.3324	48.1223	32.6851	0.0734	0.5687	2.2703	2.8390	0.1536	2.0893	2.2429	0.0000	7,413.3842	7,413.3842	2.0600	0.0000	7,464.8835
Maximum	**39.3324**	**91.9574**	**41.7813**	**0.1387**	**1.6723**	**3.5236**	**5.1959**	**0.4401**	**3.2713**	**3.7114**	**0.0000**	**14,479.4587**	**14,479.4587**	**2.6323**	**0.0000**	**14,545.2655**

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

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.24**	**0.00**	**2.13**	**3.39**	**0.00**	**0.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/18/2017	10/31/2017	5	10	
2	Grading	Grading	11/1/2017	11/21/2017	5	15	
3	Drainage/Utils	Building Construction	11/22/2017	12/12/2017	5	15	
4	Reservoir Floor and Wall Footings	Building Construction	12/13/2017	1/9/2018	5	20	
5	Assemble Column & Wall forms, Pour Corewalls and Columns	Building Construction	1/10/2018	1/30/2018	5	15	
6	Construction Roof Shoring	Building Construction	1/31/2018	2/13/2018	5	10	
7	Vertical Wall Prestressing	Building Construction	2/14/2018	2/20/2018	5	5	
8	Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Building Construction	2/21/2018	4/17/2018	5	40	
9	Prestressing Mobilization	Building Construction	4/18/2018	5/15/2018	5	20	
10	Backfill Reservoir and Site	Building Construction	5/23/2018	6/5/2018	5	10	
11	Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Building Construction	6/6/2018	7/24/2018	5	35	
12	Paving and Restoration	Paving	7/25/2018	8/14/2018	5	15	
13	Offsite Water, Reclaimed Water and Storm Drain Piping	Building Construction	7/25/2018	9/4/2018	5	30	
14	Street Improvements	Paving	8/15/2018	9/11/2018	5	20	
15	Architectual Coating	Architectural Coating	9/12/2018	9/18/2018	5	5	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 22,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Welders	0	8.00	46	0.45
Reservoir Floor and Wall Footings	Welders	0	8.00	46	0.45
Assemble Column & Wall forms, Pour Corewalls and Columns	Welders	0	8.00	46	0.45
Prestressing Mobilization	Welders	0	8.00	46	0.45
Backfill Reservoir and Site	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Loaders	1	8.00	87	0.54
Drainage/Utils	Cranes	0	8.00	231	0.29
Drainage/Utils	Forklifts	0	7.00	89	0.20
Drainage/Utils	Generator Sets	0	8.00	84	0.74
Drainage/Utils	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Drainage/Utils	Welders	0	8.00	46	0.45
Drainage/Utils	Excavators	1	8.00	157	0.57
Drainage/Utils	Off-Highway Trucks	2	8.00	381	0.57
Drainage/Utils	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and	Generator Sets	0	8.00	84	0.74

Storm Drain Piping					
Reservoir Floor and Wall Footings	Rough Terrain Forklifts	1	4.00	84	0.74
Assemble Column & Wall forms, Pour Corewalls and Columns	Off-Highway Trucks	1	8.00	381	0.57
Prestressing Mobilization	Air Compressors	2	4.00	78	0.48
Backfill Reservoir and Site	Excavators	1	8.00	157	0.57
Site Preparation	Dumpers/Tenders	1	8.00	187	0.41
Paving and Restoration	Pavers	1	8.00	130	0.42
Street Improvements	Pavers	1	8.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Street Improvements	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Street Improvements	Rollers	1	8.00	80	0.38
Backfill Reservoir and Site	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	367	0.48
Backfill Reservoir and Site	Rubber Tired Loaders	1	8.00	87	0.54
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Excavators	1	8.00	157	0.57
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Off-Highway Trucks	2	8.00	381	0.57
Grading	Off-Highway Trucks	2	8.00	381	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Rubber Tired Loaders	1	8.00	87	0.54
Grading	Excavators	1	8.00	157	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Excavators	1	8.00	157	0.57

Site Preparation	Off-Highway Tractors	1	8.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Welders	1	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Off-Highway Trucks	2	8.00	381	0.57
Backfill Reservoir and Site	Cement and Mortar Mixers	1	4.00	9	0.56
Offsite Water, Reclaimed Water and Storm Drain Piping	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Welders	0	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Trenchers	1	8.00	78	0.50
Architectual Coating	Forklifts	2	8.00	89	0.20
Construction Roof Shoring	Welders	1	8.00	46	0.45
Vertical Wall Prestressing	Welders	1	8.00	46	0.45
Site Preparation	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Trucks	1	8.00	381	0.57
Grading	Generator Sets	1	8.00	84	0.74
Architectual Coating	Aerial Lifts	2	8.00	63	0.31
Paving and Restoration	Cement and Mortar Mixers	0	8.00	9	0.56
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Street Improvements	Cement and Mortar Mixers	0	8.00	9	0.56
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cranes	0	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cranes	0	8.00	231	0.29
Construction Roof Shoring	Cranes	0	8.00	231	0.29
Vertical Wall Prestressing	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Bore/Drill Rigs	1	4.00	78	0.48

Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Cranes	0	8.00	231	0.29
Prestressing Mobilization	Cranes	0	8.00	231	0.29
Backfill Reservoir and Site	Cranes	0	8.00	231	0.29
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Forklifts	0	8.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Forklifts	0	7.00	89	0.20
Construction Roof Shoring	Forklifts	0	7.00	89	0.20
Vertical Wall Prestressing	Forklifts	0	7.00	89	0.20
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Forklifts	0	7.00	89	0.20
Grading	Rubber Tired Loaders	2	8.00	87	0.54
Prestressing Mobilization	Forklifts	0	7.00	89	0.20
Backfill Reservoir and Site	Forklifts	0	7.00	89	0.20
Grading	Scrapers	1	8.00	97	0.37
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Assemble Column & Wall forms, Pour Corewalls and Columns	Generator Sets	0	8.00	84	0.74
Construction Roof Shoring	Generator Sets	0	8.00	84	0.74
Vertical Wall Prestressing	Generator Sets	0	8.00	84	0.74
Architectual Coating	Air Compressors	1	8.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Generator Sets	0	8.00	84	0.74
Prestressing Mobilization	Generator Sets	0	8.00	84	0.74
Grading	Rubber Tired Dozers	0	8.00	247	0.40

Site Preparation	Scrapers	0	8.00	367	0.48
Underground Piping and Structures (above reservoir floor) and Aboveground Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Reservoir Floor and Wall Footings	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Assemble Column & Wall forms, Pour Corewalls and Columns	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cement and Mortar Mixers	1	8.00	9	0.56
Assemble Column & Wall forms, Pour Corewalls and Columns	Cement and Mortar Mixers	1	8.00	9	0.56
Construction Roof Shoring	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Vertical Wall Prestressing	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Prestressing Mobilization	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Backfill Reservoir and Site	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Plate Compactors	1	4.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Concrete/Industrial Saws	1	8.00	81	0.73
Paving and Restoration	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Street Improvements	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Reservoir Floor and Wall Footings	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Paving and Restoration	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Street Improvements	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	10.00	1.00	1,238.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utils	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Floor and Wall Footings	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectual Coating	5	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Roof Reinforcing, Bearing Pad	1	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Prestressing Mobilization	2	40.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Backfill Reservoir and Site	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Underground Piping and Structures (above	4	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Offsite Water, Reclaimed Water and	5	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Assemble Column & Wall forms, Pour	3	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction Roof Shoring	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Vertical Wall Prestressing	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	6.00	0.00	26.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Fugitive Dust					1.5931	0.0000	1.5931	0.1721	0.0000	0.1721			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923		4,981.3898	4,981.3898	1.5263		5,019.5470
Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**1.5931**	**1.9482**	**3.5413**	**0.1721**	**1.7923**	**1.9645**		**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0266	0.8789	0.1725	2.0500e-003	0.0454	4.7400e-003	0.0502	0.0125	4.5400e-003	0.0170		220.6461	220.6461	0.0164		221.0557
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0395	0.0292	0.3110	7.1000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		70.4189	70.4189	2.6600e-003		70.4854
Total	**0.0661**	**0.9080**	**0.4834**	**2.7600e-003**	**0.1125**	**5.2900e-003**	**0.1178**	**0.0302**	**5.0500e-003**	**0.0353**		**291.0650**	**291.0650**	**0.0190**		**291.5411**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6213	0.0000	0.6213	0.0671	0.0000	0.0671			0.0000			0.0000
Off-Road	3.8091	39.4744	22.8976	0.0487		1.9482	1.9482		1.7923	1.7923	0.0000	4,981.3898	4,981.3898	1.5263		5,019.5470
Total	**3.8091**	**39.4744**	**22.8976**	**0.0487**	**0.6213**	**1.9482**	**2.5695**	**0.0671**	**1.7923**	**1.8595**	**0.0000**	**4,981.3898**	**4,981.3898**	**1.5263**		**5,019.5470**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0266	0.8789	0.1725	2.0500e-003	0.0454	4.7400e-003	0.0502	0.0125	4.5400e-003	0.0170		220.6461	220.6461	0.0164		221.0557
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0395	0.0292	0.3110	7.1000e-004	0.0671	5.5000e-004	0.0676	0.0178	5.1000e-004	0.0183		70.4189	70.4189	2.6600e-003		70.4854
Total	**0.0661**	**0.9080**	**0.4834**	**2.7600e-003**	**0.1125**	**5.2900e-003**	**0.1178**	**0.0302**	**5.0500e-003**	**0.0353**		**291.0650**	**291.0650**	**0.0190**		**291.5411**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2867	0.0000	0.2867	0.0342	0.0000	0.0342			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253		7,330.8210	7,330.8210	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.2867**	**3.3710**	**3.6577**	**0.0342**	**3.1253**	**3.1595**		**7,330.8210**	**7,330.8210**	**2.1057**		**7,383.4630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8450	27.8992	5.4742	0.0651	1.4423	0.1506	1.5929	0.3953	0.1441	0.5394		7,004.1000	7,004.1000	0.5200		7,017.1000
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.9158**	**28.0773**	**6.0296**	**0.0665**	**1.5605**	**0.1527**	**1.7131**	**0.4268**	**0.1460**	**0.5728**		**7,148.6378**	**7,148.6378**	**0.5266**		**7,161.8025**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1118	0.0000	0.1118	0.0133	0.0000	0.0133			0.0000			0.0000
Off-Road	6.2294	63.8801	35.7518	0.0722		3.3710	3.3710		3.1253	3.1253	0.0000	7,330.8209	7,330.8209	2.1057		7,383.4630
Total	**6.2294**	**63.8801**	**35.7518**	**0.0722**	**0.1118**	**3.3710**	**3.4828**	**0.0133**	**3.1253**	**3.1387**	**0.0000**	**7,330.8209**	**7,330.8209**	**2.1057**		**7,383.4630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8450	27.8992	5.4742	0.0651	1.4423	0.1506	1.5929	0.3953	0.1441	0.5394		7,004.1000	7,004.1000	0.5200		7,017.1000
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.9158**	**28.0773**	**6.0296**	**0.0665**	**1.5605**	**0.1527**	**1.7131**	**0.4268**	**0.1460**	**0.5728**		**7,148.6378**	**7,148.6378**	**0.5266**		**7,161.8025**

3.4 Drainage/Utils - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277		5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**		**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	2.4600	0.7047	4.8600e-003	0.1216	0.0215	0.1431	0.0350	0.0206	0.0556		516.2885	516.2885	0.0408		517.3088
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.1616**	**2.5086**	**1.2230**	**6.0400e-003**	**0.2334**	**0.0224**	**0.2558**	**0.0647**	**0.0214**	**0.0861**		**633.6532**	**633.6532**	**0.0453**		**634.7845**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6455	39.1078	21.8175	0.0493		1.7693	1.7693		1.6277	1.6277	0.0000	5,035.6065	5,035.6065	1.5429		5,074.1790
Total	**3.6455**	**39.1078**	**21.8175**	**0.0493**		**1.7693**	**1.7693**		**1.6277**	**1.6277**	**0.0000**	**5,035.6065**	**5,035.6065**	**1.5429**		**5,074.1790**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	2.4600	0.7047	4.8600e-003	0.1216	0.0215	0.1431	0.0350	0.0206	0.0556		516.2885	516.2885	0.0408		517.3088
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.1616**	**2.5086**	**1.2230**	**6.0400e-003**	**0.2334**	**0.0224**	**0.2558**	**0.0647**	**0.0214**	**0.0861**		**633.6532**	**633.6532**	**0.0453**		**634.7845**

3.5 Reservoir Floor and Wall Footings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704		484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**		**484.3751**	**484.3751**	**0.1382**		**487.8295**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0658**	**0.0486**	**0.5183**	**1.1800e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**117.3648**	**117.3648**	**4.4400e-003**		**117.4757**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3057	3.4586	3.2269	4.9600e-003		0.1839	0.1839		0.1704	0.1704	0.0000	484.3751	484.3751	0.1382		487.8295
Total	**0.3057**	**3.4586**	**3.2269**	**4.9600e-003**		**0.1839**	**0.1839**		**0.1704**	**0.1704**	**0.0000**	**484.3751**	**484.3751**	**0.1382**		**487.8295**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.2090	9.2000e-004	0.2099	0.0535	8.5000e-004	0.0544		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0658**	**0.0486**	**0.5183**	**1.1800e-003**	**0.2090**	**9.2000e-004**	**0.2099**	**0.0535**	**8.5000e-004**	**0.0544**		**117.3648**	**117.3648**	**4.4400e-003**		**117.4757**

3.5 Reservoir Floor and Wall Footings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391		478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**		**478.1477**	**478.1477**	**0.1384**		**481.6070**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0586**	**0.0423**	**0.4541**	**1.1500e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**114.0679**	**114.0679**	**3.8900e-003**		**114.1652**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2694	3.0501	3.1979	4.9600e-003		0.1499	0.1499		0.1391	0.1391	0.0000	478.1477	478.1477	0.1384		481.6070
Total	**0.2694**	**3.0501**	**3.1979**	**4.9600e-003**		**0.1499**	**0.1499**		**0.1391**	**0.1391**	**0.0000**	**478.1477**	**478.1477**	**0.1384**		**481.6070**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.2090	8.9000e-004	0.2098	0.0535	8.2000e-004	0.0543		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0586**	**0.0423**	**0.4541**	**1.1500e-003**	**0.2090**	**8.9000e-004**	**0.2098**	**0.0535**	**8.2000e-004**	**0.0543**		**114.0679**	**114.0679**	**3.8900e-003**		**114.1652**

3.6 Assemble Column & Wall forms, Pour Corewalls and Columns - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789		2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**		**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6775	16.1183	10.0057	0.0258		0.7134	0.7134		0.6789	0.6789	0.0000	2,533.4188	2,533.4188	0.6396		2,549.4085
Total	**1.6775**	**16.1183**	**10.0057**	**0.0258**		**0.7134**	**0.7134**		**0.6789**	**0.6789**	**0.0000**	**2,533.4188**	**2,533.4188**	**0.6396**		**2,549.4085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.7 Construction Roof Shoring - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

3.8 Vertical Wall Prestressing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

3.9 Roof Reinforcing, Bearing Pad Installationm and Roof Pour - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135		207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**		**207.4777**	**207.4777**	**0.0398**		**208.4726**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4418	1.6820	1.8590	2.5600e-003		0.1135	0.1135		0.1135	0.1135	0.0000	207.4777	207.4777	0.0398		208.4726
Total	**0.4418**	**1.6820**	**1.8590**	**2.5600e-003**		**0.1135**	**0.1135**		**0.1135**	**0.1135**	**0.0000**	**207.4777**	**207.4777**	**0.0398**		**208.4726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.10 Prestressing Mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007		375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**		**375.2647**	**375.2647**	**0.0357**		**376.1562**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.2343	0.1693	1.8164	4.5800e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		456.2717	456.2717	0.0156		456.6609
Total	**0.3187**	**2.4756**	**2.4529**	**9.4100e-003**	**0.5687**	**0.0206**	**0.5894**	**0.1536**	**0.0196**	**0.1732**		**970.7089**	**970.7089**	**0.0543**		**972.0660**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3982	2.6743	2.4723	3.9600e-003		0.2007	0.2007		0.2007	0.2007	0.0000	375.2647	375.2647	0.0357		376.1562
Total	**0.3982**	**2.6743**	**2.4723**	**3.9600e-003**		**0.2007**	**0.2007**		**0.2007**	**0.2007**	**0.0000**	**375.2647**	**375.2647**	**0.0357**		**376.1562**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.2343	0.1693	1.8164	4.5800e-003	0.4471	3.5600e-003	0.4507	0.1186	3.2900e-003	0.1219		456.2717	456.2717	0.0156		456.6609
Total	**0.3187**	**2.4756**	**2.4529**	**9.4100e-003**	**0.5687**	**0.0206**	**0.5894**	**0.1536**	**0.0196**	**0.1732**		**970.7089**	**970.7089**	**0.0543**		**972.0660**

3.11 Backfill Reservoir and Site - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195		1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**		**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5087	13.4445	12.1374	0.0186		0.8674	0.8674		0.8195	0.8195	0.0000	1,823.8500	1,823.8500	0.4135		1,834.1885
Total	**1.5087**	**13.4445**	**12.1374**	**0.0186**		**0.8674**	**0.8674**		**0.8195**	**0.8195**	**0.0000**	**1,823.8500**	**1,823.8500**	**0.4135**		**1,834.1885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1430**	**2.3487**	**1.0906**	**5.9800e-003**	**0.2334**	**0.0180**	**0.2514**	**0.0647**	**0.0172**	**0.0818**		**628.5052**	**628.5052**	**0.0426**		**629.5703**

3.12 Underground Piping and Structures (above reservoir floor) and Aboveground Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451		4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**		**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1727	32.8174	20.1825	0.0493		1.4621	1.4621		1.3451	1.3451	0.0000	4,956.0329	4,956.0329	1.5429		4,994.6049
Total	**3.1727**	**32.8174**	**20.1825**	**0.0493**		**1.4621**	**1.4621**		**1.3451**	**1.3451**	**0.0000**	**4,956.0329**	**4,956.0329**	**1.5429**		**4,994.6049**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.13 Paving and Restoration - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.4017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2236**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

3.14 Offsite Water, Reclaimed Water and Storm Drain Piping - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299		5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**		**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6254	36.8862	22.8340	0.0526		1.7716	1.7716		1.6299	1.6299	0.0000	5,295.6309	5,295.6309	1.6486		5,336.8460
Total	**3.6254**	**36.8862**	**22.8340**	**0.0526**		**1.7716**	**1.7716**		**1.6299**	**1.6299**	**0.0000**	**5,295.6309**	**5,295.6309**	**1.6486**		**5,336.8460**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0844	2.3063	0.6365	4.8300e-003	0.1216	0.0171	0.1387	0.0350	0.0163	0.0514		514.4372	514.4372	0.0387		515.4050
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.2016**	**2.3910**	**1.5447**	**7.1200e-003**	**0.3452**	**0.0189**	**0.3640**	**0.0943**	**0.0180**	**0.1123**		**742.5731**	**742.5731**	**0.0465**		**743.7355**

3.15 Street Improvements - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398		1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**		**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8219	8.7605	7.3982	0.0114		0.4781	0.4781		0.4398	0.4398	0.0000	1,147.0444	1,147.0444	0.3571		1,155.9716
Paving	0.3013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1232**	**8.7605**	**7.3982**	**0.0114**		**0.4781**	**0.4781**		**0.4398**	**0.4398**	**0.0000**	**1,147.0444**	**1,147.0444**	**0.3571**		**1,155.9716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1172	0.0846	0.9082	2.2900e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		228.1358	228.1358	7.7800e-003		228.3305
Total	**0.1172**	**0.0846**	**0.9082**	**2.2900e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**228.1358**	**228.1358**	**7.7800e-003**		**228.3305**

3.16 Architectual Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681		1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**		**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0234	0.0169	0.1816	4.6000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		45.6272	45.6272	1.5600e-003		45.6661
Total	**0.0234**	**0.0169**	**0.1816**	**4.6000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**45.6272**	**45.6272**	**1.5600e-003**		**45.6661**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	38.4705					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.8385	7.2449	7.0764	0.0104		0.4914	0.4914		0.4681	0.4681	0.0000	1,020.7278	1,020.7278	0.2366		1,026.6428
Total	**39.3090**	**7.2449**	**7.0764**	**0.0104**		**0.4914**	**0.4914**		**0.4681**	**0.4681**	**0.0000**	**1,020.7278**	**1,020.7278**	**0.2366**		**1,026.6428**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0234	0.0169	0.1816	4.6000e-004	0.0447	3.6000e-004	0.0451	0.0119	3.3000e-004	0.0122		45.6272	45.6272	1.5600e-003		45.6661
Total	**0.0234**	**0.0169**	**0.1816**	**4.6000e-004**	**0.0447**	**3.6000e-004**	**0.0451**	**0.0119**	**3.3000e-004**	**0.0122**		**45.6272**	**45.6272**	**1.5600e-003**		**45.6661**

Keith 1220-Zone Potable Water Tank Project
Initial Study / Mitigated Negative Declaration
Appendix , Greenhouse Gas Worksheets

.1 Construction Emissions

- Construction: CalEEMod Output (Annual)

Corona Keith

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	13.00	1000sqft	0.30	13,000.00	0
Other Asphalt Surfaces	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Work days are correct

Off-road Equipment -

Off-road Equipment - Construction Data Needs document

Off-road Equipment - Consturction Data needs document

Off-road Equipment - construction data doc

Off-road Equipment - construction data document

Off-road Equipment - construction doc

Off-road Equipment - construction data

Off-road Equipment - Construction Data needs

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Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Grading - Construction Data needs

Off-road Equipment - Construction Data needs

Trips and VMT - Construction Data needs

Architectural Coating - Construction Data needs

Water And Wastewater - Construction Data needs

Solid Waste -

Operational Off-Road Equipment - Construction Data needs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	6,500.00	21,200.00
tblArchitecturalCoating	ConstArea_Parking	6,000.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	220.00	15.00
tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	220.00	35.00

tblConstructionPhase	NumDays	220.00	30.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	220.00	15.00
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	220.00	5.00
tblConstructionPhase	NumDays	10.00	20.00
tblGrading	AcresOfGrading	22.50	3.00
tblGrading	AcresOfGrading	5.00	15.00
tblGrading	MaterialExported	0.00	9,900.00
tblGrading	MaterialExported	0.00	210.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	16.00	187.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	187.00	367.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	124.00	97.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	221.00	78.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	367.00	97.00
tblOffRoadEquipment	HorsePower	9.00	231.00
tblOffRoadEquipment	HorsePower	203.00	87.00

tblOffRoadEquipment	HorsePower	8.00	89.00
tblOffRoadEquipment	HorsePower	81.00	89.00
tblOffRoadEquipment	HorsePower	158.00	157.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	HorsePower	203.00	87.00
tblOffRoadEquipment	HorsePower	100.00	84.00
tblOffRoadEquipment	HorsePower	402.00	381.00
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.41	0.48
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.44	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.50	0.48
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.48	0.37
tblOffRoadEquipment	LoadFactor	0.56	0.29
tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.43	0.20
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	LoadFactor	0.38	0.57

tblOffRoadEquipment	LoadFactor	0.36	0.54
tblOffRoadEquipment	LoadFactor	0.40	0.74
tblOffRoadEquipment	LoadFactor	0.38	0.57
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Welders	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType	Air Compressors	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Scrapers
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Cement and Mortar Mixers

tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	23.00	11.00
tblTripsAndVMT	WorkerTripNumber	47.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	2.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	40.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	20.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblTripsAndVMT	WorkerTripNumber	15.00	6.00
tblTripsAndVMT	WorkerTripNumber	47.00	10.00
tblWater	ElectricityIntensityFactorForWastewater Treatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewater Treatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00

tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	3,006,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1039	1.2447	0.6284	1.7900e-003	0.0267	0.0509	0.0775	5.6200e-003	0.0470	0.0527	0.0000	168.0354	168.0354	0.0367	0.0000	168.9522
2018	0.2831	1.7901	1.2202	2.9600e-003	0.0336	0.0797	0.1133	9.1500e-003	0.0741	0.0832	0.0000	269.9290	269.9290	0.0648	0.0000	271.5495
Maximum	**0.2831**	**1.7901**	**1.2202**	**2.9600e-003**	**0.0336**	**0.0797**	**0.1133**	**9.1500e-003**	**0.0741**	**0.0832**	**0.0000**	**269.9290**	**269.9290**	**0.0648**	**0.0000**	**271.5495**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1039	1.2447	0.6284	1.7900e-003	0.0205	0.0509	0.0713	4.9400e-003	0.0470	0.0520	0.0000	168.0353	168.0353	0.0367	0.0000	168.9521
2018	0.2831	1.7901	1.2202	2.9600e-003	0.0336	0.0797	0.1133	9.1500e-003	0.0741	0.0832	0.0000	269.9287	269.9287	0.0648	0.0000	271.5492
Maximum	**0.2831**	**1.7901**	**1.2202**	**2.9600e-003**	**0.0336**	**0.0797**	**0.1133**	**9.1500e-003**	**0.0741**	**0.0832**	**0.0000**	**269.9287**	**269.9287**	**0.0648**	**0.0000**	**271.5492**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**10.24**	**0.00**	**3.23**	**4.60**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**10-18-2017**	**1-17-2018**	0.9646	0.9646
4	**7-18-2018**	**9-30-2018**	0.0518	0.0518
		Highest	0.9646	0.9646

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/18/2017	10/31/2017	5	10	
2	Grading	Grading	11/1/2017	11/21/2017	5	15	
3	Drainage/Utils	Building Construction	11/22/2017	12/12/2017	5	15	
4	Reservoir Floor and Wall Footings	Building Construction	12/13/2017	1/9/2018	5	20	
5	Assemble Column & Wall forms, Pour Corewalls and Columns	Building Construction	1/10/2018	1/30/2018	5	15	
6	Construction Roof Shoring	Building Construction	1/31/2018	2/13/2018	5	10	
7	Vertical Wall Prestressing	Building Construction	2/14/2018	2/20/2018	5	5	

8	Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Building Construction	2/21/2018	4/17/2018	5	40	
9	Prestressing Mobilization	Building Construction	4/18/2018	5/15/2018	5	20	
10	Backfill Reservoir and Site	Building Construction	5/23/2018	6/5/2018	5	10	
11	Underground Piping and Structures (above reservoir floor)	Building Construction	6/6/2018	7/24/2018	5	35	
12	Paving and Restoration	Paving	7/25/2018	8/7/2018	5	10	
13	Offsite Water, Reclaimed Water and Storm Drain Piping	Building Construction	7/25/2018	9/4/2018	5	30	
14	Street Improvements	Paving	8/15/2018	9/11/2018	5	20	
15	Architectual Coating	Architectural Coating	9/11/2018	9/18/2018	5	6	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 21,200; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Underground Piping and Structures (above reservoir floor) and	Welders	0	8.00	46	0.45
Reservoir Floor and Wall Footings	Welders	0	8.00	46	0.45
Assemble Column & Wall forms, Pour Corewalls and Columns	Welders	0	8.00	46	0.45
Prestressing Mobilization	Welders	0	8.00	46	0.45
Backfill Reservoir and Site	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Loaders	1	8.00	87	0.54
Drainage/Utils	Cranes	0	8.00	231	0.29
Drainage/Utils	Forklifts	0	7.00	89	0.20
Drainage/Utils	Generator Sets	0	8.00	84	0.74
Drainage/Utils	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Drainage/Utils	Welders	0	8.00	46	0.45
Drainage/Utils	Excavators	1	8.00	157	0.57
Drainage/Utils	Off-Highway Trucks	2	8.00	381	0.57

Drainage/Utils	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Rough Terrain Forklifts	1	4.00	84	0.74
Assemble Column & Wall forms, Pour Corewalls and Columns	Off-Highway Trucks	1	8.00	381	0.57
Prestressing Mobilization	Air Compressors	2	4.00	78	0.48
Backfill Reservoir and Site	Excavators	1	8.00	157	0.57
Site Preparation	Dumpers/Tenders	1	8.00	187	0.41
Paving and Restoration	Pavers	1	8.00	130	0.42
Street Improvements	Pavers	1	8.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Street Improvements	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Street Improvements	Rollers	2	8.00	80	0.38
Backfill Reservoir and Site	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	367	0.48
Backfill Reservoir and Site	Rubber Tired Loaders	1	8.00	87	0.54
Underground Piping and Structures (above reservoir floor) and	Excavators	1	8.00	157	0.57
Underground Piping and Structures (above reservoir floor) and	Off-Highway Trucks	2	8.00	381	0.57
Grading	Off-Highway Trucks	2	8.00	381	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Underground Piping and Structures (above reservoir floor) and	Rubber Tired Loaders	1	8.00	87	0.54
Grading	Excavators	1	8.00	157	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Tractors	1	8.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Welders	1	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Off-Highway Trucks	2	8.00	381	0.57
Backfill Reservoir and Site	Cement and Mortar Mixers	1	4.00	9	0.56
Offsite Water, Reclaimed Water and Storm Drain Piping	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Welders	0	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Trenchers	1	8.00	78	0.50

Architectual Coating	Forklifts	2	8.00	89	0.20
Construction Roof Shoring	Welders	1	8.00	46	0.45
Vertical Wall Prestressing	Welders	1	8.00	46	0.45
Site Preparation	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Trucks	1	8.00	381	0.57
Grading	Generator Sets	1	8.00	84	0.74
Architectual Coating	Aerial Lifts	2	8.00	63	0.31
Paving and Restoration	Cement and Mortar Mixers	0	8.00	9	0.56
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Street Improvements	Cement and Mortar Mixers	0	8.00	9	0.56
Underground Piping and Structures (above reservoir floor) and	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cranes	0	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cranes	0	8.00	231	0.29
Construction Roof Shoring	Cranes	0	8.00	231	0.29
Vertical Wall Prestressing	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Bore/Drill Rigs	1	4.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Cranes	0	8.00	231	0.29
Prestressing Mobilization	Cranes	0	8.00	231	0.29
Backfill Reservoir and Site	Cranes	0	8.00	231	0.29
Underground Piping and Structures (above reservoir floor) and	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Forklifts	0	8.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Forklifts	0	7.00	89	0.20
Construction Roof Shoring	Forklifts	0	7.00	89	0.20
Vertical Wall Prestressing	Forklifts	0	7.00	89	0.20
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Forklifts	0	7.00	89	0.20
Grading	Rubber Tired Loaders	2	8.00	87	0.54
Prestressing Mobilization	Forklifts	0	7.00	89	0.20
Backfill Reservoir and Site	Forklifts	0	7.00	89	0.20
Grading	Scrapers	1	8.00	97	0.37
Underground Piping and Structures (above reservoir floor) and	Generator Sets	0	8.00	84	0.74

Reservoir Floor and Wall Footings	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Assemble Column & Wall forms, Pour Corewalls and Columns	Generator Sets	0	8.00	84	0.74
Construction Roof Shoring	Generator Sets	0	8.00	84	0.74
Vertical Wall Prestressing	Generator Sets	0	8.00	84	0.74
Architectual Coating	Air Compressors	1	8.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Generator Sets	0	8.00	84	0.74
Prestressing Mobilization	Generator Sets	0	8.00	84	0.74
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Scrapers	0	8.00	367	0.48
Underground Piping and Structures (above reservoir floor) and	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Reservoir Floor and Wall Footings	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Assemble Column & Wall forms, Pour Corewalls and Columns	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cement and Mortar Mixers	1	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cement and Mortar Mixers	1	8.00	9	0.56
Construction Roof Shoring	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Vertical Wall Prestressing	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Prestressing Mobilization	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Backfill Reservoir and Site	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Plate Compactors	1	4.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Concrete/Industrial Saws	1	8.00	89	0.73
Paving and Restoration	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Street Improvements	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Reservoir Floor and Wall Footings	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving and Restoration	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Street Improvements	4	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	11.00	1.00	1,238.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utils	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Floor and Wall Footings	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectual Coating	5	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Roof Reinforcing, Bearing Pad	1	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Prestressing Mobilization	2	40.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Backfill Reservoir and Site	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Underground Piping and Structures (above	4	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Offsite Water, Reclaimed Water and	5	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Assemble Column & Wall forms, Pour	3	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction Roof Shoring	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Vertical Wall Prestressing	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	6.00	0.00	26.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.9700e-003	0.0000	7.9700e-003	8.6000e-004	0.0000	8.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0191	0.1974	0.1145	2.4000e-004		9.7400e-003	9.7400e-003		8.9600e-003	8.9600e-003	0.0000	22.5952	22.5952	6.9200e-003	0.0000	22.7683
Total	**0.0191**	**0.1974**	**0.1145**	**2.4000e-004**	**7.9700e-003**	**9.7400e-003**	**0.0177**	**8.6000e-004**	**8.9600e-003**	**9.8200e-003**	**0.0000**	**22.5952**	**22.5952**	**6.9200e-003**	**0.0000**	**22.7683**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.4700e-003	8.2000e-004	1.0000e-005	2.2000e-004	2.0000e-005	2.5000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.0111	1.0111	7.0000e-005	0.0000	1.0129
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6000e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3249	0.3249	1.0000e-005	0.0000	0.3252
Total	**3.1000e-004**	**4.6200e-003**	**2.4200e-003**	**1.0000e-005**	**5.5000e-004**	**2.0000e-005**	**5.8000e-004**	**1.5000e-004**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**1.3360**	**1.3360**	**8.0000e-005**	**0.0000**	**1.3381**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1100e-003	0.0000	3.1100e-003	3.4000e-004	0.0000	3.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0191	0.1974	0.1145	2.4000e-004		9.7400e-003	9.7400e-003		8.9600e-003	8.9600e-003	0.0000	22.5952	22.5952	6.9200e-003	0.0000	22.7683
Total	**0.0191**	**0.1974**	**0.1145**	**2.4000e-004**	**3.1100e-003**	**9.7400e-003**	**0.0129**	**3.4000e-004**	**8.9600e-003**	**9.3000e-003**	**0.0000**	**22.5952**	**22.5952**	**6.9200e-003**	**0.0000**	**22.7683**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.4700e-003	8.2000e-004	1.0000e-005	2.2000e-004	2.0000e-005	2.5000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.0111	1.0111	7.0000e-005	0.0000	1.0129
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6000e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3249	0.3249	1.0000e-005	0.0000	0.3252
Total	**3.1000e-004**	**4.6200e-003**	**2.4200e-003**	**1.0000e-005**	**5.5000e-004**	**2.0000e-005**	**5.8000e-004**	**1.5000e-004**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**1.3360**	**1.3360**	**8.0000e-005**	**0.0000**	**1.3381**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1500e-003	0.0000	2.1500e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0467	0.4791	0.2681	5.4000e-004		0.0253	0.0253		0.0234	0.0234	0.0000	49.8781	49.8781	0.0143	0.0000	50.2362
Total	**0.0467**	**0.4791**	**0.2681**	**5.4000e-004**	**2.1500e-003**	**0.0253**	**0.0274**	**2.6000e-004**	**0.0234**	**0.0237**	**0.0000**	**49.8781**	**49.8781**	**0.0143**	**0.0000**	**50.2362**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2400e-003	0.2130	0.0393	4.9000e-004	0.0106	1.1200e-003	0.0118	2.9200e-003	1.0700e-003	3.9900e-003	0.0000	48.1437	48.1437	3.4500e-003	0.0000	48.2300
Vendor	4.0000e-005	9.9000e-004	2.7000e-004	0.0000	5.0000e-005	1.0000e-005	6.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1879	0.1879	1.0000e-005	0.0000	0.1883
Worker	4.9000e-004	4.1000e-004	4.3900e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8934	0.8934	3.0000e-005	0.0000	0.8942
Total	**6.7700e-003**	**0.2144**	**0.0439**	**5.0000e-004**	**0.0116**	**1.1400e-003**	**0.0127**	**3.1700e-003**	**1.0900e-003**	**4.2600e-003**	**0.0000**	**49.2250**	**49.2250**	**3.4900e-003**	**0.0000**	**49.3125**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.4000e-004	0.0000	8.4000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0467	0.4791	0.2681	5.4000e-004		0.0253	0.0253		0.0234	0.0234	0.0000	49.8780	49.8780	0.0143	0.0000	50.2362
Total	**0.0467**	**0.4791**	**0.2681**	**5.4000e-004**	**8.4000e-004**	**0.0253**	**0.0261**	**1.0000e-004**	**0.0234**	**0.0235**	**0.0000**	**49.8780**	**49.8780**	**0.0143**	**0.0000**	**50.2362**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2400e-003	0.2130	0.0393	4.9000e-004	0.0106	1.1200e-003	0.0118	2.9200e-003	1.0700e-003	3.9900e-003	0.0000	48.1437	48.1437	3.4500e-003	0.0000	48.2300
Vendor	4.0000e-005	9.9000e-004	2.7000e-004	0.0000	5.0000e-005	1.0000e-005	6.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1879	0.1879	1.0000e-005	0.0000	0.1883
Worker	4.9000e-004	4.1000e-004	4.3900e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8934	0.8934	3.0000e-005	0.0000	0.8942
Total	**6.7700e-003**	**0.2144**	**0.0439**	**5.0000e-004**	**0.0116**	**1.1400e-003**	**0.0127**	**3.1700e-003**	**1.0900e-003**	**4.2600e-003**	**0.0000**	**49.2250**	**49.2250**	**3.4900e-003**	**0.0000**	**49.3125**

3.4 Drainage/Utils - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0273	0.2933	0.1636	3.7000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	34.2617	34.2617	0.0105	0.0000	34.5241
Total	**0.0273**	**0.2933**	**0.1636**	**3.7000e-004**		**0.0133**	**0.0133**		**0.0122**	**0.0122**	**0.0000**	**34.2617**	**34.2617**	**0.0105**	**0.0000**	**34.5241**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-004	0.0188	5.0400e-003	4.0000e-005	9.0000e-004	1.6000e-004	1.0600e-003	2.6000e-004	1.5000e-004	4.1000e-004	0.0000	3.5706	3.5706	2.7000e-004	0.0000	3.5773
Worker	4.5000e-004	3.7000e-004	3.9900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.8122	0.8122	3.0000e-005	0.0000	0.8129
Total	**1.1500e-003**	**0.0192**	**9.0300e-003**	**5.0000e-005**	**1.7200e-003**	**1.7000e-004**	**1.8900e-003**	**4.8000e-004**	**1.6000e-004**	**6.3000e-004**	**0.0000**	**4.3828**	**4.3828**	**3.0000e-004**	**0.0000**	**4.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0273	0.2933	0.1636	3.7000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	34.2617	34.2617	0.0105	0.0000	34.5241
Total	**0.0273**	**0.2933**	**0.1636**	**3.7000e-004**		**0.0133**	**0.0133**		**0.0122**	**0.0122**	**0.0000**	**34.2617**	**34.2617**	**0.0105**	**0.0000**	**34.5241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-004	0.0188	5.0400e-003	4.0000e-005	9.0000e-004	1.6000e-004	1.0600e-003	2.6000e-004	1.5000e-004	4.1000e-004	0.0000	3.5706	3.5706	2.7000e-004	0.0000	3.5773
Worker	4.5000e-004	3.7000e-004	3.9900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.8122	0.8122	3.0000e-005	0.0000	0.8129
Total	**1.1500e-003**	**0.0192**	**9.0300e-003**	**5.0000e-005**	**1.7200e-003**	**1.7000e-004**	**1.8900e-003**	**4.8000e-004**	**1.6000e-004**	**6.3000e-004**	**0.0000**	**4.3828**	**4.3828**	**3.0000e-004**	**0.0000**	**4.3902**

3.5 Reservoir Floor and Wall Footings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6100e-003	0.0201	0.0190	3.0000e-005		1.1000e-003	1.1000e-003		1.0100e-003	1.0100e-003	0.0000	2.5583	2.5583	7.8000e-004	0.0000	2.5779
Total	**1.6100e-003**	**0.0201**	**0.0190**	**3.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.0100e-003**	**1.0100e-003**	**0.0000**	**2.5583**	**2.5583**	**7.8000e-004**	**0.0000**	**2.5779**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1000e-004	0.0163	4.3600e-003	3.0000e-005	1.3300e-003	1.4000e-004	1.4700e-003	3.6000e-004	1.3000e-004	4.9000e-004	0.0000	3.0945	3.0945	2.3000e-004	0.0000	3.1003
Worker	3.9000e-004	3.2000e-004	3.4600e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3400e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	0.7039	0.7039	3.0000e-005	0.0000	0.7045
Total	**1.0000e-003**	**0.0166**	**7.8200e-003**	**4.0000e-005**	**2.6600e-003**	**1.5000e-004**	**2.8100e-003**	**7.0000e-004**	**1.4000e-004**	**8.4000e-004**	**0.0000**	**3.7984**	**3.7984**	**2.6000e-004**	**0.0000**	**3.8049**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6000e-003	0.0201	0.0190	3.0000e-005		1.1000e-003	1.1000e-003		1.0100e-003	1.0100e-003	0.0000	2.5583	2.5583	7.8000e-004	0.0000	2.5779
Total	**1.6000e-003**	**0.0201**	**0.0190**	**3.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.0100e-003**	**1.0100e-003**	**0.0000**	**2.5583**	**2.5583**	**7.8000e-004**	**0.0000**	**2.5779**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1000e-004	0.0163	4.3600e-003	3.0000e-005	1.3300e-003	1.4000e-004	1.4700e-003	3.6000e-004	1.3000e-004	4.9000e-004	0.0000	3.0945	3.0945	2.3000e-004	0.0000	3.1003
Worker	3.9000e-004	3.2000e-004	3.4600e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3400e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	0.7039	0.7039	3.0000e-005	0.0000	0.7045
Total	**1.0000e-003**	**0.0166**	**7.8200e-003**	**4.0000e-005**	**2.6600e-003**	**1.5000e-004**	**2.8100e-003**	**7.0000e-004**	**1.4000e-004**	**8.4000e-004**	**0.0000**	**3.7984**	**3.7984**	**2.6000e-004**	**0.0000**	**3.8049**

3.5 Reservoir Floor and Wall Footings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4000e-004	9.3900e-003	0.0101	1.0000e-005		4.7000e-004	4.7000e-004		4.4000e-004	4.4000e-004	0.0000	1.3578	1.3578	4.2000e-004	0.0000	1.3684
Total	**7.4000e-004**	**9.3900e-003**	**0.0101**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.3578**	**1.3578**	**4.2000e-004**	**0.0000**	**1.3684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	8.2200e-003	2.1200e-003	2.0000e-005	7.2000e-004	6.0000e-005	7.8000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	1.6611	1.6611	1.2000e-004	0.0000	1.6640
Worker	1.9000e-004	1.5000e-004	1.6300e-003	0.0000	7.2000e-004	0.0000	7.2000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.3684	0.3684	1.0000e-005	0.0000	0.3687
Total	**4.8000e-004**	**8.3700e-003**	**3.7500e-003**	**2.0000e-005**	**1.4400e-003**	**6.0000e-005**	**1.5000e-003**	**3.7000e-004**	**6.0000e-005**	**4.4000e-004**	**0.0000**	**2.0294**	**2.0294**	**1.3000e-004**	**0.0000**	**2.0327**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4000e-004	9.3900e-003	0.0101	1.0000e-005		4.7000e-004	4.7000e-004		4.4000e-004	4.4000e-004	0.0000	1.3578	1.3578	4.2000e-004	0.0000	1.3684
Total	**7.4000e-004**	**9.3900e-003**	**0.0101**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.3578**	**1.3578**	**4.2000e-004**	**0.0000**	**1.3684**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	8.2200e-003	2.1200e-003	2.0000e-005	7.2000e-004	6.0000e-005	7.8000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	1.6611	1.6611	1.2000e-004	0.0000	1.6640
Worker	1.9000e-004	1.5000e-004	1.6300e-003	0.0000	7.2000e-004	0.0000	7.2000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.3684	0.3684	1.0000e-005	0.0000	0.3687
Total	**4.8000e-004**	**8.3700e-003**	**3.7500e-003**	**2.0000e-005**	**1.4400e-003**	**6.0000e-005**	**1.5000e-003**	**3.7000e-004**	**6.0000e-005**	**4.4000e-004**	**0.0000**	**2.0294**	**2.0294**	**1.3000e-004**	**0.0000**	**2.0327**

3.6 Assemble Column & Wall forms, Pour Corewalls and

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0130	0.1238	0.0778	2.0000e-004		5.5500e-003	5.5500e-003		5.2900e-003	5.2900e-003	0.0000	17.6354	17.6354	4.3800e-003	0.0000	17.7449
Total	**0.0130**	**0.1238**	**0.0778**	**2.0000e-004**		**5.5500e-003**	**5.5500e-003**		**5.2900e-003**	**5.2900e-003**	**0.0000**	**17.6354**	**17.6354**	**4.3800e-003**	**0.0000**	**17.7449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2000e-004	0.0176	4.5400e-003	4.0000e-005	9.0000e-004	1.3000e-004	1.0300e-003	2.6000e-004	1.2000e-004	3.8000e-004	0.0000	3.5594	3.5594	2.5000e-004	0.0000	3.5658
Worker	8.0000e-004	6.5000e-004	7.0000e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5788	1.5788	5.0000e-005	0.0000	1.5801
Total	**1.4200e-003**	**0.0183**	**0.0115**	**6.0000e-005**	**2.5500e-003**	**1.4000e-004**	**2.6900e-003**	**7.0000e-004**	**1.3000e-004**	**8.3000e-004**	**0.0000**	**5.1382**	**5.1382**	**3.0000e-004**	**0.0000**	**5.1459**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0130	0.1238	0.0778	2.0000e-004		5.5500e-003	5.5500e-003		5.2900e-003	5.2900e-003	0.0000	17.6353	17.6353	4.3800e-003	0.0000	17.7449
Total	**0.0130**	**0.1238**	**0.0778**	**2.0000e-004**		**5.5500e-003**	**5.5500e-003**		**5.2900e-003**	**5.2900e-003**	**0.0000**	**17.6353**	**17.6353**	**4.3800e-003**	**0.0000**	**17.7449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2000e-004	0.0176	4.5400e-003	4.0000e-005	9.0000e-004	1.3000e-004	1.0300e-003	2.6000e-004	1.2000e-004	3.8000e-004	0.0000	3.5594	3.5594	2.5000e-004	0.0000	3.5658
Worker	8.0000e-004	6.5000e-004	7.0000e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5788	1.5788	5.0000e-005	0.0000	1.5801
Total	**1.4200e-003**	**0.0183**	**0.0115**	**6.0000e-005**	**2.5500e-003**	**1.4000e-004**	**2.6900e-003**	**7.0000e-004**	**1.3000e-004**	**8.3000e-004**	**0.0000**	**5.1382**	**5.1382**	**3.0000e-004**	**0.0000**	**5.1459**

3.7 Construction Roof Shoring - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2100e-003	8.4100e-003	9.3000e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	0.9411	0.9411	1.8000e-004	0.0000	0.9456
Total	**2.2100e-003**	**8.4100e-003**	**9.3000e-003**	**1.0000e-005**		**5.7000e-004**	**5.7000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**0.9411**	**0.9411**	**1.8000e-004**	**0.0000**	**0.9456**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2100e-003	8.4100e-003	9.3000e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	0.9411	0.9411	1.8000e-004	0.0000	0.9456
Total	**2.2100e-003**	**8.4100e-003**	**9.3000e-003**	**1.0000e-005**		**5.7000e-004**	**5.7000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**0.9411**	**0.9411**	**1.8000e-004**	**0.0000**	**0.9456**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

3.8 Vertical Wall Prestressing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1000e-003	4.2000e-003	4.6500e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.4706	0.4706	9.0000e-005	0.0000	0.4728
Total	**1.1000e-003**	**4.2000e-003**	**4.6500e-003**	**1.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.4706**	**0.4706**	**9.0000e-005**	**0.0000**	**0.4728**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	5.8700e-003	1.5100e-003	1.0000e-005	3.0000e-004	4.0000e-005	3.4000e-004	9.0000e-005	4.0000e-005	1.3000e-004	0.0000	1.1865	1.1865	8.0000e-005	0.0000	1.1886
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	**3.4000e-004**	**5.9800e-003**	**2.6800e-003**	**1.0000e-005**	**5.7000e-004**	**4.0000e-005**	**6.2000e-004**	**1.6000e-004**	**4.0000e-005**	**2.0000e-004**	**0.0000**	**1.4496**	**1.4496**	**9.0000e-005**	**0.0000**	**1.4519**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1000e-003	4.2000e-003	4.6500e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.4706	0.4706	9.0000e-005	0.0000	0.4728
Total	**1.1000e-003**	**4.2000e-003**	**4.6500e-003**	**1.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.4706**	**0.4706**	**9.0000e-005**	**0.0000**	**0.4728**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	5.8700e-003	1.5100e-003	1.0000e-005	3.0000e-004	4.0000e-005	3.4000e-004	9.0000e-005	4.0000e-005	1.3000e-004	0.0000	1.1865	1.1865	8.0000e-005	0.0000	1.1886
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	**3.4000e-004**	**5.9800e-003**	**2.6800e-003**	**1.0000e-005**	**5.7000e-004**	**4.0000e-005**	**6.2000e-004**	**1.6000e-004**	**4.0000e-005**	**2.0000e-004**	**0.0000**	**1.4496**	**1.4496**	**9.0000e-005**	**0.0000**	**1.4519**

3.9 Roof Reinforcing, Bearing Pad Installationm and Roof Pour -

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8400e-003	0.0336	0.0372	5.0000e-005		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003	0.0000	3.7644	3.7644	7.2000e-004	0.0000	3.7825
Total	**8.8400e-003**	**0.0336**	**0.0372**	**5.0000e-005**		**2.2700e-003**	**2.2700e-003**		**2.2700e-003**	**2.2700e-003**	**0.0000**	**3.7644**	**3.7644**	**7.2000e-004**	**0.0000**	**3.7825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6500e-003	0.0470	0.0121	1.0000e-004	2.4000e-003	3.4000e-004	2.7300e-003	6.9000e-004	3.2000e-004	1.0200e-003	0.0000	9.4918	9.4918	6.8000e-004	0.0000	9.5087
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**3.7800e-003**	**0.0487**	**0.0308**	**1.5000e-004**	**6.7900e-003**	**3.8000e-004**	**7.1500e-003**	**1.8600e-003**	**3.5000e-004**	**2.2200e-003**	**0.0000**	**13.7018**	**13.7018**	**8.2000e-004**	**0.0000**	**13.7223**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8400e-003	0.0336	0.0372	5.0000e-005		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003	0.0000	3.7644	3.7644	7.2000e-004	0.0000	3.7825
Total	**8.8400e-003**	**0.0336**	**0.0372**	**5.0000e-005**		**2.2700e-003**	**2.2700e-003**		**2.2700e-003**	**2.2700e-003**	**0.0000**	**3.7644**	**3.7644**	**7.2000e-004**	**0.0000**	**3.7825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6500e-003	0.0470	0.0121	1.0000e-004	2.4000e-003	3.4000e-004	2.7300e-003	6.9000e-004	3.2000e-004	1.0200e-003	0.0000	9.4918	9.4918	6.8000e-004	0.0000	9.5087
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**3.7800e-003**	**0.0487**	**0.0308**	**1.5000e-004**	**6.7900e-003**	**3.8000e-004**	**7.1500e-003**	**1.8600e-003**	**3.5000e-004**	**2.2200e-003**	**0.0000**	**13.7018**	**13.7018**	**8.2000e-004**	**0.0000**	**13.7223**

3.10 Prestressing Mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9800e-003	0.0267	0.0247	4.0000e-005		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	3.4043	3.4043	3.2000e-004	0.0000	3.4124
Total	**3.9800e-003**	**0.0267**	**0.0247**	**4.0000e-005**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**3.4043**	**3.4043**	**3.2000e-004**	**0.0000**	**3.4124**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.2000e-004	0.0235	6.0500e-003	5.0000e-005	1.2000e-003	1.7000e-004	1.3700e-003	3.5000e-004	1.6000e-004	5.1000e-004	0.0000	4.7459	4.7459	3.4000e-004	0.0000	4.7543
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**2.9500e-003**	**0.0252**	**0.0247**	**1.0000e-004**	**5.5900e-003**	**2.1000e-004**	**5.7900e-003**	**1.5200e-003**	**1.9000e-004**	**1.7100e-003**	**0.0000**	**8.9559**	**8.9559**	**4.8000e-004**	**0.0000**	**8.9679**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9800e-003	0.0267	0.0247	4.0000e-005		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	3.4043	3.4043	3.2000e-004	0.0000	3.4124
Total	**3.9800e-003**	**0.0267**	**0.0247**	**4.0000e-005**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**3.4043**	**3.4043**	**3.2000e-004**	**0.0000**	**3.4124**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.2000e-004	0.0235	6.0500e-003	5.0000e-005	1.2000e-003	1.7000e-004	1.3700e-003	3.5000e-004	1.6000e-004	5.1000e-004	0.0000	4.7459	4.7459	3.4000e-004	0.0000	4.7543
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**2.9500e-003**	**0.0252**	**0.0247**	**1.0000e-004**	**5.5900e-003**	**2.1000e-004**	**5.7900e-003**	**1.5200e-003**	**1.9000e-004**	**1.7100e-003**	**0.0000**	**8.9559**	**8.9559**	**4.8000e-004**	**0.0000**	**8.9679**

3.11 Backfill Reservoir and Site - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5400e-003	0.0672	0.0607	9.0000e-005		4.3400e-003	4.3400e-003		4.1000e-003	4.1000e-003	0.0000	8.2728	8.2728	1.8800e-003	0.0000	8.3197
Total	**7.5400e-003**	**0.0672**	**0.0607**	**9.0000e-005**		**4.3400e-003**	**4.3400e-003**		**4.1000e-003**	**4.1000e-003**	**0.0000**	**8.2728**	**8.2728**	**1.8800e-003**	**0.0000**	**8.3197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5400e-003	0.0672	0.0607	9.0000e-005		4.3400e-003	4.3400e-003		4.1000e-003	4.1000e-003	0.0000	8.2728	8.2728	1.8800e-003	0.0000	8.3197
Total	**7.5400e-003**	**0.0672**	**0.0607**	**9.0000e-005**		**4.3400e-003**	**4.3400e-003**		**4.1000e-003**	**4.1000e-003**	**0.0000**	**8.2728**	**8.2728**	**1.8800e-003**	**0.0000**	**8.3197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

3.12 Underground Piping and Structures (above reservoir floor)

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0555	0.5743	0.3532	8.6000e-004		0.0256	0.0256		0.0235	0.0235	0.0000	78.6807	78.6807	0.0245	0.0000	79.2930
Total	**0.0555**	**0.5743**	**0.3532**	**8.6000e-004**		**0.0256**	**0.0256**		**0.0235**	**0.0235**	**0.0000**	**78.6807**	**78.6807**	**0.0245**	**0.0000**	**79.2930**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0411	0.0106	9.0000e-005	2.1000e-003	3.0000e-004	2.3900e-003	6.0000e-004	2.8000e-004	8.9000e-004	0.0000	8.3053	8.3053	5.9000e-004	0.0000	8.3201
Worker	1.8600e-003	1.5200e-003	0.0163	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.6838	3.6838	1.3000e-004	0.0000	3.6869
Total	**3.3000e-003**	**0.0426**	**0.0269**	**1.3000e-004**	**5.9400e-003**	**3.3000e-004**	**6.2600e-003**	**1.6200e-003**	**3.1000e-004**	**1.9400e-003**	**0.0000**	**11.9891**	**11.9891**	**7.2000e-004**	**0.0000**	**12.0070**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0555	0.5743	0.3532	8.6000e-004		0.0256	0.0256		0.0235	0.0235	0.0000	78.6806	78.6806	0.0245	0.0000	79.2929
Total	**0.0555**	**0.5743**	**0.3532**	**8.6000e-004**		**0.0256**	**0.0256**		**0.0235**	**0.0235**	**0.0000**	**78.6806**	**78.6806**	**0.0245**	**0.0000**	**79.2929**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0411	0.0106	9.0000e-005	2.1000e-003	3.0000e-004	2.3900e-003	6.0000e-004	2.8000e-004	8.9000e-004	0.0000	8.3053	8.3053	5.9000e-004	0.0000	8.3201
Worker	1.8600e-003	1.5200e-003	0.0163	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.6838	3.6838	1.3000e-004	0.0000	3.6869
Total	**3.3000e-003**	**0.0426**	**0.0269**	**1.3000e-004**	**5.9400e-003**	**3.3000e-004**	**6.2600e-003**	**1.6200e-003**	**3.1000e-004**	**1.9400e-003**	**0.0000**	**11.9891**	**11.9891**	**7.2000e-004**	**0.0000**	**12.0070**

3.13 Paving and Restoration - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1100e-003	0.0438	0.0370	6.0000e-005		2.3900e-003	2.3900e-003		2.2000e-003	2.2000e-003	0.0000	5.2029	5.2029	1.6200e-003	0.0000	5.2434
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1200e-003**	**0.0438**	**0.0370**	**6.0000e-005**		**2.3900e-003**	**2.3900e-003**		**2.2000e-003**	**2.2000e-003**	**0.0000**	**5.2029**	**5.2029**	**1.6200e-003**	**0.0000**	**5.2434**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.3000e-004	4.6700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0525	1.0525	4.0000e-005	0.0000	1.0534
Total	**5.3000e-004**	**4.3000e-004**	**4.6700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0525**	**1.0525**	**4.0000e-005**	**0.0000**	**1.0534**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1100e-003	0.0438	0.0370	6.0000e-005		2.3900e-003	2.3900e-003		2.2000e-003	2.2000e-003	0.0000	5.2029	5.2029	1.6200e-003	0.0000	5.2434
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1200e-003**	**0.0438**	**0.0370**	**6.0000e-005**		**2.3900e-003**	**2.3900e-003**		**2.2000e-003**	**2.2000e-003**	**0.0000**	**5.2029**	**5.2029**	**1.6200e-003**	**0.0000**	**5.2434**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.3000e-004	4.6700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0525	1.0525	4.0000e-005	0.0000	1.0534
Total	**5.3000e-004**	**4.3000e-004**	**4.6700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0525**	**1.0525**	**4.0000e-005**	**0.0000**	**1.0534**

3.14 Offsite Water, Reclaimed Water and Storm Drain Piping -

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5533	0.3425	7.9000e-004		0.0266	0.0266		0.0245	0.0245	0.0000	72.0617	72.0617	0.0224	0.0000	72.6226
Total	**0.0544**	**0.5533**	**0.3425**	**7.9000e-004**		**0.0266**	**0.0266**		**0.0245**	**0.0245**	**0.0000**	**72.0617**	**72.0617**	**0.0224**	**0.0000**	**72.6226**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2400e-003	0.0352	9.0800e-003	7.0000e-005	1.8000e-003	2.5000e-004	2.0500e-003	5.2000e-004	2.4000e-004	7.6000e-004	0.0000	7.1188	7.1188	5.1000e-004	0.0000	7.1315
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	**2.8300e-003**	**0.0365**	**0.0231**	**1.0000e-004**	**5.0900e-003**	**2.8000e-004**	**5.3700e-003**	**1.3900e-003**	**2.6000e-004**	**1.6600e-003**	**0.0000**	**10.2764**	**10.2764**	**6.2000e-004**	**0.0000**	**10.2917**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5533	0.3425	7.9000e-004		0.0266	0.0266		0.0245	0.0245	0.0000	72.0617	72.0617	0.0224	0.0000	72.6225
Total	**0.0544**	**0.5533**	**0.3425**	**7.9000e-004**		**0.0266**	**0.0266**		**0.0245**	**0.0245**	**0.0000**	**72.0617**	**72.0617**	**0.0224**	**0.0000**	**72.6225**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2400e-003	0.0352	9.0800e-003	7.0000e-005	1.8000e-003	2.5000e-004	2.0500e-003	5.2000e-004	2.4000e-004	7.6000e-004	0.0000	7.1188	7.1188	5.1000e-004	0.0000	7.1315
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	**2.8300e-003**	**0.0365**	**0.0231**	**1.0000e-004**	**5.0900e-003**	**2.8000e-004**	**5.3700e-003**	**1.3900e-003**	**2.6000e-004**	**1.6600e-003**	**0.0000**	**10.2764**	**10.2764**	**6.2000e-004**	**0.0000**	**10.2917**

3.15 Street Improvements - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0108	0.1125	0.0933	1.4000e-004		6.5000e-003	6.5000e-003		5.9800e-003	5.9800e-003	0.0000	12.7999	12.7999	3.9800e-003	0.0000	12.8996
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0138**	**0.1125**	**0.0933**	**1.4000e-004**		**6.5000e-003**	**6.5000e-003**		**5.9800e-003**	**5.9800e-003**	**0.0000**	**12.7999**	**12.7999**	**3.9800e-003**	**0.0000**	**12.8996**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	8.7000e-004	9.3300e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.1050	2.1050	7.0000e-005	0.0000	2.1068
Total	**1.0600e-003**	**8.7000e-004**	**9.3300e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**2.0000e-005**	**6.0000e-004**	**0.0000**	**2.1050**	**2.1050**	**7.0000e-005**	**0.0000**	**2.1068**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0108	0.1125	0.0933	1.4000e-004		6.5000e-003	6.5000e-003		5.9800e-003	5.9800e-003	0.0000	12.7999	12.7999	3.9800e-003	0.0000	12.8995
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0138**	**0.1125**	**0.0933**	**1.4000e-004**		**6.5000e-003**	**6.5000e-003**		**5.9800e-003**	**5.9800e-003**	**0.0000**	**12.7999**	**12.7999**	**3.9800e-003**	**0.0000**	**12.8995**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	8.7000e-004	9.3300e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.1050	2.1050	7.0000e-005	0.0000	2.1068
Total	**1.0600e-003**	**8.7000e-004**	**9.3300e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**2.0000e-005**	**6.0000e-004**	**0.0000**	**2.1050**	**2.1050**	**7.0000e-005**	**0.0000**	**2.1068**

3.16 Architectual Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0943					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0217	0.0212	3.0000e-005		1.4700e-003	1.4700e-003		1.4000e-003	1.4000e-003	0.0000	2.7780	2.7780	6.4000e-004	0.0000	2.7941
Total	**0.0968**	**0.0217**	**0.0212**	**3.0000e-005**		**1.4700e-003**	**1.4700e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**2.7780**	**2.7780**	**6.4000e-004**	**0.0000**	**2.7941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	2.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Total	**3.0000e-005**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0632**	**0.0632**	**0.0000**	**0.0000**	**0.0632**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0943					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0217	0.0212	3.0000e-005		1.4700e-003	1.4700e-003		1.4000e-003	1.4000e-003	0.0000	2.7780	2.7780	6.4000e-004	0.0000	2.7941
Total	**0.0968**	**0.0217**	**0.0212**	**3.0000e-005**		**1.4700e-003**	**1.4700e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**2.7780**	**2.7780**	**6.4000e-004**	**0.0000**	**2.7941**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	2.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Total	**3.0000e-005**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0632**	**0.0632**	**0.0000**	**0.0000**	**0.0632**

Corona Keith

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	13.00	1000sqft	0.30	13,000.00	0
Other Asphalt Surfaces	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Work days are correct

Off-road Equipment -

Off-road Equipment - Construction Data Needs document

Off-road Equipment - Consturction Data needs document

Off-road Equipment - construction data doc

Off-road Equipment - construction data document

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Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Off-road Equipment - Construction Data needs

Grading - Construction Data needs

Off-road Equipment - Construction Data needs

Trips and VMT - Construction Data needs

Architectural Coating - Construction Data needs

Water And Wastewater - Construction Data needs

Solid Waste -

Operational Off-Road Equipment - Construction Data needs

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	6,500.00	21,200.00
tblArchitecturalCoating	ConstArea_Parking	6,000.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	NumDays	220.00	15.00
tblConstructionPhase	NumDays	6.00	15.00
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tblConstructionPhase	NumDays	220.00	35.00

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tblGrading	AcresOfGrading	5.00	15.00
tblGrading	MaterialExported	0.00	9,900.00
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tblOffRoadEquipment	HorsePower	16.00	187.00
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tblOffRoadEquipment	HorsePower	187.00	367.00
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tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
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tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
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tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
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tblOffRoadEquipment	OffRoadEquipmentType	Welders	Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
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tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Cement and Mortar Mixers

tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
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tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Off-Highway Trucks
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tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
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tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	3,006,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1039	1.2447	0.6284	1.7900e-003	0.0267	0.0509	0.0775	5.6200e-003	0.0470	0.0527	0.0000	168.0354	168.0354	0.0367	0.0000	168.9522
2018	0.2831	1.7901	1.2202	2.9600e-003	0.0336	0.0797	0.1133	9.1500e-003	0.0741	0.0832	0.0000	269.9290	269.9290	0.0648	0.0000	271.5495
Maximum	**0.2831**	**1.7901**	**1.2202**	**2.9600e-003**	**0.0336**	**0.0797**	**0.1133**	**9.1500e-003**	**0.0741**	**0.0832**	**0.0000**	**269.9290**	**269.9290**	**0.0648**	**0.0000**	**271.5495**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1039	1.2447	0.6284	1.7900e-003	0.0205	0.0509	0.0713	4.9400e-003	0.0470	0.0520	0.0000	168.0353	168.0353	0.0367	0.0000	168.9521
2018	0.2831	1.7901	1.2202	2.9600e-003	0.0336	0.0797	0.1133	9.1500e-003	0.0741	0.0832	0.0000	269.9287	269.9287	0.0648	0.0000	271.5492
Maximum	**0.2831**	**1.7901**	**1.2202**	**2.9600e-003**	**0.0336**	**0.0797**	**0.1133**	**9.1500e-003**	**0.0741**	**0.0832**	**0.0000**	**269.9287**	**269.9287**	**0.0648**	**0.0000**	**271.5492**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**10.24**	**0.00**	**3.23**	**4.60**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**10-18-2017**	**1-17-2018**	0.9646	0.9646
4	**7-18-2018**	**9-30-2018**	0.0518	0.0518
		Highest	0.9646	0.9646

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/18/2017	10/31/2017	5	10	
2	Grading	Grading	11/1/2017	11/21/2017	5	15	
3	Drainage/Utils	Building Construction	11/22/2017	12/12/2017	5	15	
4	Reservoir Floor and Wall Footings	Building Construction	12/13/2017	1/9/2018	5	20	
5	Assemble Column & Wall forms, Pour Corewalls and Columns	Building Construction	1/10/2018	1/30/2018	5	15	
6	Construction Roof Shoring	Building Construction	1/31/2018	2/13/2018	5	10	
7	Vertical Wall Prestressing	Building Construction	2/14/2018	2/20/2018	5	5	

8	Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Building Construction	2/21/2018	4/17/2018	5	40	
9	Prestressing Mobilization	Building Construction	4/18/2018	5/15/2018	5	20	
10	Backfill Reservoir and Site	Building Construction	5/23/2018	6/5/2018	5	10	
11	Underground Piping and Structures (above reservoir floor)	Building Construction	6/6/2018	7/24/2018	5	35	
12	Paving and Restoration	Paving	7/25/2018	8/7/2018	5	10	
13	Offsite Water, Reclaimed Water and Storm Drain Piping	Building Construction	7/25/2018	9/4/2018	5	30	
14	Street Improvements	Paving	8/15/2018	9/11/2018	5	20	
15	Architectual Coating	Architectural Coating	9/11/2018	9/18/2018	5	6	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 21,200; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Underground Piping and Structures (above reservoir floor) and	Welders	0	8.00	46	0.45
Reservoir Floor and Wall Footings	Welders	0	8.00	46	0.45
Assemble Column & Wall forms, Pour Corewalls and Columns	Welders	0	8.00	46	0.45
Prestressing Mobilization	Welders	0	8.00	46	0.45
Backfill Reservoir and Site	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Loaders	1	8.00	87	0.54
Drainage/Utils	Cranes	0	8.00	231	0.29
Drainage/Utils	Forklifts	0	7.00	89	0.20
Drainage/Utils	Generator Sets	0	8.00	84	0.74
Drainage/Utils	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Drainage/Utils	Welders	0	8.00	46	0.45
Drainage/Utils	Excavators	1	8.00	157	0.57
Drainage/Utils	Off-Highway Trucks	2	8.00	381	0.57

