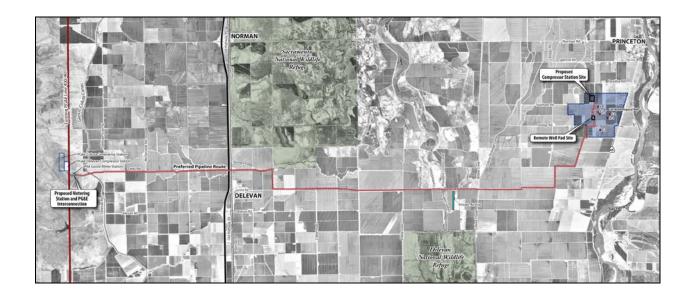
PRELIMINARY DELINEATION OF WETLANDS AND OTHER WATER BODIES

FOR THE

CENTRAL VALLEY NATURAL GAS STORAGE PROJECT, COLUSA COUNTY

SPK-2008-1588



January 2010



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Acronyms and Abbreviations

Arid West Supplement Regional Supplement to the Corps of Engineers Wetland Delineation

Manual: Arid West Region Version 2.0

Central Valley Central Valley Gas Storage, L.L.C.
CFR Code of Federal Regulations
Corps U.S. Army Corps of Engineers

CWA Clean Water Act

FIRM Flood Insurance Rate Maps

GPS global positioning system

NWR National Wildlife Refuge

OHWM ordinary high water mark

PG&E Pacific Gas & Electric

USGS U.S. Geological Survey

WRP Natural Resources Conservation Service Wetlands Reserve Program

Preliminary Delineation of Wetlands and Other Water Bodies for the Central Valley Natural Gas Storage Project, Colusa County (SPK-2008-1588)

Summary

This report presents the results of a delineation of wetlands and other water bodies conducted for the Central Valley Natural Gas Storage Project, Colusa County. The delineation was conducted to assist Central Valley Gas Storage, L.L.C., in determining the type and extent of wetlands and other water bodies in the delineation area that may be waters of the United States and subject to regulation by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act (CWA).

Wetlands and other water bodies were delineated using the routine onsite determination method described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and, where applicable, the criteria specified in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0 (Arid West Supplement) (U.S. Army Corps of Engineers 2008). Additionally, in evaluating the potential jurisdictional status of cultivated rice fields, the team used the guidance presented in Sacramento District Regulatory Branch memorandum 2007-01 (Irrigated Wetlands). The delineation of wetlands and other water bodies was based primarily on a review of soil survey information, current aerial photographs, field data gathered on a variety of seasonal dates, and previously verified wetland delineation reports prepared for two projects that occur within and adjacent to the delineation area (SPK-2001-00383 and SPK-2006-00897). Data were gathered during a number of field visits conducted in January, March, June, and July of 2009.

The delineation area encompasses 1,034.44acres and includes all areas that could be directly or indirectly disturbed during construction and maintenance of the project, as well as adjacent areas within 200 to 250 feet that could provide habitat for federally listed species (e.g., giant garter snake and fairy shrimp species). This delineation area was determined based on guidance received from Mr. Brian Vierria on November 6, 2008. The delineation area includes areas that would be directly and indirectly impacted by the proposed project: a compressor station and adjacent remote well pad site, observation well pads, meter station, approximate 14 mile pipeline alignment, staging areas, and new access roads.

Based on the data gathered during the field visits, a review of previously verified wetland delineations, and aerial photograph interpretation of areas that were not accessible during the field visits, the delineation area contains 156.173 acres of wetlands and other water bodies. Wetland types include wetland drainage, seasonal wetland, freshwater marsh, and rice fields that would pond for a duration and frequency to support wetlands under natural conditions (these rice fields occur only in the soil map unit Willows silty clay, 0 to 1 percent slopes, frequently flooded [map symbol 104]).

As described in this delineation report, the construction of levees and upstream dams has significantly modified the frequency and duration of flooding in the delineation area, particularly the natural flooding that was historically caused by the Sacramento River. Additionally, construction of

ditches has lowered the water table. These changes have resulted in some of the soils that formed under hydric conditions to no longer be subject to long duration flooding or saturation caused by a shallow water table (Reed 2006, Soil Survey Staff 2009). Under current conditions, some of the rice fields that occur in the delineation area would not flood or pond for a long duration. Based on this premise, and the guidance provided in the Irrigated Wetlands (2007-01) memorandum, many of the rice fields in the delineation area were not delineated as wetland features.

The other water bodies include non-wetland drainages, ditches, and canals that ultimately drain into the Sacramento River. The combined acreage of wetlands and other waters is shown in Table 1.

Table 1. Acreage Summary of Wetlands and Other Water Bodies

Feature	Acreage
Wetland Drainage (WD)	15.265
Seasonal Wetland (SW)	0.381
Freshwater Marsh (FWM)	5.602
Rice Field Wetland (RFW)	113.032
Other Waters Drainage (OWD)	21.893
Total	156.173

A description of the wetland and other water body features mapped in the delineation area is provided in the *Results* section of this report, and their locations are depicted in the 1" = 400' aerial photographs contained in Exhibit A. All jurisdictional boundaries presented in Exhibit A are preliminary and subject to verification by the Corps Sacramento District.

Introduction

This report presents the results of the delineation of wetlands and other water bodies conducted by ICF International for the proposed Central Valley Natural Gas Storage Project in Colusa County, California (Figure 1). The project consists of several above-ground and below-ground project facilities that are required to convert the depleted Princeton Gas Field into a high-deliverability storage field. As part of this conversion, Central Valley Gas Storage, L.L.C. (Central Valley) will construct a facility that allows the storage of gas in the Princeton Gas Field and provides a connection to Pacific Gas & Electric's (PG&E's) Line 400/401 Transmission System.

The project applicant is Central Valley. The contact person for the project applicant is as follows:

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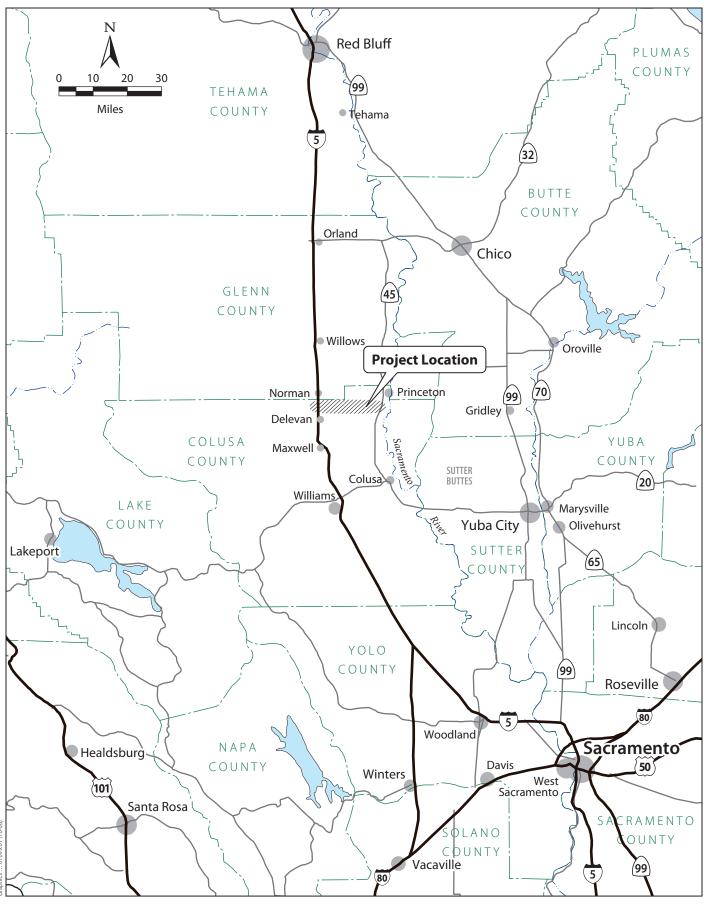




Figure 1 Project Vicinity

Site Location and Driving Directions

The delineation area is located in northern Colusa County. The eastern end is located approximately two miles southwest of the town of Princeton. The western end is located approximately four miles west of the town of Delevan. The central portion of the delineation area occurs between the Sacramento National Wildlife Refuge (to the north) and the Delevan National Wildlife Refuge (to the south). Figure 2 shows the location of the delineation area and its relationship to the surrounding towns, highways, and national wildlife refuges.

The delineation area is located on the Princeton, Mouton Weir, Maxwell, and Sites U.S. Geological Survey (USGS) 7.5-minute quadrangles. The eastern end of the delineation area is at 39.3898 degrees north latitude and 122.03157 degrees west longitude and the western end is at 39.36552 degrees north latitude and 122.25941 degrees west longitude.

To reach the eastern end of the delineation area, from downtown Sacramento, go west on L Street and turn onto Interstate 5 northbound. After six miles, take state Highway 99/70 north exit. Proceed approximately 14 miles and take the left fork for Highway 99. Continue north on Highway 99 to Yuba City. At Yuba City, proceed west on state Highway 20. After crossing the Sacramento River, turn right on state Highway 45. Proceed north on Highway 45 and turn left onto Southam Road. Turn right on McAusland Road to find the proposed compressor station site near the northwestern corner of Southam and McAusland Roads.

Site Description

Topography

Elevations in the delineation area are approximately 70 feet at the eastern end and 160 feet at the western end. The lowest part of the delineation area is in the vicinity of the point where Willow Creek and the Colusa Drain together flow into the Colusa Trough, where the elevation is approximately 60 feet. This is also the area that contains the delineated rice field wetlands.

According to Reed (2006), nearly all of the fields used for rice production in Colusa County have been leveled over the last 20 to 25 years. The leveling helps to eliminate and straighten contour rice checks, thereby improving equipment efficiency and control of water depth during the growing season. Most fields are maintained by laser leveling every 4 or 5 years (Reed 2006). Based on review of aerial photographs, all of the rice fields in the delineation area are defined by a rectilinear arrangement of checks and levees (rather than contour checks), which confirms that all the rice fields have been laser leveled.

Geomorphology

Reed (2006) describes the geomorphic surface-soil-hydrologic relationships in the county. The following describes the primary geomorphic surfaces through which the delineation area passes, with an emphasis on the hydrologic characteristics associated with each surface.

High Floodplains. The eastern end of the delineation area (essentially the north-south oriented portion) straddles the toe of the high floodplain/natural levee of the Sacramento River. Before construction of the levees along the river, although elevated above the basins to the west, this surface was flooded in most years during periods of high river flow. It is now protected from

flooding by the levees. The soils are predominantly of the loamy Vina, Moonbend, and Scribner series.

Basins. The outboard toe of the high floodplain grades imperceptibly westward to merge with the basin soils of the Colusa Basin. The basin surface comprises the majority of the delineation area. Before construction of the Sacramento River levees, the Colusa Basin was subject to regular overflows from sloughs of the Sacramento River and streams flowing east from the Coast Range foothills. The floodwaters from the Sacramento River no longer reach the basin because of the levees, but the streams from the Coast Range foothills continue to reach the basin. Flooding is still frequent and of long duration along the lowest areas of the basin. Groundwater in the basins is shallower than that of the high floodplains. In general, the soils in the basin are predominantly of the clayey Willows and Clear Lake series, but in the delineation area a large body of Alcapay soils occurs on both sides of Interstate 5.

Alluvial Terraces. The western end of the delineation area extends onto the alluvial terrace geomorphic surface. The terrace is no longer subject to flooding. The soils are predominantly of the Hillgate series, which have a subsoil of brownish clay or clay loam. A shallow perched water table may occur in relatively small areas.

Hydrology

General. The delineation area is located in the Sacramento-Stone Corral hydrologic unit (HUC 18020104) (U.S. Geological Survey 2007).

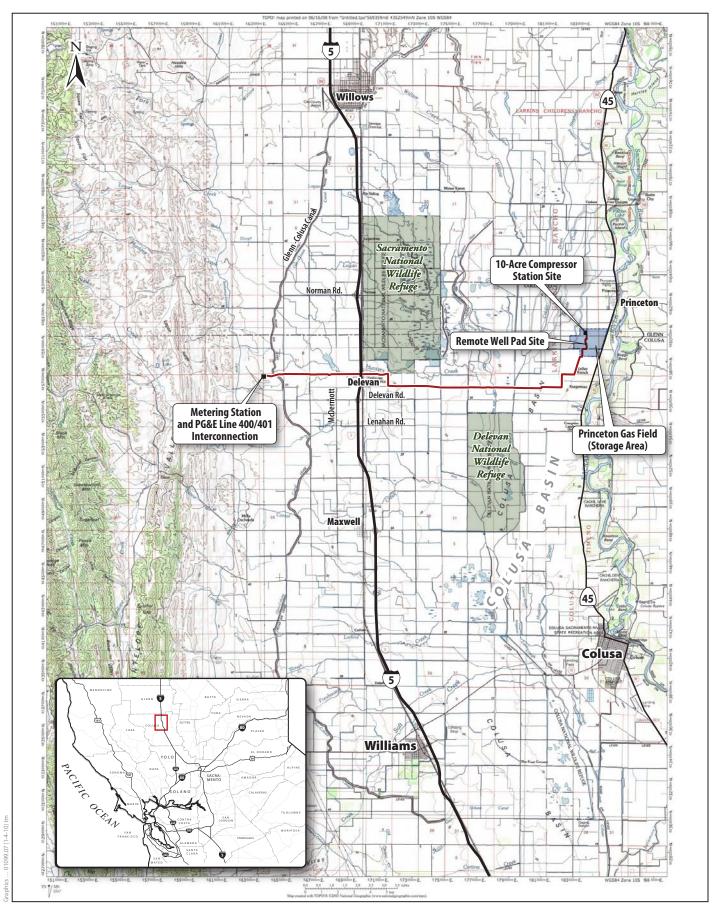
The delineation area ultimately drains southerly through the Colusa Basin via various creeks, drains, and ditches into the Colusa Trough, which flows in a southerly direction into the Colusa Basin Drainage Canal (also called the Colusa Basin Drain and the Colusa Drain) southwest of the town of Grimes. The Colusa Basin Drainage Canal flows into the Sacramento River at the town of Knights Landing. However, when flows are high in the Sacramento River the Colusa Basin Drainage Canal discharges into the Knights Landing Ridge Cut (H.T. Harvey & Associates 2008).

The Colusa Trough begins at, and is fed by, the confluence of Willow Creek and the (channelized) Colusa Drain, which combine just upstream of the delineation area. Based on a review of the Compton Landing 1917 USGS topographic map, in the form of a defined channel the Colusa Trough appears to be an entirely artificial feature, at least for the part several miles south of the delineation area. However, an account from the 1890's describes a two-mile wide "trough" that probably received annual overflows from the Sacramento River and Coast Range streams (H.T. Harvey & Associates 2008).

The Sacramento River is located approximately 1.5 miles east of the eastern end of the delineation area and is a navigable water of the United States (U.S. Army Corps of Engineers 2009).

Irrigation water is applied to most of the rice fields in the county using a conventional flow through irrigation system, in which water is delivered from a canal into the top field of the overall field then flows through several fields to the bottom field. Levees and weir boxes placed at the ends of each levee control water flow rates and water depth in the individual fields (Reed 2006).

The rice fields are flooded up to a depth of approximately six inches in April and then usually aerially seeded. Until harvest time in September or October, the fields are maintained in a flooded condition. After being harvested in the fall, some of the rice fields are flooded again in the winter months to attract waterfowl and/or to decay rice stubble.





Flooding. Reed (2006) established the existing frequency and duration of flooding for all of the soil map units in the delineation area for existing conditions. Using standard Natural Resources Conservation Service definitions (Soil Survey Division Staff 1993), flooding frequency is expressed as frequent, occasional, rare, and none, as defined below.

- Frequent—flooding is likely to occur often under normal weather conditions (the chance of flooding is more than 50% in any year but is less than 50% in all months in any year)
- Occasional—occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50% in any year)
- Rare—flooding is unlikely but possible under unusual weather conditions (i.e., the chance of flooding is 1 to 5% in any year)
- None—flooding is not probable (i.e., the chance of flooding is nearly 0%); flooding occurs less than 1 time in 500 years)

Flooding duration is expressed as follows:

- Extremely brief—0.1 hour to 4 hours
- Very brief—4 hours to 2 days
- Brief—2 to 7 days
- Long—7 to 30 days
- Very long—more than 30 days

Reed (2006) estimated the frequently flooded area of the Colusa Basin from aerial photographs of a small flood event on January 24, 1978. In such an event, water enters the basin from Willow Creek to the north and from numerous creeks to the west. The U.S. Army Corps of Engineers project levees now protect the Colusa Basin from frequent flooding from the Sacramento River. Flooding in the Colusa Basin begins when the flow at the Highway 20 gaging station on the Colusa Basin Drain exceeds 2,100 cubic feet per second. The flood on January 24, 1978 produced a reading of 4,020 cubic feet per second at the Highway 20 gaging station. This flood was of long duration.

Reed (2006) estimated the occasionally flooded area of the Colusa Basin from aerial photographs of larger flood events on March 4 and March 8, 1988. The events of March 4 and March 8 produced a reading of 5,720 cubic feet per second at the Highway 20 gaging station. Data from the California Department of Water Resources indicate that a flow of 5,720 cubic feet per second at Highway 20 occurs in about 20% of the years recorded (Reed 2006).

Reed (2006) estimated the rarely flooded areas of the basin areas in Colusa County using several methods. National Flood Insurance Program Flood Insurance Rate Maps (FIRM), based on a 1958 flood, were used for many areas. The high water lines from a large flood in February 1986 also were used. Some of this information was obtained from landowner interviews, elevation analysis, and soil morphologic characteristics. Data from the Colusa and Moulton Weirs taken since 1943, when Shasta Reservoir went into operation, indicate that both weirs flow on a frequent basis. Careful study of flow data at the Colusa and Moulton Weirs showed that the more elevated areas of the flood plain inside the Sacramento River levees are occasionally flooded for brief periods.

In accordance with the Sacramento District Regulatory Memorandum 2007-01 (*Irrigated Wetlands*), historic topographic maps, aerial photographs, and soil survey reports were reviewed to ascertain the natural (i.e., pre-European settlement) hydrologic and vegetative conditions in the delineation

area. As discussed above under *Geomorphology*, the results of the review indicate that parts of the delineation area were once subject to frequent flooding and high groundwater levels that supported wetlands. However, as a result of flood control and other improvements, the frequent flooding that historically supported the wetlands has been reduced to an occasional or rare frequency in some areas, persisting now only for a brief duration (see the Flooding section for definitions of the flooding frequency and duration classes). Because the criteria used by the Corps to define a soil that is currently subject to hydric conditions requires at least frequent flooding for a long duration, in the absence of irrigation, many parts of the delineation area would be no longer supported by wetland hydrology where flooding is the driving force behind the soils' hydrologic regime.

Groundwater. Water table levels associated with each of the soil map units as determined by Reed (2006) are provided in Table 2. The water table levels were estimated by Reed by direct observation at selected sites and on the depth range of redox features. The indicated levels are for the depth range of the upper limit of the water table during December through April.

Based on H.T. Harvey & Associates (2008), there appears to be only a small amount (i.e., 5 to 10 feet) of seasonal groundwater level variation for the part of the delineation area between the Colusa Basin Drain and the Sacramento River. This may be a result of the Sacramento River, which stands higher in elevation that the basin, providing seepage to the basin.

Based on the soil survey report (Reed 2006), drainage ditches have lowered water tables in many areas below the primary root zone of most herbaceous plant species. Accordingly, in the absence of irrigation, many parts of the delineation area would be no longer supported by wetland hydrology where a shallow water table is the driving force behind the soils' hydrologic regime.

Soils

A map of the soils in the delineation area and associated hydric soil information are provided in Appendix A. The landform and hydrologic characteristics of the soils are summarized in Table 2. Morphologically, the soils on the high floodplain/natural levee are very deep and loamy. The soils in the basins are very deep and clayey. Excess sodium in the basin soils has been largely leached from the root zone by application of irrigation water. The soils of the alluvial terraces are very deep and have loamy surface layers and a claypan.

As described above, construction of levees and upstream dams has significantly modified the frequency and duration of flooding in the delineation area, particularly the natural flooding that was historically caused by the Sacramento River. Additionally, construction of ditches has lowered the water table. These changes have resulted in some of the soils that formed under hydric conditions to no longer be subject to long duration flooding or to saturation caused by a shallow water table (Reed 2006, Soil Survey Staff 2009).

