CALIFORNIA ENERGY COMMISSION
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October 6, 2010

DOCKET
08-AFC-8
DATE OCT 06 2010
RECD. OCT 06 2010

Mr. Gregory D. Skannal, HSSE Manager
Hydrogen Energy International LLC
One World Trade Center, Suite 1600
Long Beach, CA 90831-1600

RE: HYDROGEN ENERGY CALIFORNIA PROJECT (08-AFC-8)
DATA REQUEST SET 3 (#s 153-218)

Dear Mr. Skannal:

Pursuant to Title 20, California Code of Regulations, Section 1716, and in response to the September 1, 2010 confidential filing of the Linear Modifications to the Revised Application for Certification for Hydrogen Energy California (dated August 2010); the California Energy Commission staff seeks the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

This set of data requests (#s153-218) is being made in the areas of biology (#s153-154), cultural resources (#s155-173), greenhouse gases (#s 174-181), land use (#s182-190), soil and water resources (a)(#s191-201) and (b)(#s 202-210); visual resources (# 211), and waste management (#s 212-218). We would appreciate written responses to the enclosed data requests on or before November 5, 2010.

If you are unable to provide the specific information requested, need additional time, or object to providing requested/specific information, please send a written notice to Commissioner James D. Boyd, Vice Chair and Presiding Committee Member for the Hydrogen Energy California (HECA) project, and to me, within 20 days of receipt of this letter. If sent, this notification must contain the reason(s) for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f).

If you have any questions, please call me at (916) 654-5191 or email me at rjones@energy.state.ca.us.

Sincerely,

Rod Jones
Project Manager

Enclosure
cc: Docket (08-AFC-8) and POS

PROOF OF SERVICE (REVISED 8/18/10) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 10/6/10
TKG

Technical Area: Biological Resources
Author: Amy Golden

BACKGROUND

Vegetation Community Impact Calculations

Based on the recently submitted "Linear Modifications to the Revised Application for Certification biological staff needs updated vegetation community impact calculations and survey results in order to complete the Biological Resources section of the PSA, Part 2.

DATA REQUEST

153. Please update and provide the following impact tables that were included in the April 12, 2010 workshop data response package that was docketed during June 2010, to reflect the recent linear modifications and change to transmission line (changed from 60 structures to 70):

- Table 9-1, Acreages of Temporary and Permanent Disturbance by Facility Type within the Biological Resources Study Area
- Table 9-2, Acreages of Habitat Types by Facility Type within the Biological Buffer Area
- Revised Table 134-1, Habitat Acreages within the Biological Resources Study Area

154. In an email from URS on August 25, 2010, it was indicated that a blunt-nosed leopard lizard (BNLL) was found during surveys performed along the new natural gas alignment; however, this result was not included in Section 3.2.1.2 or Table 3.2-1. Please update this section and table with 2010 BNLL survey results.

Technical Area: Cultural Resources
Author: Elizabeth A. Bagwell and Beverly Bastian

All responses to these Data Requests should be submitted under a request for confidentiality.

BACKGROUND

Literature Search

In the *Archaeological Reconnaissance for the Revised Application for Certification (AFC)* (App. H3, May 2009) and *Archaeological Survey Report Addendum of the Linear Modifications to the Revised AFC* (App. B, August 2010), Hydrogen Energy California's (HECA's) consultant reports that two information searches at the Southern San Joaquin Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS) were conducted for this Addendum. However, the information from these CHRIS searches is not sufficient to enable staff to complete its analysis of the potential impacts to cultural resources of the newly proposed alternative natural gas pipeline route.

According to the maps provided in the consultant's *Archaeological Survey Report Addendum* (App. B, pp. 57–59, Sheets 1–3), multiple alternatives for the natural gas pipeline are still being considered. Energy Commission Siting Regulations [CCR Title 20, App. B(g)(2)(B)] require the applicant to provide the results of a literature search to identify cultural resources within an area not less than one-quarter (0.25) mile on either side of all proposed linear facilities. The CHRIS search data provided by the applicant's consultant did not include that coverage. Staff will need the results of this expanded record search to complete its analysis. This search data should include copies of site forms for all known resources (prehistoric and historic-period archaeological sites and built-environment structures) and copies of reports from all previous cultural resources studies for these newly identified pipeline corridors.

App. B(g)(2)(B) also requires a copy of the USGS 7.5' quadrangle map(s) for the literature search area(s), delineating the areas of all past surveys and noting the California Historical Resources Information System (CHRIS) identifying number. Also required are copies of all technical reports whose survey coverage is wholly or partly within 0.25 mile of the area surveyed for the HECA project under Section (g)(2)(C) or which report on any archaeological excavations or architectural surveys within the literature search area. Staff will also need this information to complete its analysis. This new CHRIS and project survey data should be merged with previous project data and provided in no more than two updated, comprehensive maps showing site locations, past, present, and future survey coverage, and an updated project footprint.

In addition, all requested information should encompass a search area that includes all newly proposed pipeline alternative routes and buffer areas (not less than a 1.0-mile radius around the project site and not less than 0.25 mile on either side of the linear facilities).

DATA REQUEST

155. Please provide copies of the Department of Parks and Recreation (DPR) 523 forms, as recorded in the CHRIS database, for the identified cultural resources (prehistoric and historic-period archaeological sites and built-environment structures).

156. Please provide copies of all technical reports, available through the CHRIS, whose survey coverage is wholly or partly within 0.25 mile of any newly proposed natural gas pipeline alternative route or which report on any archaeological excavations or architectural surveys within 1.0 mile of the project site or proposed linear facilities.

157. Please provide an updated, comprehensive summary table of all cultural resources within the identified search areas. The table should include all types of resources (prehistoric and historic-period archaeological sites and built-environment structures). Each resource should be identified by the appropriate number assigned by the CHRIS (if available), site type, project component potentially affecting the resource, and California Register of Historic Resources (CRHR) eligibility determination or recommendation.

158. Using App. H3-Fig. 1 as a base map, please provide a map (1:24,000—U.S. Geological Survey quadrangle scale) of the entire, combined record search area, showing the locations of all previously and newly identified cultural resources within a 1.0-mile radius of the project site and within 0.25 mile on either side of all linear facilities and their alternative routes. This should not be an aerial representation. Please include the resource location data (prehistoric and historic-period archaeological sites and built-environment structures) for all alternative routes of the new natural gas pipeline and the coverage boundaries for all pedestrian surveys conducted by the HECA applicant. Please indicate on the map those areas still needing archaeological pedestrian survey, as of September, 2010. Provide: 1) a printed copy; 2) a basic high resolution digital copy which will work on any staff computer (.jpeg); and 3) a copy of the GIS shape files for that map, which can be used and manipulated by staff. The digital version should be provided as a single graphic image (.JPG or similar), not as a scanned PDF of hard-copy pages.