Drainage/Utils	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Generator Sets	0	8.00	84	0.74
Reservoir Floor and Wall Footings	Rough Terrain Forklifts	1	4.00	84	0.74
Assemble Column & Wall forms, Pour Corewalls and Columns	Off-Highway Trucks	1	8.00	381	0.57
Prestressing Mobilization	Air Compressors	2	4.00	78	0.48
Backfill Reservoir and Site	Excavators	1	8.00	157	0.57
Site Preparation	Dumpers/Tenders	1	8.00	187	0.41
Paving and Restoration	Pavers	1	8.00	130	0.42
Street Improvements	Pavers	1	8.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Street Improvements	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Street Improvements	Rollers	2	8.00	80	0.38
Backfill Reservoir and Site	Generator Sets	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	367	0.48
Backfill Reservoir and Site	Rubber Tired Loaders	1	8.00	87	0.54
Underground Piping and Structures (above reservoir floor) and	Excavators	1	8.00	157	0.57
Underground Piping and Structures (above reservoir floor) and	Off-Highway Trucks	2	8.00	381	0.57
Grading	Off-Highway Trucks	2	8.00	381	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Underground Piping and Structures (above reservoir floor) and	Rubber Tired Loaders	1	8.00	87	0.54
Grading	Excavators	1	8.00	157	0.57
Offsite Water, Reclaimed Water and Storm Drain Piping	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Tractors	1	8.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Welders	1	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Off-Highway Trucks	2	8.00	381	0.57
Backfill Reservoir and Site	Cement and Mortar Mixers	1	4.00	9	0.56
Offsite Water, Reclaimed Water and Storm Drain Piping	Rubber Tired Loaders	1	8.00	87	0.54
Offsite Water, Reclaimed Water and Storm Drain Piping	Welders	0	8.00	46	0.45
Offsite Water, Reclaimed Water and Storm Drain Piping	Trenchers	1	8.00	78	0.50

Architectual Coating	Forklifts	2	8.00	89	0.20
Construction Roof Shoring	Welders	1	8.00	46	0.45
Vertical Wall Prestressing	Welders	1	8.00	46	0.45
Site Preparation	Excavators	1	8.00	157	0.57
Site Preparation	Off-Highway Trucks	1	8.00	381	0.57
Grading	Generator Sets	1	8.00	84	0.74
Architectual Coating	Aerial Lifts	2	8.00	63	0.31
Paving and Restoration	Cement and Mortar Mixers	0	8.00	9	0.56
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Street Improvements	Cement and Mortar Mixers	0	8.00	9	0.56
Underground Piping and Structures (above reservoir floor) and	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cranes	0	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cranes	0	8.00	231	0.29
Construction Roof Shoring	Cranes	0	8.00	231	0.29
Vertical Wall Prestressing	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Bore/Drill Rigs	1	4.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Cranes	0	8.00	231	0.29
Prestressing Mobilization	Cranes	0	8.00	231	0.29
Backfill Reservoir and Site	Cranes	0	8.00	231	0.29
Underground Piping and Structures (above reservoir floor) and	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Forklifts	0	8.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Forklifts	0	7.00	89	0.20
Construction Roof Shoring	Forklifts	0	7.00	89	0.20
Vertical Wall Prestressing	Forklifts	0	7.00	89	0.20
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Forklifts	0	7.00	89	0.20
Grading	Rubber Tired Loaders	2	8.00	87	0.54
Prestressing Mobilization	Forklifts	0	7.00	89	0.20
Backfill Reservoir and Site	Forklifts	0	7.00	89	0.20
Grading	Scrapers	1	8.00	97	0.37
Underground Piping and Structures (above reservoir floor) and	Generator Sets	0	8.00	84	0.74

Reservoir Floor and Wall Footings	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Assemble Column & Wall forms, Pour Corewalls and Columns	Generator Sets	0	8.00	84	0.74
Construction Roof Shoring	Generator Sets	0	8.00	84	0.74
Vertical Wall Prestressing	Generator Sets	0	8.00	84	0.74
Architectual Coating	Air Compressors	1	8.00	78	0.48
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Generator Sets	0	8.00	84	0.74
Prestressing Mobilization	Generator Sets	0	8.00	84	0.74
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Scrapers	0	8.00	367	0.48
Underground Piping and Structures (above reservoir floor) and	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Reservoir Floor and Wall Footings	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Assemble Column & Wall forms, Pour Corewalls and Columns	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Cranes	0	8.00	231	0.29
Reservoir Floor and Wall Footings	Cement and Mortar Mixers	1	8.00	231	0.29
Assemble Column & Wall forms, Pour Corewalls and Columns	Cement and Mortar Mixers	1	8.00	9	0.56
Construction Roof Shoring	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Vertical Wall Prestressing	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Roof Reinforcing, Bearing Pad Installationm and Roof Pour	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Prestressing Mobilization	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Backfill Reservoir and Site	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Offsite Water, Reclaimed Water and Storm Drain Piping	Forklifts	0	7.00	89	0.20
Reservoir Floor and Wall Footings	Plate Compactors	1	4.00	89	0.20
Assemble Column & Wall forms, Pour Corewalls and Columns	Concrete/Industrial Saws	1	8.00	89	0.73
Paving and Restoration	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Street Improvements	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Reservoir Floor and Wall Footings	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving and Restoration	3	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Street Improvements	4	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	11.00	1.00	1,238.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utils	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Reservoir Floor and Wall Footings	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectual Coating	5	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Roof Reinforcing, Bearing Pad	1	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Prestressing Mobilization	2	40.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Backfill Reservoir and Site	4	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Underground Piping and Structures (above	4	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Offsite Water, Reclaimed Water and	5	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Assemble Column & Wall forms, Pour	3	20.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction Roof Shoring	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Vertical Wall Prestressing	1	10.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	6.00	0.00	26.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.9700e-003	0.0000	7.9700e-003	8.6000e-004	0.0000	8.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0191	0.1974	0.1145	2.4000e-004		9.7400e-003	9.7400e-003		8.9600e-003	8.9600e-003	0.0000	22.5952	22.5952	6.9200e-003	0.0000	22.7683
Total	**0.0191**	**0.1974**	**0.1145**	**2.4000e-004**	**7.9700e-003**	**9.7400e-003**	**0.0177**	**8.6000e-004**	**8.9600e-003**	**9.8200e-003**	**0.0000**	**22.5952**	**22.5952**	**6.9200e-003**	**0.0000**	**22.7683**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.4700e-003	8.2000e-004	1.0000e-005	2.2000e-004	2.0000e-005	2.5000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.0111	1.0111	7.0000e-005	0.0000	1.0129
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6000e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3249	0.3249	1.0000e-005	0.0000	0.3252
Total	**3.1000e-004**	**4.6200e-003**	**2.4200e-003**	**1.0000e-005**	**5.5000e-004**	**2.0000e-005**	**5.8000e-004**	**1.5000e-004**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**1.3360**	**1.3360**	**8.0000e-005**	**0.0000**	**1.3381**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1100e-003	0.0000	3.1100e-003	3.4000e-004	0.0000	3.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0191	0.1974	0.1145	2.4000e-004		9.7400e-003	9.7400e-003		8.9600e-003	8.9600e-003	0.0000	22.5952	22.5952	6.9200e-003	0.0000	22.7683
Total	**0.0191**	**0.1974**	**0.1145**	**2.4000e-004**	**3.1100e-003**	**9.7400e-003**	**0.0129**	**3.4000e-004**	**8.9600e-003**	**9.3000e-003**	**0.0000**	**22.5952**	**22.5952**	**6.9200e-003**	**0.0000**	**22.7683**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.4700e-003	8.2000e-004	1.0000e-005	2.2000e-004	2.0000e-005	2.5000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.0111	1.0111	7.0000e-005	0.0000	1.0129
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6000e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3249	0.3249	1.0000e-005	0.0000	0.3252
Total	**3.1000e-004**	**4.6200e-003**	**2.4200e-003**	**1.0000e-005**	**5.5000e-004**	**2.0000e-005**	**5.8000e-004**	**1.5000e-004**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**1.3360**	**1.3360**	**8.0000e-005**	**0.0000**	**1.3381**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1500e-003	0.0000	2.1500e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0467	0.4791	0.2681	5.4000e-004		0.0253	0.0253		0.0234	0.0234	0.0000	49.8781	49.8781	0.0143	0.0000	50.2362
Total	**0.0467**	**0.4791**	**0.2681**	**5.4000e-004**	**2.1500e-003**	**0.0253**	**0.0274**	**2.6000e-004**	**0.0234**	**0.0237**	**0.0000**	**49.8781**	**49.8781**	**0.0143**	**0.0000**	**50.2362**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2400e-003	0.2130	0.0393	4.9000e-004	0.0106	1.1200e-003	0.0118	2.9200e-003	1.0700e-003	3.9900e-003	0.0000	48.1437	48.1437	3.4500e-003	0.0000	48.2300
Vendor	4.0000e-005	9.9000e-004	2.7000e-004	0.0000	5.0000e-005	1.0000e-005	6.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1879	0.1879	1.0000e-005	0.0000	0.1883
Worker	4.9000e-004	4.1000e-004	4.3900e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8934	0.8934	3.0000e-005	0.0000	0.8942
Total	**6.7700e-003**	**0.2144**	**0.0439**	**5.0000e-004**	**0.0116**	**1.1400e-003**	**0.0127**	**3.1700e-003**	**1.0900e-003**	**4.2600e-003**	**0.0000**	**49.2250**	**49.2250**	**3.4900e-003**	**0.0000**	**49.3125**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.4000e-004	0.0000	8.4000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0467	0.4791	0.2681	5.4000e-004		0.0253	0.0253		0.0234	0.0234	0.0000	49.8780	49.8780	0.0143	0.0000	50.2362
Total	**0.0467**	**0.4791**	**0.2681**	**5.4000e-004**	**8.4000e-004**	**0.0253**	**0.0261**	**1.0000e-004**	**0.0234**	**0.0235**	**0.0000**	**49.8780**	**49.8780**	**0.0143**	**0.0000**	**50.2362**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2400e-003	0.2130	0.0393	4.9000e-004	0.0106	1.1200e-003	0.0118	2.9200e-003	1.0700e-003	3.9900e-003	0.0000	48.1437	48.1437	3.4500e-003	0.0000	48.2300
Vendor	4.0000e-005	9.9000e-004	2.7000e-004	0.0000	5.0000e-005	1.0000e-005	6.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1879	0.1879	1.0000e-005	0.0000	0.1883
Worker	4.9000e-004	4.1000e-004	4.3900e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8934	0.8934	3.0000e-005	0.0000	0.8942
Total	**6.7700e-003**	**0.2144**	**0.0439**	**5.0000e-004**	**0.0116**	**1.1400e-003**	**0.0127**	**3.1700e-003**	**1.0900e-003**	**4.2600e-003**	**0.0000**	**49.2250**	**49.2250**	**3.4900e-003**	**0.0000**	**49.3125**

3.4 Drainage/Utils - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0273	0.2933	0.1636	3.7000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	34.2617	34.2617	0.0105	0.0000	34.5241
Total	**0.0273**	**0.2933**	**0.1636**	**3.7000e-004**		**0.0133**	**0.0133**		**0.0122**	**0.0122**	**0.0000**	**34.2617**	**34.2617**	**0.0105**	**0.0000**	**34.5241**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-004	0.0188	5.0400e-003	4.0000e-005	9.0000e-004	1.6000e-004	1.0600e-003	2.6000e-004	1.5000e-004	4.1000e-004	0.0000	3.5706	3.5706	2.7000e-004	0.0000	3.5773
Worker	4.5000e-004	3.7000e-004	3.9900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.8122	0.8122	3.0000e-005	0.0000	0.8129
Total	**1.1500e-003**	**0.0192**	**9.0300e-003**	**5.0000e-005**	**1.7200e-003**	**1.7000e-004**	**1.8900e-003**	**4.8000e-004**	**1.6000e-004**	**6.3000e-004**	**0.0000**	**4.3828**	**4.3828**	**3.0000e-004**	**0.0000**	**4.3902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0273	0.2933	0.1636	3.7000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	34.2617	34.2617	0.0105	0.0000	34.5241
Total	**0.0273**	**0.2933**	**0.1636**	**3.7000e-004**		**0.0133**	**0.0133**		**0.0122**	**0.0122**	**0.0000**	**34.2617**	**34.2617**	**0.0105**	**0.0000**	**34.5241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-004	0.0188	5.0400e-003	4.0000e-005	9.0000e-004	1.6000e-004	1.0600e-003	2.6000e-004	1.5000e-004	4.1000e-004	0.0000	3.5706	3.5706	2.7000e-004	0.0000	3.5773
Worker	4.5000e-004	3.7000e-004	3.9900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.8122	0.8122	3.0000e-005	0.0000	0.8129
Total	**1.1500e-003**	**0.0192**	**9.0300e-003**	**5.0000e-005**	**1.7200e-003**	**1.7000e-004**	**1.8900e-003**	**4.8000e-004**	**1.6000e-004**	**6.3000e-004**	**0.0000**	**4.3828**	**4.3828**	**3.0000e-004**	**0.0000**	**4.3902**

3.5 Reservoir Floor and Wall Footings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6100e-003	0.0201	0.0190	3.0000e-005		1.1000e-003	1.1000e-003		1.0100e-003	1.0100e-003	0.0000	2.5583	2.5583	7.8000e-004	0.0000	2.5779
Total	**1.6100e-003**	**0.0201**	**0.0190**	**3.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.0100e-003**	**1.0100e-003**	**0.0000**	**2.5583**	**2.5583**	**7.8000e-004**	**0.0000**	**2.5779**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1000e-004	0.0163	4.3600e-003	3.0000e-005	1.3300e-003	1.4000e-004	1.4700e-003	3.6000e-004	1.3000e-004	4.9000e-004	0.0000	3.0945	3.0945	2.3000e-004	0.0000	3.1003
Worker	3.9000e-004	3.2000e-004	3.4600e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3400e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	0.7039	0.7039	3.0000e-005	0.0000	0.7045
Total	**1.0000e-003**	**0.0166**	**7.8200e-003**	**4.0000e-005**	**2.6600e-003**	**1.5000e-004**	**2.8100e-003**	**7.0000e-004**	**1.4000e-004**	**8.4000e-004**	**0.0000**	**3.7984**	**3.7984**	**2.6000e-004**	**0.0000**	**3.8049**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6000e-003	0.0201	0.0190	3.0000e-005		1.1000e-003	1.1000e-003		1.0100e-003	1.0100e-003	0.0000	2.5583	2.5583	7.8000e-004	0.0000	2.5779
Total	**1.6000e-003**	**0.0201**	**0.0190**	**3.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.0100e-003**	**1.0100e-003**	**0.0000**	**2.5583**	**2.5583**	**7.8000e-004**	**0.0000**	**2.5779**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1000e-004	0.0163	4.3600e-003	3.0000e-005	1.3300e-003	1.4000e-004	1.4700e-003	3.6000e-004	1.3000e-004	4.9000e-004	0.0000	3.0945	3.0945	2.3000e-004	0.0000	3.1003
Worker	3.9000e-004	3.2000e-004	3.4600e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3400e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	0.7039	0.7039	3.0000e-005	0.0000	0.7045
Total	**1.0000e-003**	**0.0166**	**7.8200e-003**	**4.0000e-005**	**2.6600e-003**	**1.5000e-004**	**2.8100e-003**	**7.0000e-004**	**1.4000e-004**	**8.4000e-004**	**0.0000**	**3.7984**	**3.7984**	**2.6000e-004**	**0.0000**	**3.8049**

3.5 Reservoir Floor and Wall Footings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4000e-004	9.3900e-003	0.0101	1.0000e-005		4.7000e-004	4.7000e-004		4.4000e-004	4.4000e-004	0.0000	1.3578	1.3578	4.2000e-004	0.0000	1.3684
Total	**7.4000e-004**	**9.3900e-003**	**0.0101**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.3578**	**1.3578**	**4.2000e-004**	**0.0000**	**1.3684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	8.2200e-003	2.1200e-003	2.0000e-005	7.2000e-004	6.0000e-005	7.8000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	1.6611	1.6611	1.2000e-004	0.0000	1.6640
Worker	1.9000e-004	1.5000e-004	1.6300e-003	0.0000	7.2000e-004	0.0000	7.2000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.3684	0.3684	1.0000e-005	0.0000	0.3687
Total	**4.8000e-004**	**8.3700e-003**	**3.7500e-003**	**2.0000e-005**	**1.4400e-003**	**6.0000e-005**	**1.5000e-003**	**3.7000e-004**	**6.0000e-005**	**4.4000e-004**	**0.0000**	**2.0294**	**2.0294**	**1.3000e-004**	**0.0000**	**2.0327**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4000e-004	9.3900e-003	0.0101	1.0000e-005		4.7000e-004	4.7000e-004		4.4000e-004	4.4000e-004	0.0000	1.3578	1.3578	4.2000e-004	0.0000	1.3684
Total	**7.4000e-004**	**9.3900e-003**	**0.0101**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.3578**	**1.3578**	**4.2000e-004**	**0.0000**	**1.3684**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	8.2200e-003	2.1200e-003	2.0000e-005	7.2000e-004	6.0000e-005	7.8000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	1.6611	1.6611	1.2000e-004	0.0000	1.6640
Worker	1.9000e-004	1.5000e-004	1.6300e-003	0.0000	7.2000e-004	0.0000	7.2000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.3684	0.3684	1.0000e-005	0.0000	0.3687
Total	**4.8000e-004**	**8.3700e-003**	**3.7500e-003**	**2.0000e-005**	**1.4400e-003**	**6.0000e-005**	**1.5000e-003**	**3.7000e-004**	**6.0000e-005**	**4.4000e-004**	**0.0000**	**2.0294**	**2.0294**	**1.3000e-004**	**0.0000**	**2.0327**

3.6 Assemble Column & Wall forms, Pour Corewalls and

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0130	0.1238	0.0778	2.0000e-004		5.5500e-003	5.5500e-003		5.2900e-003	5.2900e-003	0.0000	17.6354	17.6354	4.3800e-003	0.0000	17.7449
Total	**0.0130**	**0.1238**	**0.0778**	**2.0000e-004**		**5.5500e-003**	**5.5500e-003**		**5.2900e-003**	**5.2900e-003**	**0.0000**	**17.6354**	**17.6354**	**4.3800e-003**	**0.0000**	**17.7449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2000e-004	0.0176	4.5400e-003	4.0000e-005	9.0000e-004	1.3000e-004	1.0300e-003	2.6000e-004	1.2000e-004	3.8000e-004	0.0000	3.5594	3.5594	2.5000e-004	0.0000	3.5658
Worker	8.0000e-004	6.5000e-004	7.0000e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5788	1.5788	5.0000e-005	0.0000	1.5801
Total	**1.4200e-003**	**0.0183**	**0.0115**	**6.0000e-005**	**2.5500e-003**	**1.4000e-004**	**2.6900e-003**	**7.0000e-004**	**1.3000e-004**	**8.3000e-004**	**0.0000**	**5.1382**	**5.1382**	**3.0000e-004**	**0.0000**	**5.1459**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0130	0.1238	0.0778	2.0000e-004		5.5500e-003	5.5500e-003		5.2900e-003	5.2900e-003	0.0000	17.6353	17.6353	4.3800e-003	0.0000	17.7449
Total	**0.0130**	**0.1238**	**0.0778**	**2.0000e-004**		**5.5500e-003**	**5.5500e-003**		**5.2900e-003**	**5.2900e-003**	**0.0000**	**17.6353**	**17.6353**	**4.3800e-003**	**0.0000**	**17.7449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2000e-004	0.0176	4.5400e-003	4.0000e-005	9.0000e-004	1.3000e-004	1.0300e-003	2.6000e-004	1.2000e-004	3.8000e-004	0.0000	3.5594	3.5594	2.5000e-004	0.0000	3.5658
Worker	8.0000e-004	6.5000e-004	7.0000e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5788	1.5788	5.0000e-005	0.0000	1.5801
Total	**1.4200e-003**	**0.0183**	**0.0115**	**6.0000e-005**	**2.5500e-003**	**1.4000e-004**	**2.6900e-003**	**7.0000e-004**	**1.3000e-004**	**8.3000e-004**	**0.0000**	**5.1382**	**5.1382**	**3.0000e-004**	**0.0000**	**5.1459**

3.7 Construction Roof Shoring - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2100e-003	8.4100e-003	9.3000e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	0.9411	0.9411	1.8000e-004	0.0000	0.9456
Total	**2.2100e-003**	**8.4100e-003**	**9.3000e-003**	**1.0000e-005**		**5.7000e-004**	**5.7000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**0.9411**	**0.9411**	**1.8000e-004**	**0.0000**	**0.9456**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2100e-003	8.4100e-003	9.3000e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	0.9411	0.9411	1.8000e-004	0.0000	0.9456
Total	**2.2100e-003**	**8.4100e-003**	**9.3000e-003**	**1.0000e-005**		**5.7000e-004**	**5.7000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**0.9411**	**0.9411**	**1.8000e-004**	**0.0000**	**0.9456**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

3.8 Vertical Wall Prestressing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1000e-003	4.2000e-003	4.6500e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.4706	0.4706	9.0000e-005	0.0000	0.4728
Total	**1.1000e-003**	**4.2000e-003**	**4.6500e-003**	**1.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.4706**	**0.4706**	**9.0000e-005**	**0.0000**	**0.4728**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	5.8700e-003	1.5100e-003	1.0000e-005	3.0000e-004	4.0000e-005	3.4000e-004	9.0000e-005	4.0000e-005	1.3000e-004	0.0000	1.1865	1.1865	8.0000e-005	0.0000	1.1886
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	**3.4000e-004**	**5.9800e-003**	**2.6800e-003**	**1.0000e-005**	**5.7000e-004**	**4.0000e-005**	**6.2000e-004**	**1.6000e-004**	**4.0000e-005**	**2.0000e-004**	**0.0000**	**1.4496**	**1.4496**	**9.0000e-005**	**0.0000**	**1.4519**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1000e-003	4.2000e-003	4.6500e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.4706	0.4706	9.0000e-005	0.0000	0.4728
Total	**1.1000e-003**	**4.2000e-003**	**4.6500e-003**	**1.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.4706**	**0.4706**	**9.0000e-005**	**0.0000**	**0.4728**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1000e-004	5.8700e-003	1.5100e-003	1.0000e-005	3.0000e-004	4.0000e-005	3.4000e-004	9.0000e-005	4.0000e-005	1.3000e-004	0.0000	1.1865	1.1865	8.0000e-005	0.0000	1.1886
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	**3.4000e-004**	**5.9800e-003**	**2.6800e-003**	**1.0000e-005**	**5.7000e-004**	**4.0000e-005**	**6.2000e-004**	**1.6000e-004**	**4.0000e-005**	**2.0000e-004**	**0.0000**	**1.4496**	**1.4496**	**9.0000e-005**	**0.0000**	**1.4519**

3.9 Roof Reinforcing, Bearing Pad Installationm and Roof Pour -

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8400e-003	0.0336	0.0372	5.0000e-005		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003	0.0000	3.7644	3.7644	7.2000e-004	0.0000	3.7825
Total	**8.8400e-003**	**0.0336**	**0.0372**	**5.0000e-005**		**2.2700e-003**	**2.2700e-003**		**2.2700e-003**	**2.2700e-003**	**0.0000**	**3.7644**	**3.7644**	**7.2000e-004**	**0.0000**	**3.7825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6500e-003	0.0470	0.0121	1.0000e-004	2.4000e-003	3.4000e-004	2.7300e-003	6.9000e-004	3.2000e-004	1.0200e-003	0.0000	9.4918	9.4918	6.8000e-004	0.0000	9.5087
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**3.7800e-003**	**0.0487**	**0.0308**	**1.5000e-004**	**6.7900e-003**	**3.8000e-004**	**7.1500e-003**	**1.8600e-003**	**3.5000e-004**	**2.2200e-003**	**0.0000**	**13.7018**	**13.7018**	**8.2000e-004**	**0.0000**	**13.7223**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8400e-003	0.0336	0.0372	5.0000e-005		2.2700e-003	2.2700e-003		2.2700e-003	2.2700e-003	0.0000	3.7644	3.7644	7.2000e-004	0.0000	3.7825
Total	**8.8400e-003**	**0.0336**	**0.0372**	**5.0000e-005**		**2.2700e-003**	**2.2700e-003**		**2.2700e-003**	**2.2700e-003**	**0.0000**	**3.7644**	**3.7644**	**7.2000e-004**	**0.0000**	**3.7825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6500e-003	0.0470	0.0121	1.0000e-004	2.4000e-003	3.4000e-004	2.7300e-003	6.9000e-004	3.2000e-004	1.0200e-003	0.0000	9.4918	9.4918	6.8000e-004	0.0000	9.5087
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**3.7800e-003**	**0.0487**	**0.0308**	**1.5000e-004**	**6.7900e-003**	**3.8000e-004**	**7.1500e-003**	**1.8600e-003**	**3.5000e-004**	**2.2200e-003**	**0.0000**	**13.7018**	**13.7018**	**8.2000e-004**	**0.0000**	**13.7223**

3.10 Prestressing Mobilization - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9800e-003	0.0267	0.0247	4.0000e-005		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	3.4043	3.4043	3.2000e-004	0.0000	3.4124
Total	**3.9800e-003**	**0.0267**	**0.0247**	**4.0000e-005**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**3.4043**	**3.4043**	**3.2000e-004**	**0.0000**	**3.4124**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.2000e-004	0.0235	6.0500e-003	5.0000e-005	1.2000e-003	1.7000e-004	1.3700e-003	3.5000e-004	1.6000e-004	5.1000e-004	0.0000	4.7459	4.7459	3.4000e-004	0.0000	4.7543
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**2.9500e-003**	**0.0252**	**0.0247**	**1.0000e-004**	**5.5900e-003**	**2.1000e-004**	**5.7900e-003**	**1.5200e-003**	**1.9000e-004**	**1.7100e-003**	**0.0000**	**8.9559**	**8.9559**	**4.8000e-004**	**0.0000**	**8.9679**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9800e-003	0.0267	0.0247	4.0000e-005		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	3.4043	3.4043	3.2000e-004	0.0000	3.4124
Total	**3.9800e-003**	**0.0267**	**0.0247**	**4.0000e-005**		**2.0100e-003**	**2.0100e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**3.4043**	**3.4043**	**3.2000e-004**	**0.0000**	**3.4124**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.2000e-004	0.0235	6.0500e-003	5.0000e-005	1.2000e-003	1.7000e-004	1.3700e-003	3.5000e-004	1.6000e-004	5.1000e-004	0.0000	4.7459	4.7459	3.4000e-004	0.0000	4.7543
Worker	2.1300e-003	1.7400e-003	0.0187	5.0000e-005	4.3900e-003	4.0000e-005	4.4200e-003	1.1700e-003	3.0000e-005	1.2000e-003	0.0000	4.2100	4.2100	1.4000e-004	0.0000	4.2136
Total	**2.9500e-003**	**0.0252**	**0.0247**	**1.0000e-004**	**5.5900e-003**	**2.1000e-004**	**5.7900e-003**	**1.5200e-003**	**1.9000e-004**	**1.7100e-003**	**0.0000**	**8.9559**	**8.9559**	**4.8000e-004**	**0.0000**	**8.9679**

3.11 Backfill Reservoir and Site - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5400e-003	0.0672	0.0607	9.0000e-005		4.3400e-003	4.3400e-003		4.1000e-003	4.1000e-003	0.0000	8.2728	8.2728	1.8800e-003	0.0000	8.3197
Total	**7.5400e-003**	**0.0672**	**0.0607**	**9.0000e-005**		**4.3400e-003**	**4.3400e-003**		**4.1000e-003**	**4.1000e-003**	**0.0000**	**8.2728**	**8.2728**	**1.8800e-003**	**0.0000**	**8.3197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5400e-003	0.0672	0.0607	9.0000e-005		4.3400e-003	4.3400e-003		4.1000e-003	4.1000e-003	0.0000	8.2728	8.2728	1.8800e-003	0.0000	8.3197
Total	**7.5400e-003**	**0.0672**	**0.0607**	**9.0000e-005**		**4.3400e-003**	**4.3400e-003**		**4.1000e-003**	**4.1000e-003**	**0.0000**	**8.2728**	**8.2728**	**1.8800e-003**	**0.0000**	**8.3197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0118	3.0300e-003	2.0000e-005	6.0000e-004	8.0000e-005	6.8000e-004	1.7000e-004	8.0000e-005	2.5000e-004	0.0000	2.3730	2.3730	1.7000e-004	0.0000	2.3772
Worker	2.7000e-004	2.2000e-004	2.3300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5263	0.5263	2.0000e-005	0.0000	0.5267
Total	**6.8000e-004**	**0.0120**	**5.3600e-003**	**3.0000e-005**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**3.2000e-004**	**8.0000e-005**	**4.0000e-004**	**0.0000**	**2.8992**	**2.8992**	**1.9000e-004**	**0.0000**	**2.9039**

3.12 Underground Piping and Structures (above reservoir floor)

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0555	0.5743	0.3532	8.6000e-004		0.0256	0.0256		0.0235	0.0235	0.0000	78.6807	78.6807	0.0245	0.0000	79.2930
Total	**0.0555**	**0.5743**	**0.3532**	**8.6000e-004**		**0.0256**	**0.0256**		**0.0235**	**0.0235**	**0.0000**	**78.6807**	**78.6807**	**0.0245**	**0.0000**	**79.2930**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0411	0.0106	9.0000e-005	2.1000e-003	3.0000e-004	2.3900e-003	6.0000e-004	2.8000e-004	8.9000e-004	0.0000	8.3053	8.3053	5.9000e-004	0.0000	8.3201
Worker	1.8600e-003	1.5200e-003	0.0163	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.6838	3.6838	1.3000e-004	0.0000	3.6869
Total	**3.3000e-003**	**0.0426**	**0.0269**	**1.3000e-004**	**5.9400e-003**	**3.3000e-004**	**6.2600e-003**	**1.6200e-003**	**3.1000e-004**	**1.9400e-003**	**0.0000**	**11.9891**	**11.9891**	**7.2000e-004**	**0.0000**	**12.0070**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0555	0.5743	0.3532	8.6000e-004		0.0256	0.0256		0.0235	0.0235	0.0000	78.6806	78.6806	0.0245	0.0000	79.2929
Total	**0.0555**	**0.5743**	**0.3532**	**8.6000e-004**		**0.0256**	**0.0256**		**0.0235**	**0.0235**	**0.0000**	**78.6806**	**78.6806**	**0.0245**	**0.0000**	**79.2929**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4400e-003	0.0411	0.0106	9.0000e-005	2.1000e-003	3.0000e-004	2.3900e-003	6.0000e-004	2.8000e-004	8.9000e-004	0.0000	8.3053	8.3053	5.9000e-004	0.0000	8.3201
Worker	1.8600e-003	1.5200e-003	0.0163	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.6838	3.6838	1.3000e-004	0.0000	3.6869
Total	**3.3000e-003**	**0.0426**	**0.0269**	**1.3000e-004**	**5.9400e-003**	**3.3000e-004**	**6.2600e-003**	**1.6200e-003**	**3.1000e-004**	**1.9400e-003**	**0.0000**	**11.9891**	**11.9891**	**7.2000e-004**	**0.0000**	**12.0070**

3.13 Paving and Restoration - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1100e-003	0.0438	0.0370	6.0000e-005		2.3900e-003	2.3900e-003		2.2000e-003	2.2000e-003	0.0000	5.2029	5.2029	1.6200e-003	0.0000	5.2434
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1200e-003**	**0.0438**	**0.0370**	**6.0000e-005**		**2.3900e-003**	**2.3900e-003**		**2.2000e-003**	**2.2000e-003**	**0.0000**	**5.2029**	**5.2029**	**1.6200e-003**	**0.0000**	**5.2434**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.3000e-004	4.6700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0525	1.0525	4.0000e-005	0.0000	1.0534
Total	**5.3000e-004**	**4.3000e-004**	**4.6700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0525**	**1.0525**	**4.0000e-005**	**0.0000**	**1.0534**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1100e-003	0.0438	0.0370	6.0000e-005		2.3900e-003	2.3900e-003		2.2000e-003	2.2000e-003	0.0000	5.2029	5.2029	1.6200e-003	0.0000	5.2434
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1200e-003**	**0.0438**	**0.0370**	**6.0000e-005**		**2.3900e-003**	**2.3900e-003**		**2.2000e-003**	**2.2000e-003**	**0.0000**	**5.2029**	**5.2029**	**1.6200e-003**	**0.0000**	**5.2434**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.3000e-004	4.6700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0525	1.0525	4.0000e-005	0.0000	1.0534
Total	**5.3000e-004**	**4.3000e-004**	**4.6700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0525**	**1.0525**	**4.0000e-005**	**0.0000**	**1.0534**

3.14 Offsite Water, Reclaimed Water and Storm Drain Piping -

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5533	0.3425	7.9000e-004		0.0266	0.0266		0.0245	0.0245	0.0000	72.0617	72.0617	0.0224	0.0000	72.6226
Total	**0.0544**	**0.5533**	**0.3425**	**7.9000e-004**		**0.0266**	**0.0266**		**0.0245**	**0.0245**	**0.0000**	**72.0617**	**72.0617**	**0.0224**	**0.0000**	**72.6226**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2400e-003	0.0352	9.0800e-003	7.0000e-005	1.8000e-003	2.5000e-004	2.0500e-003	5.2000e-004	2.4000e-004	7.6000e-004	0.0000	7.1188	7.1188	5.1000e-004	0.0000	7.1315
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	**2.8300e-003**	**0.0365**	**0.0231**	**1.0000e-004**	**5.0900e-003**	**2.8000e-004**	**5.3700e-003**	**1.3900e-003**	**2.6000e-004**	**1.6600e-003**	**0.0000**	**10.2764**	**10.2764**	**6.2000e-004**	**0.0000**	**10.2917**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5533	0.3425	7.9000e-004		0.0266	0.0266		0.0245	0.0245	0.0000	72.0617	72.0617	0.0224	0.0000	72.6225
Total	**0.0544**	**0.5533**	**0.3425**	**7.9000e-004**		**0.0266**	**0.0266**		**0.0245**	**0.0245**	**0.0000**	**72.0617**	**72.0617**	**0.0224**	**0.0000**	**72.6225**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2400e-003	0.0352	9.0800e-003	7.0000e-005	1.8000e-003	2.5000e-004	2.0500e-003	5.2000e-004	2.4000e-004	7.6000e-004	0.0000	7.1188	7.1188	5.1000e-004	0.0000	7.1315
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	**2.8300e-003**	**0.0365**	**0.0231**	**1.0000e-004**	**5.0900e-003**	**2.8000e-004**	**5.3700e-003**	**1.3900e-003**	**2.6000e-004**	**1.6600e-003**	**0.0000**	**10.2764**	**10.2764**	**6.2000e-004**	**0.0000**	**10.2917**

3.15 Street Improvements - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0108	0.1125	0.0933	1.4000e-004		6.5000e-003	6.5000e-003		5.9800e-003	5.9800e-003	0.0000	12.7999	12.7999	3.9800e-003	0.0000	12.8996
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0138**	**0.1125**	**0.0933**	**1.4000e-004**		**6.5000e-003**	**6.5000e-003**		**5.9800e-003**	**5.9800e-003**	**0.0000**	**12.7999**	**12.7999**	**3.9800e-003**	**0.0000**	**12.8996**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	8.7000e-004	9.3300e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.1050	2.1050	7.0000e-005	0.0000	2.1068
Total	**1.0600e-003**	**8.7000e-004**	**9.3300e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**2.0000e-005**	**6.0000e-004**	**0.0000**	**2.1050**	**2.1050**	**7.0000e-005**	**0.0000**	**2.1068**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0108	0.1125	0.0933	1.4000e-004		6.5000e-003	6.5000e-003		5.9800e-003	5.9800e-003	0.0000	12.7999	12.7999	3.9800e-003	0.0000	12.8995
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0138**	**0.1125**	**0.0933**	**1.4000e-004**		**6.5000e-003**	**6.5000e-003**		**5.9800e-003**	**5.9800e-003**	**0.0000**	**12.7999**	**12.7999**	**3.9800e-003**	**0.0000**	**12.8995**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	8.7000e-004	9.3300e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.1050	2.1050	7.0000e-005	0.0000	2.1068
Total	**1.0600e-003**	**8.7000e-004**	**9.3300e-003**	**2.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**5.8000e-004**	**2.0000e-005**	**6.0000e-004**	**0.0000**	**2.1050**	**2.1050**	**7.0000e-005**	**0.0000**	**2.1068**

3.16 Architectual Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0943					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0217	0.0212	3.0000e-005		1.4700e-003	1.4700e-003		1.4000e-003	1.4000e-003	0.0000	2.7780	2.7780	6.4000e-004	0.0000	2.7941
Total	**0.0968**	**0.0217**	**0.0212**	**3.0000e-005**		**1.4700e-003**	**1.4700e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**2.7780**	**2.7780**	**6.4000e-004**	**0.0000**	**2.7941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	2.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Total	**3.0000e-005**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0632**	**0.0632**	**0.0000**	**0.0000**	**0.0632**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0943					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0217	0.0212	3.0000e-005		1.4700e-003	1.4700e-003		1.4000e-003	1.4000e-003	0.0000	2.7780	2.7780	6.4000e-004	0.0000	2.7941
Total	**0.0968**	**0.0217**	**0.0212**	**3.0000e-005**		**1.4700e-003**	**1.4700e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**2.7780**	**2.7780**	**6.4000e-004**	**0.0000**	**2.7941**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	2.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Total	**3.0000e-005**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0632**	**0.0632**	**0.0000**	**0.0000**	**0.0632**

Appendix B
Burrowing Owl Survey Report

ESA

DRAFT

CORONA-KEITH 1220 ZONE POTABLE WATER TANK PROJECT

MSHCP Focused Burrowing Owl Survey Report

Prepared for
City of Corona
Department of Water and Power

December 2016

DRAFT

CORONA-KEITH 1220 ZONE POTABLE WATER TANK PROJECT

MSHCP Focused Burrowing Owl Survey Report

Prepared for
City of Corona
Department of Water and Power

December 2016

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CORONA KEITH 1220 ZONE POTABLE WATER TANK PROJECT

MSHCP Focused Burrowing Owl Survey Report

1. Purpose

This report documents the results of focused surveys conducted for the western burrowing owl (*Athene cunicularia hypugaea*) on the 0.95-acre Corona-Keith 1220 Zone Potable Water Tank Project (project) site located in the City of Corona, Riverside County, California. The focused surveys were conducted to in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), and were required due to the project site's location within a mandatory survey area for burrowing owl within the Temescal Canyon Area Plan of the MSHCP (RCA, 2016). The purpose of the surveys is to determine if burrowing owl is present within the project site and a 500-foot buffer area prior to construction of the project.

2. Project and Property Description

2.1 Project location

The project site is generally located in western Riverside County, north and east of the Cleveland National Forest, south of State Route 91, and west of Interstate 15 (**Figure 1**). The project consists of the construction of a new water tank at 3985 Nelson Street in the City of Corona. The project will disturbed a 0.95-acre portion of the site and will include features associated with the water tank such as underground piping and electrical transmission (see **Figure 2)**, which are further described below in Section 2.2. The project site occurs within public roadways on the following assessor's parcel numbers (APNs): 116-113-001, 116-113-003, 116-113-005, 116-111-001, 116-111-002, 116-111-003, 116-111-004, 116-111-005, 116-111-009, 116-163-001, 116-163-002, and 116-163-003. The project site is situated within an undeveloped area adjacent to existing residential development and is bound on the north by Masters Street, on the west by Nelson Street, to the south by an existing hillside, and to the east by an adjacent vacant lot. The flat hilltop portion of the project site appears to have been previously graded and with an existing unpaved driveway along the southern perimeter of the site and a paved driveway immediately east of the site. Land uses surrounding the site include large-lot estate residential to the east, west and north, and low-density residential to the south. There are some residential units immediately to the south of the project site.

SOURCE: Riverside County

Keith 1220-Zone Potable Water Tank . 150788

Figure 1

Project Vicinity

2.2 Project Description

As depicted on Figure 2, the project involves the installation of a 2.5 million gallon above-ground concrete water storage tank that will be used to provide water to future residential developments. The water tank will be approximately 130 feet in diameter and 30 feet tall, with a portion of the tank buried underground. Other project components include a reservoir, altitude valve; underground water and electrical lines, and an overflow line that extends off-site. Miscellaneous off-site utilities will include approximately 600 feet of overflow/drain piping constructed along Nelson Street from the tank to an existing 36-inch storm drain located on Masters Drive. In addition, an approximately 1,250 foot 16-inch water transmission pipe will be installed that connects the proposed tank to an existing 16-inch pipe at the corner of Howe Street and Duncan Way. A new water transmission main will also be constructed along Nelson Street, Courtney Street, and Howe Street, connecting the water tank to existing water distribution at new housing developments. Staging/stockpiling will occur immediately north of the proposed tank installation in an area downslope from the project site in a graded dirt lot where soils and debris are currently being stockpiled for an unrelated project.

In addition to the construction of a new water storage tank, street edges on Nelson Street and Keith Street will be widened to one-half of the street width plus 10 feet in accordance with City Standard 113 - Rural Road. Existing high voltage power lines will be relocated underground along the Nelson Street frontage.

3. Burrowing Owl Distribution, Biology, and Threats

The western burrowing owl is a State Species of Concern due to its population decline in the state of California over the past 30 years (CDFW 2016). The western burrowing owl inhabits California, Washington, Oregon, Idaho, Montana, Wyoming, North Dakota, South Dakota, Texas, Colorado, Nebraska, New Mexico, Nevada, Oklahoma, Kansas, Nevada, Utah, Arizona, and parts of southwestern Canada and northern Mexico (Zarn 1974). While some owl populations breed and winter in different locations, the southern California populations of burrowing owls are permanent residents (Korfanta et al. 2005). In southern California, the western burrowing owl can be found in open regions of the lowlands, particularly in grasslands, desert, and low-growing scrub habitats (Wilkerson and Siegel 2011; Beradelli et al. 2010; Condon et al 2005; Zarn 1974). Burrowing owls may also use golf courses; cemeteries; road allowances within cities, airports, vacant lots in residential areas, and university campuses; fairgrounds; abandoned buildings; and irrigation ditches. Although open areas with short vegetation are critical for nesting, there is some evidence that burrowing owls prefer a vegetation mosaic with nesting habitat interspersed within taller vegetation for hunting. However, the primary requirement for suitable burrowing owl foraging habitat appears to be low vegetation cover that allows visibility and access to prey.

Due to an inability to construct their own burrows, burrowing owls often require the use of existing rodent or other burrows for roosting and nesting cover. The presence of recently excavated burrows of suitable size is the primary habitat requirement for nesting. They may also use pipes, culverts, and nest boxes where burrows are scarce. One burrow is typically selected for use as the nest; however, satellite burrows are usually found within the immediate vicinity of the

nest burrow within the defended territory of the owl. If left undisturbed, a burrowing owl pair will use the same burrow year after year for nesting, as burrowing owls have been shown to exhibit high site fidelity (Rosier et al. 2006). A clutch of seven to nine eggs is laid between March and July. Burrowing owls are generally considered monogamous, although new mates often appear when one of the pair dies or when the pair divorces. Both parents take part in incubation for about 28 days. The young emerge from the nest and spend daylight hours at the burrow entrance with one or both adults.

Burrowing owls are crepuscular owls, being most active during the early morning and evening hours. They spend most of their time protected in their burrow and when they do emerge from their burrow, it usually occurs during diurnal hours of day, when they tend to be the most active (LaFever 2008; Coulombe 1971). Their diet is predominantly large insects and small rodents, but they will also take small birds, reptiles, amphibians, fish, scorpions, and other available prey. Burrowing owls are often observed perched on fence posts or utility wires. Reasons for their decline include habitat destruction, insecticide poisoning, rodenticide (particularly squirrel eradication programs), and shooting.

4. MSHCP Survey Requirements for the Western Burrowing Owl

According to the MSHCP, burrowing owl surveys are to be conducted as part of the environmental review process. The purpose of these surveys is to meet the conservation requirements of the MSHCP species-specific objective and to ensure direct mortality of species is avoided. Surveys must be conducted following a three-step procedure, habitat assessment (Step I), focused surveys (Step II), and reporting (Step III).

Step I of the three step process requires a habitat assessment to determine if suitable habitat exists for the burrowing owl. A qualified biologist must walk the property to search for suitable habitat for burrowing owls. If suitable habitat is found on the project site, the biologist(s) must then also search for suitable habitat within a minimum 150-meter buffer zone around the property, by means of walking or use of binoculars. If the initial survey findings indicate suitable habitat is present on the property, Step II - focused surveys must be conducted.

The focused surveys are to be conducted in two parts. Part A focuses on surveying for suitable burrows and owl signs (e.g., white wash, feathers, track marks, pellets, prey remains), while Part B focuses on the presence/absence of burrowing owls. To survey for burrows and signs, the property shall be walked in transects by a qualified biologist(s), keeping a distance of no more than 30 meters apart or at a distance such that surveyors have 100% visibility of the ground surface to identify any suitable burrows or sign of presence. Suitable burrows, owl signs, and owls should be recorded with a Global Positioning System (GPS) and mapped. If suitable burrows are found, then Part B of the focused surveys must be conducted, which shall include four visual surveys within the project site and buffer area (if applicable). The first survey may be conducted concurrent with the Part A survey. Due to the diurnal nature of burrowing owls (Coulombe 1971), these four focused surveys must be conducted one hour prior to sunrise until two hours after, or two hours prior to sunset until one hour after. Surveyors must search for owls by scanning the area where suitable habitat and signs of owls were determined during the Part A

survey with the use of binoculars or spotting scopes. Then surveyors should walk transects in search for owls. If any signs or owls are observed, they should be recorded with a GPS and mapped. The focused surveys must be conducted during the breeding season (March 1st – August 31st) to accurately assess habitat use. In addition, weather conditions must consist of temperatures of 90ºF or below, wind speeds less than 20 miles per hour (mph), and surveys shall not occur during rain or heavy fog.

In accordance with the MSHCP survey requirements, a 30 day pre-construction survey needs to be conducted if suitable habitat exists, regardless of the outcome of the Step II focused surveys.

5. Methodology

5.1 Literature Review

Relevant literature and natural resources databases were reviewed to identify if any burrowing owls have been previously recorded on or in the vicinity of the project site. This included a review of the California Natural Diversity Database (CNDDB) records search for the *Corona South, Corona North, Riverside West, Lake Mathews, Alberhill, Santiago Peak, Lake Forest, Blackstar Canyon, and Prado Dam* quadrangles (California Department of Fish and Wildlife, 2016); and a review of the Western Riverside County Regional Conservation Authority Conservation Summary Report Generator Results for the project APNs.

5.2 Field Surveys

An initial (Step I) habitat assessment was conducted by ESA biologist Tommy Molioo on July 27, 2016 that identified suitable habitat and burrows for burrowing owls on the project site. Suitable habitat occurs in the graded areas where the water tank is proposed, at existing soils and debris piles and disturbed scrub areas near the proposed staging area and stockpile area, and along the roadsides where disturbed scrub habitat is present. Focused burrowing owl surveys (Step II) were conducted by ESA biologist Matthew South on August 23 and 31, and September 7 and 14, 2016 to determine if burrowing owls are present (or absent) on the project site. The Step II survey included a 500-foot survey area around the project site. The 500-foot buffer area is largely absent of suitable habitat due to the level of development from roads and homes. Undeveloped areas in the 500-foot buffer are densely covered with vegetation and therefore unsuitable for use by burrowing owls.

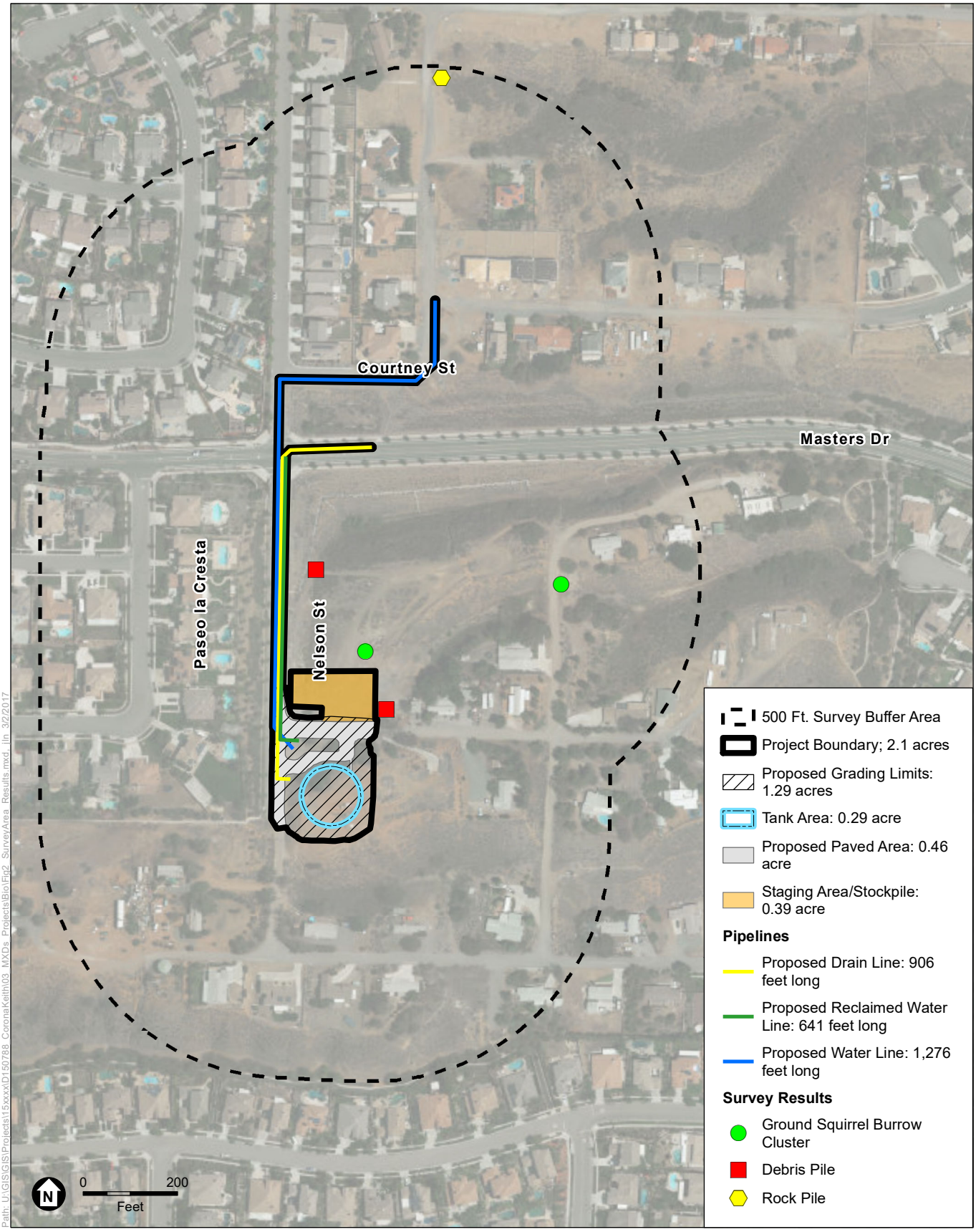
The Step II focused surveys were conducted in accordance with survey protocols developed by the California Burrowing Owl Consortium (CBOC 1993) and the Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area (Riverside County 2006) per the Riverside County MSHCP survey requirements. Surveys were conducted August 23 and 31, and September 7 and 14, 2016 within two hours of sunrise to be able to observe burrowing owls when they are most active. Suitable habitat within the survey area, including any natural burrows and debris piles, were closely inspected (see Figure 2 – Burrowing Owl Survey Map). The location of suitable burrowing owl habitat, potential owl burrows, (including suitable man-made structures that could support owls, and burrowing owl

sign (i.e., feathers, excrement, pellets, tracks) within the survey area was recorded and mapped with a GPS and described in a field notebook.

Step II, Part A - Focused Burrow Survey

A systematic survey for potential burrowing owl burrows and burrowing owl sign was conducted by walking through all suitable habitat determined to exist on the project site and within the 500-foot buffer area. Most of the adjacent areas within the 500-foot buffer having suitable habitat were surveyed on foot where access was permissible; however, areas located on private property or where access was constrained by a fence, were surveyed using binoculars from the nearest vantage point to identify potentially suitable burrows and sign of burrowing owl presence. Areas excluded from the surveys included residential developments and other areas where no suitable habitat occurs, such as areas that were highly disturbed with no burrows present, or densely vegetated areas. It is worth noting that the majority of the 500-foot buffer area is developed and unsuitable for burrowing owls.

Pedestrian survey transects were spaced at a minimum of 30 meters apart to achieve 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 30 meters in open areas, and when necessary, was reduced to account for variations in terrain, vegetation density, and poor ground surface visibility. All suitable burrows, debris piles, cavities under structures, and perches were thoroughly examined for presence of sign. Figure 2 shows the suitable burrowing owl habitat and potential burrows within the survey area.



SOURCE: ESRI

Keith 1220-Zone Potable Water Tank

Figure 2
Burrowing Owl Survey Area and Results

ESA

Step II, Part B - Focused Burrowing Owl Surveys

A total of four focused burrowing owl surveys were conducted to determine the presence or absence of burrowing owls within areas identified as suitable habitat during the focused burrow survey. The first focused burrowing owl survey was conducted concurrently with the focused burrow survey on August 23, 2016, in accordance with MSHCP burrowing owl survey protocol. The three additional focused burrowing owl surveys were spaced a minimum of one week apart to allow for an adequate period of time to observe burrowing owls and were conducted on August 31, and September 7 and 14, 2016. Although the protocol calls for all four surveys to be conducted prior to the end of breeding season on August 31, two of the surveys were conducted in September due to the timing of the initial survey. However, if the burrows were used during the breeding season prior to the initial survey, evidence of presence, such as whitewash, pellets, feathers and/or owl tracks would have been observed.

Suitable habitat within the survey area was closely inspected during each of the focused surveys, with special attention paid to areas containing burrows that could be used by owls.

6. Existing Conditions

The survey area depicted on Figure 2 covered the project site and 500-foot buffer area. The entire survey area comprised 57 acres, which includes the proposed overflow and transmission lines. Over half of the survey area consists of developed single-family residences and public roads. The proposed location of the storage tank is in an area that was previously graded and is mostly bare ground. Native shrubs consisting mostly of California buckwheat (*Eriogonum fasciculatum*) and grasses remain at the fringes of this graded area and on adjacent steep-sloped edges. The proposed staging area was also previously graded, and contained stockpiles of soil and debris. The proposed transmission and overflow line will largely occur in the existing roadways that lack suitable burrows for use by burrowing owls. Native sage scrub communities occur on steep-slopes within the survey area located to the north and south of Masters Drive, and on the slope immediately to the south of the proposed water tank site. Soils on the project site are generally sandy and friable.

Burrowing owls prefer areas of low-vegetation; however, disturbed areas where dirt and debris piles are found can be used as cover sites. Much of the disturbed and previously graded areas in the project site are suitable for use by burrowing owls. Native scrub habitat exists on the steep slopes that are adjacent to the project site, which are not suitable for supporting burrowing owls due to the density and height of the native vegetation and the steepness of the slopes are less than ideal for supporting burrowing owls. Representative photographs of the project site and survey area are included in **Appendix A**.

6.1 Plant Communities

Plant communities are generally described by the assemblages of plant species that occur together in the same area forming habitat types. Descriptions of plant communities were generally characterized based on dominant species, according to Holland (1986) and Sawyer Keeler-Wolf

(1995). Details of each plant community, disturbed areas, and land uses observed within the survey area are described below. Plant names used in this report follow the *Jepson Manual* (Hickman, 1993).

Developed Land

Developed land makes up the majority of the survey area. Developed land is characterized by urban development and paved surfaces and infrastructure. Vegetation within areas mapped as Development Lands consists of ornamental trees and shrubs associated with residences and public roadsides. The Developed Land areas are not suitable habitat for burrowing owl.

Bare Ground

Bare ground is found where previous grading removed native vegetation and compacted surface soils. Areas of bare ground include the proposed tank installation site and the proposed soils stockpile area, and the dirt roads that lead to the proposed staging area. There are existing soil stockpiles and debris piles in the proposed staging area that are located within the areas that have been mapped as Bare Ground, and debris has been dumped along some of the dirt roads that are immediately northeast of the proposed staging area within the Bare Ground area. These debris piles and soils stockpiles may provide potential cover sites for burrowing owls.

California Buckwheat Scrub

California buckwheat scrub occurs along the steep slopes that are adjacent to the project site. The community is dominated by California buckwheat, and subdominant shrubs include brittlebush (*Encelia farinosa*) and California sagebrush (*Artemisia californica*). California Buckwheat Scrub does not provide suitable habitat for burrowing owls to occur.

Disturbed California Buckwheat Scrub

Disturbed California buckwheat scrub occurs at the edges of the graded pads at the eastern edge of Nelson Street, and in small patches between dirt roads on the project site. This community is dominated by California buckwheat, with a sub dominance of brittlebush and California sagebrush. The shrubs in this community are generally sparse and stunted due to apparent disturbance from vehicles. Invasive species are also present in this community including non-native grasses such as cheatgrass (*Bromus tectorum*), red brome (*Bromus madritensis*), and Sahara mustard (*Brassica tournefortii*). The disturbed California buckwheat scrub provides moderate quality habitat for burrowing owls, because of the areas of bare ground that exists between the vegetation.

Laurel Sumac Scrub

Laurel sumac scrub occurs as a small patch on the north-facing slope adjacent to the proposed water tank site. This community is dominated by a monoculture of laurel sumac (*Malosma larina*) that is approximately six feet high and forms a dense scrub habitat with only small openings. This community is not suitable for use by burrowing owl due to the tall height and density of the shrubs.

Southern Mixed Riparian Woodland

A small stand of southern mixed riparian woodland habitat occurs within a basin installed for construction of the residential development north of Masters Drive. This native woodland habitat was created and intergrades with California buckwheat scrub on adjacent slopes. This community is associated with a drainage feature that parallels Masters Drive. Although this community is mapped within the survey area for the project site, it does not occur within any proposed impact areas.

6.2 Wildlife

Wildlife species observed or detected during the initial habitat assessment and focused surveys include common avian and mammal species typical of disturbed upland habitats and urban environments. Avian species observed or detected included common raven (*Corvus corax*) mourning dove (*Zenaida macroura*), rock dove (*Columba livia*), house finch (*Carpodacus mexicanus*), California towhee (*Melozone crissalis*), barn swallow (*Hirundo rustica*), Say's phoebe (*Sayornis saya*), Anna's hummingbird (*Calypte anna*), and Bewick's wren (*Thyromanes bewickii*). Mammal species observed includes California ground squirrel (*Otospermophilus beecheyi*) and desert cottontail (*Sylvilagus audubonii*). No amphibian or reptile species were observed during the assessment or focused surveys.

7. Survey Results

7.1 Focused Burrow Survey

The initial (Step II, Part A) focused burrow survey on August 23 was conducted during suitable weather conditions that consisted of overcast skies with an average temperature of 72 degrees Fahrenheit and calm winds, and there had been no rain in the region for a minimum of five days. Two burrow clusters suitable for use by burrowing owls were observed during the initial survey; one cluster is located in the center of the proposed staging area and a second cluster is along the edge of the road approximately 250 feet east of the proposed staging area (see Figure 2). In addition, debris piles suitable for use by burrowing owl as cover sites were observed in the southeastern corner of the proposed staging area and adjacent to the northwest corner of the proposed staging area. A rock pile associated with a drainage outlet occurs in the northern edge of the 500 foot buffer and provides suitable cover sites for burrowing owls. The rock pile was occupied by California ground squirrels, which is a known prey species of burrowing owl, and their burrows are often used by burrowing owls. However, no evidence of burrowing owls was found at any of the burrows or potential cover sites.

7.2 Focused Burrowing Owl Surveys

Focused burrowing owl surveys were conducted throughout the survey area within areas identified during the focused burrow survey as containing suitable habitat and burrows to support burrowing owl. No evidence of burrowing owl presence was observed during the four focused surveys. The survey dates, weather conditions, and results are summarized in **Table 7-1** below.

TABLE 7-1
FOCUSED BURROWING OWL SURVEYS SUMMARY

Survey Number	Date	Time	Average Temperature (Fahrenheit)	Skies	Results
1	August 23, 2016	0640 – 0755	72	Partly Cloudy	Negative
2	August 31, 2016	0645 – 0810	70	Clear	Negative
3	September 7, 2016	0700 – 0820	72	Clear	Negative
4	September 14, 2016	0635 - 0755	74	Partly Cloudy	Negative

8. Conclusions

Due to the negative findings of burrowing owls and lack of sign of burrowing owl occupancy during the four focused surveys, the project site and surrounding 500-foot buffer area does not currently support any burrowing owls. However, due to the presence of numerous California ground squirrel burrows and stockpile areas that could theoretically be used by burrowing owls as cover sites, there is a potential for burrowing owls to be present prior to the start of construction. Therefore, in accordance with the MSHCP survey protocol, a pre-construction clearance survey is required to be conducted to determine the presence or absence of burrowing owls within 30 days prior to the start of construction. The results of the pre-construction survey must be included in a separate MSHCP 30-Day Burrowing Owl Survey Report to be prepared and submitted to the City and the Western Riverside Regional Conservation Authority (RCA) prior to the start of construction.

9. References

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Appendix A
Site Photos

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APPENDIX A

Photograph Exhibit

Photo 1: Depicts the proposed water tank installation site. Photo was taken from the western end of graded pad facing east.

Photo 2: Depicts debris piles near the proposed staging area. Photo was taken from the southern edge of the proposed staging area facing north.

Photo 3: Depicts inactive burrows suitable for use by burrowing owls in the proposed staging area. The photo was taken in the center of the proposed staging area.

Photo 4: Depicts inactive burrow suitable for use by burrowing owl in the road edge east of the proposed staging area.

Photo 5: Depicts a rock pile that provides potential cover sites for burrowing owl in the northern edge of the survey area buffer. The photo was taken at the northern edge of the survey area facing north.

Photo 6: Depicts the western edge of Nelson Street where disturbed scrub habitat occurs. The photo was taken at the edge of Nelson Street, west of the proposed staging area and facing north.

Photo 7: Depicts a rock pile west of the proposed staging area. The photo was taken near the eastern edge of Nelson Street facing north.

Appendix C
Cultural Resources

ESA

C-1 Cultural Resources Letter Report

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October 19, 2016

Vernon Weisman
City of Corona, Department of Water and Power
755 Public Safety Way
Corona, CA 92880

Subject: Cultural Resources Study for the Keith 1220-Zone Potable Water Tank Phase I Project

Dear Mr. Weisman:

This letter report provides the results of the Phase I Cultural Resources Study completed for the proposed Keith 1220-Zone Potable Water Tank Project (project). This study included archival research, Native American outreach, and a pedestrian survey. The methods and results of the study are summarized below, and recommendations are provided at the close of the letter report.

Introduction

Environmental Science Associates (ESA) has been retained by the City of Corona Department of Water and Power (City) to prepare a Phase I Cultural Resources Study in support of an Initial Study/Mitigated Negative Declaration (IS/MND) being prepared for the project pursuant to the requirements of the California Environmental Quality Act (CEQA). The City is the lead agency pursuant to CEQA.

ESA personnel involved in the preparation of this letter report include Candace Ehringer, M.A., RPA, principal investigator and report author; Vanessa Ortiz, M.A., RPA, report author; and Matthew Gonzalez, B.A., surveyor; Resumes of key personnel are provided in **Attachment A**.

Project Location

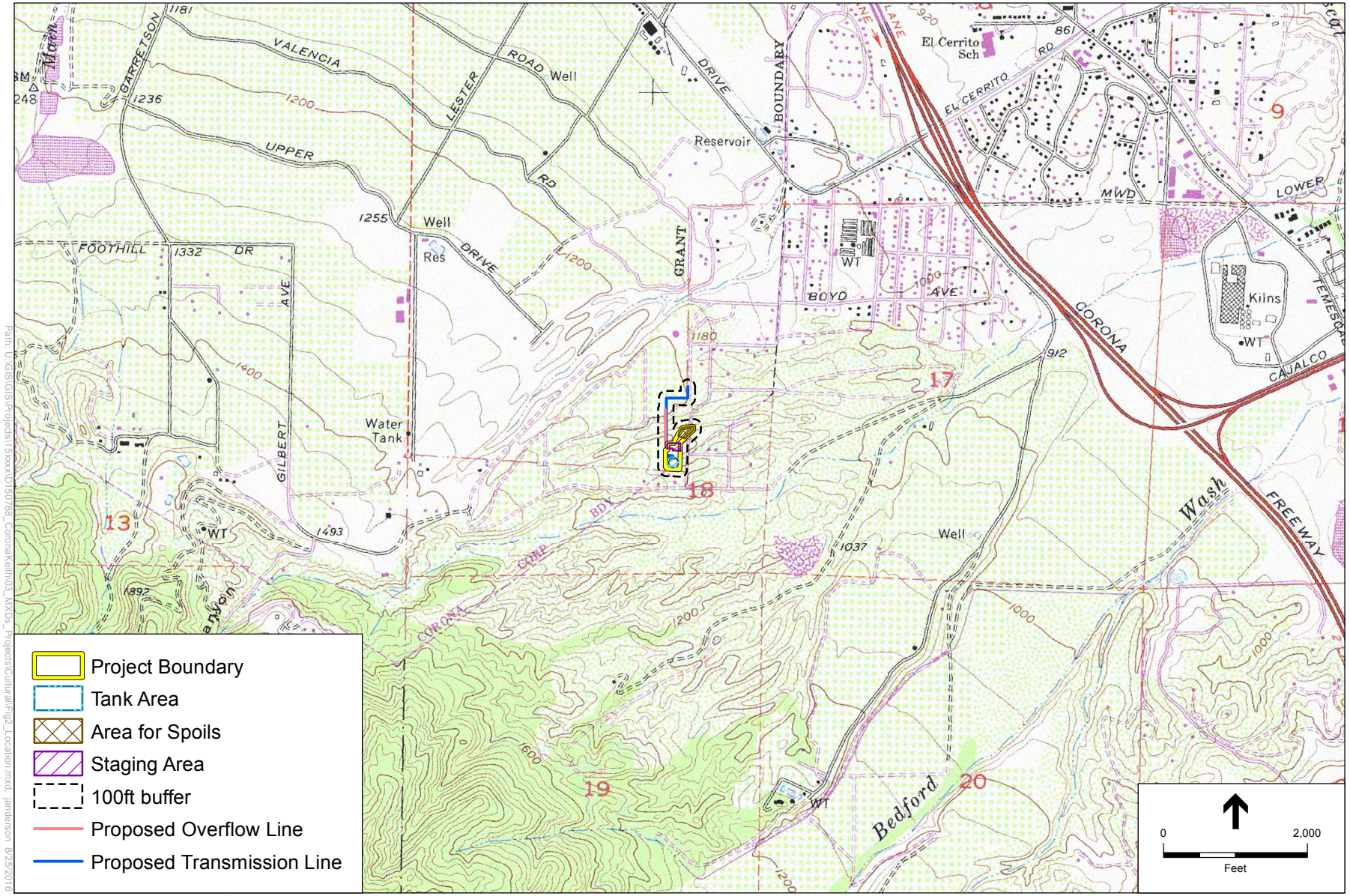
The project is located on approximately 0.95-acres at 3985 Nelson Street, southeast of the intersection of Nelson Street and Keith Street in the City of Corona (**Figure 1**). Specifically, the project is located on the Corona South, CA USGS 7.5-minute topographic quadrangle in Section 18 of Township 4 South, Range 6 West (**Figure 2**). The project site is bound on the north by Keith Street, on the west by Nelson Street, to the south by an existing hillside, and to the east by an adjacent vacant lot. The surrounding area consists of existing rural residential uses, with Estate Residential to the east, west and north and Low Density Residential to the south. There are some residential units immediately to the south of the project, located adjacent to the project site.

SOURCE: Riverside County

Keith 1220-Zone Potable Water Tank . 150788

Figure 1

Project Vicinity



SOURCE: USGS 7.5' Topo Quad Corona South 1977

Keith 1220-Zone Potable Water Tank . 150788

Figure 2

Project Loaction

Project Description

The project includes five components, or use-areas, including: (1) tank area; (2) staging area; (3) drain pipeline; (6) water transmission pipeline; and (7) recycled water pipeline.

