Texas Commission on Environmental Quality

Registration Application for Coal Combustion Residuals (CCR) Waste Management

I. General Information

1. Reason for Submittal

Type of Registration Application

☐ New ☐ Major Amendment ☐ Minor Amendment

☐ Notice of Deficiency (NOD) Response ☐ Transfer ☐ Name Change

☒ Other

NOTE: Information provided in the original submittal is indicated in blue text.

Additional information regarding the proposed Plant Drains Pond (PDP) and any revisions to the original submittal are indicated in green text.

Additional information to respond to Notice of Deficiencies (NODs) are indicated in red text.

2. Application Fees

☒ $150 Application Fee Included in original submittal

Payment Method

☐ Check ☒ Online through ePay portal <www3.tceq.texas.gov/epay/>

If paid online, enter ePay Trace Number: 582EA000470805

3. Facility Information

Facility information must match regulated entity information on the Core Data Form.

Applicant: ☐ Owner ☐ Operator ☒ Owner/Operator

Facility TCEQ Solid Waste Registration No: 31445

Facility EPA ID: TXD000815019

Regulated Entity Reference No. (if issued): RN 100217975

Facility Name: Calaveras Plant Site

Facility (Area Code) Telephone Number: 210-353-2158 (Gregg Tieken)

Facility physical street address (city, state, zip code, county): 12940 South US Highway 181, San Antonio, Texas 78223

Facility mailing address (city, state, zip code, county): 12940 South US Highway 181, San Antonio, Texas 78223

Latitude (Degrees, Minutes Seconds): 29, 18, 31.53

Longitude (Degrees, Minutes Seconds): -98, 19, 19.12

4. Publicly Accessible Website

Provide the URL address of a publicly accessible website where the owner or operator of a CCR unit will post information.
https://www.cpsenergy.com/content/corporate/en/about-us/environment/coal-combustion-residuals.html

5. Facility Landowner(s) Information

Facility landowner(s) name: CPS Energy

Facility landowner mailing address: 500 McCullough Avenue

City: San Antonio State: Texas Zip Code: 78215

(Area Code) Telephone Number: 210-353-2551

Email Address (optional):

6. CCR Waste Management Unit(s)

☒ Landfill Unit(s) ☒ Surface Impoundment(s)

For each existing landfill, new landfill and lateral expansion, existing surface impoundment, and new surface impoundment and lateral expansion(s) provide information on type of waste, the registered unit(s) in which they are managed, and sampling and analytical methods.

Submit the following tables: See Attachment 6-1 for updated CCR Waste Tables.

Table I.6. – CCR Waste Management Units;

Table I.6.A. – Waste Management Information;

Table I.6.B. – Waste Managed in Registered Units; and

Table I.6.C. – Sampling and Analytical Methods.

7. Description of Proposed Activities or Changes to Existing Facility

Provide a brief description of the proposed activities if application is for a new facility, or the proposed changes to an existing facility or registration conditions, if the application is for an amendment.

CPS Energy owns and operates the Calaveras Power Station that consists of two power plants (J.T Deely and J.K. Spruce) that are subject to regulation under the CCR Rule. At the Power Station, CPS Energy currently operates two CCR surface impoundments (Evaporation Pond and Sludge Recycle Holding (SRH) Pond) and one CCR landfill (Fly Ash Landfill). The units were historically shared by both power plants. Although the J.T. Deely Power Plant ceased operation at the end of December 2018 and sluiced bottom ash is no longer being received at the Bottom Ash Ponds (BAPs); the BAPs will continue to be inspected and monitored until the units have completed the closure process. The J.K. Spruce Power Plant currently utilizes the other CCR units. The proposed Plant Drains Pond (PDP) is being constructed to replace the SRH Pond. Construction of the proposed PDP began in June 2022 and is scheduled for completion in June 2023.

8. Primary Contact Information

Contact Name: Michael M. Malone Title: Senior Manager – Environmental Management

Contact mailing address: 500 McCullough Avenue; Mail Drop: RT0601
City: San Antonio County: Bexar State: Texas Zip Code: 78215
(Area Code) Telephone Number: 210-353-3625

Email Address (optional): mmmalone@cpsenergy.com

9. Notice Publishing

Party responsible for publishing notice:
☐ Applicant ☒ Consultant ☐ Agent in Service

Contact Name: Walter Zverina Title: Principal Consultant

Contact mailing address: 111 Congress Avenue, Suite 500
City: Austin County: Travis State: Texas Zip Code: 78701
(Area Code) Telephone Number: 512-459-4700

10. Alternative Language Notice

Is an alternative language notice required for this application? For determination, refer to Alternative Language Checklist on the Public Notice Verification Form (TCEQ-20244-Waste-NORI).

☒ Yes ☐ No

11. Public Place Location of Application

Name of the Public Place: Central Library
Physical Address: 600 Soledad Street
City: San Antonio County: Bexar State: Texas Zip Code: 78205
(Area code) Telephone Number: 210-207-2829 (Hailey Holmes)

12. Ownership Status of the Facility

☐ Corporation ☐ Limited Partnership

☐ Sole Proprietorship ☐ General Partnership ☒ Other (specify): Municipally Owned Company

CPS Energy is not a corporation, so it does not have a certificate on file with the Secretary of State. Rather, CPS Energy is a municipally owned gas and electric utility company. CPS Energy is wholly owned by the City of San Antonio and managed and operated by the Board of Trustees of the San Antonio Electric and Gas System. CPS Energy was created by a 1942 City of San Antonio Ordinance and Indenture (See attached document regarding management's authority, Article VI—Management, pg. 96 provided in Attachment 22).

Does the Site Owner (Permittee/Registrant) own all the CCR units and all the facility property?

☒ Yes ☐ No

13. Property / Legal Description Information

Provide a legal description and supporting documents of the property where the management of CCR waste will occur; including a survey plat and a boundary metes and bounds description (30 TAC §352.231(g)).