Precipitation and Growing Season

The climate in the delineation area is characterized by hot, dry summers and cool, moist winters. National Weather Service cooperative weather station number CA 1948 (Colusa 2 SSW) is the closest weather station to the delineation area, located approximately 16 miles to the south. Average annual precipitation at this weather station is 16.9 inches, with most falling as rain between the months of November and March (U.S. Department of Agriculture, Natural Resources Conservation Service 2007). Rainfall for the July 1, 2008–June 30, 2009 precipitation year was roughly 80% of the

Soil Map Symbol	Soil Map Unit Name	Geomorphic Surface	Natural Drainage Class	Permeability/ Saturated Hydraulic Conductivity (µm/sec) (slowest layer)	Existing Flooding Duration and Frequency*	Existing Seasonal High Water Table** (feet)	Hydric Status of Primary Component of Map Unit***	Altered Hydrologic Conditions
104	Willows silty clay, 0 to 1 percent slopes, frequently flooded	Basin floors	Poor	Very slow/ 0.01-0.42	Long and frequent	4.0-6.0	Hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration and lowered water tables. Rice drainage ditches have lowered water tables. Willows soil in this map unit is frequently flooded for long duration.
105	Willows silty clay, 0 to 1 percent slopes, occasionally flooded	Basin floors	Poor	Very slow/ 0.01-0.42	Brief and occasional	4.0-6.0	Hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration and have lowered water tables. Rice drainage ditches have lowered water tables. These soils formed under saturated conditions and frequent flooding.
106	Willows silty clay, 0 to 1 percent slopes	Basin floors	Poor	Very slow/ 0.01-0.42	Brief and rare	4.0-6.0	Hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration and lowered water tables. Rice drainage ditches have lowered water tables. These soils formed under conditions of saturation and frequent flooding.
108	Scribner silt loam	Flood plains	Poor	Moderately slow/1.4–4.0	Brief and rare	1.5-3.0	Hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration and lowered water tables. Rice drainage ditches have lowered water tables. Under natural conditions, these soils were saturated near the surface and were frequently flooded.
113	Westfan loam, sodic, 0 to 2 percent slopes	Alluvial fans	Moderately well	Moderately slow/1.4-4.0	Brief and rare		Non-hydric	

Table 2. Continued Page 2 of 3

Soil Map Symbol	Soil Map Unit Name	Geomorphic Surface	Natural Drainage Class	Permeability/ Saturated Hydraulic Conductivity (µm/sec) (slowest layer)	Existing Flooding Duration and Frequency*	Existing Seasonal High Water Table** (feet)	Hydric Status of Primary Component of Map Unit***	Altered Hydrologic Conditions
124	Moonbend silt loam, 0 to 2 percent slopes, occasionally flooded	Flood plains	Moderately well	Moderately slow/1.4–4.0	Brief and occasional		Non-hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration.
125	Moonbend silt loam, 0 to 2 percent slopes	Flood plains	Moderately well	Moderately slow/1.4-4.0	Brief and occasional		Non-hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration.
128	Mallard loam, 0 to 1 percent slopes	Fans	Somewhat poor	Slow/0.42-1.4	Brief and rare	3.0-5.0	Non-hydric	Water tables have been lowered by rice drainage ditches.
130	Corbiere silt loam, 0 to 1 percent slopes	Rims on basin floors	Somewhat poor	Slow/0.42-1.4	Brief and rare	2.0-4.0	Non-hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration and have lowered water tables. Rice drainage ditches have lowered water tables. It is assumed that Corbiere soils were not saturated near the surface under natural conditions.
133	Corbiere silt loam, 0 to 2 percent slopes, occasionally flooded	Rims on basin floors	Somewhat poor	Slow/0.42-1.4	Long and occasional	2.0-4.0	Non-hydric	Flood control structures on the Sacramento River have changed flooding frequency and duration and have lowered water tables. Rice drainage ditches have lowered water tables. It is assumed that Corbiere soils were not saturated near the surface under natural conditions.
144	Hillgate clay loam, 0 to 2 percent slopes	Terraces	Well	Slow/0.42-1.0	None		Non-hydric	
145	Hillgate loam, 0 to 2 percent slopes	Terraces	Well	Slow/0.42-1.4	None		Non-hydric	

Table 2. Continued Page 3 of 3

Soil Map Symbol	Soil Map Unit Name	Geomorphic Surface	Natural Drainage Class	Permeability/ Saturated Hydraulic Conductivity (µm/sec) (slowest layer)	Existing Flooding Duration and Frequency*	Existing Seasonal High Water Table** (feet)	Hydric Status of Primary Component of Map Unit***	Altered Hydrologic Conditions
155	Alcapay clay, 0 to 1 percent slopes	Basin floors	Somewhat poor	Slow/0.42-1.4	Brief and rare	4.0-6.0	Non-hydric	Water tables have been lowered by rice drainage ditches.
171	Vina loam, 0 to 2 percent slopes	Flood plains	Well	Moderate/4.0- 14.0	Brief and rare		Non-hydric	
205	Capay clay, 0 to 3 percent slopes	Basin floors	Moderately well	Very slow/ 0.01-0.42	Brief and rare	>6.0	Non-hydric	
220	Altamont silty clay, 5 to 9 percent slopes	Lower side slopes and north facing slopes of hills	Well	Slow/0.42-1.4	None		Non-hydric	

Sources: Soil Survey Staff 2009, Reed 2006.

Notes: 1) The Natural Resources Conservation Service regards the hydric status of a soil as that under which the soil formed; a naturally hydric soil that has been effectively drained is still considered to be a hydric soil, even though it may now not be subject to prolonged inundation or saturation. 2) The likelihood for seasonal ponding (defined as standing water on soils in closed depressions that is removed only by percolation or evapotranspiration) to occur was also evaluated by Reed (2006) for each soil map unit. None of the map units in the delineation area are subject to ponding.

^{*} See the Hydrology section for definitions of frequency and duration.

^{**} Water table refers to a saturated zone in the soil from December through April (i.e., the time of year that the water table is highest). The figures represent the depth to the top (upper limit) of the saturated zone in most years. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence (namely, redoximorphic features), of a saturated zone in the soil. Where no data are provided (as indicated by "---"), a high water table is not a concern or data were not estimated. A saturated zone that lasts for less than a month is not considered a water table and therefore is not identified in the table.

^{*** &}quot;Primary Component" refers to the soil that makes up approximately 85% or more of the map unit. The remaining soils in the map unit (i.e., inclusions) are not indicated here. The inclusions may or may not be hydric. See Appendix A-2 for more detailed hydric soil information.

average in the region. However, a well above-average amount of rain had fallen in the two weeks preceding the site visit to the compressor station site on March 5, 2009.

The length of the growing season at the Colusa 2 SSW weather station in 5 years out of 10 at 28 degrees air temperature averages 343 days (U.S. Department of Agriculture, Natural Resources Conservation Service 2007).

Vegetation

The delineation area is within the Sacramento Valley geographic subdivision of the Great Central Valley in the California Floristic Province (Hickman 1993). The area was historically an open grassland community with interspersed vernal pools, seasonal wetlands, emergent wetlands, and intermittent and perennial creeks with riparian habitat and valley oak woodlands. Currently, the area supports very little natural habitat and has been substantially altered by agricultural activities.

Parts of the eastern and western parts of the delineation area are used for walnut production. The delineation area is predominantly used for rice, row crops, orchards, and other agricultural operations. Some of the agricultural fields (such as those on the 10-acre compressor station site) are rotated with rice, wheat, beans, and row crops. Large wetland systems are present north and south of the delineation area in the Sacramento and Delevan National Wildlife Refuges (NWRs).

A list of the plant species that were observed while conducting the delineation field surveys and their wetland indicator status is provided in Appendix B. The wetland plant communities found in the delineation area are described in the *Results* section of this report.

Delineation Methods

The fieldwork for the delineation was conducted by a soil scientist and botanist on January 15, March 5, June 25 and 26, and July 10 and 24, 2009. The team used the routine onsite determination method described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and, where applicable, the criteria specified in the Arid West Supplement (U.S. Army Corps of Engineers 2008). Additionally, in evaluating the potential jurisdictional status of rice fields, Sacramento District Regulatory Memorandum 2007-01 (*Irrigated Wetlands*) was referenced.

As detailed in the Arid West Supplement, data on vegetation, soil, and hydrology characteristics used as the basis for wetland boundary determinations were collected and recorded on Arid West Supplement data forms (version 2.0) where access was available at the time of the field surveys (Appendix C). Data forms were completed at 16 sample plots (data points).

In areas where the field investigators did not have access because of flooded field conditions or landowner restrictions, wetlands and other water bodies were mapped from the interpretation of aerial photographs; these features were viewed from adjacent areas wherever possible. The aerial photograph interpretation was based on known reference areas in which site access was available.

The plant indicator status of each species is based on the *National List of Plant Species that Occur in Wetlands: California* (Reed 1988). Common and scientific plant names are taken from the *Jepson Manual of Higher Plants of California* (Hickman 1993), supplemented by the Jepson Online Interchange for California Floristics (University of California 2007).

The boundaries of non-wetland water bodies (i.e., other waters drainages) were delineated at the ordinary high water mark (OHWM), as defined in Title 33, section 328.3 of the Code of Federal Regulations (CFR). The OHWM represents the limit of potential Corps jurisdiction over nontidal waters (e.g., irrigation ditches, canals, and natural streams) in the absence of adjacent wetlands (33 CFR 328.04). The features were mapped and delineated in the field in accordance with Corps Regulatory Guidance Letter No. 05-05 (U.S. Army Corps of Engineers 2005).

A Trimble GeoXT global positioning system (GPS) unit, typically accurate to less than one horizontal meter, was used to record the location of the data points and certain jurisdictional boundaries. However, where the boundaries of the wetland or water body were clearly evident on the 1 inch = 200 feet aerial photograph base map, the features were mapped directly into the aerial photograph. The GPS data were downloaded, differentially corrected, and superimposed onto recent color orthorectified aerial photographs and edited as necessary to generate the delineation maps.

Results

Table 3 provides the total acreage of wetlands and other water bodies delineated in the Central Valley Gas delineation area.

Table 3. Acreage Summary of Wetlands and Other Water Bodies

Feature	Status	Acreage
Wetland Drainage (WD)	Wetland	15.265
Seasonal Wetland (SW)	Wetland	0.381
Freshwater Marsh (FWM)	Wetland	5.602
Rice Field Wetland (RFW)	Wetland	113.032
Wetlands Subtotal		134.280
Other Waters Drainage (OWD)	Other Waters	21.893
Other Water Bodies Subtotal		21.893
Total		156.173

Photographs of representative wetlands, other water bodies, and of the delineation area in general are provided in Appendix D. A list of drainages (wetland and other waters) that occur in the delineation area is provided in Appendix E.

Wetlands

Wetland Drainage

Wetland drainages totaling 15.265 acres were mapped within the delineation area (Exhibit A). Wetland drainages consist of natural and artificial drainages, agricultural ditches, and agricultural canals that are more than 5% vegetated; most are at least 50% vegetated. Paired data points were taken at representative wetland drainages to confirm the presence of all three wetland indicators (hydrophytic vegetation, hydric soil, and wetland hydrology) used by the Corps to identify wetlands.

The wetland drainages are typically dominated by cattail (*Typha* sp.) (OBL) and common tule (*Scirpus acutus var. occidentalis*) (OBL). Common associate species are umbrella sedge (*Cyperus eragrostis*) (FACW), Bermuda grass (*Cynodon dactylon*) (FAC), and Dallis grass (*Paspalum dilatatum*) (FAC). Hydric soil was identified by the presence of the indicators Redox Dark Surface (F6) and Depleted Matrix (F3). Wetland hydrology was usually identified by the presence of Surface Water (A1), but the indicators High Water Table (A2), Saturation (A3), and Oxidized Rhizospheres along Living Roots (C3) were also present at some locations.

The wetland drainages have a well-defined bed and bank and have been excavated to depths of approximately three to six feet. They appear to be supported by one or more of the following: irrigation tailwater from rice fields, high groundwater, and runoff from rice fields when they are fallow. At least some of the drainages appear to be subject to periodic dredging, such that much or all of the vegetation is removed. All wetland drainages eventually flow into the Sacramento River.

Seasonal Wetland

Seasonal wetlands totaling 0.381 acre were mapped within the delineation area (Exhibit A). These features generally consist of natural, or only slightly disturbed, planar to depressional areas in the vicinity of Interstate 5 and the western end near the proposed metering station (west of the Glenn Colusa Canal). Paired data points were taken at representative seasonal wetlands to confirm the presence of all three wetland indicators (hydrophytic vegetation, hydric soil, and wetland hydrology) used by the Corps to identify wetlands.

Non-native annual grasslands in the western portion of the delineation area (west of the Glenn-Colusa Canal and south of the Delevan Compressor Station access road) are known to support seasonal wetlands. These wetlands have been characterized as seasonal wetlands rather than vernal pools because they are not closed basin systems and are not dominated by typical vernal pool plant species (as described below). Seasonal wetlands were also mapped in the roadside swales and ditches along the Interstate 5 corridor.

The seasonal wetlands east of the Glenn-Colusa Canal were delineated by URS Corporation as part of the PG&E Colusa Generating Station Project and verified by the Corps on August 10, 2007 (SPK-2006-00897). The area north of the Delevan Compressor Station access road contains mima-mound topography and supports a variety of seasonal wetland types (including vernal pools and seasonal swales).

The seasonal wetlands west of the Glenn-Colusa Canal are routinely disked for fire control and as of June 29, 2009, supported very little vegetation (as shown in the photographs below). The dominant species observed during the wetland delineation were Italian wildrye (*Lolium multiflorum*) (FAC) and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*) (FAC). Hydric soil was identified by the presence of the indicator Redox Dark Surface (F6). Wetland hydrology was usually identified by the presence of Oxidized Rhizospheres along Living Roots (C3). The seasonal wetlands appear to be supported by incidental precipitation and local runoff inputs.



Photo 1. View (looking south) of seasonal wetland along north side of PG&E access road showing disked condition.



Photo 2. View (looking east) of seasonal wetland along north side of PG&E access road showing disked condition.

Freshwater Marsh

Freshwater marsh habitat totaling 5.602 acres was mapped in one general area within the delineation area (Exhibit A). This wetland area in a Natural Resources Conservation Service Wetlands Reserve Program (WRP) easement appears to be created or restored habitat. This area was not available for access and was evaluated only through aerial photograph review. The aerial photographs show apparent freshwater marsh vegetation on the north side of the delineation area and flooding on the south side. Based on the vegetation signature and flooding shown on the aerial photographs, it was assumed that all three wetland indicators (hydrophytic vegetation, hydric soil, and wetland hydrology) used by the Corps to identify wetlands are present.

Rice Field Wetland

Rice field wetlands totaling 113.032 acres were mapped only in the lowest part of the Colusa Basin (in the vicinity of the Colusa Drain) where, according to the soil survey report (Reed 2006), flooding occurs at a sufficient frequency and duration to give rise to wetland hydrology in the absence of irrigation water (this area is shown on Sheets 4, 5, and 6 in Exhibit A). Although some of the other rice fields are subject to flooding, it is not of sufficient duration or frequency to give rise to wetland hydrology in such areas, nor is the water table sufficiently shallow to cause saturation in the primary root zone (see Table 2.)

The rice field wetlands located in the vicinity of the Colusa Drain consist of large, laser-leveled areas that are bordered by low levees or rice checks. They are fully vegetated while rice is being produced and partly vegetated by volunteer species when fallow. Paired data points were taken in two of the rice field wetlands (which were accessible at the time of the field visits) to confirm the presence of all three wetland indicators (hydrophytic vegetation, hydric soil, and wetland hydrology) used by the Corps to identify wetlands.

Rice field wetlands consist of a near monoculture of cultivated rice (*Oryza sativa*) (OBL) when rice is being produced. Common associate species, typically occurring only along the edges of the rice fields where the water depth is slightly shallower, include annual bluegrass (*Poa annua*) (FACW). Hydric soil was identified by the presence of the indicator Redox Dark Surface (F6). Wetland hydrology was usually identified by the presence of Surface Water (A1).

Included in some rice field wetlands are small inclusions of freshwater marsh vegetation (primarily cattails). These areas occur at the downslope edge of an individual rice field along the rice check, where the standing water is deepest. Because the areas of freshwater marsh may change from year to year, depending on the management of a given rice field, they were not mapped separately from the rice field wetland.

The rice field wetlands appear to be supported by flood irrigation, incidental precipitation, and possibly by a shallow water table.

Other Waters

Other Waters Drainage

Several other water drainages were mapped in the delineation area, comprising approximately 21.893 acres, and would qualify as other waters (Exhibit A). These features mostly consist of

irrigation canals that are less than 5% vegetated. The remaining other waters drainages are drainage ditches.

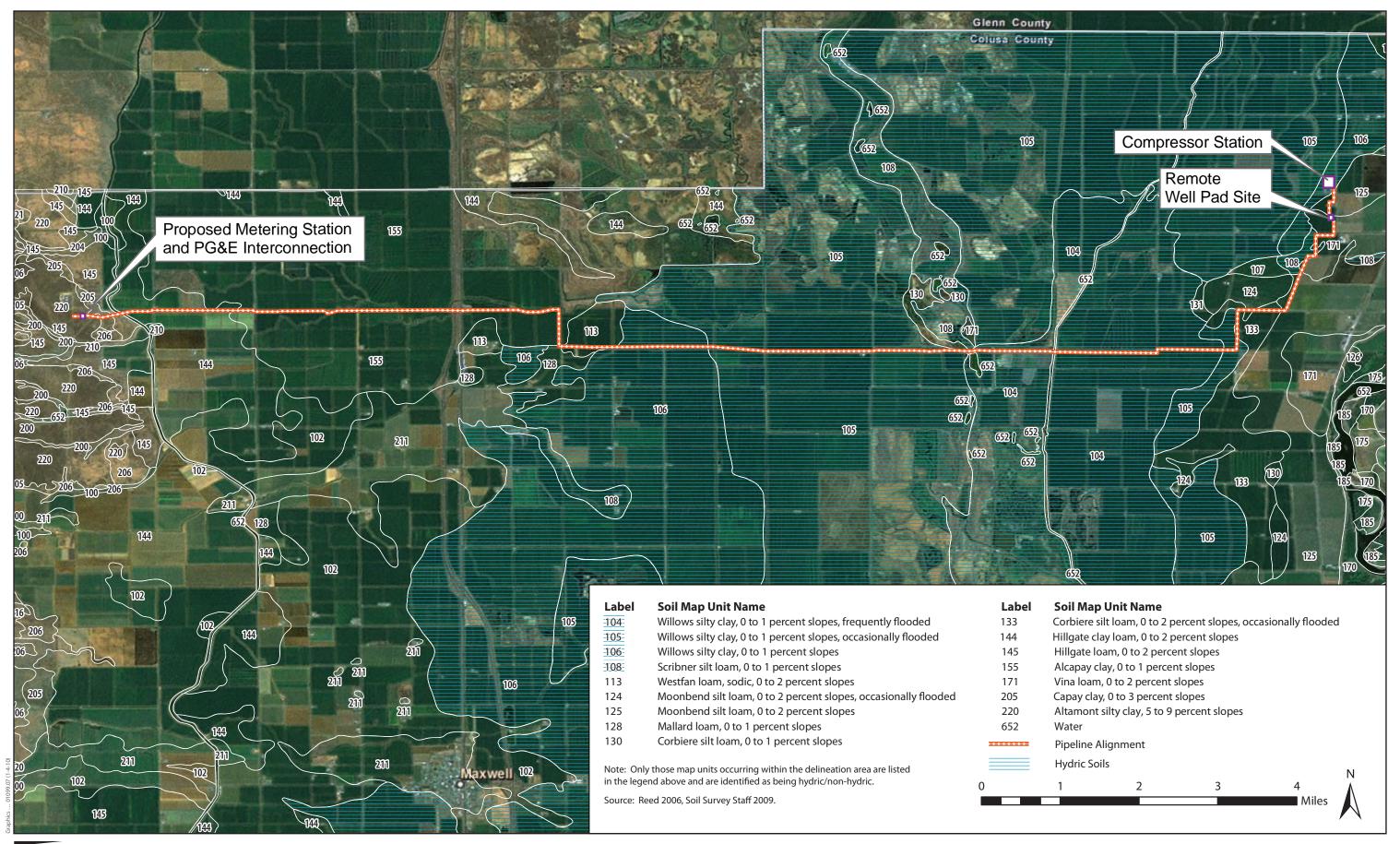
The other waters drainages have been excavated to depths of approximately four to 10 feet. The other waters drainages appear to be supported by one or more of the following: irrigation water delivered directly to the feature, tailwater from rice fields, groundwater, and runoff from rice fields when they are fallow. Nearly all of the drainages appear to be subject to periodic dredging, such that much or all of the vegetation is removed. An exception to this is the Colusa Trough, which appears to be generally too deep to support rooted vegetation. All other waters drainages eventually flow into the Sacramento River.

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Appendix A 2006 Soil Survey Map





Appendix B

Plant Species Observed in the Delineation Area

The * following a scientific name indicates that the species is not native. Wetland indicator status follows Reed (1988); nomenclature follows Reed (1988) and *The Jepson Manual* (Hickman 1993) and online updates.

