Responses to CEC Data Requests Set Two (30-Day Extension)

Amended Application for Certification for HYDROGEN ENERGY CALIFORNIA (08-AFC-8A) Kern County, California

Prepared for:
Hydrogen Energy California LLC

hydrogen energy california

Submitted to:

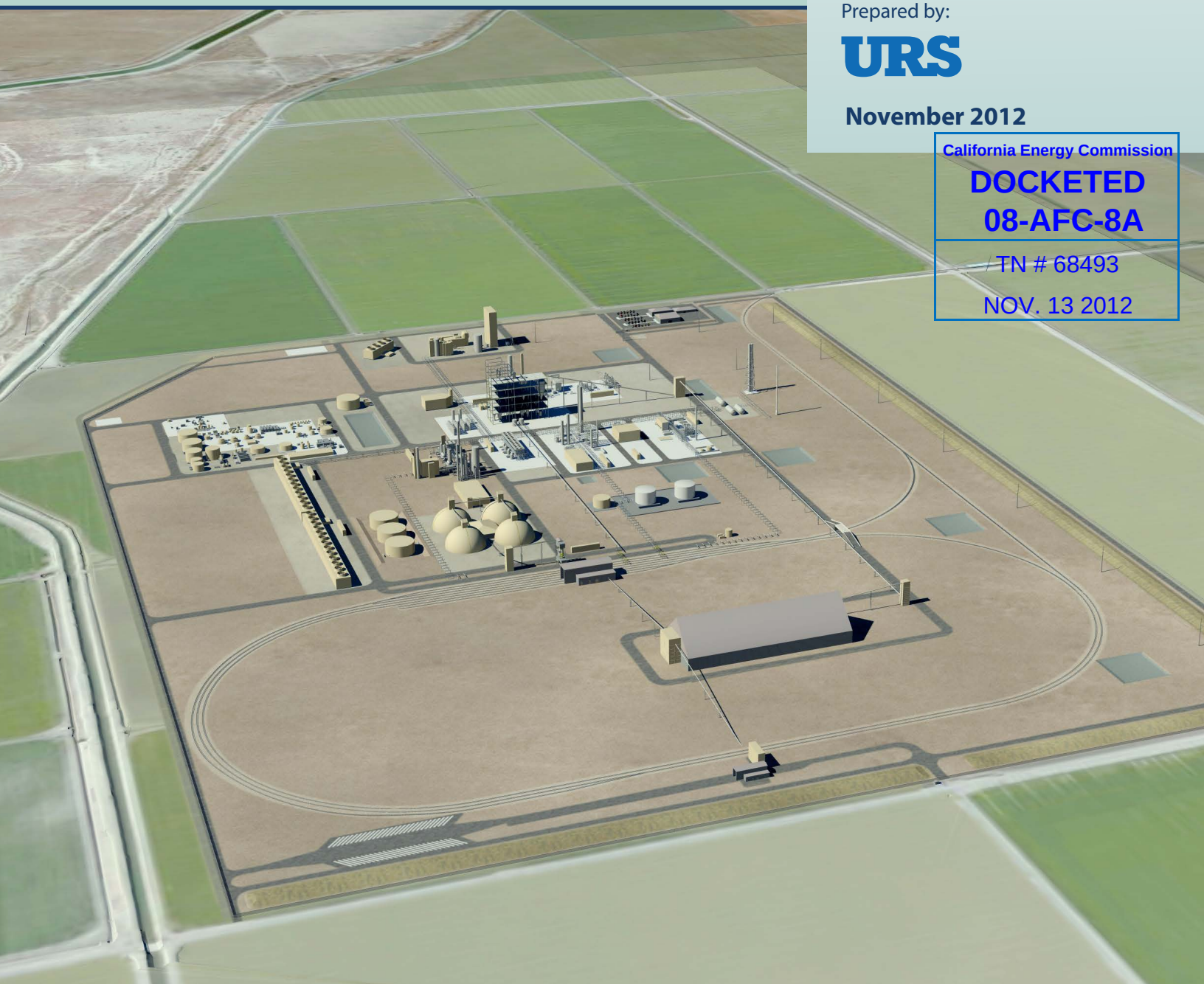
California Energy Commission

U.S Department of Energy

Prepared by:

URS

November 2012



RESPONSES TO DATA REQUESTS (30-Day Extension)
FROM CALIFORNIA ENERGY COMMISSION (CEC)

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LIST OF ACRONYMS AND ABBREVIATIONS USED IN RESPONSES

AADT	annual average daily traffic
AFC	Application for Certification
CEC	California Energy Commission
I-5	Interstate 5
KOP	key observation point
OEHI	Occidental of Elk Hills, Inc.
SR	State Route

Technical Area: Air Quality
Authors: William Walters, Nancy Fletcher

BACKGROUND: COAL TRANSPORTATION – FUGITIVE DUST EMISSIONS

The applicant has not estimated fugitive dust emissions from coal transport or provided any information regarding potential control of this emissions source. Staff needs the applicant to provide information that addresses this issue.

DATA REQUEST

A130. Please indicate whether the applicant will stipulate to using covered coal hopper cars, or stipulate to another measure to control fugitive dust emissions from open coal hopper cars.

RESPONSE

The Applicant is requesting additional time to address this Data Request.

DATA REQUEST

A131. If open coal hopper cars are proposed please estimate the fugitive coal dust emissions that occur during transport.

RESPONSE

The Applicant is requesting additional time to address this Data Request.

BACKGROUND: CONSTRUCTION FUGITIVE DUST CONTROL

Staff's continued review of the construction emissions estimates has determined that emissions control for the fugitive dust emissions estimate for grading is being double counted by assuming both a high, or mitigated, soil moisture content and assuming additional control by watering. The emission factor equation for grading includes the soil moisture content, so additional emissions control should not be applied. Additionally, the emissions control for reduced speed should only be applied to unpaved roads, not to other fugitive dust causing activities, so please revise the fugitive dust control

efficiencies to only include watering, where the current SCAQMD factor for watering three times daily is 61 percent control (http://aqmd.gov/ceqa/handbook/mitigation/fugitive/MM_fugitive.html – Table XI-A).

DATA REQUEST

A133. Please correct the grading emissions estimate by removing the added emission control efficiency that double counts the effect of grading watered/moist soil.

RESPONSE

See the response to California Energy Commission (CEC) Workshop Request A1.

DATA REQUEST

A134. Please correct the fugitive dust emissions control efficiency to only include watering efficiencies, using an agency referenced source for the control efficiency, for the fugitive dust causing activities that are not unpaved road travel.

RESPONSE

See the response to CEC Workshop Request A1.

Technical Area: Cultural Resources
Authors: Melissa Mourkas, Elizabeth A., Bagwell, Thomas Gates, Gabriel Roark

INTRODUCTION

All responses to these Data Requests containing references to specific archaeological site location or information, or cultural resources of concern to Native Americans, should be submitted under a request for confidentiality.

BACKGROUND

The Energy Commission's siting regulations require applicants to survey project sites, substations, and staging areas plus an area not less than 200 feet surrounding these features for the presence of cultural resources. Additionally, the siting regulations state that cultural resource surveys extend not less than 50 feet beyond the planned limits of proposed linear facilities (20 California Code of Regulations [CCR], App. B[g][2][C]). Three portions of the applicant's archaeological resources study area have not been surveyed to these specifications because of access issues (Amended AFC, App. G-3, Figure 1, Sheets 4–5). These areas are:

Areas surrounding the Project Site and Controlled Area, consisting of:

- A 200-foot-wide area west of Dairy Road and the Project Site and south of Adohr Road.
- A 200-foot-wide area north of Adohr Road and the Controlled Area, between Dairy Road and Tupman Road.
- A 200-foot-wide area at the northeast corner of the Controlled Area.

East of the proposed natural gas and railroad spur corridor, consisting of:

- A 50-foot-wide swath extending north from the northeast corner of the Stockdale Highway–Dairy Road intersection to the East Side Canal.

The proposed natural gas pipeline corridor along State Route (SR) 58, vicinity of Bowerbank, consisting of:

- The natural gas pipeline corridor and a 50-foot-wide buffer to each side between the end point of the proposed railroad spur and Interstate 5 (I-5).

Staff needs descriptions of archaeological survey methods and survey results for these areas to adequately assess the proposed project's impacts on historical and unique archaeological resources.

DATA REQUEST

A139. Please conduct pedestrian archaeological survey for unsurveyed portions of the proposed HECA project site, linear alignments, and associated buffer areas. In addition, if areas identified are still inaccessible, please provide a justification for continued access issues and an estimate of when requested surveys can be completed and survey results will be submitted.

RESPONSE

The following pedestrian archaeological surveys were conducted for previously unsurveyed areas:

- The natural gas pipeline corridor and a 50-foot-wide buffer to each side between the end point of the proposed railroad spur and Interstate 5.

- The laydown area that will be adjacent to the railroad spur was resurveyed to ensure that the CEC-required 200-foot-wide buffer surrounding the laydown area was adequately addressed.