159. Please provide a single map (1:24,000—U.S. Geological Survey quadrangle scale) showing the footprints of the project and all its linear alternatives (including all of the newly proposed natural gas pipeline alternative routes shown in *Archaeological Survey Report Addendum,* App. B, pp. 57–59, Sheets 1–3) in relation to the CHRIS record search boundaries, the boundaries of all pedestrian surveys conducted by the HECA applicant, and the boundaries of all other past pedestrian archaeological reconnaissance coverage, each marked with the CHRIS number identifying the associated reports. This should not be an aerial representation. Please provide the GIS shape-files for this map, as well as digital and hard copies. The digital version shall be a single graphic image (.jpg or similar) and not a scanned .pdf of hard-copy pages.

BACKGROUND

Summary of Cultural Resources

Energy Commission siting regulations require that any cultural resources listed pursuant to ordinance by a city or county, or recognized by any local historical or archaeological society or museum must be identified by the applicant. Cultural resources materials provided to date (revised AFC, May, 2009, Vol. 2, App. H3; Data Response 65; *Archaeological Survey Report Addendum*, August, 2010, App. B) do not indicate if there are any cultural resources identified by county ordinance within the project area or if local governments, historical or archaeological societies or groups, or area museums have been contacted. If a local data search has been completed or these contacts have occurred, no information has been provided to indicate the results of these inquiries. Staff needs a complete summary of all cultural resources in the HECA vicinity to complete its analysis.

DATA REQUEST

160. Please provide a list of local governments contacted or research conducted to obtain information on any cultural resources listed pursuant to any city or county ordinance and the results of those inquiries. Please plot the locations and identify any new resources on the map requested in Data Request #158.

161. Please provide a list of local museums, historical societies, or other relevant organizations contacted to obtain information on any locally important cultural resources, and the results of those inquiries. Please plot the locations and identify any new resources on the map requested in Data Request #158.

BACKGROUND

Archaeological Pedestrian Survey

The archaeological pedestrian survey of the proposed project site and linear facilities, including the newly proposed natural gas pipeline route, as identified in the August 2010 *Addendum*, App. B, is incomplete. Staff needs complete, comprehensive survey results covering all areas and all types of cultural resources (prehistoric and historic-period archaeological sites and built-environment structures) that could be impacted by the project in order to complete its analysis.

DATA REQUEST

162. Please discuss the efforts made to identify possible historic-period archaeological sites along the routes of all project linear facilities, listing the map and literature sources reviewed and the field methods employed to identify/verify such sites. If maps and literature sources were not consulted, for all the project's proposed pipelines please follow the protocol as requested in Data Requests #163 and #164.

163. Please review historic maps and aerial photographs to identify potential historic-period archaeological sites that may be present along the alternative routes of the proposed natural gas pipeline. Please, ground-truth these locations, if any, when you conduct (or complete) archaeological pedestrian surveys, covering no less than 50 feet on both sides of the right-of-way for all project linear facility routes. Include areas shown in Data Response 65 Figure 65-1-1(2); *Addendum*, App. B, Figure 1, and all newly proposed alternative natural gas pipeline routes, as shown in App. B, Map Sheets 1–3, pp.57–59.

164. Please provide the results of these surveys in a technical report conforming to the Archaeological Resource Management Report format (California Office of Historic Preservation February 1990). The report should include a version of the map described in Data Request 158, updated to show the newly completed archaeological pedestrian survey coverage. This report may be combined with the report requested in Data Request #167.

BACKGROUND

Historical Architecture Survey

The historical architecture windshield survey in the cultural resources materials provided to date (revised AFC May 2009, Vol. 2, App. H4, Maps 1–3; August 2010, App. B) is incomplete for the newly proposed natural gas pipeline routes. Staff needs complete survey results covering all areas that could be impacted by the project in order to complete its analysis.

DATA REQUEST

165. Please discuss the efforts made to identify possible extant historic-period structures, particularly canals and canal systems, along the routes of all project linear facilities, listing the map and literature sources reviewed and the field methods employed to identify/verify such sites. If maps and literature sources were not consulted, for all the project's proposed linear facilities please follow the protocol as requested in Data Requests #166 and #167.

166. Please review historic maps and aerial photographs to identify potential canals and canal systems that may be present along the alternative routes of the proposed natural gas pipeline. Please ground-truth these, if any, when you conduct a built-environment windshield survey covering no less than 0.5 mile to either side of the newly proposed natural gas pipeline alternative routes, shown in *Archaeological Survey Report Addendum,* App. B, pp. 57–59, Sheets 1–3. The survey must be conducted by an architectural historian who meets the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61.

167. Please provide a technical report, written by the qualified architectural historian indicated above, presenting the results of this survey. A resume, demonstrating the architectural historian's qualifications, should be included as an appendix to the report. The report should also include a version of the map described in Data Request 158, updated to show the newly completed built-environment survey coverage. This report may be combined with the report requested in Data Request #164.

BACKGROUND

Archaeological Study

The applicant proposes to avoid all cultural resources (Linear Modifications to the Revised AFC, August, 2010, p. 3-5). However, staff's initial analysis indicates that, except in the case of one archaeological site (CA-Ker-125), the proposed linear facilities would have direct impacts on several cultural resources. The CO_2 line would impact CA-Ker-5392, a site listed on the National Register of Historic Places. The process water line and associated wells would impact HECA-2008-1, HECA-2009-9, HECA-2009-10, and possibly CA-Riv-171.Transmission Line 1-A would impact HECA-2009-1, HECA-2009-8 and possibly CA-Ker -325. Finally, the new natural gas line may impact HECA-2010-1 (May, 2009 Vol. 1, Section 5.3, pp. 50–54; Vol. 2, App. H3, pp. 49–50; August, 2010, Section 3, pp. 5–6).

Siting regulations App. B (g) (2) (E) (i) require the applicant to discuss the measures proposed to mitigate project impacts to known cultural resources. However, the information provided by the applicant (App. H3, pp.49–50) was too general, did not support the expressed intent to avoid all cultural resources, or provide feasible and enforceable mitigation options. Because of the project's evident potential to impact known cultural resources, archaeological testing of these potential resource areas would be needed before staff can complete its analysis. Eligibility recommendations for each resource and evidence to support these recommendations would also be required.

In the case of CA-Ker-5392, this site has already been determined eligible for, and has been listed on, the National Register of Historic Places (NRHP). The applicant has expressed the intent to avoid this site. Staff requested additional information regarding the Applicant's plans for avoidance in Data Request 68. However, the information provided by the applicant in their Data Response was too general to support the expressed intent to avoid this important resource. Because of the sensitivity of this resource, staff needs a more detailed avoidance plan in order to complete their analysis.

In the absence of the above archaeological testing and detailed avoidance plan, staff may need to recommend conditions of certification that require these plans post-certification and pre-construction.