Scientific Name	Common Name	Wetland Indicator Status‡
Ferns and Fern-allies		
Azolla filiculoides	mosquito fern	OBL
Equisetum hyemale ssp. affine	rough horsetail	FACW
Trees		
Acer negundo	box elder	FACW
Eucalyptus camaldulensis *	river red gum	UPL
Eucalyptus globulus *	blue gum	UPL
Fraxinus latifolia	Oregon ash	FACW
Juglans californica var. hindsii	California black walnut	UPL
Populus fremontii ssp. fremontii	Fremont cottonwood	FACW
Quercus lobata	valley oak	FAC*
Salix gooddingii	black willow	OBL
Shrubs and Woody Vines		
Ficus carica *	edible fig	UPL
Rubus armeniacus [R. discolor] *	Himalayan blackberry	FACW*
Rubus ursinus [R. vitifolius]	California blackberry	FACW*
Salix lasiolepis	arroyo willow	FACW
Salix exigua	sandbar willow	OBL
Sambucus mexicana	blue elderberry	FAC
Toxicodendron diversilobum	poison-oak	UPL
Vitis vinifera *	cultivated grape	UPL
Forbs		
Abutilon theophrasti *	velvet-leaf	NI
Achyrachaena mollis	blow-wives	FAC*
Alisma lanceolatum *	lanceleaf water plantain	OBL
Alisma plantago-aquatica	water plantain	OBL
Amaranthus blitoides	prostrate pigweed	FACW
Amaranthus sp.	amaranth	UPL
Ambrosia psilostachya	western ragweed	FAC
Ammannia robusta	grand ammannia	OBL
Asclepias fascicularis	narrow-leaf milkweed	FAC
Aster subulatus var. ligulatus	annual water-aster	UPL
Bidens frondosa	stickweed	FACW
Brassica nigra *	black mustard	UPL
Brodiaea sp.	brodiaea	UPL
Centaurea solstitialis *	yellow star-thistle	UPL
Centromadia fitchii	Fitch's spikeweed	UPL
Ceratophyllum demersum	coontail, hornwort	OBL

Scientific Name	Common Name	Wetland Indicator Status‡
Chamaesyce maculata *	spotted spurge	UPL
Convolvulus arvensis *	field bindweed	UPL
Conyza canadensis	sneezeweed	FAC
Conyza floribunda *	tropical horseweed	UPL
Crassula aquatica/solieri	water pygmy-weed	OBL
Cressa truxillensis	alkali weed	FACW
Echinodorus berteroi	burhead	UPL
Eclipta prostrata	false daisy	UPL
Elodea canadensis	Canadian pondweed	OBL
Epilobium ciliatum ssp. ciliatum	hairy willowherb	FACW
Eremocarpus setigerus	turkey mullein	UPL
Erodium cicutarium *	redstem filaree	UPL
Eryngium castrense	coyote thistle	UPL
Euthamia occidentalis	western goldentop	OBL
Geranium dissectum *	cut-leaved geranium	UPL
Grindelia camporum	Great Valley gumplant	FACU
Hirschfeldia incana *	Mediterranean hoary mustard	UPL
Kickxia spuria *	flullein	UPL
Lactuca serriola *	prickly lettuce	FAC
Lemna minuta	minute duckweed	OBL
Lotus corniculatus *	birdfoot trefoil	FAC
Ludwigia peploides ssp. montevidensis* *	floating water-primrose	OBL
Lythrum californicum	California loosestrife	OBL
Lythrum hyssopifolia *	hyssop loosestrife	FACW
Malva neglecta *	common mallow	UPL
Malvella leprosa	alkali mallow	FAC*
Medicago polymorpha *	bur-clover	UPL
Melilotus alba *	white sweetclover	FACU+
Nerium oleander *	oleander	UPL
Physalis lancifolia *	narrowleaf tomatillo	UPL
Picris echioides *	bristly ox-tongue	FAC*
Plagiobothrys stipitatus var. micrantha	Stipitate popcornflower	UPL
Plantago coronopus *	buckhorn plantain	FAC
Plantago lanceolata *	English plantain	FAC-
Polygonum arenastrum [P. aviculare] *	common knotweed	FAC
Polygonum lapathifolium	willow smartweed	OBL
Polygonum pensylvanicum *	willow smartweed	OBL
Polygonum punctatum	punctate smartweed	OBL
Potamogeton foliosus var. foliosus	leafy pondweed	OBL
Potamogeton nodosus	longleaf pondweed	OBL
Psilocarphus brevissimus	woolly marbles	OBL
Rumex crispus *	curly dock	FACW-

Scientific Name	Common Name	Wetland Indicator Status:
Rumex pulcher *	fiddle dock	FAC+
Salsola tragus *	Russian thistle, tumbleweed	UPL
Senecio vulgaris *	common groundsel	NI*
Silybum marianum *	milk thistle	UPL
Solanum americanum	common nightshade	FAC
Sonchus asper ssp. asper *	prickly sowthistle	FAC
Torilis arvensis *	hedge parsley	UPL
Torilis nodosus *	knotted hedge parsley	UPL
Tribulus terrestris *	puncture vine	UPL
Trifolium hirtum *	rose clover	UPL
Verbena bonariensis *	purpletop vervain	FACW
Veronica peregrina ssp. xalapensis	purslane speedwell	OBL
Vicia sativa *	spring vetch	FACU
Xanthium strumarium	rough cockle-bur	FAC+
Grasses & Grass-like Plants		
Agrostis sp.	bent grass	undetermined
Aegilops triuncialis	barbed goatgrass	UPL
Avena barbata *	slender wild oat	UPL
Bromus diandrus *	ripgut brome	UPL
Bromus hordeaceus [B. mollis] *	soft chess	FACU-
Bromus madritensis ssp. madritensis *	Spanish brome	UPL
Crypsis sp.	pricklegrass	OBL
Cynodon dactylon *	Bermuda grass	FAC
Cyperus cf. esculentus	nutsedge	UPL
Cyperus difformis *	variable flatsedge	OBL
Cyperus eragrostis	umbrella sedge	FACW
Cyperus erythrorhizos	redroot flatsedge	OBL
Cyperus flavicomus *	whiteedge flatsedge	>FACW
Cyperus odoratus	redroot flatsedge	FACW
Digitaria sanguinalis *	hairy crabgrass	FACU
Distichlis spicata	saltgrass	FACW
Echinochloa colona *	jungle-rice	FACW
Echinochloa crus-galli *	barnyard grass	FACW
Hordeum murinum ssp. leporinum *	wall barley	NI
Juncus bufonius	toad rush	FACW+
Juncus effusus	soft rush	OBL
Leptochloa fascicularis	bearded sprangletop	OBL
Lolium multiflorum [L. perenne] *	Italian ryegrass	FAC*
Oryza sativa *	cultivated rice	OBL
Paspalum dilatatum	dallis grass	FAC
Phalaris aquatica *	bulbous canarygrass, Harding grass	FAC+
Poa annua *	annual bluegrass	FACW-

Appendix B. Continued

Scientific Name	Common Name	Wetland Indicator Status‡
Polypogon interruptus *	ditch rabbitsfoot grass	OBL
Polypogon monspeliensis *	rabbitsfoot grass	FACW+
Scirpus acutus var. occidentalis	common tule	UPL
Scirpus mucronatus *	ricefield bulrush	OBL
Setaria pumila *	yellow bristle grass	UPL
Sorghum halepense *	Johnsongrass	FACU
Taeniatherum caput-medusae *	Medusa-head	UPL
Typha angustifolia	narrowleaf cattail	OBL
Typha latifolia	broadleaf cattail	OBL
Vulpia bromoides *	foxtail fescue	FACW

Wetland Indicator Status for Region 0, California:

OBL (obligate)—almost always occurs in wetlands (99% probability of occurrence in wetlands).

FAC (facultative)—equally likely to occur in wetlands or nonwetlands (34–66% probability).

FACU (facultative upland)—usually occurs in nonwetlands but occasionally occurs in wetlands (1–33% probability).

FACW (facultative wetland)—usually occurs in wetlands (67–99% probability).

UPL (obligate upland)—almost never occurs in wetlands (1% probability); in general, species that are not listed on the wetland plant list are assumed to be obligate upland species.

NI (no indicator)—no indicator status assigned because regional status information is lacking; the indicator status assigned to the species in the nearest adjacent region is applied, in this case, Region 9 (Northwest).

Undetermined—cannot be assigned an indicator status because plant could not be identified to species.

A plus (+) modifier indicates more frequently found in wetlands, a minus (-) modifier indicates less frequently found in wetlands; however, although these modifiers are used in Reed (1988), **they are not used in the Regional Supplements.** For example, FAC-, FAC, and FAC+ plants are all considered to be FAC. An asterisk (*) was assigned if the indicator status was derived from limited ecological information

Appendix C Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Central Valley Gas Storage Project		City/Co	ounty: <u>Colu</u>	usa County	Sam	oling Date: <u>6-26</u>	3-09
Applicant/Owner: Central Valley Gas Storage, LLC				State: CA	Sampling Poir	nt:1	
Investigator(s): Butterworth		Section	n, Township,	Range:			
Landform (hillslope, terrace, etc.): flood plain		Local r	elief (concav	e, convex, none):	ditch	Slope (%):	0
Subregion (LRR): C	Lat: _			Long:		Datum:	
Soil Map Unit Name: Vina loam, 0 to 2 percent slopes (17							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soilyes*, or Hydrology	-			Are "Normal Cir		sent? Yes x	No
Are Vegetation, Soilves*, or Hydrologyves					ain any answers		
SUMMARY OF FINDINGS – Attach site map s					•		, etc.
Hydrophytic Vegetation Present? Yes x No Hydric Soil Present? Yes x No Yes x No Yes x No Hydric Soil Present?		15 (the Sampled				
Wetland Hydrology Present? Yes x No					es <u>x</u> 1	No	
Remarks:		l					
* Native soil profile has been truncated. ** Water in ditch	assumed t	o be irriga	ation tailwate	r from rice paddy.			
VEGETATION							
Tree Stratum (Plot size:	Absolute % Cover		nt Indicator	Dominance Tes			
1				Number of Dom That Are OBL, F	inant Species FACW, or FAC:	1	(A)
2				Total Number of Species Across		1	(B)
4				Percent of Domi That Are OBL, F	nant Species ACW, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Ind			
1					ex worksneet. /er of:	Multiply by:	
2					X		
3					x		
5.					x		
·-					X		
Herb Stratum (Plot size:r = 5 ft)					x		
1. Typha sp.			OBL	Column Totals:	(A	۸)	_(B)
Sorghum halepense Sorghum halepense				Prevalence	e Index = B/A =		
4.					getation Indicat		
5.				x Dominance	Test is >50%		
6				Prevalence	Index is ≤3.0 ¹		
7					cal Adaptations ¹		ting
8					Remarks or on a s C Hydrophytic Ve	• ,	in)
Woody Vine Stratum (Plot size:)	90	= Total (Cover				
1 2				¹ Indicators of hy be present.	dric soil and wetl	and hydrology m	ıust
% Bare Ground in Herb Stratum10		= Total (Cover	Hydrophytic Vegetation Present?	Yes <u>x</u>	No	_
Remarks:				1			

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SOIL	Sampling Point:	1

SOIL							San	npling Point:1		
Profile Des	cription: (Describe	to the de	pth needed to docu	ment the	indicator	or confire	m the absence	of indicators.)		
Depth <u>Matrix</u>		Redo	x Featur							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-17	10YR4/1	80	10YR4/4	20	<u>C</u>	M	sicl			
				_			<u> </u>			
		_			_		·			
							· 			
			<u> </u>	_	- -		<u> </u>			
							- 			
			/I=Reduced Matrix, C			ed Sand G		tion: PL=Pore Lining, M=Matrix.		
-		cable to al	I LRRs, unless other		oted.)			for Problematic Hydric Soils ³ :		
Histoso			Sandy Rec	. ,				Muck (A9) (LRR C)		
	pipedon (A2)		Stripped M Loamy Mu					Muck (A10) (LRR B)		
	listic (A3) en Sulfide (A4)		Loamy Gle	-				Reduced Vertic (F18) Red Parent Material (TF2)		
	d Layers (A5) (LRR	C)	x Depleted M					(Explain in Remarks)		
	uck (A9) (LRR D)	-,	Redox Dar					(= +,		
	ed Below Dark Surface	ce (A11)	Depleted D							
	ark Surface (A12)		Redox Dep		(F8)			of hydrophytic vegetation and		
Sandy Mucky Mineral (S1)			Vernal Poo	ls (F9)				wetland hydrology must be present,		
	Gleyed Matrix (S4)						unless dist	turbed or problematic.		
_	Layer (if present):									
• • •			_							
Depth (in	nches):		_				Hydric Soil	Present?		
Remarks:										
HYDROLO	GY									
	drology Indicators	•					Seco	ndary Indicators (2 or more required)		
_	cators (any one indi		ficient)				-	Vater Marks (B1) (Riverine)		
	•		Salt Crus	(B11)				Sediment Deposits (B2) (Riverine)		
X Surface Water (A1)— Salt Crust (B11)— Biotic Crust (B12)				Drift Deposits (B3) (Riverine)						
Saturation (A3) Aquatic Invertebrates (B13)					Drainage Patterns (B10)					
Water Marks (B1) (Nonriverine)			Hydrogen					Dry-Season Water Table (C2)		
	nt Deposits (B2) (No				eres along	Living Ro		Thin Muck Surface (C7)		
Drift De	posits (B3) (Nonrive	erine)	Presence	of Reduc	ced Iron (C	4)	c	Crayfish Burrows (C8)		
Surface Soil Cracks (B6)			Recent Ire	on Reduc	tion in Plov	ved Soils ((C6) S			
Inundat	ion Visible on Aerial	Imagery (I	B7) Thin Muc	k Surface	e (C7)		Shallow Aquitard (D3)			
Water-S	Stained Leaves (B9)		Other (Ex	plain in R	Remarks)		F	AC-Neutral Test (D5)		
Field Obser	rvations:									
Surface Wat	ter Present?	∕es <u>x</u>	No Dept	n (inches)): <u>4</u>					
Water Table	Present?	/es	No Dent	n (inches	١٠					

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Wetland Hydrology Present? Yes x No ____

Yes _____ No ____ Depth (inches): _____

(includes capillary fringe)

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

Saturation Present?

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Central Valley Gas S	Storage Project		City/County:Coli	usa County	Samp	ling Date: <u>6-26</u>	6-09
Applicant/Owner: Central Valle	ey Gas Storage, LLC			State: CA	Sampling Poin	t: <u>2</u>	
Investigator(s): Butterworth			Section, Township,	Range:			
Landform (hillslope, terrace, etc.):	flood plain		Local relief (concav	e, convex, none): _	levee road	_ Slope (%):	0
Subregion (LRR): C							
Soil Map Unit Name: Vina loam, (
Are climatic / hydrologic conditions of							
		-					Na
Are Vegetation <u>yes*</u> , Soil <u>yes</u>							_ NO
Are Vegetation, Soil <u>yes</u>	**, or Hydrology	natur	ally problematic?	(If needed, expla	ain any answers i	n Remarks.)	
SUMMARY OF FINDINGS -	Attach site map	showing	sampling point lo	ocations, trans	sects, importa	ant features	etc.
	<u> </u>						
Hydrophytic Vegetation Present?	Yes No _		is the samplet	d Area			
Hydric Soil Present?	Yes No		within a wetia	n d? Y	es N	lo <u>x</u>	
Wetland Hydrology Present? Remarks:	Yes No _	X	-				
* Levee road: vegetation partly rem	noved by herbicide/from	m blading *	* Soil consists of fill ma	aterial			
Levee road. Vegetation partly ren	loved by herbiolderhor	ii biadiiig.		atoriai			
VEGETATION							
T 0		Absolute		Dominance Tes	t worksheet:		-
Tree Stratum (Plot size:			Species? Status	Number of Domi			(4)
1				I nat Are OBL, F	ACW, or FAC:		(A)
2. 3.				Total Number of			(D)
4				Species Across			(B)
			= Total Cover	Percent of Domi	nant Species	0	(A/D)
Sapling/Shrub Stratum (Plot size	e:)		_ rotal cover	That Are OBL, F	ACW, or FAC:		(A/B)
1			<u> </u>	Prevalence Inde			
2			·		ver of:		
3					x1		
4					x2		
5					x3		
Herb Stratum (Plot size:	r = 5 ft)		= Total Cover		x 4 x 5		
unidentifiable detritus/forbs			Y ?	· ·	(A)		
2				Column Fotalo.	(//		_ (D)
3					e Index = B/A = _		_
4					egetation Indicate	ors:	
5			<u> </u>	Dominance			
6			· 	Prevalence			
7				Morphologic	cal Adaptations¹ (Remarks or on a s	Provide suppor eparate sheet)	ting
8					Hydrophytic Veg		in)
Woody Vine Stratum (Plot size:)	90	_ = Total Cover		, y	,	,
1	,			¹ Indicators of hy	dric soil and wetla	and hydrology n	nust
2.				be present.			
			= Total Cover	Hydrophytic			
% Bare Ground in Herb Stratum	10 % Cov	er of Riotic Cr	ruet O	Vegetation Present?	Yes	No assumed	
Remarks:		יי טויטווט טו	uot	i resent:		140 assuilled	•
indina.							

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Depth	Matrix		Redo	ox Features					
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Ty	pe ¹ Loc ²	Texture	Remarks		
-18	10YR3/1	100				grcl	Fill material.		
	_								
	_								
ivno: C=	Concentration, D=De	onlotion PM-Pa	aduood Matrix, C	S=Covered or (Costod Sand (Proins 21 ago	tion: DI =Doro Lining M=Motrix		
• •	il Indicators: (Appli				Doaled Salid C		ation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :		
Histos			Sandy Red	•			Muck (A9) (LRR C)		
	Epipedon (A2)		Stripped M				Muck (A10) (LRR B)		
	Histic (A3)			cky Mineral (F1)		Reduced Vertic (F18)		
_ Hydro	gen Sulfide (A4)		Loamy Gle	yed Matrix (F2)		Red F	Red Parent Material (TF2)		
_ Stratifi	ed Layers (A5) (LRR	C)	Depleted N	/latrix (F3)		Other	(Explain in Remarks)		
	Muck (A9) (LRR D)		Redox Dar	k Surface (F6)					
	ed Below Dark Surfa	ace (A11)		Oark Surface (F	7)				
 -	Dark Surface (A12)			pressions (F8)			s of hydrophytic vegetation and		
	Mucky Mineral (S1)		Vernal Poo	ols (F9)			ydrology must be present,		
	Gleyed Matrix (S4)					unless dis	turbed or problematic.		
	e Layer (if present):								
Type: _									
Depth (i	inches):					Hydric Soi	il Present? Yes No x		
emarks:									
oil profile	described from steep	p sideslope of d	itch.						
DROL	OGY								
etland H	lydrology Indicators	s:				Seco	ondary Indicators (2 or more required)		
imary Ind	dicators (any one ind	icator is sufficie	nt)			\	Water Marks (B1) (Riverine)		
Surfac	e Water (A1)		Salt Crus	t (B11)		S	Sediment Deposits (B2) (Riverine)		
High Water Table (A2)			Biotic Cru	. ,			Drift Deposits (B3) (Riverine)		
				nvertebrates (B	13)		Drainage Patterns (B10)		
Water Marks (B1) (Nonriverine)				Sulfide Odor (•		Dry-Season Water Table (C2)		
	ent Deposits (B2) (N						Thin Muck Surface (C7)		
	eposits (B3) (Nonriv			of Reduced Iro			Crayfish Burrows (C8)		
טווונט	e Soil Cracks (B6)	-,		on Reduction in			Saturation Visible on Aerial Imagery (C		
		I Imagery (B7)	· <u> </u>	k Surface (C7)		• • —	Shallow Aquitard (D3)		
Surfac	illon visible on Aeria								
Surfac Inunda			Other (Ev		(s)				
_ Surfac _ Inunda _ Water-	-Stained Leaves (B9)		Other (Ex	plain in Remark	(s)		FAC-Neutral Test (D5)		
Surfac Inunda Water- ield Obse	-Stained Leaves (B9) ervations:)		plain in Remark	(s)				
Surfac Inunda Water- ield Obse urface Wa	-Stained Leaves (B9) ervations: ater Present?) Yes No	Dept	plain in Remark	_				

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

Yes _____ No x ____ Depth (inches): none to 18

Remarks:

Saturation Present? (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No x

Project/Site: Central Valley Gas Storage Project		City/Cou	ınty: <u>Colu</u>	ısa County	Sampli	ng Date: <u>6-26</u>	6-09
Applicant/Owner: Central Valley Gas Storage, LLC				State: <u>CA</u>	_ Sampling Point:	:3	
Investigator(s): Butterworth		_ Section,	Township,	Range:			
Landform (hillslope, terrace, etc.):basin floor	Local	relief (cond	cave, conve	x, none): ditch	Slope (%): <u> </u>	
Subregion (LRR): C	Lat:			Long:		Datum:	
Soil Map Unit Name: Willows silty clay, 0 to 1 percent slop							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soilyes*, or Hydrology	-				cumstances" prese	ent? Yes x	No
Are Vegetation, Soilyes*, or Hydrologyyes					in any answers in	·	
SUMMARY OF FINDINGS – Attach site map si					-		s, etc.
Hydrophytic Vegetation Present? Yesx No							
Hydric Soil Present? Yes x No		15 (1)	e Sampled				
Wetland Hydrology Present? Yesx No			in a Wetlan		es <u>x</u> No)	
Remarks:		•					
* Native soil profile has been truncated. ** Water in ditch	assumed to	o be irrigati	on tailwater	from rice paddy.			
VEGETATION							
	Absolute	Dominant		Dominance Tes	t worksheet:		
Tree Stratum (Plot size:) 1	% Cover			Number of Domin	nant Species ACW, or FAC: _	4	(A)
2				Total Number of Species Across A		4	(B)
4				Percent of Domir			- ()
Sapling/Shrub Stratum (Plot size:)		= Total Co	over		ACW, or FAC: _	100	(A/B)
1				Prevalence Inde			
2					er of:		
3					x1		
4					x2		
5					x3		
Herb Stratum (Plot size:r = 5 ft)		- Total Ct	ovei		x5		
1. Scirpus acutus	25	<u>Y</u>	OBL_	•	(A)	·	
Paspalum dilatatum	10	<u>Y</u>	FAC				
3. Typha sp.		<u>Y</u>			e Index = B/A = _		_
4. Rumex crispus					getation Indicato	rs:	
5				x Dominance Prevalence			
6					cal Adaptations ¹ (F	Provide suppor	tina
7 8				data in R	emarks or on a se	parate sheet)	9
		= Total Co		Problematic	: Hydrophytic Vege	etation¹ (Expla	in)
Woody Vine Stratum (Plot size:)				¹ Indicators of by	dric soil and wetlar	nd hydrology n	nuet
1 2				be present.	inc son and wenar	ia nyarology n	iiust
2.		= Total Co		Hydrophytic Vegetation			
% Bare Ground in Herb Stratum 61 % Cover	of Biotic Cr	ust <u>C</u>)		Yes <u>x</u> 1		<u>-</u>
Remarks:							

