Initial Study
and
Mitigated Negative Declaration
for

Replacement of Well W076 in the Bairs-Georges Wellfield

Los Angeles Department of Water and Power
Environmental Services
111 North Hope Street, Room 1044
Los Angeles, CA 90012

August 2011

COUNTY CLERK'S USE | CITY CLERK'S USE

CITY OF LOS ANGELES
OFFICE OF THE CITY CLERK
ROOM 395, CITY HALL
LOS ANGELES, CALIFORNIA 90012
CALIFORNIA ENVIRONMENTAL QUALITY ACT
PROPOSED
MITIGATED NEGATIVE DECLARATION
(Article V, City CEQA Guidelines)

LEAD CITY AGENCY:	**COUNCIL DISTRICT**
Los Angeles Department of Water and Power (LADWP) 111 North Hope Street, Room 1044 Los Angeles, CA 90012	N/A
PROJECT TITLE: Replacement of Well W076 in Bairs-Georges Wellfield	**CASE NO.** N/A

PROJECT LOCATION:

8.5 miles north of Lone Pine and 8 miles south of Independence, CA

DESCRIPTION:

Well W076, located in the Bairs-Georges Wellfield, is among the older LADWP wells in the Owens Valley. This well was drilled in 1924 and has been mainly used to supply the Los Angeles Aqueduct (LAA). It was operational until 1990, but has failed and was shut down in 1990 due to casing misalignment and excessive sand production. Los Angeles Department of Water and Power (LADWP) proposes to replace this well using the current industry standards for well drilling. Mitigation measures, which include drilling and pumping only from the deep aquifer, have been included to minimize potential impacts to the groundwater.

NAME AND ADDRESS OF APPLICANT IF OTHER THAN CITY AGENCY: N/A

FINDINGS:

THE INITIAL STUDY PREPARED FOR THIS DOCUMENT IS INCLUDED.

NAME OF PERSON PREPARING THIS FORM:	**TITLE:**	**PHONE:**
Michael Mercado	Environmental Specialist, Project Manager	(213) 367-0395
ADDRESS: 111 N. Hope Street, Room 1044 Los Angeles, CA 90012	**SIGNATURE (Official)**  Charles C. Holloway Manager, Environmental Assessment	**DATE**

Form Gen. 157 (Appendix C)

CEQA Initial Study
and
Mitigated Negative Declaration

Replacement of Well W076 in the Bairs-Georges Wellfield

August 3, 2011

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Table of Contents

Section Name **Page Number**

Section 1 Project and Agency Information....1-3

1.1 Project Title and Lead Agency....1-3
1.2 Project Background and Objectives....1-3
1.3 Project Location and Environmental Setting....1-4
1.4 Project Description....1-4
1.5 Applicable Plans and Policies....1-4
1.6 Project Approvals....1-4
Figure 1 - Area and Vicinity Maps....1-5
Figure 2 - Design comparison - proposed and replacement well construction....1-6

Section 2 Environmental Analysis....2-7

2.1 Environmental Factors Potentially Affected....2-7
2.2 Agency Determination....2-7
2.3 Environmental Checklist....2-8
2.3.1 Aesthetics....2-8
2.3.2 Agriculture and Forest Resources....2-9
2.3.3 Air Quality....2-11
2.3.4 Biological Resources....2-14
2.3.5 Cultural Resources....2-20
2.3.6 Geology and Soils....2-22
2.3.7 Greenhouse Gas Emissions....2-24
2.3.8 Hazards and Hazardous Materials....2-26
2.3.9 Hydrology and Water Quality....2-28
2.3.10 Land Use and Planning....2-36
2.3.11 Mineral Resources....2-37
2.3.12 Noise....2-38
2.3.13 Population and Housing....2-40
2.3.14 Public Services....2-41
2.3.15 Recreation....2-42
2.3.16 Transportation and Traffic....2-43
2.3.17 Utilities and Service Systems....2-45
2.3.18 Mandatory Findings of Significance....2-46

Section 3 References, Abbreviations and Report Preparation....3-1

3.1 References and Bibliography....3-1
3.2 Acronyms and Abbreviations....3-3
3.3 Preparers of the Initial Study....3-4

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Section 1
Project and Agency Information

1.1 PROJECT TITLE AND LEAD AGENCY

Project Title:	**Replacement of Well W076 in Bairs-Georges Wellfield**
Lead Agency Name:	Los Angeles Department of Water and Power
Lead Agency Address:	111 N Hope St, Room 1044, Los Angeles, CA 90012
Contact Person:	Michael Mercado
Contact Phone Number:	213-367-0395
Project Sponsor:	Los Angeles Department of Water and Power

1.2 PROJECT BACKGROUND AND OBJECTIVES

The City of Los Angeles Department of Water and Power (LADWP) owns and operates over 100 production wells in the Owens Valley. Many of these wells were drilled in the 1920s using drilling and construction techniques available at that time. Since then, some wells have failed for a variety of reasons and have been replaced accordingly. The replacement wells are drilled using the current industry standards and with the goal of maximizing efficiency and minimizing potential impacts to the environment.

Well W076 (W076) is among the older LADWP wells in the Owens Valley. This well was drilled in 1924 and has been mainly used to supply the Los Angeles Aqueduct (LAA). W076 has operated every year from 1972 to 1990, when it was shut off due to mechanical failure. W076 was drilled utilizing standard technology at that time, which included drilling by the cable tool method and its casing was perforated using an earlier version of a casing perforator known as Mill's knife. The total depth of the original well is 210 feet with a standard 16-inch casing. To maximize its pumping capacity, the well was perforated throughout the length of the casing. W076 must be replaced because of its failure due to misaligned casing and the production of an excessive amount of sand during pumping.

The planned location of the replacement well for W076 is within 150 feet east of its current location in the same wellfield.

Based on Section VI of the 1991 *Agreement Between the County of Inyo and the City of Los Angeles and Its Department of Water and Power on a Long Term Groundwater Management Plan for Owens Valley and Inyo County* (Water Agreement), LADWP may replace existing wells and construct new wells in areas where hydrogeologic conditions are favorable and where the operation of that well will not cause a change in vegetation that would be inconsistent with (its) goals and principles. Since the implementation of the Water Agreement, LADWP has replaced a number of failed wells throughout the Owens Valley.

1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

W076 is located in Bairs-Georges Wellfield, approximately 8.5 miles north of Lone Pine and 8 miles south of Independence (see area and vicinity map, inset, figure 1). The main landmarks near Bairs-Georges Wellfield are the Alabama Hills to the south, the LAA running through the center of the wellfield, and Manzanar National Monument to the north. Bairs, Georges, and Hogback Creeks run through this wellfield. A very long alluvial fan (approximately 7 miles) with a relatively mild slope lies to the west of Bairs-Georges Wellfield.

1.4 PROJECT DESCRIPTION

W076, located in the Bairs-Georges Wellfield has failed due to casing misalignment and excessive sand production. LADWP plans to replace this well using the current industry standard for well design, meeting the requirements of California Well Standards Bulletin 74-90 by the Department of Water Resources. They include using a mud rotary method for drilling and using pre-fabricated casing and screen.

The main design feature is the depth of the replacement well. The current emphasis of groundwater management in the Owens Valley is to minimize impacts to groundwater dependent vegetation. To do this, the replacement well will be drilled and perforated below the shallow aquifer confining zone which is at an approximate depth of 400 feet, into a deeper aquifer. The borehole for the replacement well will be drilled to a depth of 600 feet. The well screen will then be installed below the confining layer and a blank casing will be installed throughout the shallow aquifer and the confining zone to draw water only from the deeper aquifer. The annular space between the screen and the borehole wall will be filled with gravel, to minimize or eliminate sand production as experienced in the original well. The space above the screen between the blank casing and the borehole wall will then be filled with cement up to ground level. After having concluded all tests to determine well function, and having determined that the replacement well is in good operating condition, all below ground well components of the original well W076 will be abandoned in place, and any above ground well components including the fencing will be removed from the site.

The current standard for municipal well installation calls for the use of the more common 18-inch diameter casing and screen as opposed to the previous standard 16-inch diameter casing. A comparison of the existing well and its proposed replacement are shown in Figure 2.

1.5 APPLICABLE PLANS AND POLICIES

The project area is located on City of Los Angeles-owned land within Inyo County. The Inyo County General Plan designates this area as a Natural Resources planning area. The zoning overlay is Open Space – 40-acre minimum lot size.

1.6 PROJECT APPROVALS

The proposed project will be designed and constructed pursuant to the provisions of the Inyo County/LADWP Long-Term Water Agreement and California Government Code Sections 53090 and 53091.

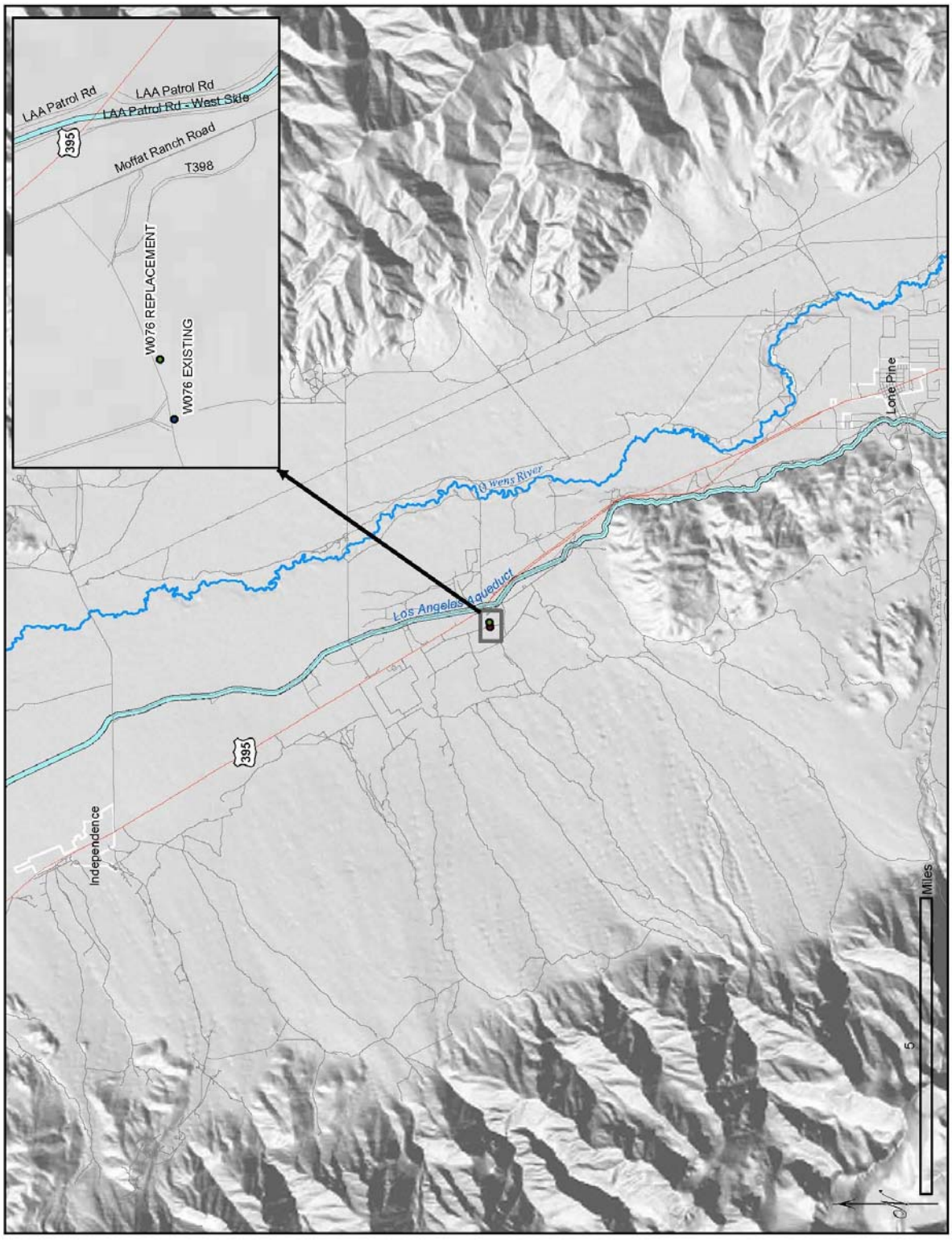

Figure 1 – Area and vicinity (inset) map for well W076 – location of existing well and location of proposed replacement.