The remaining unsurveyed areas within the Archaeological Resources Study Area (as presented on the map submitted to the CEC in the response to Data Request A149) are properties whose owners have denied the Applicant access, making survey of these areas not possible. The Applicant continues to work with the property owners to obtain access for surveys. At this time, the Applicant is unable to estimate when the requested surveys can be completed because the surveys are dependent on access approval by the property owner. The Applicant suggests that a Condition of Certification be developed, requiring surveys of these areas prior to ground disturbance. If cultural resources are identified during the surveys, mitigation measures presented in the Amended Application for Certification (AFC) will be implemented to ensure that the resources are properly managed and that impacts to cultural resources are less than significant.

DATA REQUEST

A140. Please provide the following information in the survey reports for the requested pedestrian archaeological surveys:

a. The methods used to identify cultural resources in the project linear alignments.

b. The results of the records search and pedestrian survey.

c. Descriptions of newly recorded cultural resources in the proposed project linear alignments.

d. An assessment of impacts to cultural resources in the project linear alignments.

e. Proposed mitigation measures for identified impacts.

f. Department of Parks and Recreation (DPR) 523 forms for all cultural resources identified during the survey as being 45 years or older or of exceptional importance.

g. Figures depicting survey coverage. The figures should also depict ground surface visibility in the survey areas, expressed as a percentage. Figures shall be on a 1:24,000-scale U.S. Geological Survey topographic quadrangle map. Previously and newly recorded cultural resources shall be mapped on the figures.

RESPONSE

See Confidential Appendix A, submitted separately under confidential cover, for the results of a survey conducted for the previously unsurveyed areas referenced in the response to Data Request A139.

BACKGROUND

Five cultural resource inventories have been conducted along or overlapping the portion of the proposed CO_2 pipeline corridor that extends south of the California Aqueduct (Farmer, 2008; Hamusek-McGann et al., 1997; Jackson et al., 1998; Peak & Associates, 1991; Stantec, 2011). Six archaeological resources have been identified in or less than 200 feet from the proposed pipeline within Section 22: P-15-6776 (CA-KER-5041), HECA-6, HECA-7, HECA-8, HECA-12, and Isolated Artifact 1. Archaeological sites HECA-7 and HECA-12 have been recommended as California Register-eligible resources (Farmer, 2008:5-8, 5-10). P-15-6776 has been found ineligible for listing on the National Register of Historic Places, but recent work indicates that the significance of the site needs to be reconsidered (Jackson et al., 1998: Table 8.2; Stantec, 2011:8). No archaeological resources have been found in the proposed pipeline alignment south of Section 22.

The findings of these previous inventories raise three issues. First, there is a disparity between the results of survey work in Section 22 and south of Section 22. Second, the boundaries of P-15-6776 and other archaeological sites in or adjacent to the proposed pipeline corridor are incompletely defined. Third, the proposed pipeline would intersect at least one previously identified archaeological resource, necessitating test excavation to determine resource significance and possibly mitigation measures.

Concerning the different survey results in Section 22 and south of it, the methods employed by archaeologists to identify archaeological resources appear unsuited to the visibility of archaeological materials south of Section 22. Consequently, archaeological resources are incompletely defined along this portion of the proposed CO_2 pipeline. If not corrected, significant impacts to cultural resources will likely result and could include discoveries of archaeological materials during construction.

The purpose of archaeological survey varies with the goals of the survey. The context of the Energy Commission's environmental review focuses on the discovery of archaeological objects, sites, places, and areas (14 California Code of Regulations 15064.5[a][3]). The typical unit of archaeological discovery is the individual feature (for instance, a house pit depression or mining tailings) or artifact (such as an arrow point or bottle). Artifacts or features that are found close to one another are grouped into archaeological sites for the purposes of future study and management. Archaeological sites in turn may be grouped into larger units (places or areas)—usually termed archaeological districts or landscapes—if the sites show functional, chronological, or other connections (Office of Historic Preservation, 1995:1–3).

In planning and conducting an archaeological survey, important considerations include the visibility and obtrusiveness of archaeological resources in the study area. Visibility refers to the ease with which archaeological materials can be seen. During the typical pedestrian archaeological survey, factors affecting archaeological visibility include lighting, weather, the attentiveness and experience of surveyors, the pace of survey, the presence of flood deposits or other soil cover atop archaeological resources, and the density and type of vegetation in the study area. Obtrusiveness of archaeological materials refers to the ease with which the archaeologist can recognize materials as archaeological. For instance, a large and dense scatter of stone-tool debris is easier to encounter and recognize during a survey than one that is small, sparse, or both. Standing structures or their ruins are easier to recognize as archaeological or cultural materials than are house pit depressions. Without exception, as the visibility and obtrusiveness of archaeological materials decreases, the archaeologist must increase the intensity of survey in order to identify archaeological materials. Greater intensity—and probability for finding and accurately describing the range of archaeological materials—can

be achieved in several ways. Most commonly, the spacing between surveyors (transect interval) is reduced or set no wider than the minimal dimension of archaeological resources in the study area. For example, in an area where the average diameter of archaeological sites is 60 feet, transect intervals in a survey should be no wider than 60 feet. Another reasonable way of increasing survey intensity in areas with dense vegetation is to clear vegetation at regular intervals (Feder, 1997:46–49, 54–55).

Energy Commission staff find that the survey methods employed in the proposed CO_2 pipeline corridor do not conform to the standards described above and are probably responsible for the lack of archaeological resources found south of Section 22. A review of previous surveys in the immediate vicinity will make the situation plain.

In 1991, Peak & Associates surveyed the eastern half of Section 22 in 60-foot transect intervals. Where the ground surface was not clearly visible, Peak & Associates cleared the ground surface at 60-foot intervals. The survey report does not state how obscured the ground surface was before the decision was made to scrape away vegetation, nor how large the surface scrapes were. Survey of this area identified a scatter of freshwater mussel shells, a gray chert chopper,[1] two flakes, and a single bowl mortar[2] (Peak & Associates, 1991:45, 64, 88, 112, Figure 6). This site was later designated P 15-6776 (CA-KER-5041).

Jackson and colleagues revisited the area in 1997, surveying after a wildfire had burned the area. The wildfire produced excellent ground surface visibility since most of the vegetation succumbed to the fire. Say Jackson et al. (1998:72), "The excellent ground surface visibility resulting from the wildfire revealed constituents [artifacts] that otherwise would lie obscured beneath continuous vegetation." These materials were identified near Peak & Associates' recordation of P-15-6776.

In 2008, URS archaeologists surveyed the northern half of Section 22, overlapping with Peak & Associates (1991) and Jackson et al.'s (1998) survey coverage (Farmer, 2008). The survey was conducted by 2–6 persons walking transects spaced 50 feet apart. Ground surface visibility ranged from 50–100 percent, with the "vast majority" of the survey area being free of vegetation. Once an archaeological site was located, the survey crew walked 15-foot transects over the site to determine its boundaries. URS identified four archaeological resources and one historic structure (road) in or within 200 feet of the current proposed CO_2 pipeline: HECA-6, HECA-7, HECA-11, HECA-12, and KRM-010H (Farmer, 2008:4-1).

At archaeological site P-15-6776, URS found that the site contained far more surface artifacts than were recorded by previous investigators and that the site extended further south and west. Two potential house-pit depressions were also observed on the site surface. URS attributed their additional finds to surveying after recent field disking and 10 years of erosion since the site was last recorded (Farmer, 2008:5-21, 6-1).

In February 2011, Stantec archaeologists surveyed the current proposed CO_2 pipeline by walking parallel transects spaced 50 feet between surveyors. Ground surface visibility was poor throughout the proposed pipeline corridor (10–20 percent) and Stantec does not describe attempts to improve the ground surface visibility by clearing vegetation. Stantec reports that archaeological site P-15-6776 extends west (into the proposed pipeline corridor) and north of

[1] A large pebble, cobble, or core tool that is flaked to form an axe-like cutting edge; it is used for chopping and cleaving work.

[2] A stone or wooden bowl-like artifact in which seeds, berries, meat, pigment, and other substances are pulverized or ground with a pestle.

the previously identified site boundaries. Given the clear track record shown in previous investigations of the pipeline vicinity, the amount of ground cover—and whether one clears obscuring vegetation—strongly conditions the reliability of archaeological survey results. In the context of 10–20 percent visibility and no vegetation clearing, the results of survey south of Section 22 appear unreliable.

The second issue with the archaeological survey for the proposed pipeline corridor is that archaeological site boundaries within and adjacent to the pipeline corridor are incompletely defined. This is particularly true of P-15-6776, which Stantec (2011: Figure 2) maps as extending into areas mapped as archaeological sites HECA-8, HECA BUF 1, HECA-7, HECA-ISO-1, and HECA-ISO-2 (Farmer, 2008). The Stantec (2011) report contains no reference to these archaeological sites or to URS's survey (Farmer, 2008), indicating that Stantec was unaware that these five resources were recorded near one another and to P-15-6776. Stantec (2011:8) states that "further survey, and possibly additional testing [should] be conducted in the area of site number PS-15-006776 [sic] when the exact pipeline corridor is established and ground visibility has improved."