1) **Tank Area:** The project would construct a partially buried Type I pre-stressed concrete potable water storage tank at the south east corner of Nelson Street and Keith Street within the City. The tank (known as the Keith 1220-Zone Potable Water Tank) would provide operational, emergency and fire flow storage to the City's Zone 4 1220-foot hydraulic grade line (HGL) pressure zone. The minimum required storage volume would be 2.5 million gallons (MG). The tank would help address the additional storage needed for the proposed Arantine Hills development and the predicted future deficiency of 5 MG for 1220-Zone storage in the year 2020 as identified in the 2005 Water Master Plan. The Keith 1220-Zone Potable Water Tank would allow the City to maintain consistent, reliable water pressure to its service area. The tank design would include a reservoir, altitude valve and associated piping, above ground cables will provide power to the site, and miscellaneous on- and off-site piping (i.e. overflow line, etc.). The water tank would measure approximately 125 feet in diameter and 33 feet in wall height.

   Since the tank area is currently at grades higher than the projected tank bottom, the tank area would be excavated to create a flat pad to accommodate the tank construction. The anticipated design grading is between 5 to 25 feet of cut below existing grades. A portion of the reservoir may be buried on the southerly side. A service/access road will also be needed around the perimeter of the tank, and other pumps and pipeline structures would be constructed.

2) **Staging Area:** A staging area would be located entirely within the project site, north of the tank location. No grading is anticipated in connection with staging.

3) **Drain Pipeline:** The proposed project would include an 18-inch diameter drain pipeline that would convey all discharge from the storage tank to an existing storm drain manhole. The drain pipeline would include flows from overflow, reservoir drain, underdrain and footing drain and collect discharge in a drain vault located immediately northwest of the storage tank. The pipeline alignment would convey drained discharge from the common drain vault for approximately 906 feet along Nelson Street and Masters Drive. The drain pipeline would connect to an existing storm drain manhole on Masters Drive east of Nelson Street. The depth of the storm drain in Masters Drive will allow water from the reservoir to flow by gravity. The maximum flow through the drain pipe is 4,502 gallons per minute (GPM).

4) **Water Transmission Pipeline:** A single 16-inch diameter inlet/outlet pipe to the reservoir would run from inside the reservoir up to the altitude valve. The pipe would be constructed three feet below ground surface.

The proposed project would include a new 16-inch diameter water transmission pipeline to convey water into the existing 1220-Zone distribution main. The pipeline alignment would be approximately 1,276 feet long and connect the storage tank to the existing Hayden Tank 16-inch transmission. The proposed transmission pipeline would run north along Nelson Street, crossing Masters Drive, east on Courtney Lane, and north on Howe Street, connecting to an existing distribution main in Duncan Way.

5) **Recycled Water Pipeline:** The project includes a new 6-inch recycled water pipeline to convey recycled water to the site for irrigation and landscaping uses. The pipeline alignment would be approximately 641 feet long along Nelson Street and connect an existing 12-inch recycled water main along Masters Drive to the project site.

Archival Research

EIC Records Search

A records search for the project site was conducted on July 22, 2016 at the California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) at the University of California, Riverside. The records search included a review of all recorded cultural resources within a 1/2-mile radius of the project site, as well as a review of cultural resources reports on file. In addition, the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), and the California State Historic Resources Inventory (HRI) listings were reviewed. Available historic maps and aerial photographs were also consulted.

Previous Cultural Resources Investigations

The results of the records search indicate that 14 cultural resources studies have been previously conducted within 1/2-mile of the project site, two of which (RI 7283 and RI 8099) included portions of the project site (**Table 1**). Approximately 75 percent of the 1/2-mile records search radius and 40 percent of the project site have been included in previous cultural resources investigations.

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS WITHIN 1/2- MILE OF THE PROJECT SITE

EIC # (RI-)	Author	Title	Date
01356	Drover, Christopher	*Environmental Impact Evaluation: An Archaeological Assessment of El Cerrito I, Corona, Riverside County, California*	1990
02072	Swope, Karen K.	*An Archaeological Assessment of TT 21268, Corona Area of Riverside County, California*	1987
02308	Parr, Robert E.	*An Archaeological Assessment of TT 22782, Corona Area of Riverside County, California*	1988

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS WITHIN 1/2- MILE OF THE PROJECT SITE

EIC # (RI-)	Author	Title	Date
02379	LAS, Inc	*Chase Ranch Specific Plan Archaeological Assessment*	1989
03136	Scientific Resource Surveys, Inc	*Cultural and Paleontological Survey Report on the Mission Crest Property, Riverside County, California*	1990
03137	The Keith Companies	*Cultural Resources Survey Report for the McMillan Ranch Project Near Corona, Riverside County, California*	1989
04895	Fox, Julia K., Anna M. Hoover, Kristie R. Blevins, Hugh M. Wagner, and Mark A. Roeder	*A Biological, Archaeological, and Paleontological Phase IV Mitigation Report, Monte Verde, Tract 29000, +457 Acre Property, City of Corona, County of Riverside, California*	2005
05597	White, Robert S. and Laura S. White	*An Archaeological Assessment of the +/-75 Acre Forecast Mine Expansion Site, Joseph Canyon Wash, South Corona, Riverside County*	1999
07107	Hoover, Anna M. and William R. Gillean	*An Archaeological and Paleontological Mitigation, Monitoring Report for Eagle Glen III, 59 Lots, Tract 29867 Located in the City of Corona, Riverside County, California*	2007
07283*	Irish, Leslie Nay, Anna M. Hoover, Julia K. Fox, E. Bruce Lander, and Kristie R. Blevins	*A Biological, Archaeological, and Paleontological Phase IV Mitigation Report, Eagle Glen Specific Plan Amendment 3, 155.25 Acre Property, Corona, County of Riverside, California*	2006
08099*	Sander, Jay K.	*Cultural and Paleontological Resources Inventory of 17 Acres: Tentative Tract 35576 Corona, Riverside County, California*	2008
08623	Cotterman, Cary D. and Evelyn N. Chandler	*Cultural Resources Inventory of Two Proposed Pole Replacements in Corona and Temescal Canyon, Riverside County, California (W.O. 6034-4800, k 4892, TD 495676)*	2011
08870	Cotterman, Cary D. and Evelyn N. Chandler	*Cultural Resources Inventory of Two Proposed Pole Replacements in Corona and Temescal Canyon, Riverside County, California (W.O. 6034-4800, k 4872, TD 495676)*	2011
08906	Billat, Lorna	*Collocation ("CO") Submission Packet FCC Form 621*	2012

*indicates study overlapping the project site

Previously Recorded Cultural Resources

The records search results indicate that two cultural resources have been previously recorded within a 1/2-mile radius of the project site (**Table 2**). Both of these resources are historic-period archaeological sites. No resources have been previously recorded within or immediately adjacent to the project site.

TABLE 2
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN 1/2- MILE OF THE PROJECT SITE

Primary Number (P-33-)	Permanent Trinomial (CA-RIV-)	Description	Date Recorded
03055	3055H	Historic-period archaeological site with refuse including consumer glass sherds, cans, and kitchenware ceramics	1987
07019	6197H	Historic-period archaeological site consisting of an open pit sand mine known as the Jones (Hoag Ranch) sand deposit	1999

Historic Topographic Map and Aerial Photograph Review

Historic maps and aerial photographs were examined in order to provide historical information about the natural topography and natural resources of the project site, and past uses and historic development of the project site. Historic maps reviewed include the 1902 Corona South 15-minute topographic quadrangle and the 1946, 1960, 1966, 1975, and 1983 Corona South 7.5-minute topographic quadrangles. Historic aerial photographs from 1948, 1966, 1967, 1980, 1995, and 2002 were also reviewed (Historicaerials.com, 2016).

Historic topographic maps and aerial photographs indicate that there are two water sources in the vicinity of the project site (USGS, 1902). Temescal Creek runs in a north/southerly direction about 2 miles east of the project site and Bedford Wash runs in a northeast/southwesterly direction about 950 feet south of the project site. The historic maps and aerials indicate that the immediate vicinity of the project site remained largely undeveloped until the 1960s when development of nearby orchards began; an orchard is depicted about 100 feet northwest of the project site in 1966 (USGS, 1966). Nelson Street and Keith Street are depicted east and south of the project site in 1975 (USGS, 1975; Historicaerials.com, 2016). Residential uses appear in the vicinity of the project site sometime between 1967 and 1980, and continue to expand into the 1990s and 2000s. The project site itself does not appear to have ever been developed, although sometime between 1967 and 1980 the area south of Keith Street appears to have been subject to some degree of vegetation clearing and grading (Historicaerials.com, 2016).

Native American Outreach

The California Native American Heritage Commission (NAHC) was contacted on July 21, 2016 to request a search of the Sacred Land File (SLF) for the project site. In a letter dated July 25, 2016, the NAHC indicated that the SLF search failed to indicate the presence of known prehistoric or Native American resources within the project vicinity (Totton, 2016). The letter also included an attached list of Native American contacts with ties to the project vicinity and who might possess information pertaining to cultural resources in the area. All Native American correspondence is included in **Attachment B**.

Follow-up correspondence was conducted with all individuals and groups indicated by the NAHC as having affiliation with the project site in order to solicit information on Native American cultural resources in the vicinity of the project site. Contact letters were sent via mail or email on August 22, 2016. The letters described the project and included a map depicting the project location. Recipients were requested to reply with any information concerning Native American cultural resources that might be affected by the project. To date, five responses have been received:

- In an email dated August 29, 2016, Victoria Harvey, Archaeological Monitoring Coordinator for the Aqua Caliente Band of Cahuilla Indians (Aqua Caliente Band), indicated that the project site is not within the Aqua Caliente Band's Traditional Use Area (TUA) and they deferred to other tribes in the area.

- In a letter dated on August 29, 2016, Amanda Vance, Tribal Chairperson for the Augustine Band of Cahuilla Indians (Augustine Band), indicated that the Augustine Band was not aware of specific cultural resources that could be affected by the project, and suggested contacting other Native American Tribes and individuals within the immediate vicinity of the project site and full-time Native American monitoring. The Augustine Band also requested to be notified immediately in the event that cultural resources are discovered during development of the project.

- In a letter dated August 30, 2016, Vincent Whipple, Cultural Resources Manager for the Rincon Band of Luiseño Indians (Rincon Band), indicated that the project is within the Luiseño Aboriginal Territory, but it not within the Rincon Band's Historic Boundaries. The Rincon Band deferred to the Pechanga of Luiseño Indians (Pechanga Band) or the Soboba Band of Luiseño Indians (Soboba Band) who are located in closer proximity to the project site.

- In a letter dated September 15, 2016, Joseph Ontiveros, Director of Cultural Resources for the Soboba Band, indicated that the project site is within their Tribal TUA. The letter also stated that the project site is within proximity to known sites and is considered to be culturally sensitive by the Soboba Band. The Soboba Band requested consultation with the project proponents and the lead agency; transfer of information regarding the progress of the project; continued consultation for the project; Native American monitoring by a member of the Soboba Band during any ground disturbing activities, including surveys and archaeological testing; and that the proper procedures and requests of the Soboba Band be honored. The letter included an attached list of procedures/requests regarding the handling and disposition of cultural items and human remains.

- In a letter dated October 5, 2016, Shasta C. Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians (Pala Band), indicated that the project site with not within the boundaries of the recognized Pala Indian Reservation, nor is it within the TUA for the Pala Band, and the Tribe deferred to those groups that are in closer proximity to the project site.

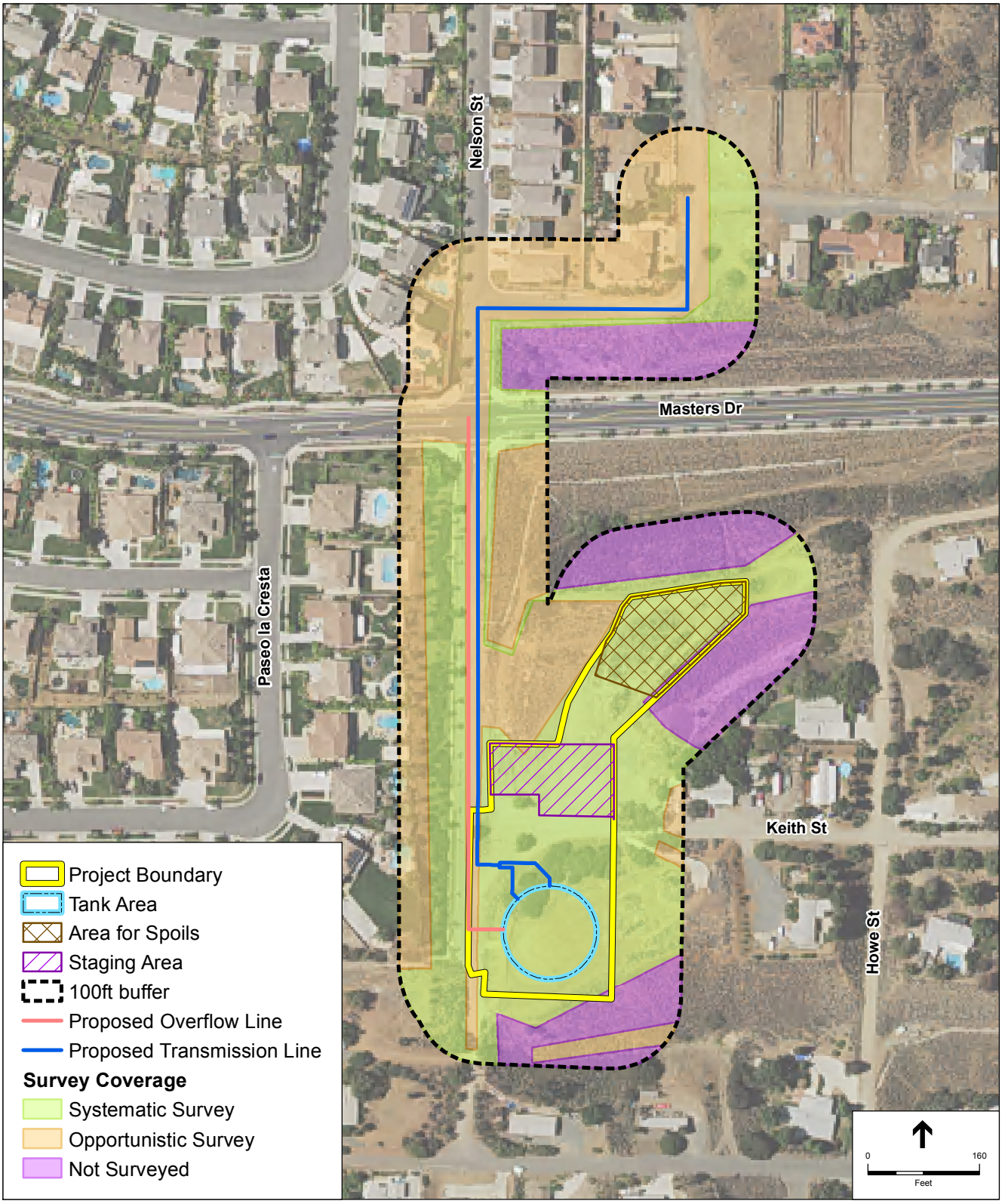
Cultural Resources Survey

Methods

A pedestrian survey of the project site, plus 100 foot buffer ("survey area"), was conducted on July 27, 2016. The survey was aimed at identifying surface evidence of archaeological resources or historic-period built resources within the survey area, and to document evidence of past disturbances associated with any previous development. A systematic survey with transects spaced at 5-10 meter intervals was conducted in undeveloped areas with flatter terrain and visible ground surface. An opportunistic survey was conducted in areas with steep terrain or less visible ground surface. Areas not surveyed include areas with no visible ground surface or private property where access was not obtained. Approximately 60 percent of the survey area was subject to a systematic survey, 25 percent was subject to an opportunistic survey, and 15 percent was not surveyed. Survey coverage is depicted in **Figure 3**.

Results

The project includes several components, or use-areas, including: (1) tank area; (2) staging area; (3) area for spoils; (4) transmission line; and (5) overflow line. Survey results for each of these areas is described in more detail below. Sediments within the survey area consisted of an orange-brown coarse sand, intermixed with sand stone cobbles. No surface evidence of archaeological resources or historic-period built resources were encountered during the survey.



SOURCE: ESRI

Keith 1220-Zone Potable Water Tank. 150788

Figure 3

Survey Coverage

1) **Tank Area:** The tank area is located in the southern portion of the project site and was subject to systematic survey. Visibility in this area was generally excellent (90% visible); however, the northern portion was obscured by vegetation (**Plate 1**).This area appears to have been subject to some level of previous disturbance and appears to have been grubbed and graded, although the depth of past ground disturbance in area is unknown.

Plate 1. Tank Area (view to the East)

2) **Staging Area:** The staging area is located at the central portion of the project site and was subject to systematic survey. Visibility in this area was excellent (100% visible), except where stockpiles were present (**Plate 2**). The staging area appears to have been subject to high level of previous disturbance and appears to have been grubbed and graded, although the depth of past ground disturbance in area is unknown.

Plate 2. Staging Area (view to the Northwest)

3) **Area for Spoils:** The area for spoils is located in the northern portion of the project site and was subject to systematic survey. Visibility in this area was generally excellent (90% visible); however, the central portion was obscured by vegetation (**Plate 3**). This area appears to have been subject to some level of previous disturbance and portions appear to have been graded and grubbed, although the depth of past ground disturbance in area is unknown.

Plate 3. Area for Spoils (view to the Southwest)

4) **Transmission Line:** The transmission line is located west of the tank area and extends north adjacent existing paved roads. The transmission line route was subject to a mix of systematic and opportunistic survey. Visibility of this component was fair (50% visible), with vegetation and pavement obscuring some portions of the route (**Plate 4**).

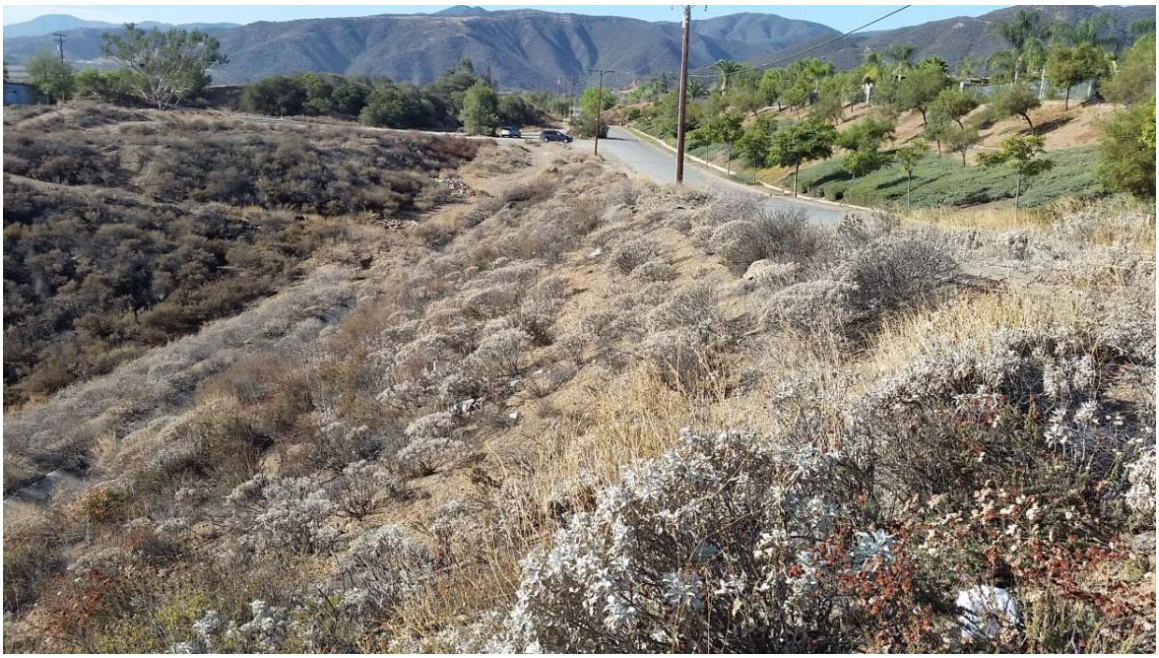


Plate 4. Transmission Line (view to the South)

5) **Overflow Line:** The overflow line is located west of the tank area and extends north within existing paved roads. The overflow line route was subject to a mix of systematic and opportunistic survey. Visibility of this component was poor (0% visible), with pavement obscuring the route (**Plate 5**). Adjacent areas with greater visibility, such as adjacent unimproved shoulders, were inspected.

Plate 5. Overflow Line (view to the South)

Conclusions and Recommendations

As a result of this study, no cultural resources were identified in the project site. Given the amount of previous disturbances on the project site, the project site is considered to have a low sensitivity for subsurface archaeological resources. However, since the project includes ground-disturbing activities, there remains a potential for discovery of subsurface archaeological deposits and human remains. The following recommendation is provided to ensure that the project would result in less than significant impacts to historical resources, unique archaeological resources, and human remains under CEQA:

1) **Inadvertent Discoveries:** In the event of the unanticipated discovery of archaeological materials, the City shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it is evaluated by an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology ("qualified archaeologist") (DOI, 2008). Construction shall not resume until the qualified archaeologist has conferred with the City on the significance of the resource.

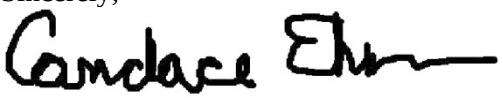
If it is determined that the discovered archaeological resource constitutes a significant resource, avoidance and preservation in place shall be the preferred manner of mitigation. Preservation in place maintains the important relationship between artifacts and their archaeological context and also serves to avoid conflict with traditional and religious values of groups who may ascribe meaning to the resource. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, an Archaeological Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with the City that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. The City shall consult with appropriate Native American representatives in determining treatment for prehistoric or Native American resources to ensure cultural values ascribed to the resource, beyond that which is scientifically important, are considered.

If human remains are encountered, the City shall halt work in the vicinity (within 100 feet) of the find and contact the Riverside County Coroner in accordance with California Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC will designate a Most Likely Descendant for the remains per PRC Section 5097.98. Until the landowner has conferred with the Most Likely Descendant, the City shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

Contact Information

If you have any questions about the information provided in this letter report, please do not hesitate to contact me. I can be reached by phone at (831) 737-7438 or by email at cehringer@esassoc.com.

Sincerely,



Candace Ehringer, M.A., RPA
Senior Cultural Resources Specialist

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Historicaerials.com. 2016. *Historic Aerial Photographs for the Years 1948, 1966, 1967, 1980, 1995, and 2002*. Electronic resource http://www.historicaerials.com/. Accessed on August 15, 2016.

Totton, Gayle. 2016. NAHC SLF Results Letter for the *Keith 1220 Zone Potable Water Tank Project, Riverside County, California (D150788.01), 5 pages*. Conducted on July 25, 2016.

U.S. Department of the Interior (DOI). 2008. Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (As Amended and Annotated), Electronic resource, www.nps.gov/history/local-law/arch_stnds_0.htm, accessed November 4, 2014.

U.S. Geological Survey (USGS)

_____ 1902. Geologic map of the Corona South 15' quadrangle, Riverside County, CA.

_____ 1960. Geologic map of the Corona South 7.5' quadrangle, Riverside County, CA

_____ 1966. Geologic map of the Corona South 7.5' quadrangle, Riverside County, CA.

_____ 1975. Geologic map of the Corona South 7.5' quadrangle, Riverside County, CA.

ATTACHMENT A:

RESUMES

Candace R. Ehringer, RPA

Senior Archaeologist

EDUCATION

M.A., Anthropology, California State University, Northridge

B.A., Anthropology, East Carolina University

16 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

Society for California Archaeology

Society for Historical Archaeology

QUALIFICATIONS

Exceeds Secretary of the Interior's Standards

CA State BLM Permitted

Certified in CA and NV BLM Protocol

HAZWOPER Certified

CONTINUING EDUCATION

AEP Advanced CEQA Workshop, 2011

ACHP Section 106 Essentials training course, 2010

Riverside County certification course, 2009 and 2011

Candace is an archaeologist with 16 years of experience in cultural resources management in California and is experienced in both California's desert and coastal environments. Her strengths include managing field surveys, archaeological monitoring, lab analysis, and coordination with Native American representatives. Candace authors and provides senior level review of documentation in support of CEQA, NEPA, and Section 106 compliance.

Relevant Experience

California Department of Toxic Substances, Topock Compressor Station Remediation CEQA Services, Mohave County, AZ and San Bernardino County, CA. *Cultural Resources Project Manager*. Candace is managing the preparation of cultural resources EIR sections and is providing project support to the California Department of Toxic Substances Control (DTSC), including facilitating Native American involvement. DTSC provides oversight of the site investigation and cleanup activities for the Pacific Gas and Electric Company (PG&E) Topock Gas Compressor Station, located in San Bernardino County, 15 miles southeast of Needles, California. Groundwater samples taken under and near the Station were found to be contaminated with hexavalent chromium and other chemicals as result of past disposal activities. Soils contamination is also present at the site, requiring investigation and cleanup. These activities are highly scrutinized by the regional Native American Tribes because the area has important cultural and religious significance. ESA prepared an EIR for soil investigations and will be conducting CEQA evaluations that tier off of the Program EIR for the Groundwater Remedy. ESA will provide these services as well as lead the Native American and public participation efforts.

Bureau of Land Management (BLM), On-Call Cultural Resources Services, Riverside County, CA. *Archaeologist.* ESA has been retained by the Bureau of Land Management (BLM) under an on-call contract to provide cultural resource services including compliance monitoring for projects under BLM jurisdiction. Candace has participated in a number of projects for the BLM Palm Springs South Coast Field Office, providing a wide range of cultural resources services for solar projects and other projects taking place on BLM lands in compliance with Section 106 and specified BLM protocols, including compliance monitoring and peer review, Class III archaeological resources surveys, resource evaluations, the preparation of reports, and Native American consultation.

BLM, Native American Monitoring and Archaeological Support, Genesis Solar, Riverside County, CA. *Project Archaeologist*. Candace managed the Class III field survey for the approximate 87-acre project area. The survey resulted in the identification of 10 previously recorded archaeological sites and nine new archaeological sites. The Genesis Solar project is a concentrated solar electric

generating facility located in Riverside County. The project consisted of two independent solar electric generating facilities with a nominal net electrical output of 125 MW each, for a total net electrical output of 250 MW. The project site is located approximately 25 miles west of the City of Blythe on lands managed by the BLM.

BLM, Blythe Mesa Solar Project, Riverside County, CA. *Third-Party Reviewer*. Candace provided third-party review on behalf of the BLM California Desert District Office. She reviewed cultural resources documents and mitigation recommendations for technical adequacy and to ensure documents/recommendations met current standards and practices and complied with BLM 8100 series manual sections.

Los Angeles Department of Water and Power (LADWP), Owens Lake Master Project – Cultural Resources Services, Inyo County, CA. *Cultural Resources Project Manager.* The Los Angeles Department of Water and Power (LADWP) is currently working to identify an environmentally sustainable approach to dust control at Owens Lake. Because Owens Lake and the surrounding area are highly sensitive for the presence of cultural resources, LADWP is seeking to avoid impacts to cultural resources by considering their locations during the project development and planning stage. To this end, ESA complied existing cultural resources data and prepared sensitivity maps for reference in the planning process. Candace managed the preparation of the maps, which documented archaeological, historical, and Native American resources, as well as paleontological resources. Candace is also currently assisting LADWP with the design of Cultural Resources Protection Criteria to protect sensitive cultural resources during implementation of the Master Project.

LADWP, Owens Lake Phase 7b Cultural Resources Task Force, Inyo County, CA. *Cultural Resources Project Support.* LADWP developed the Owens Lake Phase 7a project in response to an Abatement Order from the Great Basin Unified Air Pollution Control District (District), which required LADWP to control dust within a specified 3.1 square mile area of Owens Lakebed. During the environmental analysis conducted for Phase 7a, significant cultural and archaeological resources were discovered in the project area and approximately 328 acres were subsequently removed from the project area and designated Phase 7b. Under an agreement between LADWP and the District, a Cultural Resources Task Force (CRTF) was formed to make recommendations for the Phase 7b areas where sensitive cultural resources have been identified. The CRTF is an advisory group consisting of representatives from LADWP, the District, California State Lands Commission, State Historical Preservation Office, and local Tribal representatives. The CRTF will make initial non-binding recommendations to the District Governing Board and LADWP as to the best course of action and timing for the treatment of the Phase 7b Areas. Candace is providing cultural resources support to ESA and LADWP staff at CRTF meetings and assisting LADWP in identifying feasible options for the Phase 7b areas.

Vanessa N. Ortiz, MA, RPA

Cultural Resources Specialist

EDUCATION

M.A., Anthropology emphasis Archaeology, California State University, Los Angeles

B.A. Anthropology, California State University, Los Angeles

7 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

Society for American Archaeology

California Cultural Resources Preservation Alliance

Society for California Archaeology

Lambda Alpha Honors Society

CPR/First Aid Certified

Cross Trained Archaeology / Paleontology

Vanessa is an archaeologist with over seven years of documentation, records searches, survey, excavation, and monitoring experience. Vanessa routinely manages project schedules and coordination with project proponents, contactor staff, and agency staff. She also prepares compliance reports in accordance with CEQA and Section 106 guidelines. Vanessa is a trained archaeologist and cross-trained paleontologist with the ability to provide an appropriate response for projects where cultural resources issues arise. Vanessa is bilingual (Spanish/English) and regularly works as part of a team ensuring daily operations satisfy regulations.

Relevant Experience

Ballona Wetland Restoration, Playa Del Rey, CA. *Archaeologist.* As part of the development of the restoration plan for the Ballona Wetlands, the ESA project team characterized existing conditions that included water and sediment sampling and analysis. Vanessa assisted in survey, data recovery and artifact analysis.

Los Angeles Department of Water and Power (LADWP), Path 46 Clearance Surveys, San Bernardino, CA. *Archaeologist*. ESA has been tasked by LADWP to conduct required surveys for the Path 46 Transmission Line Clearances Project. The project's objective is to restore required code clearances to the transmission conductors, which will be accomplished by grading the ground surface underneath the transmission lines to achieve required height consistency. The work is being conducted in compliance with BLM guidelines and federal laws and statutes. Biological, archaeological, and paleontological resource surveys are currently being conducted for the 77 proposed grading areas, staging areas, and roads. Pending reports will document results of the surveys and provide recommendations for minimally invasive access areas, staging areas, and soil distribution. Vanessa provided field surveys and documentation of archaeological sites for submission to the California State Parks.

Los Angeles Department of Water and Power (LADWP), Scattergood Olympic Transmission Line (SOTL) Cultural Resources Monitoring, Los Angeles, CA. *Archaeologist*. LADWP is constructing and will operate approximately 11.4 miles of new 230 kilovolt (kv) underground transmission line. LADWP installed 55 vaults and underground conduit for the SOTL Project. ESA provided cultural resources services, including archaeological, Native American, and paleontological monitoring, to fulfill the requirements of the Project EIR mitigation measures for cultural resources. Reports documenting the monitoring findings were submitted at the end of the project. Vanessa provided oversight and scheduling to monitors and assisted in preparing the final report.

California High Speed Rail, Fresno, CA. *Archaeological Monitor.* ESA was retained as a sub-consultant to the Tutor Perini Zachary Parsons Joint Venture. The project consisted of pre-construction surveys for biological and cultural resources, compliance monitoring during construction, and compliance tracking and reporting. Approximately 29 miles in length, the project also included both biological and cultural resources such as the historic Chinatown in downtown Fresno, vernal pool and seasonal wetland habitat and crossings of the San Joaquin and Fresno Rivers. Vanessa provided archaeological monitoring for the Project during construction.

Los Angeles Department of Water and Power, La Kretz Innovation Campus Project, Los Angeles, CA. *Archaeological Monitor and Lab Technician.* ESA provided archaeological monitoring in connection with the La Kretz Innovation Campus Project located in downtown Los Angeles. ESA conducted construction worker cultural resources sensitivity training; archaeological monitoring; and prepared a monitoring report. The Project involved the rehabilitation of the 61,000-square-foot building located at 518-524 Colyton Street, the demolition of the building located at 537-551 Hewitt Street, and the construction of an open space public plaza, and surface parking lot, and involved compliance with Section 106 of the National Historic Preservation Act and consultation with the California State Historic Preservation Officer. Vanessa led monitoring for the duration of the Project, conducted data recovery, served as a lab technician during the curation of the artifacts recovered from the Project, and co-authored the final cultural report.

Los Angeles Department of Water and Power (LADWP), Silver Lake Reservoir Complex (SLRC) Storage Replacement and River Supply Conduit 1A, Los Angeles County, CA. *Archaeological and Paleontological Monitor*. ESA is providing archaeological and paleontological monitoring for SLRC Storage Replacement and River Supply Conduit 1A Project. As part of this task, ESA conducted construction worker cultural resources sensitivity training and archaeological and paleontological monitoring. A final monitoring report will be prepared at the end of construction. Vanessa was the field monitor on this project.

Sunline Administration Building Project, Thousand Palms, CA. *Archaeological Monitor.* ESA was retained by the Sunline Transit Authority to conduct cultural resources monitoring for the Sunline Administration Building Project (Project). The Project consisted of the development a 13.54-acre property located adjacent to Sunline's existing facilities and included modifications to Sunline's existing facilities, as well as the construction of new facilities including an administration building, a break room, a board room, and a transfer station for passengers. Vanessa conducted archaeological monitoring for the Project during construction.

La Plaza Project, Los Angeles, CA. *Archaeological Technician.* The Project consisted of the re-development of La Plaza in Downtown Los Angeles. As part of the project, Vanessa participated in the reburial of human remains as well as an archaeological technician for the data recovery phase.

Matthew Gonzalez

Archaeologist

EDUCATION

B.A., Classical Archaeology, University of California, Santa Barbara, California

10 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

SPECIALIZED TRAINING

40-Hour HAZWOPER Training (Update), 2015

HAZCON Certified 2015

Cultural Resources Protection Under CEQA and Other Legislative Mandates, UCLA Extension, 2008

Riverside County Archaeology and Cultural Sensitivity Training Program, 2007

CA State BLM Permitted

National Preservation Institute Section 106: An Introduction Seminar Certified (18-hour)

Matthew Gonzalez has 10 years of experience in cultural resources management in California. He has led numerous archaeological surveys throughout Southern California and Arizona, and has extensive experience with documentation of cultural resources, Native American outreach, archaeological testing and excavation methods, laboratory analysis, and soil analysis. Matthew possesses specialized expertise in faunal and lithic analyses. Matthew regularly prepares technical reports in support of CEQA, NEPA, and Section 106, as well as environmental compliance documents. He is skilled in the application of Geographic Information Systems (GIS)/Global Positioning Systems (GPS) to facilitate field investigations and record searches, and in the use of ArcView and Google Earth to develop field maps. Matthew is cross-trained in paleontology and has served as a paleontological surveyor and monitor on numerous projects.

Relevant Experience

Metro Purple Line Extension Project, Los Angeles County, CA. *Compliance Monitor*. ESA is retained by the City of Beverly Hills to conduct third-party general compliance monitoring during the advanced utilities relocation phase of construction for the segment of the Metro Purple Line in the City of Beverly Hills. In this role, ESA is responsible for compliance oversight of provisions a Memorandum of Agreement between Metro and the City of Beverly Hills. Significant issues include traffic control, pedestrian access, and noise. Matthew conducted compliance monitoring for the Project.

Los Angeles Department of Water and Power (LADWP), Scattergood Olympic Transmission Line (SOTL) Cultural Resources Monitoring, Los Angeles, CA. *Archaeological Monitor*. LADWP is constructing and will operate approximately 11.4 miles of new 230 kilovolt (kv) underground transmission line. LADWP installed 55 vaults and underground conduit for the SOTL Project. ESA provided cultural resources services, including archaeological, Native American, and paleontological monitoring, to fulfill the requirements of the Project EIR mitigation measures for cultural resources. Reports documenting the monitoring findings were submitted at the end of the project. Matthew provided archaeological and paleontological monitoring, assisted in preparing the final report and prepared weekly monitoring reports.

City of Twentynine Palms, National Park Drive Archaeological Resource Project, San Bernardino County, CA. *Archaeologist.* The City of Twentynine Palms is installing a concrete sidewalk, curb, gutter, and landscaping on either side of National Park Drive, within the road right-of-way. The project has affected archaeological site CA-SBR-2052/H, also known as the Oasis of Mara, a National Register of Historic Places (National Register)-eligible multi-component archaeological site. ESA was retained to conduct archaeological investigations to

determine the extent of impacts to the site, and whether the portion of the site that is located within the project area contributes to the overall National Register-eligibility of CA-SBR-2052/H. ESA has also been assisting the City in their consultation with SHPO. Matthew assisted in the archaeological field investigations, and conducted archaeological monitoring during construction activites for the Project.

California High Speed Rail, Fresno, CA. *Archaeological Monitor.* ESA was retained as a sub-consultant to the Tutor Perini Zachary Parsons Joint Venture. The project consisted of pre-construction surveys for biological and cultural resources, compliance monitoring during construction, and compliance tracking and reporting. Approximately 29 miles in length, the project also included both biological and cultural resources such as the historic Chinatown in downtown Fresno, vernal pool and seasonal wetland habitat and crossings of the San Joaquin and Fresno Rivers. Matthew provided archaeological monitoring for the Project during construction.

Los Angeles Department of Water and Power, La Kretz Innovation Campus Project, Los Angeles, CA. *Archaeological Monitor and Lab Technician.* ESA provided archaeological monitoring in connection with the La Kretz Innovation Campus Project located in downtown Los Angeles. ESA conducted construction worker cultural resources sensitivity training; archaeological monitoring; and prepared a monitoring report. The Project involved the rehabilitation of the 61,000-square-foot building located at 518-524 Colyton Street, the demolition of the building located at 537-551 Hewitt Street, and the construction of an open space public plaza, and surface parking lot, and involved compliance with Section 106 of the National Historic Preservation Act and consultation with the California State Historic Preservation Officer. Matthew excavated features, provided monitoring during construction, assisted in the final report, cataloged and recored artifacts during the curation of the artifacts recovered from the Project, and prepared weekly monitoring reports.

Los Angeles Department of Water and Power (LADWP), Haskell Canyon Archaeological Monitoring, Los Angeles, CA. *Archeological and Paleonotlogical Monitor.* ESA was tasked by LADWP to provide archaeological and paleontological monitoring for interim road work in Haskell Canyon. Matthew has conducted archaeological and paleontological monitoring during project construction, composed daily field logs, prepared weekly monitoring reports and coordinated with construction personal. During monitoring tasks, Matthew identified and collected numerous historic resources (refuse) and paleontological resources (marine fossils).

Irvine Ranch Water District Biosolids Handling and Energy Recovery Facilities Project, Irvine, CA. *Archaeological and Paleontological Monitor.* ESA has been retained by the Irvine Ranch Water District (IRWD) to conduct ongoing cultural and paleontological resources monitoring for the Biosolids Handling and Energy Recovery Project (Project). IRWD is constructing a new solids-handling facilities at the Michelson Water Recycling Plant (MWRP) located in Irvine, California. The facilities would thicken, stabilize, dewater, and dry solids that are generated at the MWRP. Matthew conducted archaeological and paleontological monitoring of construction activities associated with the Project.

ATTACHMENT B:

NATIVE AMERICAN CORRESPONDENCE

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

July 21, 2016

Gayle Totton
Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
FAX- 916-373-5471

Subject: **SLF Search Request Keith 1220 Zone Potable Water Tank Project, Riverside County, California (D150788.01)**

Dear Ms. Totton:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona, within Riverside County. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the south east corner of Nelson Street and Keith Street within the City. The tank will be called the Keith 1220-Zone Potable Water Tank and will provide operational, emergency and fire flow storage to the City's Zone 4 1220' HGL pressure zone.

The enclosed map shows the Project area located in:

- Section 18 area of the Corona South USGS 7.5' Quadrangle, Township 4 South, Range 6 West.

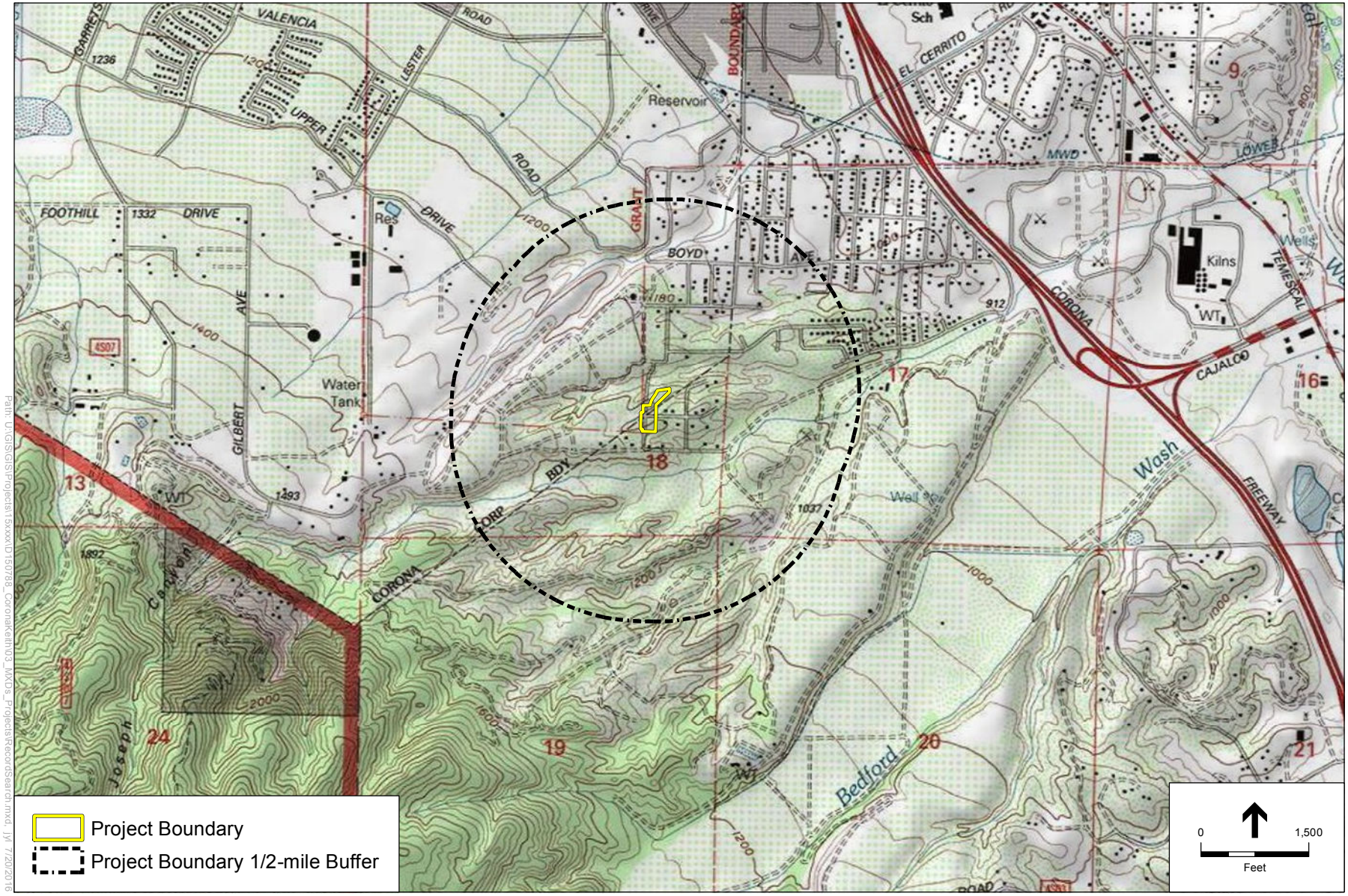
In an effort to provide an adequate appraisal of all potential impacts to cultural resources that may result from the proposed Project, ESA is requesting that a records search be conducted for sacred lands or traditional cultural properties that may exist within the Project area.

Thank you for your time and cooperation regarding this matter. To expedite the delivery of search results, please fax them to 213.599.4301. Please contact me at 323.246.6289 or vortiz@esassoc.com if you have any questions.

Sincerely,

Vanessa Ortiz

Vanessa Ortiz, M.A., RPA
Cultural Resources



SOURCE: USGS 7.5' Topo Quad Corona South 1977

Keith 1220-Zone Potable Water Tank. 150788

Figure 1

Record Search

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
Fax (916) 373-5471

July 25, 2016

Vanessa Ortiz
Environmental Science Associates

Sent by Email: vortiz@esassoc.com

RE: Proposed Keith 1220 Zone Potable Water Tank Project, City of Corona; Corona South USGS Quadrangle, Riverside County, California

Dear Ms. Ortiz:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contact List
Riverside County
7/25/2016

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760)699-6907
Fax: (760)699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
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Fax: (760)699-6919

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760)398-4722
Fax: (760)369-7161

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Barona Road — Kumeyaay
Lakeside, CA, 92040
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cloyd@barona-nsn.gov

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
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Fax: (760)347-7880

Cahuilla Band of Indians
Luther Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
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Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Kumeyaay
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Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
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Fax: (619)445-9126

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
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Fax: (619)445-9126
michaelg@leaningrock.net

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 — Gabrielino
Covina, CA, 91723
Phone: (626)926-4131
gabrielenoindians@yahoo.com

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrielino
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626)286-1262
GTTribalcouncil@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Keith 1220 Zone Potable Water Tank, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
7/25/2016

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012
Phone: (951)807-0479
sgoad@gabrielino-tongva.com
Gabrielino

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Chairperson
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Bellflower, CA, 90707
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Fax: (562)761-6417
gtongva@verizon.net
Gabrielino

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
1999 Avenue of the Stars, Suite 1100
Los Angeles, CA, 90067
Phone: (626) 676 - 1184
Gabrielino

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612
Jamul, CA, 91935
Phone: (619)669-4785
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Kumeyaay

Juaneno Band of Mission Indians
Sonia Johnston, Chairperson
P.O. Box 25628
Santa Ana, CA, 92799
sonia.johnston@sbcglobal.net
Juaneno

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos
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Juaneno

Juaneno Band of Mission Indians Acjachemen Nation - Romero
Teresa Romero, Chairperson
31411-A La Matanza Street
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tromero@juaneno.com
Juaneno

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76
Pauma Valley, CA, 92061
Phone: (760)742-3771
Luiseno

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
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Boulevard, CA, 91905
Phone: (619)478-2113
Fax: (619)478-2125
jmiller@Lapostatribe.net
Kumeyaay

La Posta Band of Mission Indians
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Kumeyaay

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairperson
P.O. Box 189
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Chapparosa@msn.com
Cahuilla

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Keith 1220 Zone Potable Water Tank, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
7/25/2016

Manzanita Band of Kumeyaay Nation
Leroy J. Elliott, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619)766-4930
Fax: (619)766-4957

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270 — Kumeyaay
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Fax: (760)782-9092
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Morongo Band of Mission Indians
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Fax: (951)922-8146

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
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Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369, Ext. 303 — Luiseno
Pauma Valley, CA, 92061
Phone: (760)742-1289
Fax: (760)742-3422

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
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Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairperson
P.O. Box 391670 — Cahuilla
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Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
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Rincon Band of Mission Indians
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vwhipple@rincontribe.org

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive — Luiseno
Vista, CA, 92081
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Fax: (760)724-2172
cjmojado@slrmissionindians.org

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Keith 1220 Zone Potable Water Tank, Riverside County.

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
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Santa Rosa Band of Mission Indians
Steven Estrada, Chairperson
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Anza, CA, 92539
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Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
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Soboba Band of Luiseno Indians
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Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
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Torres-Martinez Desert Cahuilla Indians
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tmchair@torresmartinez.org

Torres-Martinez Desert Cahuilla Indians
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Viejas Band of Kumeyaay Indians
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Fax: (619)445-5337
jhagen@viejas-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Keith 1220 Zone Potable Water Tank, Riverside County.

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 18, 2016

Temet Aguilar, Chairperson
Pauma Band of Luiseno Indians
P.O. Box 369, Ext 303
Pauma Valley, CA 92061

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Aguilar:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

The design of the Project would include a reservoir, altitude valve and associated piping, power to the site, and miscellaneous on- and off-site piping (i.e. overflow line, etc.). The water tank would be approximately 130 feet in diameter and 30 feet tall, with a portion of the tank buried underground. Miscellaneous off-site utilities would include approximately 600 feet of overflow/drain piping constructed along Nelson Street from the tank to the existing 36-inch storm drain in Masters Drive. In addition, construction of approximately 1,250 feet of 16-inch water transmission pipe would connect the proposed tank to the existing 16-inch pipe at the corner of Howe Street and Duncan Way serving the existing Hayden Tank. The new water transmission main would be constructed along Nelson Street, Courtney Street, and Howe Street. Street frontage on Nelson Street and Keith Street would be improved to one-half of the street width plus 10 feet in accordance with City Standard 113 - Rural Road. Existing high voltage power lines would be relocated underground along the Nelson Street frontage.

A records search conducted at the Eastern Information Center on July 22, 2016 indicated that there are no prehistoric resources within the Project area or a 1/2-mile radius. The results from the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search were received on July 25, 2016 with negative results.

The NAHC has identified you as someone who is culturally affiliated with the Project area, and who may have knowledge of resources in the area or an interest in the Project. We are writing to request your input on resources that may be near the Project area and to solicit any concerns you may have.

Thank you for your cooperation on this matter. If you have any questions or comments, please contact Vanessa Ortiz at 323.246.6289 or vortiz@esassoc.com or Candace Ehringer at 831.737.7438 or cehringer@esassoc.com.

Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 18, 2016

Matias Belardes, Chairperson
Juaneno Band of Mission Indians – Indians Acjachemen Nation
32161 Avenida Los Amigos
San Juan Capistrano, CA 92675

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Belardes:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

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August 18, 2016

Linda Candelaria, Co-Chairperson
Gabrielino-Tongva Tribe
1999 Avenue of the Stars, Suite 1100
Los Angeles, CA 90067

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Candelaria:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 18, 2016

Carrie Garcia, Cultural Resources Manager
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92583

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Garcia:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

The design of the Project would include a reservoir, altitude valve and associated piping, power to the site, and miscellaneous on- and off-site piping (i.e. overflow line, etc.). The water tank would be approximately 130 feet in diameter and 30 feet tall, with a portion of the tank buried underground. Miscellaneous off-site utilities would include approximately 600 feet of overflow/drain piping constructed along Nelson Street from the tank to the existing 36-inch storm drain in Masters Drive. In addition, construction of approximately 1,250 feet of 16-inch water transmission pipe would connect the proposed tank to the existing 16-inch pipe at the corner of Howe Street and Duncan Way serving the existing Hayden Tank. The new water transmission main would be constructed along Nelson Street, Courtney Street, and Howe Street. Street frontage on Nelson Street and Keith Street would be improved to one-half of the street width plus 10 feet in accordance with City Standard 113 - Rural Road. Existing high voltage power lines would be relocated underground along the Nelson Street frontage.

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Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
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213.599.4301 fax

www.esassoc.com

August 18, 2016

Shane Chapparosa, Chairperson
Los Coyotes Band of Mission Indians
P.O. Box 189
Warner Springs, CA 92086

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Chapparosa:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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Thank you for your cooperation on this matter. If you have any questions or comments, please contact Vanessa Ortiz at 323.246.6289 or vortiz@esassoc.com or Candace Ehringer at 831.737.7438 or cehringer@esassoc.com.

Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
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August 18, 2016

Robert F. Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Dorame:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Leroy Elliott, Chairperson
Manzanita Band of Kumeyaay nation
P.O. Box 1302
Boulevard, CA 91905

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Elliott:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Erica Pinto, Chairperson
Jamul Indian Village
P.O. Box 612
Jamul, CA 91935

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Pinto:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Steven Estrada, Chairperson
Santa Rosa Band of Mission Indians
P.O. Box 391820
Anza, CA 92539

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Estrada:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Michael Garcia, Vice Chairperson
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, CA 91901

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Garcia:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Patricia Garcia-Plotkin, Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, Ca 92264

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Garcia-Plotkin:

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Cultural Resources

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Enclosures: Project Location Map

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August 18, 2016

Shasta Gaughen, Tribal Historic Preservation Officer
Pala Band of Mission Indians
35008 Pala Temecula Road
Pala, CA 92059

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Shasta Gaughen:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Sandonne Goad, Chairperson
Gabrieleno/Tongva Nation
106 ½ Judge John Aiso St, #231
Los Angeles, CA 90012

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Goad:

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August 18, 2016

Ralph Goff, Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Goff:

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August 18, 2016

Jeff Grubbe, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Grubbe:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Joseph Hamilton, Chairperson
Ramona Band of Cahuilla Mission Indians
P.O. Box 391670
Anza, CA 92539

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Hamilton:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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Thank you for your cooperation on this matter. If you have any questions or comments, please contact Vanessa Ortiz at 323.246.6289 or vortiz@esassoc.com or Candace Ehringer at 831.737.7438 or cehringer@esassoc.com.

Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

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August 18, 2016

Sonia Johnston, Chairperson
Juaneno Band of Mission Indians
P.O. Box 25628
Santa Ana, CA 92799

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Johnston:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Clifford LaChappa, Chairperson
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, CA 92040

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. LaChappa:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Allen Lawson, Chairperson
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, CA 92082

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Lawson:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Mark Macarro, Chairperson
Pechanga Band of Mission Indians
P.O. Box 1477
Temecula, CA 92593

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Macarro:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Robert Martin, Chairperson
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Martin:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Cody J. Martinez, Chairperson
Sycuan Band of Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Martinez:

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Cultural Resources

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Enclosures: Project Location Map

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August 18, 2016

Bo Mazzetti, Chairperson
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, CA 92082

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Mazzetti:

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August 18, 2016

Jim McPherson, Tribal Historic Preservation Officer
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, CA 92082

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. McPherson:

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August 18, 2016

Javaughn Miller, Tribal Administrator
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, CA 91905

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Miller:

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August 18, 2016

Michael Mirelez, Cultural Resources Coordinator
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, CA 92274

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Mirelez:

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August 18, 2016

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Morales:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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Thank you for your cooperation on this matter. If you have any questions or comments, please contact Vanessa Ortiz at 323.246.6289 or vortiz@esassoc.com or Candace Ehringer at 831.737.7438 or cehringer@esassoc.com.

Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 18, 2016

Joseph Ontiveros, Cultural Resources Department
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92581

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Ontiveros:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Virgil Oyos, Chairperson
Mesa Grande Band of Mission Indians
P.O. Box 270
Santa Ysabel, CA 92070

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Oyos:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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213.599.4301 fax

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August 18, 2016

Gwendolyn Parada, Chairperson
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, CA 91905

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Parada:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Robert Pinto, Chairperson
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, CA 91901

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Pinto:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Mary Resvaloso, Chairperson
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, CA 92274

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Resvaloso:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Thomas Rodriguez, Chairperson
La Jolla Band of Luiseno Indians
22000 Highway 76
Pauma Valley, CA 92061

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Rodriguez:

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Cultural Resources

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Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
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213.599.4300 phone
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August 18, 2016

Teresa Romero, Chairperson
Juaneno Band of Mission Indians Acjachemen Nation
31411-A La Matanza Street
San Juan Capistrano, CA 92675

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Romero:

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August 18, 2016

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, CA 91723

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Salas:

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August 18, 2016

Luther Salgado, Chairperson
Cahuilla Band of Indians
52701 U.S. Highway 371
Anza, CA 92539

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Salgado:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

San Luis Rey, Tribal Council
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Tribal Council:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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August 18, 2016

Amanda Vance, Chairperson
Augustine Band of Mission Indians
P.O. Box 846
Coachella, CA 92236

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Ms. Vance:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

The design of the Project would include a reservoir, altitude valve and associated piping, power to the site, and miscellaneous on- and off-site piping (i.e. overflow line, etc.). The water tank would be approximately 130 feet in diameter and 30 feet tall, with a portion of the tank buried underground. Miscellaneous off-site utilities would include approximately 600 feet of overflow/drain piping constructed along Nelson Street from the tank to the existing 36-inch storm drain in Masters Drive. In addition, construction of approximately 1,250 feet of 16-inch water transmission pipe would connect the proposed tank to the existing 16-inch pipe at the corner of Howe Street and Duncan Way serving the existing Hayden Tank. The new water transmission main would be constructed along Nelson Street, Courtney Street, and Howe Street. Street frontage on Nelson Street and Keith Street would be improved to one-half of the street width plus 10 feet in accordance with City Standard 113 - Rural Road. Existing high voltage power lines would be relocated underground along the Nelson Street frontage.

A records search conducted at the Eastern Information Center on July 22, 2016 indicated that there are no prehistoric resources within the Project area or a 1/2-mile radius. The results from the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search were received on July 25, 2016 with negative results.

The NAHC has identified you as someone who is culturally affiliated with the Project area, and who may have knowledge of resources in the area or an interest in the Project. We are writing to request your input on resources that may be near the Project area and to solicit any concerns you may have.

Thank you for your cooperation on this matter. If you have any questions or comments, please contact Vanessa Ortiz at 323.246.6289 or vortiz@esassoc.com or Candace Ehringer at 831.737.7438 or cehringer@esassoc.com.

Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 18, 2016

Robert Welch, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grande Road
Alpine, CA 91901

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Welch:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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Enclosures: Project Location Map

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

August 18, 2016

Doug Welmas, Chairperson
Cabazon Band of Mission Indians
84-245 Indio Springs parkway
Indio, CA 92203

Subject: Corona Keith 1220 Zone Potable Water Tank, Riverside County, California (D150788.01)

Dear Mr. Welmas:

Environmental Science Associates (ESA) is preparing an Initial Study/ Mitigated Negative Declaration (IS/MND) for the City of Corona Department of Water and Power (City) Keith 1220 Zone Potable Water Tank Project (Project). The Project is located in the City of Corona in Riverside County, as depicted on the enclosed map. The Project includes the construction of a partially-buried Type I pre-stressed concrete potable water storage tank at the southeast corner of Nelson Street and Keith Street within the City. The tank would provide operational, emergency and fire flow storage to the City's Zone 4 1220 Hydraulic Grade Line (HGL) pressure zone.

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Sincerely,

Vanessa Ortiz, M.A., R.P.A.
Cultural Resources

Candace Ehringer, M.A., R.P.A
Cultural Resources

Enclosures: Project Location Map

From: THPO Consulting
To: Candace Ehringer
Subject: Corona Keith 1220 Zone Potable Water Tank
Date: Monday, August 29, 2016 1:40:30 PM

Hello, Candace,

Thank you for including us in the consultation for the Corona Keith 1220 Zone Potable Water Tank project. However, a records check of the ACBCI cultural registry revealed that this project is not located within the Tribe's Traditional Use Area (TUA). Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Hope you are doing well,

Victoria Harvey M.A., R.P.A.
Archaeological Monitoring Coordinator
Agua Caliente Band of Cahuilla Indians
760-699-6981 (Desk)
(760) 406-1909 (Cell)
vharvey@aguacaliente.net

The information contained in this message may be privileged and confidential and protected from disclosure. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by replying to the message and deleting it from your computer

AUGUSTINE BAND OF CAHUILLA INDIANS
P.O. Box 846 • Coachella, CA 92236 • (760) 398-4722 • Fax (760) 369-7161

August 29, 2016

Vanessa Ortiz
Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

RE: Keith 1220 Zone Potable Water Tank Project (Corona, CA)

Dear Ms. Ortiz:

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project, and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources has resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time we are unaware of specific cultural resources that may be affected by the proposed project. We encourage you to contact other Native American Tribes and individuals within the immediate vicinity of the project site that may have specific information concerning cultural resources that may be located in the area. We also encourage you to contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during the pre-construction and construction phase of the project. Please notify us immediately should you discover any cultural resources during the development of this project.

Very truly yours,

Augustine Band of Cahuilla Indians

Amanda Vance

Amanda Vance
Tribal Chairperson

RINCON BAND OF LUISEÑO INDIANS

Cultural Resources Department

1 W. Tribal Road · Valley Center, California 92082 ·
(760) 297-2635 Fax:(760) 749-2639

August 30, 2016

Vanessa Ortiz
ESA Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Re: Corona Keith 1220 Zone Potable Water Tank

Dear Ms. Ortiz:

This letter is written on behalf of Rincon Band of Luiseño Indians. We have received your notification regarding the Corona Keith 1220 Zone Potable Water Tank Project and we thank you for the consultation notification. The location you have identified is within the Territory of the Luiseño people.

Embedded in the Luiseño Territory are Rincon's history, culture and identity. The project is within the Luiseño Aboriginal Territory of the Luiseño people however, it is not within Rincon's Historic Boundaries. We do not have any additional information regarding this project but, we defer this project to the Pechanga Band of Luiseño Indians or Soboba Band of Luiseño Indians who are located closer to your project area.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Vincent Whipple
Manager
Rincon Cultural Resources Department

Bo Mazzetti, Tribal Chairman | Stephanie Spencer, Vice Chairwoman | Steve Stallings, Council Member | Laurie E. Gonzalez, Council Member | Alfonso Kolb, Council Member

September 15, 2016

Attn: Vanessa Ortiz, M.A., R.P.A.
ESA
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

SOBOBA BAND OF LUISEÑO INDIANS
EST. JUNE 19, 1883

RE: Native American Consultation; Corona Keith 1220 Zone Potable Water Tank, Riverside County, CA (D150788.01)

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. This project location is in proximity to known sites, is a shared use area that was used in ongoing trade between the tribes, and is considered to be culturally sensitive by the people of Soboba.

Soboba Band of Luiseño Indians is requesting the following:

1. To initiate a consultation with the project proponents and lead agency.

2. The transfer of information to the Soboba Band of Luiseno Indians regarding the progress of this project should be done as soon as new developments occur.

3. Soboba Band of Luiseño Indians continues to act as a consulting tribal entity for this project.

4. Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests that Native American Monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department to be present during any ground disturbing proceedings. Including surveys and archaeological testing.

5. Request that proper procedures be taken and requests of the tribe be honored (Please see the attachment)

Multiple areas of potential impact were identified during an in-house database search. Specifics to be discussed in consultation with the lead agency.

Sincerely,

Joseph Ontiveros, Director of Cultural Resources
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

Cultural Items (Artifacts). Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer should agree to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

The Developer should waive any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. Upon completion of authorized and mandatory archeological analysis, the Developer should return said artifacts to the Soboba Band within a reasonable time period agreed to by the Parties and not to exceed (30) days from the initial recovery of the items.

Treatment and Disposition of Remains.

A. The Soboba Band shall be allowed, under California Public Resources Code § 5097.98 (a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.

B. The Soboba Band, as MLD, shall complete its inspection within twenty-four (24) hours of receiving notification from either the Developer or the NAHC, as required by California Public Resources Code § 5097.98 (a). The Parties agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes.

C. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code § 5097.98 (a) and (b). The Soboba Band, as the MLD in consultation with the Developer, shall make the final discretionary determination regarding the appropriate disposition and treatment of human remains.

D. All parties are aware that the Soboba Band may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near, the site of their discovery, in an area that shall not be subject to future subsurface disturbances. The Developer should accommodate on-site reburial in a location mutually agreed upon by the Parties.

E. The term "human remains" encompasses more than human bones because the Soboba Band's traditions periodically necessitated the ceremonial burning of human remains. Grave goods are those artifacts associated with any human remains. These items, and other funerary remnants and their ashes are to be treated in the same manner as human bone fragments or bones that remain intact

Coordination with County Coroner's Office. The Lead Agencies and the Developer should immediately contact both the Coroner and the Soboba Band in the event that any human remains are discovered during implementation of the Project. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner shall ensure that notification is provided to the NAHC within twenty-four (24) hours of the determination, as required by California Health and Safety Code § 7050.5 (c).

Non-Disclosure of Location Reburials. It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code § 6254 (r).

Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

PALA TRIBAL HISTORIC PRESERVATION OFFICE

PMB 50, 35008 Pala Temecula Road
Pala, CA 92059
760-891-3510 Office | 760-742-3189 Fax

PALA THPO

October 5, 2016

Candace Ehringer
ESA
626 Wilshire Blvd., Suite 1100
Los Angeles, CA 90017

Re: Corona Keith 1220 Zone Potable Water Tank

Dear Mrs. Ehinger:

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

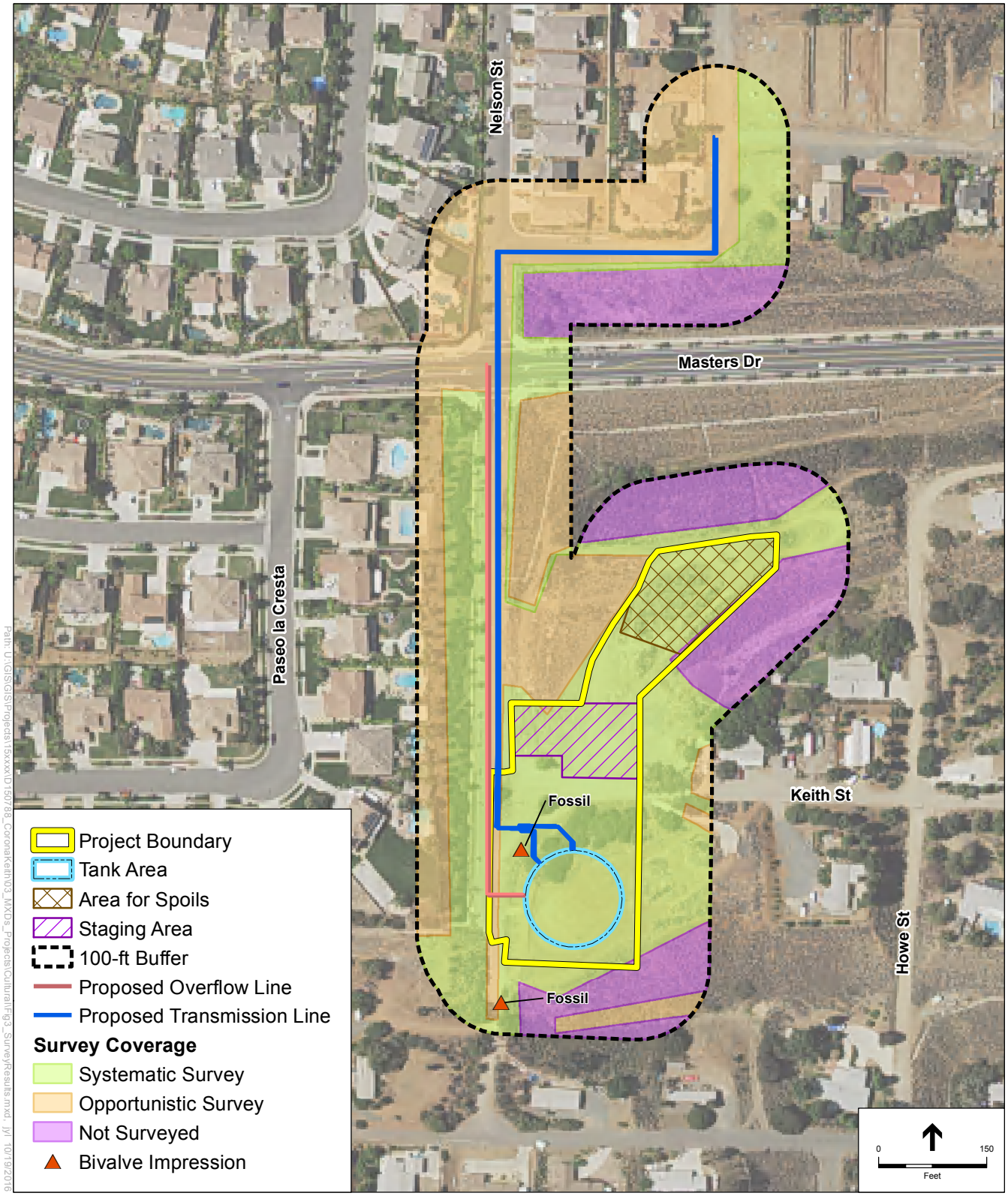
We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-891-3515 or by e-mail at sgaughen@palatribe.com.