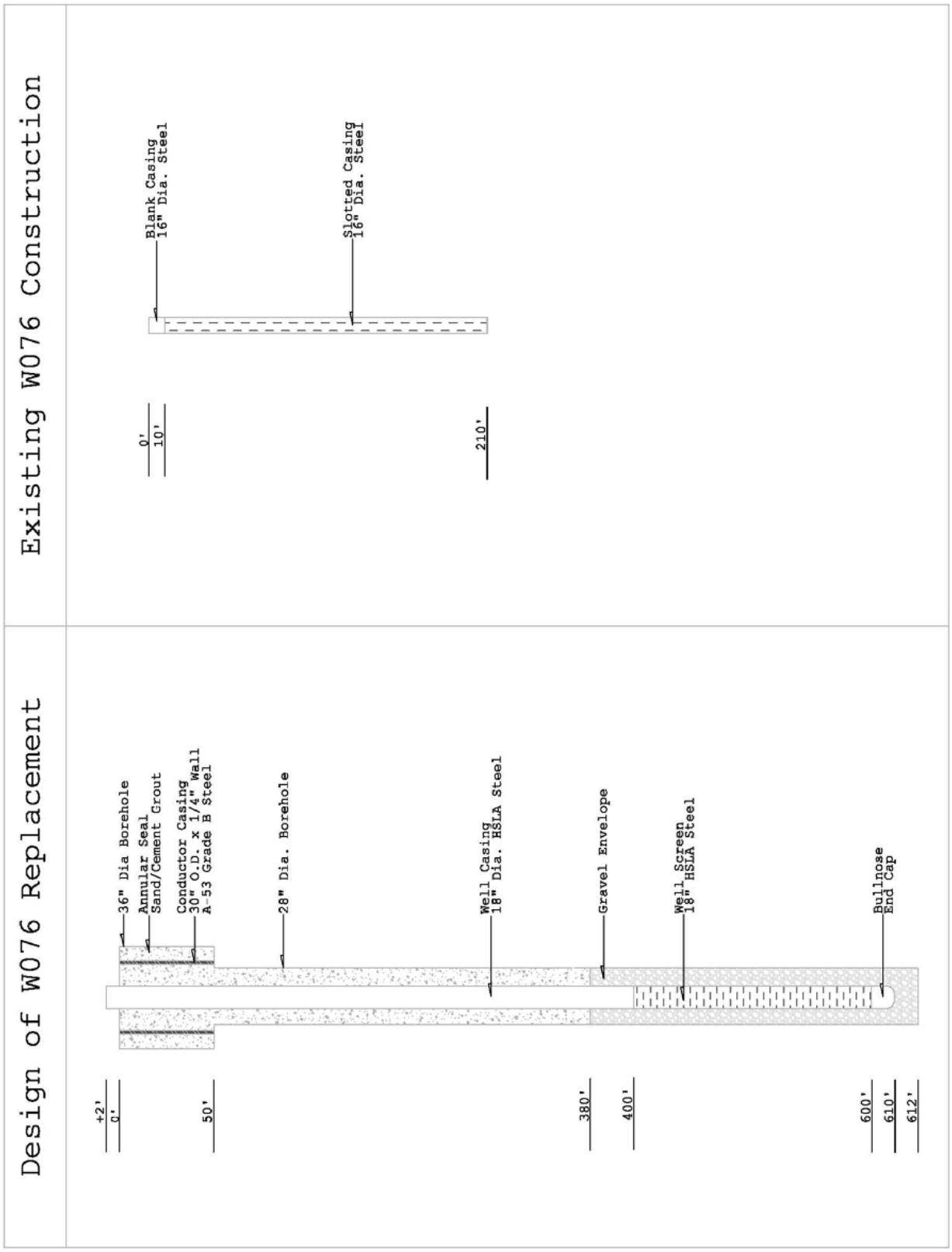

Figure 2 – Comparison of existing construction and current design for replacement well W076

Section 2
Environmental Analysis

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

2.2 AGENCY DETERMINATION

On the basis of this initial evaluation:

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

☒ I find that although the 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 applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

☐ I find that the 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 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 project, nothing further is required.

Signature: Charles C. Holloway Title: Manager, Environmental Planning and Assessment

Printed Name: Charles C. Holloway Date: August 4, 2011

2.3 ENVIRONMENTAL CHECKLIST

2.3.1 Aesthetics

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 day or nighttime views in the area?	☐	☐	☐	☒

Discussion:

a) **No Impact**. The project is in a remote location and there are no designated scenic vistas in the immediate vicinity of the proposed project or in sufficiently close proximity such that views from those vistas would be adversely affected by the proposed project. Therefore, no impacts would occur.

b) **No Impact.** The proposed project does not lie within the view shed of a state scenic highway, and no scenic resources will be damaged by the proposed construction and operation of the well, which is located in a previously disturbed area. Therefore, no impacts would occur.

c) **Less than significant impact.**. The project is located in a previously disturbed area, approximately 150 feet east of an existing well pad and adjacent to a frequently traveled dirt road. Well construction activity may affect the visual character or visual quality at the site, but the effects will be temporary. No impacts to either visual character or visual quality are expected from well operations. Therefore, less than significant impacts would occur.

d) **No Impact.** Most of the structure of a water production well will be located below ground. The only above-ground structures would include the well pad, motor, transformer, and fencing which will be replacing an already existing structure in the wellfield. Above-ground components are also of a subdued color and textural finish that would diminish reflection or glare, and artificial lighting is not included in the project. The proposed project will not create a new source of substantial light or glare that would adversely affect day or nighttime views in the project area. Therefore, no impacts would occur.

2.3.2 Agriculture and Forest Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion:

The project is located on a parcel that is zoned OS-40 (Open Space, 40-acre minimum lot size), with a land use designation of NR (Natural Resources, Inyo County, 2009).

California Public Resources Code (PRC) 12220(g) defines “forest land” as land that can support 10-percent native tree cover of any species... and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

California PRC 4526 defines "Timberland" as land... which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others.

California Government Code 51104(g) defines “timberland production zone (TPZ)” as an area which has been zoned and is devoted to and used for growing and harvesting timber, or for

growing and harvesting timber and compatible uses which is any use which does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber."

a) **No Impact.** No part of the proposed project is located on or near 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 (DOC, 2006). The area of the proposed project is not mapped, and is not considered Farmland (ZIMAS, 2007).

b) **No Impact.** The project is located on a parcel that is zoned OS-40. Since Inyo County does not offer a Williamson Act program, and parcels adjacent to the project parcel are zoned OS-40, there are no impacts associated with conflicts to agricultural zones or Williamson Act contracts.

c) **No Impact.** The project site is zoned as OS-40, does not conflict with existing zoning, and will not cause the re-zoning of forest lands, timberlands, or timberland production zones. There are no impacts associated with zoning conflicts or zoning conversions from the project.

d) **No Impact.** The project site is zoned as OS-40, and is not zoned as forest land. The proposed project will not result in conversion of forest land to non-forest use. There are no impacts associated with the loss or conversion of forest land.

e) **No Impact.** The proposed project is a well replacement project. The original well and its operation did not result in any conversion of farmland to non-agricultural use; the replacement well will be located in the same general area, will work in the same general capacity, and will not create changes in the existing environment that will result in any farmland or agricultural conversion.

2.3.3 Air Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Discussion:

The southern Owens Valley is located in the Great Basin Unified Air Pollution Control District (GBUAPCD). The valley has been designated by the State and EPA as a non-attainment area for the state and federal 24-hour average PM_{10} standards. The area has been designated as attainment or unclassified for all other ambient air quality standards. Air quality is considered excellent for all criteria pollutants with the exception of PM_{10}. Large industrial sources are absent from the Owens Valley. The major sources of criteria pollutants, other than wind-blown dust, are woodstoves, fireplaces, vehicle tailpipe emissions, fugitive dust from travel on unpaved roads, prescribed burning, and gravel mining.

a) **No Impact.** The relevant air quality plan for the project area is the *Final 2008 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan* (SIP) (GBUAPCD, 2008). The focus of this planning document is implementation of dust control measures at Owens Dry Lake. There is no impact on the applicable air quality plan from this project.

b) **Less than Significant Impact.** The GBUAPCD has not established specific quantitative thresholds of significance for air emissions related to construction. However, emissions thresholds for permitting new stationary sources (GBUAPCD Rule 209-A) can be used as screening criteria to evaluate the potential significance of project emissions during construction. (Since the carbon monoxide threshold in Rule 209-A is not a numeric standard, the South Coast Air Quality Management District threshold was used for this analysis). Emissions during project construction will be generated by the equipment used in well construction – a drill rig, a backhoe,

a shaker, and other accessory vehicles. The emissions estimates for vehicles to be used in the proposed project are shown in Table 1, below::