SOIL	Sampling Point: _	3

Depth <u>N</u> (inches) Color (mo	oist) %	Cole	or (moist)	x Feature: %	Type ¹	Loc ²	Texture	e Remarks
See Remarks be			· · · · · · · · · · · · · · · · · · ·					
<u>rtemarks be</u>		_						-
					-			
	, <u></u>	_		-				
							-	
ype: C=Concentration,						d Sand Gr		ocation: PL=Pore Lining, M=Matrix.
ydric Soil Indicators: (Applicable to	all LRRs,	unless other	rwise not	ed.)		Indicat	tors for Problematic Hydric Soils ³ :
_ Histosol (A1)			Sandy Red					cm Muck (A9) (LRR C)
_ Histic Epipedon (A2)			Stripped Ma					cm Muck (A10) (LRR B)
_ Black Histic (A3)			Loamy Muc	-				educed Vertic (F18)
Hydrogen Sulfide (A4			Loamy Gley		(F2)			ed Parent Material (TF2)
_ Stratified Layers (A5)	. ,		Depleted M		(E6)		<u>x</u> 0	Other (Explain in Remarks)
1 cm Muck (A9) (LRRDepleted Below Dark			Redox Dark Depleted Da					
Thick Dark Surface (A			Redox Depi				³ Indicat	tors of hydrophytic vegetation and
Sandy Mucky Mineral			Vernal Pool		. 0,			d hydrology must be present,
Sandy Gleyed Matrix				- ()				disturbed or problematic.
estrictive Layer (if pres								·
Type:								
Depth (inches):							Hydric 3	Soil Present? Yes x No
Could not evaluate soil be	cause access p		by near-vertion	cal sidesic	ope of ditc	n banks. H	<u> </u>	Soil Present? Yes x No
Remarks: Could not evaluate soil be vater in bottom of ditch (a	cause access p		by near-vertion	cal sidesIc	ope of ditc	h banks. H	<u> </u>	
Remarks: Could not evaluate soil be vater in bottom of ditch (a	cause access p quic moisture r		by near-vertion	cal sideslo	ope of ditc	n banks. H	lydric soil a	assumed to be present based on standing
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic	cause access p quic moisture re cators:	egime).	by near-vertion	cal sidesic	ope of ditc	n banks. H	lydric soil a	assumed to be present based on standing
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indicerimary Indicators (any or	cause access p quic moisture re cators:	egime).			ope of ditc	h banks. H	lydric soil a	assumed to be present based on standing econdary Indicators (2 or more required) Water Marks (B1) (Riverine)
temarks: could not evaluate soil be vater in bottom of ditch (a **TDROLOGY Vetland Hydrology Indications (any or a Surface Water (A1)	cause access p quic moisture re cators: le indicator is se	egime).	_ Salt Crust	(B11)	ope of ditc	h banks. H	lydric soil a	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
temarks: Sould not evaluate soil be vater in bottom of ditch (and the process of	cause access p quic moisture re cators: le indicator is se	egime).	_ Salt Crust _ Biotic Crus	(B11) st (B12)		h banks. H	lydric soil a	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or Surface Water (A1) High Water Table (A2) Saturation (A3)	cause access p quic moisture re cators: le indicator is se	egime).	_ Salt Crust _ Biotic Crus _ Aquatic In	(B11) st (B12) vertebrate	s (B13)	n banks. H	lydric soil a	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Crimary Indicators (any or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No	cause access p quic moisture re eators: e indicator is se	egime). ufficient)	_ Salt Crust _ Biotic Crus _ Aquatic In _ Hydrogen	(B11) st (B12) vertebrate Sulfide Od	es (B13) dor (C1)		lydric soil a	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B	cause access page of the control of	egime). ufficient)	_ Salt Crust _ Biotic Crus _ Aquatic In _ Hydrogen _ Oxidized F	(B11) st (B12) vertebrate Sulfide Oo Rhizosphe	es (B13) dor (C1) res along	Living Roo	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or X Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B3) (N	cause access page of the control of	egime). ufficient)	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reduce	es (B13) dor (C1) res along ed Iron (C4	Living Roo	Se Se C3)	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drianage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or x Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B3) (N Surface Soil Cracks (I	cause access page of the page	ufficient) ufficient e)	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence	(B11) st (B12) vertebrate Sulfide Oo Rhizosphe of Reduce	es (B13) dor (C1) res along ed Iron (C4 on in Plow	Living Roo	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or X Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on	cause access page of the page	ufficient) ufficient e)	Salt Crust Biotic Crus Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reduce in Reducti Surface (es (B13) dor (C1) res along ed Iron (C4 on in Plow	Living Roo	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3)
Remarks: Could not evaluate soil be vater in bottom of ditch (avater in bottom) Wetland Hydrology Indicators (any or avater in locators (b) Water Marks (B1) (Notators (B3)) (Notat	cause access page of the page	ufficient) ufficient e)	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reduce in Reducti Surface (es (B13) dor (C1) res along ed Iron (C4 on in Plow	Living Roo	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C
Remarks: Could not evaluate soil be vater in bottom of ditch (and a vater land) Primary Indicators (any or a vater land) High Water Table (A2) Saturation (A3) Water Marks (B1) (Notes a vater land) Sediment Deposits (B3) (Notes a vater land) Surface Soil Cracks (Inundation Visible on land) Water-Stained Leaves: Field Observations:	cause access page of the control of	ufficient)	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oo Rhizosphe of Reduce in Reducti Surface (blain in Re	es (B13) dor (C1) res along ed Iron (C4 on in Plow (C7) emarks)	Living Roo	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or X Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present?	cause access page of the page	ufficient) ufficient) e) (B7) No No	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oo Rhizosphe of Reduce in Reducti Surface (blain in Re	es (B13) dor (C1) res along ed Iron (C4 on in Plow (C7) emarks)	Living Roo	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or X Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Vater Table Present?	cause access page of the page	egime). ufficient) e) (B7) No No	Salt Crust Biotic Crus Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reducti Surface (olain in Re u (inches):	es (B13) dor (C1) res along ed Iron (C4 on in Plow (C7) emarks)	Living Roo I) ved Soils (C	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Ca) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Vetland Hydrology Indic Primary Indicators (any or X Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Vater Table Present?	cause access page of the page	egime). ufficient) e) (B7) No No	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reducti Surface (olain in Re u (inches):	es (B13) dor (C1) res along ed Iron (C4 on in Plow (C7) emarks)	Living Roo I) ved Soils (C	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Wetland Hydrology Indic Primary Indicators (any or x Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No. Sediment Deposits (B3) (N. Surface Soil Cracks (Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Water Table Present? Saturation Present? Saturation Present? Saturation Present? Saturation Present?	cause access page of the page	egime). ufficient) e) (B7) No No No No	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti Surface (blain in Re of (inches): of (inches):	es (B13) dor (C1) res along ed Iron (C2 on in Plow (C7) emarks)	Living Roo I) ved Soils (C	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3) FAC-Neutral Test (D5)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Wetland Hydrology Indic Primary Indicators (any or x Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No. Sediment Deposits (B3) (N. Surface Soil Cracks (Inundation Visible on Water-Stained Leaves Field Observations: Surface Water Present? Water Table Present? Saturation Present? Saturation Present? Saturation Present? Saturation Present?	cause access page of the page	egime). ufficient) e) (B7) No No No No	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti Surface (blain in Re of (inches): of (inches):	es (B13) dor (C1) res along ed Iron (C2 on in Plow (C7) emarks)	Living Roo I) ved Soils (C	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3) FAC-Neutral Test (D5)
Remarks: Could not evaluate soil be vater in bottom of ditch (a YDROLOGY Netland Hydrology Indice Primary Indicators (any or a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Notes a sediment Deposits (B3) (Notes a surface Soil Cracks (Inundation Visible on water-Stained Leaves Field Observations: Surface Water Present? Nater Table Present? Saturation Present? Saturation Present? Saturation Present? Saturation Present? Saturation Present? Saturation Present?	cause access page of the page	egime). ufficient) e) (B7) No No No No	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti Surface (blain in Re of (inches): of (inches):	es (B13) dor (C1) res along ed Iron (C2 on in Plow (C7) emarks)	Living Roo I) ved Soils (C	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3) FAC-Neutral Test (D5)
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Remarks: Could not evaluate soil be water in bottom of ditch (a YDROLOGY Wetland Hydrology Indice Primary Indicators (any or x Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on	cause access page of the page	egime). ufficient) e) (B7) No No No No	Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Surface (blain in Re (inches): (inches):	es (B13) dor (C1) res along ed Iron (C2 on in Plow (C7) emarks)	Living Roo I) ved Soils (C	Se	econdary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Canada Shallow Aquitard (D3) FAC-Neutral Test (D5)

Project/Site: <u>Central Valley Gas</u>	Storage Project		City/Co	unty: <u>Col</u>	usa County	Sampl	ing Date: <u>6-2</u>	<u> 26-09</u>
Applicant/Owner: Central Vall	ey Gas Storage, LLC				State: CA	Sampling Point	:4	
Investigator(s): Butterworth			Section	, Township,	Range:			
Landform (hillslope, terrace, etc.):	basin floor		Local re	elief (concav	re, convex, none):l	evee road	_Slope (%): _	0
Subregion (LRR):C		Lat:			Long:		Datum:	
Soil Map Unit Name: Willows silty	/ clay, 0 to 1 percent sl	lopes, occas	ionally floo	ded (105)	NWI cla	ssification:		
Are climatic / hydrologic conditions of	on the site typical for th	is time of year	ar?	Yes <u>x</u> No	(If no, explain in	Remarks.)		
Are Vegetation ves*, Soil ves	**, or Hydrology	signif	ficantly dist	urbed?	Are "Normal Circui	mstances" pres	ent? Yes x	No
Are Vegetation, Soilyes		_	-					
SUMMARY OF FINDINGS –						-		s, etc.
Hydrophytic Vegetation Present?	Yes No _	~						
Hydric Soil Present?	Yes No _		13 1	he Sampled				
Wetland Hydrology Present?			ı wıu	hin a Wetla	nd? Yes	No	3 <u>X</u>	
Remarks:	-		I					
* Levee road: vegetation partly ren	noved by herbicide/fron	n blading. *	* Soil cons	ists of fill ma	aterial.			
VEGETATION		A la la -4 -	Damina	4 la dia da a	I B			
Tree Stratum (Plot size:)	% Cover		t Indicator Status	Dominance Test v Number of Domina			
1			-		That Are OBL, FAC		1	_ (A)
2 3					Total Number of Do Species Across All		1	_ (B)
4			= Total C	cover	Percent of Dominal That Are OBL, FAC		50	_ (A/B)
Sapling/Shrub Stratum (Plot size 1					Prevalence Index	worksheet:		
2.					Total % Cover		Multiply by:	
3.					OBL species			
4.					FACW species	x 2	=	_
5.					FAC species	x 3	=	_
			= Total C	over	FACU species	x 4	=	_
Herb Stratum (Plot size:					UPL species	x 5	=	_
Centaurea solstitialis			<u>Y</u>		Column Totals:	(A)		_ (B)
2. Malvella leprosa			<u>Y</u>		Prevalence Ir	ndex = B/A = _		
3					Hydrophytic Vege			
4					Dominance Te			
5 6					Prevalence Inc			
7			_		Morphological		Provide suppo Parate sheet)	rting
8			= Total C	Cover	Problematic H	ydrophytic Veg	etation ¹ (Expla	ain)
Woody Vine Stratum (Plot size:					¹ Indicators of hydric	c soil and wetla	nd hydrology i	must
1 2					be present.	Jon and Wella	na nyarology i	nust
			= Total C		Hydrophytic Vegetation			
% Bare Ground in Herb Stratum _	60 % Cove	er of Biotic Ci	rust	0	Present? Ye	s 1	No <u>x</u>	=
Remarks:								

SOIL	Sampling Point: _	4	

1-Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix. 1-Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix. 1-Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix. 1-Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix. 1-Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix. 1-Type: C=Concentration, D=Depletion and Reduced Vertic (Applicable to all LRRs, unless otherwise noted.) 1-Type: C=Concentration, D=Depletion Application, D=Coated Vertic (Applicable to Applicable to				% T	ype ¹ Loc	c ² Textu	re Remarks
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ************************************	10VD4/4					<u> </u>	
Indicators (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*:	-18 <u>10YR4/1</u>	100				SIC	Fili material
Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) Flydrogen Sulfide (A4) Loamy Mucky Mineral (F2) Stratified Layers (A5) (LRR C) Depleted Bedw Dark Surface (A11) Depleted Bedw Dark Surface (A11) Depleted Matrix (F3) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Surface Water (A12) Strictive Layer (if present): Type: Depleted Bedscribed from steep sideslope of ditch. DROLOGY etland Hydrology Indicators: Secondary Indicators (2 or more required mary line) Surface Water (A1) Surface Water (A2) Biolic Crust (B12) Surface Water (A3) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (A2) Sediment Deposits (B3) (Nonriverine) Drift Deposits (B3) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soli Cracks (B6) Recent from Reduction in Plowed Solis (C6) Surface Soli Cracks (B6) Recent from Reduction in Plowed Solis (C6) Saturation (A3) Acqualic Invertebrates (B1) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soli Cracks (B6) Recent from Reduction in Plowed Solis (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Plowed Solis (C6) Shallow Aquitard (D3) Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Indicators (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*:							
Indicators (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*:							
Indicators (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*:							
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ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	· -						
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)							
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)							
Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histos Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) (LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduce Petric (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Wetland Hydrology must be present, unless disturbed or problematic. Sestrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes No x Petland Hydrology Indicators: In profile described from steep sideslope of ditch. //DROLOGY //DR							
Histic Epipedon (A2)	ydric Soil Indicators: (App	licable to all LRR	s, unless othe	rwise noted.))	Indic	ators for Problematic Hydric Soils ³ :
Black Histic (A3)	_ ` '	-					
Hydrogen Sulfide (A4)		-					
Stratified Layers (A5) (LRR C)	_ ` '	-	-				,
	_ , , ,		-		2)		
Depleted Below Dark Surface (A11)		K C) _			\		other (Explain in Remarks)
Thick Dark Surface (A12) Redox Depressions (F8) * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Vernal Pools (F9) unless disturbed or problematic. Vernal Pools (F9)		ace (Δ11)					
Sandy Mucky Mineral (S1)		acc (A11) _				³ Indic	ators of hydrophytic vegetation and
Sandy Gleyed Matrix (S4) Restrictive Layer (if present): Type:		-					
Restrictive Layer (if present): Type: Depth (inches):		·		. ()			
Depth (inches):							·
PARTITION OF Secondary Indicators: Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Surface Water (A1)	Type:						
PARTICLE STATE STA	Depth (inches):					Hydric	Soil Present? Yes No x
VPDROLOGY Vetland Hydrology Indicators: Surface Water (A1) High Water Table (A2) Saturation (A3) Sediment Deposits (B1) (Nonriverine) Sediment Deposits (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B3) (Norvirerine) Sediment Deposits (B2) (Riverine) Sediment Deposits							
Secondary Indicators (2 or more required primary Indicators (any one indicator is sufficient)							
Primary Indicators (any one indicator is sufficient) Surface Water (A1) Surface Water (A2) Surface Water (A2) Salt Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B10) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B3) (Nonriverine) Sediment Deposits (B3) (Nonriverine) Sediment Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Surface Soil Cracks (B9) Surface Soil Cracks (B9) Surface Water Present?	YDROLOGY						
Sulface Water (A1) Salt Crust (B11) Sediment Deposits (B2) (Riverine) High Water Table (A2) Biotic Crust (B12) Drift Deposits (B3) (Riverine) Aquatic Invertebrates (B13) Drainage Patterns (B10) Dry-Season Water Table (C2) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Thin Muck Surface (C7) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Staturation Present?		rs:					Secondary Indicators (2 or more required)
High Water Table (A2)	Vetland Hydrology Indicator)			<u>.</u>	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine)
	Vetland Hydrology Indicator Primary Indicators (any one inc			(R11)			Water Marks (B1) (Riverine)
Water Marks (B1) (Nonriverine)	Vetland Hydrology Indicator Primary Indicators (any one inc Surface Water (A1)		Salt Crust	` '			Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Thin Muck Surface (C7) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Surface Water Present?	Primary Indicators (any one indicators Surface Water (A1) High Water Table (A2)		Salt Crust Biotic Cru	st (B12)	313)		 Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No x Depth (inches): Vater Table Present? Yes No x Depth (inches): none to 18 Saturation Present? Yes No x Depth (inches): none to 18 Saturation Present? Yes No x Depth (inches): none to 18 Section Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Vetland Hydrology Indicator Primary Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3)	dicator is sufficient	Salt Crust Biotic Cru Aquatic In	st (B12) vertebrates (E	,		Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
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Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Stail Constructions: Surface Water Present? Yes No _x Depth (inches):	Primary Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriv Sediment Deposits (B2) (N	dicator is sufficient verine) Nonriverine)	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I	st (B12) vertebrates (E Sulfide Odor Rhizospheres	(C1) along Living	Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7)
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Field Observations: Surface Water Present? Yes No _x Depth (inches): Water Table Present? Yes No _x Depth (inches): none to 18 Saturation Present? Yes No _x Depth (inches): none to 18 Wetland Hydrology Present? Yes No _x No _x Depth (inches): none to 18 Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Primary Indicators (any one incomposition of the primary Indicators (any one incomposition of the primary Indicators (any one incomposition (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonrive Sediment Deposits (B2) (Nonrive Deposits (B3) (Nonrive Surface Soil Cracks (B6)	dicator is sufficient verine) Nonriverine) verine)	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Iro	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i	(C1) along Living on (C4) in Plowed So	Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Surface Water Present? Yes No _x Depth (inches): Water Table Present? Yes No _x Depth (inches): none to 18 Saturation Present? Yes No _x Depth (inches): none to 18 Includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Primary Indicators (any one incomposition of the primary Indicators (any one incomposition of the primary Indicators (any one incomposition of the primary Indicators (A1) Saturation (A3) Water Marks (B1) (Nonrive Sediment Deposits (B2) (Nonrive Deposits (B3) (Nonrive Surface Soil Cracks (B6) Inundation Visible on Aerica	verine) verine) verine) verine) verine)	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Iro Thin Muck	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7)	(C1) along Living on (C4) in Plowed So)	Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (CS) Shallow Aquitard (D3)
Water Table Present? Yes No x Depth (inches): none to 18 Saturation Present? Yes No x Depth (inches): none to 18 Includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Primary Indicators (any one incomposition of the North Marks (B1) (Nonrive Sediment Deposits (B2) (Nonrive Sediment Deposits (B3) (Nonrive Sediment Deposits (B3) (Nonrive Sediment Deposits (B3) (Nonrive Sediment Deposits (B3) (Nonrive Surface Soil Cracks (B6) Inundation Visible on Aeria Water-Stained Leaves (B9)	verine) verine) verine) verine) verine)	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Iro Thin Muck	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7)	(C1) along Living on (C4) in Plowed So)	Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (CS) Shallow Aquitard (D3)
Saturation Present? Yes No x Depth (inches): none to 18 Wetland Hydrology Present? Yes No x includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Vetland Hydrology Indicator Primary Indicators (any one incomplete Marker (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonrive Sediment Deposits (B2) (Nonrive Sediment Deposits (B3) (Nonrive Surface Soil Cracks (B6) Inundation Visible on Aerice Water-Stained Leaves (BS) Field Observations:	verine) Nonriverine) verine) al Imagery (B7)	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i a Surface (C7) plain in Rema	(C1) along Living ron (C4) in Plowed Sc) rks)	Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (CS) Shallow Aquitard (D3)
includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Primary Indicators (any one incomposition of the primary Indicators (any one incomposition of the primary Indicators (any one incomposition of the primary Indicators (A1) — Surface Water Table (A2) — Saturation (A3) — Water Marks (B1) (Nonriverside of the proposition of the primary of th	verine) Nonriverine) verine) al Imagery (B7) 9) Yes No _	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7) plain in Rema	(C1) along Living ron (C4) in Plowed Sc) rks)	Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (CS) Shallow Aquitard (D3)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Primary Indicators (any one incomposition of the property of t	verine) Nonriverine) verine) al Imagery (B7) Yes No Yes No	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex x Depth	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7) plain in Rema n (inches):	(C1) along Living on (C4) in Plowed Sc) rks) ne to 18	g Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Remarks:	Primary Indicators (any one incomposition of the property of t	verine) Nonriverine) verine) al Imagery (B7) Yes No Yes No	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex x Depth	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7) plain in Rema n (inches):	(C1) along Living on (C4) in Plowed Sc) rks) ne to 18	g Roots (C3)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Kemarks:	Primary Indicators (any one incomposition of the program of the pr	verine) Nonriverine) verine) al Imagery (B7) Yes No _ Yes No _ Yes No _	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex x Depth x Depth	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7) plain in Rema n (inches): n (inches): nor	(C1) along Living ron (C4) in Plowed Sc) rks) he to 18	p Roots (C3) poils (C6)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
	Primary Indicators (any one incomposition of the property of t	verine) Nonriverine) verine) al Imagery (B7) Yes No _ Yes No _ Yes No _	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex x Depth x Depth	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7) plain in Rema n (inches): n (inches): nor	(C1) along Living ron (C4) in Plowed Sc) rks) he to 18	p Roots (C3) poils (C6)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
	Primary Indicators (any one incomposition of the property of t	verine) Nonriverine) verine) al Imagery (B7) Yes No _ Yes No _ Yes No _	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex x Depth x Depth	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7) plain in Rema n (inches): n (inches): nor	(C1) along Living ron (C4) in Plowed Sc) rks) he to 18	p Roots (C3) poils (C6)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
	Primary Indicators (any one incomprimary Indicators (any one incom	verine) Nonriverine) verine) al Imagery (B7) Yes No _ Yes No _ Yes No _	Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex x Depth x Depth	st (B12) vertebrates (E Sulfide Odor Rhizospheres of Reduced Ir on Reduction i c Surface (C7) plain in Rema n (inches): n (inches): nor	(C1) along Living ron (C4) in Plowed Sc) rks) he to 18	p Roots (C3) poils (C6)	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)