Third, the proposed pipeline corridor would probably affect at least one archaeological resource, P-15-6776. Although Jackson et al. (1998) recommended P-15-6776 as ineligible for listing on the National Register, they did not evaluate the site for California Register eligibility and subsequent researchers found additional surface artifacts and features at the site in sufficient numbers to warrant reconsideration of its boundaries and significance (Farmer, 2008:5-20, 5-21, Table 5-2; Stantec, 2011:8). For Energy Commission staff to determine whether the proposed project would result in a substantial adverse change to historical or unique archaeological resources, staff needs to know whether archaeological site P-15-6776 qualifies as a historical or unique archaeological resource. This matter is solvable by conducting a test excavation program at the site.

DATA REQUEST

A141. Please conduct an archaeological survey in the proposed CO_2 pipeline corridor south of Section 22, incorporating the following practices.

a. Fifty-foot-wide or narrower transect intervals.

b. Where the ground surface visibility is 50 percent or less in the proposed pipeline corridor due to vegetation, clear vegetation in 3-feet- by-3-feet patches at 50-foot intervals to inspect the ground surface.

RESPONSE

As Occidental of Elk Hills, Inc. (OEHI) indicated in the *OEHI Responses to CEC Data Requests Set Two Nos. A136-A138 and A171-A177 for the Hydrogen Energy California Project*, "OEHI is currently preparing a Plan to address CEC Data Requests A141 through A146. The Plan will include an implementation schedule to address the data requests based on the projected development of the project. The Plan will be submitted to CEC as soon as it is completed."

DATA REQUEST

A142. Please prepare and submit an addendum to Amended AFC Appendices A-1 and A-2, Attachment B, that describes or contains:

a. The methods used to identify cultural resources in the proposed pipeline corridor.

b. The identity and qualifications of the personnel conducting the survey and report preparation.

c. The results of the archaeological survey.

d. Descriptions of newly recorded cultural resources in the proposed pipeline corridor.

e. An assessment of impacts to cultural resources in the proposed pipeline corridor.

f. Proposed mitigation measures for identified impacts.

g. Department of Parks and Recreation (DPR) 523 forms for all cultural resources identified during the survey as being 45 years or older or of exceptional importance.

h. Figures depicting survey coverage. The figures should also depict ground surface visibility in the survey areas, expressed as a percentage. Figures shall be on a 1:24,000-scale U.S. Geological Survey topographic quadrangle map. Previously and newly recorded cultural resources shall be mapped on the figures.

RESPONSE

See the response to Data Request A141.

DATA REQUEST

A143. Please provide a recommended avoidance plan describing and graphically demonstrating how impacts on specific archaeological resources in the proposed CO_2 pipeline corridor will be avoided. The plan should include:

a. Descriptions of the resource(s), with particular attention to the depth or thickness of archaeological materials and the resource boundaries.

b. Maps depicting the site boundaries and locations of any previous test excavation units for each resource. Maps shall meet the requirements laid out for DPR 523 Sketch Maps, but do not need to be generated on the site form template (see Office of Historic Preservation 1995:15).

c. Overlay the proposed pipeline corridor and all associated work areas and access roads onto the aforementioned sketch map.

d. Similar exhibits showing, plan and profile, the proposed methods for avoiding identified archaeological resources.

RESPONSE

See the response to Data Request A141.

DATA REQUEST

A144. If archaeological sites along the proposed CO_2 pipeline corridor cannot be avoided per data request 143, please provide, for staff review and approval, an archaeological testing plan that conforms to the standards described in Office of Historic Preservation (1991). The purpose of the testing plan is to determine whether archaeological resources in the proposed pipeline corridor meet CEQA's definition of a historical or unique archaeological resource. The research design shall be prepared by an archaeologist that meets the Secretary of the Interior's professional standards for archaeologists (see Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines, 36 Code of Federal Regulations 61). The research design must include the following:

a. A statement of the problem and research goals.

b. A statement of methods to achieve the research goal.

c. A statement regarding how the results will be reported.

d. Maps depicting the site boundaries and locations of any previous test excavation units for each resource. Maps shall meet the requirements laid out for DPR 523 Sketch Maps, but do not need to be generated on the site form template (see Office of Historic Preservation 1995:15).

e. Overlay the proposed pipeline corridor and all associated work areas and access roads onto the aforementioned sketch map.

f. A schedule for implementation of the research design.

g. The preparer's résumé and the résumés of other key staff that are expected to implement the research design.

RESPONSE

See the response to Data Request A141.

DATA REQUEST

A145. Upon staff's approval of the research design described in data request 144 immediately above, please implement the archaeological investigation consistent with the approved research design.

RESPONSE

See the response to Data Request A141.

DATA REQUEST

A146. Following completion of the archaeological investigation specified in data request 145 above, please provide, for staff's review and approval, an archaeological evaluation report that identifies the methods employed and results of the investigation. The report shall contain the following:

a. A description of the research design and the methods employed during the study.

b. A description of the study results.

c. Recommendations as to eligibility for consideration as a historical or unique archaeological resource for each resource investigated.

d. A location map on a U.S. Geological Survey, 7.5-minute topographic quadrangle.

e. For archaeological resources that appear to meet the criteria of historical or unique archaeological resource, describe whether the proposed pipeline would result in impacts to them. Supplement the impact discussion with exhibits and quantify the estimated quantity of archaeological materials that would be damaged or removed.

f. Proposed mitigation measures for impacted archaeological resources. Supplement the mitigation discussion with exhibits as needed.

g. A Sketch map (see data request 143 above) that depicts the sampling locations and the location of any newly identified archaeological features.

h. Revised DPR 523 forms.

RESPONSE

See the response to Data Request A141.

BACKGROUND

The proposed process water pipeline would extend through the vicinity of recorded sites P-15-89 (CA-KER-89/H), P-15-171 (CA-KER-171), P-15-179 (CA-KER-179), P-15-2485 (CA-KER-2485), P-15-6725, P-15-7176, P-15-13717, HECA-2008-1 (JM-BVWD-1), HECA-2009-09, HECA-2009-10, BS-BVWD-1, BS-IF-001, BS-IF-002, BS-IF-003, BS-IF-005, JM-IF-001, JM-IF-004, KRM-IF-002, KRM-IF-003, KRM-IF-004, KRM-IF-005, KRM-IF-006, and KRM-IF-007. The Amended AFC states that the process water pipeline would be placed in fill sediments and that impacts on cultural resources would be negligible (Amended AFC Section 5.3, pp. 27–29). The Amended AFC, however, does not state its source of information regarding the depth of fill in the vicinity of these resources.

DATA REQUEST

A147. Provide more detailed engineering drawings, showing where exactly the process water pipes will be placed in cross-section of levee. Provide proof, such as historic documents or test results, demonstrating the depth of fill used to build the levee, thereby proving that the sites along the pipeline will be successfully avoided.

RESPONSE

The Applicant is requesting additional time to address this Data Request.

BACKGROUND

It is unclear whether the applicant's archaeological consultants surveyed a 200-foot buffer surrounding the Controlled Area, future electrical transmission switchyard, proposed railroad laydown yard, the proposed meter/natural gas valve station, and horizontal directional drilling (HDD) entry and exit pits, as required by Appendix B(g)(2)(C) of the Energy Commission's Siting Regulations. The archaeological consultant's archaeological resources study area (ARSA) is described both narratively and graphically (Amended AFC Section 5.3, p. 3, Figure 5.3-1; Amended AFC App. A-2, Attachment B, p. 1, Figure 1; Confidential App., Railroad and Natural Gas Linears, p. 5.3-1, Figure 5.3-1). Figures depicting the ARSA do not identify the locations of the proposed railroad laydown yard, future electrical transmission switchyard, or the HDD entry and exit pits. The narrative descriptions of the ARSA and survey coverage do not indicate whether a 200-foot buffer was surveyed surrounding the Controlled Area, meter/natural gas valve station, or HDD entry and exit pits (Amended AFC App. G-3, pp. 33, 37–38).