Emissions Source		Light Duty Truck	Dump Trucks	Transport Vehicle	Drilling Rig	Backhoe / Bobcat	Shaker	Air Compressor	Generator
Vehicle type		PV	PV	HDT					
# of vehicles		2	2	2	1	1	1	1	2
travel miles/day or usage hours/day		40	40	40	20	4	4	4	4
Emissions Factor (lbs/mi or lbs/hr) (1, 2, 3)	CO	0.00826	0.01693	0.01196	0.51020	0.38740	0.38740	0.36130	0.32930
	VOC	0.00085	0.01893	0.00304	0.09430	0.09380	0.09380	0.11200	0.09610
	NOx	0.00092	0.01893	0.03822	1.00830	0.62760	0.62760	0.73200	0.64400
	SOx	0.00001	0.00003	0.00004	0.00170	0.00080	0.00080	0.00070	0.00070
	PM10	0.00009	0.00070	0.00183	0.04360	0.04820	0.04820	0.05260	0.03960
	PM2.5	0.00006	0.00060	0.00160	0.04430	0.04640	0.04640	0.03520	0.03520
Estimated Peak missions (lbs/mi or lbs/hr)	CO	0.66104	1.35440	0.95640	10.20400	1.54960	1.54960	1.44520	2.63440
	VOC	0.06800	1.51440	0.24336	1.88600	0.37520	0.37520	0.44800	0.76880
	NOx	0.07344	1.51440	3.05768	20.16600	2.51040	2.51040	2.92800	5.15200
	SOx	0.00088	0.00240	0.00328	0.03400	0.00320	0.00320	0.00280	0.00560
	PM10	0.00696	0.05600	0.14648	0.87200	0.19280	0.19280	0.21040	0.31680
	PM2.5	0.00440	0.04800	0.12808	0.88600	0.18560	0.18560	0.14080	0.28160

Emission Type	CO	VOC	NOx	SOx	PM10	PM2.5
Total Emissions from Project	20.4	5.7	37.9	0.1	2.0	1.9
Significance Thresholds (4)	550.0	250.0	250.0	250.0	80.0	55.0 (5)

Notes: PV - passenger vehicles, HDT - Heavy duty trucks

Sources:

1 - SCAQMD. 2007a. EMFA2007 version 2.3 Emission Factors for On-road passenger vehicles & delivery trucks

2 - SCAQMD. 2007b. SCAB fleet average emission factors (Diesel), Scenario year 2011

3 - SCAQMD. 2006. Final - methodology to calculate Particular matter, PM 2.5 and PM 2.5 significance.

4 - GBUAPCD. 1993. Rule 209-A Standards for authorities to construct

5 - SCAQMD. 1993. CEQA Air quality handbook

Table 1 – Summary of Estimated Worst-Case Peak Day construction Emissions for Well W076 replacement

As seen in Table 1, emissions that will be generated by construction activities are estimated to be substantially below significance thresholds, therefore, the impact on air quality from construction activity is less than significant. Construction is estimated to last about 6 weeks. After construction, the only emissions source at the site will be the well pump, which will be of similar size and rating as the pump it is replacing. Therefore, the impact on air quality from well operation will also be less than significant.

c) **Less Than Significant Impact.** The project area is a non-attainment area for PM_{10}. Construction of the project will result in dust emissions from earth disturbance. LADWP must meet GBUAPCD Rule 401, which requires that fugitive dust emission control measures be implemented to adequately prevent visible dust from the leaving the property and to maintain compliance with the PM_{10} standard. Due to the small acreage of disturbance planned, the use of water trucks as needed, and tarps to cover dirt loads that are being hauled away from the project site, dust emissions related to project construction are not be anticipated to be visible away from the project site. Therefore, project related impacts on PM_{10} will be less than significant.

d) **No Impact.** As only a small number of vehicles will be used for well construction, pollutant generation will be limited. Additionally, the closest community with sensitive receptors, including schools, day-care facilities, nursing homes, and residences, is approximately eight miles from the project site. Due to the limited number of emissions-generating vehicles and the distance of the project from the closest receptors, there is no impact to receptors due to substantial pollutant concentrations.

e) **Less Than Significant Impact.** Project construction will result in minor odors associated with fuel used for equipment and vehicles. These localized odors are common, are not normally considered offensive, and will not be experienced by any receptors since none are immediately adjacent to the project sites. Odor impacts to potential recreational visitors at the sites during construction activities will be temporary and less than significant.

2.3.4 Biological Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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, and 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 (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 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:

Comparison of W076 and the Replacement Well's Potential Effects on Vegetation

Section IV.B.1.b of the technical appendix to the Water Agreement known as the Green Book discusses "Inventorying and classifying the vegetation that could be affected by operation of the well (using vegetation inventories that reflect conditions from 1984 to 1987).

i. Identifying vegetation that has the greatest chance of being adversely impacted by pumping (the area where drawdown is greater than or equal to 10 feet).
ii. Identifying new sites for monitoring vegetation, soil moisture, and water level as necessary."

The area where drawdown is greater than or equal to 10 feet was calculated previously utilizing a three-year, worst case scenario as described in the Agreement and Green Book. The 10-foot or greater drawdown for the Bairs/Georges Wellfield will not expand as a consequence of operation of the replacement well for W076. This conclusion is based on the fact that the replacement well will be perforated in and will be drawing water only from the deep aquifer while W076 was perforated in and drew from both the shallow and deep aquifers.

Vegetation

Figure 3 shows the vegetation parcels in the area near W076 that were inventoried for baseline conditions in 1985. These parcels were classified according to the Water Agreement based on water use with designations of Type A to Type E.

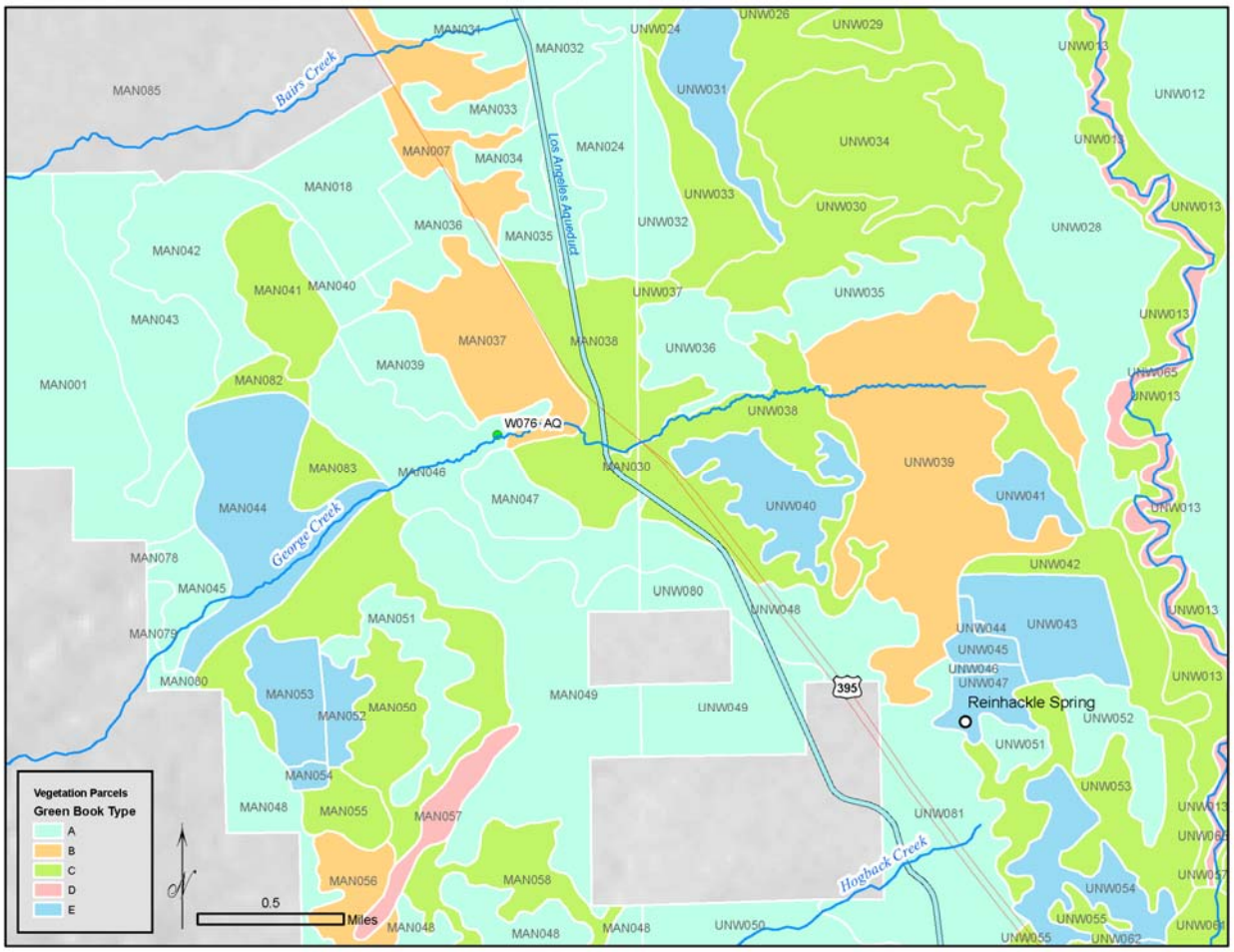

Figure 3 – Vegetation Parcels in the Vicinity of well W076

The parcels and their classifications and community designations are noted in Table 2. To determine the effects of well production on the local vegetation, drawdown was analyzed for both W076 and the proposed replacement using the USGS' MODFLOW program. The predicted drawdown contours for W076 were overlaid onto the vegetation parcel map.

Parcel Number	Veg Type	Community	Parcel Number	Veg Type	Community
MAN30	C	Alkali Meadow	***MAN44***	E	Irrigated Agriculture
MAN34	B	Nevada Saltbush Scrub	***MAN46***	A	Big Sagebrush Scrub
MAN35	A	Desert Sink	***MAN47***	A	Barren Land
MAN36	A	Desert Greasewood Scrub	***MAN49***	A	Shadscale Scrub
MAN37	B	Nevada Saltbush Scrub	***MAN50***	C	Alkali Meadow
MAN38	C	Nevada Saltbush Meadow	***MAN51***	A	Shadscale Scrub
MAN39	A	Barren Land	***MAN82***	C	Alkali Meadow
MAN40	A	Shadscale Scrub	***MAN83***	C	Alkali Meadow
MAN41	C	Alkali Meadow			

Table 2 – Vegetation Parcels Located in the Vicinity of W076

Figure 4 shows the parcels located in the vicinity of W076 and the parcels lying within the drawdown predicted for pumping the well. The area within the drawdown contours associated with W076 was reviewed for baseline vegetation composition and cover.