DATA REQUEST

168. Please submit a detailed plan for how the applicant proposes to avoid impacts to site CA-Ker-5392, which is listed on the NRHP, for staff review and approval. The plan should closely reflect the site boundaries, deposit depth, and location of artifact concentrations established during the most recent testing and data recovery projects at this site (Pacific Legacy 1998), as well as the conclusions and recommendations of previous researchers who have worked there. The plan should include a location map of the proposed CO_2 pipeline route, access road, construction laydown areas, and any other ground disturbance planned in association with construction of the pipeline, depicting their relation to site CA-Ker-5392, its site boundaries, artifact concentrations, and any areas where archaeological excavation took place. This map shall use as its base the detailed site map showing all excavation unit locations produced for the original Pacific Legacy excavation. The plan must be prepared by a prehistoric archaeologist who meets the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. Please provide a resume demonstrating the prehistoric archaeologist's qualifications.

169. Please submit, for staff review and approval, a subsurface testing plan for the seven known prehistoric sites that the project could impact. The subsurface testing plan should be prepared by a prehistoric archaeologist who meets the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. Please provide a resume demonstrating the prehistoric archaeologist's qualifications. This plan should use limited test excavations to determine if any subsurface deposits exist at: HECA-2008-1, HECA-2009-1, HECA-2009-8, HECA-2009-9, HECA-2009-10, CA-Ker-171, and CA-Ker-325. In the case of CA-Ker-171, which may have been destroyed by the construction of the California Aqueduct, the plan should include explorations near its location, as identified by CHRIS, to determine if portions of the site still exist subsurface. Similarly, DPR 523 forms show multiple locations for CA-Ker-325 in the vicinity of HECA 2009-1. The testing plan for these two sites should include a field visit and possible testing at all three locations to resolve these issues.

170. After staff approves the subsurface testing plan, please initiate the text excavations, as specified in the approved plan. A qualified prehistoric archaeologist, as identified in Data Request #169 above, shall carry out the test excavations. If deposits are found, please recover a sample of materials sufficient to support recommendations of significance for these sites. Evaluate the recovered data for its potential to address the research questions posed in the confidential cultural resources technical report.

171. Please provide a report, written by the qualified prehistoric archaeologist conducting the excavations, on the testing and findings at these sites. The report should present an analysis of the recovered data, recommendations regarding the significance of the sites, and justifications for the recommendations, based on the recovered data. Please complete or update and file DPR 523 "Archaeological Site" detail forms for these sites, including dating and significance recommendations, and submit copies to staff.

BACKGROUND

Geoarchaeological Field Sampling

The detailed geoarchaeological study provided as Data Response #77 convincingly argues that much of the proposed project is to be located in areas with high sensitivity for buried cultural resources. The project footprint, process water pipeline, and transmission line are all planned for Quaternary Alluvium (Qb), which has high cultural resources sensitivity. The CO_2 pipeline would cross three soil types (Qb, Qa, and QTt), which have high, medium, and low sensitivity, respectively. The new natural gas pipeline route would also extend across multiple soil types (Qb and Qoa), resulting in one-third of the route crossing areas of high sensitivity and the remainder in areas of low sensitivity (Data Response 77, Table 77-1 and Fig. 77-5). Based on previous archaeological survey and excavation in the HECA project vicinity, it is clear that as-yet-unidentified buried sites are likely to be prehistoric village sites with human remains.

Staff assumes parts of the project site and project linear facilities rights-of-way (ROWs) have been disturbed by agriculture to a depth of three feet, but considerable proposed project ground disturbance would exceed that depth. The ground disturbance resulting from the construction of equipment installations at the plant site would be likely to extend as deep as 12 feet below the surface. The CO_2, natural gas, and process water pipelines would be installed at least five feet below grade. The amount of relatively deep ground disturbance proposed in an area sensitive for archaeological resources is considerable.

Because of the high archaeological sensitivity through much of the project site and along project linear facilities rights-of-way (ROWs), staff expects that archaeological monitoring will be required during construction. During the April, 2010 Workshop, staff proposed selected geoarchaeological field sampling (shovel testing) within the project area in order to obtain more project-specific information. Energy Commission staff believes this would help focus the monitoring effort and would result in better historic preservation (per the State Historic Preservation Office).

The applicant should also be aware that once geoarchaeological field sampling has refined our understanding of the parts of the project area with the highest archaeological sensitivity, a subsurface inventory survey employing backhoe trenches may need to be employed in some of these areas to identify extremely sensitive resources.

The applicant agreed to design a plan and conduct geoarchaeological field sampling “once a development plan has been finalized for the Project Site” (April, 2010 Workshop Response 23). As of late September, 2010, staff has not received this plan. While staff understands that some of the project elements are still being refined, staff considers most of the project elements to be sufficiently developed for a plan to be prepared and field sampling to take place. Staff must establish a factual basis for the assessment of potential effects to buried deposits within the project impact areas. In the absence of such information, needed to appropriately configure the cultural resources monitoring for this project, staff may need to recommend conditions of certification providing that a subsurface study be conducted post-certification and pre-construction.

DATA REQUEST

172. Please design a primary geoarchaeological field study of the project plant site and linear facility corridors. The plan shall be prepared by a prehistoric archaeologist who, at a minimum, meets the U.S. Secretary of Interior’s Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and whose resume includes the completion of graduate-level coursework in geoarchaeology, physical geography, geomorphology, or Quaternary science, or

education and experience acceptable to cultural resources staff. A resume demonstrating the geoarchaeologist's qualifications should be included with the proposed plan. The plan shall include soil profiling within the Project Site where the deepest trenching would occur, and along the linear facilities at old stream or water crossings. Submit the research plan for staff approval.

173. Once staff has approved the plan, please have the qualified geoarchaeologist conduct the field study and prepare a report of the results. The primary study and resulting report should, at a minimum, include the following elements:

A. A map of the present landforms in the project area at a scale of not less than 1:24,000; the data sources for the map may be any combination of published maps, satellite or aerial imagery that has been subject to field verification, and the result of field mapping efforts;

B. A sampling strategy to document the stratigraphy of the portions of the landforms in the project impact areas where the construction of the proposed project will involve disturbance at depths greater than 3 feet;

C. Data collection necessary for determinations of the physical character, the ages, and the depositional rates of the various sedimentary deposits and paleosols that may be beneath the surface of the project impact areas to the proposed maximum depth of ground disturbance. Each landform must be sampled. Data collection at each sampling locale should include a measured profile drawing and a profile photograph with a metric scale, and the screening of a small sample (three 5-gallon buckets) of sediment from the major sedimentary deposits in each profile through ¼- inch hardware cloth. Data collection should also include the collection and assaying of enough soil humate samples to reliably radiocarbon-date a master stratigraphic column for each sampled landform; and

D. An analysis of the collected field data and an assessment, based on those data, of the likelihood of the presence of buried archaeological deposits in the project impact areas, and, to the extent possible, the likely age and character of such deposits.