Sincerely,

Shasta C. Gaughen, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO **SHASTA C. GAUGHEN** AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

C-2 Paleontological Resources Study



SOURCE: ESRI

Keith 1220-Zone Potable Water Tank. 150788

Figure 4
Survey Results

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

CONFIDENTIAL - NOT FOR PUBLIC DISTRIBUTION

October 19, 2016

Vernon Weisman
City of Corona, Department of Water and Power
755 Public Safety Way
Corona, CA 92880

Subject: Paleontological Resources Study for the Keith 1220-Zone Potable Water Tank Project

Dear Mr. Weisman:

This letter report provides the results of a Paleontological Resources Study completed for the proposed Keith 1220-Zone Potable Water Tank Project. This report documents the results of a records search from the Natural History Museum of Los Angeles County (LACM), geologic map and literature review, and pedestrian survey; provides a description and significance evaluation of fossils within the project site and assessment of the project site's overall paleontological sensitivity; and concludes with recommendations to reduce impacts to paleontological resources.

Introduction

Environmental Science Associates (ESA) has been retained by the City of Corona Department of Water and Power (City) to prepare a Phase I Cultural Resources Study in support of the Initial Study Mitigated Negative Declaration (IS/MND) pursuant to the requirements of the California Environmental Quality Act (CEQA) for the proposed Keith 1220-Zone Potable Water Tank Project (project). During the course of the cultural resources pedestrian survey, paleontological resources (fossils) were noted in the project site in two locations. A sample of fossils were collected for further examination and identification by a principal paleontologist. This study satisfies project requirements in accordance with CEQA (13 Public Resources Code 2100 et seq.) and Public Resources Code Section 5097.5 (Stats 1965, c. 1136, p. 2792). This analysis also complies with guidelines and significance criteria specified by the Society for Vertebrate Paleontology (SVP) (SVP, 1995).

ESA personnel involved in the preparation of this letter report include Alyssa Bell, Ph.D., principal investigator and report author; Sara Dietler, B.A., senior reviewer; Candace Ehringer, M.A., RPA, project manager; and Matthew Gonzalez, B.A., surveyor; Resumes of key personnel are provided in **Attachment A**.

Project Location

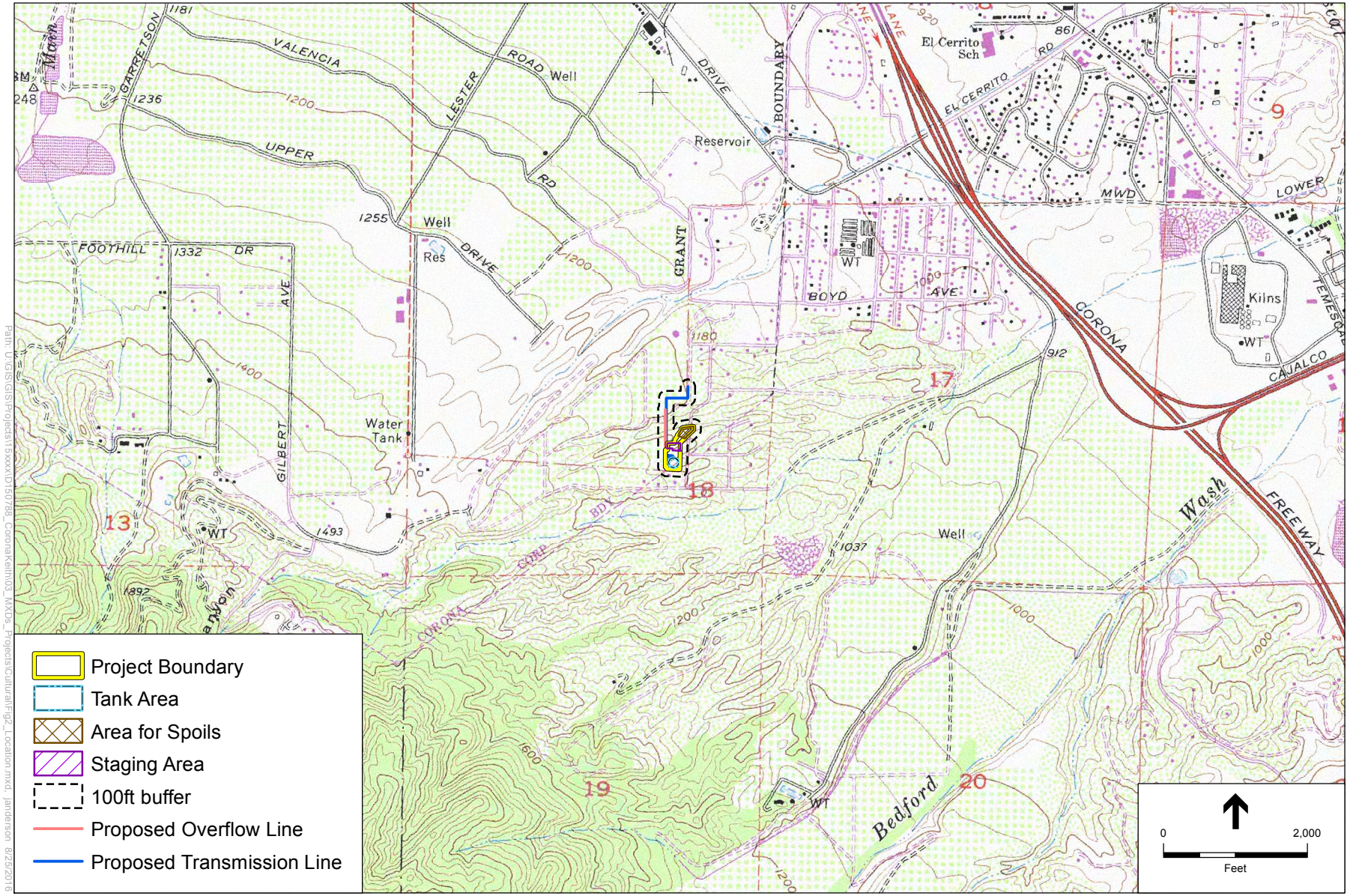
The project is located on an approximately 0.95-acres at 3985 Nelson Street, southeast of the intersection of Nelson and Keith Streets in the City of Corona (**Figure 1**). Specifically, the project is located on the Corona South, CA USGS 7.5-minute topographic quadrangle in Section 18 of Township 4 South, Range 6 West (**Figure 2**).

SOURCE: Riverside County

Keith 1220-Zone Potable Water Tank . 150788

Figure 1

Project Vicinity



SOURCE: USGS 7.5' Topo Quad Corona South 1977

Keith 1220-Zone Potable Water Tank . 150788

Figure 2

Project Loaction

The site is bound on the north by Keith Street, on the west by Nelson Street, to the south by an existing hillside, and to the east by an adjacent vacant lot. The subject property is situated within an existing rural residential area. The flatter, hilltop portion of the site appears to have been graded (possibly for a residential lot) and there is an existing unpaved driveway along the southern perimeter of the site and a paved driveway east of the site. Land uses surrounding the site include Estate Residential to the east, west and north and Low Density Residential to the south. There are some residential units immediately to the south of the project, located adjacent to the project site.

The elevations at the site vary from approximately 1,216 feet above mean sea level (msl) at the southwest side of the project site to a low of 1,190 feet msl at the northwest side. The project site consists of a graded knoll area centrally located within the property that slopes moderately to the east at 6 percent or flatter. An existing south facing descending slope, up to 65 feet high, is present along the southern property line. Two additional slopes are present within the project site, facing north and west that vary between 12 to 20 feet high.

Project Description

The project would construct a partially-buried Type I pre-stressed concrete potable water storage tank at the south east corner of Nelson Street and Keith Street within the City. The tank will be called the Keith 1220-Zone Potable Water Tank and will provide operational, emergency and fire flow storage to the City's Zone 4 1220' hydraulic grade line (HGL) pressure zone. The minimum required storage volume will be 2.5 million gallons (MG). This tank will help address the additional storage needed for the proposed Arantine Hills development and the predicted future deficiency of 5 MG for 1220-Zone storage in the year 2020 as identified in the 2005 Water Master Plan. The Keith 1220-Zone Potable Water Tank is critical for the City to maintain consistent, reliable water pressure to its service area.

The design will include the reservoir, altitude valve and associated piping, power to the site, and miscellaneous on- and off-site piping (i.e. overflow line, etc.). The water tank will be approximately 125 feet in diameter and 33 feet in wall height, with a portion of the tank buried underground. Miscellaneous off-site utilities will include approximately 900 feet of overflow/drain piping constructed in Nelson Street from the tank to the existing 36-inch storm drain in Masters Drive. In addition, construction of approximately 1,250 feet of 16-inch water transmission pipe will connect the proposed tank to the existing 16-inch pipe at the corner of Howe Street and Duncan Way serving the existing Hayden Tank. The new water transmission main will be constructed along Nelson Street, Courtney Street and Howe Street. Construction of approximately 641 feet of 6-inch recycled water pipeline in Nelson Street would connect to an existing 12-inch recycled water main in Masters Drive.

Existing high voltage power lines will be relocated underground along the Nelson Street frontage.

Project construction would involve site clearing, grading and excavation, structural development, and site clean-up. Initial construction is anticipated to begin in 2017, and completed by 2018. Construction would take approximately 12 month to complete; assuming continuous construction.

Setting

Geologic Setting

The project site is located in the Peninsular Ranges geomorphic province which is characterized by Mesozoic-age intrusive rocks and mantled by meta-sedimentary and sedimentary rocks. Lateral displacement and uplift of this region has occurred on a series of northwest trending faults. The present landform of the Santa Ana Mountains is a result of Late Quaternary-age faulting and uplift along the Elsinore Fault zone. The project site lies on a Quaternary-age alluvial fan, located roughly 1 mile north of the Santa Ana Mountains. These older fan deposits have since been eroded and dissected forming a small ridge line from the very dense fan deposits (NMG Geotechnical, Inc., 2015).

Geologic Units

Soil types mapped within the project site include Older Alluvium (Qalo) and artificial fill (Af/Afu):

- **Older Alluvium (Map Symbol - Qalo):** Quaternary-age older alluvial deposits are exposed within the project site and are known to be present up to depths of 71 feet below ground surface (bgs) based on the results of geotechnical boring. The alluvial material generally consists of red, reddish-brown and grayish-red silty and clayey fine to coarse sand with trace to some fine to coarse gravel and rounded pebbles and cobbles. The materials within this geologic unit were generally damp to moist, and dense to very dense. The upper portions of these fan deposits contain abundant angular fine to coarse gravels, while the deeper portions (below elevations of 1,161 to 1,165 feet msl) contain round to subangular pebbles and cobbles up to 10 inches in diameter, many of which are granitic (NMG Geotechnical, Inc., 2015).

- **Artificial Fill (Map symbol - Af/Afu):** There are small amounts of undocumented artificial fill within the project site at unknown depths (fill was not encountered during geotechnical boring). The fill generally consists of red to reddish-brown clayey and silty fine to coarse gravelly sands that are derived from the older alluvium. The fill was found to be dry to damp and medium dense to with scattered fine to coarse gravel. It appears that the fill is primarily associated with the prior grading for the residential lot and driveway (NMG Geotechnical, Inc., 2015).

Paleontological Setting

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or un-mineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix.

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources and can be used to (Murphey and Daitch 2007):

- study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- reconstruct ancient environments, climate change, and paleoecological relationships;
- provide a measure of relative geologic dating, which forms the basis for biochronology and biostratigraphy and which is an independent and corroborating line of evidence for isotopic dating;
- study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- study patterns and processes of evolution, extinction, and speciation; and
- identify past and potential future human-caused effects to global environments and climates.

Regulatory Setting

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value that are afforded protection under state laws and regulations. The following section summarizes the applicable state laws and regulations, as well as professional standards provided by the SVP.

California Environmental Quality Act

As codified in Title 14, Chapter 3 of the California Code of Regulations, CEQA Guidelines define the procedures, types of activities, individuals, and public agencies required to comply with CEQA (Title 14, Chapter 3, California Code of Regulations: 15000 *et seq*., amended March 29, 1999). As part of CEQA's Initial Study process, one of the questions that must be answered by the lead agency relates to paleontological resources: "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Section 15023, Appendix G, Section XIV, Part a).

The loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a

significant environmental impact. Direct impacts to paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to below a significant level through the implementation of paleontological mitigation.

The CEQA threshold of significance for a significant impact to paleontological resources is reached when a project is determined to "directly or indirectly destroy a significant paleontological resource or unique geologic feature." In general, for project sites that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For project sites that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also affected.

California Public Resources Code Section 5097.5 and Section 30244

Other state requirements for paleontological resource management are included in the Public Resources Code (Division 5, Chapter 1.7) Section 5097.5 and (Division 20, Chapter 3) Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

Society for Vertebrate Paleontology

The SVP has established standard guidelines (SVP 1995) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most state regulatory agencies with paleontological resource specific Laws, Ordinances, Regulations, and Standards (LORS) accept and use the professional standards set forth by the SVP.

As defined by the SVP (1995:26), significant nonrenewable paleontological resources are defined as:

> Fossils and fossiliferous deposits here restricted to vertebrate fossils and their taphonomic and associated environmental indicators. This definition excludes invertebrate or paleobotanical fossils except when present within a given vertebrate assemblage. Certain invertebrate and plant fossils may be defined as significant by a project paleontologist, local paleontologist, specialists, or special interest groups, or by lead agencies or local governments.

As defined by the SVP (1995:26), significant fossiliferous deposits are defined as:

> A rock unit or formation which contains significant nonrenewable paleontologic resources, here defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals, e.g., trackways, or nests and middens which provide datable material and climatic information). Paleontologic resources are considered to be older than recorded history and/or older than 5,000 years BP [before present].

Based on the significance definitions of the SVP (1995), all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies.

A geologic unit known to contain significant fossils is considered to be “sensitive” to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either disturb or destroy fossil remains directly or indirectly. Paleontological sites indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontological potential in each case (SVP 1995).

Fossils are contained within surficial sediments or bedrock, and are therefore not observable or detectable unless exposed by erosion or human activity. In summary, paleontologists cannot know either the quality or quantity of fossils prior to natural erosion or human-caused exposure. As a result, even in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce significant fossils elsewhere within the same geologic unit (both within and outside of the study area), a similar geologic unit, or based on whether the unit in question was deposited in a type of environment that is known to be favorable for fossil preservation. Monitoring by experienced paleontologists greatly increases the probability that fossils will be

discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken in order to prevent adverse impacts to these resources.

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources," the SVP (1995:23) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontologic resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical; and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Also classified as significant are areas that contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways.

- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.

- **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.

- **No Potential.** Metamorphic and granitic rock units generally do not yield fossils and therefore have no potential to yield significant non-renewable fossiliferous resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontologic potential of the rock units present within the study area.

Paleontological Resources Significance Criteria

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; or

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.

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).

Archival Research

The project site was the subject of thorough background research and analysis. The research included a locality database search, and geologic map and literature reviews. The purpose of the archival research was to identify known fossil resources within the project site and nearby in the same geologic formations and evaluate the paleontological sensitivity of the project site.

LACM Records Search

On July 1, 2016 ESA requested a database search from the LACM for records of fossil localities in the project site. The purpose of the museum records search was to: (1) determine whether any previously recorded fossil localities occur in the project site, (2) assess the potential for disturbance of these localities during construction, and (3) evaluate the paleontological sensitivity in the project site. The records search returned one known fossil locality (LACM 1207) which lies north-northwest of the project site on the west side of Cota Street in the

Temescal Wash area where a Pleistocene deer fossil (*Odocoileus*) was recovered from older Quaternary deposits (McLeod, 2016). The results of the database search are included as **Attachment B**.

Geological Map Review

Geological mapping by Gray et al. (2002) indicates that the surface of the project site is covered with very old alluvial fan deposits (mapped as Qalo in **Figure 3**), which is derived from the more elevated Santa Ana Mountains terrain which lies to the southwest. These sediments date to the early Pleistocene and as such are old enough to contain fossil remains. Elsewhere in Southern California similar sediments have preserved an abundant collection of significant fossil material (for example, see Valentine, 1989; Remeika et al., 1995; Coltrain et al., 2004; and Springer et al., 2009).

Survey

On July 27, 2016, ESA cultural resources specialist Matthew Gonzalez, B.A. conducted a pedestrian survey of the project site, plus a 100 foot buffer. In all areas where ground surface was exposed, a systematic survey was conducted with transects spaced at intervals of 5-10 meters or less. In the areas that are densely vegetated, with steep slopes and/or partially developed, an opportunistic survey was conducted.

All areas of the project site were undeveloped and exhibited excellent visibility (80-100 percent), with the exception of the locations of the proposed overflow line and the proposed transmission line, which will be located within the paved road (Nelson Street, Courtney Street, and Howe Street). Approximately 100 percent of this area was surveyed (**Figure 4)**. Areas with less than 100 percent visibility exhibited light vegetation, modern refuse, and discarded construction debris. Sediments in this area consisted mostly of an orangish-brown, coarse sand, intermixed with sand stone cobbles. In addition, some exposures of fossiliferous marine sediments (diatomite) were also present. The majority of this area appeared to have been recently graded and there were some back dirt piles and pushed up areas still present within the staging area and area for spoils.

The 100 foot buffer around the project site consisted mostly of modern development and associated landscaping, and steep slopes of drainages or ravines, with dense vegetation. The ground visibility in this area was moderate (50 – 70 percent) to poor (0 – 20 percent). Approximately 50 percent of this area was surveyed. Visibility in this area was mostly impacted by modern development (residences, landscaping, roads, etc.), dense vegetation, and modern refuse and discarded construction debris. Sediments in this area were similar to the main project site with the exception of some gravel (imported) in the landscaped and developed areas.

Two invertebrate fossils were found during the course of the field survey, both of which are impressions of bivalve shells (**Plate 1;** also see Figure 4).

EXPLANATION

SURFICIAL DEPOSITS

Qls — Landslide

Qal — Alluvium
Gravel, sand, silt

Qalo — Older alluvium
Sand, gravel, and rubble; buff and gray in color

Qt — Terrace deposits
Rubble, gravel, and sand; reddish-brown to buff in color

SEDIMENTARY ROCKS

Tp — Pliocene undifferentiated
Thick-bedded sandstone and conglomerate with lesser amounts of sandy silts and shales, marine

Tpu — Puente formation, undifferentiated
Sandy siltstone and shale, minor amounts of sandstone, conglomerate and diatomite, marine; contains abundant Mohnian and a few Luisian foraminifera

Tt — Topanga formation
Buff sandstone, conglomerate, and sandy siltstone, marine

Tvs — Vaqueros (lower Miocene) and Sespe (upper Eocene? to lower Miocene?) formations, undifferentiated
White, buff, red, and green sandstone, conglomerate, sandy clay and siltstone, in part nonmarine; upper part contains early Miocene or lower middle Miocene marine fossils

Ts — Silverado formation
Upper part marine greenish-gray sandstone and conglomerate, buff siltstone and shale; lower part nonmarine or brackish water coarse-grained micaceous sandstone, conglomerate, clay, and minor lignite. Residual clay at base

Kc — Cajalco quartz monzonite
Pinkish to tan massive granitic rock

Js — Santiago Peak volcanics
Andesitic and dacitic flows and breccias, slightly metamorphosed

Tbc / ls — Bedford Canyon formation
Dark gray to brown argillite, slate and graywacke, with thin beds of quartzite and limestone; ls, area mostly of limestone

SYMBOLS

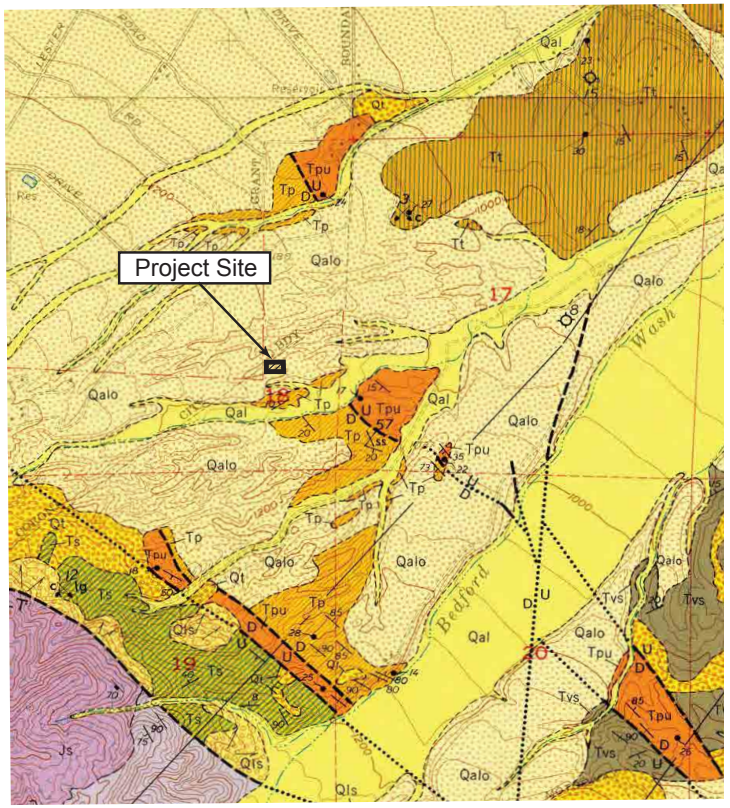
Contact, dashed where approximately located

Indefinite contact

Fault, showing dip (dashed where imperfectly exposed, dotted where concealed)
U, *upthrown side*; D, *downthrown side*

Strike and dip of beds

Fossil locality
(See table in text)



Base: California Division of Mines & Geology
Geologic and Economic Map of Corona South Quadrangle
Dated 1961

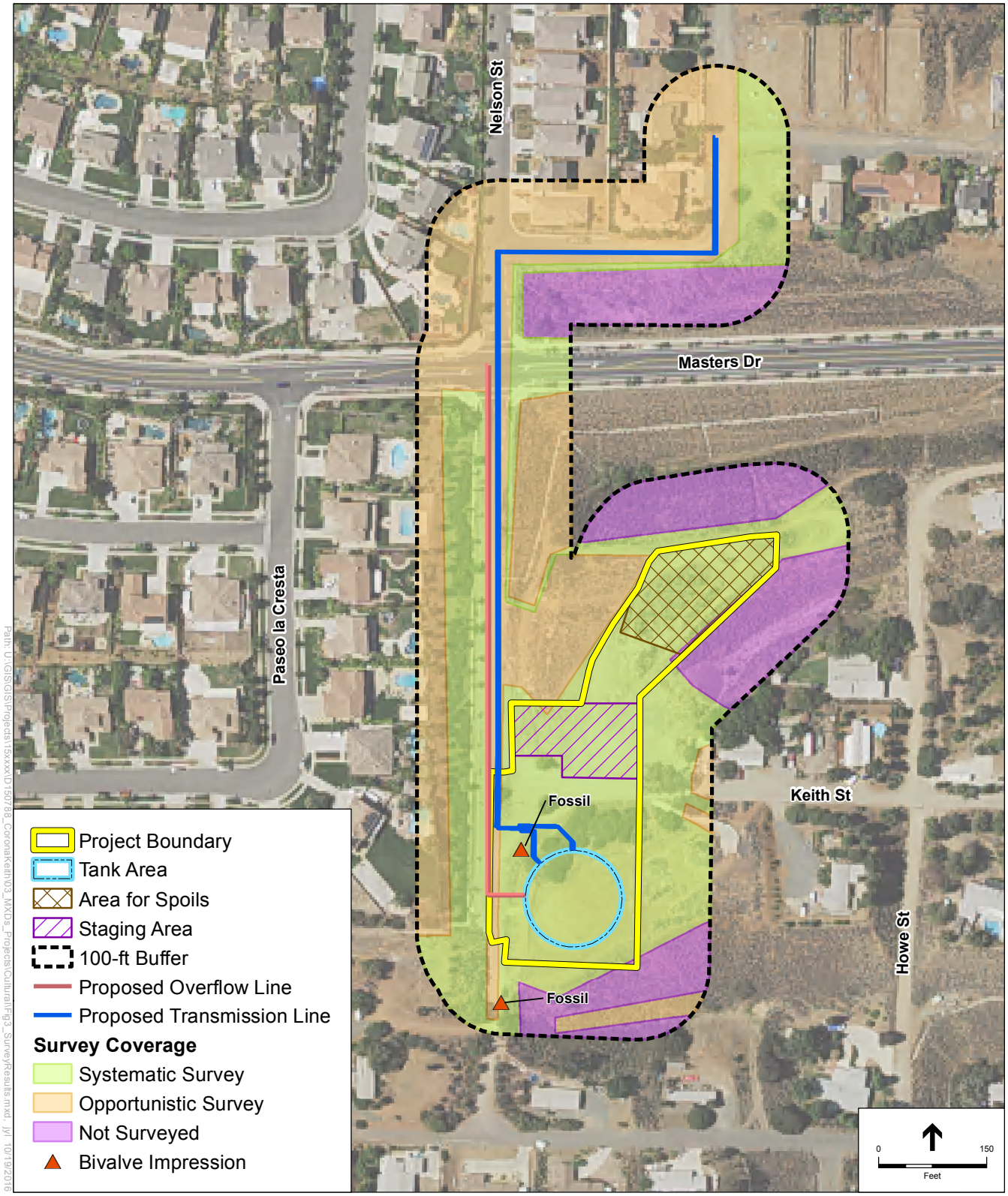
N

NOT TO SCALE

SOURCE: NMG Geotechnical, Inc., 2015

Corona Keith 1220 Zone Portable Water Tank Project . 150788

Figure 3
Geologic Map



SOURCE: ESRI

Keith 1220-Zone Potable Water Tank. 150788

Figure 4
Survey Results

Plate 1. Fossil Bivalve Impression (circled)

Significance Evaluation

The fossil bivalve impressions were incomplete and not capable of being identified to a more precise taxonomic unit, and therefore cannot provide information on evolutionary relationships, the development of biological communities, or the history of life (criteria 1, 3, and 4). Unidentifiable fossils will generally not meet significance criteria unless the amount and preservation is sufficient for dating purposes (criteria 5). Even if identifiable, single fossils are isolated finds that will not meet significance criteria unless they represent previously unknown species in the area or they provide a useful radiocarbon date that assists with local sedimentary sequencing (criteria 2 and 5).

As such, the fossil bivalve impressions are not considered scientifically significant and they do not qualify as unique paleontological resources under CEQA. However, their presence confirms that paleontological resources have been preserved in the project site and therefore significant resources that may qualify as unique paleontological resources under CEQA could be encountered during future ground disturbance.

Conclusions and Recommendations

As a result of this study, the fossil bivalve impressions found during the survey were determined to not meet the significance criteria and are not considered scientifically significant, and the project would not result in an impact

to known unique paleontological resources. However, the project site was identified as having high sensitivity for significant paleontological resources and the project could result in an impact to unknown unique paleontological resources.

The following recommended mitigation measures are provided in order to reduce impacts to unique paleontological resources to a level of less than significant:

1. A qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010) shall be retained. The qualified paleontologist shall conduct construction worker paleontological resources sensitivity training prior to the start of ground disturbing activities (including vegetation removal, pavement removal, etc.). The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the project site and the procedures to be followed if they are found. The City of Corona Department of Water and Power shall retain documentation demonstrating that construction personnel attended the training.

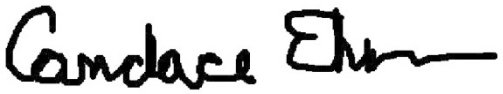
2. Full-time paleontological resources monitoring shall be conducted for all initial ground disturbance. The qualified paleontologist, based on observations of subsurface soil stratigraphy or other factors, may reduce or discontinue monitoring, as warranted, if the qualified paleontologist determines that the possibility of encountering fossiliferous deposits is low. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (or cross-trained archaeological/paleontological monitor) under the direction of the qualified paleontologist. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The qualified paleontologist shall prepare a final monitoring and mitigation report to be submitted to City of Corona Department of Water and Power and filed with the local repository.

3. If construction or other project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease until the qualified paleontologist has assessed the discovery and made recommendations as to the appropriate treatment.

Contact Information

If you have any questions about the information provided in this letter report, please do not hesitate to contact me by phone at (831) 737-7438 or by email at cehringer@esassoc.com.

Sincerely,



Candace Ehringer, MA, RPA
Cultural Resources

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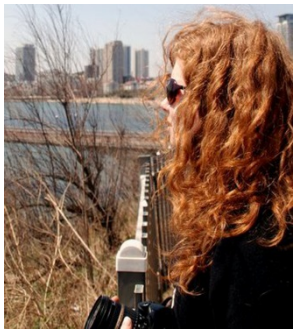

Alyssa Bell, PhD

Paleontologist

EDUCATION

Ph.D., Vertebrate Paleontology; University of Southern California

M.S., Environmental Microbiology; University of Tennessee

B.A. with honors, Ecology and Systematics; William Jewell College & Homerton College, Cambridge University

10 YEARS EXPERIENCE

As a paleontological principal investigator, Dr. Bell has supervised field work, authored project reports, and provided scientific and compliance direction and quality control for paleontological projects throughout California. Dr. Bell is also a postdoctoral research assistant at the Dinosaur Institute of the Natural History Museum of Los Angeles County (LACM). There she is involved in pursuing her own research into fossil birds as well as working with the Institute's field projects and museum-wide education and outreach initiatives.

Dr. Bell has accumulated a wealth of field experience, working with crews from a variety of institutions on field sites in Arizona, California, Montana, New Mexico, South Dakota, and Utah, as well as leading her own expeditions in Montana. She has published peer-reviewed articles or book chapters and given numerous presentations at scientific conferences on both her paleontological and microbiological research.

Relevant Experience

Sixth & Bixel Paleontological Monitoring Services Project; Los Angeles, Los Angeles County, California; Holland Partners. *Principal Investigator & Project Paleontologist.* Conducted paleontological monitoring of preconstruction activities in support of a development project encompassing two parcels in downtown Los Angeles. Monitors identified and recovered numerous significant vertebrate fossils. Supervised the excavation of fossilized whale remains discovered onsite, oversaw collection and curation of all fossil specimens.

San Pedro Plaza Park - Phase III Archaeological Monitor; Los Angeles, Los Angeles County, California; City of Los Angeles. *Principal Investigator.* Through the course of providing archaeological monitoring, identified and mitigated fossils found in San Pedro Park Plaza.

City of Fresno Recycled Water Transmission Water Main Paleo Monitoring; County, California; Garney Construction. *Principal Investigator.* Developed a monitoring and mitigation plan for the City of Fresno recycled water main construction project.

OTO Hotels Santa Monica Archaeological and Paleontological Services; Santa Monica, Los Angeles County, California; OTO Development, LLC. *Principal Investigator.* Provided paleontological monitoring and mitigation services during construction excavations and grading. Services included implementation of a paleontological mitigation monitoring program and reporting.

Blackstone Phase II; Brea, Orange County, California; Shea Homes, Inc. *Principal Investigator*. Provided cultural and paleontological monitoring services to the multi-phase housing community.

City of Colton Industrial Project Environmental Impact Report; San Bernardino County, California; PlaceWorks. *Principal Investigator.* A 6-acre industrial project at the southwest corner of Agua Mansa Road and Rancho Avenue in the City of Colton. Provided historic, cultural resources, and paleontological resources study for the project site.

City of Hope Specific Plan and Environmental Impact Report; Duarte, Los Angeles County, California; PlaceWorks. *Principal Investigator.* Provided paleontological resource studies for the City of Hope.

El Camino Real Bridge Replacement Environmental Services; Atascadero, San Luis Obispo County, California; Quincy Engineering. *Principal Investigator.* Provided environmental services, including preparation of all CEQA/NEPA documentation, technical studies, and permitting, for the replacement of the El Camino Real bridge over Santa Margarita Creek in Atascadero.

Flintridge Sacred Heart Specific Plan Environmental Impact Report; Los Angeles County, California; CAJA Environmental Services, Inc. *Principal Investigator.* Provided paleontological studies and developing monitoring & mitigation recommendations for the Sacred Heart development project.

Natural and Cultural Support for the Gordon Mull Subdivision Environmental Impact Report; Glendora, Los Angeles County, California; Terry A. Hayes Associates, LLC. *Principal Investigator.* Prepared an EIR for in Support of Environmental Impact Report for the Gordon Mull Subdivision, City of Glendora, Los Angeles County, California. The project is proposing to redevelop a 71-acre, 19-lot located in the San Gabriel Foothills. Under the current contract, SWCA biology and cultural resources staff are collecting data to prepare respective resources and mitigation sections for an EIR overseen by TAHA staff.

UCI Area 10 (PA 10-2 & 10-4) Archaeological and Paleontological Monitoring; Irvine, Orange County, California; California Pacific Homes. *Principal Investigator & Project Paleontologist.* Conducted archaeological and paleontological monitoring of preconstruction activities in support of a housing development project at the University of California, Irvine. Management of the curatorial process for the fossils collected during monitoring and author of final reporting.

Washington National Archaeological and Paleontological Monitoring (Access Culver City); Culver City, Los Angeles County, California; GDCV Culver City, LLC. *Principal Investigator & Project Paleontologist.* Implemented an archaeological and paleontological mitigation monitoring program during project grading, as well as identification, recordation, and recovery; laboratory preparation, identification, analysis, and curation of fossils; and reporting. Supervised laboratory and curation work for fossils collected.

Sara Dietler

Archaeologist

EDUCATION

B.A., Anthropology, San Diego State University

18 YEARS EXPERIENCE

CERTIFICATIONS/ REGISTRATION

California BLM Permit, Principal Investigator, Statewide

Nevada BLM Permit, Paleontology, Field Agent, Statewide

PROFESSIONAL AFFILIATIONS

Society for American Archaeology (SAA)

Society for California Archaeology (SCA)

Sara is a senior archaeologist and paleontology lead with 19 years of experience in cultural resource management in Southern California. As a senior project manager, she manages technical studies including paleontological and archaeological assessments and surveys, monitoring and fossil salvage for many clients including public agencies and private developers. She is a cross-trained paleontological monitor and supervisor, familiar with regulations and guidelines implementing the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and the Society of Vertebrate Paleontology guidelines. She has extensive experience providing oversight for long-term monitoring projects throughout the Los Angeles Basin for both archaeological, Native American, and paleontological monitoring compliance projects and provides streamlined management for both disciplines.

Relevant Experience

Long Beach Courthouse Project; Long Beach, California; Clark Construction. ***Senior Project Archaeologist*** **and** ***Project Manager***. Sara directed the paleontological and archaeological monitoring for the construction of the New Long Beach Courthouse. She supervised monitors inspecting excavations up to 25 feet in depth. Nine archaeological features were recovered. Sara completed an assessment of the artifacts and fossil localities in a technical report at the completion of the project.

Elysian/USC Water Recycling Project IS/EA, Los Angeles, California; LADWP. ***Project Manager.*** Sara worked on the an Initial study/mitigated negative declaration and an environmental assessment/finding of no significant impact to construct recycled water pipelines for irrigation and other industrial uses serving customers in downtown Los Angeles, including Elysian Park. The US Environmental Protection Agency is the federal lead agency. She prepared two technical reports and a treatment plan for archaeological, historic and paleontological resources identified during the Phase I assessment.

Kern County Solar Energy Projects; Kern County, California; Recurrent Energy. Provided cultural resources, paleontological resources, and Native American monitoring services for five separate solar photovoltaic projects. The five projects include a total of 626 acres of previously undeveloped land in the eastern portion of the county. Ms. Dietler served as Project Manager for all five projects and Senior Archaeologist providing client coordination and oversight of paleontological monitoring and reporting.

SCE Master Services Agreement for Natural and Cultural Resources Services; Southern California; Southern California Edison. Provides project management and senior archaeological support for an on-call MSA with SCE for cultural and natural resources consulting services. This contract has included numerous surveys and monitoring projects for pole replacements and small- to mid-size reconductoring projects, substation maintenance, and construction projects. Ms. Dietler has served as Project Manager for more than 25 projects under this contract. She is the go-to person for all water, gas, and power projects occurring in the City of Avalon on Santa Catalina Island. Ms. Dietler is responsible for oversight of archaeological and paleontological monitors, serving as report author and report manager.

Sixth and Bixel Project, Los Angeles, California, Holland Partners. Served as *Project Manager* for a monitoring phase of the project for a mixed use development in downtown Los Angeles, which included the recovery of fossils including marine invertebrates, sharks, and a partial whale. Conducting coordination with the Los Angeles Natural History Museum regarding preparation and curation of the whale fossil.

I-5 HOV Lanes Project, Orange County, California; Orange County Transportation Authority (OCTA). Cultural Resources Task Manager. Directed the OCTA I-5 HOV Lanes Project which involves improvements to Interstate 5 between SR-55 and SR-57 and included a Phase I study. Orange County Transportation Authority and Caltrans served as the overseeing agencies. Coordinated with planners, other resource managers and Caltrans. Completed analysis of existing conditions, conducted an archaeological survey and produced an Archaeological Survey Report following Caltrans guidelines.

Downtown Cesar Chavez Median Project, City of Los Angeles, California; LADPW, Bureau of Engineering. *Project Manager*. Project was a local assistance project requiring consultations with Caltrans cultural resources. Responsible for Caltrans coordination, serving as contributing author and report manager for required ASR, HPSR, and HRER prepared for the project.

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LOS ANGELES COUNTY

Vertebrate Paleontology Section
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Fax: (213) 746-7431
e-mail: smcleod@nhm.org

11 August 2016

Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Attn: Vanessa Ortiz, Cultural Resources

re: Paleontological resources for the proposed Keith 1220 Zone Potable Water Tank Project,
ESA Project # 150788.01, in the City of Corona, Riverside County, project area

Dear Vanessa:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed Keith 1220 Zone Potable Water Tank Project, ESA Project # 150788.01, in the City of Corona, Riverside County, project area as outlined on the portion of the Corona South USGS topographic quadrangle map that you sent to me via e-mail on 21 July 2016. We do not have any vertebrate fossil localities that lie directly within the proposed project area site boundaries, but we do have vertebrate fossil localities nearby from the same or similar sedimentary deposits as occur in the proposed project area.

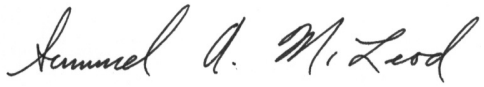
The entire proposed project area has surface deposits composed of older Quaternary alluvial fan deposits, derived from the more elevated terrain of the Santa Ana Mountains to the southwest. Our closest fossil vertebrate locality from older Quaternary deposits is LACM 1207, north-northwest of the proposed project area on the northwestern side of Corona north of the Riverside Freeway (Highway 91) on the west side of Cota Street in the Temescal Wash area, that produced a fossil specimen of deer, *Odocoileus*, at unknown depth.

Very shallow excavations in the older Quaternary alluvium exposed throughout the proposed project area probably will not discover any significant vertebrate fossils. Deeper excavations in the proposed project area, however, may well uncover significant fossil vertebrate

specimens. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains while not impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils collected should be placed in an accredited scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,



Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

Appendix D

Geotechnical Investigation Report

ESA

NMG Geotechnical, Inc.

June 17, 2015

Project No. 12092-03

To: City of Corona
755 Corporation Yard Way
Corona, California 92880

Attention: Mr. Vernon Weisman

Subject: Geotechnical Investigation and Preliminary Design Report for the Proposed Zone 4 Potable Water Tank Site, 3985 Nelson Street, City of Corona, California

In accordance with your request and authorization, NMG Geotechnical, Inc. (NMG) has performed a preliminary geotechnical investigation for the proposed Zone 4 Potable Water Tank site at 3985 Nelson Street in the City of Corona, California. The purpose of this study was to evaluate the geotechnical conditions at the site and evaluate the suitability for the proposed water tank. We understand that site will be used for construction of a 2.5 to 3 million gallon pre-stressed concrete water tank.

Our study included a detailed background review, field investigation and mapping, laboratory testing, analysis and preparation of this report with illustrations. The site-specific subsurface investigation performed included two large-diameter bucket-auger borings, which were excavated, sampled and visually and/or downhole logged to a depth of up to 71 feet below ground surface. A geophysical study was also conducted at the site to measure the shear wave velocity and used for the site specific seismic evaluation. Groundwater was not encountered in the borings. NMG performed laboratory testing on selected soil samples to evaluate the engineering soil properties. The compilation of this data was used to characterize the subsurface conditions and geotechnical constraints. Environmental evaluation of onsite soil is not a part of this report and is the purview of others.

Based on our investigation and analyses, the site is considered feasible from a geotechnical standpoint as a future site for a water tank. This report summarizes our findings and conclusions, and provides preliminary recommendations for the design and construction of the water tank and associated improvements. This report is subject to revision following review of future design and grading information and plans.

If you have any questions regarding this report, please contact our office. We appreciate the opportunity to provide our services.

Respectfully submitted,

NMG GEOTECHNICAL, INC.

Anthony Zepeda, PG 9294
Senior Staff Geologist

Karlos Markouizos, RCE 50312
Principal Engineer

Terri Wright, CEG 1342
Principal Geologist

AZ/TW/KGM/je

Distribution: (2) Addressee

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1.0 INTRODUCTION

1.1 Purpose and Scope of Services

NMG Geotechnical, Inc. (NMG) has performed a geotechnical investigation for the proposed Zone 4 Water Tank at the subject site in the City of Corona, California. The purpose of this investigation was to determine the existing subsurface conditions and provide our geotechnical findings, conclusions, and preliminary design recommendations. NMG's scope of services are based primarily on communication with you and the project team, our background review of the subject site, regional knowledge of the area, and our experience with similar projects.

Our scope of services for this project included the following:

- Review of geotechnical information pertaining to the subject site, including review of site geology, groundwater data, seismic hazard maps, historic aerial photographs, and topographic maps. A list of references is presented in Appendix A.
- Site reconnaissance to identify the existing site conditions and mark the boring locations.
- Notification of and coordination with Underground Service Alert to clear boring locations of existing underground utilities.
- A geophysical study was conducted by GeoVision Geophysical Services on April 28, 2015 to provide shear wave velocity profile to a depth of 30 m (98 feet). This data was used for the seismic evaluation of the site and the report is presented in Appendix E.
- Drilling, logging, and sampling of two bucket-auger borings (B-1 and B-2) to depths of approximately 29 to 71 feet below ground surface (bgs). Relatively undisturbed soil samples were obtained from the borings at 5- to 10-foot intervals. Bulk samples from cuttings at various depths were collected during the Investigation. The borings were backfilled with the cuttings generated during drilling. The boring logs are presented in Appendix B.
- Laboratory testing to classify the onsite soils and evaluate in-situ moisture and density, maximum dry density and optimum moisture content, grain-size distribution, sand equivalent, Atterberg limits, expansion index, soluble sulfate, and soil corrosivity. Soil corrosivity testing was conducted by HDR. The laboratory test results are included in Appendix C.
- Geotechnical analysis of subsurface information collected during our field investigation and laboratory testing to evaluate the geotechnical conditions that will impact the design and construction of the proposed improvements. This includes evaluation of temporary excavations and shoring, settlement analysis, remedial measures and design parameters for the water tank and other improvements. The site specific seismic analysis are presented in Appendix D.
- Preparation of this report, accompanying figures and NMG's general earthwork and grading specifications (Appendix F).

1.2 Site Location and Conditions

The subject site is located at 3985 Nelson Street, southeast of the intersection of Nelson and Keith Streets in the city of Corona (Figure 1). The site is bound on the north by Keith Street, on the west by Nelson Street, to the south by an existing hillside, and to the east by an adjacent vacant lot. The subject property is situated within an existing rural residential area and is approximately 0.95 acres (180 feet wide by 230 feet long; see Plate 1). The flatter, hilltop portion of the site appears to have been graded (possibly for a residential lot) and there is an existing unpaved driveway along the southern perimeter of the site and a paved driveway east of the site.

The elevations at the site vary from approximately 1,216 feet above mean sea level (msl) at the southwest side of the site to a low of 1,190 feet msl at the northwest side. The site consists of a graded knoll area centrally located within the property that slopes moderately to the east at 6 percent or flatter. An existing south facing 1.5H:1V to 2H:1V descending slope, up to 65 feet high, is present along the southern property line. Two additional slopes, generally at 2H:1V, are present at the site, facing north and west that vary between 12 to 20 feet high. The existing site conditions and topography are also depicted on Plate 1.

1.3 Site History

Our review of historic aerial photographs dating back to 1949 and recent Google Earth satellite imagery revealed the following:

- Between 1949 and 1970, the site and adjacent surrounding areas were roughly in their natural state and consisted of dissected elevated old fan/terrace deposits. Agriculture activities were taking place north and east of the subject site on broad alluvial fans.
- By 1975 road cuts and fills were made to construct Keith Street, Nelson Street, Howe Street and Galloway Lane. A natural canyon trending northeast-southwest beneath the existing Keith and Nelson Street intersection, adjacent to the subject site, was likely filled with cuttings from road excavations. It appears the northwest facing slope within the subject site was cut (over steepened) to generate fill material for this canyon crossing.
- Between 1977 and 1990, aerials show minor development of this neighborhood area. Houses were built on the surrounding lots; however, no structures were ever constructed on the subject site.
- By 1993, a concrete driveway and structure was built on the adjacent lot to the east. The subject site remained undeveloped. The site and adjacent area remained unchanged through 1995.
- By 1997, the adjacent structure to the east was demolished. Remnants of demolition debris are still littered across this lot. Throughout the 2000s, the subject site remained relatively unchanged, and has never been developed since the site was originally graded.

1.4 Proposed Improvements

A design for the site is not available at this time. Based on conversations with the City of Corona, we anticipate the following for the future water tank:

- On the order of a 2.5- to 3.0-million-gallon reservoir,
- AWWA D110-04, Type 1 pre-stressed concrete tank;
- About 130 feet in diameter and 30 feet high;
- A portion of the tank will be buried;
- A top elevation at approximately 1,225 feet msl, and
- Bottom elevation will be near 1,195 feet msl.

Since the site is currently at grades higher than the projected tank bottom, the site will need to be excavated to create a flat pad to accommodate the tank construction. The anticipated design grading is between 5 to 25 feet of cut below existing grades. A portion of the reservoir may be buried on the southerly side. Temporary slopes up to 20 feet high may be required during the future construction. The anticipated design conditions for the reservoir are shown on our Cross Section 1-1' (Plate 1). A service/access road will also be needed around the perimeter of the tank, and other pumps and pipeline structures will be needed.

1.5 Subsurface Investigation

Our field investigation consisted of a geophysical study by GeoVision conducted on April 28, 2015 and excavation of two 28-inch-diameter, bucket-auger borings (B-1 and B-2) performed by NMG on May 11, 2015. The geophone array line locations from the geophysics study are shown on Plate 1. The measured geophysical data provided a shear wave velocity profile to a depth of 30 m (98 feet). The boring locations were marked and underground service alert (USA) was notified prior to drilling the onsite borings. The bucket-auger borings were drilled to total depths of 71 to 29 feet bgs. These borings were sampled and visually logged from the surface, as well as down-hole by an engineering geologist to interpret the subsurface geologic conditions. The approximate locations of the borings are shown on Plate 1 and boring logs are provided in Appendix B. The geophysical data and report are presented in Appendix E.

The drilling and sampling of the existing soils was generally difficult due to the dense granular soils that also contained gravels, pebbles and cobbles. Drilling with a large bucket-auger drill rig required crowds and local coring. The Kelly bar (that is much heavier than the standard 140 lbs hammer) was used for driving a 2.5-inch-inside-diameter, split-barrel sampler. Relatively undisturbed soil ring samples were obtained from the borings. The blows-per-foot to drive the sampler are recorded on the geotechnical boring logs. Drive samples were generally recovered however could not be collected locally due to the presence of cobbles. Also, we found the individual rings collected in the drive sampler were difficult to separate without further disturbing the soil sample. Bulk samples of onsite soil were collected from the bucket-auger cuttings and used for additional soil identification purposes and laboratory testing. Soil samples were visually classified in accordance with the Unified Soil Classification System (USCS).

1.6 Laboratory Testing

NMG performed laboratory testing on representative samples of onsite soils collected during our field investigation to characterize their engineering properties. We found that testing of undisturbed ring samples was limited since separating the rings collected in the drive sampler resulted in more disturbed test specimens. The laboratory tests performed as part of this study included:

- Moisture content and dry density;
- Grain-size distribution;
- Atterberg limits;
- Expansion;
- Sand Equivalent;
- Maximum dry density and optimum moisture content; and
- Soluble sulfate and corrosivity testing.

Some of engineering properties developed for the onsite soils are based on correlation published values for given soil types and soil index properties. Laboratory tests were conducted in general conformance with applicable American Society for Testing and Materials (ASTM) standard test methods. Laboratory test results for this study are presented in Appendix C. In-situ moisture content and dry density data are included on the geotechnical boring logs presented in Appendix B.

2.0 FINDINGS

2.1 Geologic Setting

The site is located in the Peninsular Ranges geomorphic province which is characterized by Mesozoic-age intrusive rocks and mantled by meta-sedimentary and sedimentary rocks. Lateral displacement and uplift of this region has occurred on a series of northwest trending faults. The present landform of the Santa Ana Mountains are a result of Late Quaternary-age faulting and uplift along the Elsinore Fault zone. The subject site lies on a Quaternary-age alluvial fan, located roughly 1 mile north of the mountains. These older fan deposits have since been eroded and dissected, so that the site consists of a small ridge line formed of the very dense fan deposits.

2.2 Earth Units

Bedrock is not exposed at or adjacent to the subject site and was not encountered in the boring excavated at the site. Quaternary-age alluvial fan deposits overlie the bedrock units at depths greater than 71 feet (the total depth of Boring B-1). In addition, various generations of artificial fill have been placed within and adjacent to the subject site during historic and recent grading for residential lots.

Older Alluvium (Map Symbol - Qalo): Quaternary-age older alluvial deposits are exposed within the subject site and were encountered in both bucket-auger borings to depths of up to 71 feet bgs. The alluvial material generally consisted of red, reddish-brown and grayish red silty and clayey fine to coarse sand with trace to some fine to coarse gravel and rounded pebbles and cobbles. The materials within the unit were generally damp to moist, and dense to very dense. The upper portions of these fan deposits contain abundant angular fine to coarse gravels, while the deeper portions (below elevations of 1,161 to 1,165 feet msl) contain round to subangular pebbles and cobbles up to 10 inches in diameter. Many of the larger cobbles are granitic. Drilling with a large bucket-auger drill rig required crowds and local coring. Drive samples could not be collected locally due to the presence of the granitic cobbles.

Alluvium (Map Symbol - Qal): Younger alluvium is mapped in the canyon to the south of the site (CDMG, 1961 and Plate 1). This material is not located within the subject site.

Artificial Fill (Map symbol - Af/Afu): Relatively minor amounts of undocumented artificial fill are present across the site, associated with the prior grading for the residential lot and driveway. The undocumented fills generally consist of red to reddish brown clayey and silty fine to coarse gravelly sands that are derived from the older alluvium. The fill was found to be dry to damp and medium dense to with scattered fine to coarse gravel. Undocumented fills were not encountered within any of the borings excavated during this investigation.

Based on review of historic aerial photographs and topographic maps, it appears road cuts and fills were made to construct the Keith Street and Nelson Street intersection, along the northwest corner of the site. A natural canyon trending northeast-southwest beneath the existing Keith and Nelson Street intersection, adjacent to the subject site, was likely filled with cuttings from road excavations. It appears the northwest facing slope within the subject site may have been cut (over

steepened) to generate fill material for this canyon fill. The approximate limits of the undocumented fill have been mapped on Plate 1.

2.3 Geotechnical Conditions

A summary of the general soil properties at this site is presented below based on the laboratory testing performed and our geotechnical review of the test results.

The in-situ moisture contents in the borings varied from 4.0 to 8.5 percent and dry densities ranged from 114.3 to 129.6 pounds per cubic foot (pcf). Maximum density testing of samples taken in the upper 5 feet and at a depth of 15 to 20 feet ranged from 127.0 to 134.0 pounds per cubic foot (pcf) with an optimum moisture ranging from 7.0 to 9.5 percent. Grain-size distribution tests were conducted on selected samples to characterize the material encountered in the borings. The fines content (passing No. 200 sieve) test results indicate 14 to 37 percent passing. The Atterberg limits test performed on the fines found the liquid limit (LL) to vary between 26 to 32 percent and plasticity index (PI) to vary from 11 to 18 percent. The sand equivalent values of the onsite soils tested varied from 11 to 19. Based on the Unified Soil Classification System (USCS) the older alluvial soils at the site are generally described as silty to clayey sands (SM-SC) with gravel, pebbles and cobbles.

Consolidation and direct shear tests were not performed based on the dense granular soils and the fact that preparation of the test specimen resulted in sample disturbance. The onsite granular soils are dense and the consolidation settlement is anticipated to be minor. Also, based on the soil type, density and blow counts the onsite soils are considered to have moderately high strength. An internal friction of 35 degrees with a cohesion of 100 psf are considered typical lower bound strength parameters for the onsite soils.

The soil samples collected from the upper 5 feet had low expansion potential with an expansion indices varying from of 32 to 38. Also, the onsite soils are considered to be moderate for subgrade support of pavements.

Two samples were tested by HDR lab for resistivity, pH, chemical content and corrosion potential. Electrical resistivities measured in the laboratory with as-received moisture were in the mildly corrosive category. When saturated, the electrical resistivities dropped into the moderately corrosive category. Soil pH values varied from 7.0 to 7.4 which is basically the neutral range and not significant in evaluating corrosivity. The chloride and sulfate exposures were found in the negligible range.

2.4 Regional Faulting and Seismicity

No evidence of active faulting was observed at the subject site during this study, or prior studies at the site by others. The site is not located in an Alquist-Priolo Fault Rupture Hazard Zone (Hart and Bryant, 2007) or any fault zones mapped by the County of Riverside (Riverside County, 2015). Also, based on mapping by the State (Jennings and Bryant, 2010), there are no active faults mapped at the site. Therefore, the potential for primary ground rupture is considered slight

to nil. The closest active faults to the subject site are the Elsinore and Chino Fault Zones, located 0.62, and 1.49 miles south and northwest, respectively.

The site is located in an area with very low potential for liquefaction as defined by the County of Riverside (Riverside County, 2015). Based on our geotechnical investigation, the overall potential for liquefaction at the site is considered very low to nil. The soils encountered in both borings were generally dense to very dense silty and clayey sands that are not liquefiable. Also, groundwater is be well below the subject site, greater than 70 feet below the existing pad grade elevation.

2.5 Site Specific Seismic Evaluation

The site-specific ground motion evaluation for both horizontal and vertical accelerations included the following:

- Determining the Site Class;
- Selection of Attenuation Relationships;
- Probabilistic Analysis;
- Deterministic Analysis;
- Design Response Spectra;
- Peak Horizontal Ground Acceleration; and
- Vertical Ground Accelerations

The seismic ground motion analyses were performed using the computer program EZFRISK, version 7.65 (Risk Engineering, 2015) in conjunction with data from the US Geological Survey National Seismic Design Maps (USGS, 2014) and in accordance with the appropriate methods described in ASCE Standard 7-10 and the 2013 California Building Code (CBC). The site-specific seismic response spectral analysis (tables and graphs) and the output from EZ-FRISK and USGS computer programs are presented in Appendix D. The recommended site-specific seismic design parameters are tabulated in Section 3.5 of this report.

Site Class and Attenuation Relationships: Based on review of the subsurface data, the subject site is classified as Site Class C (very dense soil and soft rock) in accordance with Table 20.3-1 of ASCE Standard 7-10. An average shear wave velocity of 447 meters per second for the upper 100 feet of soil (Vs_{30}) was used for our analysis based on the geophysical study conducted at the site (Appendix E).

The regional attenuation relationships developed by Abrahamson-Silva (2008), Boore-Atkinson (2008), Campbell-Bozorgnia (2008), and Chiou-Youngs (2007) were used in our analyses for horizontal acceleration. These Next Generation Attenuation (NGA) relationships, corrected for maximum rotated component of ground motion, were selected based upon their compatibility with the site-specific earth materials and seismic source conditions. The average spectral acceleration values from these attenuation relationships were used to generate the site-specific response spectra. The vertical accelerations are discussed separately below.

In addition, due to proximity of the site to the controlling fault (less than 10km), we applied near-source directivity effect based on research done by Paul Somerville and Norm Abrahamson (1997 and 2000). In their research, they found that amplitudes of ground motion increase for spectral periods of 0.5 seconds and greater for sites near fault ruptures. They also found that amplitudes are greater in the perpendicular direction from the fault than those in the parallel direction. The Abrahamson (2000) paper shows a method of adapting the results of Somerville et al. to peak site horizontal acceleration (PSHA). In addition, our implementation also tapers the reduction in sigma estimated by Abrahamson for small magnitude or large distance events. This tapering is required to avoid reducing the hazard when including near source directivity when all of the sources are in the far-field.

Probabilistic Analysis: Probabilistic seismic hazard analysis was performed to estimate the peak and spectral accelerations for the maximum considered earthquake (MCE) ground motion values for active faults within a 100 km (60 mile) radius. Above-attenuation relationships were used for our probabilistic analysis. We also used the maximum rotated component of the ground motion per ASCE 7-10 requirements. The probabilistic analysis was conducted for the MCE having a 2-percent chance of exceedance in 50 years, with a statistical return period of 2,475 years. The correction factors were used per ASCE 7-10 Section 21.2.1.1 (Method 1 of probabilistic ground motions) to calculate the 1-percent probability of collapse within a 50-year period.

Deterministic Analysis: A deterministic seismic hazard analysis, assumed to attenuate to the site per the same attenuation relationships as the probabilistic method, was performed by evaluating the ground motions generated by maximum earthquakes on each of the active faults within the same search radius. The 84th percentile of the maximum rotated component of ground motion was used for this analysis. Using this methodology, the maximum earthquake resulting in the highest peak horizontal accelerations at the site would be a magnitude 7.85 event on the Elsinore Fault.

Site-Specific Design Response Spectra: For the site-specific analysis, the deterministic accelerations of the 84th percentile of the maximum rotated component of ground motion, at 5-percent damped, were compared to the results of the probabilistic analysis. The lesser of the probabilistic and larger of the 84th percentile deterministic and MCE deterministic lower limit spectrum is termed the site-specific MCE. The site-specific design response spectrum is derived by taking 2/3 of the site-specific MCE spectral values (provided the results are not less than 80 percent of the design earthquake (DE) response spectrum).

Peak Horizontal Ground Acceleration: Peak ground acceleration was calculated per Section 21.5 of ASCE 7-10. In order to calculate the peak ground acceleration, the probabilistic analysis was conducted for the MCE having a 2-percent chance of exceedance in 50 years, with a statistical return period of 2,475 years, using the geometric mean value of the ground motion. The deterministic peak ground acceleration was calculated using the largest 84th percentile geometric mean peak ground motion. The deterministic geometric mean peak ground acceleration was compared to 0.50 F_{PGA} (per Table 11.8-1 of ASCE 7-10, F_{PGA} for this site is 1.0) and the higher of the two values were used. The site specific MCE_G peak ground acceleration was then calculated per Section 21.5.3 of ASCE 7-10 which is the lesser of the probabilistic and

deterministic numbers, not lower than 80 percent of PGA_M determined from equation 11.8-1 of ASCE 7-10. For the subject site, the MCE_G Peak Ground Acceleration is 0.976g.

Vertical Ground Accelerations: Bozorgnia, et al. (1999) concluded that "the standard engineering practice of assigning the vertical/horizontal ratio a value of 2/3 is unconservative at short periods, especially for unconsolidated soil and in the near-source region, but conservative at long periods and should be modified." This indicates that the vertical component can equal or exceed the horizontal component at shorter periods (higher frequencies) as shown in the tables provided in Appendix D. Site-specific spectrum plots for the vertical ground accelerations were generated using the previously described horizontal method and attenuation relationships for vertical accelerations. The spectrum plots for vertical accelerations reflect higher accelerations at higher frequencies.

2.6 Groundwater

Groundwater was not encountered during our drilling to a depth of 71 feet bgs (an elevation of approximately 1,143 feet above msl). We believe the groundwater will remain deep below the site, greater than 50 feet below the planned tank bottom elevation of 1,195 feet above msl.

2.7 Liquefaction Potential

The site is mapped by the County of Riverside in a very low liquefaction potential area. Due to the depth of the groundwater and the relatively high density of the soils, potential liquefaction is considered very low to nil.

2.8 Slope Stability

Based on our geologic mapping and aerial photograph interpretation and published data, there are no large, deep-seated landslides mapped within or that would impact the proposed tank site. Given that the geologic conditions at the site and that the underlying soils are anticipated to have moderately high strengths, the perimeter slopes as depicted on Cross-Section 1-1’ (Plate 1) are considered to be grossly stable. Due to the sandy soils, slopes steeper than 1:1 may be prone to some local surficial instability.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 General Conclusion and Recommendation

Based on the results of our geotechnical review and investigation, the subject site is considered feasible from a geotechnical standpoint. The tank will be underlain by dense, granular old alluvial deposits that generally have favorable geotechnical soil properties. The primary geotechnical design constraint is the potential for high seismic shaking during an earthquake. At this time, we anticipate the proposed tank can utilize standard grading methods and a conventional shallow foundation system. The design recommendations in this report are preliminary and may be may be superseded by more stringent requirements of others. Additional subsurface investigation and/or geotechnical evaluation may be needed during the future design phase for the reservoir to confirm the design parameters.

Remedial grading and additional site mapping during grading are required to verify there are no faults underlying the tank and that any existing undocumented artificial fill at the north end of the site is removed and recompacted.

3.2 Remedial Measures

The majority of the site is anticipated to be a design cut that will expose competent soil. However, for shallow cut and design fill areas, we recommend that the upper 3 to 5 feet of dry and weathered near surface soils be removed and recompacted as certified compacted fill. If undocumented fill is encountered, it should be completely removed, reprocessed and recompacted as new certified fill. For the tank pad, consideration should be given to performing a 2- to 3-foot-deep overexcavation to provide a more uniform fill blanket below the tank. The overexcavation should extend a minimum 3 feet outside the tank.

The removal and excavation bottoms should be reviewed and approved by the geotechnical consultant prior to fill placement. The removal bottom should expose competent soil that has sufficient moisture content (near or above optimum) and a minimum relative compaction of 90 percent in accordance with ASTM Test Method D1557. For the tank pad area, we recommend increasing the minimum relative compaction to 95 percent in accordance with ASTM Test Method D1557. The approved excavation bottoms should be scarified a minimum of 6 inches, moisture-conditioned as needed, and compacted in place prior to placement of fill materials.

Excavations less than 4 feet deep may consist of near vertical sidewalls; however, due to drier and more weathered near-surface soils conditions, some raveling of vertical cuts may occur. If remedial removals deeper than 5 feet are necessary, the excavation will need to be laid back at a minimum of 1:1 inclination. Excavations adjacent to existing structures, utilities or improvements to be protected in-place should be performed in accordance with the requirements of the governing agencies and avoid destabilizing the adjacent ground or undermining the improvements/foundations.

3.3 General Grading

In general, the grading and excavations should be performed in accordance with the governing agencies' requirements and NMG's General Earthwork and grading Specifications presented in Appendix F.

Clearing and grubbing of the site includes removal of weeds and miscellaneous abandoned material, and trash/debris that are to be disposed of offsite. Undocumented fill and trench backfill encountered during grading shall also be removed. Deleterious materials (i.e., concrete, asphalt, pipelines and construction materials, etc.) encountered during grading operations should be removed and disposed of offsite. At minimum, existing structures, improvements and utilities adjacent to the site that are to be protected in place should be located and visually marked prior to grading operations.

Geotechnical observation and testing shall be performed during the grading and construction operations. Geotechnical field and laboratory testing should be conducted in accordance with ASTM test procedures related to fill placement, backfilling and compaction control. The fill shall be placed in nearly horizontal, loose lifts no more than 8 inches in thickness, moisture-conditioned and compacted to a minimum relative compaction of 90 percent (per ASTM 1557) for the general fill and a minimum 95 percent for the tank pad. Fills are to be placed at above optimum moisture content. The moisture content of the onsite soils vary and thus appropriate measures (e.g., mixing, and moisture-conditioning) may be required to achieve the correct moisture content for fill placement. Native materials that are relatively free of deleterious material should be suitable for use as compacted fill except for areas requiring select material.

The majority of the future site grading will likely result in design cuts and exporting of material.

3.4 Groundwater

The groundwater table is anticipated to remain deep below the proposed tank bottom elevation (more than 50 feet deep). The groundwater table is not anticipated to be encountered during grading and construction of the proposed reservoir.

3.5 Seismic Design Criteria

The following table summarizes the seismic design criteria for the subject sites. The site-specific design response spectrum was developed in accordance with ASCE 7-10 and 2013 CBC; and the data is provided in Appendix D. The mapped spectral values were determined by using the computer program Seismic Design Maps provided by the USGS (2014).

SEISMIC DESIGN PARAMETERS FOR HORIZONTAL ACCELERATION

Selected Seismic Design Parameters for Horizontal Acceleration	***Seismic Design Values***
Controlling seismic source	Elsinore Fault
Distance to controlling seismic source	1.01 km
Site Class per Table 20.3-1 of ASCE 7-10	C
Mapped spectral acceleration for short (0.2 sec) periods (S_S)	2.451g
Mapped spectral acceleration for 1-second periods (S_1)	0.961g
Maximum considered earthquake spectral response acceleration for short periods (S_{MS}) from *site-specific analysis*	2.541g
Maximum considered earthquake spectral response acceleration for 1-second periods (S_{M1}) from *site-specific analysis*	1.573g
Five-percent damped design spectral response acceleration at short periods (S_{DS}) from *site-specific analysis*	1.694g
Five-percent damped design spectral response acceleration at 1-second period (S_{D1}) from *site-specific analysis*	1.049g
MCE_G Peak ground horizontal acceleration, *site-specific analysis*	0.976g
Seismic Design Category, Section 11.6 of ASCE 7-10	F
Moment magnitude for the controlling fault, Mw	7.85

SEISMIC DESIGN PARAMETERS FOR VERTICAL ACCELERATIONS

Selected Seismic Design Parameters for Vertical Acceleration	***Seismic Design Values***
Controlling seismic source	Elsinore Fault
Distance to controlling seismic source	1.01 km
Site Class per Table 1613.5.2 of CBC 2010	C
Maximum considered earthquake spectral response acceleration for short periods (S_{MS}) from *site-specific analysis*	1.961g
Maximum considered earthquake spectral response acceleration for 1-second periods (S_{M1}) from *site-specific analysis*	0.999g
Five-percent damped design spectral response acceleration at short periods (S_{DS}) from *site-specific analysis*	1.307g
Five-percent damped design spectral response acceleration at 1-second period (S_{D1}) from *site-specific analysis*	0.666g
Peak ground vertical acceleration *site-specific analysis*	0.634g
Moment magnitude for the controlling fault, Mw	7.85

3.6 Settlement Potential

Our recommended remedial removals and overexcavation (Section 3.2) are intended to remove the unsuitable/compressible near-surface existing soil and provide a uniform fill blanket under the proposed tank site. Our recommendation would provide the proposed structures with a minimum 3-foot cap on uniform compacted fill below the tank pad. We anticipate that the total settlement of the underlying soil due to the structural and seismic loading would be minor. Based

on the uniform alluvial soil conditions to a depth of 71 feet, we anticipate that the differential settlement would not exceed 1 inch over a 40-foot span. This should take into account the potential for seismic settlement.

3.7 Foundation Design

The foundation for the future reservoir would need to be designed for the structural loads anticipated, the seismic conditions in Section 3.5, and the differential settlement presented in Section 3.6. We anticipated that a conventional shallow foundations system will be suitable and will be underlain by certified fills and/or competent alluvial deposits.

The recommended allowable bearing capacity for strip (ring) and isolated footings may be calculated based on the following equation:

$$q_{all} = 500 + 600\ B + 900\ D \leq 4{,}500 \text{ psf}$$

(where B = footing width in feet and D = footing depth in feet)

The maximum allowable bearing pressure of 3,000 psf may be used for a mat foundation that is larger than 20-foot by 20- foot. The allowable bearing pressure may be increased by one-third for wind and seismic loading. The coefficient of resistance of 0.45 against unwanted sliding is considered appropriate. A subgrade modulus (k) of 300 pci and soil elastic modulus (Es) of 2,500 psi may be used for design of foundations and slabs.

We recommend that strip and isolated footings have a minimum embedment depth of 24 inches.