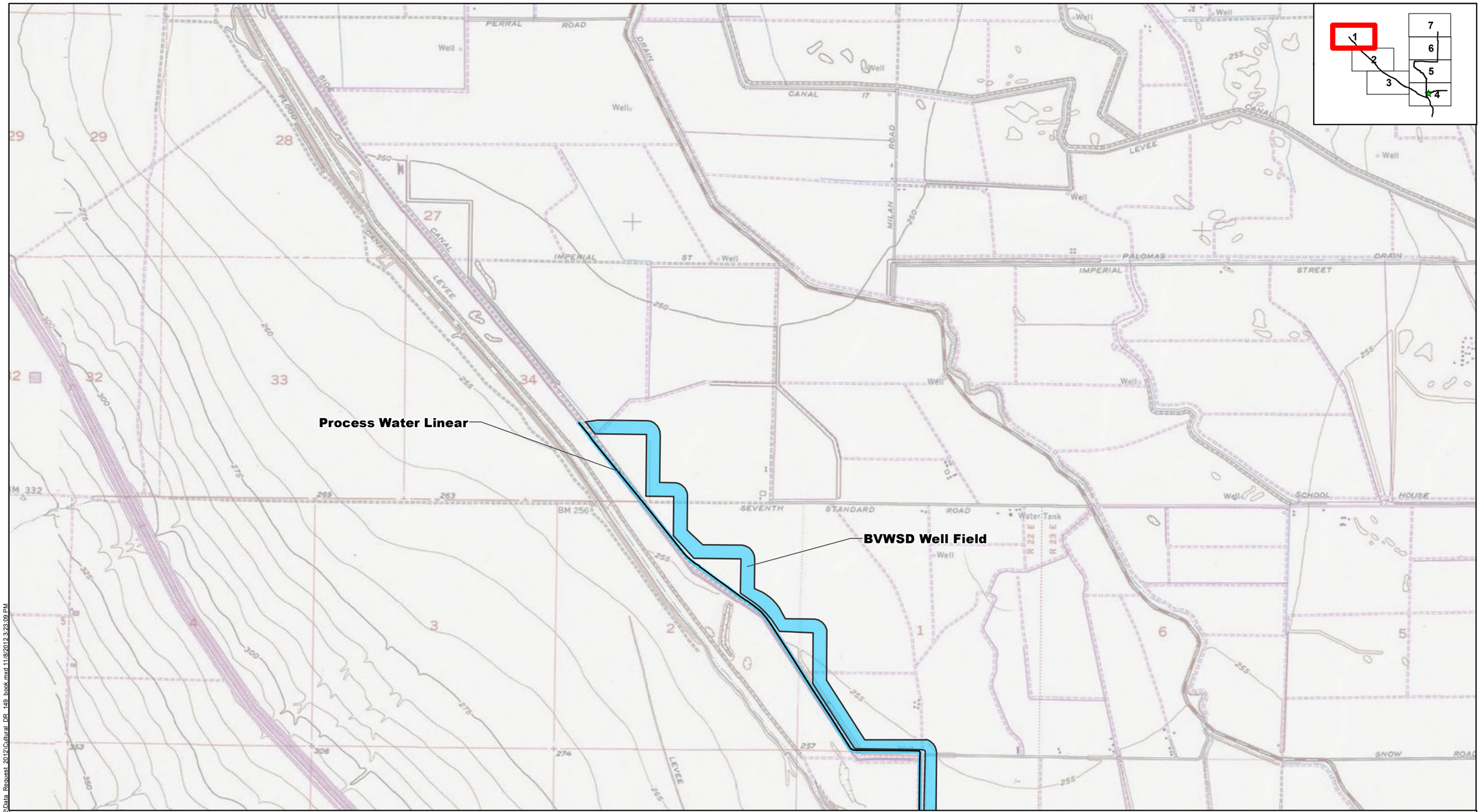
DATA REQUEST

A149. Please provide survey coverage figures on a 7.5-minute topographic quadrangle base (set at 7.5-minute scale). The figures must include all project elements and boundaries of the areas actually surveyed.

REVISED RESPONSE

Figure A149-1 has been updated to accurately reflect all unsurveyed areas to date; it replaces Figure A149-1 (Sheet 4), previously submitted with the responses to CEC Data Requests Set 2. The unsurveyed areas presented on Revised Figure A149-1 also update this element of the following figures previously submitted to the CEC:

- Figure 1 of Appendix G-3 of the Amended AFC (submitted under confidential cover);
- Figure A84a-1 submitted in the responses to CEC Data Requests Set 1; and
- Figure A148-1 submitted in the responses to CEC Data Request Set 2 (submitted under confidential cover).



HECA Project Component
Survey Area
No Survey Access

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ARCHAEOLOGICAL SURVEY COVERAGE

Hydrogen Energy California (HECA)
Kern County, California

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REVISED FIGURE A149-1 - SHEET 1

Source: ESRI, USGS seamless 1:24K topo maps. Updated by ESRI, 2009

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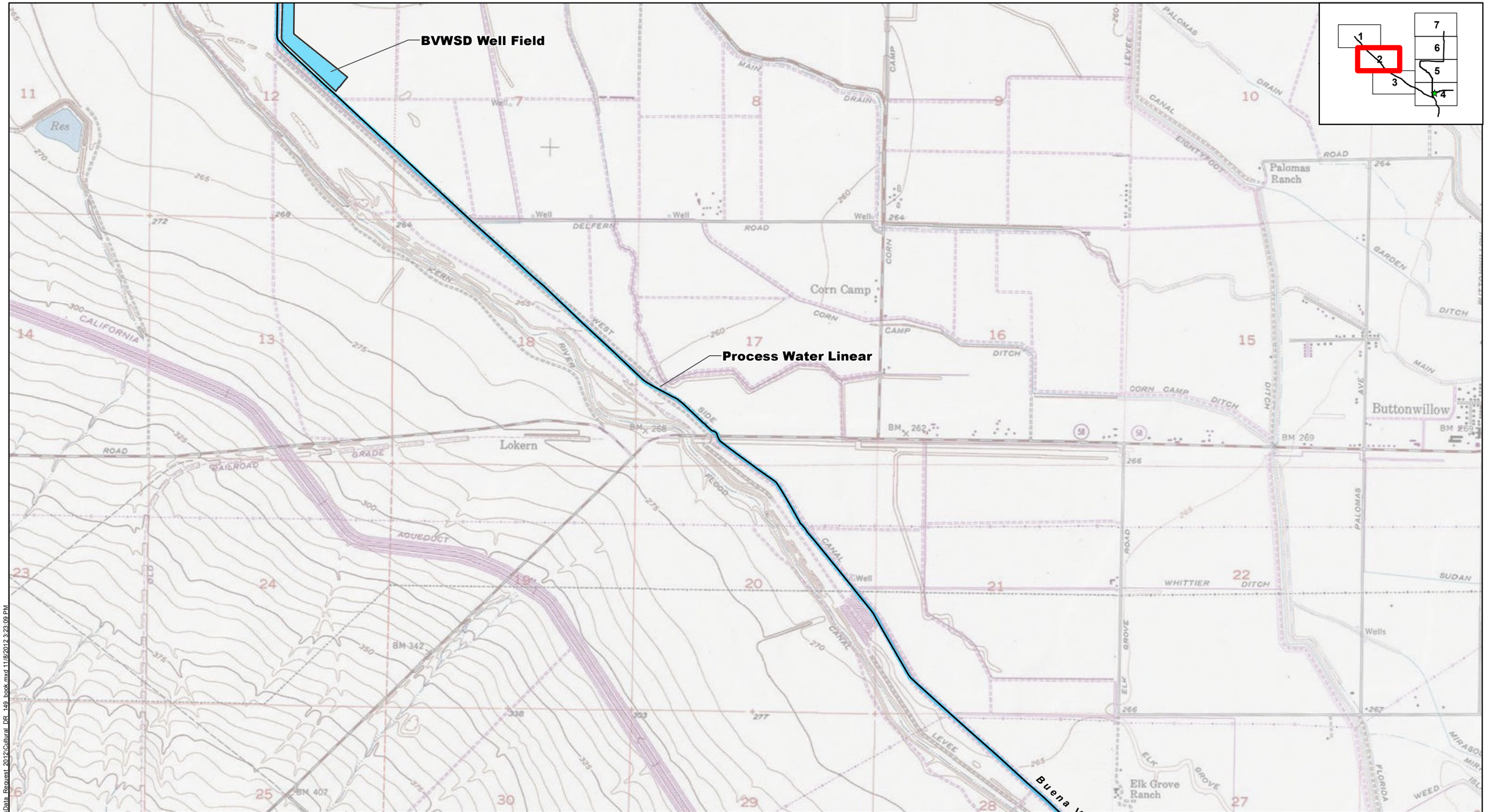

HECA Project Component
Survey Area
No Survey Access

N

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ARCHAEOLOGICAL SURVEY COVERAGE