Technical Area: Greenhouse Gases
Author: William Walters

BACKGROUND

Project Fuel Use Bounding Limits

The greenhouse gas (GHG) emissions estimate for the project is very sensitive to the fuel and gasifier feedstock assumptions used. A major finding staff needs to make is whether or not the project would comply with SB 1368 GHG Emission Performance Standard requirements and whether the project would have the ability to reduce system-wide GHG emissions[1]. When the gas turbine is operating on hydrogen-rich fuel derived from the petroleum coke/coal feedstocks the majority of the GHG emissions, in the form of CO_2, from the fuel feedstocks is going to be shipped offsite for injection in an oil field for enhanced oil recovery (EOR) and carbon sequestration; however, there is no sequestration of GHG emissions from natural gas used in the gas turbine or duct burners, so the total amount of natural gas used in the gas turbine/duct burners can potentially have a significant effect on the total GHG emissions and emissions efficiency in terms of CO_2 or CO_2 equivalent emissions per megawatt-hour (MWh) of net generation (CO_2/MWh or CO2E/MWh). Staff needs the applicant to provide bounding fuel assumptions and GHG emissions to fully evaluate the GHG emissions and regulatory compliance issues of the HECA project. Staff notes that we indicated a need for fuel use bounding assumptions during the data response workshop, but this information has yet to be provided by the applicant. These data requests formalize, and provide additional clarification for the applicant, regarding the requests made at the data response workshop.

DATA REQUEST

174. Please describe the maximum amount of natural gas that would be used in the gas turbine, both as the primary gas turbine fuel, as mixed with the hydrogen-rich fuel as the primary gas turbine fuel, and as sole or mixed fuel for the duct burners, and provide the efficiency of its use (CO2E/MWh of net generation with complete calculations and assumptions) in the gas turbine and the duct burners.

175. Please describe whether natural gas may be used as the primary gas turbine/duct burner fuel if there are very long periods of gasifier downtime due to major process upsets or accidents, and if so whether the duct burners would or would not be used during these periods when the majority of the parasitic power load from the gasification system would not occur. How long and how often could this mode of operation occur? What would be the basis for this decision?

176. Please provide the GHG emissions performance of the petroleum coke feedstock and coal feedstock, separately (CO2E/MWh of net generation with complete calculations and assumptions).

177. Please provide the range of best-case and worst-case facility annual GHG emissions (CO2E) and annual emissions performance (CO_2/MWh for SB 1368 compliance and CO2E/MWh of net generation) for the potential range of fuel/feedstock use options to

[1] Recent Energy Commission Final Decisions (Decisions) have noted in the Conclusions of Law in the Greenhouse Gas (GHG) Emissions sections that "[a]ny new power plant that we certify must: a) not increase the overall system heat rate; b) not interfere with generation from existing renewables or with the integration of new renewable generation; and c) have the ability to reduce the system-wide GHG emissions."

which the applicant is willing to stipulate, with calculations and all assumptions on feedstock/fuel use and CO_2 venting provided.

178. Please provide the expected annual GHG emissions (CO2E) and annual emissions performance (CO2E/MWh of net generation) during the DOE performance demonstration period, with calculations and all assumptions on feedstock/fuel use and CO_2 venting provided; and confirm the values provided in June 2010 for the long-term mature plant operations after the DOE performance demonstration. Also please identify the minimum, anticipated, and maximum duration of the DOE demonstration phase.

BACKGROUND

Sequestration Agreement

Staff needs confirmation of any agreement between Hydrogen Energy International LLC and Occidental Petroleum regarding the enhanced oil recovery (EOR) and CO_2 sequestration in order to complete our findings regarding GHG impacts. Without such an agreement the project's proposed EOR and CO_2 sequestration does not have adequate certainty for staff to include the CO_2 sequestration in the GHG emissions estimate for the project.

DATA REQUEST

179. Please provide a copy of the agreement between Hydrogen Energy International LLC and Occidental Petroleum that provides assurance that the Occidental Petroleum Enhanced Oil Recovery (EOR) project-related action would be completed, that Occidental Petroleum would be contractually required to accept responsibility for and inject/sequester the HECA project's separated CO_2 emissions stream; and that outlines the roles of each party regarding CO_2 sequestration and ownership/liability for this project.

180. Please discuss whether Hydrogen Energy California, LLC has identified any options that would allow the Energy Commission to adopt conditions of certification for purposes of ensuring compliance with the carbon sequestration component of HECA.

BACKGROUND: SB 1368 EMISSIONS PERFORMANCE STANDARD COMPLIANCE CALCULATIONS

For the purposes of project total greenhouse gas accounting and determining SB 1368 compliance it is necessary to consider the carbon sequestration process, Occidental's Enhanced Oil Recovery (EOR) Project, as part of the overall carbon and energy balance as if it were located onsite to determine the HECA project's total greenhouse gas emissions and the project's net CO_2/MWh emission rate's compliance with the Emission Performance Standard (EPS). Energy Commission staff is currently working to determine an estimate for the long term retention efficiency of the sequestration process, but staff needs additional information for the aboveground EOR facility's GHG emissions and energy consumption.

DATA REQUEST

181. Please provide an estimate, with all assumptions and calculations provided in electronic form (editable Excel spreadsheet), of the EOR processes greenhouse gas emissions and electricity consumption that includes the following:

a. The direct annual CO_2 and CO2E emissions from the EOR facility heaters and other fuel fired equipment.

b. The annual CO2E emissions for the mobile sources (employee vehicles, maintenance delivery vehicles, etc.) required to operate the EOR facility.

c. The annual CO_2 leakage from the EOR process, including the leakage from all of the aboveground piping components starting at the HECA fence line.

d. The annual electricity consumption (in MWh) for the EOR process.

Technical Area: Land Use
Author: Eric Veerkamp

Please be aware that if any responses to the Data Requests contained herein have the potential to reveal proprietary or confidential information, they should be submitted under a request for confidentiality.

BACKGROUND

Controlled Area

Section 2.2 (Water Well), page 2.1, of the August 2010 Linear Modifications to the Revised Application for Certification (AFC) states that Hydrogen Energy International (HEI) has defined two alternatives to supply the project with potable water. Alternative A, the preferred solution, would increase the size of the Controlled Area from 628 acres to 633 acres*. [Alternative B involves developing a new well on the already identified 250-acre permanently disturbed portion of the overall 473-acre Project Site*]. Based on the use of Alternative A for the HECA facility, staff considers this to be part of a revised 478-acre Project Site, as opposed to the Controlled Area. To fully analyze the land use issues associated with Alternative A, please provide the following.

DATA REQUEST

182. Please provide the Assessor's Parcel Number (APN) of the parcel associated with Alternative A.

183. Please clarify the zoning of the parcel associated with Alternative A.

184. Please revise acreage of Williamson Act land that will need to be petitioned for cancellation, if any.

185. Please update the analysis of the proposed Lot Line Adjustment (LLA) stating how it would be affected by the inclusion of Alternative A.