Submit the following documents:

a. Property Legal Description
b. Property Metes and Bounds Description
c. Metes and Bounds Drawings
d. On-Site Easements Drawings

See documents provided in Attachment 21. Updated documents, figures, and the Property Owner Affidavit have been added to Attachment 21.

14. Operator Information

Identify the entity who will conduct facility operations, if the owner and operator are not the same. Owner and Operator are the same.

Operator Name:

Operator mailing address:

City: State: Zip Code:

(Area Code) Telephone Number:

Email Address (optional):

15. Confidential Documents

Does the application contain confidential documents?

☐ Yes ☒ No

If "Yes", cross-reference the confidential documents throughout the application and submit as a separate attachment in a binder clearly marked "CONFIDENTIAL."

16. Permits and Construction Approvals

Permit or Approval	Received	Pending	Not Applicable
Hazardous Waste Management Program under the Texas Solid Waste Disposal Act	☐	☐	☒
Underground Injection Control Program under the Texas Injection Well Act	☐	☐	☒
National Pollutant Discharge Elimination System Program under the Clean Water Act and Waste Discharge Program under Texas Water Code, Chapter 26 TPDES permits authorize discharge from the Bottom Ash Ponds, SRH Pond, and Fly Ash Landfill.	☒	☐	☐
Prevention of Significant Deterioration Program under the Federal Clean Air Act (FCAA). Nonattainment Program under the FCAA	☒	☐	☐
National Emission Standards for Hazardous Air Pollutants Preconstruction Approval under the FCAA	☒	☐	☐
Other (describe)	☐	☐	☐

17. Legal Authority

The owner and operator of the facility shall submit verification of their legal status with the application. This shall be a one-page certificate of incorporation issued by the secretary of state. The owner or operator shall list all persons having over a 20% ownership in the facility.

CPS Energy is not a corporation, so it does not have a certificate on file with the Secretary of State. Rather, CPS Energy is a municipally owned gas and electric utility company. CPS Energy is wholly owned by the City of San Antonio and managed and operated by the Board of Trustees of the San Antonio Electric and Gas System. CPS Energy was created by a 1942 City of San Antonio Ordinance and Indenture (See attached document regarding management's authority, Article VI—Management, pg. 96 provided in Attachment 22).

18. TCEQ Core Data Form

The TCEQ requires that a Core Data Form (TCEQ-10400) be submitted on all incoming applications, unless a Regulated Entity and Customer Reference Number has been issued by the TCEQ and no core data information has changed. For more information regarding the Core Data Form, call (512) 239-5175 or visit the TCEQ Website.

See the updated Core Data Form provided in Attachment 23.

19. Other Governmental Entities Information

Coastal Management Program

Is the facility within the Coastal Management Program boundary?

☐ Yes ☒ No

Local Government Jurisdiction (If Applicable)
Within City Limits of: Not Applicable
Within Extraterritorial Jurisdiction of: San Antonio

Is the facility located in an area in which the governing body of the municipality or county has prohibited the storage, processing or disposal of municipal or industrial solid waste?

☐ Yes ☒ No If "Yes", provide a copy of the ordinance or order as an attachment.

20. Attachments

Does the application include the following?

General Maps	☒ Yes	☐ No
General Topographic Map	☒ Yes	☐ No
Facility Layout Map	☒ Yes	☐ No
Surrounding Features Map	☒ Yes	☐ No
Process Flow Diagram	☒ Yes	☐ No
Land Ownership Map	☒ Yes	☐ No
Land Ownership List	☒ Yes	☐ No
Pre-printed Mailing Labels	☒ Yes	☐ No

Maps and drawings shall be legible and easily readable by eye without magnification. Scales and paper size shall be chosen based on the type of map submitted, the land area covered, and the amount of detail to be shown. See instructions for details regarding maps and drawings to be submitted in application.

See documents provided in Attachment 1. See updated CCR Well Network Location Map, new Contiguous Registration Boundary Map, and updated Process Flow Diagrams in Attachment 1.

21. Verification of Compliance

Does the owner and operator verify that the design, construction, and operation of CCR landfill(s) and surface impoundment(s) meets the requirements of 30 TAC §352.231(f), 30 TAC §352.2, 40 CFR §257.52, and 40 CFR §§257.3-1 – 257.3-3).

☒ Yes ☐ No

30 TAC 352.231(f): *The owner or operator shall verify that the design, construction, and operation of the coal combustion residuals landfill or surface impoundment meets the requirements of §352.2 of this title (relating to Applicability of Other Regulations).*

30 TAC 352.2: *The commission adopts by reference 40 Code of Federal Regulations §257.52 (Applicability of other regulations) as amended through the April 17, 2015, issue of the Federal Register (80 FR 21301).*

40 CFR 257.52: *Applicability of Other Regulations.*

(a) Compliance with the requirements of this subpart does not affect the need for the owner or operator of a CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit to comply with all other applicable federal, state, tribal, or local laws or other requirements.

(b) Any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit continues to be subject to the requirements in §§257.3-1, 257.3-2, and 257.3-3.

40 CFR 257.3: *Solid waste disposal facilities or practices which violate any of the following criteria pose a reasonable probability of adverse effects on health or the environment:*

3-1: Floodplains.

(a) Facilities or practices in floodplains shall not restrict the flow of the base flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human life, wildlife, or land or water resources.

(b) As used in this section:

(b)(1) Based flood means a flood that has a 1 percent or greater chance of recurring in any year or a flood of a magnitude equaled or exceeded once in 100 years on the average over a significantly long period.

(b)(2) Floodplain means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, which are inundated by the base flood.

(b)(3) Washout means the carrying away of solid waste by waters of the base flood.

3-2: Endangered Species.

(a) Facilities or practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.

(b) The facility or practice shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17.