Project/Site: Central Valley Gas S	Storage Project		City/Coι	ınty: <u>Col</u> ı	usa County	Sampling Date: _6	3-26-09
Applicant/Owner: Central Vall	ey Gas Storage, LLC				State: <u>CA</u> Samp	oling Point:5	
Investigator(s): Butterworth			Section,	Township,	Range:		
Landform (hillslope, terrace, etc.):	basin floor		Local re	lief (concav	e, convex, none):ditch_	Slope (%):	0
Subregion (LRR):C		Lat:			Long:	Datum:	
Soil Map Unit Name: Alcapay cla	y, 0 to 1 percent slope	es (155)			NWI classifica	ation:	
Are climatic / hydrologic conditions of	on the site typical for the	nis time of year	ar?	res <u>x</u> No	(If no, explain in Rem	narks.)	
Are Vegetation, Soilyes	*, or Hydrology	signif	ficantly distu	urbed?	Are "Normal Circumstar	nces" present? Yes_	x No
Are Vegetation, Soilyes					(If needed, explain any a	answers in Remarks.))
SUMMARY OF FINDINGS -							
Hydrophytic Vegetation Present?	Yes <u>x</u> No						
Hydric Soil Present?	Yes x No		13 (1	e Sampled			
Wetland Hydrology Present?			ı wıuı	in a Wetla	nd? Yes <u>x</u>	No	_
Remarks:			l		-		
* Native soil profile has been trunca	ated. ** Water in dit	ch assumed	to be irrigat	ion tailwate	r from rice paddy.		
VEGETATION							
Trac Stratum (Diet size)	\		Dominant		Dominance Test works		
Tree Stratum (Plot size:					Number of Dominant Sp That Are OBL, FACW, o		(A)
3					Total Number of Domina Species Across All Strate		(B)
4			= Total Co		Percent of Dominant Spo That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence Index work		
1 2						Multiply by:	
3.					OBL species		
4					FACW species		
5.					FAC species	x 3 =	
			= Total Co	over	FACU species	x 4 =	
Herb Stratum (Plot size: r	= 5 ft)				UPL species	x 5 =	
			<u>Y</u>		Column Totals:	(A)	(B)
2. Cynodon dactylon			Y		Prevalence Index	= B/A =	
3. Polypogon monspeliensis			<u>Y</u>		Hydrophytic Vegetation		
4					x Dominance Test is		
5 6					Prevalence Index is		
7					Morphological Adap		porting et)
8			= Total C		Problematic Hydrop		
Woody Vine Stratum (Plot size:			_		¹ Indicators of hydric soil	and wetland hydroloc	ıv must
1 2					be present.	and medana nyareneg	,,
			_ = Total C	over	Hydrophytic Vegetation		
% Bare Ground in Herb Stratum	% Cov	er of Biotic Ci	rust <u>(</u>)	Present? Yes	x No	
Remarks:							

SOIL	Sampling Point: _	5

SOIL							San	npling Point:5	
Profile Desc	cription: (Describ	e to the de	pth needed to docu	ment the	indicator	or confir	m the absence	e of indicators.)	
Depth	Matrix	Redo	Redox Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-15	2,5YR4/1	85	7.5YR4/4	15	<u>C</u>	M	sicl		
						- <u></u>			
						·			
¹ Type: C=C	oncentration, D=De	epletion, RN	1=Reduced Matrix, C	S=Covere	ed or Coate	ed Sand C	Grains. ² Locat	tion: PL=Pore Lining, M=Matrix.	
			I LRRs, unless other					s for Problematic Hydric Soils ³ :	
Histosol Histic E Black H Hydroge Stratifie 1 cm Me Deplete Thick De Sandy M Sandy C	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) (LRR D) d Below Dark Surfa ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Layer (if present):	e C) ace (A11)	Sandy Rec Stripped M Loamy Mu Loamy Gle X Depleted N Redox Dar Depleted C Redox Dep	lox (S5) atrix (S6) cky Miner yed Matri flatrix (F3) k Surface bark Surfa	al (F1) x (F2) (F6) ce (F7)		1 cm I 2 cm I Reduc Red P Other 3Indicators wetland by	Muck (A9) (LRR C) Muck (A10) (LRR B) ced Vertic (F18) Parent Material (TF2) (Explain in Remarks) of hydrophytic vegetation and rdrology must be present, turbed or problematic.	
HYDROLO	GY								
	drology Indicators	•					Seco	ndary Indicators (2 or more required)	
Primary Indi	cators (any one ind						v	Vater Marks (B1) (Riverine)	
High Wa Saturati Water M Sedime Drift De Surface Inundati	Marks (B1) (Nonrive nt Deposits (B2) (Nonrive posits (B3) (Nonrive Soil Cracks (B6) ion Visible on Aeria Stained Leaves (B9	onriverine verine)	Presence Recent Ire	st (B12) nvertebrat Sulfide C Rhizospho of Reduct Reduct K Surface	Odor (C1) eres along ed Iron (Cition in Plovi (C7)	4)	C C oots (C3) T C (C6) S	Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Thin Muck Surface (C7) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)	
Surface Wat	ter Present?		No Dept	. ,					
Water Table			No Dept						
Saturation P (includes ca	resent? pillary fringe)	Yes <u>x</u>	No Dept	h (inches)	: <u>0</u>	We	tland Hydrolog	y Present? Yes x No	

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

Remarks:

Project/Site: Central Valley Gas	Storage Project		City/	County: <u>Col</u>	usa County	Samp	oling Date: 6-2	6-09
Applicant/Owner: Central Vall	ey Gas Storage, LLC				State: CA	_ Sampling Poir	nt: <u>6</u>	
Investigator(s): Butterworth			Secti	ion, Township,	Range:			
Landform (hillslope, terrace, etc.):	basin floor		Loca	l relief (concav	e, convex, none): _	levee road	Slope (%):	0
Subregion (LRR):C		Lat:			Long:		Datum:	
Soil Map Unit Name: Alcapay cla								
Are climatic / hydrologic conditions of								
Are Vegetation <u>yes*</u> , Soil <u>yes</u>		-			Are "Normal Circ		sent? Yes x	No
Are Vegetation, Soilyes					(If needed, expla	·		
SUMMARY OF FINDINGS –						-		s, etc.
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No Yes No			s the Sample				
Wetland Hydrology Present?				vithin a Wetla	nd? Ye	es N	Vo <u>х</u>	
Remarks:			-					
* Levee road: vegetation partly ren VEGETATION	noved by herbicide/fro	om blading. *	* Soil co	onsists of fill ma	aterial			
VEGETATION		Absolute	Domin	ant Indicator	Dominance Tes	t workshoot:		
Tree Stratum (Plot size:)			es? Status	Number of Domi			
1					That Are OBL, F		0	_ (A)
2					Total Number of	Dominant		
3			_		Species Across A	All Strata:	1	_ (B)
4. Sapling/Shrub Stratum (Plot size			_ = Tota	l Cover	Percent of Domir That Are OBL, F		0	_ (A/B)
1	,				Prevalence Inde	ex worksheet:		
2.					Total % Cov	er of:	Multiply by:	_
3					OBL species	x ^	1 =	_
4					FACW species	x2	2 =	_
5					FAC species	x3	3 =	_
Hards Otractoria (Diatoria	. .		_ = Tota	l Cover	FACU species			
Herb Stratum (Plot size: r =	,	15	V	NII	UPL species			
Convolvulus arvensis unidentifiable grass/detritus					Column Totals:	(A	r)	_ (B)
3.					Prevalence	e Index = B/A =		_
4.					Hydrophytic Ve	getation Indicat	tors:	
5.					Dominance			
6					Prevalence			
7						cal Adaptations ¹ emarks or on a s		
8					Problematic		. ,	
Manda Vina Charles (Diet sine)	,	20	_ = Tota	al Cover	Floblematic	riyuropriyuc veç	getation (Expla	111)
Woody Vine Stratum (Plot size:					¹ Indicators of hyd	dric soil and wetl	and hydrology r	nust
1 2					be present.			
2.					Hydrophytic			
0/ Dave Created in Llash Charters	00 0/ 00				Vegetation	V	NI= v	
% Bare Ground in Herb Stratum	<u>80</u> % COV	ei oi biotic C	iust	U	Present?	Yes	INU X	-
Remarks:								

SOIL	Sampling Point: _	6	

Depth Matrix	e depth needed to document the indicator or co Redox Features	onnin the abs	ence of indicators.)
	Color (moist) % Type ¹ Lo	oc² Textu	re Remarks
0-16 7.5YR3/2 100)	cl	Fill material
			
<u> </u>			
¹Type: C=Concentration D=Depletion	, RM=Reduced Matrix, CS=Covered or Coated Sa	and Crains 2	Location: PL=Pore Lining, M=Matrix.
	to all LRRs, unless otherwise noted.)		ators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)		cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S6)		cm Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)		Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	F	Red Parent Material (TF2)
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)	c	Other (Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)		
Depleted Below Dark Surface (A1	, <u> </u>	31	atom of horder de tie constation and
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	<pre> Redox Depressions (F8) Vernal Pools (F9)</pre>		ators of hydrophytic vegetation and nd hydrology must be present,
Sandy Midcky Milleral (31) Sandy Gleyed Matrix (S4)	Vernai Foois (i 9)		s disturbed or problematic.
Restrictive Layer (if present):			o distance of problematic.
Type:			
Depth (inches):		Hydric	Soil Present? Yes No x
Remarks:		1,	
Soil profile described from steep sides	lone of ditch		
Con prome described from steep sides	rope of ditori.		
HYDROLOGY			
Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
	a sufficient\	.2	
Primary Indicators (any one indicator is			Water Marks (B1) (Riverine)
Surface Water (A1)	Salt Crust (B11)	-	Sediment Deposits (B2) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	-	Drift Deposits (B3) (Riverine)
Saturation (A3) Water Marks (B1) (Nonriverine)	Aquatic Invertebrates (B13)		Drainage Patterns (B10)
Sediment Deposits (B2) (Nonrive	 Hydrogen Sulfide Odor (C1) rine) — Oxidized Rhizospheres along Living 		Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Oxidized Kilizospheres along Living Presence of Reduced Iron (C4)	• , ,	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed S	-	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Image			Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)		FAC-Neutral Test (D5)
Field Observations:			
	No x Depth (inches):		
	No x Depth (inches): none to 16		
		Wetland Hydi	rology Present? Yes No x
(includes capillary fringe)			
Describe Recorded Data (stream gaug	ge, monitoring well, aerial photos, previous inspecti	ions), if availab	le:
Remarks:			

Project/Site: Central Valley Gas Storage Project		City/County:	Colusa County	Sam	pling Date: 6-26	3-09
Applicant/Owner: Central Valley Gas Storage, I	State:	<u>CA</u> Sampling Poi	nt:7			
Investigator(s): Butterworth Section, Township, Range:						
Landform (hillslope, terrace, etc.): basin floor		Local relief (concave, convex, r	ione): swale/ditch	Slope (%):	0-5
Subregion (LRR): C	Lat: _		Long:		Datum:	
Soil Map Unit Name: Alcapay clay, 0 to 1 percent s						
Are climatic / hydrologic conditions on the site typical						
Are Vegetation, Soilyes*, or Hydrolog	-				esent? Yes x	No
Are Vegetation, Soilyes*, or Hydrolog				d, explain any answers		
SUMMARY OF FINDINGS – Attach site n						, etc.
	No	13 1116 3	ampled Area			
	No		Wetland?	Yes <u>x</u>	No	
Remarks:						
Roadside ditch/railroad ditch. * Native soil profile h	as been truncated	approximately	6-12 inches.			
VEGETATION						
Tree Stratum (Plot size:)	Absolute % Cover	Dominant Ind Species? St	tatus	ce Test worksheet:		
1			That Are	of Dominant Species OBL, FACW, or FAC:	1	(A)
2			I Otal Nul	nber of Dominant Across All Strata:	1	(B)
4		= Total Cover		of Dominant Species OBL, FACW, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plot size:			Prevalen	ce Index worksheet:		
1 2				% Cover of:	Multiply by:	
3.				cies x		
4				pecies x		
5				cies x		
		= Total Cover		ecies x		
Herb Stratum (Plot size:r = 5 ft	_)			cies x		
1. <u>Lolium multiflorum</u>		<u>Y</u> !	Coldinii	otals: (A	A)	(B)
2. Picris echiodes		<u>N</u>		valaria da la da v		
3. <u>Lactuca serriola</u>				valence Index = B/A = ytic Vegetation Indica		-
4				inance Test is >50%	itors.	
5				ralence Index is ≤3.0 ¹		
6				phological Adaptations ¹	(Provide support	tina
7				ata in Remarks or on a		ung
8	112	= Total Cover	Prob	lematic Hydrophytic Ve	egetation ¹ (Explai	n)
1			be preser	rs of hydric soil and wet	land hydrology m	nust
2			i			
% Bare Ground in Herb Stratum 0 %	·	= Total Cover ust <u>0</u>	Vegetation	on	No	
Remarks:			l			

SOIL	Samplir
	Cumpiii

Sampling Point: 7										
Profile Des	scription: (Descr	ibe to the de	pth needed to docu	ment the	indicator	or confirm	n the absence	e of indicators.)		
Depth Matrix			Rede	ox Featur	es					
(inches)	Color (moist	:) %	Color (moist) % Type ¹ Loc ²			Loc ²	Texture	Remarks		
0-4	10YR3/1	80	7.5YR4/4	20	<u>C</u>	PL, M	cl	A1 (partly truncated by ditch excav.)		
4-16	10YR4/1	85	10YR4/4	15	С	M	С	A2		
			-	_	_					
-										
	_									
				_						
1Type: C=0	Concentration D-	Donlotion DA		S=Cover	end or Coate	ad Sand C	raina ² l aga	tion: PL=Pore Lining, M=Matrix.		
			II LRRs, unless othe			eu Sanu G		s for Problematic Hydric Soils ³ :		
Histos		piloubio to u	Sandy Red		oloui,			Muck (A9) (LRR C)		
	Epipedon (A2)		Stripped M	. ,)			Muck (A10) (LRR B)		
	Histic (A3)		Loamy Mu					ced Vertic (F18)		
	gen Sulfide (A4)		Loamy Gle	-			Red F	Parent Material (TF2)		
Stratific	ed Layers (A5) (LF	RR C)	Depleted N	/latrix (F3	3)		Other	(Explain in Remarks)		
1 cm M	Muck (A9) (LRR D))	x Redox Dar	k Surface	e (F6)					
	ed Below Dark Su		Depleted D							
	Dark Surface (A12	•	Redox Dep		(F8)			s of hydrophytic vegetation and		
	Mucky Mineral (S	•	Vernal Poo	ols (F9)				ydrology must be present,		
	Gleyed Matrix (S4						unless dis	turbed or problematic.		
	Layer (if presen									
Type:			_							
Depth (i	nches):		_				Hydric Soi	il Present? Yes x No		
Remarks:										
Pore linings	s (PL) are oxidized	d rhizosphere	S.							
IVDDOL	201									
HYDROL										
	ydrology Indicate						Seco	ondary Indicators (2 or more required)		
Primary Inc	dicators (any one in	ndicator is su	fficient)				\	Water Marks (B1) (Riverine)		
Surfac	e Water (A1)		Salt Crus	t (B11)				Sediment Deposits (B2) (Riverine)		
High W	/ater Table (A2)		Biotic Cru	ıst (B12)			[Drift Deposits (B3) (Riverine)		
Satura	tion (A3)		Aquatic Ir	nvertebra	tes (B13)		[Drainage Patterns (B10)		
Water	Marks (B1) (Nonr i	iverine)	Hydroger	Sulfide (Odor (C1)		[Dry-Season Water Table (C2)		
Sedime	ent Deposits (B2)	(Nonriverine) <u>x</u> Oxidized	Rhizosph	eres along	Living Roo	ots (C3)	Thin Muck Surface (C7)		
Drift De	eposits (B3) (Non ı	riverine)	Presence	of Redu	ced Iron (C	4)	(Crayfish Burrows (C8)		
Surfac	Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C9)									
Inunda	Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3)							Shallow Aquitard (D3)		
Water-Stained Leaves (B9)										
Field Obse	ervations:									
Surface Wa	ater Present?	Yes	No x Dept	h (inches): <u></u>					
Water Tabl	e Present?	Yes	No x Dept	h (inches): <u>none to 1</u>	16				
							Wetland Hydrology Present? Yes x No			

Minor biotic crust in places.

(includes capillary fringe)

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

Remarks:

Project/Site: Central Valley Gas	Storage Project		City	y/Cou	ınty: <u>Colu</u>	usa County	Sam	ıpling Date: <u>6-2</u>	<u>26-09</u>
Applicant/Owner: Central Vall	ey Gas Storage, LLC					State: <u>CA</u>	_ Sampling Poi	int: <u>8</u>	
Investigator(s): Butterworth			Sec	ction,	Township,	Range:			
Landform (hillslope, terrace, etc.):	basin floor		Loc	cal rel	ief (concav	e, convex, none): _	planar	Slope (%): _	0
Subregion (LRR):C	_	Lat:				Long:		Datum:	
Soil Map Unit Name: Alcapay cla	y, 0 to 1 percent slopes	(155)				NWI c	lassification:		
Are climatic / hydrologic conditions of	on the site typical for th	is time of yea	ar?	Υ	es x No	(If no, explain	in Remarks.)		
Are Vegetation, Soil								resent? Yes _>	xNo
Are Vegetation, Soil		_	_						
SUMMARY OF FINDINGS –									
Hydrophytic Vegetation Present?	Yes No _	~							
Hydric Soil Present?	Yes No _				e Sampled				
Wetland Hydrology Present?				with	in a Wetlar	nd? Y€		Nox	
VEGETATION									
VEGETATION		Absolute	Dom	inant	Indicator	Dominance Test	t worksheet:		
Tree Stratum (Plot size:1		% Cover	Spec	cies?	Status	Number of Domir That Are OBL, FA	nant Species	0	_ (A)
2						Total Number of Species Across A		3	_ (B)
4. Sapling/Shrub Stratum (Plot size						Percent of Domir That Are OBL, FA		0	_ (A/B)
1						Prevalence Inde	x worksheet:		
2.						Total % Cove	er of:	Multiply by:	
3						OBL species _	x	. 1 =	_
4						FACW species _	X	2 =	_
5						FAC species _			
Harb Stratum (Diet size) r	_ E # \		_ = To	tal Co	over	FACU species _			
Herb Stratum (Plot size:r 1Bromus hordeaceous		40	~		FACU	UPL species _			
					NL	Column Totals: _	(A	4)	_ (B)
Centaurea solstitialis						Prevalence	Index = B/A =		_
4. Latuca serriola						Hydrophytic Veg	getation Indica	itors:	
5.						Dominance	Test is >50%		
6						Prevalence			
7						Morphologic	al Adaptations ¹	(Provide suppo separate sheet)	rting
8						Problematic		•	
Woody Vine Stratum (Plot size:)	105	_ = To	tal Co	over	i iobiematic	Trydrophytic ve	getation (Expir	3111)
1.						¹ Indicators of hyd be present.	fric soil and wet	land hydrology i	must
2						Hydrophytic			
% Bare Ground in Herb Stratum _	0 % Cove					Vegetation	Yes	_ Nox	_
Remarks:									

SOIL	Sampling Point: 8

Profile Descri	ption: (Descri	be to the dep	th need	ed to docun	nent the ir	ndicator o	or confirm	the absen	ce of indicators.)
Depth _	Matrix				x Features	<u> </u>			
(inches)	Color (moist)	%	Colo	r (moist)	<u></u> %	Type ¹	Loc ²	Texture	Remarks
0-17 1	I0YR3/2	100						sicl	3% gravel
					· 				
								-	
			-		· ——			-	_
									<u> </u>
	centration, D=D						d Sand Gr		cation: PL=Pore Lining, M=Matrix.
Hydric Soil In	dicators: (App	licable to all	LRRs, u	ınless other	wise note	ed.)		Indicato	rs for Problematic Hydric Soils ³ :
Histosol (A	A1)			Sandy Redo	x (S5)			1 cn	n Muck (A9) (LRR C)
	pedon (A2)			Stripped Ma	. ,				n Muck (A10) (LRR B)
Black Histi	. ,			Loamy Muc		(F1)			uced Vertic (F18)
	Sulfide (A4)			Loamy Gley	,	` '			Parent Material (TF2)
	_ayers (A5) (LR	R C)		Depleted Ma		(- –)			er (Explain in Remarks)
	k (A9) (LRR D)	- /		Redox Dark		F6)		_	- ()
	Below Dark Sur	face (A11)		Depleted Da	,	,			
	k Surface (A12)			Redox Depr		. ,		3Indicate	ors of hydrophytic vegetation and
	cky Mineral (S1)		Vernal Pool		σ,			hydrology must be present,
-	eyed Matrix (S4)			voman con	J (1 J)				isturbed or problematic.
	yer (if present)							1111000 4	istance of problematic.
_									
,. <u> </u>									
Depth (inches):						Hydric S	oil Present? Yes No x		
Remarks:									
Native profile.									
HYDROLOG	iΥ								
Wetland Hydr	ology Indicato	rs:						Sec	condary Indicators (2 or more required)
-	tors (any one in		icient)						Water Marks (B1) (Riverine)
-		diodioi io odii	ioiority	0-4-04	(D44)				
Surface W			-	Salt Crust				_	Sediment Deposits (B2) (Riverine)
High Wate	er Table (A2)			Biotic Crus				_	Drift Deposits (B3) (Riverine)
Saturation	ı (A3)			Aquatic Inv	ertebrates	s (B13)		_	Drainage Patterns (B10)
Water Mar	rks (B1) (Nonri v	/erine)	_	Hydrogen	Sulfide Od	or (C1)		_	Dry-Season Water Table (C2)
Sediment	Deposits (B2) (I	Nonriverine)		Oxidized R	hizospher	es along l	_iving Roo	ots (C3)	Thin Muck Surface (C7)
Drift Depo	sits (B3) (Nonri	verine)		Presence of	of Reduce	d Iron (C4)		Crayfish Burrows (C8)
	oil Cracks (B6)	,		Recent Iro				· <u></u>	Saturation Visible on Aerial Imagery (C9)
	n Visible on Aeri	al Imageny (B		Thin Muck			00 00110 (Shallow Aquitard (D3)
			'') <u> </u>						
	ined Leaves (B	9)		Other (Exp	iain in Rei	narks)			FAC-Neutral Test (D5)
Field Observa	ations:								
Surface Water	Present?	Yes	No x	Depth	(inches):				
Water Table P	resent?	Yes	No x	Depth	(inches):_i	none to 17	7		
Saturation Pres	sent?	Yes	No x	Depth	(inches): ı	none to 17	Wetla	and Hydrol	ogy Present? Yes No x
(includes capill		. 00			(o.,oo). <u>.</u>		-	,	
		am gauge, m	onitoring	well, aerial p	hotos, pre	vious insp	pections),	if available:	
	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:	Pomarke:								
remains.									