186. Please update figures reflecting the revised Project Area.

    a. Figure 2.7, Project Location Map.
    b. Figure 2.4 (Site Plan) of the May 2009 Revised AFC.
    c. Figure 5.4-2, Overview, Existing Land Uses.
    d. Figure 5.4-2(5), Existing Land Uses.

BACKGROUND

New Study Area

While Section 3.4.1, page 3-7 of the August 2010 Linear Modifications states that 0.25 mile of the relocated 11 miles of natural gas pipeline would be located primarily on roadways and agricultural land and the remaining 10.75 acres would be located in roadway Right-of-Way or adjacent to agricultural lands, the Section does not provide detailed land use information about the new study area resulting from the relocated natural gas linear.

DATA REQUEST

187. For staff to determine the land use compatibility of the proposed rerouted natural gas line, please provide the zoning and general plan designations, and the Assessor's Parcel Number(s) of the parcel(s) proposed for the relocation of the natural gas linear.

188. Please provide revised text, tables, and figures reflecting the proposed change in land use associated with the amended study area related to linears. At a minimum, the potable water/natural gas and carbon dioxide portions of the following tables from the May 2009 Revised AFC need to be updated.

    a. Table 5.4-4, Important farmlands within the study area according to the State of California Farmlands Mapping and Monitoring Program (FMMP).
    b. Table 5.4-5, Williamson Act contract lands within the study area.
    c. Table 5.4-3, Existing crop types within the study area.
    d. Table 5.4-7, Kern County General Plan Land Use designations within the study area.
    e. Table 5.4-2, Existing land uses within the study area.
    f. Table 5.4-8, Kern County Zoning designations within the study area.

BACKGROUND

Natural Gas Linear

Section 2.3 (Relocation of Natural Gas Linear), page 2-3, of the August 2010 Linear Modifications states that the linear would cross I-5 and the East Side Canal; however, no discussion is provided regarding the pipeline crossing at Highway 58 and the Southern Pacific Railroad.

DATA REQUEST

189. Please include a schedule indicating when the required encroachment permits and/or requests for right-of-way (for all crossings) from Cal Trans, the Southern Pacific Railroad, Kern County, and other agencies with jurisdiction, will be obtained and the steps taken to obtain them.

190. Please clarify whether the Hwy. 58/Southern Pacific Railroad crossing would also use horizontal directional drilling. Please revise Figure 2-8, Project Location Details to indicate the location of any new entry and exit pits.

Technical Area: Soil and Water Resources (a)
Author: Mike Conway

BACKGROUND

Industrial Water Supply

The proposed project would use an annual average of about 4.2 million gallons of groundwater per day and up to 6 million gallons per day (gpd) in summer. This is equivalent to an average water use of 4,741 acre-feet per year (AFY). The applicant however has arranged to receive up to 7,500 AFY.

The applicant proposes to use Buena Vista Water Storage District (BVWSD) groundwater supply based on economic feasibility, availability, quality, and reliability. The applicant sought water of poor quality with the goal of using the worst available water for cooling at the proposed plant. As part of the BVWSD Brackish Groundwater Remediation Program (BGRP), the HECA project would receive up to 7,500 AFY of groundwater from the BVWSD. The BVWSD would deliver the water via pipeline to the project site located 15 miles southeast of the proposed wellfield. In August of 2008, the applicant and BVWSD signed a "Summary of Proposed Water Transfer Terms" that explains the specific terms of the water supply agreement (FEIR 2009). The will-serve letter signed by Hydrogen Energy International and BVWSD states that the water supply for HECA would vary between 1,000 mg/L to 4,000 mg/L, with an average of 2,000 mg/L. This water is described by BVWSD as having few uses and also as being the cause of low crop yield and low crop quality within the district.

The project's industrial water would be supplied via Component 4 of BVWSD's water management program titled the Brackish Groundwater Remediation Project (BGRP), which is described in the district's 2009 Final Environmental Impact Report. According to district records, the portion of the district south of 7th Standard Road is underlain by groundwater having total dissolved solids (TDS) concentrations ranging from 300 to 1,000 mg/L, whereas areas to the north are underlain by ground water with concentrations ranging from 1,000 to 4,000 mg/L. The purpose of the program would be to remediate shallow perched and brackish groundwater that has adversely impacted plant growth and crop yield within the district. The program would seek to operate two strategic pump zones called Target Area A (north of 7th Standard Road) and Target Area B (mostly south of 7th Standard Road). Combined extraction of the BGRP could total up to 12,000 AFY (FEIR 2009).

The HECA project would receive water from Target Area B, which is located along the west-central edge of the district. Up to ten wells are planned for this area designed to extract brackish groundwater with TDS concentrations ranging from 700 to 4,000 mg/L located within 200 to 700 feet below the ground surface. The water quality produced by the extraction wells is expected to be a mix of water relatively high in TDS concentrations originating west of the well field and low TDS concentrations water from the east. The location of the proposed wells is intended to reduce the lateral inflow of the high TDS concentration groundwater from the west (FEIR 2009).

The Hydrogeologic Data Acquisition Report prepared by the applicant provides data from multiple pump tests and water quality sampling results within the Target Area B vicinity. The report concluded that TDS within the vicinity ranged from 860 mg/L to 4,300 mg/L and that in some instances vertical stratification of TDS concentration occurs. For example, the report describes vertical zones of salinity in well C-8: TDS concentrations of 530 mg/L in the upper 100 feet of the water column in the well, TDS concentrations of 950 mg/L in the 100-140 feet depth interval, and 1,220 mg/L TDS concentrations in the 140 to 213 feet depth interval. Similarly in Well C-3, the applicant reported the water column has TDS concentrations zones that range

from 500 mg/L to 1,500 mg/L between the water surface and a depth of 140 feet below the water surface. Water samples from other wells in the general vicinity of these two wells contain even higher TDS concentrations, such as Well 70A (4,300 mg/L), Well 96 (2,900 mg/L), and Well 98 (2,400 mg/L).

The distribution of salinity varies throughout the proposed target area, but does not appear to provide quantitative evidence that a long-term water supply with average TDS concentrations of 2,000 mg/L could be obtained over the life of the project. Because the quality of the water supply is important to understanding the reasonableness of its use (cooling), it is important for staff to establish, with some degree of confidence, the expected long-term quality of the proposed HECA project water supply.

The proposed array of wells would mix water of two distinct sources, water from the east and water from the west. The approach is intended to shift the interface between westerly groundwater that is reportedly relatively high in TDS concentrations and easterly groundwater reportedly relatively lower in TDS concentrations. The westward migration of relatively low TDS concentration groundwater from the east is intended to improve overall groundwater quality conditions beneath the district. While staff does not disagree that a shift in interface location can increase the area underlain by lower TDS concentrations groundwater, it is not clear why it is necessary to mix the two waters. As proposed, staff cannot conclude that the proposed pumping layout maximizes the capture of poor quality groundwater flowing into the district from the west and minimizes the extraction of higher quality groundwater flowing from the east.