(c) As used in this section:

(c)(1) Endangered or threatened species means any species listed as such pursuant to section 4 of the Endangered Species Act.

(c)(2) Destruction or adverse modification means a direct or indirect alteration of critical habitat which appreciably diminishes the likelihood of the survival and recovery of threatened or endangered species using that habitat.

(c)(3) Taking means harassing, harming, pursuing, hunting, wounding, killing, trapping, capturing, or collecting or attempting to engage in such conduct.

3-3: Surface Water.

(a) For purposes of section 4004(a) of the Act, a facility shall not cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) under section 402 of the Clean Water Act, as amended.

(b) For purposes of section 4004(a) of the Act, a facility shall not cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under section 404 of the Clean Water Act, as amended.

(c) A facility or practice shall not cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an areawide or Statewide water quality management plan that has been approved by the Administrator under section 208 of the Clean Water Act, as amended.

(d) Definitions of the terms "Discharge of dredged material", "Point source", "Pollutant", "Waters of the United States", and "Wetlands" can be found in the Clean Water Act, as amended, 33 U.S.C. 1251 et seq., and implementing regulations, specifically 33 CFR Part 323 (42 FR 37122, July 19, 1977).

II. Location Restrictions and Geology

See Instructions and Technical Guidance

22. Location Restrictions

Submit certifications and technical reports demonstrating compliance of CCR unit(s) with applicable location restrictions (30 TAC 352, Subchapter E) and comply with 30 TAC §352.231(d) and 30 TAC §352.4 for submission of engineering and geoscientific information.

See the updated *Location Restriction Demonstration* (ERM, 2018) in Attachment 2-1. The attached version of the *Location Restriction Demonstration* has been updated to include signature, seal, and date of qualified professional and Firm Number. Information regarding the regional Fault areas, Seismic impact zones and Unstable areas in proximity to the proposed PDP is included in Attachment 2-1 in the original submittal. A draft version of the Wetlands section associated with the proposed PDP is provided in Attachment 2-2. Additional information regarding Placement above the uppermost aquifer is provided in the *Geology Summary* (Attachment 3). This additional information will be incorporated into an updated *Location Restriction Demonstration* after the PDP well network is completely installed, surveyed, and evaluated.

A. **Placement above the uppermost aquifer** (30 TAC §352.601) (40 CFR §257.60). For those CCR units whose base is less than five feet above the upper limit of the uppermost aquifer, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.60(a) – (c).

B. **Wetlands** (30 TAC §352.611) (40 CFR §257.61). For CCR units located in wetlands, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.61(a) – (c).

C. **Fault areas** (30 TAC §352.621) (40 CFR §257.62). For CCR units located within 200 feet of the outermost damage zone of a fault, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.62(a) – (c).

D. **Seismic impact zones** (30 TAC §352.631) (40 CFR §257.63). For CCR units located in a seismic impact zone, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.63(a) – (c).

E. **Unstable areas** (30 TAC §352.641) (40 CFR §257.64). For CCR units located in unstable areas, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.64(a) – (d).

23. Geology Summary Report

Submit a summary of the geologic conditions at the facility, including the relation of the geologic condition to each CCR unit. The summary must include enough information and data and include sources and references for the information. Include all groundwater monitoring data required by 40 CFR Part 257, Subpart D, (30 TAC §352.241, §352.601, §352.621, §352.631, and §352.641) and submitted in accordance of 30 TAC §352.4.

Note: Previously prepared documents may be submitted but must be supplemented or updated as necessary to provide the requested information (30 TAC §352.241(b)). (Subchapter C Geology)

See Attachment 3 which contains excerpts from the *Location Restriction Demonstration* (ERM, 2018) and groundwater monitoring data for each of the four CCR units from the most recent *Annual Groundwater Sampling and Corrective Action Reports* (ERM, 2021). Draft versions of the *Geology Summary* and groundwater monitoring data for the PDP have been added to Attachment 3. An updated *Geology Summary* is provided in Attachment 3-1. This *Geology Summary* will be updated and sealed after the PDP well network is completely installed, surveyed, and evaluated.

III. Fugitive Dust Control Plan

24. Fugitive Dust Control Plan

A. **Submit a copy of the CCR Fugitive Dust Control Plan** (30 TAC §352.801) (40 CFR §257.80(b)), or the most recently amended plan. The initial plan or subsequent amended plan must be certified by a qualified Texas licensed professional engineer (Texas P.E.) that the plan meets the requirements of 30 TAC Chapter 352.

See the updated *CCR Fugitive Dust Control Plan* (ERM, 2022) in Attachment 4. The attached version of the *CCR Fugitive Dust Control Plan* has been updated to include signature, seal, and date of qualified professional and Firm Number. Information regarding the proposed PDP operations will be incorporated into an updated *Fugitive Dust Control Plan*. The *Fugitive Dust Control Plan* will be updated prior to the operation of the PDP.

B. **Submit the most recent Annual CCR Fugitive Dust Control Report** (30 TAC §352.801) (40 CFR §257.80(c)) and include the report information.

See the updated *CCR Units – 2020 Annual Inspection and Fugitive Dust Control Report* in Attachment 5. The attached version of the *CCR Units – 2020 Annual Inspection and Fugitive Dust Control Report* has been updated to include signature, seal, and date of qualified professional and Firm Number and to address NODs.

IV. Landfill Criteria

See Instructions and Technical Guidance – No. 30 Coal Combustion Residuals Landfill

25. Landfill(s) for CCR Waste

Provide the following information below if there is a landfill; if there is more than one landfill, separate information is required for each landfill. See Attachment 6 Landfill Tables.

A. Landfill Characteristics

Describe the design, installation, construction, and operation of the landfill and submit a completed Table IV.A. – Landfill Characteristics.

See the updated *Compilation of Construction History* (ERM, 2022) in Attachment 13-1. The attached version of the *Compilation of Construction History* has been updated to address NODs.