Hydrogen Energy California (HECA)
Kern County, California

URS

REVISED FIGURE A149-1 - SHEET 2

Source: ESRI, USGS seamless 1:24K topo maps. Updated by ESRI, 2009

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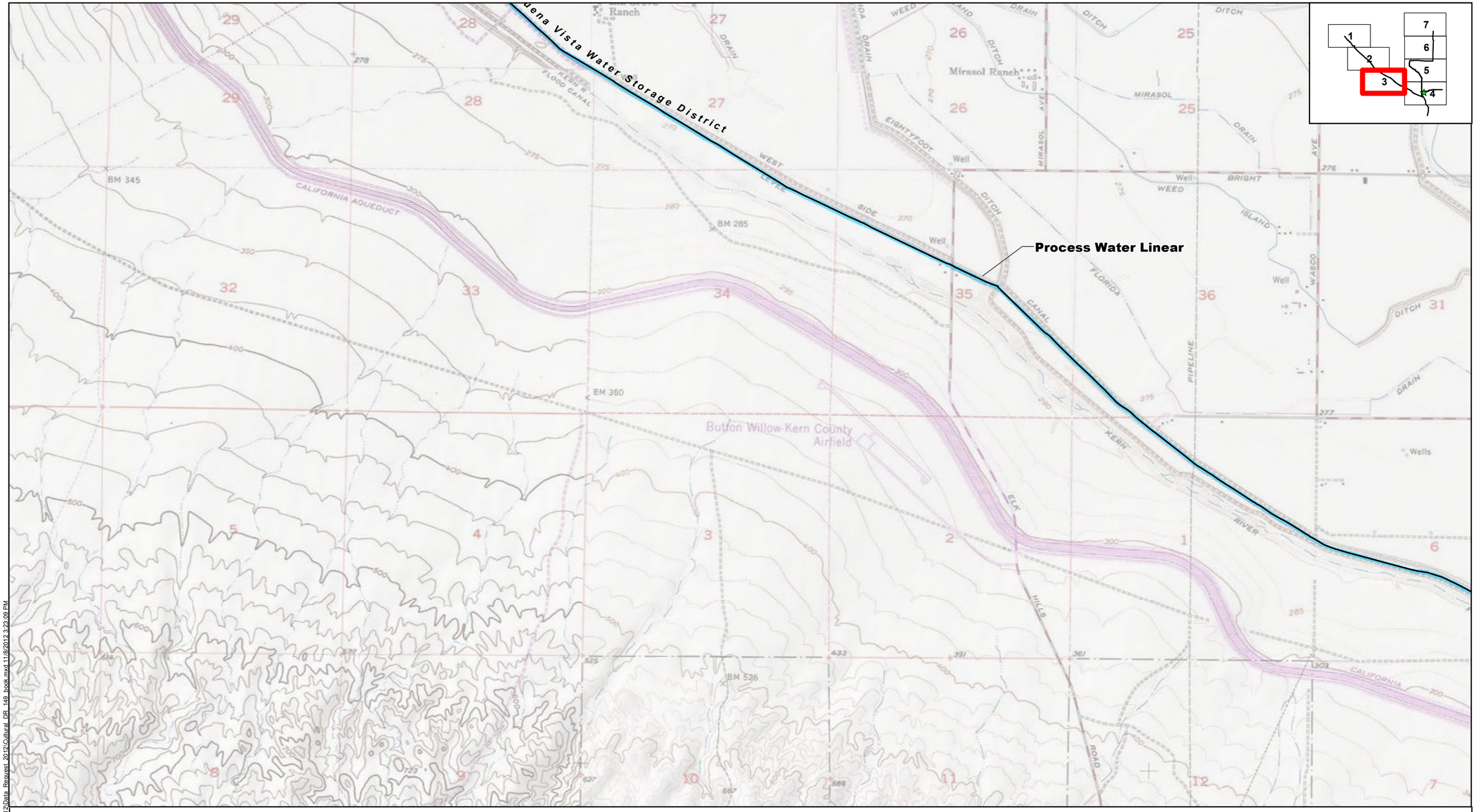

HECA Project Component
Survey Area
No Survey Access

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ARCHAEOLOGICAL SURVEY COVERAGE

Hydrogen Energy California (HECA)
Kern County, California

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REVISED FIGURE A149-1 - SHEET 3

Source: ESRI, USGS seamless 1:24K topo maps. Updated by ESRI, 2009

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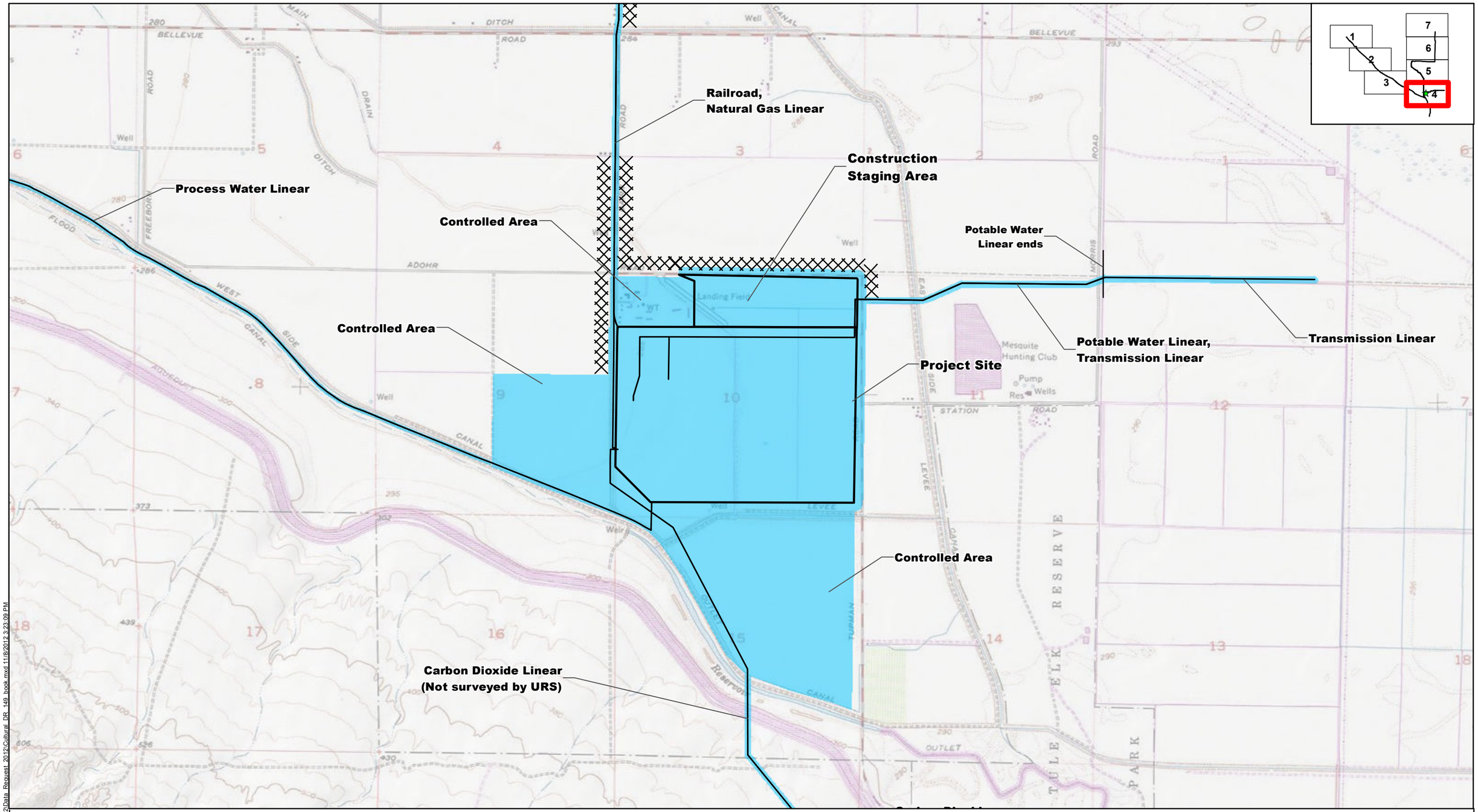

HECA Project Component
Survey Area
No Survey Access

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ARCHAEOLOGICAL SURVEY COVERAGE

Hydrogen Energy California (HECA)
Kern County, California

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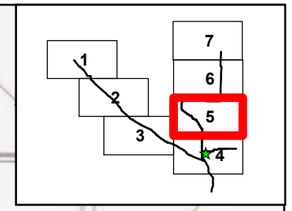
REVISED FIGURE A149-1 - SHEET 4

Railroad line ends

Rail Laydown Yard

Natural Gas Linear

Railroad, Natural Gas Linear



HECA Project Component
Survey Area
No Survey Access

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Source: ESRI, USGS seamless 1:24K topo maps. Updated by ESRI, 2009

ARCHAEOLOGICAL SURVEY COVERAGE

Hydrogen Energy California (HECA)
Kern County, California

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REVISED FIGURE A149-1 - SHEET 5