Staff is also having difficulty determining or verifying that the "axial" interface of the water from the east and west is located east of the proposed wellfield. A report published by the California Department of Water Resources (DWR), "Report on Proposed Belridge Water Storage District" in 1961, describes the axial interface as not being any further east than the West Side Canal. If this is true, project pumping would induce flow of lesser quality water into the district. The same report contains groundwater quality data gathered from within BVWSD. Three wells were sampled immediately east of the proposed HECA wellfield. These wells contained water with TDS values ranging from 390 to 414 mg/L. Though data contained within this report is dated, staff is unable to identify more recent data that demonstrates that pumping would not induce flow of poor quality water into areas of higher quality groundwater. For instance, the Hydrogeologic Data Acquisition Report provides no further data or confidence that supports the applicant's claim that the axial interface is within BVSWD. TDS data from the 1961 DWR report also indicates that better quality water may exist in close proximity to the proposed Target Area B wellfield. The DWR report also generally describes a groundwater flow gradient within Belridge as being to the northeast. The applicant however proposes that water flowing from Belridge is flowing in a southeasterly direction. This evidence might explain the presence of higher TDS water in the north end of the Buttonwillow Service Area and lower TDS water in the southern portion of the district, which would also support the conclusion in the FEIR that groundwater south of 7th Standard Road is generally in the range of 300 to 1,000 mg/L TDS.

Waters containing 3,000 mg/L TDS or less qualifies as a potential source for municipal and domestic supply worthy of protection under the state Water Boards Drinking Water Policy (88-63), which was updated in 2006. Accordingly, staff does not view pumping 2,000 mg/L TDS water as reclamation, and labeling it as such is in conflict with 88-63 rather than complimentary. Staff also cannot find an example of where pumping a water body protected for municipal and domestic supply quality water qualifies as reclamation under state recycle, reuse, and reclamation policies.

Staff is unable to adequately address impacts to water quality from the proposed pumping for the following reasons:

- The quality of the supply is an important factor for staff to consider in determining the reasonableness of cooling versus other uses within the district. Staff does not have a clear understanding of the vertical and areal distribution of high TDS water within the aquifer and its implications for the long-term reliability of a 2,000 mg/L groundwater supply.
- BVWSD has identified beneficial uses of both the high and low TDS concentrations groundwater. Staff cannot understand the necessity of mixing and extracting relatively low TDS concentrations groundwater from the east with higher TDS concentrations groundwater from the west. Different well locations conceivably could accomplish the goal of removing high TDS concentrations groundwater without mixing and degrading the lower TDS concentrations groundwater from the east.
- No well water sample data was presented from areas west of the district. Staff therefore cannot conclude with any confidence that groundwater west of BVWSD's Buttonwillow Service Area and Target Area B is of sufficiently high TDS concentrations to justify pumping for project use.
- The proposed supply to the HECA project appears only marginally degraded and suitable for uses with or without treatment. Staff therefore cannot reconcile how this project's water supply would be considered reclaimed.
- The Zone of Influence from the proposed well extractions (the areal extent of water stored in the aquifer that will be removed by extraction) is not adequately defined.

DATA REQUEST

191. Please provide staff a map showing well-water quality data and the axial interface location between east and westward flowing water, groundwater TDS concentrations west of the proposed well field, the expected zone of influence of the well field. Include a quantitative estimate of expected long-term quality of water produced by the well field.

192. Please estimate the net benefit of the proposed pumping in terms of salt removal. Quantify the rate and mass of salt removed as a result of the project, considering appropriate boundary conditions for the areal extent of the impact/benefit, i.e. BVWSD, Kern County Subbasin.

193. Please estimate the volume of water that may be degraded by increasing TDS to greater than 3,000 mg/L over the life of the project.

194. Please discuss how BVWSD will reconcile the potential mixing of higher quality groundwater that has specified uses identified by the District with lower quality groundwater that limits or impacts other beneficial uses.

195. The "Term of Water Transfer" states that average TDS in the groundwater supply from BVWSD will be "about" 2,000 mg/L TDS and range between "about" 1,000 and 4,000 mg/L TDS. This quality specification does not appear to ensure water that could be considered a drinking water supply would be protected for future uses or use consistent with BVWSD's. Please explain what metrics shall be used and conditions put in place to reassure staff that only the described quality will be provided to and utilized by the power plant.

196. Please describe what safeguards are in place to ensure if high quality groundwater that does not meet the water transfer terms will not be pumped and whether an alternative reliable supply is available.

197. Please describe other well configurations that could eliminate the need to mix better quality water with lower quality water for the project water supply. Are there other well configurations that could more effectively capture high TDS water without mixing it with the relatively low TDS concentrations water from the east?

198. The Final Environmental Impact Report (2009) for the BVWSD indicates that groundwater located south of 7th Standard Road is generally in the range of 300 to 1,000 mg/L TDS, whereas water to the north of 7th Standard Road is 1,000 mg/L TDS. The proposed project wells are located south of 7th Standard Road. Please explain why the proposed wellfield would be located in the portion of the district containing better water.

BACKGROUND

Project Water Use

The project's average annual water use is projected at 4,775 AFY. The project signed an agreement for up to 7,500 AFY. Staff cannot verify why such a discrepancy exists between supply and demand.

The project's overall water use is very high relative to its project power output. Staff analyzed the water flow diagram included in the Application for Certification (AFC) and understands that a portion of the supply would be used for gasification. The project still however appears to use an unprecedented volume of water for evaporative cooling.

199. As discussed above, the average annual water use is projected at 4,775 AFY, but HEI signed an agreement for a supply up to 7,500 AFY. Please explain the necessity for a supply that is greater than 50 percent more than demand.

200. Please explain why the proposed power plant appears to be such an inefficient user of water relative to power output. Please further explain how this power plant would use the least amount of the worst quality per unit of power production.

BACKGROUND

Alternative Water Supply

The Revised Application for Certification contains a brief description of the alternative water supplies considered for the project. The description of the alternative, agricultural wastewater is very brief and general. BVWSD's Water Balance (FIER, 2009) indicates that surface outflow from the agriculture-dominated district may be significant. Staff is also aware that BVWSD is exploring methods for treatment and options for reuse of agricultural drainage, see "Low-pressure reverse osmosis (RO) membrane desalination of agricultural drainage water," published in Desalination in 2003. Staff also notes approximately 12,000 to 15,000 acres of the Buttonwillow Service Area located north of the proposed well field (Target Area B) is affected by a shallow water table. This area is drained by a shallow subsurface tile drainage system which may generate a significant volume of drainage water supply. Use of this alternative water supply by HECA could provide dual benefits of root zone salt balance and improved soil aeration in the affected area.