B. Liner Design

1. For existing landfills, provide attachments describing how the facility will comply with 30 TAC 352, Subchapter F (Design Criteria).

   The citation 30 TAC 352, Subchapter F (Design Criteria) adopts by reference 40 CFR 257.70 (Design Criteria for New CCR Landfills and Any Lateral Expansion of a CCR Landfill) and does not apply to existing landfills.

2. For new landfills or lateral expansions of existing landfills, submit pages describing how the facility will comply with 30 TAC §352.261 and 30 TAC §352.701.

   Not Applicable.

3. Complete Table IV.B. - Landfill Liner System and specify the type of liner used for the landfill.

4. Provide attachments describing the design, installation, and operation of the liner and leak detection system. The description must demonstrate that the liner and leak detection system will prevent discharge to the land, groundwater, and surface water. Submit a quality assurance project plan (QAPP) to ensure that each analysis is performed appropriately.

   The existing landfill does not have a leak detection system.

C. Leachate Collection and Removal

Submit design information and description of leachate collection and removal system in accordance with 30 TAC §352.701.

The existing landfill does not have a leak detection system.

Complete Table IV.C. - Landfill Leachate Collection System

D. Design of Liner and Leachate Collection and Removal System.

For a new landfill or lateral expansion of a CCR landfill, provide a qualified Texas P.E. certification and technical report that the design of the liner and the leachate collection and removal system meets the requirements of 30 TAC §352.711.

Not Applicable.

E. Run-on and Run-off Controls

At time of application, attach pages describing how the facility will comply with the run-on and run-off system plan for an existing, new, or lateral expansion of a CCR landfill information. Provide a qualified Texas P.E. certification and technical report that the run-on and run-off control system plans meet the requirements of 30 TAC §352.811.

See the updated *Run-on/Run-off Control Plan – 5-Year Update* (ERM, 2021) in Attachment 7. The attached version of the *Run-on/Run-off Control Plan – 5-Year Update* has been updated to include signature, seal, and date of qualified professional and Firm Number.

F. Inspection for Landfills

At time of application, attach pages describing how the facility will comply 30 TAC §352.841 and complete Table IV.D. – Inspection Schedule for Landfills. For existing CCR landfills, provide the most recent inspection report. All CCR landfills and any lateral expansions of a CCR landfill must be inspected for any structural weakness, malfunction, deterioration conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit, or any other conditions which may cause harm to human health and environment at a frequency specified in 40 CFR §257.84(a) and (b).

See the updated *2020 Annual Inspection and Fugitive Dust Control Report* in Attachment 5. The attached version of the *CCR Units – 2020 Annual Inspection and Fugitive Dust Control Report* has been updated to include signature, seal, and date of qualified professional and Firm Number and to address NODs.

V. Surface Impoundment Criteria

See Instructions and Technical Guidance – No. 31 Coal Combustion Residuals Surface Impoundment

26. Surface Impoundment(s) for CCR Waste

Provide the following information below if there is a surface impoundment; if there is more than one surface impoundment, separate information is required for each surface impoundment. See Attachment 6 Surface Impoundment Tables. See Attachment 6-3 for updated Surface Impoundment Tables.

A. General Surface Impoundment(s) Characteristics

Provide information about the characteristics of the surface impoundment(s): incised, surface area (acres), storage volume (acres-feet), and depth (feet).

For all surface impoundment(s), include the following information:

1. Complete Table V.A. - Surface Impoundments Characteristics. List the surface impoundment(s) to be registered as a CCR unit(s), the wastes managed in each unit, and the rated capacity or size of each unit.
2. Describe the surface impoundment(s) and provide a plan view drawing with cross-sections, if available.

   See the updated *Compilation of Construction History* (ERM, 2022) in Attachment 13-1. The attached version of the *Compilation of Construction History* has been updated to address NODs. PDP Construction Plans (AECOM, 2022, draft versions) have been included in Attachment 1 of the updated *Compilation of Construction History* (ERM, 2022).
3. Specify the minimum freeboard to be maintained and the basis of the design to prevent overtopping resulting from normal or abnormal operation; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error. Show that adequate freeboard will be available to prevent overtopping from a 100-year, 24-hour storm.

See the updated *Inflow Design Flood Control Plan – 5-Year Update* (ERM, 2021) in Attachment 12-1. The attached version of the *Inflow Design Flood Control Plan – 5-Year Update* has been updated to include signature, seal, and date of qualified professional and Firm Number. See Attachment 12-2 for the PDP *Inflow Design Flood Control Plan* (AECOM, 2022, draft version). The *Inflow Design Flood Control Plan* will be updated prior to the operation of the PDP.

4. Waste Flow
Describe the means that will be used to immediately shut off the flow of waste to the impoundment in the event of liner failure or to prevent overtopping.

See the updated *Inflow Design Flood Control Plan – 5-Year Update* (ERM, 2021) in Attachment 12-1. The attached version of the *Inflow Design Flood Control Plan – 5-Year Update* has been updated to include signature, seal, and date of qualified professional and Firm Number. See Attachment 12-2 for the PDP *Inflow Design Flood Control Plan* (AECOM, 2022, draft version). The *Inflow Design Flood Control Plan* will be updated prior to the operation of the PDP.

5. Dike Construction ☒ Yes ☐ No

If Yes, submit the dike certification (located at the end of the application).

The structural integrity of the dike system must be certified by a qualified Texas P.E. before the registration is issued. If the impoundment is not being used, the dike system must be certified before it can be put into use. The certification must be sealed by a qualified Texas P.E., along with the engineering firm's name and registration number (30 TAC §352.4).