Project/Site: Central Valley Gas Storage Project		City/Coun	ty: <u>Colι</u>	usa County S	ampling Date: 6-26	6-09
Applicant/Owner: Central Valley Gas Storage, LI	LC		State: <u>CA</u> Sampling	Point: 9		
Investigator(s): Butterworth		Section, T	ownship,	Range:		
Landform (hillslope, terrace, etc.): basin floor		Local relie	ef (concav	e, convex, none): <u>concave</u>	Slope (%):	0
Subregion (LRR): C	Lat:			Long:	Datum:	
Soil Map Unit Name: Alcapay clay, 0 to 1 percent sle	opes (155)			NWI classification:	<u> </u>	
Are climatic / hydrologic conditions on the site typical for	or this time of yea	ar? Ye	es <u>x</u> No	(If no, explain in Remarks	.)	
Are Vegetation, Soil, or Hydrology	_					x No
Are Vegetation, Soil, or Hydrology					swers in Remarks.)	
SUMMARY OF FINDINGS – Attach site ma						
Hydrophytic Vegetation Present? Yesx	Nο					
Hydric Soil Present? Yes x		15 1116	Sampled		No	
Wetland Hydrology Present? Yesx	No	withir	ı a wetiai	id? Yes X	No	
Remarks:						
Marginal seasonal wetland.						
VEGETATION						
Tree Stratum (Plot size:)	Absolute % Cover	Dominant I Species?		Dominance Test worksheet		
1				Number of Dominant Species That Are OBL, FACW, or FAC		(A)
2				Total Number of Dominant Species Across All Strata:	3	_ (B)
4				Percent of Dominant Species	3	
Sapling/Shrub Stratum (Plot size:		= Total Cov	er	That Are OBL, FACW, or FAC	D: <u>100</u>	(A/B)
1				Prevalence Index workshee	et:	
2.				Total % Cover of:	Multiply by:	_
3				OBL species	x 1 =	_
4				FACW species	x 2 =	=
5	-			FAC species		
Herb Stratum (Plot size: r = 5 ft		= Total Cov	er	FACU species	· · · · · · · · · · · · · · · · · · ·	_
1. Lolium multiflorum	, 50	Υ	FAC	UPL species		
Cynodon dactylon		Y		Column Totals:	(A)	_ (B)
Leymus triticoides		<u> Y</u>	FACW	Prevalence Index = B/A	Δ =	_
4. Rumex crispus	3	N	FACW	Hydrophytic Vegetation Ind	licators:	
5. Avena sp.	3	<u>N</u>	NL	x Dominance Test is >50%		
6. Bromus hordeaceous	2	<u>N</u>	FACU	Prevalence Index is ≤3.0		
7				Morphological Adaptation data in Remarks or or		
8				Problematic Hydrophytic	• • • • • • • • • • • • • • • • • • • •	
Woody Vine Stratum (Plot size:)	<u>108</u>	= Total Cov	er/		(=-4	,
1				¹ Indicators of hydric soil and v	wetland hydrology n	nust
2.				be present.		
		= Total Cov	/er	Hydrophytic Vegetation	No	
% Bare Ground in Herb Stratum 0	JOVEI OI DIOUC CI	ust <u>U</u>		Present? Yes x	No	-
Remarks:						

SOIL	Sampling Point: _	9

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature				
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-5	10YR4/1	70	10YR4/6	30	С	PL, M	С	A1
5-11	10YR3/1	100						Λ1
5-11	10113/1	100					<u>C</u>	<u>A1</u>
			•	-				
1		I-ti DM	Deduced Metric Of		-1 04-	-1010-	21	Since DL Dans Linius M Matrix
			=Reduced Matrix, CS LRRs, unless other			a Sana Gr		tion: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
-		able to all			eu.)			•
Histosol			Sandy Red	. ,				Muck (A9) (LRR C)
	oipedon (A2)		Stripped Ma		1 (54)			Muck (A10) (LRR B)
Black Hi	` '		Loamy Muc	•	` '			ced Vertic (F18)
	n Sulfide (A4)	•	Loamy Gley					arent Material (TF2)
	d Layers (A5) (LRR (•)	Depleted M x Redox Dar				Other	(Explain in Remarks)
	ick (A9) (LRR D) d Below Dark Surfac	o (A11)			` '			
		e (ATT)	Depleted				3Indicators	of hydrophytic vegetation and
	ark Surface (A12)		Vernal Pool		,FO)			drology must be present,
-	Mucky Mineral (S1) Gleyed Matrix (S4)		vernai Poor	S (F9)			-	curbed or problematic.
	Layer (if present):						T UTILESS GIST	urbed or problematic.
, —							1	
Depth (inches):							Hydric Soil	Present? Yes x No
Remarks:								
Native profile) .							
Pore linings	(PL) are oxidized rhiz	zospheres.						
	CV							
HYDROLO								
-	drology Indicators:						· ·	ndary Indicators (2 or more required)
Primary Indic	cators (any one indic	ator is suffi	cient)				v	Vater Marks (B1) (Riverine)
Surface	Water (A1)		Salt Crust	(B11)			s	Sediment Deposits (B2) (Riverine)
High Wa	iter Table (A2)		Biotic Crus	st (B12)			0	Orift Deposits (B3) (Riverine)
Saturation	on (A3)		Aquatic In	vertebrate	es (B13)		0	Orainage Patterns (B10)
Water M	arks (B1) (Nonriver	ine)	Hydrogen					Ory-Season Water Table (C2)
	nt Deposits (B2) (No					Livina Roo	·	Thin Muck Surface (C7)
· · · · · · · · · · · · · · · · · · ·	oosits (B3) (Nonrive	•	Presence		_	_		Crayfish Burrows (C8)
	Soil Cracks (B6)	,	Recent Iro					Saturation Visible on Aerial Imagery (C9)
	on Visible on Aerial I	magany (P	·			vea oons (e		Shallow Aquitard (D3)
		mayery (b					· · · · · · · · · · · · · · · · · · ·	, , ,
	tained Leaves (B9)		Other (Exp	nain in Re	emarks)			AC-Neutral Test (D5)
Field Obser								
Surface Wat			No x Depth	,				
Water Table	Present? Y	es	No x Depth	(inches):	none to 1	1		
Saturation P		es	No x Depth	(inches):	none to 1	1 Wetla	and Hydrolog	y Present? Yes x No No
(includes cap		naline m	onitoring well, aerial	nhotos n	revious inc	nections)	if available	
Describe Ne	colded Data (Stream	gauge, m	milloring well, aeriai į	Jilotos, pi	evious iris	spections),	ii available.	
D1								
Remarks:								

Project/Site: Central Valley Gas S	Storage Project		City/	County: Colu	usa County	Sam	pling Date: <u>6-2</u>	26-09
Applicant/Owner: Central Valle	ey Gas Storage, LLC		State: <u>CA</u>	Sampling Poir	nt: <u>10</u>			
Investigator(s): Butterworth			Sect	tion, Township,	Range:			
Landform (hillslope, terrace, etc.):	basin floor		Loca	al relief (concav	e, convex, none):	planar	Slope (%): _	50
Subregion (LRR): C		Lat:			Long:		Datum:	
Soil Map Unit Name: Alcapay clay								
Are climatic / hydrologic conditions o								
Are Vegetation, Soil		-					esent? Yes x	No
Are Vegetation, Soilyes*						lain any answers		
SUMMARY OF FINDINGS –						-		s, etc.
Lludrophytic Vagatation Procent?	Vac No							
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No Yes No			s the Sampled				
Wetland Hydrology Present?			١ ١	within a Wetla	nd?	/es I	No <u>x</u>	
Remarks:			<u> </u>					
Sideslope of railroad bed. * Railroad ballast.								
VEGETATION								
Tree Stratum (Plot size:)	Absolute % Cover		nant Indicator es? Status	Number of Dom			
1						FACW, or FAC:	1	_ (A)
2 3					Total Number o Species Across		2	_ (B)
4					Percent of Dom That Are OBL, I	inant Species FACW, or FAC:	50	_ (A/B)
Sapling/Shrub Stratum (Plot size					Prevalence Ind			
1. 2.						ver of:	Multiply by:	
3						X		
4.						x		
5.						x		
					FACU species	x	4 =	_
Herb Stratum (Plot size:r =					-	x		
Sorghum halepense			35		Column Totals:	(A	١)	_ (B)
Lactuca serriola Avena sp.			30 5		Prevalenc	e Index = B/A =		
4. Leymus triticoides						egetation Indica		
5					Dominance	_		
6.					Prevalence	e Index is ≤3.0 ¹		
7.						ical Adaptations ¹		
8						Remarks or on a s		
Woody Vine Stratum (Plot size:)	<u>75</u>	_ = Tota	al Cover	Problemati	c Hydrophytic Ve	getation (Expla	ain)
1 2					¹ Indicators of hy be present.	dric soil and wetl	iand hydrology r	must
% Bare Ground in Herb Stratum			_ = Tota	al Cover	Hydrophytic Vegetation Present?	Yes	No <u>x</u>	_
Remarks:					1			

SOIL	Sampling Point:	10	

Profile Desc	cription: (Descril	oe to the dept	h needed to docu	ment the i	ndicator o	or confirm	n the absence	of indicators.)
Depth	Matrix			ox Features	4			
(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc ²	<u>Texture</u>	Remarks Remarks
0-15	See remarks bel	<u>ow</u>					egrls	Fill material
	-							
							-	
1							. 3.	
			Reduced Matrix, C			d Sand Gr		tion: PL=Pore Lining, M=Matrix.
-		licable to all L	RRs, unless othe		ea.)			for Problematic Hydric Soils ³ :
Histosol	` '		Sandy Rec				·	Muck (A9) (LRR C)
	pipedon (A2)		Stripped M		L (E4)			Muck (A10) (LRR B)
	istic (A3)		Loamy Mu	•	, ,			ced Vertic (F18)
	en Sulfide (A4) d Layers (A5) (LR I	B C)	Loamy Gle Depleted N	-	(FZ)			arent Material (TF2) (Explain in Remarks)
· 	uck (A9) (LRR D)	K C)	Redox Dar		F6)		Other	(Explain in Remarks)
	d Below Dark Surf	ace (A11)	Depleted D					
	ark Surface (A12)	400 (7111)	Redox Dep				3Indicators	of hydrophytic vegetation and
	Mucky Mineral (S1)	Vernal Poo		-,			drology must be present,
-	Sleyed Matrix (S4)		<u> </u>	,			-	turbed or problematic.
Restrictive	Layer (if present)):						·
_								
	ches):						Hydric Soil	Present? Yes No x
Remarks:							,	
	avolly loamy cand	I railroad balla	st: insufficient fine	oarth to do	ormino co	lor of mate	riv	
Extremely gr	avelly loanly saile	Tallioad ballas	st. Ilisuilicient illie t	saitii to dei	emine co	ioi oi iiiati	IIA.	
HYDROLO	GY							
Wetland Hy	drology Indicator	rs:					Seco	ndary Indicators (2 or more required)
Primary India	cators (any one in	dicator is suffic	cient)				v	Vater Marks (B1) (Riverine)
Surface	Water (A1)		Salt Crus	t (B11)			S	Sediment Deposits (B2) (Riverine)
	ater Table (A2)		Biotic Cru	` '				Prift Deposits (B3) (Riverine)
Saturation			Aquatic Ir		s (B13)			Orainage Patterns (B10)
	larks (B1) (Nonri v	rerine)	Hydrogen					Ory-Season Water Table (C2)
· 	nt Deposits (B2) (I	,				iving Roc		Thin Muck Surface (C7)
	posits (B3) (Nonri			of Reduce	_	_		Crayfish Burrows (C8)
	Soil Cracks (B6)	· · · · · · · · · · · · · · · · · · ·		on Reducti				Saturation Visible on Aerial Imagery (C9)
	on Visible on Aeria	al Imagery (B7		k Surface (ca cons (Shallow Aquitard (D3)
	stained Leaves (B			plain in Re				FAC-Neutral Test (D5)
Field Obser	•	,,	Outer (Ex	piairiiiii	marks)			AO-Neutral Test (B3)
Surface Wat		Voc	No v Dont	h (inahaa):				
			No x Dept			_		
Water Table		·	No x Dept	, , ,		_		
Saturation P		Yes	No <u>x</u> Dept	h (inches):	none to 15	<u> Wetl</u>	and Hydrolog	y Present? Yes No x
(includes cap Describe Re		am gauge, moi	nitoring well, aerial	photos, pr	evious inst	pections).	if available:	
	(33-,	3	1,		,,		
Remarks:								
rtemarks.								

Project/Site: Central Valley Gas Storage Project		City/Cou	nty: <u>Colu</u>	ısa County	Samp	ling Date: <u>6-2</u>	6-09
Applicant/Owner: Central Valley Gas Storage, LLC				State: CA	Sampling Poin	t: <u>11</u>	
Investigator(s): Butterworth		Section,	Township,	Range:			
Landform (hillslope, terrace, etc.):basin floor		_ Local rel	ief (concav	e, convex, none): _	ditch	_ Slope (%):	0
Subregion (LRR): C	Lat:			Long:		Datum:	
Soil Map Unit Name: Alcapay clay, 0 to 1 percent slopes							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soilves*, or Hydrology	-			Are "Normal Cire		sent? Yes x	No
Are Vegetation, Soilves*, or Hydrology _ves							
SUMMARY OF FINDINGS – Attach site map s					-		s, etc.
Hydrophytic Vogotation Propent? Vog v No							
Hydrophytic Vegetation Present? Yes x No Hydric Soil Present? Yes x No No		15 111	e Sampled				
Wetland Hydrology Present? Yes x No			in a Wetlar		es <u>x</u> N	10	
Remarks:		l.					
* Native soil profile has been truncated. ** Water in ditch	n assumed t	o be irrigati	on tailwatei	from rice paddy.			
VEGETATION				<u>, </u>			
Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?		Dominance Tes			
1				Number of Domi That Are OBL, F.		2	(A)
2				Total Number of Species Across		2	(B)
4		= Total Co		Percent of Domi		100	(A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Inde	ex worksheet:		
1					er of:	Multiply by:	
3.				OBL species			
4.				FACW species			
5				FAC species	x 3	3 =	_
		= Total Co		FACU species	x 4	\ =	_
Herb Stratum (Plot size: r = 5 ft)				UPL species			
1. Schoenoplectus acutus		<u>Y</u>		Column Totals:	(A)	_ (B)
Polygonum sp. Rumex crispus		<u>Y</u> N		Prevalence	e Index = B/A =		
Xanthium strumarium				Hydrophytic Ve			
5				x Dominance	Test is >50%		
6				Prevalence	Index is ≤3.0 ¹		
7				Morphologic	cal Adaptations ¹ (Provide suppor	ting
8					emarks or on a s		
Woody Vine Stratum (Plot size:)	90	= Total Co	over	Problematio	: Hyaropnytic veç	jetation (Expia	in)
1 2				¹ Indicators of hydbe present.	dric soil and wetla	and hydrology n	nust
% Bare Ground in Herb Stratum10 % Cover		= Total Co	over	Hydrophytic Vegetation Present?	Yes <u>x</u>	No	_
Remarks:				•			

SOIL	Sampling Point: _	11

Profile Description:	(Describe to the	depth neede	ed to docun	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix			K Features	-	. 2		
<u>(inches)</u> Cold	or (moist) %	Color	r (moist)	%	Type'	Loc ²	<u>Texture</u>	Remarks
See Remark	s below							
	-							
¹ Type: C=Concentra	tion D-Dopletion	DM-Doduco	d Matrix, CS	-Covered	d or Cooto	d Sand Cr	raina ² l acati	on: PL=Pore Lining, M=Matrix.
Hydric Soil Indicate						u Sanu Gi		for Problematic Hydric Soils ³ :
Histosol (A1)	ioi (rippiiousio te		Sandy Redo		ou.,			fuck (A9) (LRR C)
Histic Epipedon	(A2)		Stripped Ma	. ,				fuck (A10) (LRR B)
Black Histic (A3)			Loamy Mucl		l (F1)			ed Vertic (F18)
Hydrogen Sulfide			Loamy Gley	-	. ,			arent Material (TF2)
Stratified Layers			Depleted Ma				x Other	(Explain in Remarks)
1 cm Muck (A9)			Redox Dark	Surface ((F6)			
	Dark Surface (A11	_	Depleted Da		. ,		•	
Thick Dark Surfa	` '		Redox Depr		F8)			of hydrophytic vegetation and
Sandy Mucky Mi			Vernal Pools	s (F9)			-	drology must be present,
Sandy Gleyed M Restrictive Layer (if							uniess distu	urbed or problematic.
_								
, <u> </u>							Undeia Cail	Brancost 2 Van v. Na
Depth (inches):							Hydric Soil	Present? Yes x No
Remarks:								
water in bottom of dit			y near-vertic	al sidesio	pe of ditch	n banks. H	lydric soil assu	med to be present based on standing
water in bottom or an	on (aquio moistare	regime).						
HYDROLOGY								
Wetland Hydrology	Indicators:						Secon	dary Indicators (2 or more required)
Primary Indicators (a	ny one indicator is	sufficient)					W	/ater Marks (B1) (Riverine)
x Surface Water (A	A1)		Salt Crust	(B11)			Se	ediment Deposits (B2) (Riverine)
High Water Tabl	e (A2)		Biotic Crus	t (B12)			Di	rift Deposits (B3) (Riverine)
Saturation (A3)			Aquatic Inv	ertebrate/	s (B13)		Di	rainage Patterns (B10)
Water Marks (B1) (Nonriverine)	_	Hydrogen	Sulfide Od	dor (C1)		Dı	ry-Season Water Table (C2)
Sediment Depos	its (B2) (Nonriveri	ne)	Oxidized R	hizosphe	res along l	Living Roof	ts (C3) Th	hin Muck Surface (C7)
Drift Deposits (B	3) (Nonriverine)	_	Presence of	of Reduce	d Iron (C4	.)	Cı	rayfish Burrows (C8)
Surface Soil Cra	cks (B6)		Recent Iro	n Reduction	on in Plow	ed Soils (C	C6) Sa	aturation Visible on Aerial Imagery (C9)
Inundation Visible	e on Aerial Imager	y (B7)	Thin Muck	Surface (C7)		SI	hallow Aquitard (D3)
Water-Stained L	eaves (B9)	_	Other (Exp	lain in Re	marks)		F/	AC-Neutral Test (D5)
Field Observations:								
Surface Water Prese	nt? Yes x	No	Depth	(inches):	8			
Water Table Present	? Yes	No	Depth	(inches):	0			
Saturation Present?	Yes	No	Depth	(inches):	0	Wetla	and Hydrology	y Present? Yes x No
(includes capillary fri		monitorin = :	wall carial :	hotos r=	ovious is s	nootices) :	if available:	
Describe Recorded I	ata (stream gauge	, monitoring v	weii, aeriai p	niolos, pro	evious ins	peciions), I	ıı avalladie:	
Remarks:								

Project/Site: Central Valley Gas Storage Project		City/County: Colu	isa County	Samp	ling Date: <u>6-2</u>	6-09
Applicant/Owner: Central Valley Gas Storage, LLC			State: CA	_ Sampling Poin	t: <u>12</u>	
Investigator(s): Butterworth		_ Section, Township, I	Range:			
Landform (hillslope, terrace, etc.):basin floor		_ Local relief (concave	e, convex, none): _	levee road	_ Slope (%):	0
Subregion (LRR): C	Lat:		Long:		_ Datum:	
Soil Map Unit Name: Alcapay clay, 0 to 1 percent slopes						
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation <u>yes*</u> , Soil <u>yes*</u> , or Hydrology	-				ent? Yes v	No
Are Vegetation, Soil, or Hydrology						
SUMMARY OF FINDINGS – Attach site map s				-		s, etc.
Lludranhutia Vagatatian Brasant2 Vaga v. Na						
Hydrophytic Vegetation Present? Yes x No Hydric Soil Present? Yes x No		Is the Sampled				
Wetland Hydrology Present? Yes x No		within a Wetlan		es <u>x</u> N	lo	
Remarks:						
* Levee road: vegetation removed by blading. ** Soil con	sists of fill ma	iterial				
VEGETATION						
Tree Stratum (Plot size:)		Dominant Indicator Species? Status	Dominance Tes			
1			Number of Domi		n/a	_ (A)
2			Total Number of Species Across A		n/a	(B)
4		= Total Cover	Percent of Domir That Are OBL, F.	nant Species ACW, or FAC:	n/a	_ (A/B)
Sapling/Shrub Stratum (Plot size:) 1			Prevalence Inde	ex worksheet:		
2				er of:	Multiply by:	
3.			OBL species			
4.			FACW species			
5			FAC species			
		= Total Cover	FACU species			
Herb Stratum (Plot size: r = 5 ft)			UPL species	x 5	i =	_
1. (barren)			Column Totals:	(A)		_(B)
2			Prevalence	e Index = B/A =		
3			Hydrophytic Ve			_
4			Dominance	_	013.	
5			Prevalence			
6				cal Adaptations ¹ (Provide suppor	rtina
8			data in R	emarks or on a s	eparate sheet)	
Woody Vine Stratum (Plot size:)		= Total Cover	Problematic	: Hydrophytic Veg	jetation ¹ (Expla	nin)
1			¹ Indicators of hyd	dric soil and wetla	and hydrology r	must
2			be present.			
% Bare Ground in Herb Stratum 100 % Cover		= Total Cover	Hydrophytic Vegetation Present?	Yes	No <u>x</u>	_
Remarks:			<u> </u>			
Freshly graded levee road.						