3.8 Lateral Earth Pressures

We recommend the following lateral earth pressures for native soils in drained conditions be used for design of retaining walls and tank walls. The equivalent fluid earth pressures for approved onsite soil are based on level-ground conditions and a total unit weight for backfill materials of 125 pcf.

Conditions *(Level Ground)*	**Equivalent Fluid Pressure (psf/ft.)**
	Static Level
Active	32
At-Rest	51
Passive	480

To design an unrestrained retaining wall, such as a cantilever wall, the active earth pressure may be used. For a restrained retaining wall, such as a vault or at restrained wall corners, the at-rest pressure should be used. Passive pressure is used to compute lateral soils resistance developed against lateral structural movement. Further, for sliding resistance the friction coefficient of 0.45 may be used at the concrete and soil interface. The passive resistance is taken into account only if it is ensured that the soil against embedded structure will remain intact with time. The retaining structures may also need to be designed for additional lateral loads if other structures or walls are planned within a 1:1 projection.

The seismic lateral earth pressure for walls/structures retaining more than 6 feet of soil and level backfill conditions may be estimated to be an additional 29 pcf for active and at-rest conditions. The seismic lateral earth pressure does not apply to walls/structures retaining less than 6 feet of soil (2013 CBC Section 1803.5.12). The earthquake soil pressure has a triangular distribution and is added to the static pressures. For the active and at-rest conditions, the additional earthquake loading is zero at the top and maximum at the base. Typical recommendations for retaining wall drainage are provided on the attached detail (Figure 3).

3.9 Slope Stability and Setback

In general, slopes within the subject site do not have adverse bedding conditions and should be grossly stable. The temporary backcut slopes should not be excavated steeper than 1:1. There may be a potential for local backcut failures on the temporary slope if they become overly saturated or as a result of weathered or fracture zones within the older alluvial deposits.

We also recommend that the tank have a setback from the descending natural slope in accordance with the 2013 CBC requirements (Section 1808.7) which requires a minimum distance of 1/3 the slope height but not exceed 40 feet.

3.10 Expansion Potential

The expansion potential of onsite materials will likely be "low" as classified by ASTM D4829. No special measures are anticipated to mitigate expansion. Additional testing following the completion of grading should be performed to confirm the expansion potential of the foundation soils.

3.11 Cement Type and Corrosivity

We anticipate that the onsite soils are only mildly corrosive and will have "negligible" sulfate exposure level (based on the classification for concrete exposed to sulfate in Table 4.2.1 in ACI-318-08). Cement type and mix design for structural concrete with respect to sulfates should conform to the Greenbook requirements. If specific corrosion protection recommendations are needed, the findings in this report should be reviewed by a corrosion engineer.

3.12 Non-Structural Concrete

Exterior concrete elements, such as curb and gutter, sidewalks and other improvements, are susceptible to lifting and cracking when constructed over expansive soils. The upper 12 inches of the soil subgrade for concrete improvements should be presaturated to have a minimum moisture content of 110 percent of optimum. The nominal thickness for the concrete improvements should be 4 inches, except where heavier loads are anticipated. Pavements anticipated to have vehicular traffic (H-5 to H-20 loading) should be a minimum 6 inches thick and provided with the appropriate aggregate base, reinforcement and restraints. Standards by the governing agency may have minimum thickness requirements for the exterior concrete elements.

The approved subgrade soils should be adequate for support of the proposed pavements and should not require aggregate base sub-layer. For pavements that have vehicular loading, a minimum 6-inch-thick layer of aggregate base material should be provided. Steel reinforcement may be added in lieu of the aggregate base, provided it is acceptable to the governing agency. The minimum reinforcement should consist of No. 3 rebar placed 24 inches on center (both directions) and placed near mid-height of the slab. Where used, reinforcing steel should be protected with the appropriate concrete cover.

Aggregate base should be crushed miscellaneous base (CMB) in accordance with Standard Specifications for Public Works Construction ("Green Book"). The material should be free of any detrimental quantity of deleterious materials. The aggregate base should be observed and tested by the geotechnical consultant to verify that it is compacted to a minimum of 95 percent relative compaction based on ASTM Test Method D1557.

We recommend that longitudinal and transverse joint spacing for the concrete pavement be no more than 10 feet apart to control cracking. The depth of jointing must be at least ¼ of the slab thickness. Expansion joints need to be incorporated into the concrete pavements to allow for soil and thermal expansion. Please also note that reducing cracking of concrete is often a function of proper concrete mix design, placement, and curing/finishing practices. Adherence to guidelines of the American Concrete Institute (ACI) is recommended. Also, the amount of post-construction watering, or lack thereof, can have a significant impact on the adjacent concrete flatwork.

3.13 Pavement Design

Pavement design is typically based on the expected traffic index (TI) and the R-value of the subgrade soil following street grading and utility installation. Assuming a TI of 5.5 for the access road and a minimum R-value of 30, we recommend asphalt pavement section consisting of 4 inches of asphalt concrete (AC) over 6 inches of aggregate base (AB).

Prior to construction of pavement sections, the subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned as needed, and recompacted in place to a minimum of 90 percent relative compaction per ASTM D1557. Subgrade should be firm and unyielding prior to AB placement. Aggregate base can be crushed AB or crushed miscellaneous base (CMB) in accordance with Standard Specifications for Public Works Construction (the "Green Book"). The materials should be free of deleterious materials. Aggregate base materials should be placed in 6- to 8-inch loose lifts, moisture-conditioned, as necessary, and compacted to a minimum of 95 percent relative compaction per ASTM D1557.

3.14 Rippability

The anticipated bottom tank elevation, the site will have cuts on the order of 20 to 25 feet deep within the central portion of the subject site. Based on the geotechnical and geophysical findings, older alluvium at the site should be rippable using D-8 bulldozers. Cuts into this material may produce oversize rock (greater than 10 inches in size) that will require removal from the site. Crushing of rock may be considered to reduce the oversize rock to acceptable sizes so that it may

be placed in shallow fills. Soils that have oversize material should be placed as backfill within 2 feet of any structure.

3.15 Erosion Potential and Maintenance of Graded Slopes

Areas exposing older alluvial materials and fills composed of sandy soils are subject to erosion. Measures, such as planting portions of these slopes or placement of an erosion mat over the face of the slope, may be considered to help protect the slope face from erosion. If the slope faces are sandy, applying a hydroseed mix as soon as practical should help mitigate the erosion potential.

In general, to reduce the erosion and slumping potential, permanent slopes should be protected from erosion by planting with appropriate vegetation or suitable erosion protection should be applied as soon as is practical. Proper drainage should be designed and maintained to collect surface waters and direct them away from slopes. A rodent-control program should be established and maintained as well, in order to reduce the potential for damage related to burrowing.

3.16 Utility and Trench Excavations and Backfill

We recommend that excavations be performed in accordance with the requirements set forth by the Greenbook Section 306 and CAL/OSHA Excavation Safety Regulations (Construction Safety Orders). The native soils at the site are anticipated to be classified as Type B. Excavations adjacent to existing utilities or structures to be protected in place may require special measures (i.e., providing a minimum setback distance, layback or temporary shoring) to reduce the potential for ground movement and other adverse impacts. The steepest allowable slopes in Type B soil are 1:1 for excavations less than 20 feet deep. Where there is no room for these layback slopes, we anticipate that shoring will be necessary. Excavations should be reviewed periodically by the contractor's qualified person to confirm compliance with Cal OSHA requirements.

The bedding, shading, and structural backfill of the pipe and structures shall also comply with approved project plan and Greenbook specifications (Section 306). Structural backfill material shall have a sand equivalent not less than 20 and meet the gradation requirements per Greenbook Table 300-3.5.1(A).

Geotechnical observation and testing should be performed during trench excavation and backfill operations. Field and laboratory testing should be conducted in accordance with project specifications and the relevant test procedures related to fill placement and compaction control. The trench backfill shall be compacted to the minimum relative compaction of 90 percent by ASTM Test Method D1557.

Native materials that are relatively free of deleterious and oversize material, should be suitable for use as trench backfill. Soils that have oversize material should be placed as backfill within 2 feet of any structure. Fills should be moisture-conditioned and processed, as necessary to achieve a uniform moisture content that is over optimum, and within moisture limits required to assure adequate bonding and compaction. The moisture content of the existing soils varies and additional measures (e.g., mixing, drying or wetting) may be required to achieve the appropriate

moisture content for fill placement. Native backfill materials should be compacted to a minimum of 90 percent relative compaction. Select granular backfill (SE 30 or better) or approved slurry may be used in lieu of native soils for trench backfill, but shall be placed and densified in accordance with the requirements of the governing agency. Gravelly material (materials greater than 3 inches) may not be suitable for structural backfill. Trenches excavated next to structures and foundations should also be properly backfilled and compacted to provide full lateral support and reduce settlement potential.

3.17 Surface Drainage and Irrigation

Inadequate control of run-off water, heavy irrigation after development of the site, or regional groundwater level changes may result in shallow groundwater conditions. Maintaining adequate surface drainage, proper disposal of run-off water, and control of irrigation will help reduce the potential for future moisture-related problems and differential soil movements.

Surface drainage should be carefully taken into consideration during grading, landscaping, and construction. Positive surface drainage should be provided to direct surface water away from structures and slopes and toward the street or suitable drainage devices. Ponding of water adjacent to the structures should not be allowed. Paved areas should be provided with adequate drainage devices, gradients, and curbing to prevent run-off flowing from paved areas onto adjacent unpaved areas.

3.18 Geotechnical Review of Future Plans

Once construction, grading, or foundation plans become available, they should be reviewed by the geotechnical consultant. The geotechnical consultant should work with the structural engineer and project team as needed during design to provide more detailed geotechnical recommendations, as needed for grading and foundation design.

3.19 Geotechnical Observation and Testing

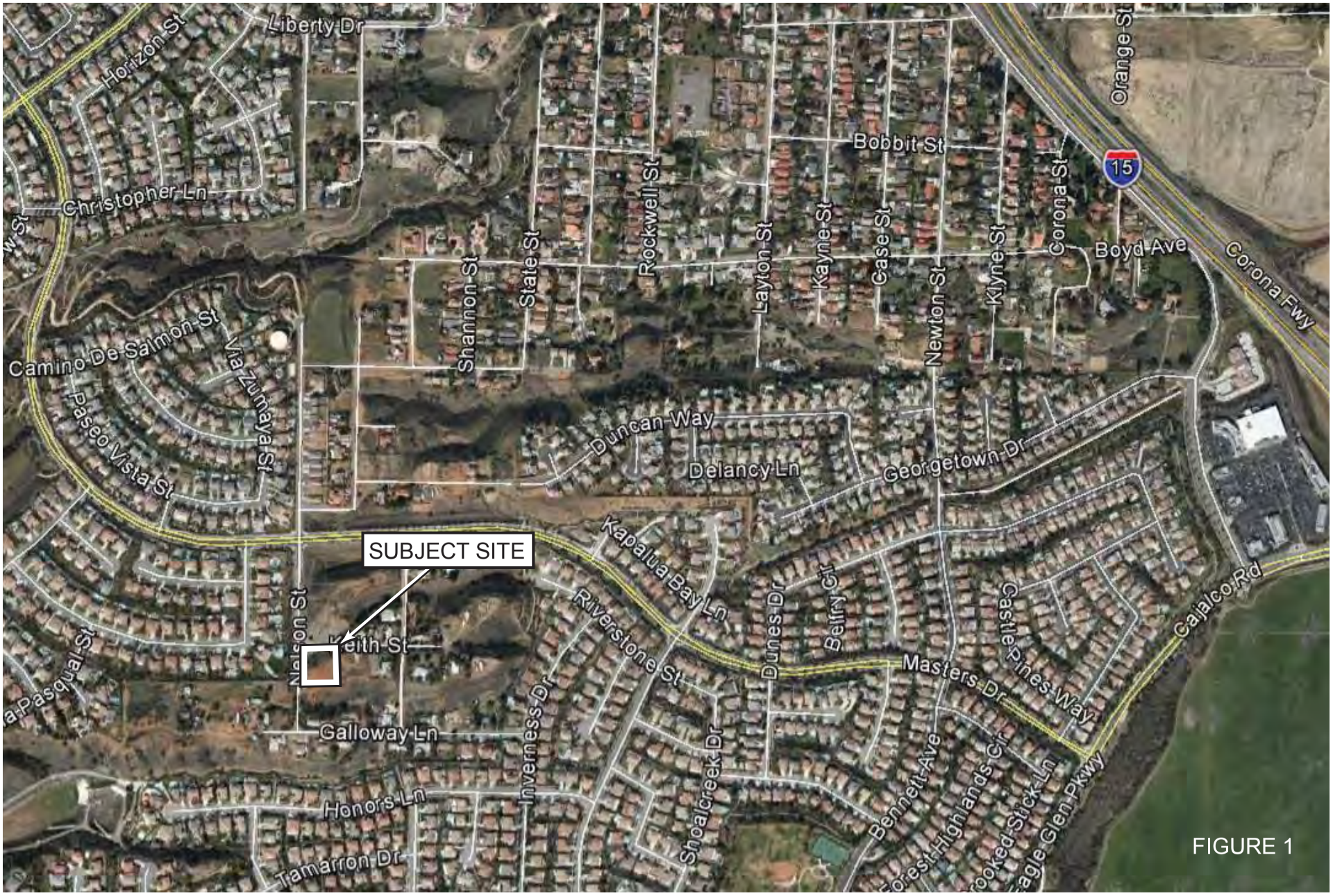
Geotechnical observation and testing should be conducted during the following stages:

- During site preparation and clearing;
- During remedial removal and excavation;
- During placement of compacted fill;
- During trench excavation and backfill;
- During structure and trench backfill operations;
- During preparation of subgrade soils for pads and pavements;
- During placement of aggregate base and asphalt cement; and
- When any unusual or unexpected geotechnical conditions are encountered during construction.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of our client, the city of Corona, based on the specific scope of services requested by our client for the project described herein. This report or its contents should not be used or relied upon for other projects or by other parties without the consent of NMG and the involvement of a geotechnical professional. The means and methods used by NMG for this study are based in part on local geotechnical standards of practice, care, and requirements of governing agencies. No warranty or guarantee, express or implied is given.

The findings, conclusions, and recommendations are professional opinions based on interpretations and inferences made from geologic and engineering data from specific locations and depths, observed or collected at a given time. By nature, geologic conditions can vary from point to point, can be very different in between points, and can also change over time. Therefore, our conclusions and recommendations are by nature preliminary and are subject to verification and possible modification as plans develop and with more Investigation and/or observations during grading and construction when more subsurface data becomes available.



SITE LOCATION MAP
ZONE 4 TANK SITE
3985 NELSON STREET
CITY OF CORONA, CALIFORNIA

Project Number: 12092-03

Project Name: City of Corona/Zone 4
Nelson Tank Site

Date: 6/17/15

N

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EXPLANATION

SURFICIAL DEPOSITS

Qls — Landslide

Qal — Alluvium
Gravel, sand, silt

Qalo — Older alluvium
Sand, gravel, and rubble; buff and gray in color

Qt — Terrace deposits
Rubble, gravel, and sand; reddish-brown to buff in color

SEDIMENTARY ROCKS

Tp — Pliocene undifferentiated
Thick-bedded sandstone and conglomerate with lesser amounts of sandy silts and shales, marine

Tpu — Puente formation, undifferentiated
Sandy siltstone and shale, minor amounts of sandstone, conglomerate and diatomite, marine; contains abundant Mohnian and a few Luisian foraminifera

Tt — Topanga formation
Buff sandstone, conglomerate, and sandy siltstone, marine

Tvs — Vaqueros (lower Miocene) and Sespe (upper Eocene? to lower Miocene?) formations, undifferentiated
White, buff, red, and green sandstone, conglomerate, sandy clay and siltstone, in part nonmarine; upper part contains early Miocene or lower middle Miocene marine fossils

Ts — Silverado formation
Upper part marine greenish-gray sandstone and conglomerate, buff siltstone and shale; lower part nonmarine or brackish water coarse-grained micaceous sandstone, conglomerate, clay, and minor lignite. Residual clay at base

Kc — Cajalco quartz monzonite
Pinkish to tan massive granitic rock

Js — Santiago Peak volcanics
Andesitic and dacitic flows and breccias, slightly metamorphosed

Tbc / ls — Bedford Canyon formation
Dark gray to brown argillite, slate and graywacke, with thin beds of quartzite and limestone; ls, *area mostly of limestone*

SYMBOLS

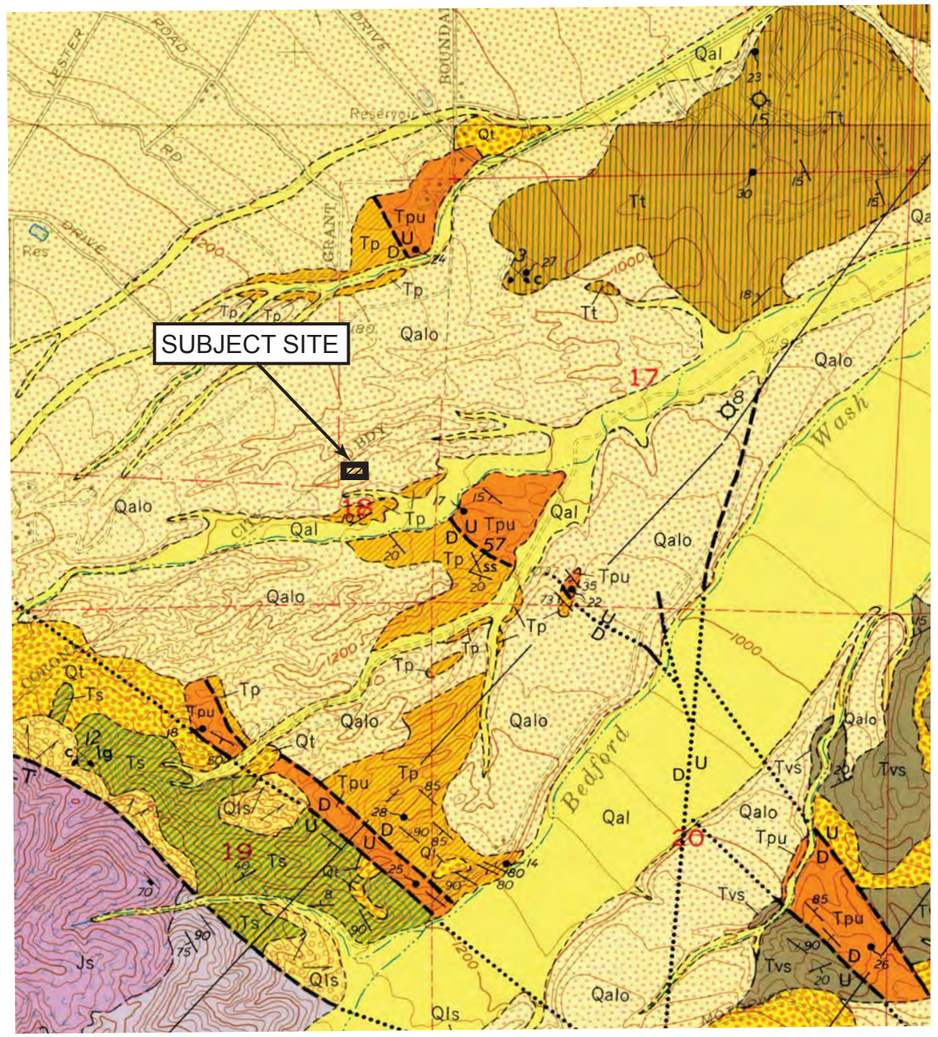
Contact, dashed where approximately located

Indefinite contact

Fault, showing dip (dashed where imperfectly exposed, dotted where concealed)
U, *upthrown side;* D, *downthrown side*

Strike and dip of beds

Fossil locality
(See table in text)



Base: California Division of Mines & Geology
Geologic and Economic Map of Corona South Quadrangle
Dated 1961

FIGURE 2

N

GEOLOGIC MAP
ZONE 4 TANK SITE
3985 NELSON STREET
CITY OF CORONA, CALIFORNIA

Project Number: 12092-03

Project Name: City of Corona/Zone 4
Nelson Tank Site

Date: 6/17/15

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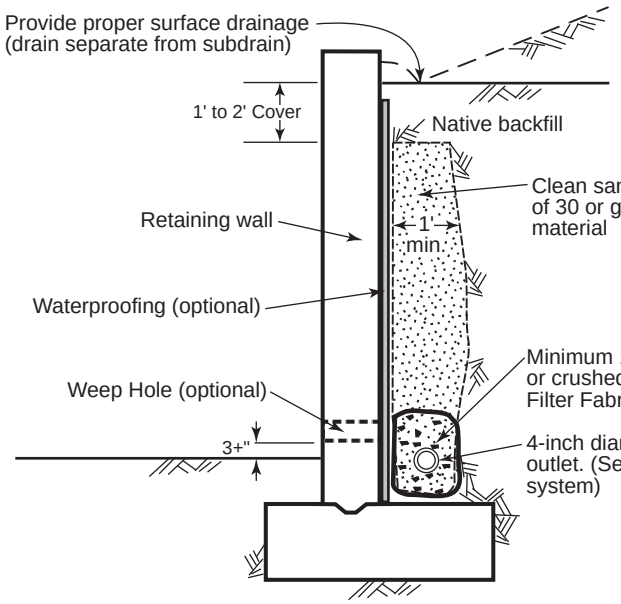
OPTION 1:

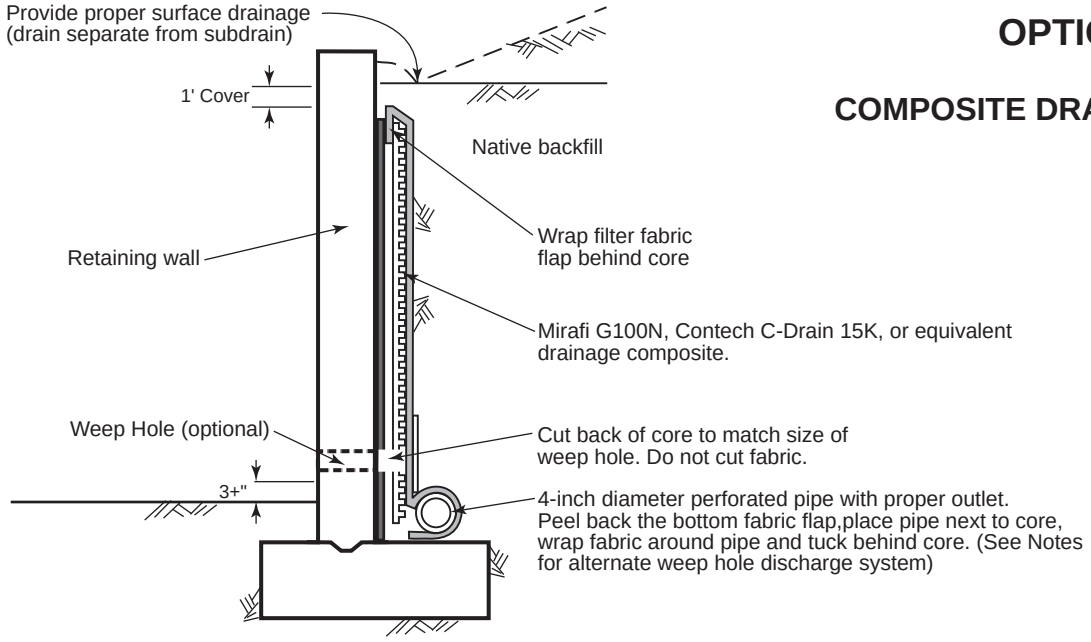
AGGREGATE SYSTEM DRAIN



Alternative: Class 2 permeable filter material (Per Caltrans specifications) may be used for vertical drain and around perforated pipe (without filter fabric)

OPTION 2:

COMPOSITE DRAINAGE SYSTEM



NOTES:

1. **PIPE TYPE SHOULD BE PVC OR ABS, SCHEDULE 40 OR SDR35 SATISFYING THE REQUIREMENTS OF ASTM TEST STANDARD D1527, D1785, D2751 , OR D3034.**
2. **FILTER FABRIC SHALL BE APPROVED PERMEABLE NON-WOVEN POLYESTER, NYLON, OR POLYPROPYLENE MATERIAL.**
3. **DRAIN PIPE SHOULD HAVE A GRADIENT OF 1 PERCENT MINIMUM.**
4. **WATERPROOFING MEMBRANE MAY BE REQUIRED FOR A SPECIFIC RETAINING WALL (SUCH AS A STUCCO OR BASEMENT WALL).**
5. **WEEP HOLES MAY BE PROVIDED FOR LOW RETAINING WALLS (LESS THAN 3 FEET IN HEIGHT) IN LIEU OF A VERTICAL DRAIN AND PIPE AND WHERE POTENTIAL WATER FROM BEHIND THE RETAINING WALL WILL NOT CREATE A NUISANCE WATER CONDITION. IF EXPOSURE IS NOT PERMITTED, A PROPER SUBDRAIN OUTLET SYSTEM SHOULD BE PROVIDED.**
6. **IF EXPOSURE IS PERMITTED, WEEP HOLES SHOULD BE 2-INCH MINIMUM DIAMETER AND PROVIDED AT 25-FOOT MAXIMUM SPACING ALONG WALL. WEEP HOLES SHOULD BE LOCATED 3+ INCHES ABOVE FINISHED GRADE.**
7. **SCREENING SUCH AS WITH A FILTER FABRIC SHOULD BE PROVIDED FOR WEEP HOLES/OPEN JOINTS TO PREVENT EARTH MATERIALS FROM ENTERING THE HOLES/JOINTS.**
8. **OPEN VERTICAL MASONRY JOINTS (I.E., OMIT MORTAR FROM JOINTS OF FIRST COURSE ABOVE FINISHED GRADE) AT 32-INCH MAXIMUM INTERVALS MAY BE SUBSTITUTED FOR WEEP HOLES.**
9. **THE GEOTECHNICAL CONSULTANT MAY PROVIDE ADDITIONAL RECOMMENDATIONS FOR RETAINING WALLS DESIGNED FOR SELECT SAND BACKFILL.**

RETAINING WALL DRAINAGE DETAIL

NMG Geotechnical, Inc.

FIGURE 3

APPENDIX A

APPENDIX A

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APPENDIX A

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AERIAL PHOTOGRAPHS REVEIWED

Date	*Scale*	*Photograph*	*Source*
4/27/2014	-		Google Earth
1/12/2013	-		Google Earth
3/9/2011	-		Google Earth
11/15/2009	-		Google Earth
12/31/2005	-		Google Earth
9/7/2003	-		Google Earth
6/4/2002	-		Google Earth
2/24/1999	1"=2000'	C-134-34-38/39	Continental Aerial Photo
10/16/1997	1"=2000'	C-118-34-90/91	Continental Aerial Photo
1/29/1995	1"=2000'	C-103-34-172	Continental Aerial Photo
5/19/1993	1"=2000'	C-92-14-303/304	Continental Aerial Photo
6/12/1990	-	C-87-15-28/29	Continental Aerial Photo
1/8/1987	-	F-138/139	Continental Aerial Photo
4/8/1983	-	218-15-6/7	Continental Aerial Photo
2/15/1977	1"=4150'	RIV-4-03/04	Continental Aerial Photo
1/13/1975	-	157-15-6/7	Continental Aerial Photo
1/30/1970	-	60-4-98/99	Continental Aerial Photo
5/15/1967	-	AXM-4HH-134/135	Continental Aerial Photo
10/16/1959	1"=1666'	AXM-16W-153	Continental Aerial Photo
10/15/1959	1"=1666'	AXM-16W-121	Continental Aerial Photo
5/5/1949	-	AXM-4F-166/167	Continental Aerial Photo

Appendix E

Phase I Environmental Site Assessment

ESA

KEITH 1220-ZONE POTABLE WATER TANK PROJECT

Phase I Environmental Site Assessment

Prepared for
City of Corona

November 2017

ESA

KEITH 1220-ZONE POTABLE WATER TANK PROJECT

Phase I Environmental Site Assessment

Prepared for
City of Corona

November 2017

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ESA

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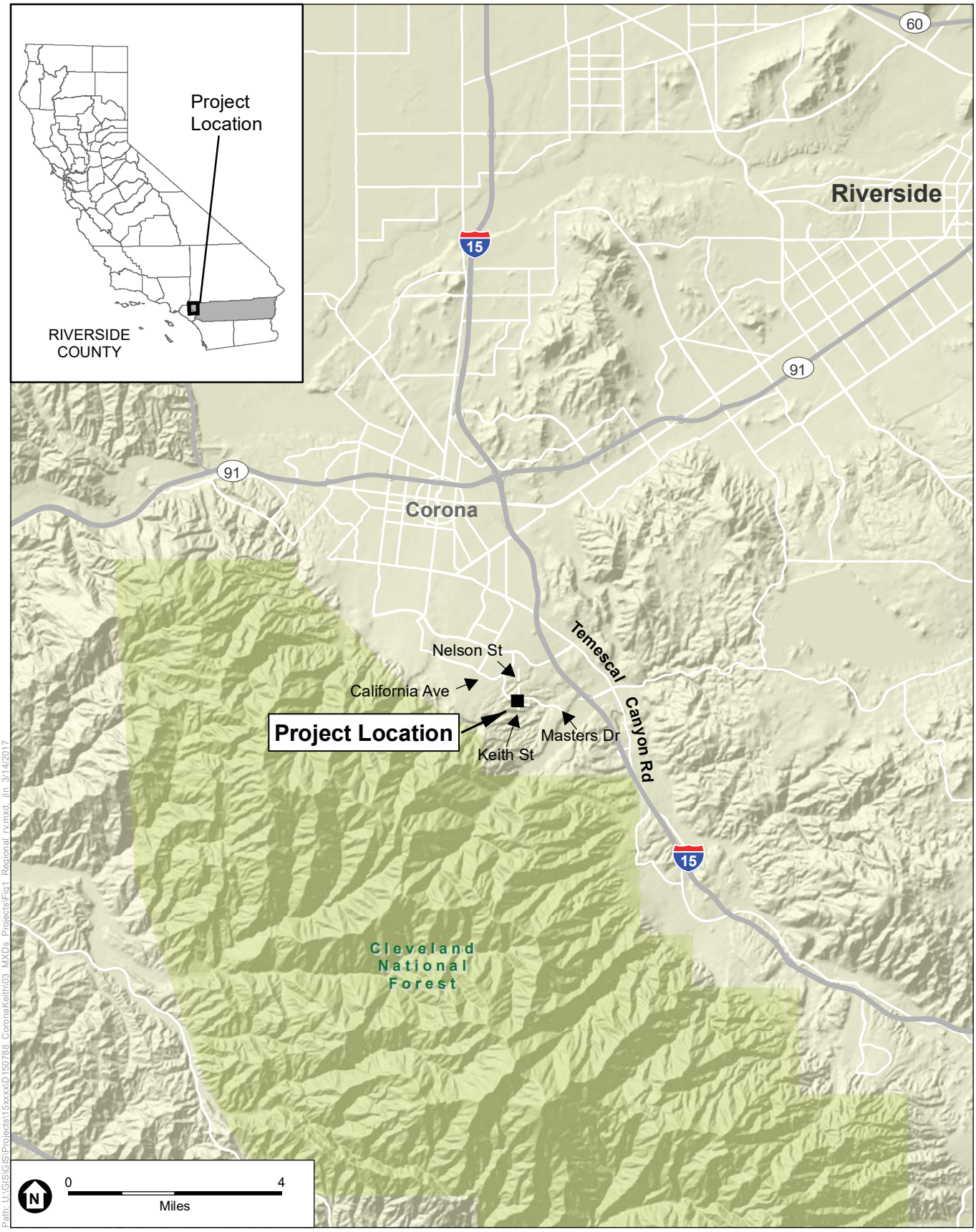
SECTION 1
Executive Summary

ESA compiled this Executive Summary using excerpts from the Phase I Environmental Site Assessment report that follows. This Executive Summary may not provide all the information necessary to fully characterize the site and gain an understanding of the issues nor does it detail the Phase I assessment and its findings. ESA does not recommend sole reliance on this Executive Summary.

This Phase I Environmental Site Assessment was conducted on behalf of the City of Corona for the Keith 1220-Zone Potable Water Tank Project site on Assessor Parcel Numbers (APNs) 116-113-001, 116-111-002, 116-111-003, and 116-111-004, 116-162-022 (site), City of Corona, California (see **Figure 1** and **Figure 2**). This report was prepared in general accordance with guidance from the American Society of Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13).

The parcels are undeveloped and unpaved with the exception of parcel 116-160-022 which includes paved Masters Drive. The study area includes paved right-of-ways Nelson Street, Masters Drive, and Courtney Street. Utility poles are located along Nelson Street and Keith Street. Access to the tank site is by unpaved Keith Street. The regulatory and historic records search, site reconnaissance, and interview did not identify any Recognized Environmental Conditions. This report should be read in its entirety for a comprehensive understanding of the project site conditions described.

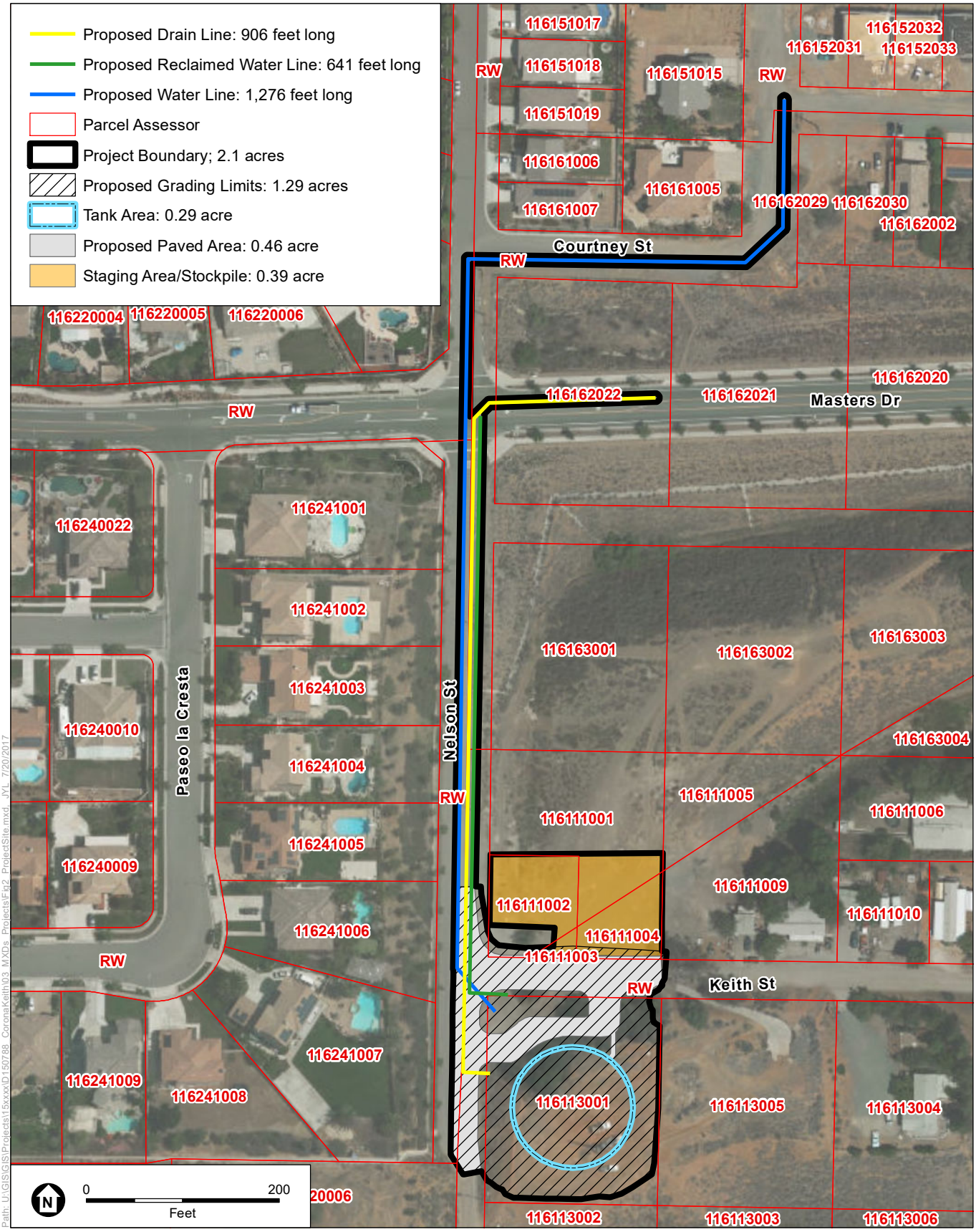


SOURCE: ESRI

Keith 1220-Zone Potable Water Tank

Figure 1
Regional Location Map

ESA



SOURCE: ESRI; Kleinfelder 2017

Keith 1220-Zone Potable Water Tank

Figure 2
Project Site

ESA

SECTION 2
Introduction

2.1 Purpose, Standards, and Definitions

Environmental Science Associates (ESA) was retained to conduct a Phase I Environmental Site Assessment for five parcels in the City of Corona, California (see **Figure 1, Regional Location** and **Figure 2, Project Site**). The five parcels are located at the northeast and southeast corners of the intersection of Keith Street and Nelson Street.

This Phase I assessment was conducted in general accordance with the American Society of Testing Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13) and the U.S. Environmental Protection Agency (US EPA) Final Rule regarding Standards and Practices for All Appropriate Inquiries as published in the Federal Register on November 1, 2005 (70 FR 66070) and codified at 40 CFR Part 312 (AAI Rule). The US EPA has stated that the newly revised ASTM E1527-13 is consistent with the AAI rule (78 FR 79319, December 30, 2013). Specifically, this final rule amends the AAI Rule at 40 CFR Part 312 to reference ASTM E1527-13 and make clear that persons conducting all appropriate inquiries may use the procedures included in this standard to comply with the AAI Rule.

The purpose of this Phase I assessment is to enable the parties relying on it to satisfy one or more of the requirements for the innocent landholder defense to liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and to evaluate the potential for Recognized Environmental Conditions (RECs) at the project site. Three types of RECs are defined by the ASTM E1527-13, as listed below. The term Recognized Environmental Conditions (REC) means:

> *"The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."*

In addition, the updated ASTM E1527-13 defined the two additional categories cited below.

The term Historical Recognized Environmental Conditions (HREC) means:

> *"A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental*

professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition."

For a past REC to be considered an HREC it must:

- Have already been remediated (or meet current standards without remediation);
- Not require use restrictions or engineering controls (e.g., cap, subslab depressurization system, etc.); and
- Meet current standards.

If the REC has use restrictions or engineering controls (e.g., cap, subslab depressurization system, etc.), then the REC may be designated as a Controlled Recognized Environmental Condition (CREC), as defined below. Unlike HRECs, a CREC will be listed in the conclusions section of the Phase I assessment, along with other RECs. The purpose of this new category is to bring continuing obligations such as use restrictions, maintenance requirements, reporting requirements, etc. to the forefront. The term Controlled Recognized Environmental Conditions (CREC) means:

"A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report."

RECs, HRECs, and CRECs are not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

2.2 Scope of Services

The following sections describe ESA's work scope:

Section 2*, Introduction*, *Standards*, and *Definitions*, includes a discussion of the purpose for performing the Phase I assessment; the standards and definitions used for the Phase I assessment; and the significant assumptions and limitations.

Section 3*, Site Description*, compiles information concerning the location, legal description, current and proposed use, a description of any structures and improvements at the time of ESA's assessment, and adjoining property use for the parcels.

Section 4, *Records Review*, includes ESA's review of various databases available from the federal, state, and local regulatory agencies regarding hazardous materials use, storage, or disposal at the parcels. Client-provided information is summarized and copies of relevant documents are included in the appendices of this report. Physical setting sources such as topography, soil, and groundwater conditions are described.

Section 5, *Site Reconnaissance*, describes ESA's observations during reconnaissance of the parcels. The methodology used and limiting conditions are described.

Section 6, *Interviews* and *User Provided Information*, summarizes telephone and personal interviews conducted with Site Manager from Saroyan.

Section 7, *Findings and Opinions*, presents ESA's findings and professional opinions regarding the information contained in this report. It provides ESA's conclusions regarding the presence of RECs connected with the parcels and data gaps, if any, that could affect the recognition of RECs.

Section 8, *Report Authors and Qualifications*, provides the signatures and qualifications of the report authors.

Section 8, *References*, is a summary of the resources used to compile this report that are not already included in the Appendices.

The appendices contain certain pertinent documentation regarding the parcels. Appendices A, B, and C contain the regulatory agency database search results report; historical aerial photographs, topographic maps, Sanborn insurance map and city directory search results; and the interview questionnaires, respectively.

2.3 Limitations and Exceptions

No environmental site assessment can wholly eliminate uncertainty regarding the potential for RECs, HRECs, and CRECs in connection with a property. Conformance of this Phase I assessment with ASTM E1527-13 reduces, but does not eliminate, uncertainty regarding the potential for RECs, HRECs, and CRECs in connection with the subject property. While ESA has made every effort to discover and interpret available historical and current information on the properties within the time available, some potential always remains for undiscovered contamination to be present. ESA's report is a best-efforts collection and interpretation of available information, and cannot be considered wholly conclusive. This report and the associated work were provided in accordance with the principles and practices generally employed by the local environmental consulting profession. This is in lieu of all warranties, expressed or implied. No other warranty is expressed or implied. ASTM E1527-13 is included in this report by reference.

This Phase I assessment is based primarily on historical research, a database review, and a site reconnaissance of accessible areas. This Phase I assessment does not include "non-scope issues" as specified by ASTM E1527-13, such as surveys for the presence of the following items on or in the vicinity of the subject property: asbestos-containing materials (ACMs), poly-chlorinated biphenyls (PCBs), radon, indoor air quality, lead-based paint analysis, lead in drinking water, industrial hygiene, health and safety, regulatory compliance, and high voltage lines.

The conclusions presented are professional opinions based solely upon indicated data described in this report, visual site and vicinity observations, and the interpretation of the available historical information and documents reviewed, as described in this report. Unless ESA has actual knowledge to the contrary, information obtained from interviews or provided to ESA is assumed to be correct and complete. ESA does not assume any liability for information that was misrepresented to ESA by others or for items not visible, accessible, or present on the parcels during the time of the site reconnaissance. The conclusions are intended exclusively for the purpose outlined herein and the site location indicated. Any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of the user.

Opinions and recommendations presented herein apply to the site conditions existing at the time of this Phase I assessment and cannot necessarily apply to site changes of which ESA is not aware and has not had the opportunity to evaluate. Changes in the conditions of the parcels may occur with time due to natural processes or the works of man on the property or adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond ESA's control. Opinions and judgments expressed herein are based on ESA's understanding and interpretation of current regulatory standards, and should not be construed as legal opinions.

SECTION 3
Site Description

3.1 General Setting and Location

The site includes 0.9 acres of undeveloped land owned by the City of Corona (APN 116-113-001). The elevations on the site vary from a maximum of approximately 1,214 feet above mean sea level (amsl) on the elevated mound of land in the center of the project area to a minimum of 1,190 feet amsl on the northwest portion of the site. APN 116-113-001 is currently completely undeveloped and consists of small trees and bushes on the northern portion of the site. There is one utility pole placed along the west side of the property. APNs116-111-002, 116-111-03, and 116-111-004 are undeveloped and located northeast of the intersection of Nelson Street and Keith Street. The parcels are currently fenced with "No Trespassing" signs. Access to these parcels is provided off of Keith Street. The study area includes about 1,300 linear feet within right-of-way in Nelson Street, Masters Drive, Courtney Street, and Duncan Way.

3.2 Current and Proposed Land Uses

Parcel 116-113-001 is undeveloped. The southeast parcel is the proposed location of the water tank. Parcels 116-111-001, -003, and -004 are undeveloped and would be the construction staging and stockpile area during project construction. Potable water, reclaimed water, and drainage utility lines are proposed within Nelson Street from the site of the tank to Courtney Lane, eventually to Duncan Way.

SECTION 4
Records Review

The purpose of the records review is to obtain and examine records that could help to evaluate potential RECs, HRECs, and CRECs in connection with the parcels. This section documents the database records search, the evaluation of other records, summarizes information provided by the property owners, and describes the physical setting of the parcels.

4.1 Standard Environmental Record Sources

Federal, state, and local regulatory agencies publish databases of businesses and properties that handle hazardous materials or hazardous waste, including those properties with a known release of hazardous substances to soil and/or groundwater. These databases are available for review and/or purchase at the regulatory agencies, or the information may be obtained through a commercial database service. ESA contracted with a commercial database service, GeoSearch, to perform the government database search for listings within the appropriate ASTM Standard minimum search distance. The GeoSearch database search sources are summarized on **Table 4-1**. A detailed description of the types of information contained in each of the databases reviewed and the agency responsible for compiling the data is included in the GeoSearch Radius Report provided as Appendix A. A list of acronyms for the individual databases is presented in the Database Summary of the GeoSearch Radius Report.

ESA evaluated the listings with regard to the nature of potential chemicals of concern, the extent of known releases, and the physical setting of the parcels (e.g., soil properties, geology, and seismicity). In general, reported or potential releases likely to affect a property would include those located on or within 1/8-mile radius of the parcels. ESA also considered additional factors such as chemical properties, regional knowledge of the site vicinity, anticipated groundwater flow direction, and available past regulatory documentation as part of the REC evaluation.

4.2 Results of Database Search

None of the parcels were listed on any of the GeoSearch-searched regulatory agency database records. Closed (already cleaned up) sites within the search radius and operating sites with no records of releases or use violations were not considered since they would not pose a risk to the parcels. The following **Table 4-1** summarizes the searched regulatory records.

TABLE 4-1
REGULATORY RECORDS REVIEW SEARCH SOURCES

Federal
• Emergency Response Notification System (ERNS)
• Federal Institutional or Engineering Controls Registries (EC)
• Land Use Control Information System (LUCIS)
• Resource Conservation Recovery Act (RCRA) Sites with Controls
• RCRA-Generators List
• RCRA – Non-Generator
• Brownfields Management System
• Delisted National Priorities List
• No longer regulated RCRA Non-CORRACTS (Corrective Action Report) – Treatment, Storage, or Disposal Facility (TSDF)
• No longer regulated RCRA Corrective Action Faculties
• Superfund Enterprise Management System
• Superfund Enterprise Management System Archived Site Inventory
• US EPA National Priority List (NPL), proposed NPL, and Delisted NPL Site List
• RCRA Corrective Action Facilities
State/Local
• DTSC Deed Restrictions
• Above Ground Storage Tanks
• Historic Underground Storage Tank
• Statewide Environmental Evaluation and Planning System
• State and tribal registered storage tank lists
• State and tribal leaking storage tank lists - LUST - Leaking Underground Storage Tank, GeoTracker
• State and tribal landfill and/or solid waste disposal site lists – SWF/LF Solid waste information system
• State and tribal voluntary cleanup sites
• State, tribal, and local Brownfield lists
• EnviroStor Cleanup Sites
• EnviroStor Permitted and Corrective Action Sites

4.3 Other Records Reviewed

ESA accessed the State Water Resources Control Board (SWRCB) GeoTracker and the Department of Toxic Substances Control (DTSC) EnviroStor websites to search for other possible site listings to update information from the GeoSearch report. No other sites within the search distances were identified. The GeoSearch regulatory agency records search also provides historical aerial photographs, historical topographic maps, fire insurance maps, and city directories for review. The results of the review of these other records are discussed further below.

Historical Aerial Photographs. GeoSearch provided historical aerial photographs for the years 1931, 1938, 1948, 1952, 1959, 1966, 1974, 1980, 1990, 1995, 2002, 2004, 2014. These photographs are included in Appendix B of this report.

The 1931 aerial photograph shows each of the parcels and surrounding area as undeveloped. Crops are shown to the north near the foothills.

The parcels remain unchanged in the 1938 aerial photograph. The aerial shows dirt roads in the vicinity.

The parcels and surrounding area remain unchanged in the 1948 aerial photograph.

The parcels and surrounding area remain unchanged in the 1952 aerial photograph.

The parcels remain unchanged in the 1959 aerial photograph. The area approximately 1,000 feet to the northeast appears developed with agricultural uses.

The parcels remain unchanged in the 1966 aerial photograph. The area immediately to the west has row crops. Some dirt roads are shown to the north.

The 1974 aerial photograph shows the parcels as partially graded. Nelson Street and Keith Street are shown as dirt roads. A water tank is shown to the north.

The parcels remain unchanged in the 1980 aerial photograph. The surrounding area is more developed with buildings to the northeast, agricultural uses to the north and west, and a dirt road grid and buildings to the east.

The 1990 aerial is of poorer quality and makes details obscure. A small structure appears on the parcel. The area to the north is developed with commercial and residential uses. The area to the east is also developed with rural residential uses.

The parcels and surrounding area remain unchanged in the 1995 aerial photograph.

The parcels remain unchanged in the 2002 aerial photograph. The surrounding areas to the north and south are graded for tract residential development. Masters Drive is visible.

The parcels remain unchanged in the 2004 aerial photograph. The previously graded pads in the surrounding area are now developed with tract residential neighborhoods. The immediate surrounding area is developed with rural residential uses. Masters Drive is completely shown and paved.

The parcels and surrounding area remain unchanged in the 2014 aerial photograph.

Historical Topographic Maps. GeoSearch provided historical topographic maps for the years 1902, 1943, 1954, 1967, 1973, 1982, 1988, 1997, and 2012. These maps are included in Appendix B of this report.

The 1902 Corona, CA 1:10,420 historic topographic map shows the the parcels as undeveloped. Dirt roads are shown in hills to the south. The foothills are not developed. The city of Corona is shown to the north with a road grid, structures and the San Diego railroad line is also shown.

The parcels remain unchanged in the 1943 Corona, CA 1:5,208 topographic map. Roads and agricultural row crops are shown to the north.

The parcels remain unchanged in the 1954 Corona South, CA 1:2,000 topographic map. The surrounding area remains the same as in 1943. Reservoirs are shown in the agricultural areas about 0.5-mile to the north.

The parcels remain unchanged in the1967 Corona South, CA 1:2,000 topographic map. The area immidiately to the west is used for agriculutral row crops and a water tank is shown about 0.75-mile west within the agricultural area. The community of El Cerrito is shown several miles northeast. The two-lane State Route 71 is shown on the map. The areas about 0.50-mile southeast are used for agriculture and a well is shown about one mile southeast.

The 1973 Corona South, CA 1:2,000 topographic map shows the alignments for Keith Street, Nelson Street, Courtney Street, and Howe Street. The parcels and surrounding area remain unchanged.

The parcels remain undeveloped in 1982 photorevised in 1973 Corona South, CA 1:2,000 topographic map. The parcels are located in an agricultural area. Structures are shown adjacent to the east.

The pacels remain undeveloped in the1988 photorevised in 1982 Corona South, CA 1:2,000 topographic map. Additional structures are shown to the east and southwest of the parcels.

The parcels remain undeveloped in the 1997 Corona South, CA 1:2,000 topographic map. The area immidiately surrounding the parcels remains unchanged. Areas to the north previously used for agriculture are developed with improved roads.

The parcels remain undeveloped on the 2012 Corona South, CA 1:2,000 topographic map. The surrounding area no longer supports agricultural uses. The surrounding areas are develped with improved roads. Masters Drive is shown as an improved road. Interstate 15 is shown to the east.

Oil and Gas Well Information. No oil or gas wells are located on the parcels or within the immediate vicinity (GeoSearch, 2017, Appendix B). The nearest active oil and gas well is located 0.41-mile northeast.

Fire Insurance Maps. GeoSearch searched the Sanborn fire insurance map library. No fire insurance maps were found covering the parcels, as noted in Appendix B.

City Directories. GeoSearch provided city directories which include the name of the site owner of the site and surrounding properties; these are included in Appendix B. The names of the properties were checked for indications of site use with a focus on the use of hazardous materials. The majority of the listings are the names of individuals, which would not indicate site use. Further, based on a review of historic aerials and photos, the surrounding properties were used for agricultural uses and then developed for residential.

4.4 Physical Setting

The following sections provide information about the physical setting of the parcels obtained from published reports and maps, as referenced. Geotechnical information is not a required element of ASTM E1527-13 Phase I assessments, and is not included in this Phase I assessment.

Topography. The parcels are located several miles northeast of the Santa Ana Mountains. The project site ranges in elevation from 1,190 feet amsl to 1,214 feet amsl. The overall topographic relief is relatively flat with a small mound in the center of the southeast quadrant.

Geology, Soils, and Hydrology. The site is on Quaternary alluvium and marine deposits from the nearby Santa Ana Mountains. These rocks date back to the early Pleistocene (up to 1.6 million years ago).

No Alquist-Priolo fault zones pass through the parcels. Fault zones are not located within the immediate vicinity of the parcels; the nearest fault zone is the active Glen Ivy Fault section of the Elsinore Fault Zone is located one mile southwest of the project site. The Glen Ivy Fault extends northwest from Lake Elsinore to west of Corona, and is located along the southwest boundary of the City.

The soil of the project is comprised of Perkins gravelly loam and terrace escarpments of the Garison Series. Runoff is possible due to construction activities disturbing the soil. Surface water flow is generally to the north toward Keith Street. Groundwater is not expected to be encountered during construction activities as it exists 71 feet below ground surface.

Flood Zone Designation. The parcels are not located within the 100-year flood zone.

SECTION 5
Site Reconnaissance

5.1 Methodology and Limiting Conditions

Arabesque Said-Abdelwahed, MPP, from ESA conducted the site reconnaissance on July 17, 2017, to assess present conditions. Weather at the time of the site inspection was sunny and warm. The site conditions discussed below are limited to readily apparent environmental conditions observed.

5.2 General Site Setting

The study area is located in the hills with predominately residential uses. The residences to the west are part of a tract housing development. The areas immediately to the east and south are rural residential uses. The elevations on the site vary on the elevated mound of land.

5.3 Site Observations

The site observations discussed below are organized by APN. Figure 2 shows the locations of the parcels.

116-113-001 (Tank Site)

This is an undeveloped and unpaved parcel situated on an elevated area at the southeast corner of the intersection of Keith Street and Nelson Street. A cluster of bushes and trees are located on the northern portion of the site. The site was previously sheet graded. Native shrubs and grasses remain at the fringes of this graded area and on adjacent steep-sloped edges. A paved driveway leading up to the parcel is located along Keith Street. One utility pole is located along the western boundary of the parcel and includes a pole-mounted transformer. No leaks were observed from the transformer. Some debris such as concrete and wooden poles are located at the northwestern corner of the parcel (**Figure 3**, **Figure 4**, and **Figure 5**).

116-111-002, -003, -004 (Staging Area)

These parcels are undeveloped, unpaved and located northeast of the intersection of Nelson Street and Keith Street. The parcels are currently fenced with “No Trespassing” signs. Access to these parcels is provided off of Keith Street. The proposed staging area is also previously graded, with stockpiles of soil and debris (Figure 5).

Right-of-Way

The study area includes about 1,300 linear feet within right-of-way in Nelson Street, Masters Drive, Courtney Street, and Duncan Way. The streets are paved with the exception of Keith Street. Utility lines are along the eastern soft shoulder Nelson Street (Figure 4 and Figure 5).

PHOTOGRAPH 1: View of 116-113-001 (Tank Site) Facing North

PHOTOGRAPH 2: View of 116-113-001 (Tank Site) Facing South

PHOTOGRAPH 3: View of 116-113-001 (Tank Site) Facing West

PHOTOGRAPH 4: View of the pole-mounted transformer adjacent to 116-113-001 (Tank Site) on Nelson Street.

D150788.01

SOURCE: ESA, 2017

Keith 1220-Zone Potable Water Tank

Figure 3

Photos 1-4

ESA

PHOTOGRAPH 5: View of Nelson Street and adjacent residences to the west from 116-113-001 (Tank Site); Facing Northwest

PHOTOGRAPH 6: View of Keith Street and Driveway to the Tank Site from the intersection at Nelson Street; Facing East

PHOTOGRAPH 7: Staging Area; Facing East

PHOTOGRAPH 8: View of the intersection of Masters drive and Nelson Street; Facing North

D150788.01

SOURCE: ESA, 2017

Keith 1220-Zone Potable Water Tank

Figure 4

Photos 5-8

ESA

PHOTOGRAPH 9: View of Nelson Street and adjacent residences to the west from 116-113-001 (Tank Site); Facing Northwest

PHOTOGRAPH 10: View of Keith Street and Driveway to the Tank Site from the intersection at Nelson Street; Facing East

D150788.01

SOURCE: ESA, 2017

Keith 1220-Zone Potable Water Tank

Figure 5

Photos 9-10

ESA

5.4 Results of the Site Reconnaissance

No evidence of materials or equipment suggesting hazardous materials or waste, discolored soil or water due to chemical spills, stressed vegetation due to chemical spills, above ground or underground storage tanks, pits, ponds, septic systems, or lagoons were observed at the parcels during the site reconnaissance.

SECTION 6
Interviews and User Provided Information

An interview questionnaire was completed on October 24, 2017 by Tom Koper with the City of Corona. Mr. Koper has worked with the City for 25 years and has historic knowledge of the project site. The questionnaire verified that the parcels have no records or observations of above ground or underground storage tanks, chemical storage, and hazardous materials spills. The questionnaire is provided in Appendix D.

SECTION 7
Findings and Opinions

7.1 Findings and Opinions

A commercial database service, GeoSearch, provided relevant federal, state, and local regulatory agency lists for references to the parcels and listings within the appropriate ASTM Standard search distance for our review. Regulatory agency websites were checked or the agencies contacted to provide additional information about the subject sites. The parcels were not identified in any of the database search results or by the regulatory agencies. No other facilities were identified that would have the potential to affect the parcels. There are no other known hazardous materials or hazardous waste issues present that could affect the parcels.

The history of the parcels was reviewed to identify potential RECs, HRECs, or CRECs; no RECS, HRECs, or CRECs were identified.

Site reconnaissance was conducted on July 17, 2017. No RECs, HRECs, or CRECs were observed relative to chemical use, storage, or disposal. There were no observations of discolored soil or stressed vegetation.

This Phase I environmental site assessment was completed in general conformance with the guidelines in ASTM E1527-13.

7.2 Data Gaps

ESA attempted to obtain reasonably ascertainable information regarding the parcels and their surrounding environs. There were no data gaps identified that could affect the identification of RECs, HRECs, or CRECs at the parcels.

SECTION 8
Report Authors and Qualifications

8.1 Report Authors and Signatures

This section includes qualification statements of the environmental professionals responsible for conducting the Phase I assessment and preparing this report.

Ms. Arabesque Said-Abdelwahed, MPP, of ESA conducted the data review for the project, conducted the site reconnaissance, and prepared the Phase I Environmental Site Assessment report. Ms. Said-Abdelwahed has over eight years of experience in environmental site investigations, characterizations, and assessments, including Phase I Environmental Site Assessments.

The work conducted and the report written by Ms. Said-Abdelwahed was reviewed by Mr. Michael Burns. Mr. Burns has over 30 years of experience in environmental site investigations, characterizations, and assessments, including Environmental Site Assessments.

Ms. Said-Abdelwahed declares that, to the best of her professional knowledge and belief, she meets the definition of Environmental Professional as defined in 40 CFR §312.10. Mr. Burns declares that, to the best of his professional knowledge and belief, he meets the definition of Environmental Professional as defined in 40 CFR §312.10.

Ms. Said-Abdelwahed has the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of this property. With the assistance of Mr. Burns, she has developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Principal Analyst/Reviewer:

Arabesque Said-Abdelwahed, MPP

Senior Reviewer:

Michael G. Burns, PG #4532

SECTION 9
References

ASTM, 2013, E1527-13 *Standard Practice for Environmental Site Assessments: Phase 1 Environmental Assessment Process.*

City of Corona, 2004, *City of Corona General Plan.* March 17.

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_____, 2017. *GeoSearch Environmental Lien Keith 1220-Zone Potable Water Tank, Corona, Riverside County, California 92881*. July 25.

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_____, 2017. *GeoPlus Oil & Gas Report, Keith 1220-Zone Potable Water Tank, Corona, Riverside County, California 92881, Order #: 90773,* July 24.

_____, 2017. *GeoPlus Water Well Report, Keith 1220-Zone Potable Water Tank, Corona, Riverside County, California 92881, Order #: 90773,* July 24.

_____, 2017. *GeoPlus Physical Setting Maps, Keith 1220-Zone Potable Water Tank, Corona, Riverside County, California 92881, Order #: 90773,* July 24.

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APPENDIX A

GeoSearch Regulatory Records Database Report

GeoSearch

On time. On target. In touch.™

E RecSearch Report

Satellite view

Target Property:

Keith 1220-Zone Potable Water Tank
Corona, Riverside County, California 92881

Prepared For:

Environmental Science Assoc-Irvine

Order #: 90773
Job #: 197270
Project #: D150788.01 Task 7
Date: 07/24/2017

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Unlocatable Report . . . . . See Attachment

Zip Report . . . . . See Attachment

Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquiries Rule (40 CFR §312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR §312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

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Target Property Summary

Target Property Information

Keith 1220-Zone Potable Water Tank
Corona, California 92881

Coordinates
Area centroid (-117.54057, 33.8196916)
1,188 feet above sea level

USGS Quadrangle
Corona South, CA

Geographic Coverage Information

County/Parish: Riverside (CA)
ZipCode(s):
Corona CA: 92881, 92883

Radon
* Target property is located in Radon Zone 2.
Zone 2 areas have a predicted average indoor radon screening level between 2 and 4 pCi/L (picocuries per liter).