A report shall accompany the dike certification which summarizes the activities, calculations, and laboratory and field analyses performed in support of the dike certification. Describe the design basis used in construction of the dikes. A QAPP should be included in the report to ensure that each analysis is performed appropriately and include:

(1) Slope Stability Analysis

(2) Hydrostatic and Hydrodynamic Analysis

(3) Storm Loading

(4) Rapid Drawdown

Earthen dikes should have a protective cover to minimize wind and water erosion and to preserve the structural integrity of the dike. Describe the protective cover used and describe its installation and maintenance procedures.

See the updated *Structural Stability and Safety Factor Assessments – 5-Year Update* (ERM, 2021) in Attachment 14. The attached version of the *Structural Stability and Safety Factor Assessments – 5-Year Update* has been updated to include signature, seal, and date of qualified professional and Firm Number. The certification for Dike Construction will be submitted prior to the operation of the PDP.

B. Liner Design

For surface impoundment(s), provide information about how the facility will comply with 30 TAC §352.711 for existing CCR surface impoundments. For new and lateral expansion of CCR surface impoundments provide information on how the facility will comply with 30 TAC §352.261, and 30 TAC §352.721, see Instructions and Technical Guidance No. 31 Coal Combustion Residuals Surface Impoundment. The qualified Texas P.E. must certify that the design of the liner complies with the requirements of 30 TAC Chapter 352 and 40 CFR Part 257, Subpart D, where required.

Is the CCR surface impoundment unlined? ☒ Yes ☐ No (BAPs, EP, and SRH Pond)

Is the CCR surface impoundment unlined? ☐ Yes ☒ No See Attachment 13-2 for the PDP *Liner Documentation* (AECOM, 2022).

If "Yes", the CCR unit is subject to the closure requirements under 30 TAC Chapter 352 and 40 CFR §257.101(a) to retrofit or close. A notification must be prepared stating that an assessment of corrective measures has been initiated.

See Attachments 9-1 and 9-2 *Alternative Capacity Infeasibility Demonstration* for the Evaporation Pond and the *Alternative Capacity Infeasibility Demonstration* for the SRH Pond, prepared for and submitted to EPA on 30 November 2020, to demonstrate that CCR and non-CCR wastestreams must continue to be managed in those surface impoundments based on a lack of alternative capacity.

Also see Attachment 9-3 for a letter from the EPA dated 11 January 2022 which indicated that EPA has reviewed both demonstrations and determined that both demonstrations are complete. As a consequence of the submission of complete demonstrations, the deadlines for the CCR units covered by the demonstrations to cease receipt of waste is tolled until EPA completes their review and issues a final decision on the demonstrations.

1. Complete Table V.B. - Surface Impoundment Liner System for each surface impoundment to be registered.
2. Describe the design, installation and operation of liner and leak detection components. The description must demonstrate that the liner and leak detection system will prevent discharge to the land and surface water. Submit a QAPP report to ensure that each analysis is performed appropriately.

   See Attachment 8-1 *Liner Design Criteria for Existing CCR Surface Impoundments* for a description of the various liner components. The existing surface impoundments (BAPs, EP, and SRH Pond) do not have leak detection systems.
3. For new or laterally expansions of existing surface impoundments, provide a subsurface soil investigation report that must include:

   Not Applicable for BAPs, EP, and SRH Pond. See Attachment 13-3 for the PDP *Geotechnical Engineering Study* (Raba Kistner, 2018) and Attachment 13-4 for the PDP *Geotechnical Engineering Study* (Raba Kistner, 2020) for the PDP.

   a. A description of all borings drilled, at the unit location, to test soils and characterize groundwater;
   b. A unit map drawn to scale showing the surveyed locations and elevations of the borings, including location of permanent identification markers ((30 TAC §352.731) and (40 CFR §257.73(a)(1));
   c. Cross-sections prepared from the borings depicting the generalized strata at the unit;
   d. Boring logs, including a description of materials encountered, and any discontinuities such as fractures, fissures, slickensides, lenses or seams;
   e. A description of the geotechnical data and the geotechnical properties of the subsurface soil materials, including the suitability of the soils and strata for the intended uses; and
   f. A demonstration that all geotechnical tests were performed in accordance with industry practices and recognized procedures.

C. Hazard Potential Classification

Provide the current hazard potential classification assessment and associated documentation, as required by 30 TAC §352.731 or §352.741 and 40 CFR §257.73(a)(2) or §257.74(a)(2). The qualified Texas P.E. must certify that the initial hazard potential classification and any subsequent periodic classification was conducted in accordance with the requirements of 30 TAC Chapter 352, where required.

Hazard Potential Classification:

SRH Pond – Significant Hazard Potential

EP – Low Hazard Potential

PDP – Significant Hazard Potential

See Attachment 10 *Hazard Potential Classification Assessment for Existing CCR Surface Impoundments – 5-Year Update* (CPS Energy, 2021). Information regarding the proposed PDP will be incorporated into an updated *Hazard Potential Classification Assessment for Existing CCR Surface Impoundments*. The *Hazard Potential Classification Assessment for Existing CCR Surface Impoundments* will be updated prior to the operation of the PDP.

D. Emergency Action Plan for High or Significantly High Hazard Potential

Provide the current Emergency Action Plan that has been certified by a qualified Texas P.E. and includes the following requirements from 30 TAC 352, Subchapter F and 40 CFR §257.73(a)(3)(i)(A) - (E) or 40 CFR §257.74 (a)(3)(i)(A) - (E). The qualified Texas P.E. must certify that the written Emergency Action Plan and any subsequent amendment of the plan complies with the requirements of 30 TAC 352, Subchapter F, where required.

Complete Table V.J. - Inspection of Surface Impoundments

See the updated *Emergency Action Plan* for the Bottom Ash Ponds and SRH Pond (ERM, 2017) in Attachment 11. The attached version of the *Emergency Action Plan* has been updated to include signature, seal, and date of qualified professional and Firm Number. Information regarding the proposed PDP operations will be incorporated into an updated *Emergency Action Plan*. The *Emergency Action Plan* will be updated prior to the operation of the PDP.