SOIL	Sampling Point:12

Profile Desc	ription: (Describ	e to the de	pth need	ed to docun	nent the i	ndicator	or confirm	n the absen	ce of indicators.)
Depth	Matrix				K Feature:				
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-16	10YR4/1	65	7.5YR4	/6	35	С	M	С	Fill material
		·	-		· ——	-			<u> </u>
									<u> </u>
			·-			·-	·-	•	
			-		· ——	-		-	
¹ Type: C=Co	oncentration, D=D	epletion, RM	l=Reduce	d Matrix, CS	=Covered	d or Coate	ed Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (App	licable to al	l LRRs, u	nless other	wise not	ed.)		Indicato	ors for Problematic Hydric Soils ³ :
Histosol	(A1)			Sandy Redo	x (S5)			1 cr	m Muck (A9) (LRR C)
Histic Ep	pipedon (A2)			Stripped Ma	trix (S6)			2 cr	m Muck (A10) (LRR B)
Black Hi	stic (A3)			Loamy Mucl	ky Minera	I (F1)		Rec	duced Vertic (F18)
Hydroge	n Sulfide (A4)			Loamy Gley	ed Matrix	(F2)		Rec	d Parent Material (TF2)
Stratified	l Layers (A5) (LR I	R C)		Depleted Ma	atrix (F3)			Oth	er (Explain in Remarks)
1 cm Mu	ick (A9) (LRR D)			Redox Dark					
	d Below Dark Surf	ace (A11)		Depleted Da				0	
	ark Surface (A12)			Redox Depr		F8)			ors of hydrophytic vegetation and
-	lucky Mineral (S1)			Vernal Pools	s (F9)				hydrology must be present,
	Sleyed Matrix (S4)							unless o	disturbed or problematic.
_	_ayer (if present)								
Туре:			-						
Depth (inc	ches):		-					Hydric S	oil Present? Yes No x
Remarks:								· ·	
Fill material:	Sharp boundaries	on redox fe	atures ass	sumed to be	inherited	from soul	ce area fro	om which so	il was taken.
Soil profile de	escribed from stee	ep sideslope	of ditch.						
, , , , , , , , , , , , , , , , , , ,		.,							
HYDROLO	GY								
Wetland Hyd	drology Indicator	s:						<u>Se</u>	condary Indicators (2 or more required)
Primary Indic	cators (any one inc	dicator is suf	ficient)						Water Marks (B1) (Riverine)
Surface	Water (A1)			Salt Crust	(B11)				Sediment Deposits (B2) (Riverine)
	iter Table (A2)			Biotic Crus					Drift Deposits (B3) (Riverine)
Saturation				Aquatic Inv		s (B13)			Drainage Patterns (B10)
	arks (B1) (Nonriv	erine)		Hydrogen					Dry-Season Water Table (C2)
	nt Deposits (B2) (N					` '	Living Ro		Thin Muck Surface (C7)
	oosits (B3) (Nonri			Presence of		_	_		Crayfish Burrows (C8)
	Soil Cracks (B6)	verific)		Recent Iro					Saturation Visible on Aerial Imagery (C9)
·	, ,	al Imagony (E		Thin Muck			veu Solis (
	on Visible on Aeria				,				Shallow Aquitard (D3)
	tained Leaves (B9	"	_	Other (Exp	iain in Re	emarks)	1		FAC-Neutral Test (D5)
Field Observ									
Surface Water	er Present?		-	Depth	, ,				
Water Table	Present?	Yes	No <u>x</u>	Depth	(inches):	none to 1	<u>6</u>		
Saturation Pr		Yes	No x	Depth	(inches):	none to 1	6 Wetl	and Hydrol	ogy Present? Yes No x
(includes cap		am acues	onitoria	woll contri	hotos ==	ovious !==	nootio\	if available:	
Describe Red	corded Data (strea	am gauge, m	ionitoring	well, aerial p	motos, pr	evious ins	spections),	if available:	
Remarks:			_			_			

Project/Site: Central Valley Gas	Storage Project		City/County:	Colusa County	Samp	ling Date: 6-26-09
Applicant/Owner: Central Val	ley Gas Storage, LLC			State:	CA Sampling Point	t: <u>13</u>
Investigator(s): Butterworth			Section, Townsh	nip, Range:		
Landform (hillslope, terrace, etc.): _	basin floor		Local relief (cond	cave, convex, noi	ne): <u>none (planed)</u>	_ Slope (%):0
Subregion (LRR):C		Lat:		Long:		_ Datum:
Soil Map Unit Name: Willows silt						
Are climatic / hydrologic conditions of						
Are Vegetation, Soil		-				sent? Ves v No
Are Vegetation <u>yes**</u> , Soil					explain any answers in	
SUMMARY OF FINDINGS –				•		
Hydrophytic Vegetation Present?	Yes <u>x</u> No _		is the samp	led Area		
Hydric Soil Present?	Yes <u>x</u> No _			tland?	Yes <u>x</u> N	lo
Wetland Hydrology Present? Remarks:	Yes <u>x</u> No _					_
* Area is normally flood irrigated.	** Seeded rice.					
VEGETATION						
		Absolute	Dominant Indicate		e Test worksheet:	
Tree Stratum (Plot size:1	,		Species? Status	- Nullibel of i	Dominant Species BL, FACW, or FAC:	1 (A)
2. 3.					per of Dominant cross All Strata:	1 (B)
4			= Total Cover		Dominant Species BL, FACW, or FAC:	100 (A/R)
Sapling/Shrub Stratum (Plot size						100 (100)
1				_	e Index worksheet:	N.A. delantina la con
2					6 Cover of: x 1	
3					cies x 2	
4					es x3	
5			= Total Cover		cies x 4	
Herb Stratum (Plot size:r	= 5 ft)		- Total Cover		es x 5	
1. Oryza sativa		100	Y OBL	-	tals:(A)	
2					llence Index = B/A = _	
4					ic Vegetation Indicate	
5.				<u>x</u> Domin	ance Test is >50%	
6.					ence Index is ≤3.01	
7 8				Morph	ological Adaptations ¹ (la in Remarks or on a se	Provide supporting eparate sheet)
Woody Vine Stratum (Plot size:			= Total Cover	Proble	matic Hydrophytic Veg	etation ¹ (Explain)
1.				Indicators of be present.	of hydric soil and wetla	and hydrology must
2			= Total Cover	Hydrophyti Vegetation		
% Bare Ground in Herb Stratum _	0 % Cove	r of Biotic Cr	rust0	Present?		No
Remarks:						

SOIL	Sampling Point: _	13

	1 (1 (B) 11 (1)							7 10 10 10 10 10 10 10 10 10 10 10 10 10
	scription: (Describe to the	e depth nee				or confirn	n the absence of	of indicators.)
Depth (inches)	Matrix Color (moist)	— — — — — — — — — — — — — — — — — — —	Redox lor (moist)	x Features %	Type ¹	Loc ²	Texture	Remarks
(IIIOIICO)		/0	ioi (iiioiot)		Турс		Texture	Kemano
	(see below)							
								
	- <u></u>							
	·			-				
¹Type: C=C	Concentration, D=Depletion	n. RM=Redu	ced Matrix. CS	=Covered	or Coate	d Sand Gi	rains. ² Locatio	on: PL=Pore Lining, M=Matrix.
	Indicators: (Applicable							or Problematic Hydric Soils ³ :
Histoso	ol (A1)		Sandy Redo	x (S5)			1 cm M	uck (A9) (LRR C)
	Epipedon (A2)	_	_ Stripped Ma	trix (S6)				uck (A10) (LRR B)
Black H	Histic (A3)	_	_ Loamy Mucl	ky Minera	l (F1)		Reduce	d Vertic (F18)
	en Sulfide (A4)	_	Loamy Gley	ed Matrix	(F2)		Red Pa	rent Material (TF2)
	ed Layers (A5) (LRR C)	_	_ Depleted Ma				Other (E	Explain in Remarks)
	luck (A9) (LRR D)	—	_ Redox Dark					
	ed Below Dark Surface (A	l1) <u> </u>	_ Depleted Da				31	f budaan buda waxadada a anad
	Park Surface (A12)	_	_ Redox Depr		-8)			of hydrophytic vegetation and
	Mucky Mineral (S1) Gleyed Matrix (S4)	_	_ Vernal Pools	s (F9)				rology must be present, rbed or problematic.
	Layer (if present):						unicas dista	ribed of problematic.
	nches):						Hydric Soil F	Present? Yes x No
Remarks:	iciics).						Tryunc don't	1636III: 163 <u>X</u> 110
HYDROLO	OGY							
	ydrology Indicators:						Second	dary Indicators (2 or more required)
_	icators (any one indicator	is sufficient)						ater Marks (B1) (Riverine)
	e Water (A1)	io camolone,	Salt Crust	(R11)				ediment Deposits (B2) (Riverine)
	ater Table (A2)	_	Biotic Crus					ift Deposits (B3) (Riverine)
Saturat		_	Aquatic Inv	` '	c (B13)			ainage Patterns (B10)
	Marks (B1) (Nonriverine)	-	Aquatic in Hydrogen :					y-Season Water Table (C2)
	ent Deposits (B2) (Nonrive	rine)				Living Roc		in Muck Surface (C7)
	eposits (B3) (Nonriverine)		Presence of		_	_		ayfish Burrows (C8)
	e Soil Cracks (B6)		Recent Iro					turation Visible on Aerial Imagery (C9)
	tion Visible on Aerial Imag		Thin Muck			04 000 (allow Aquitard (D3)
	Stained Leaves (B9)	o., (2.) _	Other (Exp	`	,			C-Neutral Test (D5)
Field Obse	<u> </u>		_ ` '		,			. ,
Surface Wa	iter Present? Yes x	. No	Depth	(inches):	4-6			
Water Table			Depth					
Saturation F			Depth			Wetl	and Hydrology	Present? Yes x No
(includes ca	apillary fringe)							
Describe Re	ecorded Data (stream gau	ge, monitorin	ıg well, aerial p	onotos, pro	evious insp	pections),	ıt available:	
Remarks:	-1d d-4 - 66 **		tt					
vvater on fie	eld on date of field survey	is from flood	irrigation.					

Project/Site: Central Valley Gas	Storage Project	t		City	y/County:	: Colu	ısa County	Sam	pling Date: 6-	26-09
Applicant/Owner: Central Val	ley Gas Storage	e, LLC					State: CA	Sampling Poi	nt: 14	
Investigator(s): Butterworth				Sec	ction, Tov	wnship,	Range:			
Landform (hillslope, terrace, etc.): _										0
Subregion (LRR): C										
Soil Map Unit Name: Alcapay cla										
Are climatic / hydrologic conditions of										
Are Vegetation, Soil								rcumstances" pre	esent? Yes x	: No
Are Vegetation <u>yes**</u> , Soil								lain any answers		
SUMMARY OF FINDINGS -								·	,	s, etc.
Lludraphytic Variation Present?	Voo v	No								
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes x Yes x				Is the S	•				
Wetland Hydrology Present?	Yes x				within a	a Wetlar	nd? Y	'es <u>x</u>	No	-
Remarks:				- I						
* Area is normally flood irrigated.	** Seeded rice	l <u>.</u>								
VEGETATION										
T 01 1 (D1 1)			Absolute				Dominance Tes	st worksheet:		
Tree Stratum (Plot size:1							Number of Dom That Are OBL, F		1	_ (A)
2							Total Number of Species Across		1	(B)
4. Sapling/Shrub Stratum (Plot size							Percent of Dom That Are OBL, F	inant Species FACW, or FAC:	100	(A/B)
1							Prevalence Ind	lex worksheet:		
2.								ver of:	Multiply by:	
3.								x		
4.							FACW species	x	2 =	_
5.								x		
					tal Cover		FACU species	x	4 =	
Herb Stratum (Plot size:r							UPL species	x	5 =	
							Column Totals:	(A	١)	(B)
2							Prevalenc	e Index = B/A =		
3								egetation Indica		
4							x Dominance	· ·	1010.	
5							Prevalence			
6								ical Adaptations ¹	(Provide suppo	ortina
7 8								Remarks or on a		
0					tal Cover		Problemati	c Hydrophytic Ve	getation1 (Expl	ain)
Woody Vine Stratum (Plot size:)		10	nai oovei					
1							¹ Indicators of hy be present.	dric soil and wet	and hydrology	must
2							· ·			
				='			Hydrophytic Vegetation			
% Bare Ground in Herb Stratum _	0	% Cover	of Biotic Cr	ust	0		Present?	Yes <u>x</u>	No	
Remarks:										

SOIL	Sampling Point: _	14	

Profile Description: (Desc				iicaitii tir	commin the	abscrice	or interest of or
Depth Mate (inches) Color (mois		Color (moist)	x Features ⁻	Type ¹	Loc ² T	exture	Remarks
		Color (moloc)		<u>.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		Oxtoro	rtomanto
(see below)							
· · · · · · · · · · · · · · · · · · ·			- -				
· · · · · · · · · · · · · · · · · · ·							
·						-	
,							
							
Type: C-Consentration D-	-Donlotion DM-F	Paduand Matrix CS	C=Covered e	.r. Cootod	Cond Crains	21 conti	on: PL=Pore Lining, M=Matrix.
Type: C=Concentration, D= Hydric Soil Indicators: (Ap	•						for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Red		-,			uck (A9) (LRR C)
Histic Epipedon (A2)		Stripped Ma			_		uck (A10) (LRR B)
Black Histic (A3)			ky Mineral (F	F1)	_		ed Vertic (F18)
Hydrogen Sulfide (A4)			ed Matrix (F	•	_	— Red Pa	rent Material (TF2)
Stratified Layers (A5) (L	RR C)	Depleted M		,			Explain in Remarks)
1 cm Muck (A9) (LRR D			Surface (F6	3)	_	_ `	,
Depleted Below Dark Su	•		ark Surface (•			
Thick Dark Surface (A12	. ,		ressions (F8)		3	Indicators of	of hydrophytic vegetation and
Sandy Mucky Mineral (S		Vernal Pool	ls (F9)	,	W	etland hyd	rology must be present,
Sandy Gleyed Matrix (S		_	` ,			-	rbed or problematic.
Restrictive Layer (if preser	nt):						
-							
Type:							
Depth (inches):					Ну	ydric Soil	Present? Yes x No
Depth (inches):		4 ORL and surface	water (4 to 6	6 inches)			
Depth (inches): Remarks: No soil pit was excavated: pl		% OBL and surface	water (4 to 6	6 inches)			
Depth (inches):Remarks: No soil pit was excavated: pl	ant cover is 100%	6 OBL and surface	water (4 to 6	6 inches)		quic condi	tions are assumed.
Depth (inches):	ant cover is 100%		water (4 to 6	6 inches)		quic condi	tions are assumed. dary Indicators (2 or more required)
Depth (inches):	ant cover is 100%	ent)		6 inches)		quic condi Secon W	dary Indicators (2 or more required) ater Marks (B1) (Riverine)
Depth (inches):	ant cover is 100%	ent) Salt Crust	(B11)	6 inches)		Secone W Se	dary Indicators (2 or more required) ater Marks (B1) (Riverine) additional data (B2) (Riverine)
Depth (inches):	ant cover is 100%	ent) Salt Crust Biotic Crus	(B11) st (B12)			Seconi — W — Se	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) ift Deposits (B3) (Riverine)
Depth (inches):	ant cover is 100% ors: indicator is suffici	ent) Salt Crust Biotic Crus Aquatic In	(B11) st (B12) vertebrates ((B13)		Secondi — W — Se — Dr — Dr	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) ift Deposits (B3) (Riverine) ainage Patterns (B10)
Depth (inches):	ant cover is 100% ors: indicator is suffici	ent) Salt Crust Biotic Crus Aquatic In Hydrogen	(B11) st (B12) vertebrates (Sulfide Odor	(B13) r (C1)	is present. A	Secon Secon W Se Dr Dr	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) ift Deposits (B3) (Riverine) rainage Patterns (B10) y-Season Water Table (C2)
Depth (inches):	ant cover is 100% ors: indicator is suffici	ent) Salt Crust Biotic Crus Aquatic In Hydrogen Oxidized F	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres	(B13) r (C1) s along Liv	is present. A	Secondi Secondi W Se Dr Dr	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7)
Depth (inches):	ant cover is 100% ors: indicator is suffici	ent) Salt Crust Biotic Crus Aquatic In: Hydrogen Oxidized F Presence	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I	(B13) r (C1) s along Liv Iron (C4)	is present. A	Secondi Secondi W Se Dr Dr Dr	dary Indicators (2 or more required) ater Marks (B1) (Riverine) adiment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8)
Depth (inches):	ant cover is 100% ors: indicator is suffici	ent) Salt Crust Biotic Crus Aquatic In: Hydrogen Oxidized F Presence Recent Iro	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I	(B13) r (C1) s along Liv Iron (C4)	is present. A	Secondi Secondi W Se Dr Dr Dr	dary Indicators (2 or more required) ater Marks (B1) (Riverine) adiment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8)
Depth (inches):	ant cover is 100% ors: indicator is suffici	ent) Salt Crust Biotic Crus Aquatic In: Hydrogen Oxidized F Presence Recent Iro	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I	(B13) r (C1) s along Liv Iron (C4) in Plowed	is present. A	Secondi Secondi Secondi Secondi Secondi Colored Secondi	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (Callow Aquitard (D3)
Depth (inches):	ant cover is 100% ors: indicator is sufficitiverine) (Nonriverine) riverine) priverine)	ent) Salt Crust Biotic Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction	(B13) r (C1) s along Liv Iron (C4) in Plowed	is present. A	Secondi Secondi Secondi Secondi Secondi Colored Secondi	dary Indicators (2 or more required) ater Marks (B1) (Riverine) adiment Deposits (B2) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) ain Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (C5)
Depth (inches):	ant cover is 100% ors: indicator is sufficitiverine) (Nonriverine) riverine) priverine)	ent) Salt Crust Biotic Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7	(B13) r (C1) s along Liv Iron (C4) in Plowed	is present. A	Secondi Secondi Secondi Secondi Secondi Colored Secondi	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) allow Aquitard (D3)
Depth (inches):	ant cover is 100% ors: indicator is sufficit (Nonriverine) (riverine)) erial Imagery (B7)	ent) Salt Crust Biotic Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7 blain in Rema	(B13) r (C1) s along Liv Iron (C4) in Plowed 7) arks)	is present. A	Secondi Secondi Secondi Secondi Secondi Colored Secondi	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) allow Aquitard (D3)
Depth (inches):	ant cover is 100% ors: indicator is sufficit viverine) (Nonriverine) riverine)) irial Imagery (B7) B9) Yes N	ent) Salt Crust Biotic Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7 plain in Rema	(B13) r (C1) s along Liv lron (C4) in Plowed r) arks)	is present. A	Secondi Secondi Secondi Secondi Secondi Condition Secondi S	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) allow Aquitard (D3)
Depth (inches):	ant cover is 100% ors: indicator is sufficit viverine) (Nonriverine) riverine)) irial Imagery (B7) B9) Yes N	ent) Salt Crust Biotic Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7 plain in Rema	(B13) r (C1) s along Liv lron (C4) in Plowed r) arks)	is present. A	Secondi 	dary Indicators (2 or more required) ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (C9) allow Aquitard (D3)
Depth (inches):	ant cover is 100% ors: indicator is sufficit iverine) (Nonriverine) riverine)) vial Imagery (B7) B9) Yes N Yes N	ent) Salt Crust Biotic Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7 blain in Remain (inches): 4 in (inches): — in	(B13) r (C1) s along Liv lron (C4) in Plowed 7) arks)	ving Roots (Cd Soils (C6)	Secondi Sec	dary Indicators (2 or more required) ater Marks (B1) (Riverine) addiment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (Callow Aquitard (D3) AC-Neutral Test (D5)
Depth (inches):	ant cover is 100% ors: indicator is sufficit iverine) (Nonriverine) riverine)) vial Imagery (B7) B9) Yes N Yes N	ent) Salt Crust Biotic Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7 blain in Remain (inches): 4 in (inches): — in	(B13) r (C1) s along Liv lron (C4) in Plowed 7) arks)	ving Roots (Cd Soils (C6)	Secondi Sec	dary Indicators (2 or more required) ater Marks (B1) (Riverine) addiment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (Callow Aquitard (D3) AC-Neutral Test (D5)
Depth (inches):	ant cover is 100% ors: indicator is sufficit iverine) (Nonriverine) riverine)) rial Imagery (B7) B9) Yes N Yes N Yes N Team gauge, mon	ent) Salt Crust Biotic Crus Aquatic In: Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7 blain in Remain (inches): 4 in (inches): — in	(B13) r (C1) s along Liv lron (C4) in Plowed 7) arks)	ving Roots (Cd Soils (C6)	Secondi Sec	dary Indicators (2 or more required) ater Marks (B1) (Riverine) addiment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (Callow Aquitard (D3) AC-Neutral Test (D5)
Depth (inches):	ant cover is 100% ors: indicator is sufficit iverine) (Nonriverine) riverine)) rial Imagery (B7) B9) Yes N Yes N Yes N Team gauge, mon	ent) Salt Crust Biotic Crus Aquatic In: Oxidized F Presence Recent Iro Thin Muck Other (Exp	(B11) st (B12) vertebrates (Sulfide Odor Rhizospheres of Reduced I on Reduction s Surface (C7 blain in Remain (inches): 4 in (inches): — in	(B13) r (C1) s along Liv lron (C4) in Plowed 7) arks)	ving Roots (Cd Soils (C6)	Secondi Sec	dary Indicators (2 or more required) ater Marks (B1) (Riverine) addiment Deposits (B2) (Riverine) iff Deposits (B3) (Riverine) ainage Patterns (B10) y-Season Water Table (C2) in Muck Surface (C7) ayfish Burrows (C8) aturation Visible on Aerial Imagery (Callow Aquitard (D3) AC-Neutral Test (D5)