Database Summary

FEDERAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSCA	0	0	TP/AP
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	TP/AP
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	TP/AP
RCRA SITES WITH CONTROLS	RCRASC	0	0	TP/AP
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAGR09	0	0	0.1250
RESOURCE CONSERVATION & RECOVERY ACT - NON-GENERATOR	RCRANGR09	0	0	0.1250
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - NON-CORRACTS TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM	SEMS	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM ARCHIVED SITE INVENTORY	SEMSARCH	0	0	0.5000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - SUBJECT TO CORRECTIVE ACTION FACILITIES	RCRASUBC	0	0	1.0000

SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	TP/AP
BIENNIAL REPORTING SYSTEM	BRS	0	0	TP/AP
CERCLIS LIENS	SFLIENS	0	0	TP/AP
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
EPA DOCKET DATA	DOCKETS	0	0	TP/AP
ENFORCEMENT AND COMPLIANCE HISTORY INFORMATION	ECHOR09	0	0	TP/AP
FACILITY REGISTRY SYSTEM	FRSCA	0	0	TP/AP

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR09	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	0	0	TP/AP
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDESR09	0	0	TP/AP
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	TP/AP
PERMIT COMPLIANCE SYSTEM	PCSR09	0	0	TP/AP
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	TP/AP
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	TP/AP
TOXICS RELEASE INVENTORY	TRI	0	0	TP/AP
ALTERNATIVE FUELING STATIONS	ALTFUELS	0	0	0.2500
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
MINE SAFETY AND HEALTH ADMINISTRATION MASTER INDEX FILE	MSHA	0	0	0.2500
MINERAL RESOURCE DATA SYSTEM	MRDS	0	0	0.2500
OPEN DUMP INVENTORY	ODI	0	0	0.5000
SURFACE MINING CONTROL AND RECLAMATION ACT SITES	SMCRA	0	0	0.5000
URANIUM MILL TAILINGS RADIATION CONTROL ACT SITES	USUMTRCA	0	0	0.5000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMER MILITARY NIKE MISSILE SITES	NMS	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.0000
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM	FUSRAP	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000
SUB-TOTAL		0	0	

Database Summary

STATE (CA) LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
DTSC DEED RESTRICTIONS	DTSCDR	0	0	TP/AP
ABOVE GROUND STORAGE TANKS	ABST	0	0	0.2500
HISTORICAL UNDERGROUND STORAGE TANKS	HISTUST	0	0	0.2500
STATEWIDE ENVIRONMENTAL EVALUATION AND PLANNING SYSTEM	SWEEPS	0	0	0.2500
UNDERGROUND STORAGE TANKS	USTCUPA	0	0	0.2500
CALSITES DATABASE	CALSITES	0	0	0.5000
GEOTRACKER CLEANUP SITES	CLEANUPSITES	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS	LUST	0	0	0.5000
SOLID WASTE INFORMATION SYSTEM SITES	SWIS	0	0	0.5000
VOLUNTARY CLEANUP PROGRAM	VCP	0	0	0.5000
ENVIROSTOR CLEANUP SITES	ENVIROSTOR	1	0	1.0000
ENVIROSTOR PERMITTED AND CORRECTIVE ACTION SITES	ENVIROSTORPCA	0	0	1.0000

SUB-TOTAL		1	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM	CHMIRS	0	0	TP/AP
CLANDESTINE DRUG LABS	CDL	0	0	TP/AP
EMISSIONS INVENTORY DATA	EMI	0	0	TP/AP
HAZARDOUS WASTE TANNER SUMMARY	HWTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FACILITIES	NPDES	0	0	TP/AP
RECORDED ENVIRONMENTAL CLEANUP LIENS	LIENS	0	0	TP/AP
REGISTERED WASTE TIRE HAULERS	WTHAULERS	0	0	TP/AP
CALIFORNIA MEDICAL WASTE MANAGEMENT PROGRAM FACILITY LIST	MWMP	0	0	0.2500
DTSC REGISTERED HAZARDOUS WASTE TRANSPORTERS	DTSCHWT	0	0	0.2500
DRY CLEANER FACILITIES	CLEANER	0	0	0.2500
SPILLS, LEAKS, INVESTIGATION & CLEANUP RECOVERY LISTING	SLIC	0	0	0.2500
CORTESE LIST	CORTESE	0	0	0.5000
EXPEDITED REMOVAL ACTION PROGRAM SITES	ERAP	0	0	0.5000
LISTING OF CERTIFIED DROPOFF, COLLECTION, AND COMMUNITY SERVICE PROGRAMS	DROP	0	0	0.5000

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
LISTING OF CERTIFIED PROCESSORS	PROC	0	0	0.5000
NO FURTHER ACTION DETERMINATION	NFA	0	0	0.5000
RECYCLING CENTERS	SWRCY	0	0	0.5000
REFERRED TO ANOTHER LOCAL OR STATE AGENCY	REF	0	0	0.5000
SCHOOL PROPERTY EVALUATIONS	SCH	0	0	0.5000
SITES NEEDING FURTHER EVALUATION	NFE	0	0	0.5000
WASTE MANAGEMENT UNIT DATABASE	WMUDS	0	0	0.5000
TOXIC PITS CLEANUP ACT SITES	TOXPITS	0	0	1.0000

SUB-TOTAL		0	0	

Database Summary

LOCAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
SUTTER COUNTY ABOVEGROUND STORAGE TANKS	SCAST	0	0	0.2500
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
RIVERSIDE COUNTY GENERATOR LIST	RCGL	0	0	0.1250
RIVERSIDE COUNTY DISCLOSURE LIST	RCDL	0	0	0.2500
RIVERSIDE COUNTY MEDICAL WASTE FACILITIES	RCMW	0	0	0.2500
RIVERSIDE COUNTY UNDERGROUND STORAGE TANK SITES	RCUST	0	0	0.2500
RIVERSIDE COUNTY UNDERGROUND STORAGE TANKS CLEANUP SITES	RCLUST	0	0	0.5000
SUB-TOTAL		0	0	

TRIBAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR09	0	0	0.2500
ILLEGAL DUMP SITES ON THE TORRES MARTINEZ RESERVATION	TORRESDUMPSITES	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR09	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	

TOTAL		1	0	

Database Radius Summary

FEDERAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRSAFS	0.0200	0	NS	NS	NS	NS	NS	0
BRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	0.0200	0	NS	NS	NS	NS	NS	0
EC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
ECHOR09	0.0200	0	NS	NS	NS	NS	NS	0
ERNSCA	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
FRSCA	0.0200	0	NS	NS	NS	NS	NS	0
HMIRSR09	0.0200	0	NS	NS	NS	NS	NS	0
ICIS	0.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	0.0200	0	NS	NS	NS	NS	NS	0
LUCIS	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
MLTS	0.0200	0	NS	NS	NS	NS	NS	0
NPDESR09	0.0200	0	NS	NS	NS	NS	NS	0
PADS	0.0200	0	NS	NS	NS	NS	NS	0
PCSR09	0.0200	0	NS	NS	NS	NS	NS	0
RCRASC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SFLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SSTS	0.0200	0	NS	NS	NS	NS	NS	0
TRI	0.0200	0	NS	NS	NS	NS	NS	0
TSCA	0.0200	0	NS	NS	NS	NS	NS	0
RCRAGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
RCRANGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
ALTFUELS	0.2500	0	0	0	NS	NS	NS	0
HISTPST	0.2500	0	0	0	NS	NS	NS	0
MRDS	0.2500	0	0	0	NS	NS	NS	0
MSHA	0.2500	0	0	0	NS	NS	NS	0
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
DNPL	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NLRRCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODI	0.5000	0	0	0	0	NS	NS	0
RCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMSARCH	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SMCRA	0.5000	0	0	0	0	NS	NS	0

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USUMTRCA	0.5000	0	0	0	0	NS	NS	0
DOD	1.0000	0	0	0	0	0	NS	0
FUDS	1.0000	0	0	0	0	0	NS	0
FUSRAP	1.0000	0	0	0	0	0	NS	0
NLRRCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
NMS	1.0000	0	0	0	0	0	NS	0
NPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
PNPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRASUBC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RODS	1.0000	0	0	0	0	0	NS	0

SUB-TOTAL		0	0	0	0	0	0	0

STATE (CA) LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
CDL	0.0200	0	NS	NS	NS	NS	NS	0
CHMIRS	0.0200	0	NS	NS	NS	NS	NS	0
DTSCDR	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
EMI	0.0200	0	NS	NS	NS	NS	NS	0
HWTS	0.0200	0	NS	NS	NS	NS	NS	0
LIENS	0.0200	0	NS	NS	NS	NS	NS	0
NPDES	0.0200	0	NS	NS	NS	NS	NS	0
WTHAULERS	0.0200	0	NS	NS	NS	NS	NS	0
ABST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
CLEANER	0.2500	0	0	0	NS	NS	NS	0
DTSCHWT	0.2500	0	0	0	NS	NS	NS	0
HISTUST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
MWMP	0.2500	0	0	0	NS	NS	NS	0
SLIC	0.2500	0	0	0	NS	NS	NS	0
SWEEPS	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
USTCUPA	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
CALSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CLEANUPSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CORTESE	0.5000	0	0	0	0	NS	NS	0
DROP	0.5000	0	0	0	0	NS	NS	0
ERAP	0.5000	0	0	0	0	NS	NS	0
LUST	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NFA	0.5000	0	0	0	0	NS	NS	0
NFE	0.5000	0	0	0	0	NS	NS	0
PROC	0.5000	0	0	0	0	NS	NS	0
REF	0.5000	0	0	0	0	NS	NS	0
SCH	0.5000	0	0	0	0	NS	NS	0
SWIS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SWRCY	0.5000	0	0	0	0	NS	NS	0
VCP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
WMUDS	0.5000	0	0	0	0	NS	NS	0
ENVIROSTOR	**1.0000**	**0**	**0**	**0**	**0**	**1**	**NS**	**1**
ENVIROSTORPCA	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
TOXPITS	1.0000	0	0	0	0	0	NS	0

Database Radius Summary

SUB-TOTAL		*0*	*0*	*0*	*0*	*1*	*0*	*1*

Database Radius Summary

LOCAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
RCGL	0.1250	0	0	NS	NS	NS	NS	0
RCDL	0.2500	0	0	0	NS	NS	NS	0
RCMW	0.2500	0	0	0	NS	NS	NS	0
RCUST	0.2500	0	0	0	NS	NS	NS	0
SCAST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
RCLUST	0.5000	0	0	0	0	NS	NS	0

SUB-TOTAL		0	0	0	0	0	0	0

Database Radius Summary

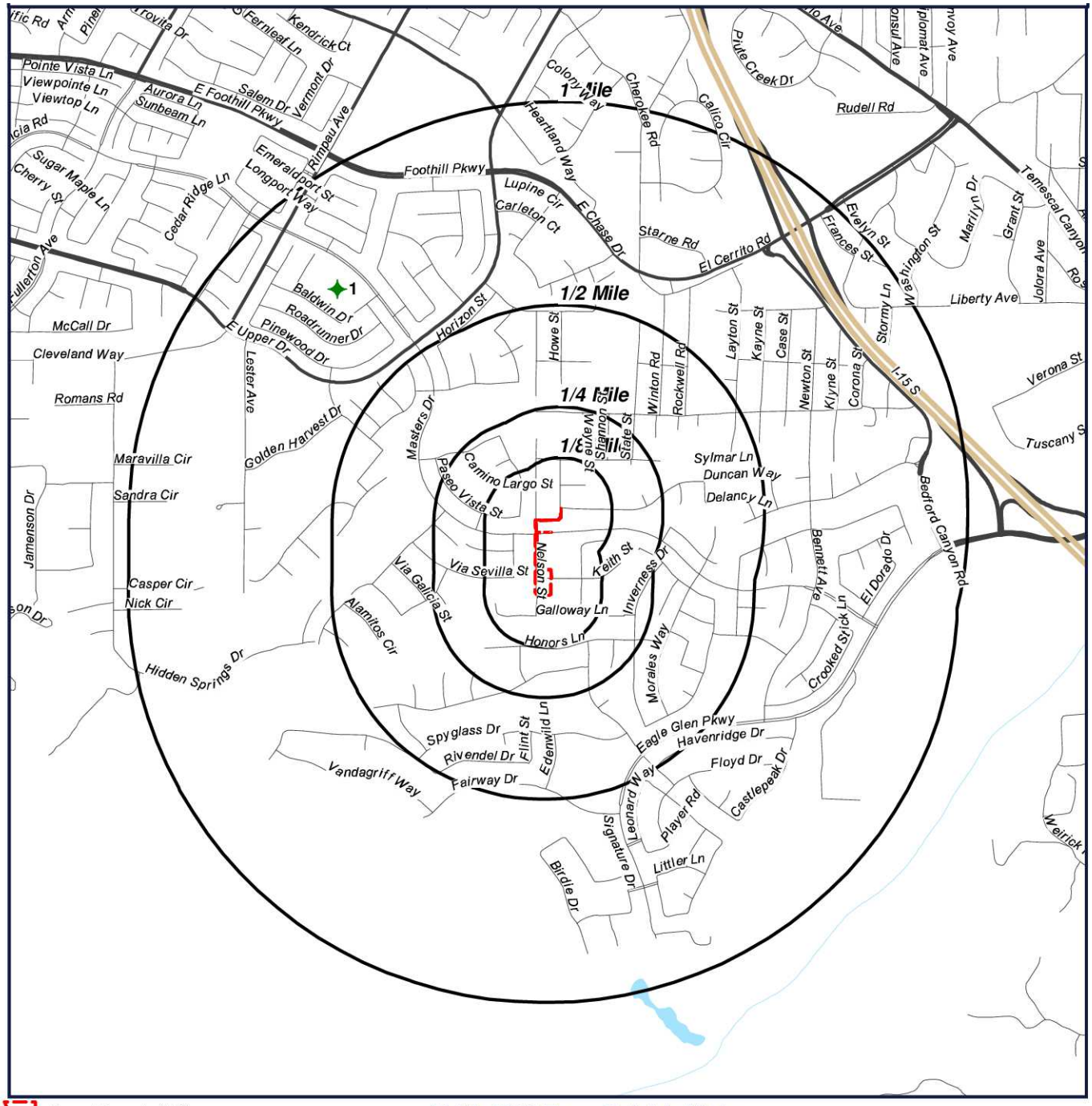
TRIBAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR09	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
LUSTR09	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODINDIAN	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
TORRESDUMPSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
INDIANRES	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	0	0	0	1	0	1

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



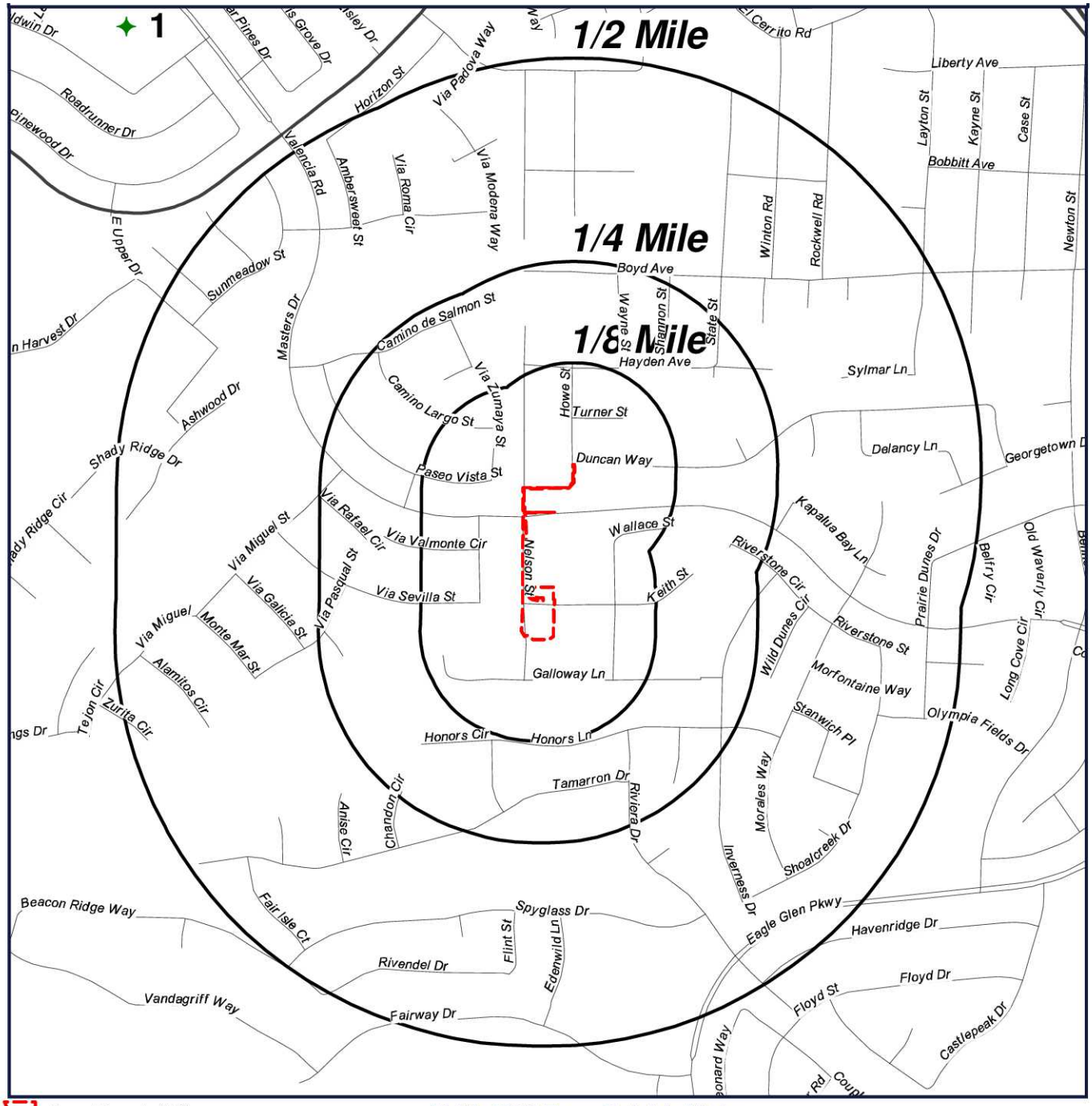
Target Property (TP)

ENVIROSTOR

Keith 1220-Zone Potable Water Tank
Corona, California
92881

[Click here to access Satellite view]

Radius Map 2



Click here to access Satellite view

Ortho Map

Target Property (TP)
ENVIROSTOR

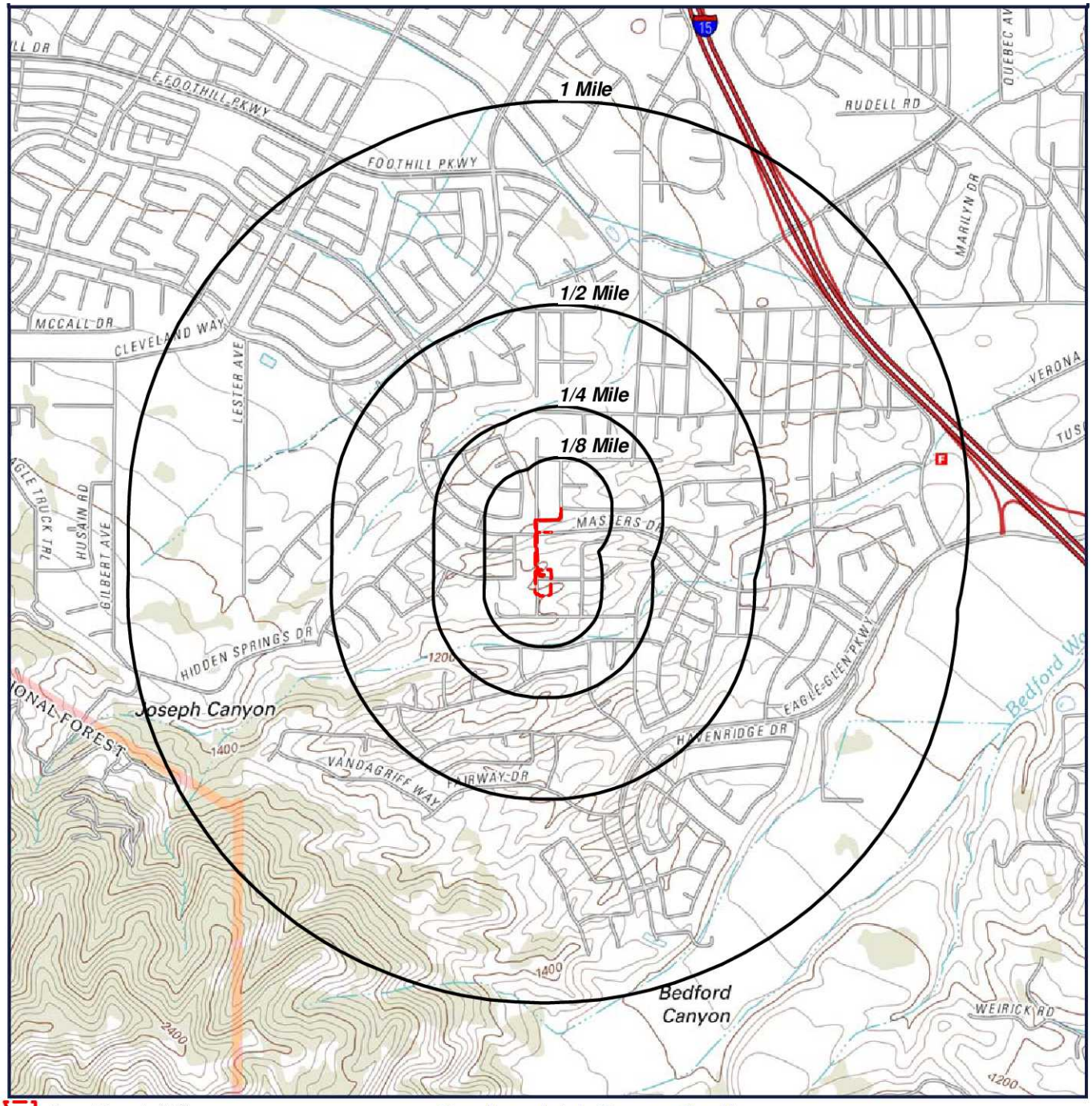
Quadrangle(s): Corona South
Keith 1220-Zone Potable Water Tank
Corona, California
92881

N
W E
S

0' 500' 1000' 1500'
SCALE: 1" = 1000'

[Click here to access Satellite view]

Topographic Map



Target Property (TP)

Quadrangle(s): Corona South
Source: USGS, 03/30/2012
Keith 1220-Zone Potable Water Tank
Corona, California
92881

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
1	***ENVIROSTOR***	***33010020***	***Higher (1,196 ft.)***	***0.76 mi. NW (4013 ft.)***	***ORANGE ELEMENTARY***	***1350 VALENCIA ROAD, CORONA, CA 92881***	*20*

Elevation Summary

Elevations are collected from the USGS 3D Elevation Program 1/3 arc-second (approximately 10 meters) layer hosted at the NGTOC. .

Target Property Elevation: 1188 ft.

*NOTE: Standard environmental records are displayed in **bold**.*

EQUAL/HIGHER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
1	ENVIROSTOR	1,196 ft.	ORANGE ELEMENTARY	1350 VALENCIA ROAD, CORONA, CA 92881	20

LOWER ELEVATION

No Records Found

MAP ID# 1

Distance from Property: 0.76 mi. (4,013 ft.) NW
Elevation: 1,196 ft. (Higher than TP)

SITE INFORMATION

ID #: **33010020** ASSESSOR'S PARCEL #: **108280022**
URL LINK: CLICK HERE
NAME: **ORANGE ELEMENTARY**
ADDRESS: **1350 VALENCIA ROAD**
CORONA, CA 92881
COUNTY: **RIVERSIDE**
SITE SIZE (ACRES): **10**
LEAD AGENCY: **DTSC**
DTSC PROJECT MANAGER: **KAMILI SIGLOWIDE**
DTSC SUPERVISOR: **CHARLES RIDENOUR**
DTSC DIVISION BRANCH: **SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **SCHOOL INVESTIGATION**
SITE TYPE DESCRIPTION
SCHOOL: IDENTIFIES PROPOSED AND EXISTING SCHOOL SITES THAT ARE BEING EVALUATED BY DTSC FOR POSSIBLE HAZARDOUS MATERIALS CONTAMINATION. SCHOOL SITES ARE FURTHER DEFINED AS "CLEANUP" (REMEDIAL ACTIONS OCCURRED) OR "EVALUATION" (NO REMEDIAL ACTION OCCURRED) BASED ON COMPLETED ACTIVITIES. ALL PROPOSED SCHOOL SITES THAT WILL RECEIVE STATE FUNDING FOR ACQUISITION OR CONSTRUCTION ARE REQUIRED TO GO THROUGH A RIGOROUS ENVIRONMENTAL REVIEW AND CLEANUP PROCESS UNDER DTSC'S OVERSIGHT.
DTSC's CURRENT INVOLVEMENT AT SITE (as of 04/24/2001)
NO FURTHER ACTION - IDENTIFIES COMPLETED SITES WHERE DTSC DETERMINED AFTER INVESTIGATION, GENERALLY A PEA (AN INITIAL ASSESSMENT), THAT THE PROPERTY DOES NOT POSE A PROBLEM TO PUBLIC HEALTH OR THE ENVIRONMENT
PAST USE/S THAT CAUSED THE CONTAMINATION
AGRICULTURAL - ROW CROPS
CONFIRMED CONTAMINANTS OF CONCERN
NONESPECIFIED - NONE SPECIFIED

Back to Report Summary

Unlocated Sites Summary

This list contains sites that could not be mapped due to limited or incomplete address information.

No Records Found

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 10/20/14

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BRS Biennial Reporting System

VERSION DATE: 12/31/11

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 07/01/16

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

DOCKETS EPA Docket Data

VERSION DATE: 12/22/05

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 08/03/15

This database includes site locations where Engineering and/or Institutional Controls have been identified as part

of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.

ECHOR09 Enforcement and Compliance History Information

VERSION DATE: 02/08/17

The EPA's Enforcement and Compliance History Online (ECHO) database, provides compliance and enforcement information for facilities nationwide. This database includes facilities regulated as Clean Air Act stationary sources, Clean Water Act direct dischargers, Resource Conservation and Recovery Act hazardous waste handlers, Safe Drinking Water Act public water systems along with other data, such as Toxics Release Inventory releases.

ERNSCA Emergency Response Notification System

VERSION DATE: 04/17/17

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FRSCA Facility Registry System

VERSION DATE: 04/04/17

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

HMIRSR09 Hazardous Materials Incident Reporting System

VERSION DATE: 11/29/16

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ICIS Integrated Compliance Information System (formerly DOCKETS)

VERSION DATE: 03/25/17

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System

VERSION DATE: 01/21/17

In 2006, the Integrated Compliance Information System (ICIS) - National Pollutant Discharge Elimination System (NPDES) became the NPDES national system of record for select states, tribes and territories. ICIS-NPDES is an information management system maintained by the United States Environmental Protection Agency's Office of Compliance to track permit compliance and enforcement status of facilities regulated by the NPDES under the Clean Water Act. ICIS-NPDES is designed to support the NPDES program at the state, regional, and national levels.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System

VERSION DATE: 02/12/16

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements.

NPDESR09 National Pollutant Discharge Elimination System

VERSION DATE: 04/01/07

Information in this database is extracted from the Water Permit Compliance System (PCS) database which is used by United States Environmental Protection Agency to track surface water permits issued under the Clean Water Act. This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa. The NPDES database was collected from December 2002 until April 2007. Refer to the PCS and/or ICIS-NPDES database as source of current data.

PADS PCB Activity Database System

VERSION DATE: 07/01/14

The PCB Activity Database System (PADS) is used by the United States Environmental Protection Agency to monitor the activities of polychlorinated biphenyls (PCB) handlers.

PCSR09 Permit Compliance System

VERSION DATE: 08/01/12

The Permit Compliance System is used in tracking enforcement status and permit compliance of facilities controlled by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act and is maintained by the United States Environmental Protection Agency's Office of Compliance. PCS is designed to support the NPDES program at the state, regional, and national levels. This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa. PCS has been modernized, and no longer exists. National Pollutant Discharge Elimination System (ICIS-NPDES) data can now be found in Integrated Compliance Information System (ICIS).

RCRASC RCRA Sites with Controls

VERSION DATE: 02/23/16

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with institutional controls in place.

SFLIENS CERCLIS Liens

VERSION DATE: 06/08/12

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States Environmental Protection Agency has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties. This database contains those CERCLIS sites where the Lien on Property action is complete.

SSTS Section Seven Tracking System

VERSION DATE: 12/08/14

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new establishments and records

pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. ("Production" includes formulation, packaging, repackaging, and relabeling.)

TRI Toxics Release Inventory

VERSION DATE: 12/31/15

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal and tribal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/31/06

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and importer site.

RCRAGR09 Resource Conservation & Recovery Act - Generator

VERSION DATE: 06/12/17

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities currently generating hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

RCRANGR09 Resource Conservation & Recovery Act - Non-Generator

VERSION DATE: 06/12/17

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities classified as non-

generators. Non-Generators do not presently generate hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ALTFUELS Alternative Fueling Stations

VERSION DATE: 05/16/17

Nationwide list of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE).

HISTPST Historical Gas Stations

VERSION DATE: NR

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

MRDS Mineral Resource Data System

VERSION DATE: 03/15/16

MRDS (Mineral Resource Data System) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS.

MSHA Mine Safety and Health Administration Master Index File

VERSION DATE: 02/03/17

The Mine dataset lists all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970. It includes such information as the current status of each mine (Active, Abandoned, NonProducing, etc.), the current owner and operating company, commodity codes and physical attributes of the mine. Mine ID is the unique key for this data. This information is provided by the United States Department of Labor - Mine Safety and Health Administration (MSHA).

BF Brownfields Management System

VERSION DATE: 05/10/17

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities

in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment. This database included tribal brownfield sites.

DNPL Delisted National Priorities List

VERSION DATE: 05/30/17

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 06/12/17

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An "open dump" is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

RCRAT Resource Conservation & Recovery Act - Non-CORRACTS Treatment, Storage & Disposal Facilities

VERSION DATE: 06/12/17

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities recognized as hazardous waste treatment, storage, and disposal sites (TSD).

SEMS Superfund Enterprise Management System

VERSION DATE: 05/30/17

The U.S. Environmental Protections Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response,

Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

SEMSARCH Superfund Enterprise Management System Archived Site Inventory

VERSION DATE: 05/30/17

The Superfund Enterprise Management System Archive listing (SEMS-ARCHIVE) has replaced the CERCLIS NFRAP reporting system in 2015. This listing reflect sites that have been assessed and no further remediation is planned and is of no further interest under the Superfund program.

SMCRA Surface Mining Control and Reclamation Act Sites

VERSION DATE: 02/22/17

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

USUMTRCA Uranium Mill Tailings Radiation Control Act Sites

VERSION DATE: 03/04/17

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

DOD Department of Defense Sites

VERSION DATE: 06/21/10

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

FUDS Formerly Used Defense Sites

VERSION DATE: 06/01/15

The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the U.S. Army Corps of Engineers (USACE), the boundaries/polygon data are based on preliminary findings and not

all properties currently have polygon data available. DISCLAIMER: This data represents the results of data collection/processing for a specific USACE activity and is in no way to be considered comprehensive or to be used in any legal or official capacity as presented on this site. While the USACE has made a reasonable effort to insure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation or guaranty, either expressed or implied, as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein. For additional information on Formerly Used Defense Sites please contact the USACE Public Affairs Office at (202) 528-4285.

FUSRAP Formerly Utilized Sites Remedial Action Program

VERSION DATE: 03/04/17

The U.S. DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 06/12/17

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NMS Former Military Nike Missile Sites

VERSION DATE: 12/01/84

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites.
During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

NPL National Priorities List

VERSION DATE: 05/30/17

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

PNPL Proposed National Priorities List

VERSION DATE: 05/30/17

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 06/12/17

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with corrective action activity.

RCRASUBC Resource Conservation & Recovery Act - Subject to Corrective Action Facilities

VERSION DATE: 06/12/17

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities subject to corrective actions.

RODS Record of Decision System

VERSION DATE: 01/23/12

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

CDL Clandestine Drug Labs

VERSION DATE: 09/30/15

The California Department of Toxic Substance Control (DTSC) provides this listing of illegal drug laboratories. Pursuant to Section 25354.5 of the California Health and Safety Code, DTSC conducts emergency removal actions at clandestine drug labs at the request of State and local law enforcement agencies. DTSC's contractors typically remove hazardous substances that may pose an immediate threat to public health and the environment while the enforcement officials are on scene. During the emergency removal actions, contractors remove and properly dispose of contaminated lab equipment, chemicals used to make the illegal drugs (usually methamphetamine), lab chemical wastes, and other grossly contaminated materials. DTSC does not perform additional assessment work beyond standard emergency removal actions and makes no further determination regarding the need for future cleanup work at the emergency removal location. The reported location information may or may not include the actual location of the illegal drug lab. The DTSC does not guarantee the accuracy of the address or location information or the condition of the location listed.

CHMIRS California Hazardous Material Incident Report System

VERSION DATE: 05/09/17

The California Hazardous Material Incident Report System database is provided by the California Emergency Management Agency. This database contains accidental or spill release information from reported hazardous material incidents since 1993.

DTSCDR DTSC Deed Restrictions

VERSION DATE: 05/04/17

The California Department of Toxic Substances Control (DTSC) maintains this listing of sites with deed restrictions. According to the DTSC, restricted land use indicates whether the site or area within the site has an environmental restriction recorded and/or other institutional control preventing certain types of land use or activities. The land use restrictions listed under the site management requirements are only an abbreviated summary of the land use restrictions, and may not encompass all restrictions and notification requirements placed on a property. For complete land use restriction information please contact the DTSC to review associated Land Use Restriction documents.

EMI Emissions Inventory Data

VERSION DATE: 12/31/15

The Air Resources Board's Emissions Inventory Database contains criteria pollutant data and toxic data on facilities throughout the state of California for the 2012-2000 inventory years.

HWTS Hazardous Waste Tanner Summary

VERSION DATE: 07/11/16

This data is prepared from information extracted from copies of hazardous waste manifests received each year by the Department of Toxic Substances Control. The Hazardous Waste Summary Report (Tanner Report) currently includes manifest data from the 1993 through the 2013 reporting years.

LIENS Recorded Environmental Cleanup Liens

VERSION DATE: 02/28/17

The California Department of Toxic Substance Control (DTSC) maintains this listing of liens placed upon real properties. A lien is utilized by the DTSC to obtain reimbursement from responsible parties for costs associated with the remediation of contaminated properties.

NPDES National Pollutant Discharge Elimination System Facilities

VERSION DATE: 03/30/17

This State Water Resources Control Board database contains NPDES permits, including stormwater general permit enrollees that are active, inactive and historical. NPDES permits are required from all facilities that discharge their wastewater from a point source into a waterbody.

WTHAULERS Registered Waste Tire Haulers

VERSION DATE: 03/03/17

This listing of registered waste tire haulers is maintained by the California Integrated Waste Management Board.

ABST Above Ground Storage Tanks

VERSION DATE: 12/01/07

This database contains aboveground storage tank facilities registered with the California State Water Resources Control Board (SWRCB). Since 2006, tanks were required to contain a minimum (even as cumulative) of 1320 gallons to be in the program. As of January 1, 2008, the SWRCB no longer maintains a list of registered aboveground storage tanks, due to effective Assembly Bill No. 1130 (Laird) of the Aboveground Petroleum Storage Act (APSA). This Bill authorized the Certified Unified Program Agencies to implement and administer the requirements of the APSA.

CLEANER Dry Cleaner Facilities

VERSION DATE: 05/16/17

This database, created by accessing the California Department of Toxic Substances Control's (DTSC) Hazardous Waste Tracking System, includes dry cleaner facilities that have registered EPA identification numbers. These facilities are categorized with one of the following NAICS Codes: 81231 or 81232. This database may also include facilities other than dry cleaners who also register with these same NAICS Codes. Not all companies report their NAICS/SIC Codes to the DTSC and therefore this database may exclude registered dry cleaner facilities with incomplete classification information.

DTSCHWT DTSC Registered Hazardous Waste Transporters

VERSION DATE: 10/30/14

The Department of Toxic Substances Control provides this list of Registered Hazardous Waste Transporters.

HISTUST Historical Underground Storage Tanks

VERSION DATE: 12/31/87

The Hazardous Substance Storage Container Database is a historical list of Underground Storage Tank sites, compiled from tank survey and registration information collected at one time between 1984 and 1987 by the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials.

MWMP California Medical Waste Management Program Facility List

VERSION DATE: 05/25/17

To protect the public and the environment from potential infectious exposure to disease causing agents, the Medical Waste Management Program (MWMP), in the Environmental Management Branch of the California Department of Public Health, regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities, medical waste transporters, and medical waste transfer stations.

SLIC Spills, Leaks, Investigation & Cleanup Recovery Listing

VERSION DATE: 06/16/08

These records are maintained by the California Regional Water Quality Control Board (RWQCB). This list includes contaminated sites that impact groundwater or have the potential to impact ground water. Please refer to CLEANUPSITES database as source of current data.

SWEEPS Statewide Environmental Evaluation and Planning System

VERSION DATE: 10/01/94

The Statewide Environmental Evaluation and Planning System (SWEEPS) contains a historical listing of active and inactive underground storage tank locations from the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials. Refer to CUPA listing for source of current data.

USTCUPA Underground Storage Tanks

VERSION DATE: 02/03/17

An underground storage tank is an individual tank or group of tanks that store hazardous substances. Underground storage tanks are completely or considerably below the ground surface. This database contains UST permit data submitted from the Certified Unified Program Agencies (CUPA) directly to the State Water Resources Control Board. CUPA's are local agencies that have been certified by the California EPA to implement state environmental programs within the local agency's jurisdiction.

CALSITES CALSITES Database

VERSION DATE: 05/01/04

This historical database was maintained by the Department of Toxic Substance Control for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

CLEANUPSITES GeoTracker Cleanup Sites

VERSION DATE: 05/03/17

This GeoTracker Cleanup Sites database is maintained by the California Regional Water Quality Control Board (RWQCB). The database contains contaminated sites that impact groundwater or have the potential to impact ground water, including spills, investigations, cleanup recoveries and reported leaking underground storage tank incidents.

CORTESE Cortese List

VERSION DATE: 11/02/02

This historical listing includes hazardous waste and substances sites designated by the State Water Resources Control Board (LUST), the Integrated Waste Board (SWIS), and the Department of Toxic Substance Control (CALSITES). The Cortese List was utilized by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites.

DROP Listing of Certified Dropoff, Collection, and Community Service Programs

VERSION DATE: 02/17/17

Listing of Certified Dropoff, Collection, and Community Service Programs (non-buyback) operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

ERAP Expedited Removal Action Program Sites

VERSION DATE: 11/04/16

The Expedited Remedial Action Program is a pilot project administered by the Department of Toxic Substances Control's Site Mitigation and Brownfields Reuse Program to promote the cleanup of up to 30 hazardous

substance release sites. ERAP provides significant incentives for redevelopment of contaminated properties by promoting cleanups based on the planned land use, by providing a covenant not to sue, and by outlining a fair and equitable liability scheme.

LUST Leaking Underground Storage Tanks

VERSION DATE: 06/16/08

This database is maintained by the State Water Resources Control Board. LUST records contain an inventory of reported leaking underground storage tank incidents. Please refer to the CLEANUPSITES database as source of current data.

NFA No Further Action Determination

VERSION DATE: 07/01/05

The NFA listing contains properties at which the Department of Toxic Substance Control has made a clear determination that the property does not pose a problem to the environment or to public health.

NFE Sites Needing Further Evaluation

VERSION DATE: 07/01/05

The NFE listing contains properties that the Department of Toxic Substance Control suspects with possible contamination. These are unconfirmed contaminated properties that need further assessment.

PROC Listing of Certified Processors

VERSION DATE: 05/10/17

Listing of Certified Processors that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

REF Referred to Another Local or State Agency

VERSION DATE: 07/01/05

The REF listing contains properties where contamination has not been confirmed and which were determined as not requiring direct Department of Toxic Substance Control Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

SCH School Property Evaluations

VERSION DATE: 07/01/05

The SCH listing contains proposed and existing school sites that are being evaluated by Department of Toxic Substance Control for possible hazardous materials contamination. In some cases, these properties may be

listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

SWIS Solid Waste Information System Sites

VERSION DATE: 05/01/17

The Solid Waste Information System (SWIS) database includes information on solid waste facilities, operations, and disposal sites located in California. This database is maintained by the California Department of Resources Recycling and Recovery.

SWRCY Recycling Centers

VERSION DATE: 06/19/17

Listing of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

VCP Voluntary Cleanup Program

VERSION DATE: 09/14/04

The California Voluntary Cleanup program provides regulatory oversight by the Department of Toxic Substance Control (DTSC) to project proponents desiring to address mitigation activities at sites which have lower health and/or environmental risk than sites which are currently being addressed by DTSC. Refer to Envirostor database as source of current data.

WMUDS Waste Management Unit Database

VERSION DATE: 01/01/00

The Waste Management Unit Database System tracks and inventories waste management units. CCR Title 27 contains criteria stating that Waste Management Units are classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. Water Code Section 13273.1 requires that operators submit a water quality solid waste assessment test (SWAT) report to address leak status. The WMUDS was last updated by the State Water Resources control board in 2000.

ENVIROSTOR EnviroStor Cleanup Sites

VERSION DATE: 05/03/17

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database of cleanup sites contains the following: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. Sites where DTSC has made a "No Action Required" determination are not included in this

database, as these sites had assessments that revealed no evidence of recognized environmental conditions in connection with the property.

ENVIROSTORPCA EnviroStor Permitted and Corrective Action Sites

VERSION DATE: 05/03/17

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database contains detailed information on hazardous waste permitted and corrective action facilities. Investigation and cleanup activities at hazardous waste facilities (either Resource Conservation and Recovery Act (RCRA) or State-only) that either were eligible for a permit or received a permit are called "corrective action." These facilities treated stored, disposed and/or transferred hazardous waste.

TOXPITS Toxic Pits Cleanup Act Sites

VERSION DATE: 07/01/95

Toxic Pits are sites with possible contamination of hazardous substances where cleanup is necessary. This listing is no longer updated by the State Water Resources Control Board.

Environmental Records Definitions - LOCAL

RCGL Riverside County Generator List

VERSION DATE: 05/13/14

This listing of permitted facilities that create hazardous waste is maintained by the Riverside County Department of Environmental Health.

RCDL Riverside County Disclosure List

VERSION DATE: 05/13/14

This listing of permitted facilities that handle hazardous materials is maintained by the Riverside County Department of Environmental Health.

RCMW Riverside County Medical Waste Facilities

VERSION DATE: 09/07/11

This listing of medical waste facilities is provided by the Riverside County Department of Environmental Health.

RCUST Riverside County Underground Storage Tank Sites

VERSION DATE: 11/23/15

This listing of permitted underground storage tanks is maintained by the Riverside County Department of Environmental Health.

SCAST Sutter County Aboveground Storage Tanks

VERSION DATE: 06/12/17

The Sutter County's Environmental Health Division provides this listing of aboveground storage tanks.

RCLUST Riverside County Underground Storage Tanks Cleanup Sites

VERSION DATE: 05/13/14

This listing of facilities with unauthorized release (leaking tanks) is maintained the Riverside County Department of Environmental Health, Local Oversight Program (LOP).

USTR09 Underground Storage Tanks On Tribal Lands

VERSION DATE: 10/06/16

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

LUSTR09 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 10/06/16

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

TORRESDUMPSITES Illegal Dump Sites on the Torres Martinez Reservation

VERSION DATE: 10/29/07

This listing of illegal dump site locations on the Torres Martinez Reservation is maintained by the United States Environmental Protection Agency, Region IX. These dump sites contain unlawfully discarded household waste such as landscaping and wood wastes with no known soil or groundwater contamination. A majority of the sites have already been cleaned up through the collaborative efforts of the EPA, The California Integrated Waste Management Board and the Torres Martinez Tribe.

INDIANRES Indian Reservations

VERSION DATE: 01/01/00

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

APPENDIX B

Historical Aerial Photographs, Topographic Maps, Fire Insurance Map, Oil & Gas Report, and City Directory

GeoSearch
On time. On target. In touch.™

Historical Aerials Package

Target Property:

Keith 1220-Zone Potable Water Tank

Corona, Riverside, California 92881

Prepared For:

Environmental Science Assoc-Irvine

Order #: 90773
Job #: 197273
Project #: D150788.01 Task 7
Date: 7/24/2017

Target Property Summary

Keith 1220-Zone Potable Water Tank

Corona, Riverside, California 92881

USGS Quadrangle: ***Corona South***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-117.539922000, 33.821673000), (-117.539818000, 33.821772000), (-117.539810000, 33.822083000), (-117.539784000, 33.822083000), (-117.539790000, 33.821767000), (-117.539900000, 33.821664000), (-117.540860000, 33.821655000), (-117.540851000, 33.821210000), (-117.540809000, 33.821236000), (-117.540205000, 33.821247000), (-117.540211000, 33.821230000), (-117.540805000, 33.821228000), (-117.540824000, 33.821211000), (-117.540807000, 33.819834000), (-117.540785000, 33.819831000), (-117.540757000, 33.819738000), (-117.540735000, 33.819705000), (-117.540678000, 33.819679000), (-117.540566000, 33.819662000), (-117.540456000, 33.819657000), (-117.540456000, 33.819708000), (-117.540735000, 33.819723000), (-117.540741000, 33.819897000), (-117.540227000, 33.819901000), (-117.540231000, 33.819679000), (-117.540209000, 33.819679000), (-117.540213000, 33.819589000), (-117.540253000, 33.819564000), (-117.540243000, 33.819515000), (-117.540217000, 33.819480000), (-117.540227000, 33.819021000), (-117.540327000, 33.818968000), (-117.540514000, 33.818968000), (-117.540676000, 33.818971000), (-117.540727000, 33.819006000), (-117.540797000, 33.819039000), (-117.540851000, 33.819021000), (-117.540911000, 33.819116000), (-117.540890000, 33.819578000), (-117.540876000, 33.821672000), (-117.540835000, 33.821673000)

Aerial Research Summary

Date	Source	Scale	Frame
2014	USDA	1" = 500'	N/A
2004	USDA	1" = 500'	N/A
06/05/2002	USGS	1" = 500'	N/A
10/03/1995	USGS	1" = 500'	N/A
08/29/1990	USGS	1" = 500'	1852-160
12/24/1980	USGS	1" = 500'	4-20
11/06/1974	USGS	1" = 500'	1-43
04/16/1966	USGS	1" = 500'	2-84
10/16/1959	ASCS	1" = 700'	PI-9
07/31/1952	USGS	1" = 700'	11-98
07/10/1948	USGS	1" = 500'	3-22
06/07/1938	ASCS	1" = 500'	45-79
1931	Fairchild	1" = 500'	343

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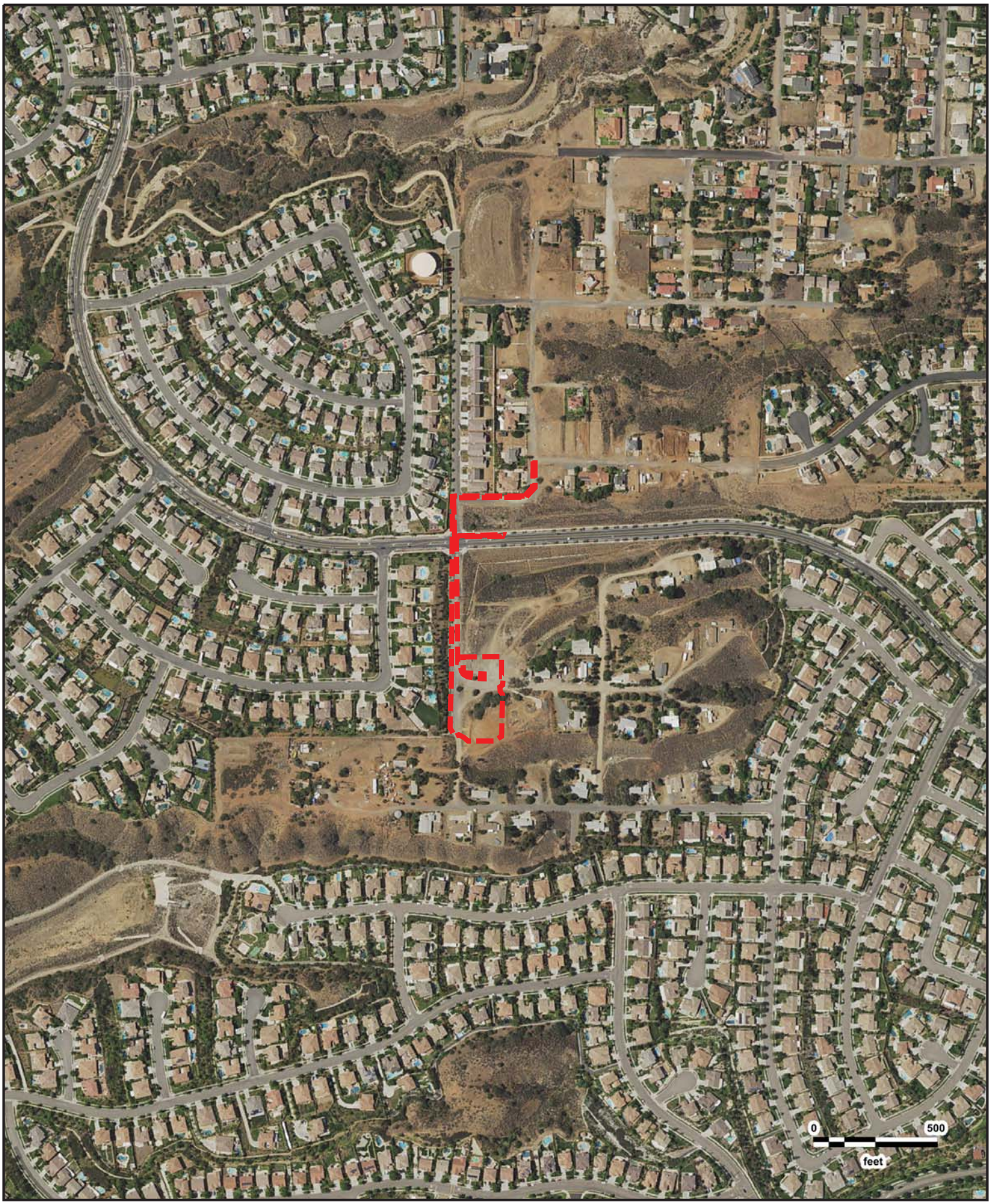

N
W E
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Keith 1220-Zone Potable Water Tank
USDA
2014

GeoSearch

JOB #: 197273 - 07/24/2017

N
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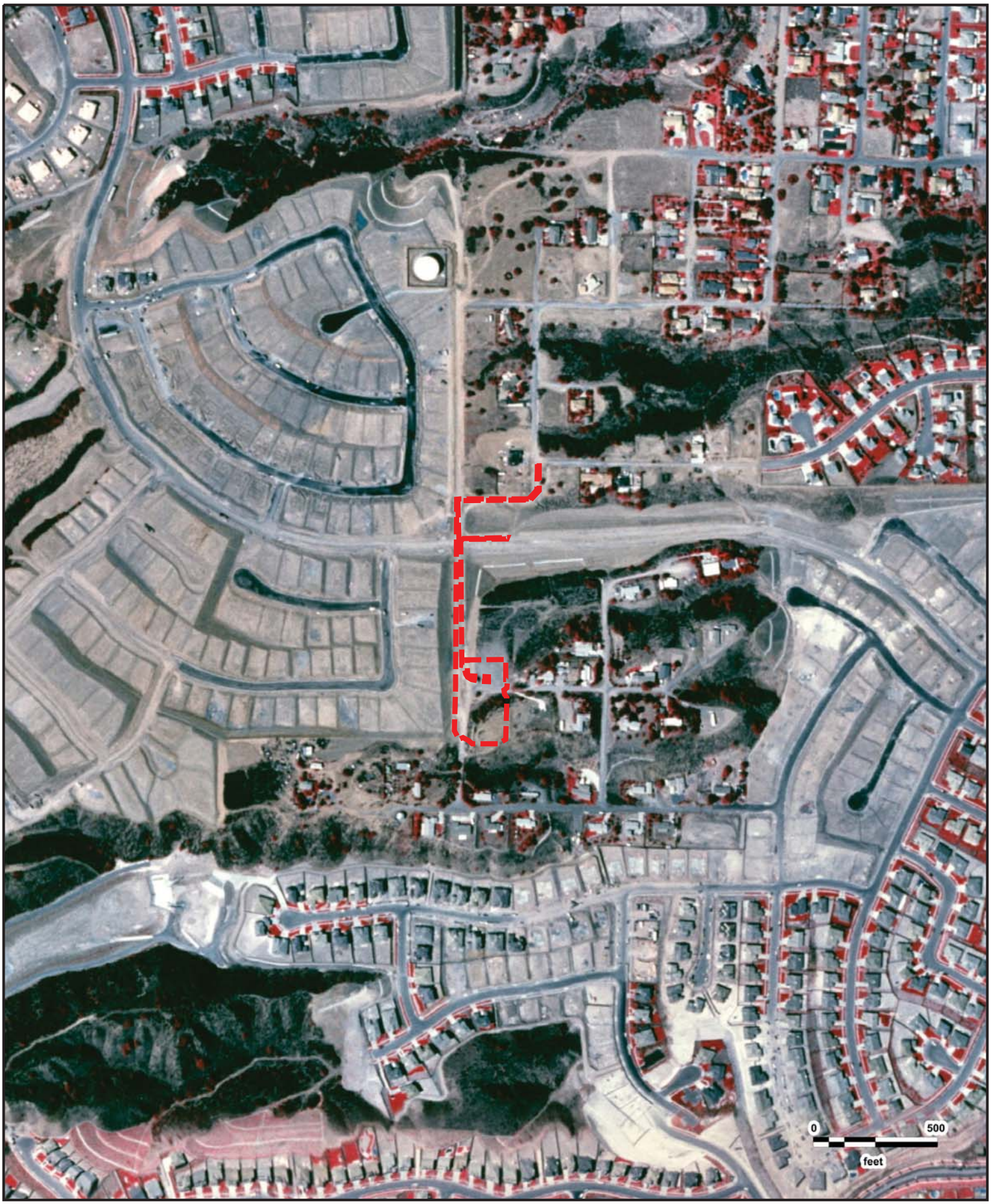
Keith 1220-Zone Potable Water Tank
USDA
2004

GeoSearch

JOB #: 197273 - 07/24/2017



N
W E
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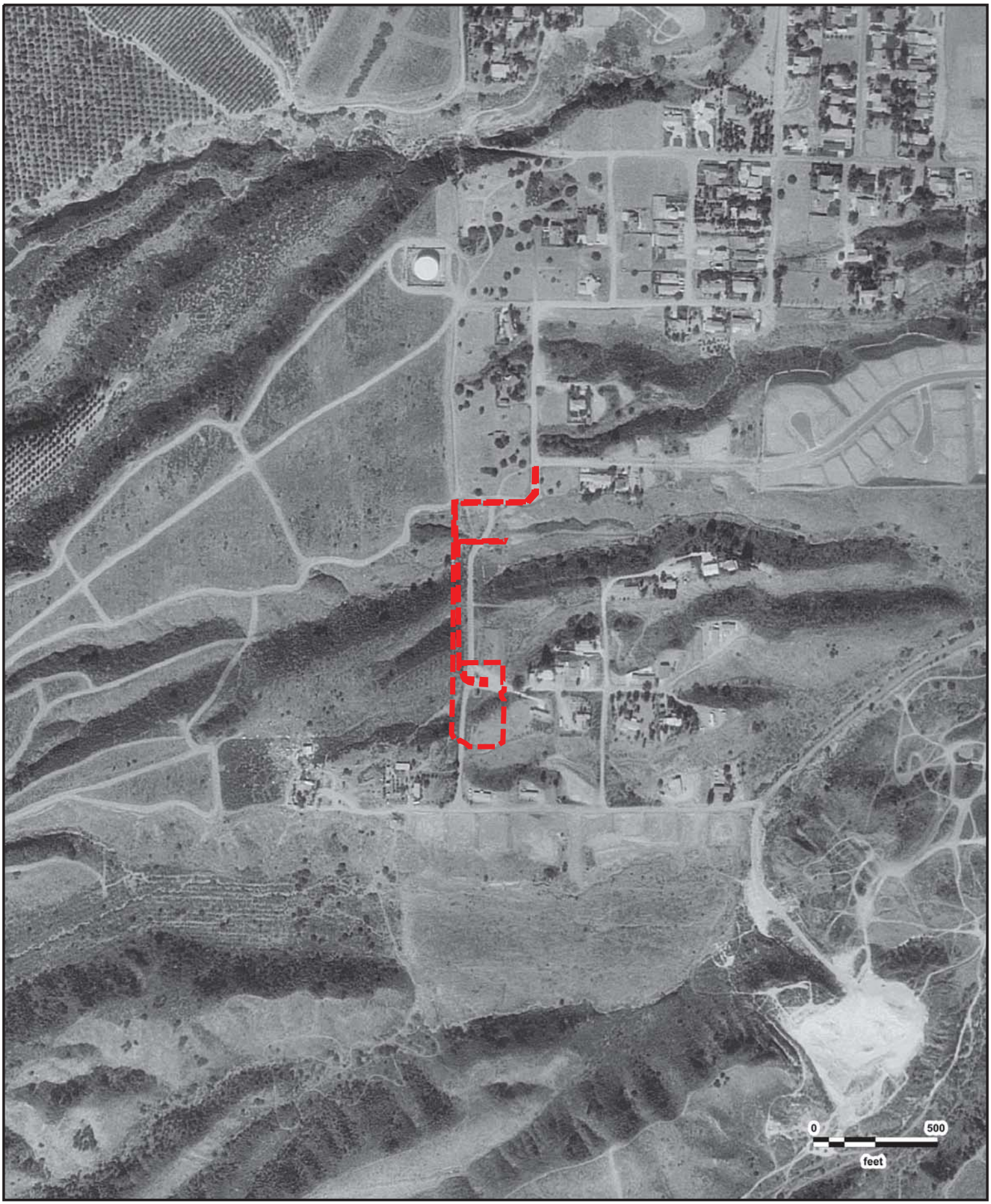
Keith 1220-Zone Potable Water Tank
USGS
06/05/2002

GeoSearch

JOB #: 197273 - 07/24/2017



N
W E
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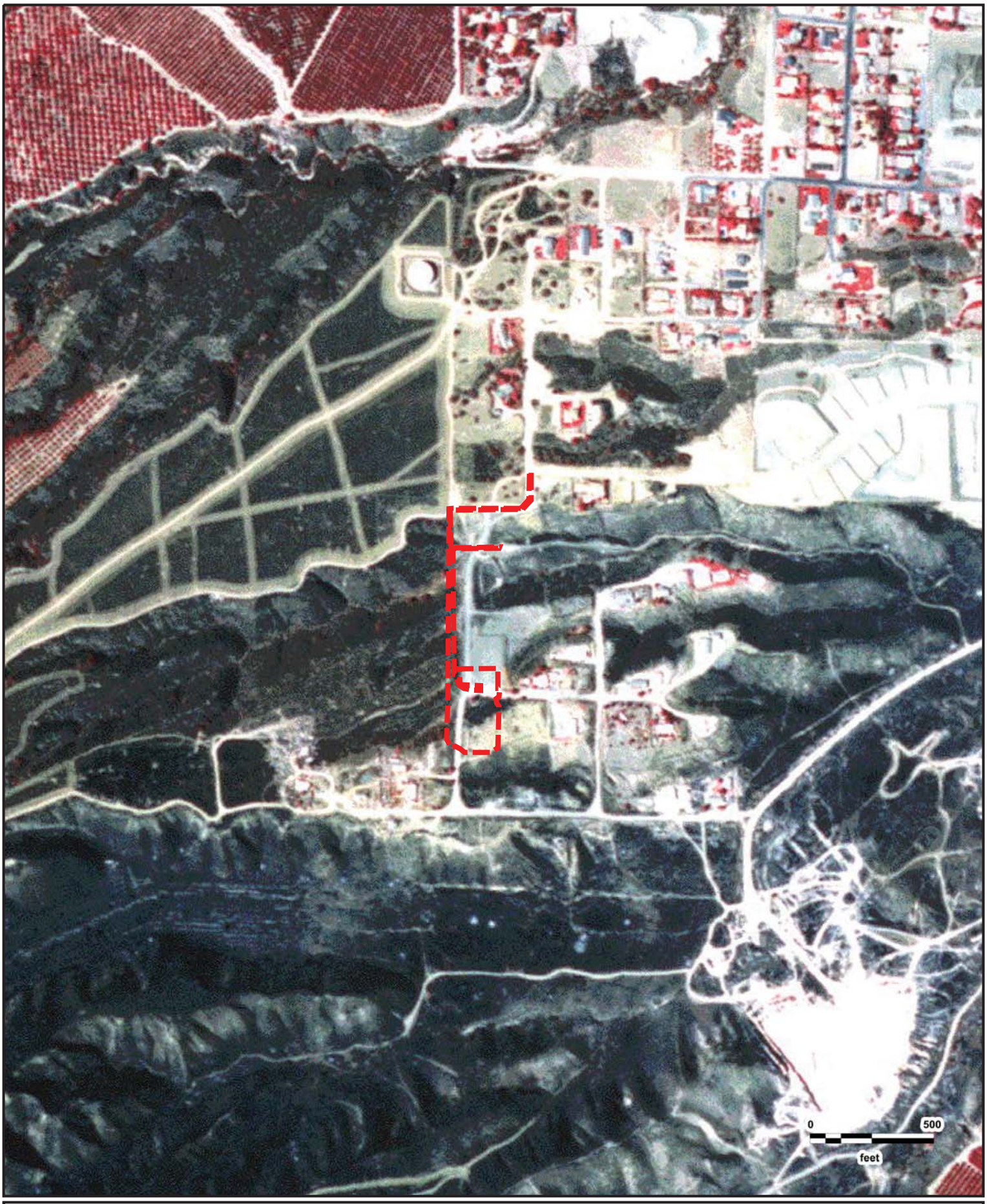
Keith 1220-Zone Potable Water Tank
USGS
10/03/1995

GeoSearch

JOB #: 197273 - 07/24/2017



N
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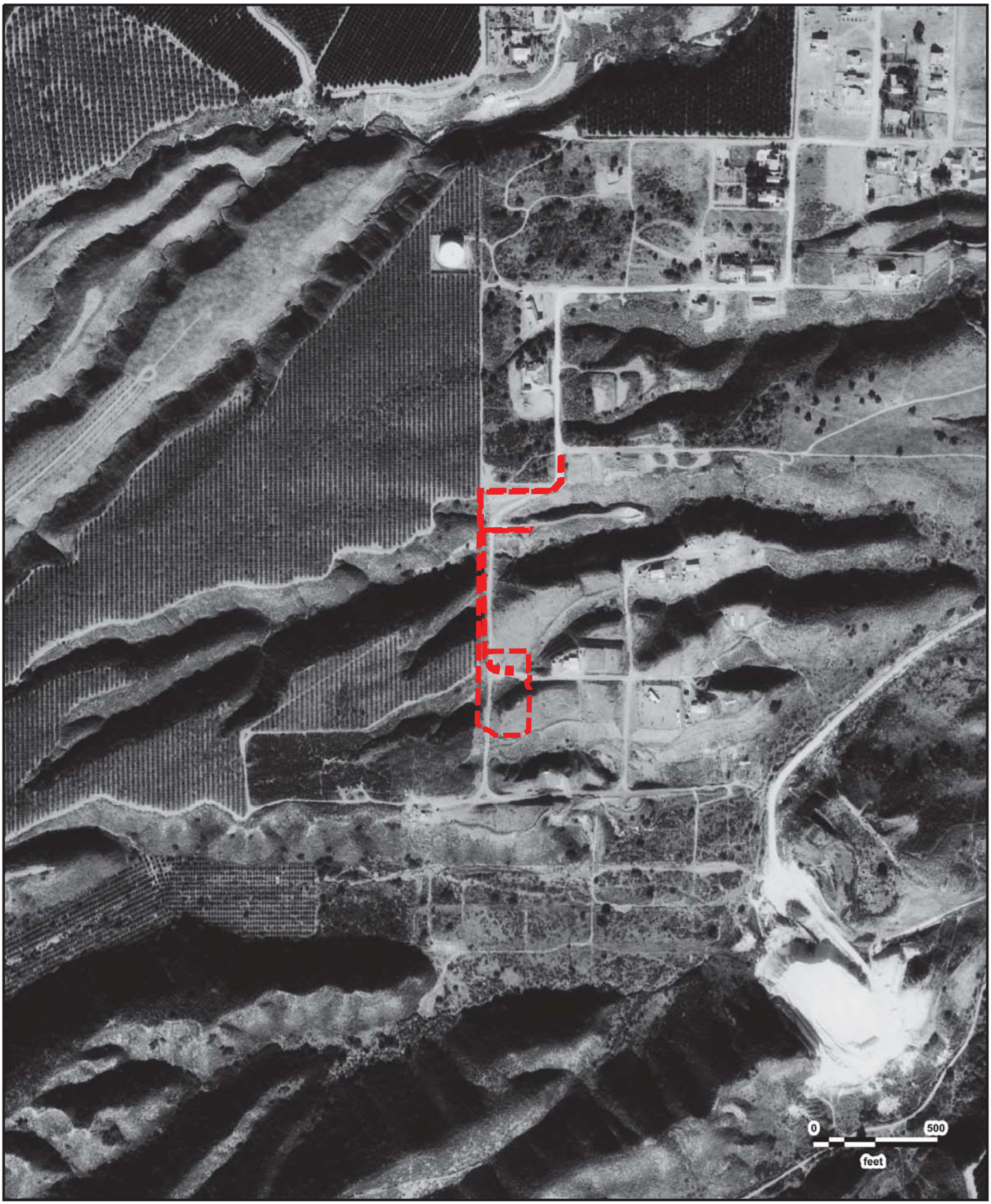
Keith 1220-Zone Potable Water Tank
USGS
08/29/1990

GeoSearch

JOB #: 197273 - 07/24/2017



N
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Keith 1220-Zone Potable Water Tank
USGS
12/24/1980

GeoSearch

JOB #: 197273 - 07/24/2017

N
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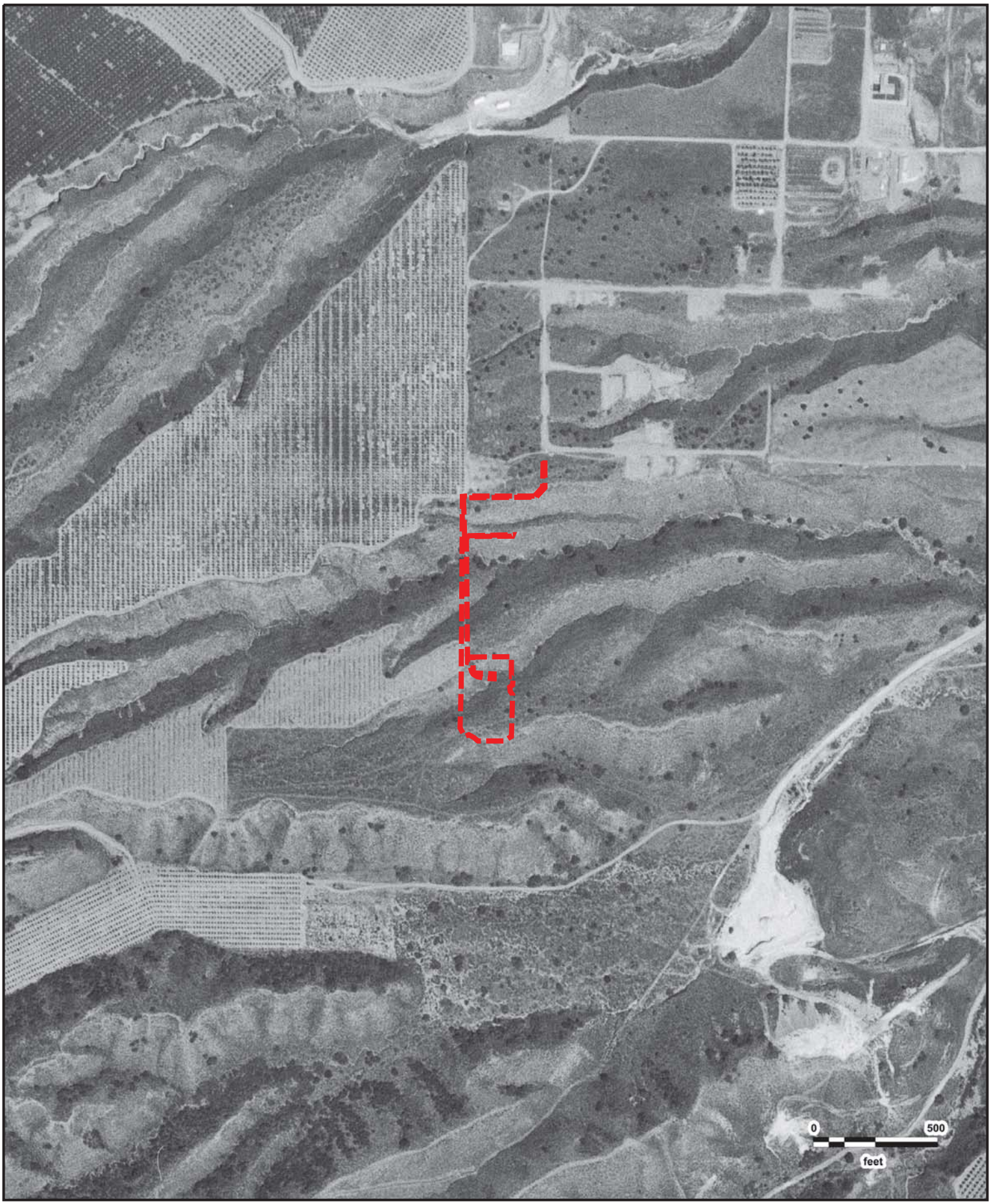
Keith 1220-Zone Potable Water Tank
USGS
11/06/1974

GeoSearch

JOB #: 197273 - 07/24/2017



N
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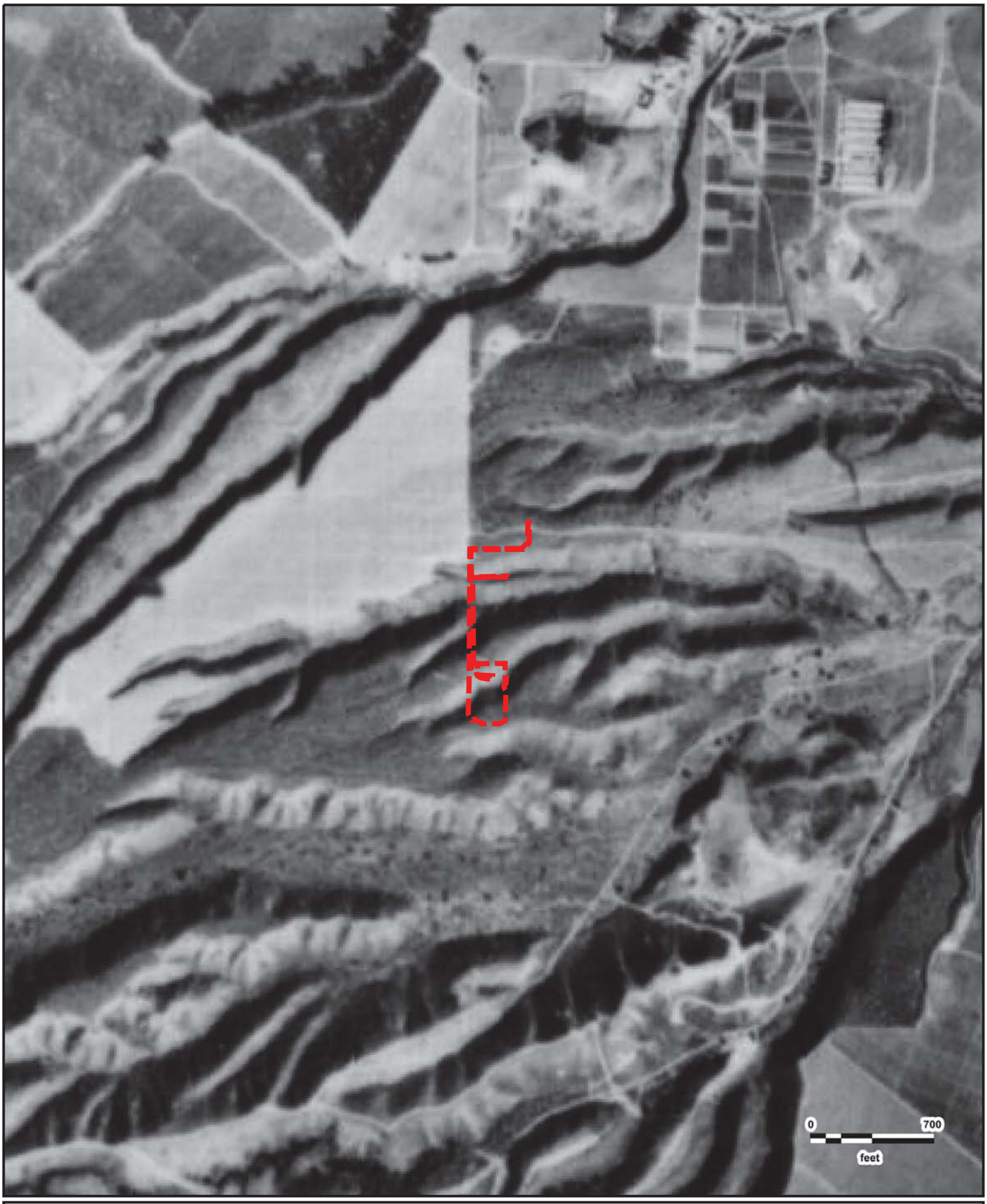
Keith 1220-Zone Potable Water Tank
USGS
04/16/1966