E. Inflow Design Flood Control System Plan

Describe how the surface impoundment(s) system will manage stormwater run-on away from the surface impoundment(s) (30 TAC §352.821 and 40 CFR §257.82(a) and (c)). Stormwater run-on must be diverted away from a surface impoundment, based on the hazard potential. Where dikes are used to divert run-on, they must be protected from erosion. Include all analyses used to calculate run-on volumes. Provide the inflow design flood control system plan. Provide qualified Texas P.E. certification that the initial and periodic inflow design flood control system plans meet the requirements of 30 TAC §352.821, where required.

See the updated *Inflow Design Flood Control Plan – 5-Year Update* (ERM, 2021) in Attachment 12-1. The attached version of the *Inflow Design Flood Control Plan – 5-Year Update* has been updated to include signature, seal, and date of qualified professional and Firm Number. See Attachment 12-2 for the PDP *Inflow Design Flood Control Plan* (AECOM, 2022, draft version). The *Inflow Design Flood Control Plan* will be updated prior to the operation of the PDP.

F. History of Construction for Existing CCR Surface Impoundment(s), or the Design and Construction Plans for New and Lateral Expansions

Provide information on the history of construction for each existing CCR surface impoundment (30 TAC §352.731 and 40 CFR §257.73(c)) or the design and construction plans for new and lateral expansions of each CCR surface impoundment (30 TAC §352.741) and (40 CFR §257.74(c)).

See the updated *Compilation of Construction History* (ERM, 2022) in Attachment 13-1. The attached version of the *Compilation of Construction History* has been updated to address NODs. PDP Construction Plans (AECOM, 2022, draft versions) have been included in Attachment 1 of the updated *Compilation of Construction History* (ERM, 2022).

G. Structural Stability Assessment

Provide the most recent structural stability assessment of the surface impoundments. Include the combined capacity of all surface impoundment spillways with calculations; the peak discharge the unit must meet for all combined spillways; probable maximum flood-high hazard, 1,000-yr-significant high hazard, 100-yr-low hazard; identify if there were any structural stability deficiencies in last assessment; identify how these deficiencies were managed and corrected; and qualified Texas P.E. certification. The structural stability assessment must include all information required in 30 TAC §352.731 for existing surface impoundments or 30 TAC §352.741 for new or laterally expanding surface impoundments.

See the updated *Structural Stability and Safety Factor Assessments – 5-Year Update* (ERM, 2021) in Attachment 14. The attached version of the *Structural Stability and Safety Factor Assessments – 5-Year Update* has been updated to include signature, seal, and date of qualified professional and Firm Number. Based on the unit dimensions, a *Structural Stability Assessment* is not required for the proposed PDP.

H. Safety Factor Assessment

The current safety factor assessment must be submitted with the application. It must include documentation that demonstrates whether the calculated factors of safety for each CCR surface impoundment achieve the minimum safety factors specified in 30 TAC 352, Subchapter F and 40 CFR §257.73(e)(1)(i) - (iv) and 40 CFR §257.74(e)(1)(i) - (iv) for the critical cross-section of the embankment. The critical cross-section is the cross-section anticipated to be the most susceptible to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments must be supported by appropriate engineering calculations and certified by a qualified Texas P.E.

See the updated *Structural Stability and Safety Factor Assessments – 5-Year Update* (ERM, 2021) in Attachment 14. The attached version of the *Structural Stability and Safety Factor Assessments – 5-Year Update* has been updated to include signature, seal, and date of qualified professional and Firm Number. Based on the unit dimensions, a *Safety Factor Assessment* is not required for the proposed PDP.

VI. Groundwater Monitoring and Corrective Action (30 TAC 352, Subchapter H)

See Instructions and Technical Guidance – No. 32 Coal Combustion Residuals Groundwater Monitoring and Corrective Action

27. Groundwater Monitoring System

See the updated *Groundwater Monitoring System* (ERM, 2017) in Attachment 17. The attached version of the *Groundwater Monitoring System* has been updated to include signature, seal, and date of qualified professional and Firm Number. Five monitor wells have been installed to complete the monitoring network for the proposed PDP. See Attachment 6-4 for updated Groundwater Monitoring System Tables. Information regarding the PDP monitoring network will be incorporated into an updated *Groundwater Monitoring System*. The *Groundwater Monitoring System* will be updated prior to the operation of the PDP.

A. Complete Table VI.A. - Unit Groundwater Detection Monitoring System.

B. Provide a map showing location of wells, groundwater elevations, and groundwater flow direction.

C. Provide attachments describing how the facility will comply with the requirements in 30 TAC §352.911 and provide a certification by a qualified Texas P.E or qualified Texas P.G. that the groundwater monitoring system design and construction meet the requirements of 30 TAC Chapter 352.

D. Provide a figure showing the geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

E. For a multiunit groundwater monitoring system, demonstrate that the groundwater monitoring system will be equally as capable of detecting monitored constituents at the waste boundary of the CCR unit as the individual groundwater monitoring system for each CCR unit by providing at minimum the following information:

1. Number, spacing, and orientation of each CCR unit;
2. Hydrogeologic setting; and
3. Site history.

F. Has there been any sampling concentrations of one or more constituents listed in Appendix IV detected at statistically significant levels above the groundwater protection standard (GWPS)? ☐ Yes ☒ No

All the existing CCR units have only been evaluated for Appendix III constituents under Detection Monitoring. No statistically significant increases have been determined that would require evaluation of Appendix IV constituents.

G. Provide information on how monitoring wells have been constructed and cased in a manner that maintains the integrity of the monitoring well borehole and to prevent contamination of samples and the groundwater.