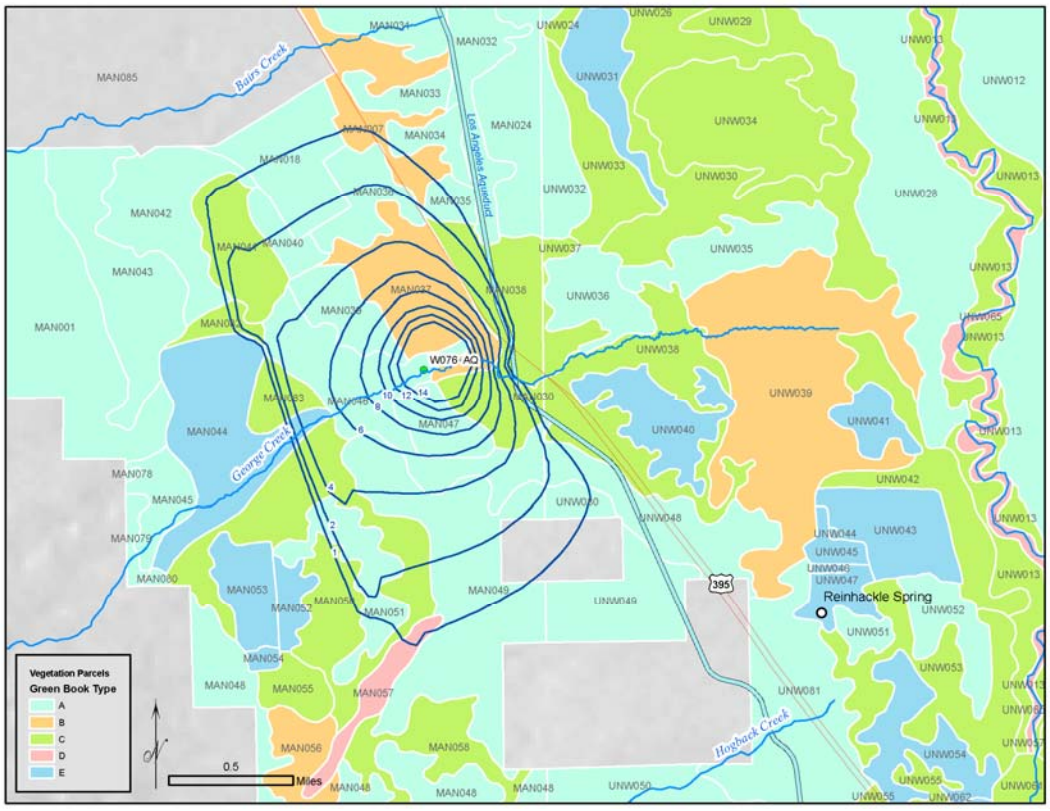

Figure 4 – Overlay of predicted 1-yr Drawdown Contour for W076 on Vegetation Parcel Map. Contour lines indicate 3 cubic feet/second of pumping for 1 year from the shallow aquifer.

Type B vegetation parcel MAN037 lies within the predicted drawdown contours for W076. This parcel was mapped as a Nevada Saltbush Scrub community with 45 percent cover dominated by *Atriplex lentiformis* ssp. *torreyi* (Nevada Saltbush) and *Ericameria nauseosa* (Rubber Rabbitbrush). The portion of Type C vegetation parcel MAN038 that lies west of the LAA is within the predicted drawdown contours for W076. This parcel was mapped as a Nevada Saltbush Meadow with 50 percent cover dominated by *Atriplex lentiformis* ssp. *torreyi* (Nevada Saltbush) and *Disticlis spicata* (Inland Saltgrass). Portions of other Type C parcels (MAN041, MAN083, and MAN082), part of one Type E parcel, part of one Type D parcel and part of one Type B parcel lie within the outer edges of the predicted drawdown of W076. All other vegetation parcels lying within the drawdown contours are classified as Type A vegetation and are not considered to be groundwater dependent.

Figure 5 shows the area lying within the predicted drawdown contours associated with the pumping of the replacement well for W076. Eight feet is the greatest drawdown predicted for the replacement well and this drawdown is confined to a small area in the immediate vicinity of the well. The predicted drawdown contours for the replacement well in the shallow aquifer cover a smaller area than the existing W076.

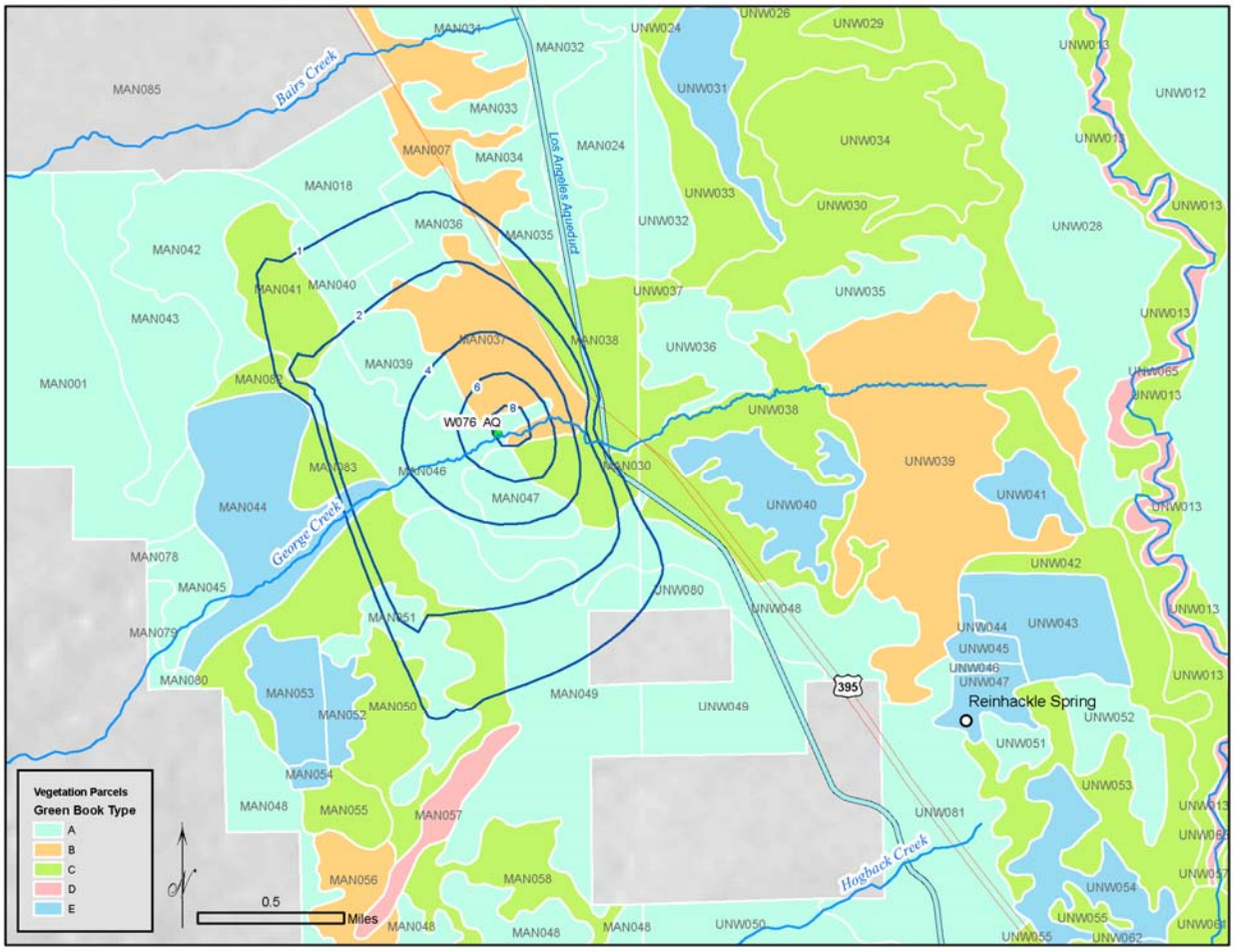

Figure 5 – Overlay of predicted 1-yr Drawdown Contour for Replacement well W076. Contour lines were drawn using 3 cubic feet/second of pumping for 1 year from the deep aquifer.

Comparing the 8-foot contours in Figures 4 and 5, note that there is a considerable difference in the predicted size for each area. The existing W076 was drawing from the shallow aquifer and therefore could more readily affect groundwater dependent vegetation. Because the replacement well will be screened only in the deep aquifer, it is anticipated to produce less drawdown in the shallow aquifer than the existing W076. Therefore, the replacement well will have less potential for impact on groundwater dependent vegetation.

The replacement well will discharge into Georges Creek, providing additional recharge to a portion of parcel MAN037 which is closest to the replacement well, along with the vegetation on either side of the creek. This includes vegetation parcel MAN038 that lies on both sides of Georges Creek and both sides of the LAA. The portion of MAN038 that lies to the east of the LAA receives recharge from the aqueduct and is not within the drawdown contours of W076 or the replacement well (Figures 4 and 5). The area of parcel MAN038 that lies to the west of the LAA was predicted to have drawdown of 2 to 14 feet from W076. The replacement well for W076 is predicted to have drawdown of 1 to 6 feet. The greatest drawdown is in close proximity to Georges Creek which will carry the water discharged from the well, providing additional recharge to adjacent parcels. The reduced drawdown is a result of conducting pumping in the deep aquifer below a confining layer. Monitoring site BG2, located in vegetation parcel MAN37, is identified as the site that controls the ON-OFF status of W076 under the vegetation protection provisions of the Water Agreement. This monitoring site is located in an area that lies between the two-foot and one-foot predicted drawdown contours for the replacement well. BG2 is being proposed for use as the monitoring site to determine the pumping status of this replacement well. The Inyo/Los Angeles Technical Group will determine if BG2 is the appropriate monitoring site for the well or another feasible and necessary site is required.

Based on California Natural Diversity Data Base (CNDDB) listings for the Manzanar United States Geological Survey (USGS) quadrangles and other published records, the following sensitive species are known or have the potential to occur on the project site:

- Northern Harrier (*Circus cyaneus*) (SSC)
- Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis)* (state endangered)
- Yellow-breasted Chat (*Icteria virens*) (CSC)
- Townsend's Big-eared Bat (*Corynorhinus townssendii*) (CSC; U.S. Forest Service sensitive)
- Pallid Bat (*Antrozous pallidus*) (CSC; U.S. Forest Service Sensitive)
- Sierra Nevada Big Horn Sheep (*Ovis Canadensis sierrae)* (federal endangered, state endangered)
- Owen's Valley Checkerbloom (*Sidalcea covillei)* (state endangered)
- Inyo County Star-Tulip (*Calochortus excavatus*) (CSC)

Sensitive Avian Species. The project site may contain habitat potentially suitable for foraging. The project site does not have suitable habitat for nesting, foraging, or wintering of the Yellow-billed Cuckoo. The closest potential cuckoo habitat is in the Hogback Creek Area, and cuckoos have not been detected during focused surveys performed the past two years at this location. The site does not contain marsh type vegetation and therefore is not suitable for nesting for the Northern Harrier, however they may forage nearby. The existing vegetation would not support nesting for the Yellow-breasted Chat, however the Chat may forage nearby.

Sensitive Bat Species. The sensitive bat species known for the general project area may forage nearby however there are no known caves or mines for roosting. If a bat roost is

identified and expected to be impacted, the situation will be evaluated and appropriate action taken to avoid impacts such as exclusion measures or providing an alternative roost site.