GeoSearch

JOB #: 197273 - 07/24/2017



N
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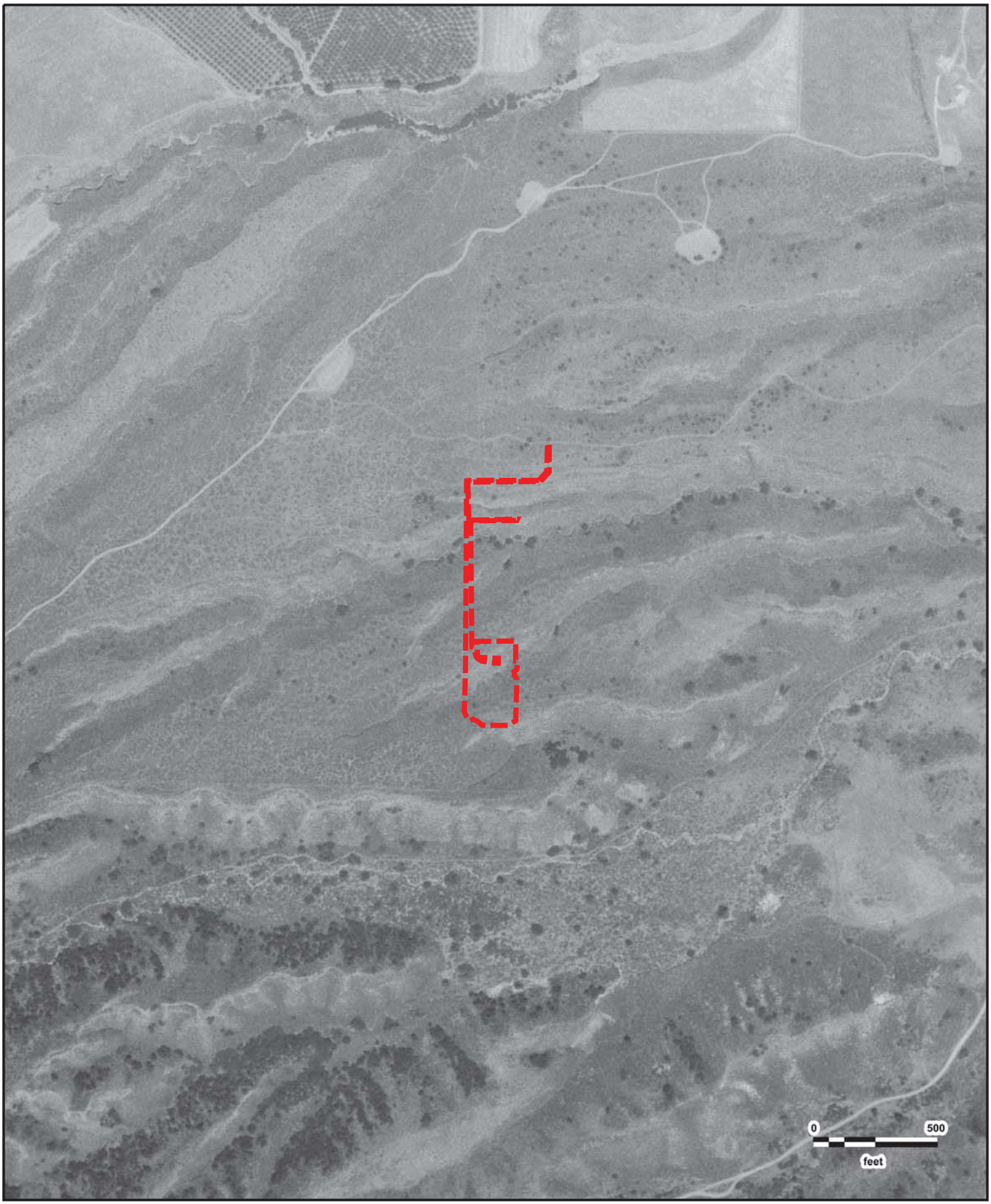
Keith 1220-Zone Potable Water Tank
ASCS
10/16/1959

GeoSearch

JOB #: 197273 - 07/24/2017



N
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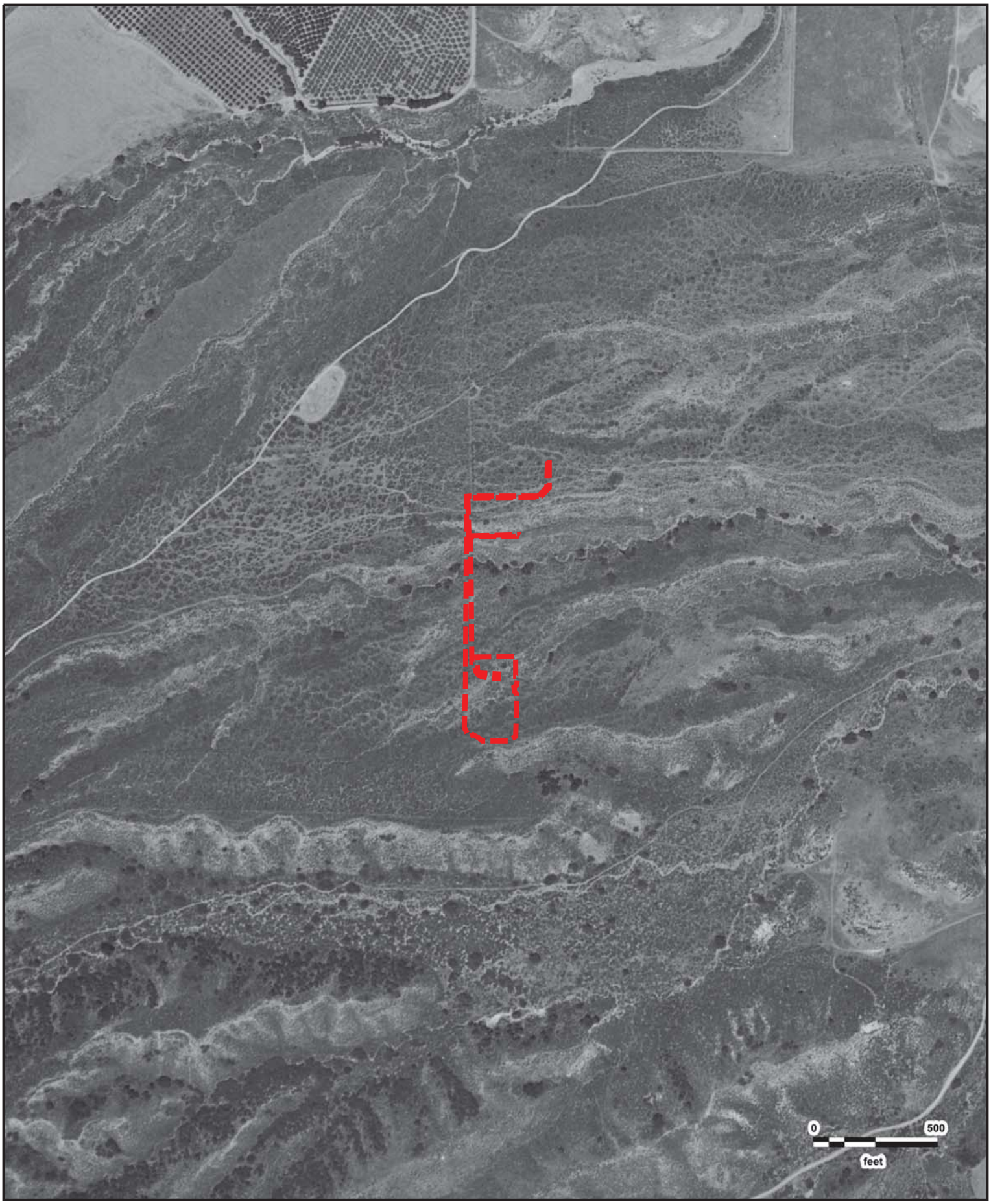
Keith 1220-Zone Potable Water Tank
USGS
07/31/1952

GeoSearch

JOB #: 197273 - 07/24/2017



N
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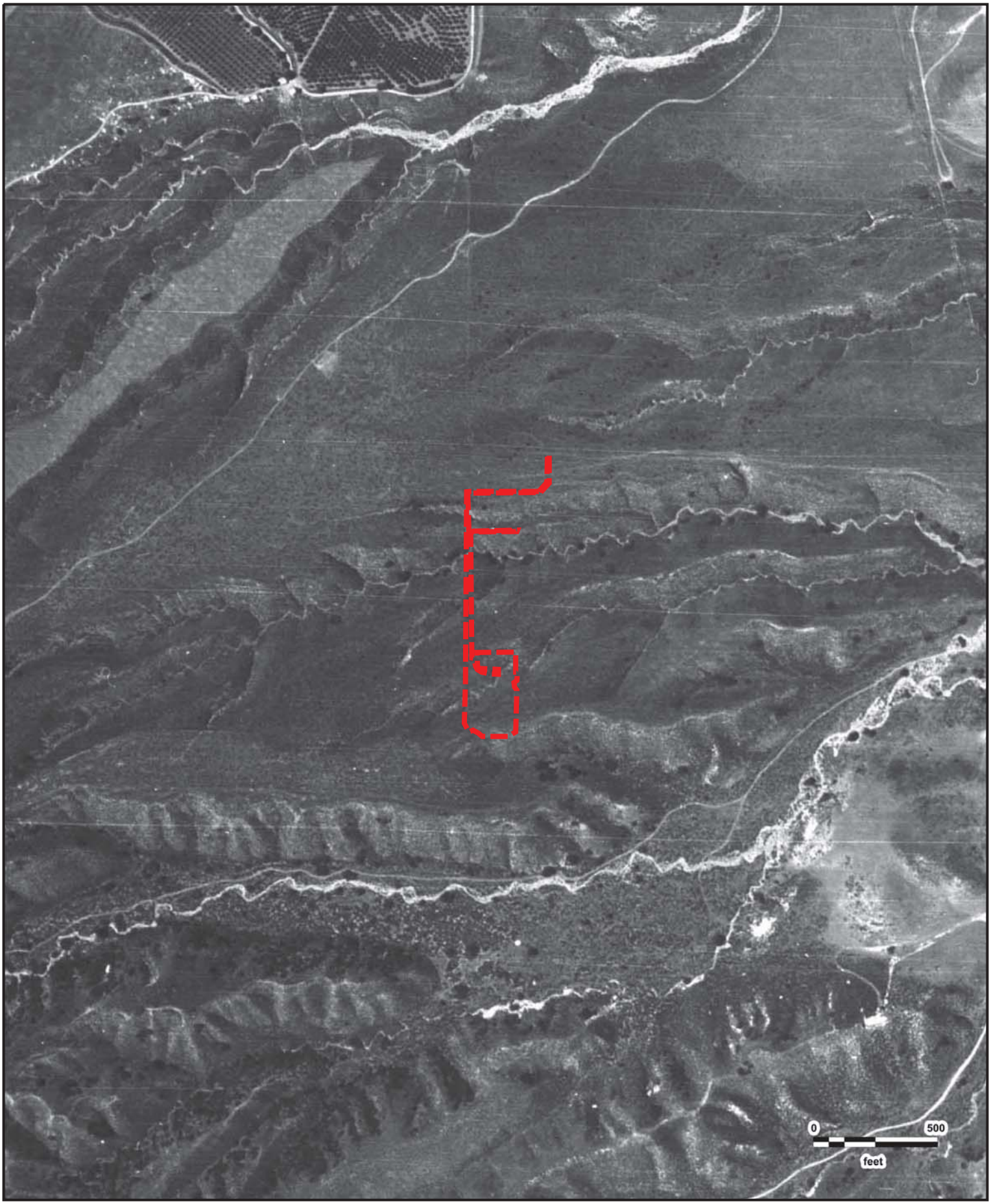
Keith 1220-Zone Potable Water Tank
USGS
07/10/1948

GeoSearch

JOB #: 197273 - 07/24/2017



N
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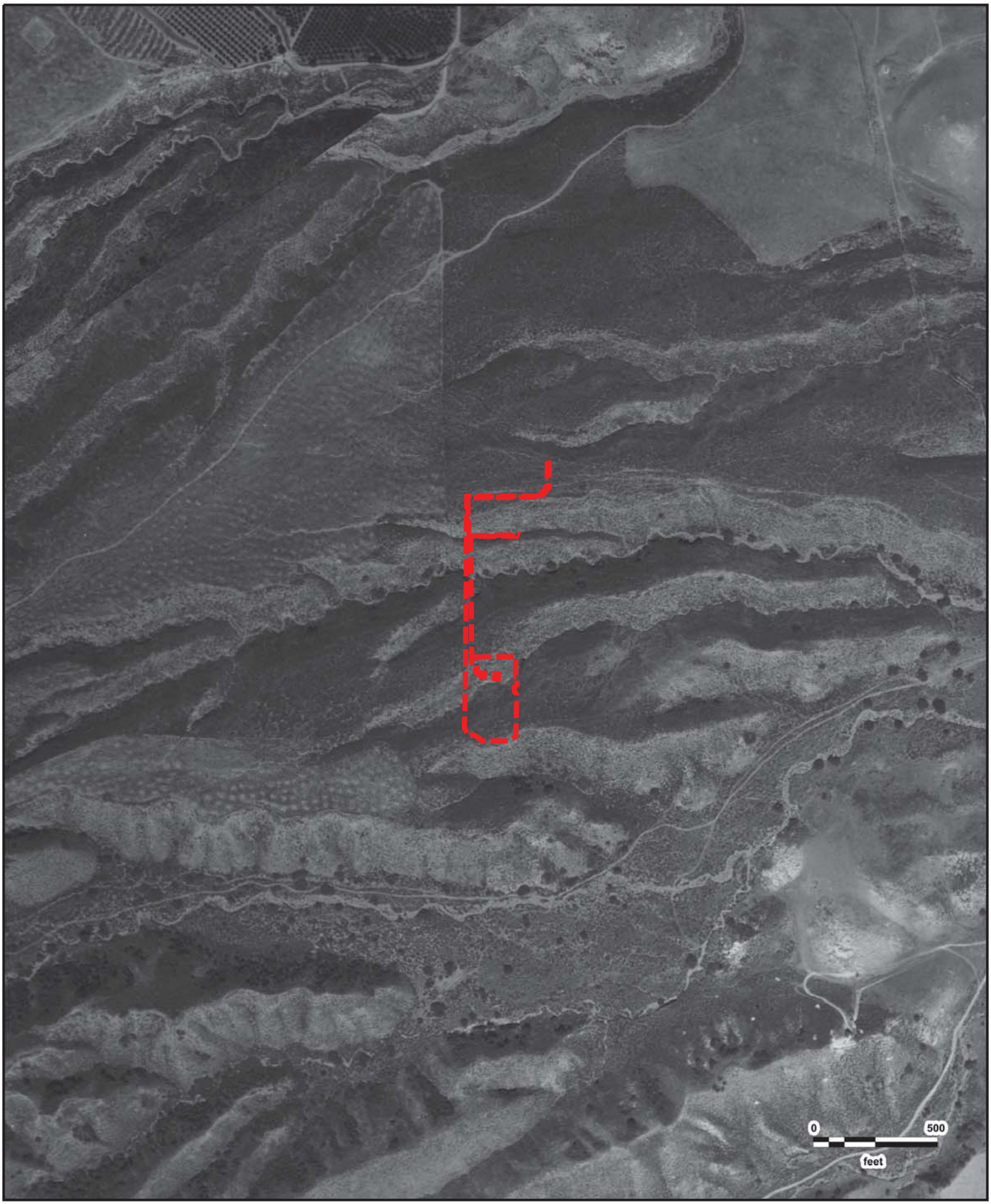
Keith 1220-Zone Potable Water Tank
ASCS
06/07/1938

GeoSearch

JOB #: 197273 - 07/24/2017



N
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Keith 1220-Zone Potable Water Tank
Fairchild
1931

GeoSearch

JOB #: 197273 - 07/24/2017

GeoSearch

On time. On target. In touch.™

Historical Topographic Maps

Target Property:

Keith 1220-Zone Potable Water Tank

Corona, Riverside, California 92881

Prepared For:

Environmental Science Assoc-Irvine

Order #: 90773

Job #: 197267

Project #: D150788.01 Task 7

Date: 7/25/2017

Target Property Summary

Keith 1220-Zone Potable Water Tank

Corona, Riverside, California 92881

USGS Quadrangle: ***Corona South***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-117.539922000, 33.821673000), (-117.539818000, 33.821772000), (-117.539810000, 33.822083000), (-117.539784000, 33.822083000), (-117.539790000, 33.821767000), (-117.539900000, 33.821664000), (-117.540860000, 33.821655000), (-117.540851000, 33.821210000), (-117.540809000, 33.821236000), (-117.540205000, 33.821247000), (-117.540211000, 33.821230000), (-117.540805000, 33.821228000), (-117.540824000, 33.821211000), (-117.540807000, 33.819834000), (-117.540785000, 33.819831000), (-117.540757000, 33.819738000), (-117.540735000, 33.819705000), (-117.540678000, 33.819679000), (-117.540566000, 33.819662000), (-117.540456000, 33.819657000), (-117.540456000, 33.819708000), (-117.540735000, 33.819723000), (-117.540741000, 33.819897000), (-117.540227000, 33.819901000), (-117.540231000, 33.819679000), (-117.540209000, 33.819679000), (-117.540213000, 33.819589000), (-117.540253000, 33.819564000), (-117.540243000, 33.819515000), (-117.540217000, 33.819480000), (-117.540227000, 33.819021000), (-117.540327000, 33.818968000), (-117.540514000, 33.818968000), (-117.540676000, 33.818971000), (-117.540727000, 33.819006000), (-117.540797000, 33.819039000), (-117.540851000, 33.819021000), (-117.540911000, 33.819116000), (-117.540890000, 33.819578000), (-117.540876000, 33.821672000), (-117.540835000, 33.821673000)

Topographic Map Summary

Date	Quadrangle	Scale
2012	Corona South, CA	1" = 2000'
1997	Corona South, CA	1" = 2000'
1967 PHOTOREVISED 1988	Corona South, CA	1" = 2000'
1967 PHOTOREVISED 1982	Corona South, CA	1" = 2000'
1967 PHOTOREVISED 1973	Corona South, CA	1" = 2000'
1967	Corona South, CA	1" = 2000'
1954	Corona South, CA	1" = 2000'
1943	Corona, CA	1" = 5208'
1902	Corona, CA	1" = 10420'

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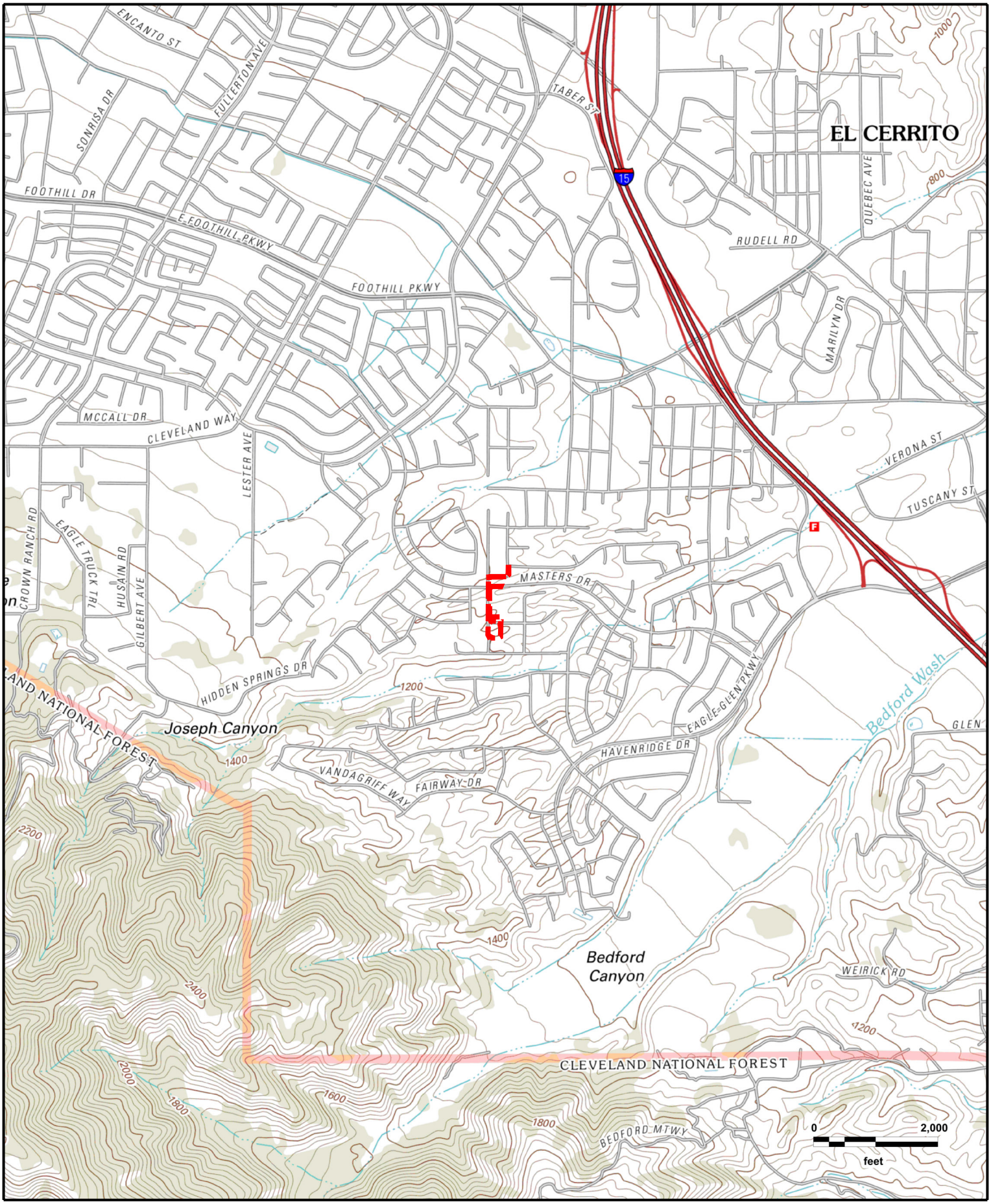

N
W E
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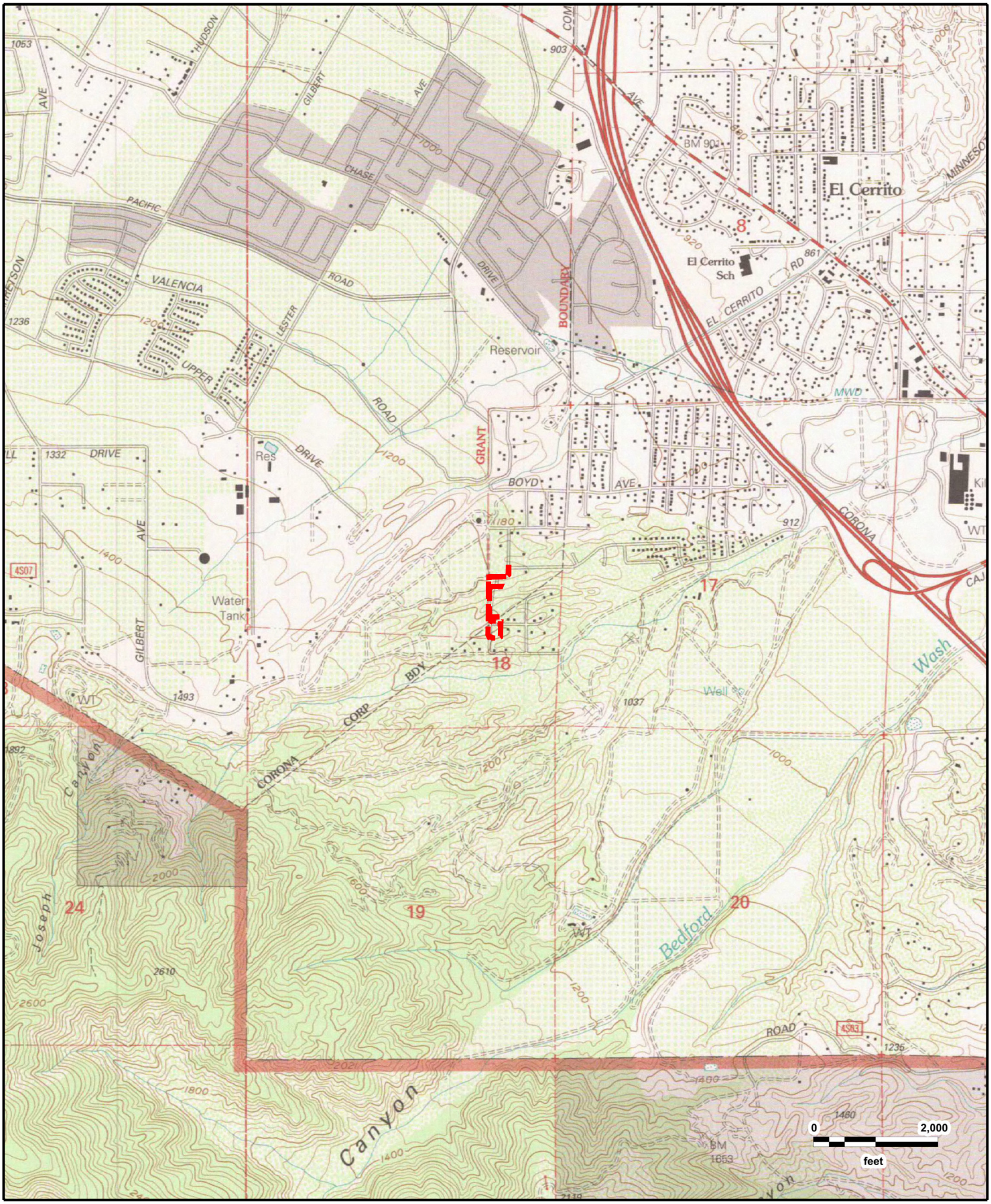
Keith 1220-Zone Potable Water Tank
Corona South, CA (2012)

GeoSearch

JOB #: 197267 - 07/25/2017



N
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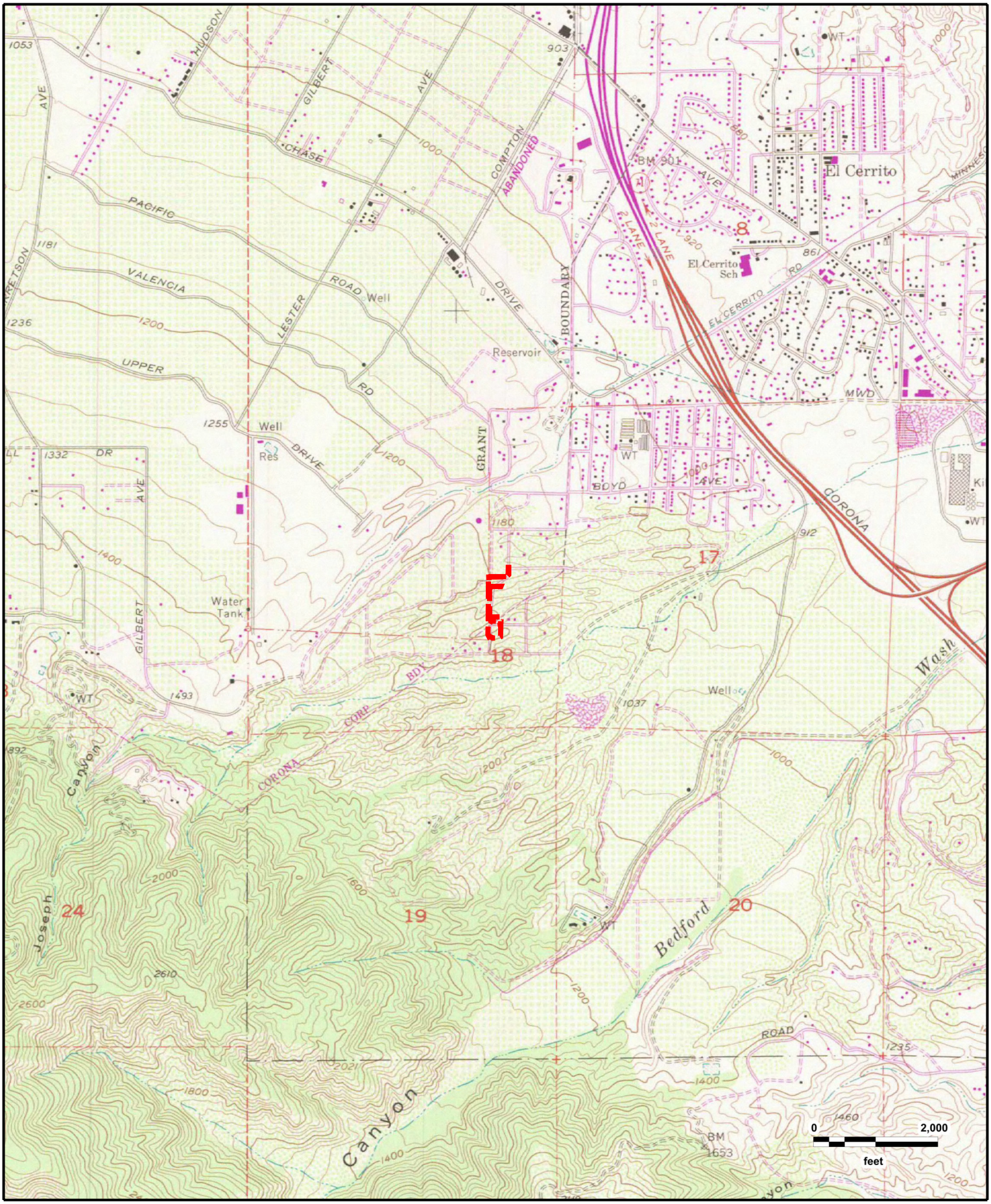
Keith 1220-Zone Potable Water Tank
Corona South, CA (1997)

GeoSearch

JOB #: 197267 - 07/25/2017



N
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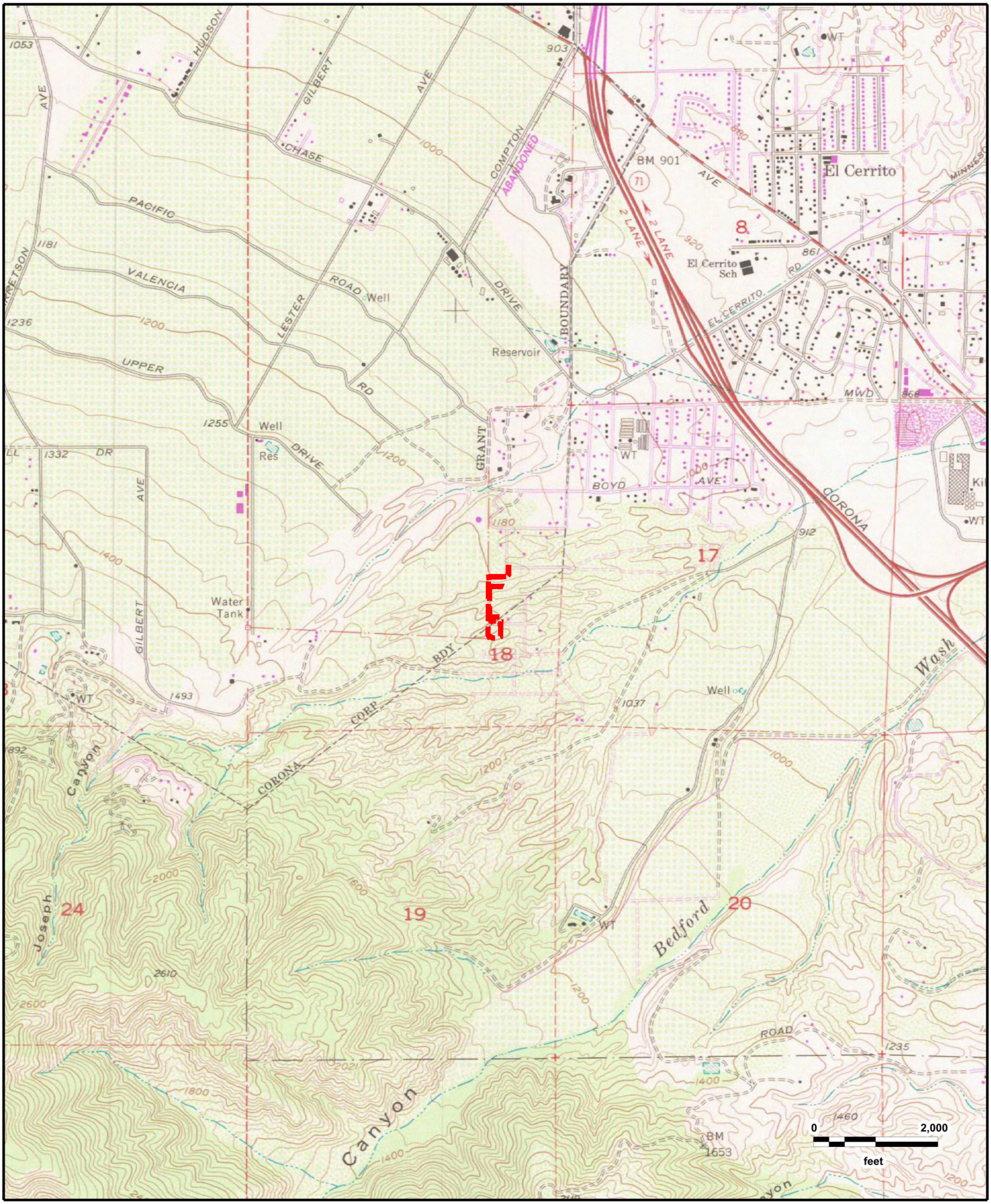
Keith 1220-Zone Potable Water Tank
Corona South, CA (1988)

GeoSearch

JOB #: 197267 - 07/25/2017



N
W E
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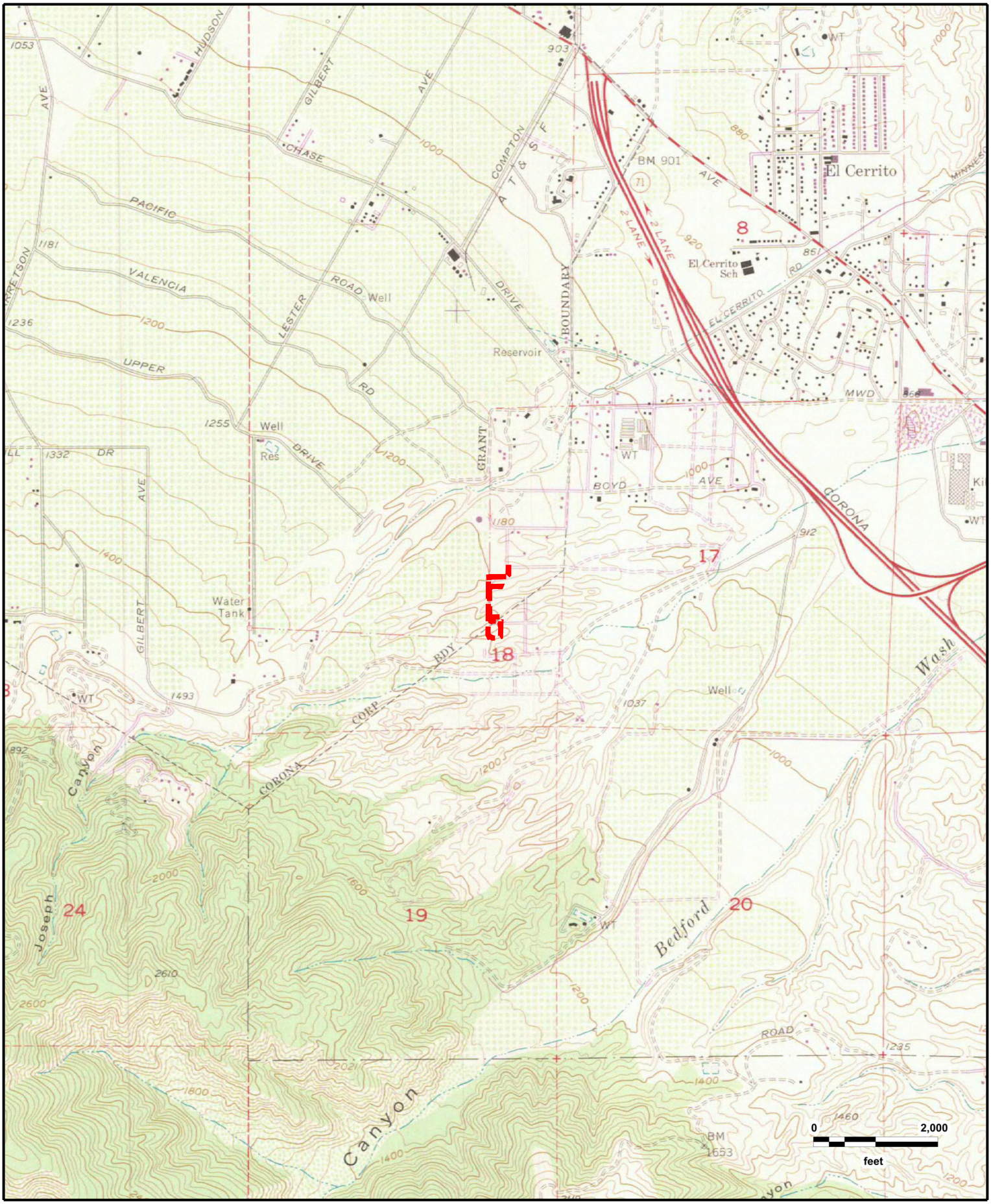
Keith 1220-Zone Potable Water Tank
Corona South, CA (1982)

GeoSearch

JOB #: 197267 - 07/25/2017



N
W E
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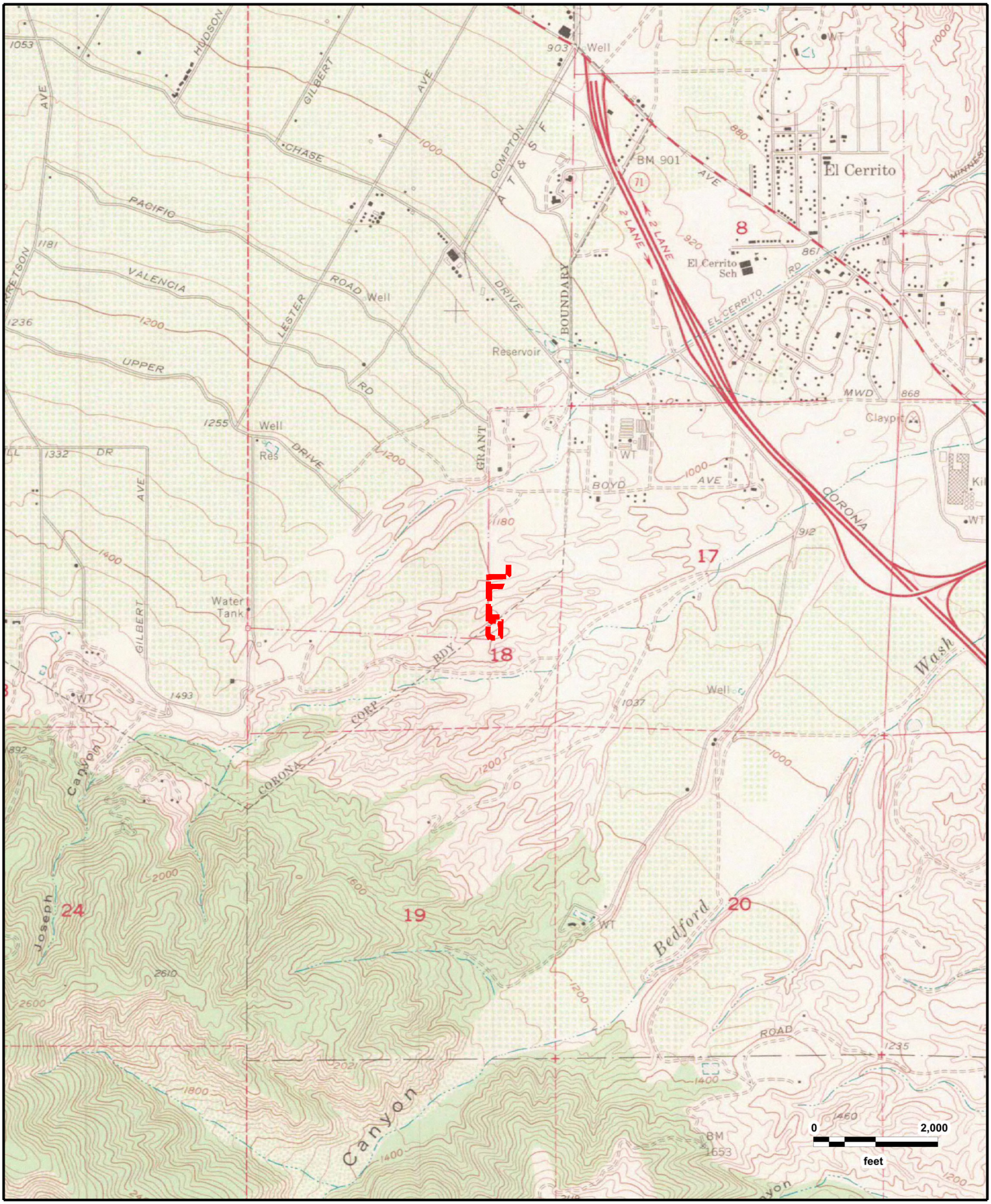
Keith 1220-Zone Potable Water Tank
Corona South, CA (1973)

GeoSearch

JOB #: 197267 - 07/25/2017



N
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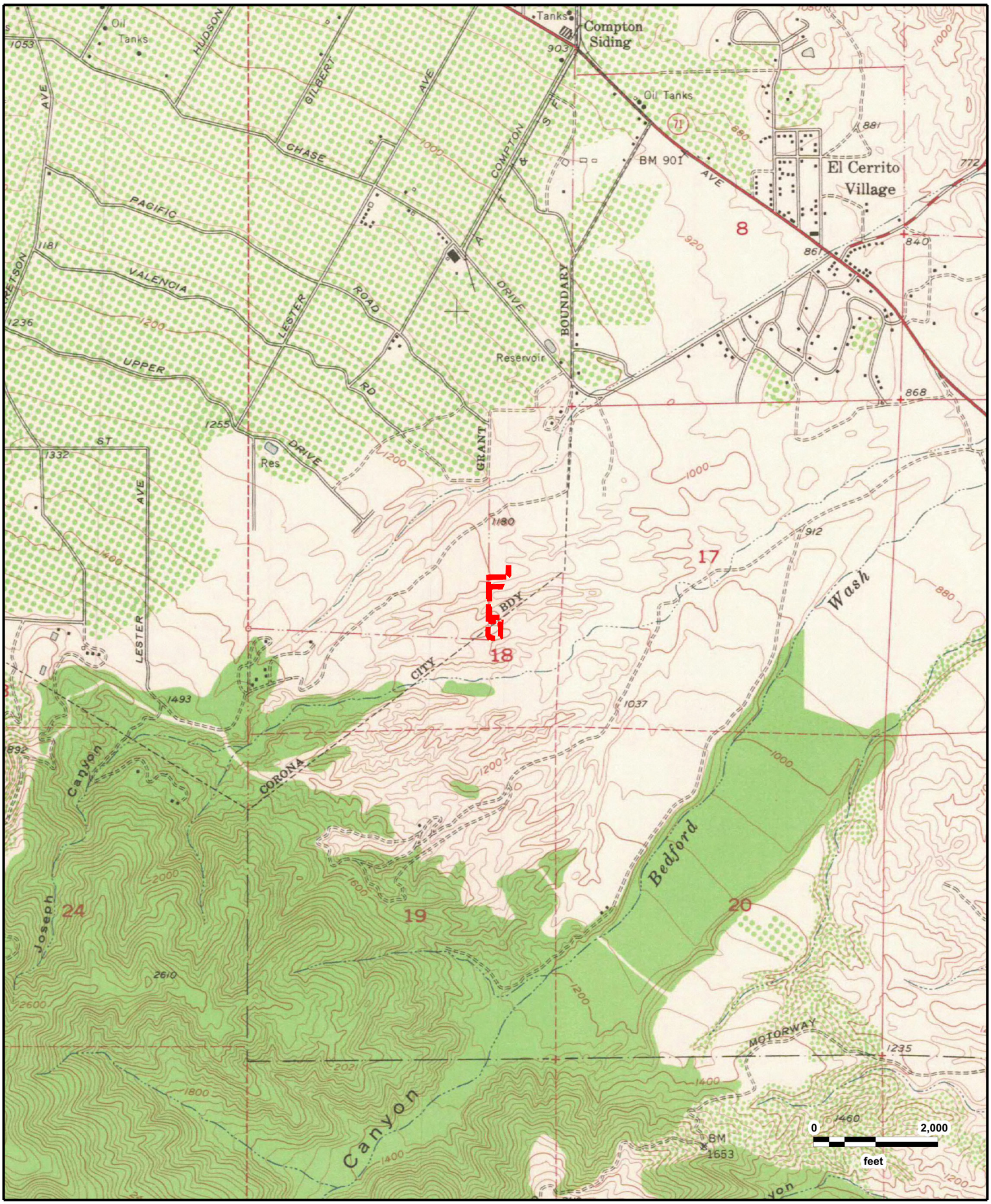
Keith 1220-Zone Potable Water Tank
Corona South, CA (1967)

GeoSearch

JOB #: 197267 - 07/25/2017



N
W E
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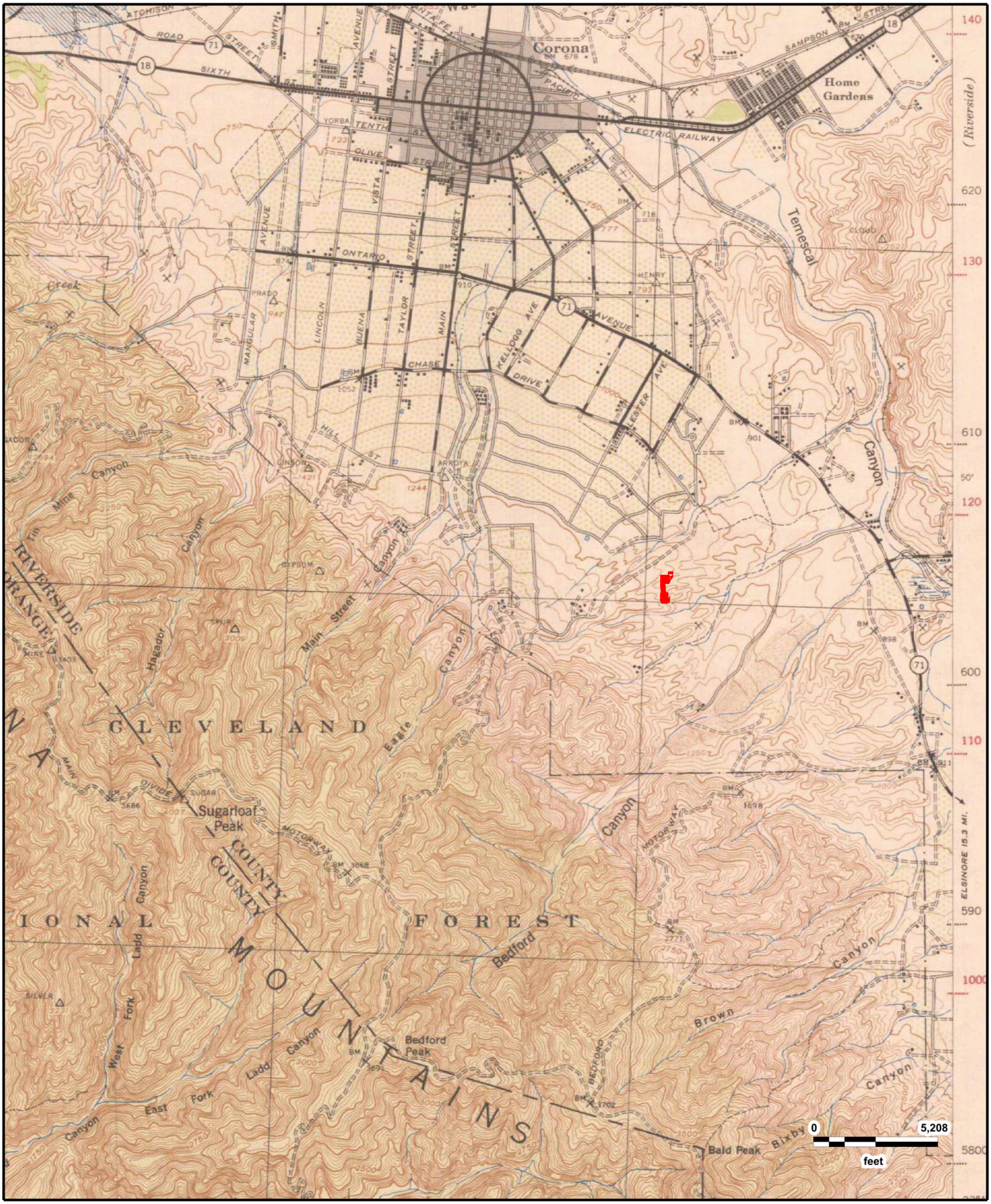
Keith 1220-Zone Potable Water Tank
Corona South, CA (1954)

GeoSearch

JOB #: 197267 - 07/25/2017



N
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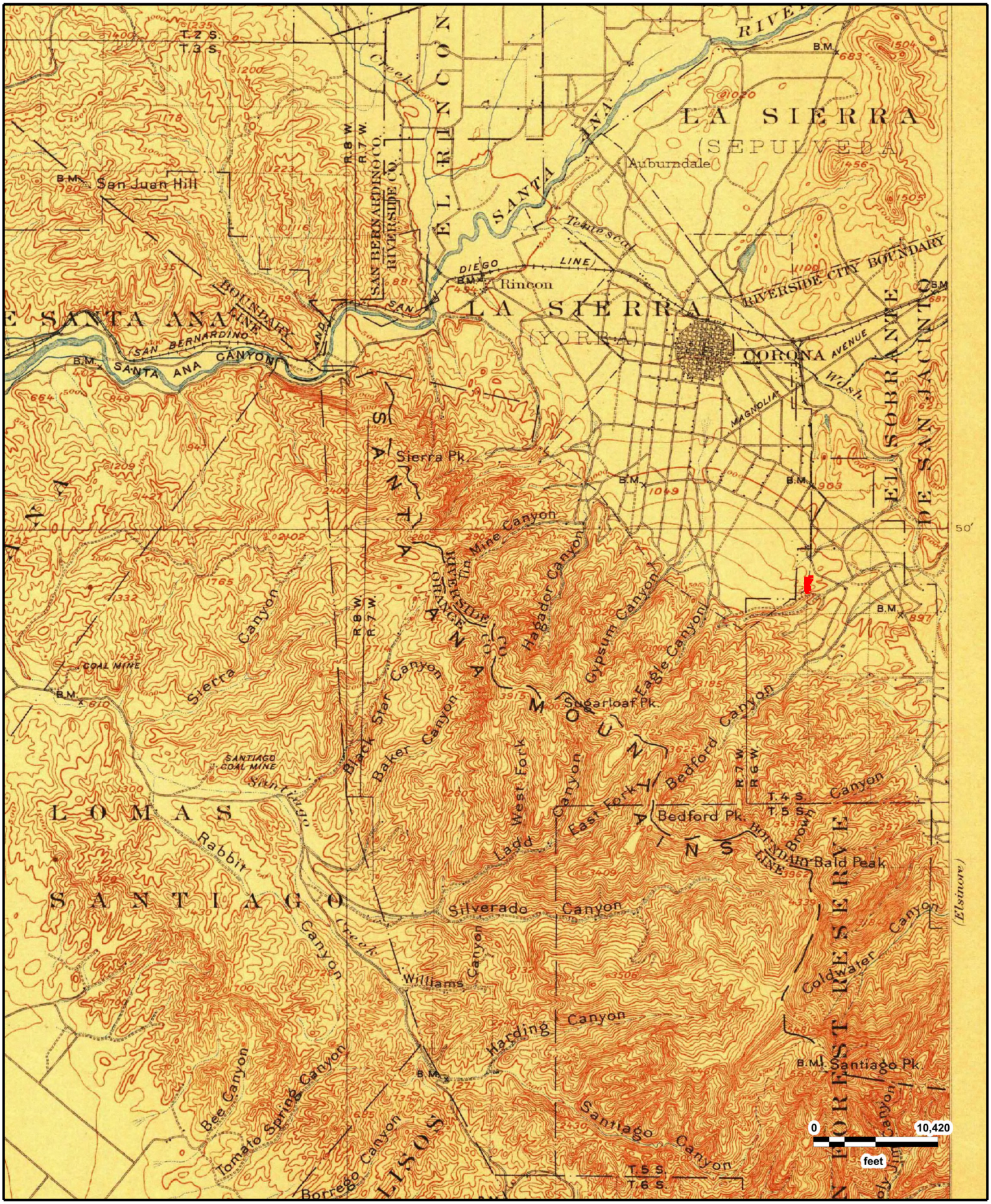
Keith 1220-Zone Potable Water Tank
Corona, CA (1943)

GeoSearch

JOB #: 197267 - 07/25/2017



N
W E
S

Keith 1220-Zone Potable Water Tank
Corona, CA (1902)

GeoSearch

JOB #: 197267 - 07/25/2017

GeoSearch FIM

Date: 07/25/17

GS Job Number: 90773

Company Name: Environmental Science Associates

Project Number: D150788.01 Task

Site Information: Keith 1220-Zone Potable Water Tank
Corona, Riverside, California, 92881

The collections of fire insurance maps listed below were reviewed according to the site information supplied by client. Based on the information provided, no coverage is available.

Library of Congress
University Publications of America
Other Libraries (universities, state, local, etc.).

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GeoSearch

On time. On target. In touch.™

GeoPlus Oil & Gas Report

Satellite view

Target Property:

Keith 1220-Zone Potable Water Tank
Corona, Riverside County, California 92881

Prepared For:

Environmental Science Assoc-Irvine

Order #: 90773
Job #: 197269
Project #: D150788.01 Task 7
Date: 07/24/2017

Table of Contents

Target Property Summary 1

Database Radius Summary 2

Oil & Gas Map 3

Located Sites Summary 4

Oil & Gas Well Report 5

Environmental Records Definitions 6

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Target Property Summary

Target Property Information

Keith 1220-Zone Potable Water Tank
Corona, California 92881

Coordinates
Area

USGS Quadrangle
Corona South, CA

Geographic Coverage Information

County/Parish: Riverside (CA)
ZipCode(s):
Corona CA: 92881, 92883

Radon
* Target property is located in Radon Zone 2.
Zone 2 areas have a predicted average indoor radon screening level between 2 and 4 pCi/L (picocuries per liter).

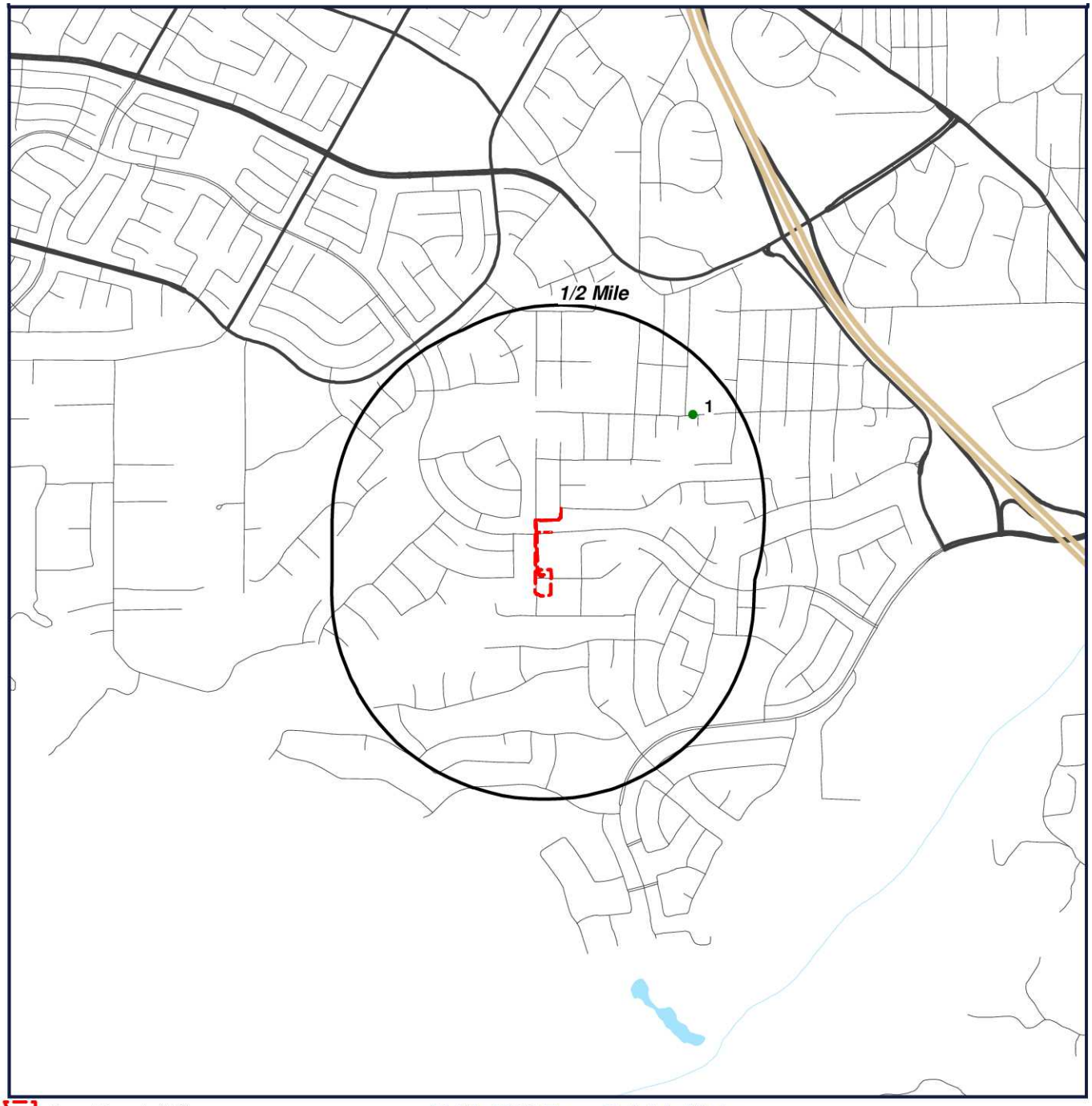
Database Radius Summary

STATE (CA) LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
OG	0.5000	0	0	0	1	NS	NS	1
SUB-TOTAL		0	0	0	1	0	0	1
TOTAL		0	0	0	1	0	0	1

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

OIL & GAS MAP



Target Property (TP)

Well Location

Keith 1220-Zone Potable Water Tank
Corona, California
92881

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

Located Sites Summary

Map ID#	Database Name	Site ID#	Distance From Site	Site Name	Address
1	OG	06500081	0.41 mi. NE (2165 ft.)		RIVERSIDE COUNTY, CORONA, CA 92881

Oil & Gas Well Report

MAP ID	API #	WELL #	OPERATOR NAME	LEASE NUMBER	SPUD DATE	W.D.	WELL TYPE	STR	LATITUDE	LONGITUDE
1	06500081	1	A. W. DUNCAN	NOT REPORTED	NR	NR	ACTIVE	T 04S S17	33.8256950	-117.534155

OG Oil and Gas

VERSION DATE: 03/16/17

This oil, gas, and geothermal well information database is maintained by the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources. The database information may change without notice. The Department of Conservation makes no warranties, whether expressed or implied, as to the suitability of the product for any particular purpose. Any use of this information is at the user's own risk.

From: Customer Service
To: Arabesque Abdelwahed
Cc: Eric Mapson
Subject: GS 90773-City Directories
Date: Friday, July 21, 2017 12:06:54 PM

Arabesque,

Eric let me know that you had a few questions in regards to which streets to choose for city directories. Keith Street is a good option for your first choice, but it does look like Paseo la Cresta is going to be mainly residential, but the entire area is mainly residential so it just depends on which street that you feel would work better for your property. Galloway Lane, Masters Dr, Howe St and Wallace St are some more options, but they look to be mainly residential as well.

We won't know til we get in and research it what exactly is or has been in the area.

Please let us know if you have any further questions and which other street you would prefer! Thank you.

-Amanda

Thank you for using ***GeoSearch*** - www.geo-search.com.

The product you ordered is attached to this email. If you ordered multiple products, the other items will be emailed separately.

Please contact us with any questions or concerns at 1-888-396-0042.

~~~
~~~

APPENDIX C

Physical Setting Report and Water Well Report

GeoSearch
On time. On target. In touch.™

GeoPlus Physical Setting Maps

Satellite view

Target Property:

Keith 1220-Zone Potable Water Tank
Corona, Riverside County, California 92881

Prepared For:

Environmental Science Assoc-Irvine

Order #: 90773
Job #: 197272
Project #: D150788.01 Task 7
Date: 07/24/2017

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Target Property Summary

Target Property Information

Keith 1220-Zone Potable Water Tank
Corona, California 92881

Coordinates
Area

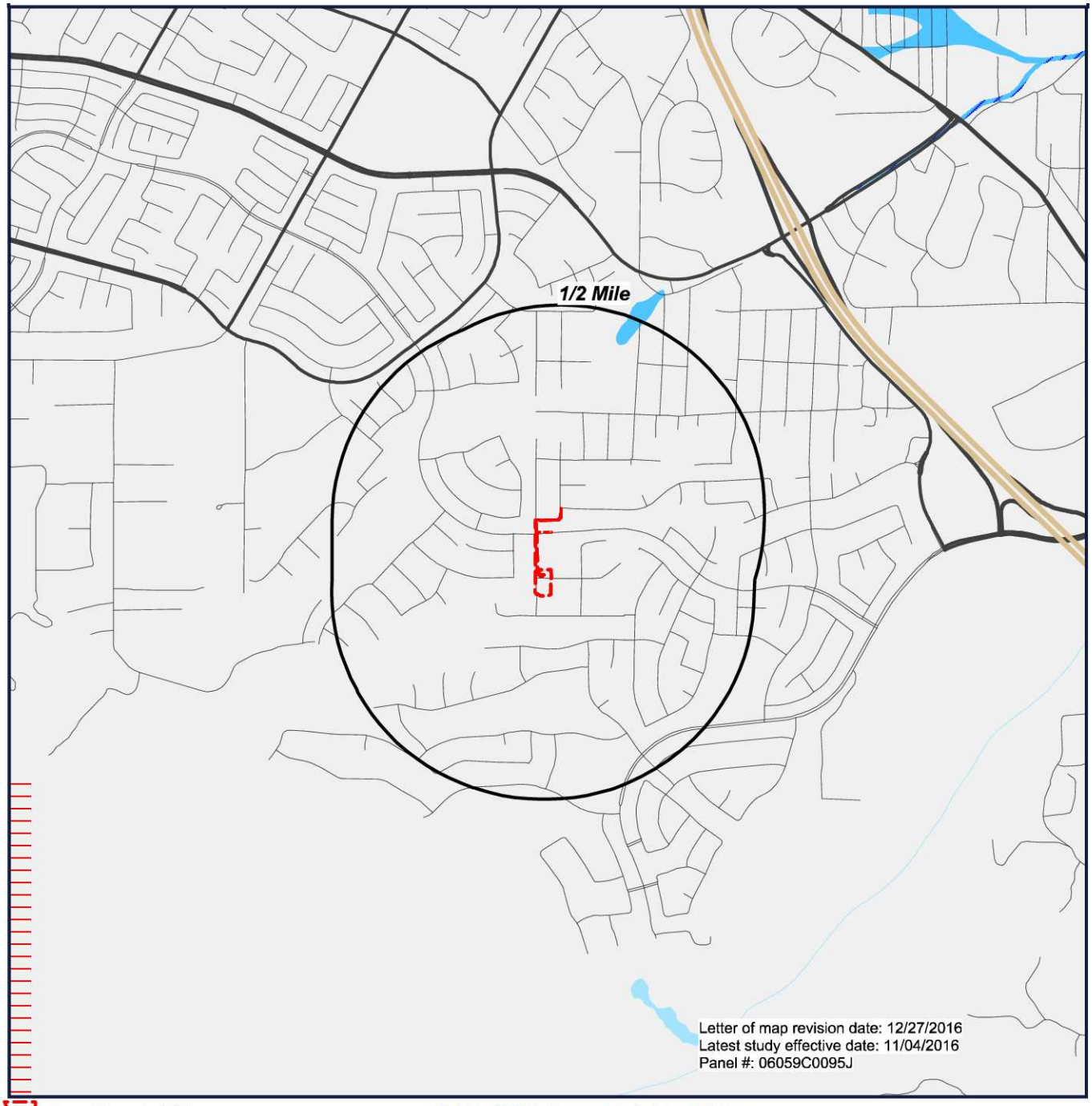
USGS Quadrangle
Corona South, CA

Geographic Coverage Information

County/Parish: Riverside (CA)
ZipCode(s):
Corona CA: 92881, 92883

Radon
* Target property is located in Radon Zone 2.
Zone 2 areas have a predicted average indoor radon screening level between 2 and 4 pCi/L (picocuries per liter).

FEMA Map



Target Property (TP)

- ZONE A
- ZONE AE
- ZONE AH
- ZONE A0
- ZONE AR
- ZONE V
- ZONE VE
- ZONE D
- ZONE X
- AREA NOT INCLUDED
- OPEN WATER
- NDA - DIGITAL DATA NOT AVAILABLE

Keith 1220-Zone Potable Water Tank
Corona, California
92881

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

FEMA Report

FEMA - Federal Emergency Management Agency

The National Flood Hazard Layer (NFHL) data used in this report is derived from the Federal Emergency Management Agency. The NFHL dataset is a compilation of effective Flood Insurance Rate Map (FIRM) databases (a collection of the digital data that are used in GIS systems for creating new Flood Insurance Rate Maps) and Letters of Map Change (Letters of Map Amendment and Letters of Map Revision only) that create a seamless GIS data layer for United States and its territories. The NFHL is updated as new study or LOMC data becomes effective. Note: Currently, not all areas have modernized FIRM database data available. As a result, users may need to refer to the effective Flood Insurance Rate Map for effective flood hazard information. This data was provided by the Federal Emergency Management Agency's Map Service Center in November of 2013.

FEMA Flood Zone Definitions within Search Radius

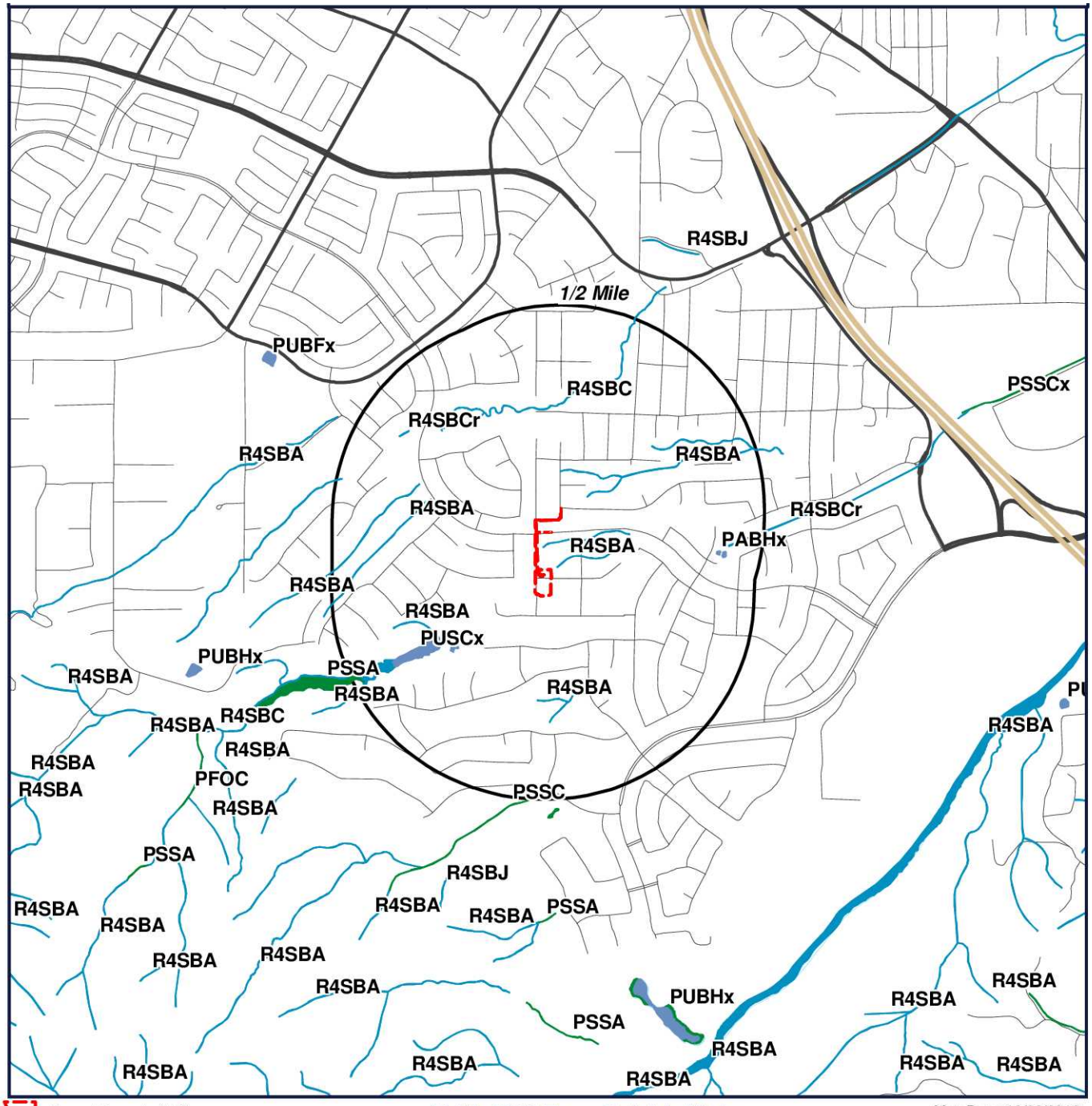
A	Zone A

Areas subject to inundation by the 1-percent-annual-chance flood event. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.