Based on the review of well construction diagrams for monitor wells installed by other consultants (JKS-31, JKS-33, and JKS-36) and well construction diagrams for monitor wells installed by ERM (JKS-45 through 70), the monitor wells in the networks around the CCR units are installed with well screen surrounded with a sand pack and a bentonite/ bentonite cement seal above the sand pack and are completed at the surface with a concrete pad and protective casing. The monitor wells in the networks are inspected twice a year during the semi-annual monitoring events and are repaired, if necessary, to prevent contamination of samples and the groundwater.

28. Groundwater Monitoring Sampling and Analysis Program

Provide a sampling and analysis plan that includes procedures and techniques; sampling and analytical methods that are appropriate for groundwater sampling; and that address the requirements of 30 TAC §352.931 and 40 CFR §257.93. Provide a P.E or P.G. certification that describes the statistical method selected to evaluate the groundwater monitoring data and certifies that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area. Refer to TG-32 for information and guidance.

See the updated *Groundwater Sampling and Analysis Program* (ERM, 2022) in Attachment 18. The attached version of the *Groundwater Sampling and Analysis Program* has been updated to include signature, seal, and date of qualified professional and Firm Number. Sampling at the proposed PDP will follow the procedures identified in the current *Groundwater Sampling and Analysis Program* (ERM, 2022). The *Groundwater Sampling and Analysis Program* document will be updated after completion of the monitoring network for the PDP.

29. CCR Unit(s) in a Detection Monitoring Program

Does the facility have CCR unit(s) in a Detection Monitoring Program? See Attachment 6 Groundwater Monitoring Tables. See Attachment 6-5 for updated Groundwater Monitoring Tables. See Attachment 6-5 for Table VI.C.1 and VI.D.2 to address NODs.

☒ Yes ☐ No

If "Yes", Submit the following information:

A. Submit Table VI.C. – Facility CCR Units Under Detection Monitoring.

B. Provide a Background Evaluation Report.

As presented in the *Annual Groundwater Sampling and Corrective Action Reports* for 2021, CPS Energy conducted a Water Level Study to determine if refinements to the groundwater monitoring program are appropriate. CPS Energy plans to provide relevant data to confirm the validity of the upgradient location determination. Some of this additional information is currently being collected and evaluated and will be presented in more detail in the subsequent *Annual Groundwater Sampling and Corrective Action Reports* (2022 reporting year).

C. Provide a report with the results of semiannual monitoring events.

See updates to the most recent *Annual Groundwater Sampling and Corrective Action Report* for each of the four existing CCR units (ERM, 2021) in Attachments 16-1 through 16-4. The attached versions of the *Annual Groundwater Sampling and Corrective Action Reports* have been updated to include signature, seal, and date of qualified professional and Firm Number.

1. Has a statistically significant increase (SSI) been detected for one or more of the constituents listed in Appendix III at any monitoring well?

   ☐ Yes ☒ No

2. Has a notification to the executive director been sent within 14 days?

   ☐ Yes ☒ No

3. Date assessment monitoring program will start: Not applicable.

4. Do you plan to provide an alternative source demonstration (ASD)?

   ☒ Yes ☐ No

Multiple *Written Demonstrations* (aka *Alternate Source Demonstrations*) have been prepared for the existing CCR units and have documented no statistically significant increases. See Attachments 15-1 through 15-4 for *Written Demonstration – Responses to Potential Statistically Significant Increases* prepared by ERM for reporting years 2017, 2018, 2019, and 2020. The attached versions of the *Written Demonstrations* (aka *Alternate Source Demonstrations*) have been updated to include signature, seal, and date of qualified professional and Firm Number. The *Alternate Source Demonstration* for reporting year 2021 (Attachment 26) has been updated to address NODs.

30. CCR Unit(s) in an Assessment Monitoring Program

Does the facility have CCR unit(s) in an Assessment Monitoring Program?

☐ Yes ☒ No

All the existing CCR units have only been evaluated for Appendix III constituents under Detection Monitoring. No statistically significant increases have been determined that would require evaluation of Appendix IV constituents.

If "Yes", Submit information related for units.

A. Complete Table VI.D. – CCR Units Under Assessment Monitoring.

B. Provide, for each well in assessment monitoring status, the recorded concentrations lab sheets and results in a tabulated form.

C. Have the concentrations of all constituents listed in Appendices III and IV been at or below background values, using the statistical procedures in 30 TAC §352.931 and 40 CFR §257.93(g), for two consecutive sampling events for the CCR unit(s)? ☐ Yes ☐ No

If answer to above is yes, detection monitoring may resume. The owner or operator must prepare a notification stating that detection monitoring is resuming for the CCR unit and obtain written approval from the executive director.

D. Are there any concentrations of any constituent in Appendices III and IV above background values? ☐ Yes ☐ No

1. Has a notification to the executive director been sent within 14 days?

   ☐ Yes ☐ No

E. Date assessment of corrective measures will be initiated (must be within **90 days** of finding a statistically significant level above the GWPS) for the CCR unit(s):

F. Will you provide an ASD (see TG-32 for an acceptable submittal)? ☐ Yes ☐ No

G. Date assessment of corrective measures will be initiated if ASD is not accepted?

H. Complete Table VI.D.2. - Groundwater Detection Monitoring Parameters

Note: Refer to TG-32 regarding establishing a GWPS for each constituent in Appendix IV detected in the groundwater and attach as table.

I. Have you completed the assessment of corrective measures? ☐ Yes ☐ No
If "Yes", date assessment of corrective measures was completed:
If "No", date assessment of corrective measures will be completed:
Expected date of submittal of amendment (see note below):
Provide completed assessment of corrected measures materials.

Note: Within **30 days** of completing the assessment of corrective measures, and before remedy implementation, the owner or operator shall submit an application for amendment to the registration. In some circumstances, the assessment of corrective measures and selected remedy may be approved as part of the initial application for the CCR unit registration.

J. Have you selected a remedy? ☐ Yes ☐ No

Provide public meeting documentation under 30 TAC §352.961 and a report under 30 TAC §352.971 and 40 CFR §257.97.