Sensitive Plant Species. Rare plants are not present within the project area. *Sidalcea covillei* and *Calochortus excavatus* are present on the USGS quad sheet; however, the closest documented populations are located over two miles from the project site. The vegetation community at the project site is not suitable for either of these plant species.

Sierra Nevada Big Horn Sheep. The Sierra Nevada Big Horn Sheep are unlikely to be found at the project site due to the low elevation and lack of preferred habitat.

a) Less Than Significant Impact. The project site may contain habitat potentially suitable for foraging for some of the species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS). However, the project area does not appear to be suitable habitat for nesting or wintering, therefore impacts from the project would be less than significant.

b) Less Than Significant Impact. The proposed project has a less than significant impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or the USFWS. Riparian vegetation will not be impacted as a result of the proposed project. The project will involve minimal disturbance to existing vegetation, and may only be during the construction phase of the project.

c) **No Impact.** The proposed project does not lie within a federally-designated protected wetland area and will not have any adverse effect on federally protected wetlands. There are no impacts.

d) **Less Than Significant Impact.** The proposed project will not interfere with the movement of any native resident or migratory fish. Since wildlife movements are often concentrated along riparian corridors. The project site is likely used by wildlife populations such as mule deer and tule elk on a regular basis, and by migratory birds such as waterfowl on a seasonal basis. Temporary disturbances will occur only during the construction phase of the project and during occasional facility inspections. Therefore, impacts are less than significant.

e) **No Impact.** This project does not conflict with any local policies or ordinances protecting biological resources. Additionally, the pumping of replacement for W076 will be managed by, and complies with, provisions of the Water Agreement to protect vegetative and biological communities.

f) **No Impact.** The project site does not currently fall within any Habitat Conservation Plan, Natural Community Conservation Plan, or state habitat conservation plan. LADWP is working with the CDFG and USFWS on a Habitat Conservation Plan. The project will not conflict with the provisions of this Habitat Conservation Plan.

2.3.5 Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Discussion: A pedestrian survey of the proposed project area was conducted on November 29, and a records search for the area within a ½-mile radius of the proposed site was conducted on November 30, 2010 by Garcia and Associates.

A records search was conducted at the Eastern Information Center (EIC) of the California Historical Resources Information System. The search was conducted using the following resources:

- The California Department of Parks and Recreation's Inventory of Historic Resources
- The Office of Historic Preservation's Historic Properties Directory, which combines all cultural resources listed in the California Historical Landmarks, California Points of Historical Interest, and those listed or eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources.

To protect cultural and archeological resources, site records and survey results are not appended to this Initial Study.

The records search identified six prior studies and twelve previously recorded prehistoric and historic resources within the survey/search area. The records search also revealed that the proposed project site is within a listed archeological site (CA-INY-4939/H). Some components of this site have been listed in the NRHP; however, some components of this archeological site have yet to be evaluated.

a) and b) **Less Than Significant Impact with mitigation incorporated.** To ensure that the project causes no substantial or adverse change in the significance of a historic or

archeological resource, the following mitigation measures shall be implemented to reduce impacts to below a level of significance

- **CUL-1:** Archeological and cultural features within the project area will be avoided during project implementation and operation of the well so that the impacts to historical resources are less than significant.

- **CUL-2:** The pipeline leading from the replacement well to Georges Creek will be installed in a location without known cultural resources. The specific location will be determined in coordination with a qualified archaeologist during a field visit. If relocation of the pipeline is impractical, archaeological testing and evaluation will be conducted.

- **CUL-3.** Pipeline and the first 10 feet of well installation shall be monitored by a qualified archaeologist. Based on the NAHC contact list for the project, Native American representatives shall be notified of project construction schedules at the project site, and invited to be present during well and pipeline installation on a volunteer basis.

- **CUL-4.** In the event that cultural resources are uncovered during construction, employees shall halt work in the vicinity of a potential cultural resources discovery (all excavation and earth moving activities within 50 feet) and immediately contact their supervisor or foreman and a qualified archaeologist. The relocation or redirection of work will then be determined by the construction supervisor and archaeologist.

c) **No Impact.** The site does not contain unique paleontological resources or unique geologic features.

d) **Less Than Significant Impact.** There was no evidence of human remains within the project site at the time the pedestrian surveys were conducted (2010). However, in the unexpected event that human remains are discovered, all excavation work should halt in the immediate vicinity and a qualified archaeologist, LADWP, and the Inyo County Coroner shall be contacted immediately. The Inyo County Coroner can be reached at 760-873-4266. If the human remains are Native American in origin, then the Inyo County Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The NAHC will determine the Most Likely Descendant (MLD). The MLD, with permission from the CSLC, will inspect and make a recommendation regarding the appropriate means of treatment or reinterment, with dignity, the human remains and associated grave goods (Section 7050.5 of the California Health and Safety Code; Sections 5097.94 and 5097.98 of the Public Resources Code).

2.3.6 Geology and Soils

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 project area lies in eastern California, between Lone Pine and Independence in the Owens Valley. The Owens Valley of eastern California is a deep north-south trending basin, lying between the Sierra Nevada to the west and the White-Inyo Mountains to the east. The Owens Valley was formed as a fault block basin with the valley floor dropped down relative to the mountain blocks on either side.

The Owens Valley is the westernmost basin in a geologic province known as the Basin and Range, a region of fault-bounded, closed basins separated by parallel mountain ranges stretching from central Utah to the Sierra Nevada and encompassing all of the state of Nevada. Geological formations in the project areas are of Cenozoic age, chiefly Quaternary.

The soils in Owens Valley contain mostly Quaternary alluvial fan, basin-fill, and lacustrine deposits (Miles and Goudy, 1997).

a) **No Impact.** The project area is located within U.S. Geological Survey quadrangles containing delineated Alquist-Priolo special studies zones (California Geological Survey). Surface rupture on these faults is also possible outside of the currently mapped active traces of these range-front faults in the vicinity of the project sites. Since habitable structures will not be built as part of the proposed project, people will not be exposed to adverse effects involving seismic ground shaking. The project area has relatively little slope and stable soils which reduces any possibility of land slides, and seismic related ground failure such as liquefaction.

b) **Less than significant.** The proposed project includes minor soil disturbance related to installation of the well, well pad, and fencing. All appropriate best management practices will be utilized to prevent substantial erosion and loss of topsoil. The impact will be less than significant.

c) **No Impact.** Soils within the project site have a slope of 0-2% and are classified as very deep soils. Landslides are not anticipated at the generally gently sloped Project site. The potential for subsidence at the project site will not be altered since groundwater withdrawals will only occur in the deep aquifer and will be managed under the Water Agreement. Liquefaction and related lateral spreading is unlikely at the project site. Additionally, since no habitable structures will be built as part of the proposed project there is no impact.

d) **No Impact.** Habitable structures will not be built as part of the proposed project. The soils mapped in the adjacent areas have low concentrations of clay. There will be no project-related impacts from expansive soils.

e) **No Impact.** There will be no impacts to the capability of soils to support septage or wastewater disposal systems. Portable sanitary facilities will be made available to workers only during the construction phase; permanent sanitary facilities are not present or proposed for the project site.

2.3.7 Greenhouse Gas Emissions

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion:

a) **Less Than Significant Impact.** Greenhouse gases include, but are not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Project-related emissions of greenhouse gases will be limited to air pollutants generated during the temporary construction activities. Operations-related air pollutant emissions will result from infrequent vehicle trips to the project site – the same as under existing conditions. Since operation of the project will not increase air pollutant emissions over existing conditions, the project will have no significant impact on climate change. As described above, construction of the project will result in less than significant combustion emissions from vehicles and equipment. The impact from the emission of greenhouse gases, and therefore climate change, will be less than significant.

b) **No Impact.** The following policies and regulations are relevant to climate change in California:

- **State of California Assembly Bill 32 –** California Global Warming Solutions Act - Assembly Bill (AB) 32, *California Global Warming Solutions Act of 2006*, was signed into law on September 27, 2006. With the Governor's signing of AB 32, the Health and Safety Code (Section 38501, Subdivision (a)) now states the following: *"Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems."*

  AB 32 requires the California Air Resources Board (CARB), in coordination with State agencies as well as members of the private and academic communities, to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance

with this program. Under the provisions of the bill, by 2020, statewide greenhouse gas emissions will be limited to the equivalent emission levels in 1990.

- **State of California Senate Bill 375 -** On September 30, 2008, Governor Arnold Schwarzenegger signed Senate Bill (SB) 375, which seeks to reduce GHG emissions by discouraging sprawl development and dependence on car travel. SB 375 helps implement the AB 32 GHG reduction goals by integrating land use, regional transportation and housing planning.

The proposed project is a well replacement project – after construction has been completed, the replacement well will be functioning in the same general capacity, and will be managed under the same vegetation protection provisions of the Water Agreement. No conflict with greenhouse gas policies and regulations are expected. Therefore, there is no impact on these policies and regulations.

2.3.8 Hazards and Hazardous Materials

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion:

a and b) **Less Than Significant Impact.** Construction and operation of the proposed project will require the routine transport of limited quantities of fuel. Fuel will be used for vehicles and power equipment. Fuel will be contained within the manufacturer's tanks on all powered heavy equipment onsite, or in approved canisters for powered hand equipment. When necessary for refueling, a fuel/service truck will visit the site, parking at a non-sensitive location such as a road shoulder on level ground. Equipment operators will move all mobile equipment to the fuel/service truck for refueling. Equipment crews will also be required to carry emergency spill kits in the unlikely event of equipment malfunction due to unforeseeable circumstances (e.g., accidental spills, hose failure, oil drips, etc.). Additionally, all vehicles not absolutely necessary for construction will be parked at non-sensitive locations away from the construction area. The

drill rig will have a permanent containment system set up to prevent the potential of any impacts from fueling operations. No fuel will be stored onsite at the project location.

As is the current practice by LADWP, use of hazardous materials will be carefully monitored to limit exposure of humans or environmental receptors. Therefore, impacts from the routine transport, use, or disposal of hazardous materials will be less than significant.

c) **No Impact.** There are no schools within eight miles of the project site. Hazardous materials use will be limited to fuels. Since this material will be properly handled (as described above), there will be no impact on the schools from hazardous materials.

d) **No Impact.** Section 65962.5 of the California Government Code requires the California Environmental Protection Agency (CalEPA) to update a list of known hazardous materials sites, which is also called the "Cortese List." The sites on the Cortese List are designated by the State Water Resources Control Board, the Integrated Waste Management Board, and the Department of Toxic Substances Control. The project site was not found on any of these lists. Therefore the project will not create a significant hazard to the public or the environment.

e and f) **No Impact.** The project area is not located sufficiently near a private airstrip or public airport to pose a safety risk. The closest airstrip is the Manzanar airstrip, located 1.8 miles north of the project area. It was abandoned and decommissioned in 1956. There are no project-related impacts on airport safety.

g) and h) **Less Than Significant Impact.** Construction related traffic will be limited to a remote location at least eight miles away from the closest residential area. The impact from travel of construction workers and equipment to and from the project site will have a less than significant impact on emergency access and evacuation plans and will have a less than significant impact on people or structures as they apply to wildland fires.