DATA REQUEST

201. Please quantitatively show that tile drainage or shallow extraction well-water from the Buttonwillow Service Area is not a feasible alternative water supply for the project.

Technical Area: Soil and Water Resources (b)
Author: Marylou Taylor

BACKGROUND

Revising Drainage Erosion and Sediment Control Plan

The "Preliminary Storm Water Drainage Plan" (Revised AFC: Figure 2-36) appears to maintain separation of the non-contact runoff from the potentially contaminated runoff. The conceptual plans, however, do not specify how potentially contaminated runoff would not seep into the soil, beyond stating that dedicated basins would include impermeable liners and the inactive feedstock storage would include a 12-inch clay liner. Staff is particularly concerned about the inactive feedstock storage area. The Revised AFC includes limited information on how the applicant would manage this stockpile and ensure there would be no runoff that could impact surface or groundwater resources.

DATA REQUEST

202. Please revise the draft Drainage Erosion and Sediment Control Plan (DESCP) to include: the potential contaminants that would most likely be found in each lined basin and sump, the type of lining proposed and reason(s) why, the method(s) of conveyance to the basin, and maintenance performed during the operational life of the proposed project.

203. Please revise draft DESCP to include a plan to address how storm runoff in contact with the storage pile would be collected and conveyed and how this area would not contaminate the surrounding soil.

BACKGROUND

Construction Storm Water Run-off

In the Preliminary Hydrology Study, the applicant calculated the volume of storm water for each retention basin as required by Kern County, but did not supply information showing that basins would sufficiently retain these volumes. Staff needs assurance that no post-construction storm water runoff would leave the proposed HECA site. In addition, no analysis was provided by the applicant to show no construction-phase runoff (from rain events as well as from construction activities) would leave the site.

DATA REQUEST

204. Please revise the drainage areas shown on the "Civil Preliminary Hydrology Map" to correctly reflect contributing areas to each retention basin/sump, as shown by runoff flow patterns on the draft DESCP's "Preliminary Grading and Drainage Plan".

205. Please revise the draft DESCP to include:
    a. additional analysis for the operational phase of the proposed project showing that all storm water runoff is accounted for and that the retention basins and sumps are adequately sized and designed to Kern County standards (i.e. freeboard, side slopes, drawdown time).
    b. analysis to show no construction-phase runoff (from rain events as well as from construction activities) would leave the site.

BACKGROUND

Off-site Runoff

The applicant's conceptual plans for managing storm water propose to prevent runoff from outside the site boundary from flowing onto the site. However, preliminary storm drainage plans do not show offsite flows for each phase of the proposed project, and the Preliminary Hydrology Study does not address offsite areas that would produce flows to the proposed site. Furthermore, staff discovered that the existing onsite irrigation ditches are actually drainage ditches that convey irrigation runoff through the proposed site from adjacent properties. The applicant proposes to fill these ditches, but shows no plans to divert these flows around the proposed site. Without a clear plan showing how offsite storm runoff or irrigation runoff would be diverted around the proposed site, the project could result in flooding offsite.

DATA REQUEST

206. Please revise the draft DESCP to demonstrate that the proposed project would not cause offsite flooding during either the construction phase or the operational phase.

BACKGROUND

Pipeline Installation Across Waterways

Water course crossings where Horizontal Directional Drilling (HDD) would not be used would instead be crossed by traditional open trench methods. Potential construction-related impacts of an open trench crossing a water course include: increased sediment delivery to the water flow through disturbance of the channel bed and banks during construction; destabilization of the channel bed and banks resulting in long-term erosion; and introduction of foreign contaminants through the use of heavy machinery in the channel. The applicant lists several Best Management Practices (BMPs) in the draft DESCP to implement during construction of the proposed linear facilities, but no information was provided to address pipeline installation across waterways such as irrigation ditches.

DATA REQUEST

207. Please revise the draft DESCP to demonstrate that impacts to soil and water resources would be less than significant during pipeline installation across waterways such as irrigation ditches.

BACKGROUND

Erosion-Control Best Management Practices

The applicant has proposed permanent erosion control measures to mitigate all potential soil related impacts from the operation of the proposed HECA project, stating in their draft DESCP that measures may include seeding, hydroseeding, and mulching of non-impervious areas. However, more information is needed to assure staff that all erosion-control BMPs would be properly applied after construction is complete and properly maintained during operation of the proposed HECA project.

Staff is particularly concerned about potential erosion that would occur in the following areas:

- the temporary laydown yards and temporary parking areas used during the construction phase (totaling about 145 acres) which would likely become compacted after 37 months of construction activity and traffic,
- the permanent earthen berms (located at the north and eastern-most fence line) which would be exposed to prevailing winds originating from north-west of the proposed site,
- the area surrounding the inactive feedstock storage pile which would experience occasional traffic from heavy mobile equipment accessing the pile.

DATA REQUEST

208. Please revise the draft DESCP to provide more information showing the type, location, timing, and maintenance plan/schedule of all erosion-control BMPs.

BACKGROUND

Horizontal Directional Drilling

Horizontal Directional Drilling (HDD) is proposed in selected areas to install underground pipelines. In response to Energy Commission's Data Request #106, the applicant submitted a "HDD Frac-Out Plan" on December 11, 2009. Staff recognizes that additional risks other than frac-outs are associated with HDD activities, such as soil heaving/settlement from drilling, water disposal from dewatering, erosion from work at entrance/exit pits, and damage/injury from inadvertently boring through existing utilities.

Staff requests a more comprehensive HDD Plan which includes the elements listed below. Note: Final approval of the HDD Plan by staff does not eliminate the need for the applicant to comply with and obtain encroachment permits from appropriate federal, state, and local agencies.

DATA REQUEST

209. Please provide a draft HDD plan that contains elements "A" through "G" below.

A. General description of work
    a. major equipment used, pipe materials and pipe sizes
    b. pilot hole drilling procedure, reaming operation, pullback procedure, hydrostatic testing, and dewatering procedures
    c. installation and monitoring of SWPPP facilities and conditions
    d. site restoration plan
B. Proposed pipe alignment
    a. typical layout of entrance/exit pits and staging areas, including distances from public and private properties
    b. locate existing utilities near HDD activities
    c. entry and exit point locations
    d. profile showing angle of entry/exit and depth at every 50(?) feet
    e. locations where pipe crosses roads, irrigation ditches, and the California Aqueduct (include distance between pipe casing and these facilities)
C. Monitoring procedures

    a. pilot hole, reaming, and pullback
    b. unintended frac-outs
    c. ground surface movement (settlement or heave)
D. Containment and control
    a. drilling fluids and additives used
    b. drilling fluids delivery, recovery, and containment
    c. method/location for final disposal of waste drilling fluids
    d. frac-out contingency plan
E. Hazardous materials contingency plan
F. Abandonment plan
    a. during pilot hole drilling
    b. during reaming
    c. HDD realignment
G. Notification procedures

BACKGROUND

Feedstock Storage Area

The applicant proposes to store petroleum coke and coal at inactive feedstock storage areas on the site. No chemical analytical characterization of this material or potential runoff that could be generated from this material has been provided in the AFC. Staff is concerned that potentially contaminated discharges may originate from the inactive feedstock storage areas. Staff notes that applicant has proposed clay-lined and impermeable containment areas for feedstock storage areas but it is not clear why these are proposed or if they are sufficient to prevent migration of toxic and non-conventional pollutants.