X	Zone X

An area that is determined to be outside the 100 and 500 year floodplains.

NWI Map



Target Property (TP)

Keith 1220-Zone Potable Water Tank
Corona, California
92881

Map Date: 12/02/2016

- ESTUARINE AND MARINE DEEPWATER
- ESTUARINE AND MARINE WETLAND
- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/ SHRUB WETLAND
- LAKE
- OTHER
- RIVERINE
- FRESHWATER POND
- NDA - DIGITAL DATA NOT AVAILABLE

N W E S

0' 1000' 2000' 3000'

SCALE: 1" = 2000'

[Click here to access Satellite view]

NWI Report

NWI - National Wetlands Inventory

The US NWI digital data bundle is a set of records of wetlands location and classification as defined by the U.S. Fish & Wildlife Service. This dataset is one of a series available in 7.5 minute by 7.5 minute blocks containing ground planimetric coordinates of wetlands point, line, and area features and wetlands attributes. When completed, the series will provide coverage for all of the contiguous United States, Hawaii, Alaska, and U.S. protectorates in the Pacific and Caribbean. The digital data as well as the hardcopy maps that were used as the source for the digital data are produced and distributed by the U.S. Fish & Wildlife Service's National Wetlands Inventory project. Currently, this data is only available in select counties throughout the United States.

NWI Definitions within Search Radius

PABHx

SYSTEM: **PALUSTRINE**
CLASS: **AQUATIC BED**
SPECIAL MODIFIER: **EXCAVATED**

PSSA

SYSTEM: **PALUSTRINE**
CLASS: **SCRUB-SHRUB**

PSSC

SYSTEM: **PALUSTRINE**
CLASS: **SCRUB-SHRUB**

PUSAx

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED SHORE**
SPECIAL MODIFIER: **EXCAVATED**

PUSCx

SYSTEM: **PALUSTRINE**
CLASS: **UNCONSOLIDATED SHORE**
SPECIAL MODIFIER: **EXCAVATED**

R4SBA

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **TEMPORARILY FLOODED**

R4SBAr

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **TEMPORARILY FLOODED**
SPECIAL MODIFIER: **ARTIFICIAL SUBSTRATE**

R4SBAx

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **TEMPORARILY FLOODED**
SPECIAL MODIFIER: **EXCAVATED**

R4SBC

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **SEASONALLY FLOODED**

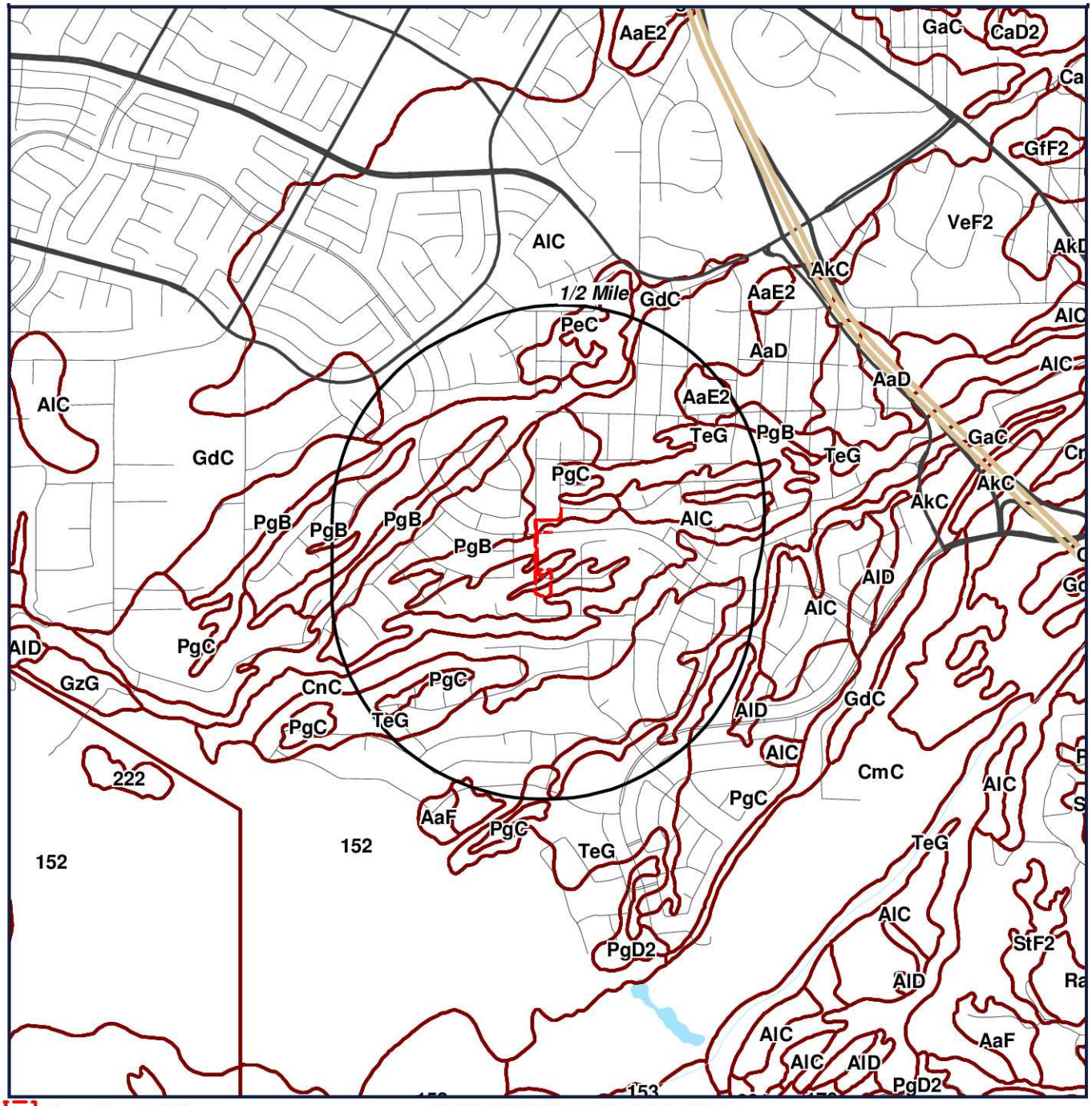
R4SBCr

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **SEASONALLY FLOODED**
SPECIAL MODIFIER: **ARTIFICIAL SUBSTRATE**

R4SBCx

SYSTEM: **RIVERINE**
SUBSYSTEM: **INTERMITTENT**
CLASS: **STREAMBED**
WATER REGIME: **SEASONALLY FLOODED**
SPECIAL MODIFIER: **EXCAVATED**

Soil Map



Target Property (TP)

SOIL BOUNDARY

NOTCOM - DIGITAL DATA NOT AVAILABLE/NOT COMPLETE

Keith 1220-Zone Potable Water Tank
Corona, California
92881

N
W E
S

0' 1000' 2000' 3000'

SCALE: 1" = 2000'

[Click here to access Satellite view]

SOIL Report

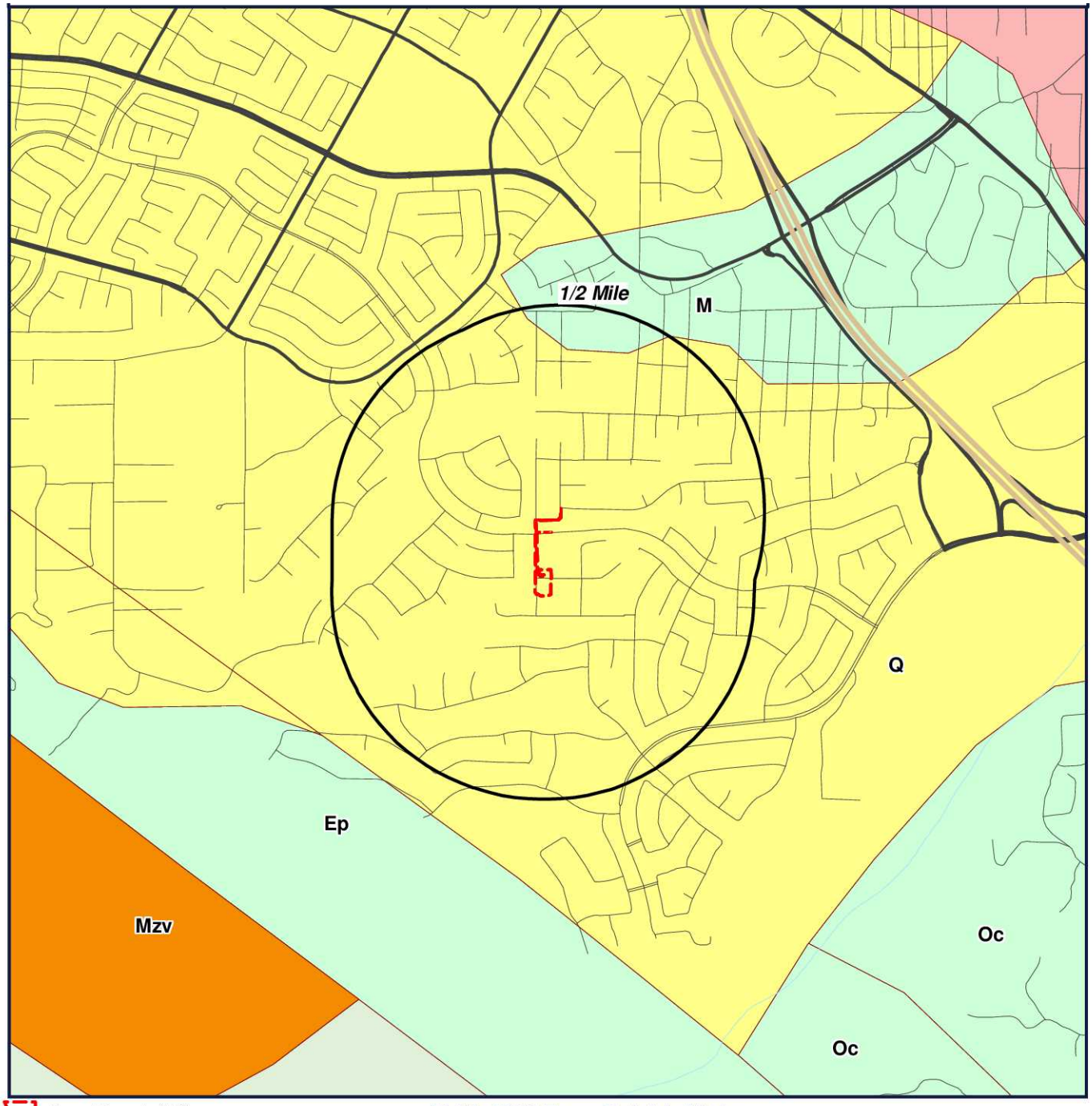
Soil Surveys

The soil data used in this report is obtained from the Natural Resources Conservation Service (NRCS). The NRCS is the primary federal agency that works with private landowners to help them conserve, maintain and improve their natural resources. The soil survey contains information that can be applied in managing farms and ranches; in selecting sites for roads, ponds, buildings and other structures; and in determining the suitability of tracts of land for farming, industry and recreation. This data is available in select counties throughout the United States.

SOIL Code Definitions within Search Radius

AaD	ALTAMONT CLAY, 5 TO 15 PERCENT SLOPES
AaE2	ALTAMONT CLAY, 15 TO 25 PERCENT SLOPES, ERODED
AlC	ARBUCKLE GRAVELLY LOAM, 2 TO 8 PERCENT SLOPES
CnC	CORTINA GRAVELLY COARSE SANDY LOAM, 2 TO 8 PERCENT SLOP ES
GdC	GARRETSON GRAVELLY VERY FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES
PeC	PERKINS LOAM, 2 TO 8 PERCENT SLOPES
PgB	PERKINS GRAVELLY LOAM, 2 TO 5 PERCENT SLOPES
PgC	PERKINS GRAVELLY LOAM, 5 TO 8 PERCENT SLOPES
PgD2	PERKINS GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, ERODED
RuF	ROUGH BROKEN LAND
TeG	TERRACE ESCARPMENTS
152	EXCHEQUER-ROCK OUTCROP COMPLEX, 30 TO 75 PERCENT SLOPES

Geology Map



Target Property (TP)

Keith 1220-Zone Potable Water Tank
Corona, California
92881

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

GEOLOGY Report

US GEOLOGY

THE GEOLOGY DATA USED IN THIS REPORT ORIGINATES FROM THE USGS. THE FIRST STAGE IN DEVELOPING STATE DATABASES FOR THE CONTERMINOUS UNITED STATES WAS TO ACQUIRE DIGITAL VERSIONS OF ALL EXISTING STATE GEOLOGIC MAPS. ALTHOUGH A SIGNIFICANT NUMBER OF DIGITAL STATE MAPS ALREADY EXISTED, A NUMBER OF STATES LACKED THEM. FOR THESE STATES NEW DIGITAL COMPILATIONS WERE PREPARED IN COOPERATION WITH STATE GEOLOGIC SURVEYS OR BY THE NSA (NATIONAL SURVEYS AND ANALYSIS) PROJECT. THESE NEW DIGITAL STATE GEOLOGIC MAPS AND DATABASES WERE CREATED BY DIGITIZING ALREADY EXISTING PRINTED MAPS, OR, IN A FEW CASES, BY MERGING EXISTING LARGER SCALE DIGITAL MAPS.

GEOLOGY Definitions within Search Radius

GEOLOGY SYMBOL: **M**
UNIT NAME: **Miocene marine rocks**
UNIT AGE: **Oligocene to Pliocene**
UNIT DESCRIPTION:
Sandstone, shale, siltstone, conglomerate and breccia; in part Pliocene and Oligocene.
ADDITIONAL UNIT INFORMATION:

ROCKTYPE/S: **sandstone; mudstone; siltstone; evaporite; conglomerate**

GEOLOGY SYMBOL: **Q**
UNIT NAME: **Quaternary alluvium and marine deposits**
UNIT AGE: **Pliocene to Holocene**
UNIT DESCRIPTION:
Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated. Mostly nonmarine, but includes marine deposits near the coast.
ADDITIONAL UNIT INFORMATION:

ROCKTYPE/S: **alluvium; terrace; lake or marine deposit (non-glacial)**

GeoSearch

On time. On target. In touch.™

GeoPlus Water Well Report

Satellite view

Target Property:

Keith 1220-Zone Potable Water Tank
Corona, Riverside County, California 92881

Prepared For:

Environmental Science Assoc-Irvine

Order #: 90773
Job #: 197268
Project #: D150788.01 Task 7
Date: 07/24/2017

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Target Property Summary

Target Property Information

Keith 1220-Zone Potable Water Tank
Corona, California 92881

Coordinates
Area

USGS Quadrangle
Corona South, CA

Geographic Coverage Information

County/Parish: Riverside (CA)
ZipCode(s):
Corona CA: 92881, 92883

Radon
* Target property is located in Radon Zone 2.
Zone 2 areas have a predicted average indoor radon screening level between 2 and 4 pCi/L (picocuries per liter).

Database Radius Summary

FEDERAL LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
NWIS	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0

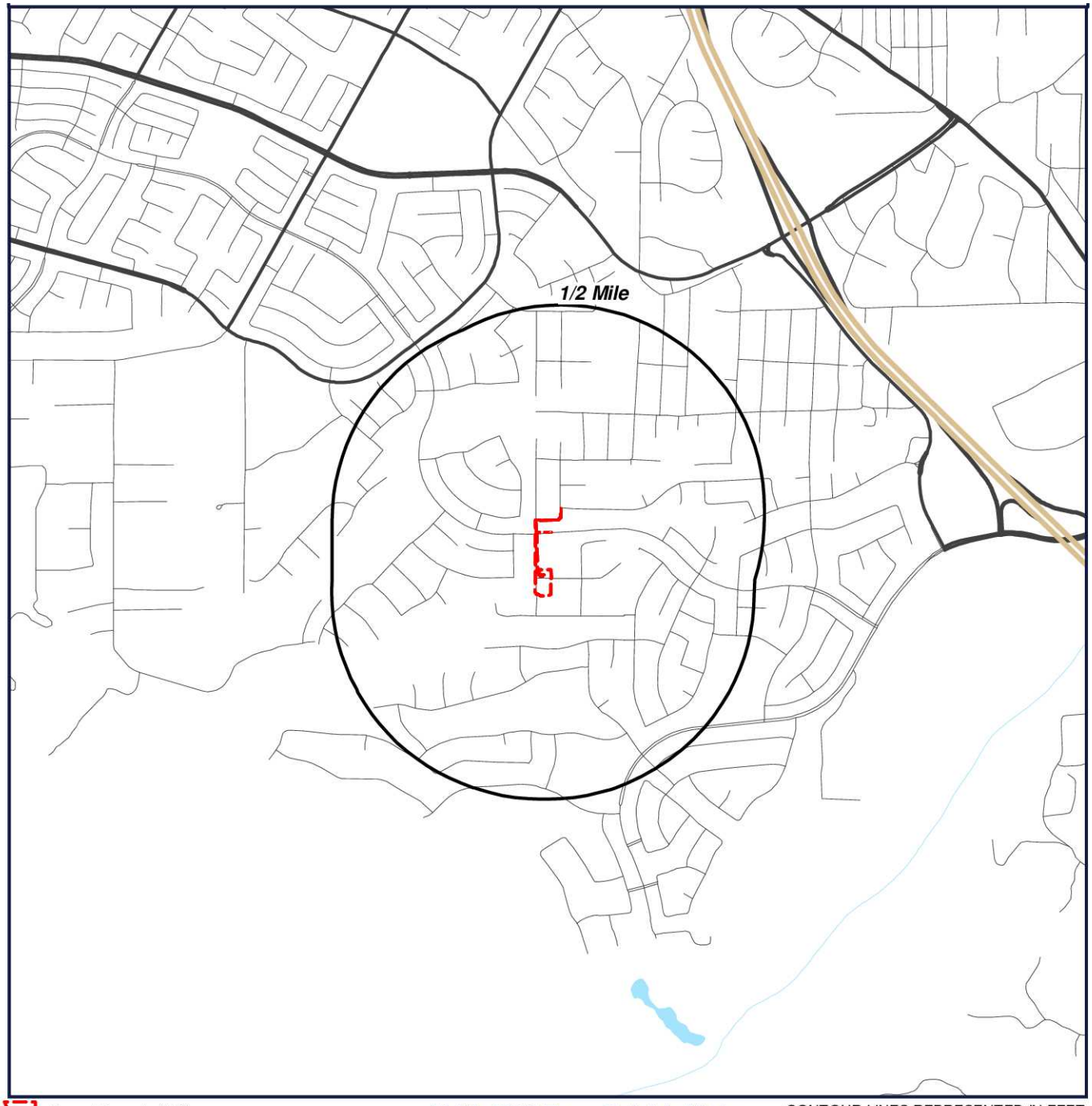
Database Radius Summary

STATE (CA) LISTING

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
DWRWELLS	0.5000	0	0	0	0	NS	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0	0

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Waterwell Map



Target Property (TP)

Keith 1220-Zone Potable Water Tank
Corona, California
92881

CONTOUR LINES REPRESENTED IN FEET

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

[Click here to access Satellite view]

Located Sites Summary

No Records Found.

NWIS United States Geological Survey National Water Information System

VERSION DATE: 12/14/16

This USGS National Water Information System database only includes groundwater wells. The USGS defines this well type as: A hole or shaft constructed in the earth intended to be used to locate, sample, or develop groundwater, oil, gas, or some other subsurface material. The diameter of a well is typically much smaller than the depth. Wells are also used to artificially recharge groundwater or to pressurize oil and gas production zones. Additional information about specific kinds of wells should be recorded under the secondary site types or the Use of Site field. Underground waste-disposal wells should be classified as waste-injection wells.

DWRWELLS California Department of Water Resources Water Wells

VERSION DATE: 02/17/17

The California Department of Water Resources (DWR) maintains this database of water wells, including California Statewide Groundwater Elevation Monitoring (CASGEM) program wells and Voluntary wells. In Late 2009 the State Legislature amended the Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. To achieve that goal, the amendment requires collaboration between local monitoring entities and DWR to collect groundwater elevation data. In accordance with this amendment to the Water Code, DWR developed the CASGEM program.

APPENDIX D

All Appropriate Inquiry (AAI) Questionnaire

INTERVIEW QUESTIONNAIRE
PHASE I ENVIRONMENTAL SITE ASSESSMENT
Compatible with ASTM Standard E 1527

Site Name: Keith 1220-Zone Potable Water Tank

Site Address: None Available

Date: 10/27/17

Interviewer: Arabesque Said-Abdelwahed

Interviewee: Tom Koper _____

Site Association: City of Corona Employee _____

Years Associated: 25 _____

Please answer the following questions to the best of your knowledge.

1. Was the property or adjoining property ever used for industrial purposes (e.g. manufacturing) or as a gas station, dry cleaners, waste treatment, processing facility, motor repair facility, photo lab, commercial printing facility, junkyard/disposal/recycling/ landfill? If yes, please list the activity, hazardous substances used, and approximate dates when the activity occurred.

   Prior land use, hazardous substances used, and dates:
   The Map of Overlook Addition #2 to Corona was approved in 1925 with the intent for Residential lots. _____
   _____

   Prior owners, key site managers/operators, occupants and dates:
   The previous owner was Mark Obeid for an unknown durations. _____
   _____
   _____

   Existing or prior structures used for what purposes and duration:
   No prior structures. This lot has been vacant since the Overlook Addition #2 map was recorded. _____
   _____
   _____

2. Do any of the following documents exist for the site or any portion of the site? If so, can you provide a copy? No

- ☐ Environmental site assessment reports
- ☐ Environmental compliance audit reports
- ☐ Environmental permits
- ☐ Underground Storage Tank registration
- ☐ Underground Injection System registration
- ☐ Material Safety Data Sheets
- ☐ Community Right-To-Know Plan
- ☐ Safety plans: preparedness and prevention plans; spill prevention; countermeasure; and control plans, etc.
- ☐ Reports regarding hydrogeologic conditions on the property or surrounding area;
- ☐ Correspondence from any government agency relating to past or current violations of environmental laws with regard to the property or relating to environmental liens encumbering the property
- ☐ Hazardous waste generator notices or reports
- ☐ Geotechnical studies
- ☐ Risk assessments
- ☐ Recorded Activity and Use Limitations (AULs)

3. Have you ever observed evidence of or do you have prior knowledge of any of the following items being used, stored, discarded, dumped above grade, buried, or burned onsite? Circle all that apply and indicate amount and approximate dates. No

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Above ground storage tank (AST)*			Size: Contents: Condition:
Automotive batteries			
Industrial batteries			
Pesticides (>5 gallon)			
Paints (> 5 gallon)			
Chemicals/Hazardous Substances (> 5 gallon liquid)			

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Chemicals/Hazardous Substances (dry sacks, containers, etc.)			
Industrial drums (typically 55 gallons)			Contents: Condition:
Transformer or other equipment that may contain PCBs (e.g. hydraulic equipment)*			Installation date:
Underground storage tank*			Size: Contents: Condition:
Unknown materials you suspect may be hazardous substances			Describe:

*Please provide records if available.

4. What method(s) is used to contain spills of hazardous waste?

NA

5. What method(s) is used to dispose of hazardous waste?

NA

6. Are there any permits for handling, use, storage, or disposal of hazardous waste?

No

7. Have you observed evidence of or have prior knowledge of the following onsite? No

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Equipment Maintenance Areas			
Accidental spills or releases of chemicals or petroleum products			

MATERIAL	QUANTITY	DATE(S) OBSERVED	COMMENTS
Possible asbestos containing materials (e.g. pipe, building, etc.)			Describe material:
Fill dirt originating from an unknown or contaminated site?			Source:
Pits, ponds, or lagoons associated with waste treatment or waste disposal?			Location:
Stained soil or odiferous soil? (e.g. oily black)			Location:
Sumps or dry wells*			Size : Contents : Condition :
Vent pipes, fill pipes, access ways to a fill pipe protruding from the ground or adjacent to a structure onsite?			Location:
Heating and cooling systems (include fuel source)			Source:
Flooring, drains, walls that are stained or emitting a foul odor (do NOT include water damage)?			Location:

*Please provide records if available.

8. Is the property served by a private well or non-public water system? If so, please answer the following: No

   a. Was the well used for domestic (D), agricultural irrigation (I), or monitoring (M) purposes? Are the wells currently operational and if not, when were they last used? When was the well drilled? How deep is the well? What is the approximate discharge rate?

Well No.	Type	Operating?	Last Used	Date Drilled	Depth	Discharge Rate	Location
1-							
2-							

b. Have the wells been sampled for contaminants that exceed applicable requirements for the designated use (e.g. Drinking Water Standards)? If so, please provide the dates and copies of well records.

c. Has the well or water system been designated by any governmental environmental/health agency as contaminated?

9. Is there an oil/gas well or oil/gas vent located onsite? If so, please indicate the location. Please supply any documents available.

No

10. Is the property or has the property to your knowledge been previously served by a septic system? If so, please indicate the location of the tank and leach lines (if applicable) and list any hazardous materials disposed.

No

11. Does the property discharge waste water into a storm water sewer system or a sanitary sewer system onto or adjacent to the property? If so, please describe location, piping flow, quantity discharged, and water quality.

No

12. Do you have knowledge of the following with respect to the property? Circle and explain all that apply. None

a. Environmental clean-up, ongoing or pending.

b. Environmental liens

c. Governmental notifications regarding any possible past or present violations of environmental laws.

d. Past, threatened, pending lawsuits or administrative proceedings relevant to a release of a hazardous substance or petroleum product, in, on, or from the property.

e. Prior environmental assessment that indicated the presence of hazardous substances, petroleum hydrocarbons, contaminants, or recommended further assessment.

f. Deed Restrictions

g. Citizen complaints regarding activities onsite

AGRICULTURAL SITES:

13. What crops have been grown onsite, currently and in the past? None

CROP	DATE	LOCATION

If crops are present or have been grown, please answer questions 14 through 16 below:

14. Have pesticides been applied to fields or other portions of the site? If so, please answer the following questions:

    a. List the names of pesticides (includes herbicides, fungicides, insecticides, rodenticide) used and dates applied.

PESTICIDE AND BRAND NAME	DATE	CROP OR ANIMAL USE

b. Have you been notified of any violation of environmental law with respect to application or storage of pesticides?

_____
_____
_____

c. Location of pesticide mixing areas, if any (past or present)?

_____
_____
_____

d. Method of pesticide application?

_____
_____
_____

15. Have fertilizers been applied to the site? What type and method of application?

_____
_____
_____

16. Are there any buried pipelines for irrigation or other purposes onsite? If so, what materials is the piping constructed of? Asbestos containing material, PVC, other? Describe the location of buried piping.

_____
_____
_____

User Questionnaire

Only the client ("user") needs to respond to the following questions:

17. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state, or local law? No

18. Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law? No

19. As the user of this Phase 1 ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? No

20. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? Yes

21. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

    a) Do you know the past uses of the property? Yes – Vacant Lot

    b) Do you know of specific chemicals that are present or once were present at the property? No

    c) Do you know of spills or other chemical releases that have taken place at the property? No

    d) Do you know of any environmental cleanups that have taken place at the property? No

22. As the user of this Phase 1 ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property? No

Appendix F
Noise Worksheets

ESA

Project: Keith 1220-Zone Potable Water Tank

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

Calculation

				West					South				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Site Prep					**77**	***75***				**68**	***68***		
Dumpers/Tenders	1	76	20%	45	72	65	68	5	130	63	56	59	5
Excavator	1	81	40%	45	77	73	76	5	130	68	64	67	5
Graders	1	85	40%	145	71	67	70	5	230	67	63	66	5
Off-HighwayTractor	1	80	25%	145	66	60	63	5	230	62	56	59	5
Off-Highway Trucks	1	76	20%	145	62	55	58	5	230	58	51	54	5
Rubber Tired Loader	1	79	50%	145	65	62	65	5	230	61	58	61	5
Grading/Excavation					**78**	***70***				**69**	***61***		
Sweeper/Scrubbers	1	82	10%	45	78	68	71	5	130	69	59	62	5
Water Trucks	1	80	10%	45	76	66	69	5	130	67	57	60	5
Excavation for Reservoir					**74**	***74***				**69**	***70***		
Excavator	1	81	40%	100	70	66	69	5	170	65	61	64	5
Generator Sets	1	81	50%	100	70	67	70	5	170	65	62	65	5
Graders	1	85	40%	100	74	70	73	5	170	69	65	68	5
Haul Trucks	2	76	20%	200	62	55	58	5	270	59	52	55	5
Off-Highway Trucks	2	76	20%	200	62	55	58	5	270	59	52	55	5
Rubber Tired Loader	2	79	50%	200	65	62	65	5	270	62	59	62	5
Scrapers	1	84	40%	200	67	63	66	5	270	64	60	63	5
Water Trucks	1	80	10%	200	63	53	56	5	270	60	50	53	5
Underground Piping and Structures (below reservoir floor)					**70**	***68***				**65**	***64***		
Excavator	1	81	40%	100	70	66	69	5	170	65	61	64	5
Haul Trucks	2	76	20%	100	68	61	64	5	170	63	56	59	5
Off-Highway Trucks	2	76	20%	200	62	55	58	5	270	59	52	55	5
Rubber Tired Loader	1	79	50%	200	62	59	62	5	270	59	56	59	5
Reservoir Floor and Wall Footings					**68**	***67***				**63**	***62***		
Drill Rig Truck	1	79	20%	100	68	61	64	5	170	63	56	59	5
Cement and Mortar Mixers	1	79	40%	100	68	64	67	5	170	63	59	62	5
Compactor (Ground)	1	83	20%	200	66	59	62	5	270	63	56	59	5
Rough Terrain Forklift	1	75	10%	200	58	48	51	5	270	55	45	48	5
Assemble Column					**79**	***73***				**74**	***68***		
Cement and Mortar Mixers	1	79	40%	100	68	64	67	5	170	63	59	62	5
Concrete Saw	1	90	20%	100	79	72	75	5	170	74	67	70	5
Off-Highway Trucks	2	76	20%	200	62	55	58	5	270	59	52	55	5

				West					South				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Construction Roof Shoring/Vertical Wall Prestressing/Roof Reinforcing					**63**	***59***				**61**	***57***		
Welders	1	74	40%	100	63	59	62	5	130	61	57	60	5
Prestressing Mobilization					**67**	***64***				**65**	***62***		
Air Compressor	1	78	50%	100	67	64	67	5	130	65	62	65	5
Backfill Reservoir and Site					**77**	***76***				**68**	***68***		
Cement and Mortar Mixers	1	79	40%	45	75	71	74	5	130	66	62	65	5
Excavator	1	81	40%	45	77	73	76	5	130	68	64	67	5
Graders	1	85	40%	145	71	67	70	5	230	67	63	66	5
Rubber Tired Loader	1	79	50%	145	65	62	65	5	230	61	58	61	5
Underground Piping and Structures (above reservoir floor)					**70**	***68***				**65**	***64***		
Excavator	1	81	40%	100	70	66	69	5	170	65	61	64	5
Haul Trucks	2	76	20%	100	68	61	64	5	170	63	56	59	5
Off-Highway Trucks	2	76	20%	200	62	55	58	5	270	59	52	55	5
Rubber Tired Loader	1	79	50%	200	62	59	62	5	270	59	56	59	5
Offsite Water Reclaimed Water and Storm Drain Piping/Paving and Restoration					**85**	***83***				**65**	***63***		
Paver	1	77	50%	25	83	80	83	0	300	56	53	56	5
Haul Trucks	2	76	20%	25	85	78	81	0	300	58	51	54	5
Off-Highway Trucks	2	76	20%	125	71	64	67	0	400	56	49	52	5
Roller	1	80	20%	225	67	60	63	0	500	55	48	51	5
Paving Equipment	1	90	20%	225	77	70	73	0	500	65	58	61	5
Excavator	1	81	40%	225	68	64	67	0	500	56	52	55	5
Trenchers	1	85	50%	225	72	69	72	0	500	60	57	60	5
Rubber Tired Loader	1	79	50%	225	66	63	66	0	500	54	51	54	5
Street Improvement					**76**	***72***				**70**	***64***		
Roller	1	80	20%	45	76	69	72	5	180	64	57	60	5
Paving Equipment	1	90	20%	145	76	69	72	5	280	70	63	66	5
Paver	1	77	50%	145	63	60	63	5	280	57	54	57	5

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: Keith 1220-Zone Potable Water Tank

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

Calculation

				East					North				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Site Prep					**70**	***71***				**57**	***57***		
Dumpers/Tenders	1	76	20%	170	65	58	61	0	600	49	42	45	5
Excavator	1	81	40%	170	70	66	69	0	600	54	50	53	5
Graders	1	85	40%	270	70	66	69	0	700	57	53	56	5
Off-HighwayTractor	1	80	25%	270	65	59	62	0	700	52	46	49	5
Off-Highway Trucks	1	76	20%	270	61	54	57	0	700	48	41	44	5
Rubber Tired Loader	1	79	50%	270	64	61	64	0	700	51	48	51	5
Grading/Excavation					**71**	***63***				**60**	***53***		
Sweeper/Scrubbers	1	82	10%	170	71	61	64	0	600	60	50	53	0
Water Trucks	1	80	10%	170	69	59	62	0	600	58	48	51	0
Excavation for Reservoir					**73**	***73***				**55**	***57***		
Excavator	1	81	40%	200	69	65	68	0	840	51	48	51	5
Generator Sets	1	81	50%	200	69	66	69	0	840	51	48	51	5
Graders	1	85	40%	200	73	69	72	0	840	55	52	55	5
Haul Trucks	2	76	20%	300	63	56	59	0	940	49	42	45	5
Off-Highway Trucks	2	76	20%	300	63	56	59	0	940	49	42	45	5
Rubber Tired Loader	2	79	50%	300	66	63	66	0	940	52	49	52	5
Scrapers	1	84	40%	300	68	64	67	0	940	54	50	53	5
Water Trucks	1	80	10%	300	64	54	57	0	940	50	40	43	5
Underground Piping and Structures (below reservoir floor)					**69**	***68***				**51**	***51***		
Excavator	1	81	40%	200	69	65	68	0	840	51	48	51	5
Haul Trucks	2	76	20%	200	67	60	63	0	840	50	43	46	5
Off-Highway Trucks	2	76	20%	300	63	56	59	0	940	49	42	45	5
Rubber Tired Loader	1	79	50%	300	63	60	63	0	940	49	46	49	5
Reservoir Floor and Wall Footings					**67**	***66***				**53**	***50***		
Drill Rig Truck	1	79	20%	200	67	60	63	0	840	49	43	46	5
Cement and Mortar Mixers	1	79	40%	200	67	63	66	0	840	49	46	49	5
Compactor (Ground)	1	83	20%	300	67	60	63	0	940	53	46	49	5
Rough Terrain Forklift	1	75	10%	300	59	49	52	0	940	45	35	38	5
Assemble Column					**78**	***72***				**60**	***54***		
Cement and Mortar Mixers	1	79	40%	200	67	63	66	0	840	49	46	49	5
Concrete Saw	1	90	20%	200	78	71	74	0	840	60	54	57	5
Off-Highway Trucks	2	76	20%	300	63	56	59	0	940	49	42	45	5

				East					North				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Construction Roof Shoring/Vertical Wall Prestressing/Roof Reinforcin					**62**	***58***				**44**	***41***		
Welders	1	74	40%	200	62	58	61	0	840	44	41	44	5
Prestressing Mobilization					**66**	***63***				**48**	***45***		
Air Compressor	1	78	50%	200	66	63	66	0	840	48	45	48	5
Backfill Reservoir and Site					**70**	***71***				**57**	***57***		
Cement and Mortar Mixers	1	79	40%	170	68	64	67	0	600	52	48	51	5
Excavator	1	81	40%	170	70	66	69	0	600	54	50	53	5
Graders	1	85	40%	270	70	66	69	0	700	57	53	56	5
Rubber Tired Loader	1	79	50%	270	64	61	64	0	700	51	48	51	5
Underground Piping and Structures (above reservoir floor)					**69**	***68***				**51**	***51***		
Excavator	1	81	40%	200	69	65	68	0	840	51	48	51	5
Haul Trucks	2	76	20%	200	67	60	63	0	840	50	43	46	5
Off-Highway Trucks	2	76	20%	300	63	56	59	0	940	49	42	45	5
Rubber Tired Loader	1	79	50%	300	63	60	63	0	940	49	46	49	5
Offsite Water Reclaimed Water and Storm Drain Piping/Paving and Re					**69**	***67***				**85**	***83***		
Paver	1	77	50%	350	60	57	60	0	25	83	80	83	0
Haul Trucks	2	76	20%	350	62	55	58	0	25	85	78	81	0
Off-Highway Trucks	2	76	20%	450	60	53	56	0	125	71	64	67	0
Roller	1	80	20%	550	59	52	55	0	225	67	60	63	0
Paving Equipment	1	90	20%	550	69	62	65	0	225	77	70	73	0
Excavator	1	81	40%	550	60	56	59	0	225	68	64	67	0
Trenchers	1	85	50%	550	64	61	64	0	225	72	69	72	0
Rubber Tired Loader	1	79	50%	550	58	55	58	0	225	66	63	66	0
Street Improvement					**71**	***65***				**86**	***81***		
Roller	1	80	20%	350	63	56	59	0	25	86	79	82	0
Paving Equipment	1	90	20%	450	71	64	67	0	125	82	75	78	0
Paver	1	77	50%	450	58	55	58	0	125	69	66	69	0

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

June 22, 2016

City of Corona
Department of Water & Power
755 Public Safety Way
Corona, CA 92880

Tom Koper
District Engineer
E-mail: tom.koper@ci.corona.ca.us
Office Phone: 951-279-3604
Cell Phone: 951-264-8907

RE: Letter of objection (CEQA), City of Corona water tank project, Keith and Nelson.

From: Florence E. Settles Trust, **Alan H. Settles, Jr.** Trustee, 1709 Galloway Lane, Corona, CA 92883 (Parcel 279220006-2). Mailing address: **2141 Mendocino Street, Fullerton, CA 92831-1237**.

The City of Corona issued a first notice and held a field meeting with interested parties in June, 2016 to provide a high level over view of the City's plans to construct a large water holding tank on newly acquired property on the east side of **Nelson Street, south of Keith Street**.

Limited details have been provided in writing by the city.

Our property, **1709 Galloway Lane, Corona, CA 92883**, appears to be at the same approximate elevation as the water tank site, and is located on the west side of Nelson Street, opposite the water tank site.

The Settles family has owned and lived on our property since 1979 (37 years).

The Settles property will be adversely impacted as follows:

- Our expansive views to the east will be replaced by an imposing water tank. No amount of landscaping can make a 9 – 20 foot tank attractive. *You can put lipstick on a pig -- but you still have a pig!*
- We already have an ugly water tank adjacent to our property, located on the south side of Galloway Lane.
- The Settles, and surrounding property owners, will **suffer lower property values** due to this proposal. while others – not visually impacted – will benefit financially. In short: We lose property value so that large developers can gain millions of dollars in profit. ***WE NEED FOR THE CITY TO LOOK OUT FOR OUR INTERESTS***. Long after the developers have retired to their estates – we will be living with this ugly water tank.
- **Another BIG issue: We are in a drought. Where is the water going to come from to fill the tank and serve thousands of new residents? (We already lack the water to keep our lawns alive).**
- **Traffic is already bad. Thousands of additional cars will make a bad situation much worse.**

At the very least, under CEQA, we expect the city to rethink this project.

- A reasonable mitigating measure would be to **completely bury the water tank** (Which will already, under your proposal, be ***partially buried***).
- Then, without an above ground presence, and with some low level landscaping, the visual impact will be transformed from a visual blight to a community enhancement by assuming a ***park like appearance***. Paving the dirt portion of Nelson would be a big improvement too.
- By IMPROVING the appearance of the site – without blocking anyone's view – the developer gets his homes – **the neighborhood gets a park** – and everyone wins.
- Plopping a huge water tank on a vacant property is relatively easy. Doing it in an environmentally responsible way is more difficult. Our proposal provides the city with an opportunity ***to do the right thing*** for **EVERYONE** impacted by your proposal. If it costs more to implement the mitigation measures suggested – **Please follow this simple principle:** ***Let the one who benefits (the developer) pay***. Without water – The developer loses millions of dollars in profit. What is fair is fair.
- The proposed water tank will be the second water tank on Nelson Street – making it the third tank in a quarter mile radius.

The construction of a large water tank in an established residential area, whose primary beneficiary is the developer of approximately 1800 homes ***who will not be impacted aesthetically*** by the unattractive and imposing tank, seems unfair. We will suffer ***all of the negative effects*** from this project – See list on page 1 – while the new homes developer will enjoy most of the benefits! Burying this tank will solve the problem.

In a conversation with Mr. Koper last Friday, June 17, 2017, I was advised that the CEQA process has not concluded.

We have the following understanding of the CEQA process:

CEQA process overview: CEQA mandates actions all state and local agencies must take to advance that policy. Specifically, for any project under CEQA's jurisdiction with potentially significant environmental impacts, agencies must identify **mitigation measures** and **alternatives** by preparing an Environmental Impact Report, and must approve projects with **feasible mitigation measures** and the **environmentally superior alternative**.[4] The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations Title 14 § 15000 et seq., which detail the protocol by which state and local agencies comply with CEQA requirements. Appendix A of the CEQA Guidelines summarizes this protocol in flowchart form.[5] CEQA originally applied to only public projects, but California Supreme Court interpretation of the statute, as well as later revisions to the wording, have expanded the CEQA's jurisdiction to nearly all projects within California, including those accomplished by private businesses and individuals. § 21002.1: **"Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so."** For private projects, CEQA applies when a government permit or other entitlement for use is necessary.[6]

We believe the intent of CEQA is not to stop progress – new construction – but to require that the proposed construction does not destroy or unnecessarily degrade the environment of established areas.

Clearly, the city's water tank project, based on the above ground height of 9 – 20 feet (Provided at the field meeting) will have a substantial negative impact on the surrounding neighborhood.

I can be reached at: **2141 Mendocino Street, Fullerton, CA 92831-1237. Cell phone: 714 496-1408. Email: alansettles@sbcglobal.net.**

Respectfully,

Alan H. Settles, Jr.

City of Corona

400 S. Vicentia Ave.
Corona, CA 92882

Minutes - Draft

Tuesday, November 13, 2018

6:00 PM

Council Chambers

Planning and Housing Commission

Mitchell Norton, Chair
Timothy Jones, Vice Chair
Tony Dunn, Commissioner
Jeff Ruscigno, Commissioner
Vacant, Commissioner

EXHIBIT 5

ROLLCALL

Present 4 - Tim Jones, Mitchell Norton, Jeff Ruscigno, and Tony Dunn

1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

Commissioner Ruscigno led the Pledge of Allegiance.

3. ORAL COMMUNICATIONS FROM THE PUBLIC

JOE MORGAN, RESIDENT, addressed his concern regarding All American Asphalt and the monitoring of certain issues that were presented by the residents at the October 22, 2018 Planning and Housing Commission meeting. The project was approved by City Council on November 7, 2018; however, Mr. Morgan stated the agreement to monitor the issues raised by residents was not in official writing.

JOANNE COLETTA, DIRECTOR, stated for clarification, a condition of approval was added to the Surface Mining Permit, and it is part of the public record.

4. MEETING MINUTES

18-2162 Approval of minutes for the Planning and Housing Commission meeting of September 24, 2018.

Attachments: 20180924-P&H Minutes - DRAFT

A motion was made by Ruscigno, seconded by Jones, that the Planning and Housing Commission approve the meeting minutes of September 24, 2018. The motion carried by the following vote:

Aye: 4 - Jones, Norton, Ruscigno, and Dunn

18-2252 Approval of minutes for the Planning and Housing Commission meeting of October 22, 2018.

Attachments: 20181022-P&H Minutes - DRAFT

A motion was made by Ruscigno, seconded by Jones, that the Planning and Housing Commission approve the meeting minutes of October 22, 2018. The motion carried by the following vote:

5. CONSENT ITEMS

None.

6. PUBLIC HEARINGS

18-2255 **GPA2018-0001**: Application to amend the General Plan designation on approximately 31 acres from Agriculture to MDR (Medium Density Residential, 6-15 du/ac) on 17.4 acres and OS (Open Space) on 11.2 acres plus 2.6 acres of street right-of-way associated with the extension of the southerly boundary of the Arantine Hills Specific Plan (SP09-001) and further amend the General Plan designations within the boundary of the specific plan to increase Open Space (OS) from 56.8 to 77.4 acres; increase Parks (P) from 8.7 to 9.9 acres; reduce Low Density Residential (LDR, 3-5 du/ac) from 75.6 to 42.5 acres; increase Medium Density Residential (MDR, 6-15 du/ac) from 74.3 to 110.1 acres; and increase High Density Residential (HDR, 15-36 du/ac) from 34.3 to 39.0 acres for the project located west of Interstate 15, south of Eagle Glen Parkway in the Arantine Hills Specific Plan. (Applicant: John Sherwood of Arantine Hills Holdings, LP, 85 Enterprise, Suite 405, Aliso Viejo, CA 92656).

Attachments: Staff Report

Exhibit 1 - Letter from New Home Company dated November 2, 2018

18-2256 **DA15-001 Amendment**: First amendment to the Arantine Hills Development Agreement (DA15-001) to include and extend the development rights and obligations of the original development agreement to the 31.2 acres proposed to be added to the project area by SPA2018-0001, an application to amend the Arantine Hills Specific Plan (SP09-001) located west of Interstate 15, south of Eagle Glen Parkway, (Applicant: John Sherwood of Arantine Hills Holdings, LP, 85 Enterprise, Suite 405, Aliso Viejo, CA 92656).

Attachments: Staff Report

Exhibit 1 - Letter from New Home Company dated November 2, 2018

18-2257 **SPA2018-0001**: Application to amend the Arantine Hills Specific Plan (SP09-001) located west of Interstate 15, south of Eagle Glen Parkway, to: **1)** re-allocate units among the planning areas *with no additional units being added* and distribute the allowable units across a wider area by including 31.2 acres into the specific plan boundary along the southerly perimeter establishing new Planning Area 17 with an MDR (Medium Density Residential) designation (17.4 acres) and Planning Area 16A with an OS (Open Space) designation (11.1 acres) plus 2.6 acres of street right-of-way; **2)** amend Planning Area 1 from Low Density Residential (LDR, 27.6 acres) to Medium Density Residential (MDR, 33.4 acres); Planning Area 2 from Medium Density Residential (MDR, 23.2 acres) to High Density Residential (HDR, 17.4 acres); Planning Area 6 from High Density Residential (HDR, 17.4 acres) to Medium Density Residential

(MDR, 17.4 acres); Planning Area 8, Low Density Residential (LDR) from 48 to 42.5 acres; Planning Area 9, Medium Density Residential (MDR) from 10.2 to 10.5 acres; Planning Area 10, High Density Residential (HDR) from 16.9 to 21.6 acres; Planning Area 12 from Medium Density Residential (MDR, 9.5 acres) to Open Space (OS, 9.5 acres); **3)** amend Planning Area 14 (MDR, 25.9 acres) reducing 167 units to 154 units; **4)** add a new Planning Area 18 for 1.2 acres of additional Park (P); and **5)** commensurate conforming revisions to the specific plan document (Applicant: John Sherwood of Arantine Hills Holdings, LP, 85 Enterprise, Suite 405, Aliso Viejo, CA 92656).

Attachments: Staff Report

Exhibit 1 - Letter from New Home Company dated November 2, 2018

18-2258 **PM 37036**: Application to subdivide approximately 159+ acres into two parcels for conveyance purposes along the southerly boundary of the Arantine Hills Specific Plan (SP09-001), located west of Interstate 15, south of Eagle Glen Parkway (Applicant: John Sherwood of Arantine Hills Holdings, LP, 85 Enterprise, Suite 405, Aliso Viejo, CA 92656).

Attachments: Staff Report

Exhibit 1 - Letter from New Home Company dated November 2, 2018

Chair Norton stated that the applicant requested a continuance to the Planning and Housing Commission meeting of November 26, 2018. Chair Norton asked if there is anyone from the public that wants to comment on these applications at this time.

FRED MYERS, RIVERSIDE COUNTY RESIDENT, thanked staff for taking action on certain items he presented at the October 22, 2018 Planning and Housing Commission meeting. Mr. Myers spoke on a Memorandum of Sale Agreement from 2016 and stated he will address his other concerns at the November 26, 2018 Planning and Housing Commission meeting.

A motion was made by Ruscigno seconded by Dunn, that the Planning and Housing Commission CONTINUE items GPA2018-0001, SPA2018-0001, DA15-001, and PM 37036 to the Planning and Housing Commission meeting of November 26, 2018. The motion carried by the following vote:

18-2233 **SUF2018-0001**: Request for a similar use finding that metal punching and pressing of small components is considered similar to uses permitted in the M-1 (Light Manufacturing) Zone, such as the use machine shop, the manufacturing of goods made from metal, and the manufacturing of electronic equipment, components, and products. (Applicant: Nicholas Ravlich of Ravlich Enterprises, LLC 10550 Lawson River Avenue Fountain Valley, CA 92708).

Attachments: Staff Report

Resolution No. 2526

Exhibit A - Corona Municipal Code Chapter 17.44.030 Permitted Uses

Exhibit B - Applicant's letter dated October 3, 2018 describing the use and operations of the business

Exhibit C - Environmental Documentation

PPT for SUF2018-0001

Commissioner Ruscigno recused himself due to a conflict of interest.

At the request of Chair Norton, Lupita Garcia, Assistant Planner, reviewed the staff report for SUF2018-0001. At the conclusion of her presentation, Ms. Garcia offered to answer any questions of the Commission.

ADAM HILL, REPRESENTING RAVLICH ENTERPRISES, LLC, provided a brief overview of the project and why there is a need for it.

Commissioner Jones asked about the decibel level and how that was determined.

Ms. Garcia said the decibel reading was taken at their existing location, while the press machines were being used.

Chair Norton opened the public hearing.

BRIAN TRESSEN, RESIDENT, spoke in favor of the project.

JOE MORGAN, RESIDENT, spoke in favor of the project. He suggested possibly changing the ordinance.

Chair Norton closed the public hearing.

Discussion ensued between the Commission and staff regarding the threshold between small and larger pieces of metal.

A motion was made by Dunn, seconded by Jones, that the Planning and Housing Commission GRANT SUF2018-0001, and adopt Resolution No. 2526 based on the analysis and findings made pursuant ot Section 17.88.050 of the Corona Municipal Code that metal punching and pressing of small components is permitted int he M-1 (Light Manufacturing) Zone and similar to the use machine shop, the manufacturing of goods made from metaland the manufacturing of electronic equipment, components, and products. The motion carried by the following vote:

Aye: 3 - Jones, Norton, and Dunn

Recused: 1 - Ruscigno

18-2220 **PM 36667**: Parcel map application to subdivide 1.60 acres into four parcels for single-family residential purposes located at the terminus of Riverbend Circle, generally on the east side of Fullerton Avenue and south of Taber Street in the Medium Density Residential designation of the Corona Vista Specific Plan (SP90-5) (Applicant: Melvin Aou, Poppybend, LLC, 18340 Yorba Linda Blvd., Suite 107-200, Yorba Linda, CA 92886).

Attachments: Staff Report

Locational and Zoning Map

Exhibit A - Parcel Map 36667

Exhibit B - Conditions of Approval

Exhibit C - Applicant's letter, dated October 8, 2018, providing essential subdivision information

Exhibit D - Information regarding community meetings held in April and May 2016

Exhibit E - Flyer for community meeting held on October 15, 2018

Exhibit F - Presentation for community meeting held on October 15, 2018

Exhibit G - Minutes and sign-in sheet for community meeting held on October 15, 2018

Exhibit H - Environmental Documentation

PM 36667, TTM 36634, PP15-004 PP Presentation

At the request of Chair Norton, Sandra Yang, Senior Planner, reviewed the staff report and exhibits for the three related public hearing items PM 36667, TTM 36634, and PP15-004. At the conclusion of her presentation, Ms. Yang offered to answer any questions of the Commission.

MICHAEL KIM, PROJECT ENGINEER REPRESENTING POPPYBEND LLC., thanked staff for hearing the proposal.

MELVIN AOU, REPRESENTING POPPYBEND LLC, stated he is available to answer any questions.

CATHERINE HALLETT, RESIDENT, spoke on her concern regarding the fact that the largest home proposed in the project will be located right behind her home. Her request is that a smaller home be built behind her home and that the setbacks be similar. Ms. Hallett also mentioned her concern about the maintenance and upkeep to the proposed landscape area. Ms. Hallett stated she is also speaking on behalf of one of her neighbors who has the same concerns.

HOWARD LOMBARDI, RESIDENT, spoke on his concern regarding the stability of the existing block wall once the grading begins, the ability to maintain the area by the 11 residents, and the accessibility of the area from the street.

KATHY HUMPHRY, RESIDENT, spoke on her concerns regarding the maintenance of the slope and the maintenance of the existing iron fencing.

AMIT CHANDRA, RESIDENT, spoken on his concern regarding additional traffic.

Chair Norton closed the public hearing.

DON SCHWEITZER, ARCHITECT FOR THE PROJECT, addressed the concerns regarding the setbacks and size of the properties.

Mr. Aou addressed the concerns regarding the maintenance of the landscape areas, the stability of the existing retaining wall, and traffic concerns.

Mr. Kim addressed the concern regarding accessibility of the area from the street and the placement of other single story homes.

TOM KOPER, ASSISTANT PUBLIC WORKS DIRECTOR, provided information on the traffic study and on the proposed wall. Mr. Koper recommended that the current homeowners photo-document the condition of the existing retaining wall and their swimming pools. Mr. Koper also spoke on the CC and Rs that will directly effect each property owner.

Commissioner Dunn asked for clarification on the block wall that was mentioned earlier.

Mr. Koper provided an explanation between the existing wall and the new proposed wall.

Discussion ensued between Vice Chair Jones, staff and the applicant on the type of shrubbery that will be planted and the height of the shrubbery. Mr. Koper indicated only shrubs will be planted in this area, but no trees. Trees could potentially undermine the retaining wall.

Discussion ensued between Commissioner Ruscigno, staff and the applicant regarding the protective guard rail, shrubbery and landscape, parking options and clarification on the Homeowners Association.

Commissioner Ruscigno stated he would like to add a condition that the street trees to be installed within the parkway along Hudson Avenue and Fullerton Avenue adjacent to the project site be 36-inch box in size at the time of installation.

Chair Norton reopened the public hearing.

TOM RICHINS, RESIDENT, applauded the Planning and Housing Commissioners for their well thought-out questions. He is in favor of this project.

Chair Norton closed the public hearing.

A motion was made by Jones, seconded by Ruscigno, that the Planning and Housing Commission recommend APPROVAL of PM 36667 to the City Council, based on the findings contained in the staff report and subject to the conditions of approval. The motion carried by the following vote:

Aye: 4 - Jones, Norton, Ruscigno, and Dunn

18-2253 **TTM 36634**: Tentative tract map application to create one buildable lot for residential condominium purposes and two lettered lots for streets and other improvements on 2.32 acres to facilitate the development of 11 single-family detached condominium homes located on the east side of Hudson Avenue at Poppyseed Lane, generally west of Fullerton Avenue at Taber Street in the Medium Density Residential designation of the Corona Vista Specific Plan (SP90-5) (Applicant: Melvin Aou, Poppybend LLC,18340 Yorba Linda Blvd., Suite 107-200, Yorba Linda, CA 92886).

Attachments: Staff Report

Locational and Zoning Map

Exhibit A - Tentative Tract Map 36634

Exhibit B - Conditions of Approval

Exhibit C - Site Plan

Exhibit D - Applicant's letter, dated October 8, 2018, giving required subdivision information

Exhibit E - Information regarding community meetings held in April and May 2016

Exhibit F - Letter from Monte Verde HOA, dated October 27, 2018

Exhibit G - Mailer for community meeting held on October 15, 2018

Exhibit H - Presentation for community meeting held on October 15, 2018

Exhibit I - Minutes and sign-in sheet for community meeting held on October 15, 2018

Exhibit J - Mailer for Ferndale Street residences

Exhibit K - Public correspondence

Exhibit L - Environmental Documentation

A motion was made by Ruscigno, seconded by Dunn, that the Planning and Housing Commission recommend adoption of the Mitigated Negative Declaration and the Mitigation Monitoring Plan and APPROVAL of TTM 36634, based on the findings contained in the staff report and conditions of approval. The motion

carried by the following vote:

Aye: 4 - Jones, Norton, Ruscigno, and Dunn

18-2260 **PP15-004**: Precise plan application to review the site design, architecture, fencing, and landscaping associated with the development of 11 single-family detached condominium homes on 2.32 acres located on the east side of Hudson Avenue at Poppyseed Lane and four single-family homes on 1.60 acres located at the terminus of Riverbend Circle, generally on the west and east sides of Fullerton Avenue near Taber Street in the Medium Density Residential designation of the Corona Vista Specific Plan (SP90-5) (Applicant: Melvin Aou, Poppybend LLC, 18340 Yorba Linda Blvd., Suite 107-200, Yorba Linda, CA 92886).

Attachments: Staff Report

Resolution No. 2525

Locational and Zoning Map

Exhibit A-1 - Site Plan for Condominium Development

Exhibit A-2 - Site Plan for Single-Family Development

Exhibit B - Conditions of Approval

Exhibit D - Floor Plans for Single-Family Development

Exhibit E-1 - Colored Elevations for Condominium Development

Exhibit E-2 - Colored Elevations for Single-Family Development

Exhibit F-1 - Detailed Elevations for Condominium Development

Exhibit F-2 - Detailed Elevations for Single-Family Development

Exhibit G - Landscape Plan for Condominium Development

Exhibit H - Landscape Plan for Single-Family Development

Exhibit I - Open Space Plan

Exhibit J - Fences and Walls for Condominium Development

Exhibit K - Fences and Walls for Single-Family Development

Exhibit L - Photos of the South Retaining Wall and Tubular Steel Fence

Exhibit M - Cross-sectin Details of the South Project Boundaryline

Exhibit N - Conceptual Grading Plan for Condominium Development

Exhibit O - Applicant's letter dated July 17, 2017, addressing criteria for Precise Plan

Exhibit P - Information regarding community meetings held in April and May 2016

Exhibit Q - Letter from Monte Verde HOA, dated October 27, 2018

Exhibit R - Flyer for community meeting held on October 15, 2018

Exhibit S - Presentation for community meeting held on October 15, 2018

Exhibit T - Minutes and sign-in sheet for community meeting held on October 15, 2018

Exhibit U - Mailer for Ferndale Street residences

Exhibit V - Public correspondence

Exhibit W - Environmental Documentation for Condominium Development

Exhibit X - Environmental Documentation

A motion was made by Jones, seconded by Dunn, that the Planning and Housing Commission adopt the Mitigated Negative Declaration and the Mitigation Monitoring Plan and adopt Resolution No. 2525 GRANTING PP15-004, with an added condition that the street trees to be installed within the parkway along Hudson Avenue and Fullerton Avenue adjacent to the project site shall be 36-inch box in size at time of installation and based on the findings contained in the staff report and conditions of approval. The motion carried by the following vote:

Aye: 4 - Jones, Norton, Ruscigno, and Dunn

18-2254 **V2017-0101**: Application for a variance from Sections 17.70.060 (A) and 17.70.060 (F) (1) of the Corona Municipal Code to increase the height of a perimeter tube steel fence from five feet to eight feet within the front yard and from seven feet to eight feet within the side and rear yards for a new city water reservoir site located on the southeast corner of Nelson Street and Keith Street (3985 Nelson Street) in the R-1A (Single-Family Residential, 40,000 square-foot minimum lot size) Zone (Applicant: Vernon Weisman, District Engineer, City of Corona, Department of Water and Power, 755 Public Safety Way, Corona, CA 92880).

Attachments: Staff Report

Resolution No. 2524

Locational and Zoning Map

Exhibit A - Site Plan

Exhibit B - Conditions of Approval

Exhibit C1 - C2 - Fence Plan and Details

Exhibit D - Landscape Plan

Exhibit E - Applicant's letter, dated October 12, 2018

Exhibit F - Environmental Documentation

Exhibit G - Letter of objection, dated June 22, 2018

CUP17-002 V2017-0101 PP Presentation

At the request of Chair Norton, Harald Luna, Associate Planner, reviewed the staff report and exhibits for the two related public hearing items V2017-0101 and CUP17-002. At the conclusion of his presentation, Mr. Luna offered to answer any questions of the Commission.

MAYRA CABRERA, UTILITY ENGINEER, stated she is available to answer any questions.

Commissioner Ruscigno asked what the height is of the reservoir on the north side of Nelson from Masters Drive.

TOM MOODY, DWP GENERAL MANAGER, stated it is 24 feet above grade.

Chair Norton opened the public hearing.

RUSSELL TULL, RESIDENT, spoke on his concern regarding the structural integrity of the water tower and the possibility of flooding due to a crack or a leak. Mr. Tull also spoke on his concern regarding the empty lot adjacent to the proposed water tower and the potential fire hazard that exists due to the weeds.

JOE MORGAN, RESIDENT, asked what the funding source is for this

project. Mr. Morgan stated he is also interested in hearing about the steps the City will take if there is a flood or leak due to the water tower.

Chair Norton closed the public hearing.

Mr. Moody stated that the project will partially be funded by the developer of Arantine Hills, which is their fair share, and partially funded by the current rate-payer. Mr. Moody stated that most of the piping for this project is underground. In addition, inside the piping are check valves. For example, if there is an earthquake, the check valves would automatically shut down. Also, staff would have the ability to control the values if needed.

Vice Chair Jones spoke on his concern regarding potential graffiti to the water tower. He would like to see more mature landscape planted around the tower. He would like all trees to be planted at the project site to be a minimum of 36-inch box in size at time of installation.

Mr. Moody stated staff is willing to use mature landscaping and the department is aware of potential graffiti and will address any graffiti in a timely manner.

Discussion ensued between Commissioner Ruscigno and staff regarding the ground level placement of the water tower.

A motion was made by Ruscigno, seconded by Jones, that the Planning and Housing Commission recommend adoption of the Mitigated Negative Declaration and the Mitigation Monitoring Plan and Resolution No. 2524 GRANTING V2017-0101, based on the findings contained in the staff report and conditions of approval. The motion carried by the following vote:

Aye: 4 - Jones, Norton, Ruscigno, and Dunn

18-2234 **CUP17-002**: Conditional Use Permit application to establish a 2.5 million-gallon potable water reservoir on 0.90-acres located at 3985 Nelson Street in the R-1A (Single-Family Residential, 40,000 square-foot minimum lot size) Zone. (Applicant: Vernon Weisman, District Engineer, City of Corona, Department of Water and Power, 755 Public Safety Way, Corona, CA 92880).

Attachments: Staff Report

Resolution No. 2523

Locational and Zoning Map

Exhibit A - Site Plan

Exhibit B - Conditions of Approval

Exhibit C - Conceptual rendering of reservoir

Exhibit D - Potable Water Storage Reservoir Cross Sections

Exhibit E - Landscape Plan

Exhibit F1 - F2 - Fence Plan and Details

Exhibit G - Letter of Objection, dated June 22, 2016

Exhibit H - Environmental Documentation

Exhibit I - Applicant's letter, dated December 14, 2016

A motion was made by Dunn, seconded by Jones, that the Planning and Housing Commission recommend adoption of the Mitigated Negative Declaration and the Mitigation Monitoring Plan and Resolution No. 2523 GRANTING CUP17-002, adding a condition that all trees to be planted at the project site shall be a minimum of 36-inch box in size at time of installation and based on the findings contained in the staff report and conditions of approval. The motion carried by the following vote:

Aye: 4 - Jones, Norton, Ruscigno, and Dunn

18-2231 **ZTA2018-0001**: Proposal to amend various sections of, and add a new subsection to, Title 17 pertaining to: 1) lot coverage for legal non-conforming smaller lots in residential zones with larger minimum lot size standards (CMC Sections 17.06.120; 17.08.120; 17.10.120; 17.11.120; 17.12.120; 17.20.120; 17.64.010[E] (new); and 2) amend Sections 17.85.040(B)(2) and (C)(3) pertaining to parking requirements for accessory dwelling units in order to conform with recent state legislation (Applicant: City of Corona).

Attachments: Staff Report

Exhibit A - Proposed zone text amendment to CMC Chapter 17.64 (Lots and Yards)

Exhibit B - Proposed zone text amendment to CMC Chapters 17.06, 17.08, 17.10, 17.11, 17.12 and 17.20 (Agriculture and Single Family Zones)

Exhibit C - Proposed zone text amendment to Chapter 17.85 (Accessory Dwelling Units)

Exhibit D - Aerial depicting small lot development in the Overlook Addition

Exhibit E - Environmental documentation

Exhibit F - Letter of suport from Ms. Melissa Hendrickson

PPT for ZTA2018-0001

At the request of Chair Norton, Terri Manuel, Planning Manager, reviewed

the staff report and exhibits for public hearing item ZTA2018-0001. At the conclusion of her presentation, Ms. Manuel offered to answer any questions of the Commission.

Commissioner Ruscigno asked if this was part of the annexation that took place years back.

Mr. Koper stated part of the area was within the City jurisdiction, the other was part of Riverside County.

Commissioner Ruscigno asked for clarification on the location of the assessory dwelling units.

Ms. Manuel explained the ZTA deals with two separate topics neither of which affects the other.

Discussion ensued regarding the assessory dwelling units.

Chair Norton opened the public hearing.

MELISSA HENDRICKSON, RESIDENT, thanked staff for all their hard work. Her main goal in the design was to place the master bedroom downstairs.

WES SPEAKE, RESIDENT, spoke on his concerns regarding future larger lots being converted to smaller lots and parking standards.

JOE MORGAN, RESIDENT, stated the zone text amendment should be two separate applications and not combined and these types of situations should be approved on a case by case basis.

Ms. Manuel provided responses to Mr. Speake and Mr. Morgan's concerns. Ms. Manuel also stated that it is acceptable to combine a zone text amendment.

Ms. Coletta provided additional information on the lot coverage regulations.

Commissioner Ruscigno asked for clarification on the minimum of the small lot size on single family homes.

Ms. Coletta provided a response confirming that the minimum lot size for a fee simple (ownership) lot is 7.200 square feet.

A motion was made by Jones, seconded by Dunn, that the Planning and Housing Commission recommend APPROVAL of ZTA2018-0001 to the City Council, based on the findings contained in the staff report. The motion carried by the following vote:

Aye: 4 - Jones, Norton, Ruscigno, and Dunn

7. WRITTEN COMMUNICATIONS

None.

8. ADMINISTRATIVE REPORTS

Ms. Coletta stated there will be a Study Session on Wednesday, November 14, 2018 at 3:30 p.m.

9. PLANNING AND HOUSING COMMISSIONERS' REPORTS AND COMMENTS

None.

10. PLANNING AND HOUSING COMMISSION ORAL REPORTS AND COMMENTS REGARDING COUNCIL COMMITTEES

18-2266 Report by Commissioner Ruscigno on the November 7, 2018 Infrastructure Committee meeting.

Attachments: 20181107-Infrastructure Committee agenda

Mr. Ruscigno stated there was discussion and review of the Mangular Blend Station from the Public Works Department.

11. ADJOURNMENT

Chair Norton adjourned the meeting at 8:15 p.m. to the Planning and Housing Commission meeting of Monday, November 26, 2018, commencing at 6:00 p.m. in the City Hall Council Chambers.