2.3.9 Hydrology and Water Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 the site or 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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 which 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?	☐	☐	☒	☐

Discussion:

The main water features in the Bairs-Georges Wellfield include Bairs Creek, Georges Creek, and Hogback Creek flowing from west to east, the LAA flowing from north to south, and Reinhackle Spring located along the1872 Fault, east of U.S. Highway 395.

Figure 6 shows the location of various surface water flow gauges in the vicinity of Bairs-Georges Wellfield. Table 3 lists flow measurements on the gauges shown in Figure 6. As evident from Table 2, Georges Creek is the biggest creek in this wellfield with a long-term average flow of 8.6 cfs measured at the base of mountain.

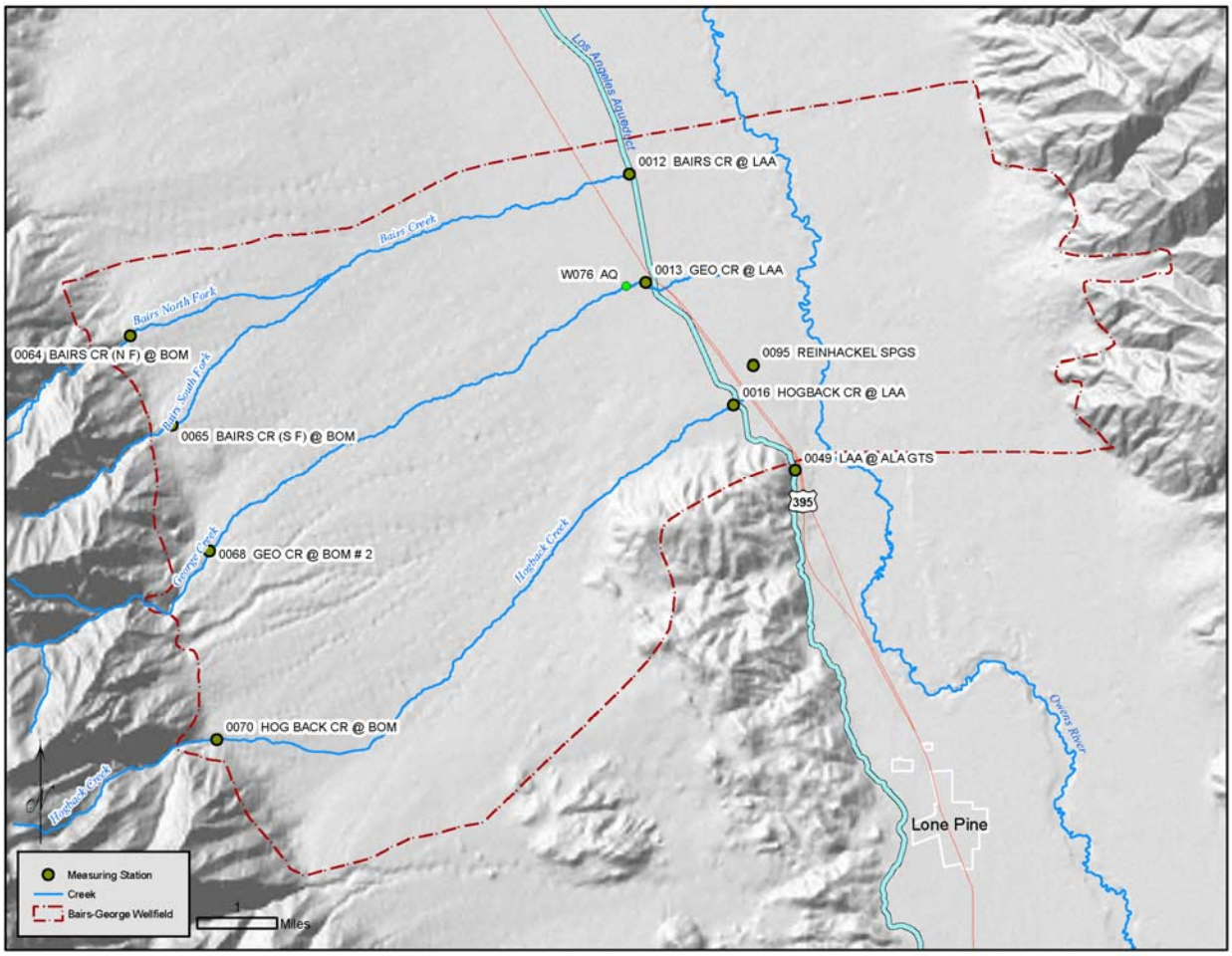

Figure 6 – Location of Surface Water Gauges in Bairs-George Wellfield

All three creeks in the Bairs-Georges Wellfield have gauges at the base of mountain and at the LAA, allowing calculation of recharge to the groundwater aquifer through infiltration. Estimates of long-term average annual recharge from these creeks by USGS are: 3,200 acre-feet from Bairs Creek, 3,800 acre-feet from Georges Creek, and 2,100 acre-feet from Hogback Creek. Additionally, USGS estimated an annual total of 2,250 acre-feet of mountain front recharge between Bairs Creek to the north and Lone Pine Creek to the south and 63 acre-feet from the northern side of the Alabama Hills (Danskin, 1998).

Groundwater in the Bairs-Georges Wellfield flows generally from west to east. This easterly groundwater flow is controlled mainly by several faults that run in a north-south direction. Percolation from creeks recharges the groundwater aquifer. The LAA runs unlined up to Alabama Gates to the south of Bairs-Georges Wellfield. The seepage from the LAA and the mountain front recharge from the area between Bairs Creek and Hogback Creek are the other sources of aquifer recharge in this area.

Reinhackle Spring is located in the Bairs-Georges Wellfield, between the LAA and the Owens River and west of 1872 Owens Valley Fault. Flow from Reinhackle Spring supports the nearby pasturelands. The 1991 Environmental Impact Report *Water from the Owens Valley to Supply the Second Los Angeles Aqueduct* (1991 EIR) stated that historic groundwater pumping has reduced flow in the spring. However, no data was shown to support conclusions about impacts to vegetation from reduced flow in the spring. Total annual spring flow since 1991 averages 1,550 acre-feet, ranging from 1,200 in 1991 to 1,950 acre-feet in 1996. Per the 1991 EIR recommendation, future groundwater pumping in the area should be managed to avoid causing a reduction spring flow that would result decreases or changes in native vegetation.

The Inyo County Water Department and LADWP conducted a cooperative study in 2003 to characterize the geochemical signature of the deep and shallow aquifer in Owens Valley (MWH, 2003). As part of this study, the geochemistry of flow from Reinhackle Spring was also studied. Results of the study showed flow in Reinhackle Spring has similar composition to both the LAA and the shallow aquifer. The geochemistry study suggested the water emerging from Reinhackle Spring is predominately from the LAA or sources similar in composition to the LAA.

The LADWP is conducting an operational test in the Bairs-Georges Wellfield to aid in developing an operational plan that satisfies the EIR requirement.

YEAR	Hogback Creek @ BOM 0070	Hogback Creek @ LAA 0016	Georges Creek @ BOM 0068	Georges Creek @ LAA 0013	Bairs Creek (North Fork) @BOM 0064	Bairs Creek (South Fork) @BOM 0065	Bairs Creek @ LAA 0012	Reihackle Spring 0095	LAA @ Alabama Gates 0049
1990-91	1,240	21	3,013	415	844	486	0	814	127,262
1991-92	1,944	163	5,084	1,848	1480	1,010	90	1,171	209,438
1992-93	2,163	216	5,440	2,417	1684	1,213	247	1,430	260,922
1993-94	2,929	449	6,388	3,224	2330	1,623	450	1,579	294,262
1994-95	1,704	65	4,372	1,618	1314	790	66	1,474	191,292
1995-96	4,631	841	9,284	4,619	3352	2,475	810	1,842	430,273
1996-97	4,041	1,378	8,225	5,121	2545	2,070	1,153	1,950	416,401
1997-98	4,005	1,823	8,404	5,757	2712	1,963	1,482	1,684	387,226
1998-99	4,947	2,211	9,578	5,653	3150	2,446	2,462	1,595	411,243
1999-00	2,023	740	4,474	2,129	1420	830	473	1,464	295,438
2000-01	1,620	268	4,322	1,919	1086	726	81	1,472	252,076
2001-02	2,915	992	6,197	3,919	1976	1,417	894	1,554	257,124
2002-03	1,450	75	3,673	1,140	913	576	0	1,399	246,253
2003-04	2,311	471	5,011	2,204	1591	1,061	323	1,686	274,333
2004-05	2,156	326	5,185	2,223	1707	1,320	140	1,620	248,792
2005-06	4,519	1,736	9,988	5,323	3768	2,831	2,100	1,704	384,941
2006-07	3679	1,431	8,515	3,036	2750	1,774	869	1,840	410,495
2007-08	1,009	11	3,157	255	853	537	0	1,249	164,241
2008-09	2,575	672	5,360	2,162	1,812	1,325	377	1,354	193,304
2009-10	1,816	170	4,610	1,315	1,430	1,006	8	1,328	197,648
Average (af)	2,684	703	6,014	2,815	1,936	1,374	601	1,510	282,648
Average (cfs)	3.71	0.97	8.31	3.89	2.67	1.90	0.83	2.09	390.40

Table 3 - Average Annual flow in Surface water gauges in Bairs-Georges Wellfield

There is no weather station in Bairs-Georges Wellfield; however, the long-term average precipitation measurements in the LADWP yards at the Independence (approximately

eight miles northwest) and Lone Pine (approximately eight and one half miles southeast) are 5.5 and 4.0 inches per year, respectively.

a) **Less than Significant Impact.** The proposed project will not violate any water quality standards or waste discharge requirements. LADWP will obtain a General Waste Discharge Permit for Discharges to Land with a Low Threat to Water Quality for the installation of the replacement well from the State Water Resources Control Board. All drilling waste generated during the installation of the well will be properly handled and stored during drilling operations and disposed of at an appropriate offsite location.

b) **Less than Significant with Mitigation Incorporated.** W076 is among the older LADWP wells in the Owens Valley. This well was drilled in 1924 and has been mainly used to supply the LAA. As shown in Table 3, W076 has been operated every year from 1972 to 1990, when it became incapable of operating. The original well was perforated mainly within the shallow aquifer. Groundwater modeling indicates that pumping from this well was more likely to have had a significant impact on groundwater levels in the area surrounding the well than if it had been screened only to a deeper, confined aquifer. To minimize the potential that the replacement well might substantially deplete groundwater supplies, or interfere with groundwater recharge that would cause the local groundwater table levels to drop, the following mitigation measures shall be implemented to reduce impacts to below a level of significance:

   - **HYDRO-1:** The replacement well will be drilled to a depth of 600 feet. The replacement well will be screened below the confining zone at 400 feet, and water will only be drawn from the deep aquifer.