DATA REQUEST

210. Please provide a complete characterization of wastes that could be generated during the above-described activities. Please provide all the information necessary for compliance with RWQCB requirements for onsite material storage and disposal systems (i.e., coal, petroleum coke and ash containments). The information provided should include copies of any ROWDs or Engineering Reports required by the RWQCB.

Technical Area: Visual Resources
Author: Jeanine Hinde

BACKGROUND

Conceptual On-site Landscaping Plan

The Revised Application for Certification (revised AFC) prepared by the project applicant characterizes visual impact susceptibility and severity as "high" at key observation point (KOP) 1 and identifies a significant impact to visual resources at this location (see Tables 5.11-3 and 5.11-5 and p. 5.11-25 in the revised AFC). The revised AFC for the project includes a visual resources mitigation measure (VRMM-2) recommending preparation of a conceptual landscaping plan that includes on-site plantings to screen views of the project site (see p. 5.11-41 of the revised AFC). The visual resources section of the revised AFC does not provide a conceptual landscaping plan or visual simulations that Energy Commission staff need to assess the adequacy of on-site landscaping to screen views of the project site from KOP 1. Staff has concluded that additional project information is necessary before a significance conclusion can be reached for the impact at KOP 1. The Final Staff Assessment will include an assessment of the effectiveness of proposed on-site landscaping and other proposed conditions of certification to mitigate the impact at KOP 1.

DATA REQUEST

211. Please provide an electronic copy of a conceptual on-site landscaping plan for review by staff. The primary purpose of the plan is to show how landscaping at the project site will contribute to screening views to the maximum extent feasible for the view from KOP 1. Consistency with applicable sections of Chapter 19.86, Landscaping, of the Kern County Zoning Ordinance is required <http://www.co.kern.ca.us/planning/pdfs/ZO/2010_zo_updates.pdf.>). To ensure that the information provided in the on-site landscaping plan will allow for a thorough assessment of this impact, the plan will need to include these elements, at a minimum:

    - Information on the type of plant species proposed; their size, quantity, and spacing at planting; expected height at 5 years and maturity; and expected growth rates. Staff requires preparation of this information by a qualified professional arborist or botanist familiar with local growing conditions.

    - Conceptual planting plan.

    - Use of landscaped earthen berms and/or other built screening devices to maximize the effectiveness of landscaping at the site. Electronic copies of 11-inch by 17-inch color photographic simulations at life size scale showing the landscaping 5 years after planting and at maturity from the viewpoint for KOP 1.

Technical Area: Waste Management
Author: Ellie Townsend-Hough

BACKGROUND

Phase II Environmental Site Assessment

The Phase I Environmental Site Assessment (ESA) identified recognized environmental conditions (RECs) at the site. The RECs included staining on the ground surface, underground fuel oil storage tanks, and contaminated soil. In addition, there is an unidentified liquid discharge, and an uncontained tailings pile associated with the operation of the former Port Organics Products, LTD (POP) natural fertilizer manufacturing plant located on a portion of the proposed site. The presence of these conditions and derivation establishes the need for the applicant to complete and submit a Phase II ESA to staff.

The historical use of the proposed project site was agricultural, which suggests that pesticides and herbicides were likely used on the site. Common agricultural practices can result in residual concentrations of fertilizers, pesticides or herbicides in near-surface soil. The Phase I ESA did not identify this land use as a REC. To ensure that the concentrations of agricultural chemicals do not pose a potential health risk or hazard, the applicant should provide soil sampling and characterization of the parcel/project site. The California Department of Toxic Substances Control (DTSC) has prepared the "Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision August 26, 2002)". Staff believes this guidance or equivalent may be appropriate for further site analysis (See below).

DATA REQUEST

212. Please provide results of field sampling and analysis which adequately characterize the presence of harmful chemicals or conditions and identify whether there will be any risk to construction or plant personnel due to the presence of these chemicals. Samples should be assessed for persistent agricultural chemicals, such as organochlorine pesticides that were applied to the project property.

213. Please confirm that there is no site contamination related to underground storage tanks located on the proposed project site.

214. Please provide an estimated date for the demolition of the fuel oil tanks on the proposed project site, along with a schedule and work plan for investigation and possible remediation of soils in the vicinity of the tanks.

215. Please identify what constituents are in the PO fertilizer plant's contaminated soil and tailing piles located on the proposed project site. Please provide a schedule and work plan for investigation and possible remediation of soils and tailing piles that may pose a health and safety risk.

216. Please provide information on any soil sampling and analysis or regulatory enforcement action that may have been taken related to the discharge pictured in Photo 21 of the Phase 1 ESA or other discharges related to the PO operation.

BACKGROUND

Gasification Waste

The applicant states on page 5.13-12 of the Hydrogen Energy (HECA) Project revised Application for Certification (AFC) that similar gasification wastes from Integrated Gasification Combined Cycle (IGCC) facilities outside of California have been determined to be nonhazardous based on federal leachate tests. However, the applicant has not provided specific references to document their assertions nor provided other information to demonstrate that the gasification waste from the proposed project will be found to be nonhazardous based on California's leachate testing protocol, which is different than the federal leachate testing protocol.

DATA REQUEST

217. Please provide documentation that supports the applicant's statement in the revised AFC that similar gasification wastes from Integrated Gasification Combined Cycle (IGCC) facilities outside of California have been determined to be nonhazardous based on federal leachate tests.

218. Please provide a discussion and documentation of why you believe the gasification waste from the proposed HECA Project will be found to be nonhazardous based on California's leachate testing protocol. Include in your response, as appropriate, a comparison between the federal and California leachate testing protocols.

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

Docket No. 08-AFC-8

PROOF OF SERVICE LIST
Rev. 8/18/10

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DECLARATION OF SERVICE

I, Teraja` Golston, declare that on October 6, 2010, I served and filed copies of the attached (08-AFC-8) Hydrogen Energy California Project – CEC Data Request Set 3 (153-218), dated October 6, 2010, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[http://www.energy.ca.gov/sitingcases/hydrogen_energy].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

_X_ sent electronically to all email addresses on the Proof of Service list;

_X_ by personal delivery;

_____ by delivering on this date, for mailing with the United States 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 NOT marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_X_ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-8
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury 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.

Original Signature in Dockets
Teraja` Golston