Project/Site: Central Valley Gas Storage Project		City/County:Colusa County Sampling Date:3-5-09			
Applicant/Owner: Central Valley Gas Storage, LLC				State: <u>CA</u> Sampli	ng Point: 15
Investigator(s): Butterworth		Section,	Township,	Range:	
Landform (hillslope, terrace, etc.):basin floor		Local rel	ief (concave	e, convex, none): <u>none (p</u>	laned) Slope (%): 0
Subregion (LRR): C	Lat:			Long:	Datum:
Soil Map Unit Name: Willows silty clay, 0 to 1 percent slo					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology	-				es" present? Yes x No
Are Vegetation, or Hydrology					
SUMMARY OF FINDINGS – Attach site map s					
Hydrophytic Vegetation Present? Yes No	V				
Hydric Soil Present? Yes x No		15 111	e Sampled		
Wetland Hydrology Present? Yes x No		With	in a Wetlar		Nox
Remarks:		l .		-	
* Area is normally flood irrigated. ** See Remarks under	Vegetation.				
VEGETATION					
Total Objections (Distriction	Absolute	Dominant		Dominance Test worksh	eet:
Tree Stratum (Plot size:) 1)		Species?		Number of Dominant Spec That Are OBL, FACW, or I	
2				Total Number of Dominan Species Across All Strata:	
4		= Total Co	 over	Percent of Dominant Spec That Are OBL, FACW, or I	cies FAC: <u>50</u> (A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index works	
1				Total % Cover of:	
2				OBL species	
4.				FACW species	
5.				FAC species	
		= Total Co		FACU species	x 4 =
Herb Stratum (Plot size: r = 5 ft)				UPL species	x 5 =
1. Triticum sp.*		<u>Y</u>	<u>NL</u>	Column Totals:	(A)(B)
2. Poa annua		<u>Y</u>		Prevalence Index =	B/A =
3. Malvella leprosa (?)				Hydrophytic Vegetation	
4. Trifolium sp.				Dominance Test is >5	
5 6				Prevalence Index is ≤	
7					ations ¹ (Provide supporting
8.				data in Remarks of	r on a separate sheet)
Woody Vine Stratum (Plot size:)		= Total Co		Problematic Hydroph	ytic Vegetation¹ (Explain)
1				¹ Indicators of hydric soil at be present.	nd wetland hydrology must
% Bare Ground in Herb Stratum 20	-	= Total Co	over	Hydrophytic Vegetation Present? Yes	No <u></u>
Remarks:				L	
* Based on information from property owner, the field is rot appears to have been last cultivated in wheat.	ational field	that is rota	ted into wh	eat, rice, and row crops. Du	uring the field visit, the site

SOIL	Sampling Point: _	15

SOIL							Sar	mpling Point: 15
Profile Des	cription: (Descri	be to the de	pth needed to doc	ument the	indicato	r or confirr	n the absence	e of indicators.)
Depth	Matrix	Κ		dox Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR3/1	75	10YR4/4 &	15	<u>c</u>	M	sic	Ap horizon
			10YR5/4	10	<u>c</u>	M		·
8-14	10YR3/2	95	10YR4/1	5	<u>d</u>	<u>PL</u>	sic	A horizon
			-	· ·			<u> </u>	
	-							
					_		-	•
			-				-	·
			M=Reduced Matrix,			ted Sand G		tion: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to a	II LRRs, unless oth	nerwise no	ted.)		Indicators	s for Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy Re	edox (S5)			1 cm	Muck (A9) (LRR C)
Histic E	pipedon (A2)		Stripped	Matrix (S6)			2 cm	Muck (A10) (LRR B)
Black H	listic (A3)		Loamy M	ucky Miner	al (F1)		Redu	ced Vertic (F18)
	en Sulfide (A4)		Loamy G	leyed Matri	x (F2)			Parent Material (TF2)
· 	ed Layers (A5) (LR	RC)		Matrix (F3			Other	(Explain in Remarks)
·	uck (A9) (LRR D)		x Redox Da					
	ed Below Dark Sur			Dark Surfa				
	ark Surface (A12)			epressions	(F8)			s of hydrophytic vegetation and
	Mucky Mineral (S1	,	Vernal Po	ools (F9)				ydrology must be present,
-	Gleyed Matrix (S4)						unless dis	turbed or problematic.
Restrictive	Layer (if present):						
Type:			_					
Depth (in	nches):		_				Hydric Soi	il Present? Yes x No
Remarks:								
An horizon r	redox feature bour	ndaries are d	iffuse (i.e., contemp	orary)				
, ip								
HYDROLO	OGY							
Wetland Hy	drology Indicato	rs:					Seco	ondary Indicators (2 or more required)
Primary Indi	icators (any one in	dicator is su	fficient)				\	Water Marks (B1) (Riverine)
x Surface	: Water (A1)		Salt Cru	st (B11)			9	Sediment Deposits (B2) (Riverine)
High W	ater Table (A2)		Biotic C	rust (B12)			[Drift Deposits (B3) (Riverine)
Saturati	ion (A3)		Aquatic	Invertebrat	es (B13)		[Drainage Patterns (B10)
Water N	Marks (B1) (Nonri v	verine)	Hydroge	en Sulfide (Odor (C1)		[Dry-Season Water Table (C2)
Sedime	ent Deposits (B2) (Nonriverine) x Oxidized	d Rhizosph	eres along	Living Ro	ots (C3)	Thin Muck Surface (C7)
	posits (B3) (Nonri			e of Reduc		_		Crayfish Burrows (C8)
	Soil Cracks (B6)	,	· 		•	wed Soils (Saturation Visible on Aerial Imagery (C9)
	ion Visible on Aeri	al Imagery (ck Surface			· · · —	Shallow Aquitard (D3)
	Stained Leaves (B		• —	Explain in R	. ,			FAC-Neutral Test (D5)
Field Obser		- /	331 (2	F			<u> </u>	
	ter Present?	Yes x	_ No Dep	oth (inches): 3			
Water Table			_ No Dep	, ,				
Saturation F			_ No Dep			Wet	land Hydrolog	gy Present? Yes No x
	pillary fringe) ecorded Data (stre		nonitoring well, aeria					

Remarks:

Soil below 9 inches depth is not saturated, so perched water table is present. Oxidized rhizospheres on dirt clods from upper 3 inches of profile; these may have formed from flooding of irrigation water rather than natural rainfall. Water on field is clear. Water on field is probably from recent rainfall (rather than irrigation water), as no water was observed entering field at upslope end to the north. (Note: Above average rainfall occurred in two weeks prior to field survey; amount of water may not be representative of normal conditions. Only small, very shallow areas of water present on adjoining fields.)

Project/Site: <u>Central Valley Gas</u>	Storage Project		City/Coι	unty: <u>Colu</u>	isa County	Sampli	ng Date: <u>1-15</u>	<u>5-09</u>
Applicant/Owner: Central Val	ley Gas Storage, LLC				State: CA	Sampling Point:	16	
Investigator(s): Butterworth, Widdo	wson		Section,	Township,	Range:			
Landform (hillslope, terrace, etc.): _	flood plain		Local re	lief (concave	e, convex, none):	none	Slope (%):	0-2
Subregion (LRR):C		Lat:			Long:		Datum:	
Soil Map Unit Name: Moonbend								
Are climatic / hydrologic conditions								
Are Vegetation, Soilyes		-			Are "Normal Circu		ent? Yes x	Nο
Are Vegetation, Soil					(If needed, explain	·		
SUMMARY OF FINDINGS -					,	•	,	, etc.
Hydronhytia Vagatatian Procent?	Voc. No.							
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No _ Yes No _		15 (1	ne Sampled				
Wetland Hydrology Present?			With			s No) <u>X</u>	
Remarks:								
* Fallow field. ** Native soil profile planted. VEGETATION	may nave been partiy	cut or filled f	rom land sr	mootning. L	vata point located ne	ar well pad in are	a not regularly	<u></u>
		Absolute	Dominant	Indicator	Dominance Test	worksheet:		
Tree Stratum (Plot size:1		· · ·	Species?		Number of Domina That Are OBL, FA		1	(A)
2					Total Number of D	Dominant		
3					Species Across Al	II Strata: _	2	(B)
4. Sapling/Shrub Stratum (Plot size			= Total C		Percent of Domina That Are OBL, FA	ant Species CW, or FAC: _	50	(A/B)
1					Prevalence Index	x worksheet:		
2.					Total % Cove	er of: I	Multiply by:	_
3					OBL species _	x1:	=	_
4					FACW species _	x 2 =	=	_
5					FAC species	x3:	=	_
Llawb Chrahima /Dlataina			_ = Total C	over	FACU species			-
	<u>= 5 ft</u>)	15	Y	EAC	UPL species			
Chamaesyce maculata					Column Totals:	(A)		_ (B)
Convolvulus arvensis					Prevalence I	Index = B/A =		_
·					Hydrophytic Veg			
5. Picris echiodes					Dominance T	est is >50%		
6.					Prevalence Ir	ndex is ≤3.0¹		
7.					Morphologica	al Adaptations¹ (P	rovide support	ting
8.						marks or on a se	. ,	:\
Woody Vine Stratum (Plot size:			_ = Total C		Problematic I	nyarophytic Vege	πation` (Explai	.11)
1					¹ Indicators of hydr	ric soil and wetlar	nd hydroloav m	nust
2					be present.		, 	-
-			= Total C		Hydrophytic			
O/ Davis Onsured in Linute Office	05 0/ 0		_		Vegetation	-	da u	
% Bare Ground in Herb Stratum _	65 % Cove	er of Biotic Ci	rust <u>(</u>	<u>J</u>	Present? Y	es N	10 X	
Remarks:		p						
Site is not cultivated/planted. Ove Field contains corn cobs on surface			by local res	iuent to be t	useu ioi loilialoes, V	viicat, and other f	non-nice crops.	

SOIL	Sampling Point:	16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matri	X		Redo	x Features	8			
(inches)	Color (moist)	%	Cold	or (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR3/2	_100						sil	Ap Horizon
8-18	10YR3/3	100						sil	Bw horizon
0 10	101110/0				-			<u> </u>	BW HOHZOH
l ———									·
								-	·
l ———									·
	Concentration, D=E						d Sand Gr		tion: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	olicable to al	I LRRs,	unless other	rwise note	ed.)		Indicators	s for Problematic Hydric Soils ³ :
Histoso	` '			Sandy Red					Muck (A9) (LRR C)
	pipedon (A2)			Stripped Ma					Muck (A10) (LRR B)
	listic (A3)		_	Loamy Muc	-				ced Vertic (F18)
	en Sulfide (A4)	D C\	_	Loamy Gley		(F2)			Parent Material (TF2)
	d Layers (A5) (LR uck (A9) (LRR D)	(R C)		Depleted M Redox Dark		E6)		Other	(Explain in Remarks)
	ed Below Dark Sur	face (Δ11)		Depleted Da	,	,			
	ark Surface (A12)		_	Redox Dep				3Indicators	s of hydrophytic vegetation and
	Mucky Mineral (S1			Vernal Pool		٠,			/drology must be present,
	Gleyed Matrix (S4	•			- (-)				turbed or problematic.
Restrictive	Layer (if present):							·
Type:									
Depth (in	nches):							Hydric Soi	I Present? Yes No x
Remarks:	,		=						
HYDROLO)GY								
Wetland Hy	drology Indicato	rs:						Seco	ndary Indicators (2 or more required)
Primary Indi	cators (any one in	dicator is suf	ficient)					\	Water Marks (B1) (Riverine)
Surface	Water (A1)			Salt Crust	(B11)			9	Sediment Deposits (B2) (Riverine)
	ater Table (A2)			Biotic Crus	, ,				Orift Deposits (B3) (Riverine)
Saturation				_ _ Aquatic In		s (B13)			Orainage Patterns (B10)
	Marks (B1) (Nonri	verine)		 _ Hydrogen					Ory-Season Water Table (C2)
Sedime	nt Deposits (B2) (Nonriverine))	Oxidized F	Rhizosphe	res along	Living Roo	ots (C3) 1	Γhin Muck Surface (C7)
Drift De	posits (B3) (Nonri	iverine)		Presence	of Reduce	d Iron (C4	·)	(Crayfish Burrows (C8)
Surface	Soil Cracks (B6)			_ Recent Iro	n Reduction	on in Plow	ed Soils (0	C6) <u> </u>	Saturation Visible on Aerial Imagery (C9)
Inundat	ion Visible on Aer	ial Imagery (E	37)	_ Thin Muck	Surface (C7)		9	Shallow Aquitard (D3)
Water-S	Stained Leaves (B	9)		_ Other (Exp	olain in Re	marks)		F	FAC-Neutral Test (D5)
Field Obser		<u>, </u>				<u> </u>			· · ·
Surface Wat	ter Present?	Yes	No	Depth	(inches):				
Water Table							8		
	Water Table Present? Yes No Depth (inches): none to 18 Saturation Present? Yes No Depth (inches): none to 18 Wetland Hydrology Present? Yes No _x								
	pillary fringe)	165	_ NO	Бери	i (iiiciies).	HOHE TO I	<u> </u>	and mydrolog	y resent: resNo x
	ecorded Data (stre	am gauge, m	onitoring	well, aerial p	photos, pre	evious ins	pections),	if available:	
Remarks:									
ĺ									

Appendix D Representative Photographs



Photo 1. View of proposed compressor station site, right side of road in front of buildings. Site is fallow field at time of photo. Looking south from intersection of McAusland and Paradise roads.



Photo 2. Other waters drainage (irrigation ditch).





Photo 3. Other waters drainage (irrigation ditch), with rice field in right-middleground.



Photo 4. Wetland drainage dominated by cattail. Looking east at data points 1 and 2.





Photo 5. Other waters drainage (irrigation canal). Looking east.



Photo 6. Other waters drainage (Colusa Trough). Looking north.





Photo 7. Seasonal wetland, looking north. Data Point 9 is in middle-foreground.



Appendix E

List of Drainages and Potential Crossing Methods

Drainage		Estimated		Status as a Waters of the	
Number ¹	Drainage Type	Width (ft)	Wetland Vegetation Present at Crossing	United States at Crossing	Potential Crossing Method ²
D-1	Roadside Ditch	2	None	Other waters	Trench
D-1a	Roadside Ditch	3	Freshwater marsh	Wetland	Avoided by alignment
D-2	Roadside Ditch	1	None	Other waters	Trench
D-3	Roadside Ditch	1	None	Other waters	Avoided by alignment
D-4	Roadside Ditch	1	None	Other waters	Avoided by alignment
D-5	Canal	12	None	Other waters	Auger bore
D-6	Canal	15	Fremont cottonwood riparian woodland (above OHWM)	Other waters	Auger bore
D-7	Agricultural Ditch	8	Freshwater marsh	Wetland	Trench
D-8	Agricultural Ditch	5	None	Other waters	Trench
D-9	Agricultural Ditch	5	None	Other waters	Trench
D-10	Canal	15	None	Other waters	Trench
D-10a	Canal	15	Scattered riparian woodland species (above OHWM)	Other waters	Auger bore
D-11	Agricultural Ditch	12	None	Other waters	Auger bore
D-12	Agricultural Ditch	15	None	Other waters	Avoided by alignment
D-13	Agricultural Ditch	5	None	Other waters	Avoided by alignment
D-14	Agricultural Ditch	12	Freshwater marsh	Wetland	Auger bore
D-15	Agricultural Ditch	3	Freshwater marsh	Wetland	Avoided by alignment
D-16	Agricultural Ditch	5	Freshwater marsh	Wetland	Avoided by alignment
D-17	Canal	12	None	Other waters	Auger bore (one crossing)
D-18	Canal	10	Freshwater marsh	Wetland	Avoided by alignment
D-19	Colusa Trough	80	Primarily open water with narrow fringe of freshwater marsh	Wetland/Other waters	HDD
D-19a	Willow Creek	40	Primarily open water with narrow fringe of freshwater marsh	Wetland/Other waters	Avoided by alignment
D-19b	Colusa Drain	45	Primarily open water with narrow fringe of freshwater marsh	Wetland/Other waters	Avoided by alignment
D-20	Canal	25	Freshwater marsh	Wetland	Avoided by alignment
D-21	Central Drain	30	Freshwater marsh	Wetland	Avoided by alignment
D-22	Canal	15	Freshwater marsh	Wetland	Avoided by alignment
D-23	Logan Creek	60	Primarily open water with narrow fringe of freshwater marsh	Wetland/Other waters	Auger bore
D-24	Canal	25	Freshwater marsh	Wetland	Trench
D-25	Agricultural Ditch	10	Freshwater marsh	Wetland	Auger bore
D-26	Agricultural Ditch	10	Freshwater marsh	Wetland	Auger bore
D-27	Agricultural Ditch	12	Freshwater marsh	Wetland	Avoided by alignment

Appendix E. List of Drainages and Potential Crossing Methods

Drainage Number ¹	Drainage Type	Estimated Width (ft)	Wetland Vegetation Present at Crossing	Status as a Waters of the United States at Crossing	Potential Crossing Method ²
D-28	Agricultural Ditch	2	Freshwater marsh	Wetland	Avoided by alignment
D-26 D-29	•	10		Wetland	
	Agricultural Ditch Hunters Creek		Scattered freshwater marsh vegetation		Avoided by alignment
D-30		50	None	Other waters Wetland	Auger bore
D-31	Canal	15	Freshwater marsh		Auger bore
D-32	Canal	20	None	Other waters	Auger bore
D-33	Agricultural Ditch	15	Freshwater marsh	Wetland	Auger bore
D-34	Canal	20	Scattered freshwater marsh vegetation	Wetland	Avoided by alignment
D-35	Agricultural Ditch	3	Freshwater marsh	Wetland	Avoided by alignment
D-36	Agricultural Ditch	4	Freshwater marsh	Wetland	Avoided by alignment
D-37	Agricultural Ditch	5	None	Other waters	Avoided by alignment
D-38	Canal	25	None	Other waters	Auger bore
D-39	Agricultural Ditch	12	None	Other waters	Auger bore
D-40	Agricultural Ditch	10	None	Other waters	Trench
D-41	Agricultural Ditch	6	None	Other waters	Trench
D-42	Agricultural Ditch	8	Wetland	Wetland	Avoided by alignment
D-43	Hunters Creek	20 to 40	Fremont cottonwood riparian woodland (above OHWM)	Other waters	Auger bore or HDD (three crossings of Hunters Creek)
D-44	Agricultural Ditch	10	Freshwater marsh	Wetland	Trench
D-45	Agricultural Ditch	8	Freshwater marsh	Wetland	Trench
D-46	Agricultural Ditch	6	Freshwater marsh	Wetland	HDD
D-46a	Roadside Ditch	3	Herbaceous weedy seasonal wetland	Wetland	HDD
D-47	Roadside Ditch	6	Freshwater marsh	Wetland	HDD
D-48	Agricultural Ditch	6	Freshwater marsh	Wetland	Avoided by alignment
D-49	Agricultural Ditch	8	None	Other waters	Trench
D-50	Agricultural Ditch	10	None	Other waters	Avoided by alignment
D-51	Agricultural Ditch	10	None	Other waters	Avoided by alignment
D-52	Agricultural Ditch	8	None	Other waters	Trench
D-53	Agricultural Ditch	8	Freshwater marsh	Wetland	Avoided by alignment
D-54	Agricultural Ditch	12	Freshwater marsh	Wetland	Avoided by alignment
D-55	Agricultural Ditch	6	Freshwater marsh	Wetland	Avoided by alignment
D-56	Agricultural Ditch	12	Freshwater marsh	Wetland	Avoided by alignment

Drainage		Estimated		Status as a Waters of the	
Number ¹	Drainage Type	Width (ft)	Wetland Vegetation Present at Crossing	United States at Crossing	Potential Crossing Method ²
D-57	Roadside Ditch	4	Seasonal wetland vegetation	Wetland	Auger bore
D-58	Roadside Ditch	6	Seasonal wetland vegetation	Wetland	Avoided by alignment
D-59a	Agricultural Ditch	8	None	Other waters	Avoided by alignment
D-59	Agricultural Ditch	8	Woody riparian and freshwater marsh	Wetland	Avoided by alignment
D-60	Agricultural Ditch	12	None	Other waters	Avoided by alignment
D-61	Glenn-Colusa Canal	90	None	Other waters	HDD
D-62	Agricultural Ditch	15	Freshwater marsh	Wetland	HDD

Table Notes:

¹Drainage Number

The drainage number corresponds to the project alignment maps provided in Exhibit 1.

²Potential Crossing Method

The crossing methods will be determined as part of the pipeline engineering and design phase. Some of the drainages shown as "avoided by alignment" may actually be trenched or bored. The pipeline construction methods (including open-cut trench, auger bore, and horizontal directional [HDD] drilling methods) are described in detail in Chapter 2 of the PEA.