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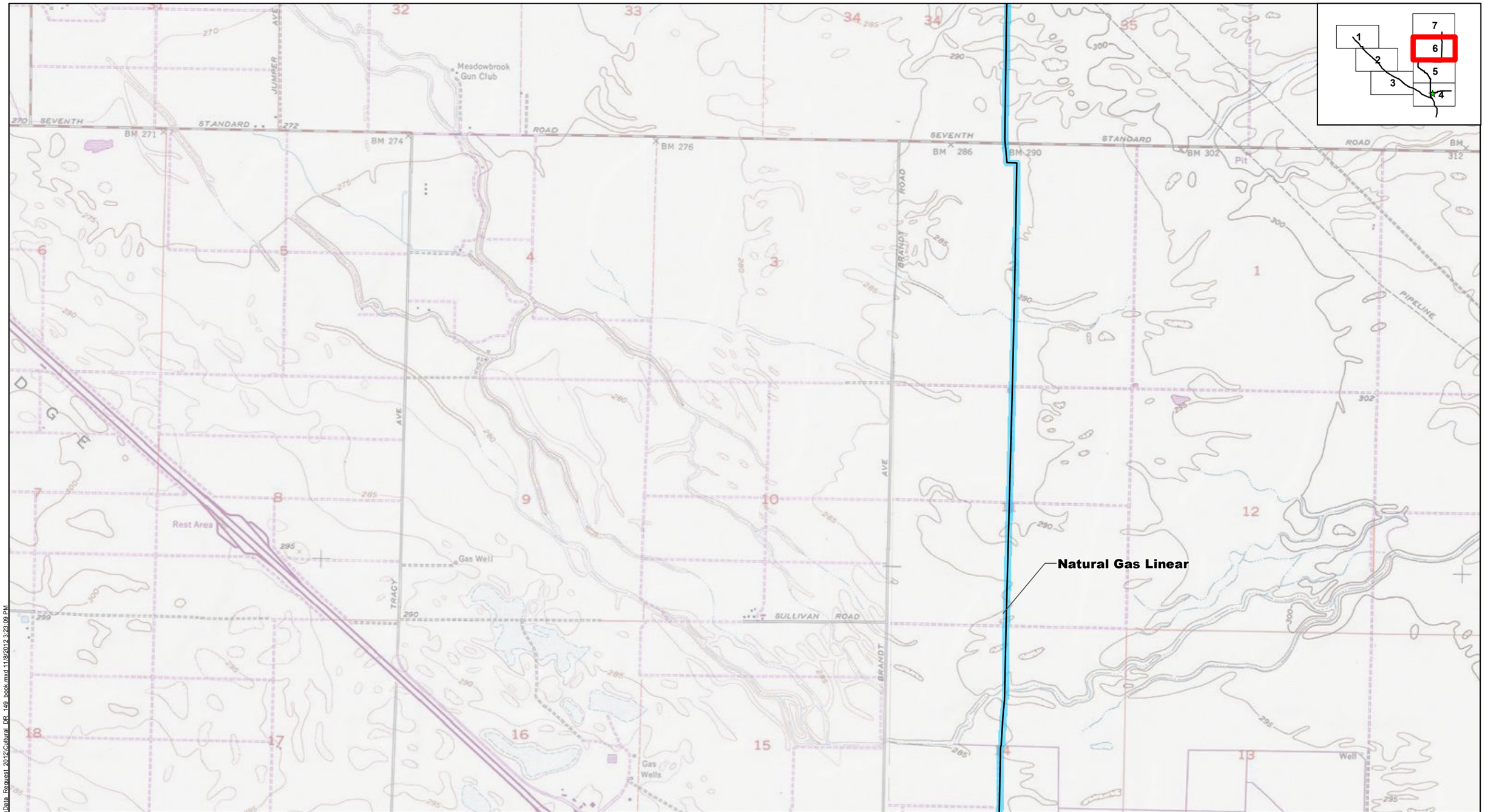

HECA Project Component
Survey Area
No Survey Access

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ARCHAEOLOGICAL SURVEY COVERAGE

Hydrogen Energy California (HECA)
Kern County, California

URS

REVISED FIGURE A149-1 - SHEET 6

Source: ESRI, USGS seamless 1:24K topo maps. Updated by ESRI, 2009

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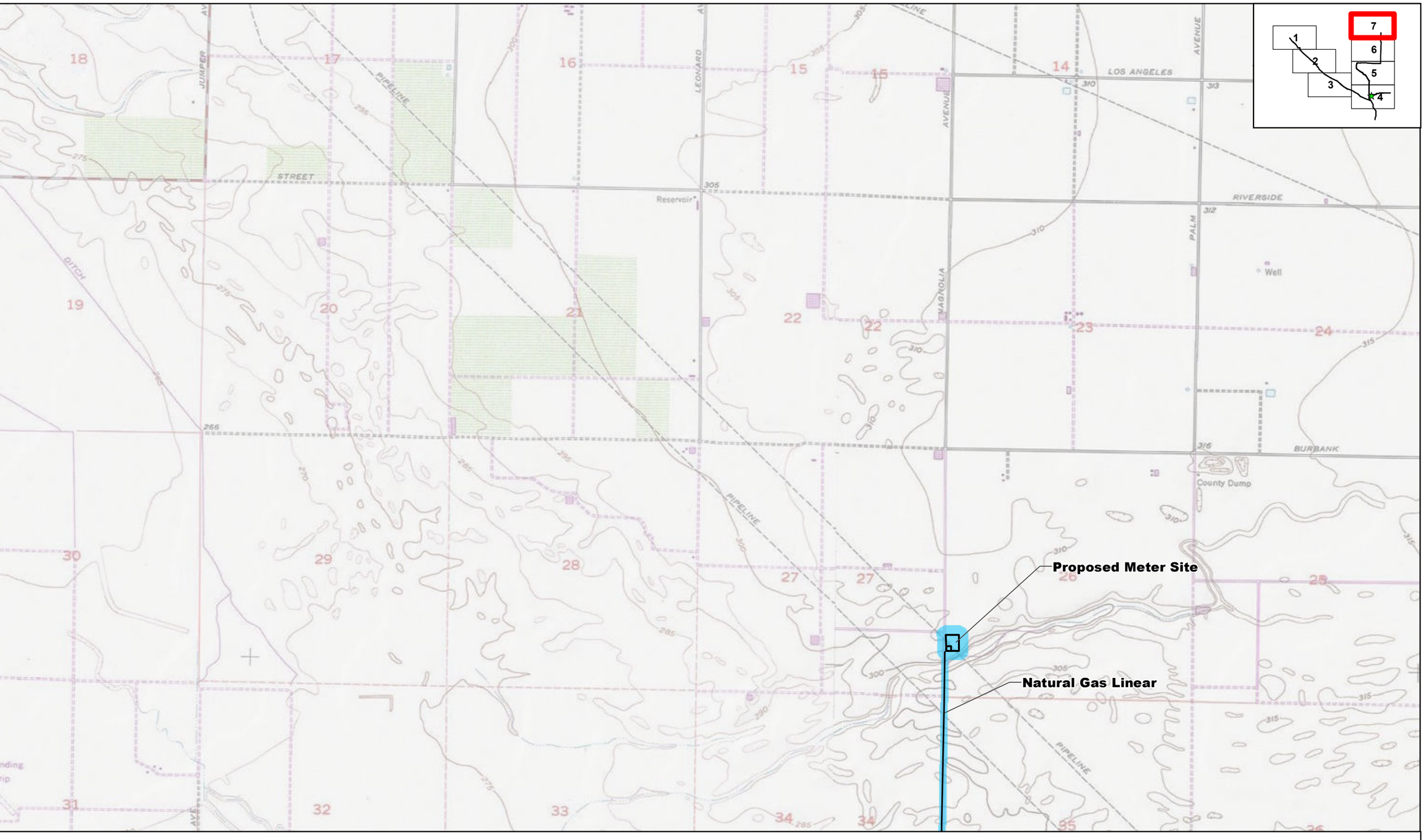

ARCHAEOLOGICAL SURVEY COVERAGE

Hydrogen Energy California (HECA)
Kern County, California

URS

REVISED FIGURE A149-1 - SHEET 7

Technical Area: Traffic and Transportation
Author: John Hope

BACKGROUND

The amended AFC on pages 5.10-5 through 5.10-8 provides information related to regional and local roadway facilities (e.g., Interstate 5, Stockdale Highway). As part of this information, the revised AFC identifies the annual average daily traffic (AADT) for regional roadway facility segments in the study area. However, the information does not identify the AADT for local roadway facilities.

DATA REQUEST

A159. Please provide the AADT volumes for all local roadway facilities that would experience project-related traffic during construction and operation activities (Alternatives 1 and 2).

RESPONSE

Table A159-1 shows the Baseline 2016 annual average daily traffic (AADT) volumes for all study roadway facilities that would experience project-related traffic during construction. The Baseline 2016 AADT volumes apply to construction activities for both Project Alternative 1 (rail transportation) and Alternative 2 (truck transportation).

Table A159-1
Roadway Segment AADT Volume
Year 2016 Project Construction Baseline

Roadway	Segment	Cross-Section	2016 Baseline AADT
Dairy Road	South of Stockdale Highway	2-Lane	202
Adohr Road	East of Dairy Road	2-Lane	291
Station Road	West of Morris Road	2-Lane	227
Stockdale Highway	West of Dairy Road	2-Lane	1,804
Stockdale Highway	West of I-5 Freeway	2-Lane	2,009
Stockdale Highway	East of I-5 Freeway	2-Lane	4,579
Morris Road	South of Stockdale Highway	2-Lane	281
Wasco Way	North of Stockdale Highway	2-Lane	1,858
Tupman Road	South of Adohr Road	2-Lane	130
Tupman Road	North of SR 119	2-Lane	648
SR 119	East of Tupman Road	2-Lane	11,872
I-5	North of Stockdale Highway	4-Lane	36,960
I-5	South of Stockdale Highway	4-Lane	34,720
SR 43	North of Stockdale Highway	2-Lane	6,160

Notes:

AADT = Annual Average Daily Traffic
I-5 = Interstate 5
SR = State Route

Table A159-2 shows the Baseline 2017 AADT volumes for all study roadway facilities that would experience Project-related traffic during the operation of Project Alternative 1 (Rail Transportation).