Table 4 lists annual pumping from these wells since the 1972 runoff year. W076 was pumping as much as 2,250 acre-feet per year, an average rate of 3.1 cfs, but it became incapable of operating in 1990 due to mechanical problems.

YEAR	W095	W403	W343	W348	W076	V082	Total
1972-73	934				2,145		3,079
1973-74	518			439	1,167		2,124
1974-75	83			744	560		1,387
1975-76	53			1,859	1,708		3,620
1976-77	96		385	1,486	2,017		3,984
1977-78	563		950	1,483	2,250		5,246
1978-79	40		10	149	88		287
1979-80	404		360	1,026	930		2,720
1980-81	0		0	0	8		8
1981-82	9		352	593	1,334		2,288
1982-83	18		34	59	45		156
1983-84	1		0	0	2		3
1984-85	0		0	64	0		64
1985-86	188		165	0	473		826
1986-87	155		266	388	331		1,140
1987-88	808		1,740	2,083	1,854		6,485
1988-89	739		754	1,383	1,726		4,602
1989-90	372		894	965	1,063		3,294
1990-91	0		356	1	1	160	518
1991-92	0		231	0	0	152	383
1992-93		30	203	0	0	32	265
1993-94		3	79	1	0	69	152
1994-95		0	246	0	0	137	383
1995-96		45	73	156	0	127	401
1996-97		0	0	0	0	60	60
1997-98		0	0	48	0	0	48
1998-99		24	0	48	0	0	72
1999-00		0	1	0	0	60	61
2000-01		0	157	0	0	29	186
2001-02		196	737	765	0	0	1,698
2002-03		130	43	810	0	0	983
2003-04		107	73	0	0	0	180
2004-05		9	331	731	0	35	1,106
2005-06		180	0	306	0	64	550
2006-07		0	0	0	0	17	17
2007-08		0	466	0	0	56	522
2008-09		0	149	1	0	0	150
2009-10		0	86	0	0	0	86

Table 4 – Volume, in acre-feet per year, of water pumped from production wells in Bairs-Georges Wellfield

Modeling Simulation

A comparison of the effects on groundwater levels was done for the existing well W076 and its proposed replacement well. MWH Americas, Inc., LADWP's consultant, used a 2010 MODFLOW-based groundwater model for the comparison. The model covered the area south of Thibaut-Sawmill Wellfield in the north and extended south of the Lone Pine Wellfield. The model includes three layers that generally simulated the shallow, intermediate, and deep aquifers. The cell size in the model was 500 feet by 500 feet.

Two pumping operation scenarios for W076 were simulated. Starting from the steady state condition, a pumping rate of 3 cfs for a period of one year was simulated. Except for the pumping from W076, all other inputs to the model were kept consistent with the steady state condition. The drawdown contour resulting from 1-year of pumping from W076 in the shallow aquifer was shown previously in Figure 4 (page 2-14). Figure 5 (page 2-15) shows the drawdown contour resulting from 1-year of pumping from the deep aquifer (60% from layer 2 and 40% from layer 3 of the model). The resulting contour maps show that shallow aquifer drawdown in the area of the well is much less when pumping is done from the deep aquifer.

Figure 7 shows the drawdown profile in a northwest to southeast direction. The profile shows that 50-percent less drawdown is found when water is pumped from the deep aquifer as compared to the drawdown when water is pumped from the shallow aquifer.

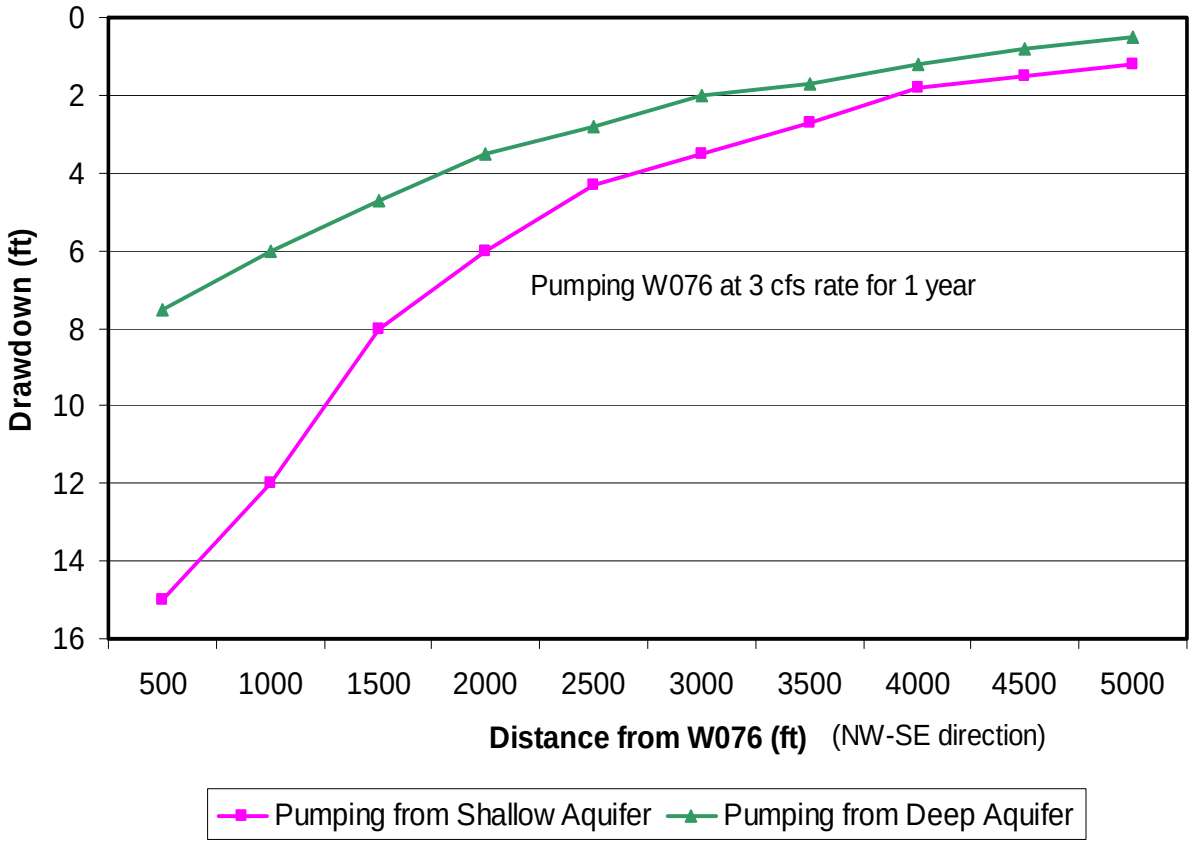

Figure 7: Drawdown Profile Comparison of Shallow versus Deep Aquifer

Pumping Test

Following the installation of the W076 replacement well, the contractor will perform a step-drawdown and a 24-hour constant rate pumping test of the new well while collecting water level data from nearby shallow and deep monitoring wells. The pumped water will re-released to Georges Creek. Data from the pumping test will be used to calculate aquifer characteristics at that location. This data should provide information on the capacity of the replacement well. The design capacity of the replacement well will substantially be the same as that of the existing W076.

- **HYDRO-2:** The replacement well will remain categorized as a non-exempt production well–like the original well that it will replace. According to the procedures outlined in the Water Agreement and its Technical Appendix, the Green Book, non-exempt production wells in the Owens Valley are linked to adjacent vegetation monitoring sites. Pumping from non-exempt production wells is regulated under vegetation protection provisions of the Water Agreement, and a non-exempt well's On/Off status is determined by

comparing available soil moisture and the water demand of vegetation at the monitoring site. All production wells in Bairs-Georges Wellfield are linked to vegetation monitoring Site BG2, located north of the well. Replacement well W076 will also be linked to the same monitoring site, therefore, its pumping status will be governed by the same criteria as the existing W076. The Technical Group has the authority to choose a different monitoring site if the Group determines it to be appropriate after analyzing data from the initial operation of the replacement well.

Bairs-Georges is one of the smaller wellfields in the Owens Valley. City-owned production wells in this wellfield are W076, W343, W348, and W403, while V082 has been used by Inyo County to supplement water for Diaz Lake, south of Lone Pine. Figure 8 shows the location of production wells, along with the location of a few of the 40 shallow and deep monitoring wells in this wellfield.

c) **No Impact.** The installation of the replacement well will not substantially alter the existing drainage pattern of the site or area. The project will require the installation of a small well pad, electronics, and fencing. The drainage pattern of the site will not be altered as a result of the proposed project or installation of the well and its components.

d) **No Impact.** The installation of the replacement well will not substantially alter the existing drainage pattern of the site or area nor substantially increase the rate or amount of surface runoff.

e) **No Impact**. Stormwater flows across the project site and infiltrates or enters existing surface water features. The proposed project will not contribute to stormwater runoff , and will not alter the volume of storm flows. There are no engineered storm drains present on the project site and none are proposed, so there are no impacts to stormwater drainage systems, nor will the project provide additional substantial new sources of polluted runoff.

f) **No Impact.** The installation of the replacement well will not substantially degrade water quality. Straw wattles will be installed between the drill rig and the edge of Georges Creek prior to the drilling of the replacement well. Any drilling wastes will be retained on-site and will be disposed of appropriately.

g), h) and i) **No Impact.** The proposed project will not place housing or structures that will impede flows within the flood plain, or create levees or dams No levees or dams are present on the project sites and no off-site levees or dams will be modified as part of project implementation. The project will have no impact on housing or structures in a 100-year flood hazard area.

j) **Less than Significant Impact.** Seiche and tsunami are not relevant for the proposed project due to the distance of large surface water features from the project site. Mudflows that originate at higher elevations above the project area, which then move across the site, are a possible phenomenon; however, since no habitable structures are planned as part of the project, people will not be exposed to injury or death from mudflows. Therefore, impacts will be less than significant.

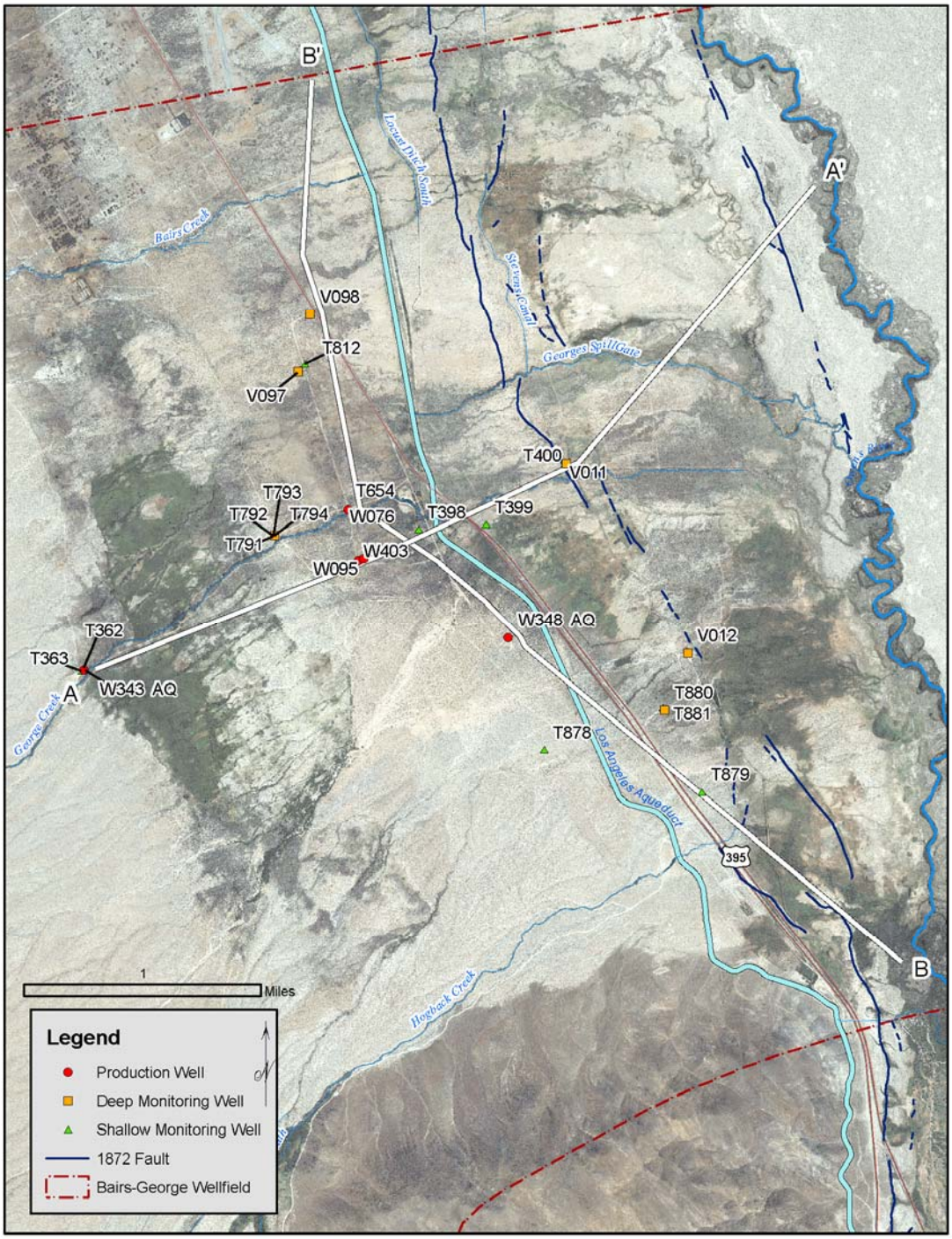

Figure 8 – Selected Groundwater and Monitoring Wells in Bairs-Georges Wellfield

2.3.10 Land Use and Planning

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The proposed project is located in an area zoned for open space and used for ranching, wildlife habitat, and recreation. No established communities are located on or immediately adjacent to the project site, and none are planned as part of the proposed project. There are no project-related impacts on established communities.

b) **No Impact.** The Inyo County General Plan (2001) includes Goal BIO-1: Maintain and enhance biological diversity and healthy ecosystems through the County. Policy BIO-1.2 calls for the preservation of riparian habitat and wetlands and Policy BIO-1.3 calls for the restoration of biodiversity. Accordingly, there will be no adverse impacts on applicable land use plans and policies.

c) **No Impact.** There are no Significant Natural Areas (SNAs) as determined by CDFG at the project site, and there are no adopted habitat conservation plans or natural community conservation plans for this site. LADWP is currently working with USFWS and CDFG on a Habitat Conservation Plan. Implementation of the project will not conflict with the provisions of that Habitat Conservation Plan. Therefore, there will be no impact on any adopted habitat plan or natural community conservation plan.

2.3.11 Mineral Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion:

a) and b) **No Impact.** There is no existing mining activity at the project site. The project site is not a locally-important mineral resource recovery site. Well construction and operations will not limit future mineral recovery activities or result in the loss of availability of known mineral resources. There are no project-related impacts to mineral resources.

2.3.12 Noise

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) 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) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) 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 or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

a) and d) **Less Than Significant Impact.** No habitable structures are located on or immediately adjacent to the property, and none are planned as part of the proposed project. The closest residential areas and schools are approximately eight miles away. Given the distance of the project area from residences and schools, noise generated during construction will be inaudible to sensitive receptors. Noise may be temporarily noticeable to ranch workers or persons visiting the sites for recreation, mostly during the construction phase of the project. Therefore, noise impacts during construction will be less than significant. Noise levels that will be experienced from the operation of the replacement well will not differ from levels experienced from the operation of the original well, so there is no impact from the operations.

b) **Less Than Significant Impact.** Heavy equipment and the well drilling rig used for well installation may create some ground borne vibration or ground borne noise. Since the closest buildings to the project site are over 1 mile away, impacts related to temporary ground borne vibration or noise will be less than significant.

c) **No Impact.** Noise generated during project construction will include intermittent vehicle travel, and the well drilling rig. However, generated noise will be temporary – there will be no permanent increase in ambient noise levels related to the project.

e) and f) **No Impact.** The project area is not located sufficiently near either a private airstrip or public airport to expose people residing or working in the area to experience excessive noise levels. The decommissioned Manzanar Airstrip lies 1.8 miles north of the project area; however, it has not been in use since 1956. There will be no project-related impacts on noise near an active airport/airstrip.

2.3.13 Population and Housing

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a) through c) **No Impact.** The project is located in a remote area away from population centers, and will not induce substantial population growth or displace existing housing that necessitates the construction of replacement housing for a substantial number of people. Well production will only restore production that has been lost due to structural deterioration and the diminished yield from the original well. There will be no impacts on population and on housing from implementation of the well replacement project.

2.3.14 Public Services

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The proposed well replacement project does not create any growth inducing impacts to any nearby community. The project will not result in any physical impacts that will result in the need for additional fire and police protection, schools, parks, or other public services above and beyond what already exists. As the project is not growth inducing and does not create a need for additional public services or infrastructure, there are no project-related impacts.

2.3.15 Recreation

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

a) and b) **No Impact.** The project will not increase the use, or require the construction and expansion of recreational facilities; since there will be no increased use due to the proposed project, no deterioration of public infrastructure can be attributed to the project. Therefore, the project will have no impact on recreation or recreational facilities.

2.3.16 Transportation and Traffic

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion:

a) and b) **Less Than Significant Impact.** Construction of the project will result in a minimal number of construction vehicles and workers traveling to and from the project site. There will be no impact on traffic patterns in the nearby towns of Independence and Lone Pine. The temporary increase in traffic in and around the rural project site is less than significant.

c) **No Impact.** The project area is not located sufficiently near either a private airstrip or public airport, nor does the project contain features that will alter air traffic patterns. The

Independence Airport is located over eight miles north east of the project site. No impacts on air safety will occur.

d) **Less than significant impact.** Minor grooming of service roads may be needed to allow service vehicles to reach the project site; otherwise, substantial roadway alterations are not proposed as part of the project. The existing roadways will continue to be suitable for their existing use – no roadway hazards will be created and less than significant impacts to road use will be created by the project.

e) **No Impact.** The project site is in a remote location away from population centers; service roads to and from the project site are infrequently used and are not normally used by emergency service vehicles. Additionally, all work on the replacement well will occur at a location off a spur road or patrol road which is away from normally travelled local roads. There are no impacts to emergency services access.

f) **No Impact.** The project site is in a remote location away from population centers and will not have an impact on any alternative transportation measures or facilities. Therefore, there will be no project-related impacts on alternative transportation.

2.3.17 Utilities and Service Systems

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed 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 stormwater 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 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?	☐	☐	☐	☒
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 statues and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

a) through c) and e) through g) **No Impact.** The project will not include or induce housing or employment that will affect local wastewater treatment requirements, or result in the construction of additional public services infrastructure. With the exception of Georges Creek, the project site does not contain water, sewage, or solid waste infrastructure, nor are any proposed under the project. There will be no project-related impacts on public utilities and service systems.

d) **No Impact.** There is no plumbed potable water serving the project site. The project will have no impact on water utility service.

2.3.18 Mandatory Findings of Significance

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
b)	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	☐	☐	☒	☐
c)	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, effects of other current projects, and the effects of probable future projects.)?	☐	☐	☐	☒
d)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Discussion:

a) **Less than significant.** The installation of replacement W076 does not have the potential to degrade the quality of the environment, 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. Well drilling and construction activities will be of a short duration and have no significant impacts. The project is located in a previously disturbed site and best management practices will be followed to reduce any potential construction related impacts. The operation of replacement W076 will be managed under the Water Agreement creating less than significant impacts to the environment as a result of the project.

b) **Less than significant.** The project will have a less than significant impact on short and long term environmental goals. The replacement well will only be perforated in the deeper aquifer to minimize impacts to groundwater dependent vegetation in the area as compared to pumping the existing well. The operation of replacement W076 will be managed under the Water Agreement minimizing environmental impacts related to the project.

c) **No impact.** While there are a few projects in Inyo County, none are in the immediate area of the project site, and none will have overlapping construction schedules with this proposed project. Therefore, there are no cumulative construction-related impacts on air quality, noise, and traffic.

d) **No impact.** The proposed project will not have environmental effects which will cause substantial adverse effects on human beings.

Section 3
References, Abbreviations and Report Preparation

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3.2 ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effect
AQMP	Air Quality Management Plan
BMPs	Best Management Practices
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CAT	Climate Action Team
CCRI	Climate Change Research Initiative
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
City	City of Los Angeles
DWR	Department of Water Resources
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
GCDIS	Global Change Data and Information System
GCRIO	Global Change Research Information Office
GBUAPCD	Great Basin Unified Air Pollution Control District
HCP	Habitat Conservation Plan
IS	Initial Study
LADWP	(City of) Los Angeles Department of Water and Power
MOU	Memorandum of Understanding
NAST	National Assessment and Synthesis Team
ND	Negative Declaration
PM_{10}	particulate matter 10 microns or less in diameter
SIP	state implementation plan
SCAQMD	South Coast Air Quality Management District
SNA	Significant Natural Areas
SWRCB	State Water Resources Control Board
USCCSP	U.S. Climate Change Science Program
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey

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