Table A159-2
Roadway Segment AADT Volume
Year 2017 Project Operations Baseline – Alternative 1 (Rail Transportation)

Roadway	Segment	Cross-Section	2017 Baseline AADT
Dairy Road	South of Stockdale Highway	2-Lane	205
Adohr Road	East of Dairy Road	2-Lane	296
Station Road	West of Morris Road	2-Lane	231
Stockdale Highway	West of Dairy Road	2-Lane	1,837
Stockdale Highway	West of I-5 Freeway	2-Lane	2,046
Stockdale Highway	East of I-5 Freeway	2-Lane	4,664
Morris Road	South of Stockdale Highway	2-Lane	286
Wasco Way	North of Stockdale Highway	2-Lane	1,892
Tupman Road	South of Adohr Road	2-Lane	132
Tupman Road	North of SR 119	2-Lane	660
SR 119	East of Tupman Road	2-Lane	12,084
I-5	North of Stockdale Highway	4-Lane	37,620
I-5	South of Stockdale Highway	4-Lane	35,340
SR 43	North of Stockdale Highway	2-Lane	6,270
SR 43	North of SR 58 East	2-Lane	10,260
SR 43	South of 7th Standard	2-Lane	5,700
SR 43	South of Lerdo Highway	2-Lane	11,400
SR 43	South of Poso Avenue	2-Lane	11,628

Notes:

AADT = Annual Average Daily Traffic
I-5 = Interstate 5
SR = State Route

Table 159-3 shows the Baseline 2017 AADT volumes for all study roadway facilities that would experience Project-related traffic during the operation of Project Alternative 2 (Truck Transportation).

Table A159-3
Roadway Segment AADT Volume
Year 2017 Project Operations Baseline – Alternative 2 Truck Transportation

Roadway	Segment	Cross-Section	2017 Baseline AADT
Dairy Road	South of Stockdale Highway	2-Lane	205
Adohr Road	East of Dairy Road	2-Lane	296
Station Road	West of Morris Road	2-Lane	231
Stockdale Highway	West of Dairy Road	2-Lane	1,837
Stockdale Highway	West of I-5 Freeway	2-Lane	2,046
Stockdale Highway	East of I-5 Freeway	2-Lane	4,664
Morris Road	South of Stockdale Highway	2-Lane	286
Wasco Way	North of Stockdale Highway	2-Lane	1,892
Tupman Road	South of Adohr Road	2-Lane	132
Tupman Road	North of SR 119	2-Lane	660
SR 119	East of Tupman Road	2-Lane	12,084
I-5	North of Stockdale Highway	4-Lane	37,620
I-5	South of Stockdale Highway	4-Lane	35,340
SR 43	North of Stockdale Highway	2-Lane	6,270
SR 43	North of SR 58 East	2-Lane	10,260
SR 43	South of 7th Standard	2-Lane	5,700
SR 43	South of Lerdo Highway	2-Lane	11,400
SR 43	South of Poso Avenue	2-Lane	11,628
Wasco Road	South of Poso Avenue	2-Lane	1,507
J Street	North of Poso Avenue	2-Lane	2,123
J Street	South of 9th Street	2-Lane	781
H Street	South of 9th Street	2-Lane	1,155
Kimberlina Road	East of SR 43	2-Lane	3,850
Poso Avenue	East of SR 43	2-Lane	2,805
9th Street	East of H Street	2-Lane	352

Notes:
AADT = Annual Average Daily Traffic
I-5 = Interstate 5
SR = State Route

BACKGROUND

The amended AFC provides an analysis of peak-hour intersection levels of service (LOS) for the "no project" and with the project construction and operation conditions (Alternatives 1 and 2). The amended AFC concludes that two intersections (SR 43/Stockdale Highway, SR 119/ Tupman Road) would be significantly affected by construction and operation activities.

As identified in the amended AFC in Tables 5.10-3 and 5.10-5, construction and operation of the proposed project would result in a peak of 3,720 and 2,906 passenger- car-equivalent (PCE) vehicle trips per day, respectively. In addition, footnote number 4 in Table 5.10-5 of the amended AFC identifies a break in coal trucking activities would occur during the evening peak hour to minimize roadway conflicts with heavy vehicles and identifies coal trucking activities would resume immediately after the peak evening traffic has dissipated.

DATA REQUEST

A160. Please provide a LOS analysis based on AADT for all roadway segments located in Kern County affected by project construction and operation activities.

RESPONSE

Roadway segment level of service (LOS) is based on the functional classification of the roadway, the maximum desired LOS capacity, roadway geometrics, and the existing or forecasted AADT volume. Table A160-1 was used to evaluate roadway segment LOS based on AADT. The County does not have LOS criteria for AADT; therefore, the City of Bakersfield's criteria, as shown in Table A160-1, were used for guidance.

Table A160-1
Roadway Segment Daily Capacity by Road Facility
by Level of Service

Functional Classification	Levels of Service				
	A	B	C	D	E
6-Lane Freeway	67,500	78,500	90,000	101,250	112,500
4-Lane Freeway	45,000	52,500	60,000	67,500	75,000
6-Lane Arterial	36,000	42,000	48,000	54,000	60,000
4-Lane Arterial	24,000	28,000	32,000	36,000	40,000
4-Lane Collector	18,000	21,000	24,000	27,000	30,000
2-Lane Collector	9,000	10,500	12,000	13,500	15,000

Source: Bigwest Refinery EIR, Kern County Planning Department, 2008.

Table A160-2 presents the Baseline 2016 AADT volumes with and without Project Construction added trips and corresponding LOS for all study roadway facilities that would experience project-related traffic during construction. The Year 2016 Project Construction plus Project LOS apply to both Project Alternative 1 (Rail Transportation) and Alternative 2 (Truck Transportation) construction activities.

Table A160-2
Roadway Segment ADT Volume and LOS
Year 2016 Project Construction – Alternative 1 and Alternative 2

Roadway	Segment	Cross-Section	2016 Baseline AADT	LOS	Project Added AADT	Baseline Plus Project AADT	LOS
Dairy Road	South of Stockdale Highway	2-Lane	202	A	2,550	2,752	A
Adohr Road	East of Dairy Road	2-Lane	291	A	1,276	1,567	A
Station Road	West of Morris Road	2-Lane	227	A	188	415	A
Stockdale Highway	West of Dairy Road	2-Lane	1,804	A	1,576	3,380	A
Stockdale Highway	West of I-5 Freeway	2-Lane	2,009	A	1,162	3,171	A
Stockdale Highway	East of I-5 Freeway	2-Lane	4,579	A	632	5,211	A
Morris Road	South of Stockdale Highway	2-Lane	281	A	188	469	A
Wasco Way	North of Stockdale Highway	2-Lane	1,858	A	616	2,474	A
Tupman Road	South of Adohr Road	2-Lane	130	A	1,172	1,302	A
Tupman Road	North of SR 119	2-Lane	648	A	862	1,510	A
SR 119	East of Tupman Road	2-Lane	11,872	C	738	12,610	D
I-5	North of Stockdale Highway	4-Lane	36,960	A	482	37,442	A
I-5	South of Stockdale Highway	4-Lane	34,720	A	396	35,116	A
SR 43	North of Stockdale Highway	2-Lane	6,160	A	115	6,275	A

Notes:

AADT = Annual Average Daily Traffic
I-5 = Interstate 5
LOS = level of service
SR = State Route

Table A160-3 presents the Baseline 2017 AADT volumes with and without Project Operations added trips and corresponding LOS for all study roadway facilities that would experience project-related traffic during the operation of Project Alternative 1 (Rail Transportation).

Table A160-3
Roadway Segment ADT Volume and LOS
Year 2017 Project Operation – Alternate 1 (Rail Transportation)

Roadway	Segment	Cross-Section	2017 Baseline AADT	LOS	Project Added AADT	Baseline Plus Project AADT	LOS
Dairy Road	South of Stockdale Highway	2-Lane	205	A	258	463	A
Adohr Road	East of Dairy Road	2-Lane	296	A	216	512	A
Station Road	West of Morris Road	2-Lane	231	A	682	913	A
Stockdale Highway	West of Dairy Road	2-Lane	1,837	A	0	1,837	A
Stockdale Highway	West of I-5 Freeway	2-Lane	2,046	A	940	2,986	A
Stockdale Highway	East of I-5 Freeway	2-Lane	4,664	A	208	4,872	A
Morris Road	South of Stockdale Highway	2-Lane	286	A	682	968	A
Wasco Way	North of Stockdale Highway	2-Lane	1,892	A	0	1,892	A
Tupman Road	South of Adohr Road	2-Lane	132	A	216	348	A
Tupman Road	North of SR 119	2-Lane	660	A	108	768	A
SR 119	East of Tupman Road	2-Lane	12,084	D	92	12,176	D
I-5	North of Stockdale Highway	4-Lane	37,620	A	356	37,976	A
I-5	South of Stockdale Highway	4-Lane	35,340	A	378	35,718	A
SR 43	North of Stockdale Highway	2-Lane	6,270	A	16	6,286	A
SR 43	North of SR 58 East	2-Lane	10,260	B	16	10,276	B
SR 43	South of 7th Standard	2-Lane	5,700	A	16	5,716	A
SR 43	South of Lerdo Highway	2-Lane	11,400	C	16	11,416	C
SR 43	South of Poso Avenue	2-Lane	11,628	C	16	11,644	C

Notes:

AADT = Annual Average Daily Traffic
I-5 = Interstate 5
LOS = level of service
SR = State Route

Table A160-4 presents the Baseline 2017 AADT volumes with and without Project Operations added trips and corresponding LOS for all study roadway facilities that would experience project-related traffic during the operation of Project Alternative 2 (Truck Transportation).

Table A160-4
Roadway Segment ADT Volume and LOS
Year 2017 Project Operation – Alternate 2 (Truck Transportation)

Roadway	Segment	Cross-Section	2017 Baseline AADT	LOS	Project Added AADT	Baseline Plus Project AADT	LOS
Dairy Road	South of Stockdale Highway	2-Lane	205	A	270	475	A
Adohr Road	East of Dairy Road	2-Lane	296	A	216	512	A
Station Road	West of Morris Road	2-Lane	231	A	2,512	2,743	A
Stockdale Highway	West of Dairy Road	2-Lane	1,837	A	0	1,837	A
Stockdale Highway	West of I-5 Freeway	2-Lane	2,046	A	2,782	4,828	A
Stockdale Highway	East of I-5 Freeway	2-Lane	4,664	A	1,582	6,246	A
Morris Road	South of Stockdale Highway	2-Lane	286	A	2,512	2,798	A
Wasco Way	North of Stockdale Highway	2-Lane	1,892	A	0	1,892	A
Tupman Road	South of Adohr Road	2-Lane	132	A	216	348	A
Tupman Road	North of SR 119	2-Lane	660	A	108	768	A
SR 119	East of Tupman Road	2-Lane	12,084	D	92	12,176	D
I-5	North of Stockdale Highway	4-Lane	37,620	A	578	38,198	A
I-5	South of Stockdale Highway	4-Lane	35,340	A	624	35,964	A
SR 43	North of Stockdale Highway	2-Lane	6,270	A	1,366	7,636	A
SR 43	North of SR 58 East	2-Lane	10,260	B	1,366	11,626	C
SR 43	South of 7th Standard	2-Lane	5,700	A	1,366	7,066	A
SR 43	South of Lerdo Highway	2-Lane	11,400	C	1,366	12,766	D
SR 43	South of Poso Avenue	2-Lane	11,628	C	691	12,319	D
Wasco Road	South of Poso Avenue	2-Lane	1,507	A	675	2,182	A
J Street	North of Poso Avenue	2-Lane	2,123	A	1,350	3,473	A
J Street	South of 9th Street	2-Lane	781	A	675	1,456	A
H Street	South of 9th Street	2-Lane	1,155	A	675	1,830	A
Kimberlina Road	East of SR 43	2-Lane	3,850	A	675	4,525	A
Poso Avenue	East of SR 43	2-Lane	2,805	A	675	3,480	A
9th Street	East of H Street	2-Lane	352	A	675	1,027	A

Notes:

AADT = Annual Average Daily Traffic
I-5 = Interstate 5
LOS = level of service
SR = State Route

Technical Area: Socioeconomics
Authors: Candace M. Hill, Aaron J. Nousaine

BACKGROUND: DIRECT, INDIRECT, AND INDUCED ECONOMIC IMPACTS

The amended Application for Certification (AFC) presents the estimated direct, indirect, and induced economic impacts of the Hydrogen Energy California (HECA) project derived from an application of the IMPLAN economic modeling software using economic data specific to Kern County for 2009. The amended AFC does not provide a clear explanation of the assumptions and input values used in the IMPLAN economic model. To undertake an independent assessment of the economic impacts of the proposed project, California Energy Commission staff requires a complete project budget that identifies major expenditures for construction and operation of all major project components. This should include all aspects of both the HECA and the Occidental of Elk Hills, Inc. (OEHI) projects. It should also identify the value and percentage of total spending within each expense category that will be spent locally within Kern County.

Because the impact estimates reported in the AFC include the impacts of both the HECA and OEHI projects combined, it is not possible to evaluate the independent economic impacts of each project. The economic impact estimates in the AFC also report indirect and induced construction and operations impacts as combined figures. For example, the AFC states on page 5.8-12 that the two projects combined will produce approximately $1.67 billion in labor income, of which approximately $294 million would represent the indirect and induced effects of construction related activities. To fully understand the economic impacts of the two projects it is necessary that the economic impact estimates be reported separately. The direct, indirect, and induced economic impacts also need to be reported independently because each represents a different type of economic effect.

The AFC also does not report the estimated fiscal impacts of purchases associated with project operations and maintenance. According to the data provided on page 5.8-23 of the AFC, the HECA project is expected to generate approximately $77.4 million in taxable sales (7.25 percent sales tax on $1.06 billion worth of locally purchased materials) during project construction. However, no data is provided on the estimated amount of state and local sales taxes that are likely to be generated by project operations.

DATA REQUEST

A164. Provide staff with a complete project budget for construction, operations, and maintenance for both the HECA and OEHI projects. This should include details by expense category and estimated timelines for construction, operations and maintenance of each project component.

RESPONSE

The Applicant has provided project budget information under confidential cover in the response to Workshop Request A24 included in the following document: *Responses to CEC Workshop Requests: Nos. A1 through A32 for the Hydrogen Energy California Project.*

Technical Area: Visual Resources
Author: Elliott Lum

BACKGROUND

According to the Supplemental Environmental Information (SEI) package for the Occidental of Elk Hills, Inc. (OEHI) CO_2 Enhanced Oil Recovery (EOR) project, OEHI is proposing to utilize carbon dioxide from the HECA project to facilitate oil production in its Elk Hills Unit operations.

As stated in the Aesthetics section of the SEI, the project's Processing Facility will be visible in views from the City of Tupman. Additionally, some small components of the proposed project would be visible from the communities of Dustin Acres, Valley Acres, and motorists on portions of Elk Hills Rd, SR 58, Tupman Road, and SR 119 (see Section 4.1).

Six KOPs were selected to evaluate the visual impacts of the proposed project. Each impact discussion for the above KOPs confirms that components of the proposed project may be visible. The visual impacts to all six of the aforementioned KOPs have been characterized as less than significant (see Section 4.1-17 to 19). However, Energy Commission staff has concluded that additional project information is necessary before a significance conclusion can be reached.

DATA REQUEST

A178. Please provide revised photographic simulations for each of the six KOP viewpoints reflecting the new aboveground elements of the Processing Facility, including the satellites, pipelines, and any other related aboveground structures that may be visible from the six KOPs.

RESPONSE

As indicated in the *OEHI Responses to CEC Data Requests Set Two Nos. A136-A138 and A171-A177 for the Hydrogen Energy California Project*, "OEHI will prepare photographic simulations for each of the six key observation point (KOP) viewpoints reflecting the new aboveground elements of the Processing Facility, satellites, pipelines, and any other related aboveground structures that may be visible from the six KOPs. Electronic and paper copies of 11-inch by 17-inch color photographic simulations at life size scale for each of the six KOP viewpoints will be provided to the CEC based on conceptual design parameters of the subject facilities. The simulations will be submitted to CEC as soon as they are completed."

DATA REQUEST

A179. Please provide electronic and paper copies of 11-inch by 17-inch color photographic simulations at life size scale for each of the six KOP viewpoints.

RESPONSE

See the response to Data Request A178.

DATA REQUEST

A180. Please provide information on the dimensions (i.e., height and width) of all the proposed above ground structures.

RESPONSE

See the response to Data Request A178.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
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AMENDED APPLICATION FOR CERTIFICATION FOR THE HYDROGEN ENERGY CALIFORNIA PROJECT

Docket No. 08-AFC-08A
(Revised 10/8/12)

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DECLARATION OF SERVICE

I, Dale Shileikis, declare that on November 12, 2012, I served and filed a copy of the attached Responses to CEC Data Requests Set Two (30-Day Extension), dated November, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at:
http://www.energy.ca.gov/sitingcases/hydrogen_energy/index.html

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:
(*Check all that Apply*)

For service to all other parties:

_X_ Served electronically to all e-mail addresses on the Proof of Service list;

____ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked *"hard copy required" or where no e-mail address is provided.

AND

For filing with the Docket Unit at the Energy Commission:

_X_ by sending one electronic copy to the e-mail address below (preferred method); OR

____ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 08-AFC-08A
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.ca.gov

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

____ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.