VII. Closure and Post-Closure Care

See Instructions and Technical Guidance

Submit a full closure plan and post-closure plan and all information describing how the owner or operator will comply with 30 TAC 352, Subchapter J and 40 CFR §§257.100 - 257.104. The owner of property on which an existing disposal facility is located, following the closure of a unit, must also submit documentation that a notation has been placed in the deed to the facility that will in perpetuity notify any potential purchasers of the property that the land has been used to manage CCR wastes and its use is restricted (30 TAC §352.1221 and 40 CFR §257.102(i)). For CCR units, closed after October 19, 2015, that were closed before submission of the application, the applicant should submit documentation to show that notices required under 30 TAC 352, Subchapter K and 40 CFR §257.105 or §257.106 have been filed.

The proposed PDP will be closed by removal of CCR. Information regarding the proposed PDP will be incorporated into an updated *CCR Unit Closure and Post-Closure Plan*. The *CCR Unit Closure and Post-Closure Plan* will be updated prior to the operation of the PDP. See the updated *CCR Unit Closure and Post Closure Plan* (ERM, 2022) in Attachment 19. The attached version of the *CCR Unit Closure and Post Closure Plan* has been updated to include signature, seal, and date of qualified professional and Firm Number and to address NODs.

31. Closure Plan

This section applies to the owners and operators of all CCR units required to be registered. The applicant must close the facility in a manner that minimizes need for further maintenance and controls, or eliminates, to the extent necessary to protect human health and the environment, the post-closure release of CCR waste, chemical constituents of concern, leachate, contaminated rainfall, or waste decomposition products to the groundwater, surface waters, or to the atmosphere.

The type of unit to be closed can determine the level of detail sufficient for a closure plan. CCR units which have been certified closed after October 19, 2015, must provide documentation to demonstrate compliance with state and federal regulations.

For each unit to be registered, complete Table VII.A.1. - Unit Closure and list the CCR Unit components to be decontaminated, possible methods of decontamination, and possible methods of disposal of wastes and waste residues generated during unit closure. All ancillary components must be decontaminated, and the generated waste disposed of appropriately.

See Attachment 6 Closure Tables. See Attachment 6-6 for updated Closure Tables.

Information about CCR units closed or to be closed under alternative closure requirements must be provided in Table VII.A.2. - CCR Units Under Alternative Closure Notification.

Guidance on design of a closure cap and final cover for non-hazardous industrial solid wastes landfills is provided in EPA publication 530-SW-85-014, TCEQ Technical Guidance No. 3 and TCEQ publication, RG-534, "Guidance for Liner Construction and Testing for a Municipal Solid Waste Landfill".

See Attachments 28-1 and 28-2 for the EP Closure Drawings and Specifications (Burns & McDonnell, 2021 and 2020).

32. Post-Closure Care Plan

Provide a post-closure care plan that complies with the requirements of 30 TAC §352.1241. Post-closure care of each CCR unit must continue for at least 30 years after the date of completing closure of the unit and must consist of monitoring and reporting of the groundwater monitoring systems, in addition to the maintenance and monitoring of CCR unit. Continuation of certain security requirements may be necessary after the date of closure. Post-closure use of property on or in which waste remains after closure must never be allowed to disrupt the integrity of the containment system. In addition, submit the following information:

- The name, address, and phone number of the person or office to contact about the CCR unit during the post-closure period; and
- A discussion of the future use of the land associated with each unit.

Landfills and surface impoundments which have been certified closed after October 19, 2015, must be included in post-closure care plans, unless they have been determined to have been closed by waste removal equivalent to the closure standards in 30 TAC §352.1221 and 40 CFR §257.102 or 30 TAC §352.1231 and 40 CFR §257.103. If such a demonstration has been made pursuant to 40 CFR §257.102 or §257.103, but an equivalency determination has not been made, please submit a copy of the demonstration documentation. If an equivalency determination has been made, applicant should submit a copy of this determination.

VIII. Financial Assurance

33. Post-Closure Care Cost Estimate

Financial assurance for post-closure care (30 TAC §352.1101) applies to owners or operators of all CCR units, except CCR units from which the owner or operator intends to remove wastes and perform clean closure. Provide a written cost estimate in current dollars of the total cost of the 30-year (or longer, if applicable under 30 TAC §352.1101(d)) post-closure care period to perform post-closure care requirements as prescribed in 30 TAC §352.1241. The cost estimate must be based on the costs of hiring a third party to conduct post-closure care maintenance. The proposed PDP will be closed by removal of CCR. See Attachments 6-7 and 6-8 for updated Post-Closure Tables to address NODs.

Complete Table VIII.A.1. – Post-Closure Cost Summary for Existing Registered Units

Complete Table VIII.A.2. - Post-Closure Cost Summary for Proposed Registered Units

34. Financial Assurance Mechanism

The financial assurance for post-closure care is required in accordance with 30 TAC §352.1101. The applicant shall demonstrate the financial assurance within 90 days after approval of the registration with a financial mechanism acceptable to TCEQ in compliance with 30 TAC §352.1101(c) and 30 TAC §37, Subchapters A through D, except as indicated in 30 TAC §352.1111, in an amount no less than the amount specified in the approved Post-Closure Care Cost Summary. Provide a description of the proposed financial assurance mechanism. See Attachments 6-7 and 6-8 for updated Post-Closure Tables to address NODs.

Complete Table VIII.B. - Post-Closure Period, for the authorized post-closure period, to meet the requirements of 30 TAC §352.1241(a) through (c).

Attachment 1 Section 20 Attachments

Attachment 1-1

Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	7/25/2016	SCALE:	AS SHOWN	REVISION:	1
W.O.NO.:	K:\GIS\CPS\Calaveras\MXD\0337367_CPSCalaveras_SiteLoc.mxd				

FIGURE 2.1
FACILITY LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Attachment 1-2

Environmental Resources Management

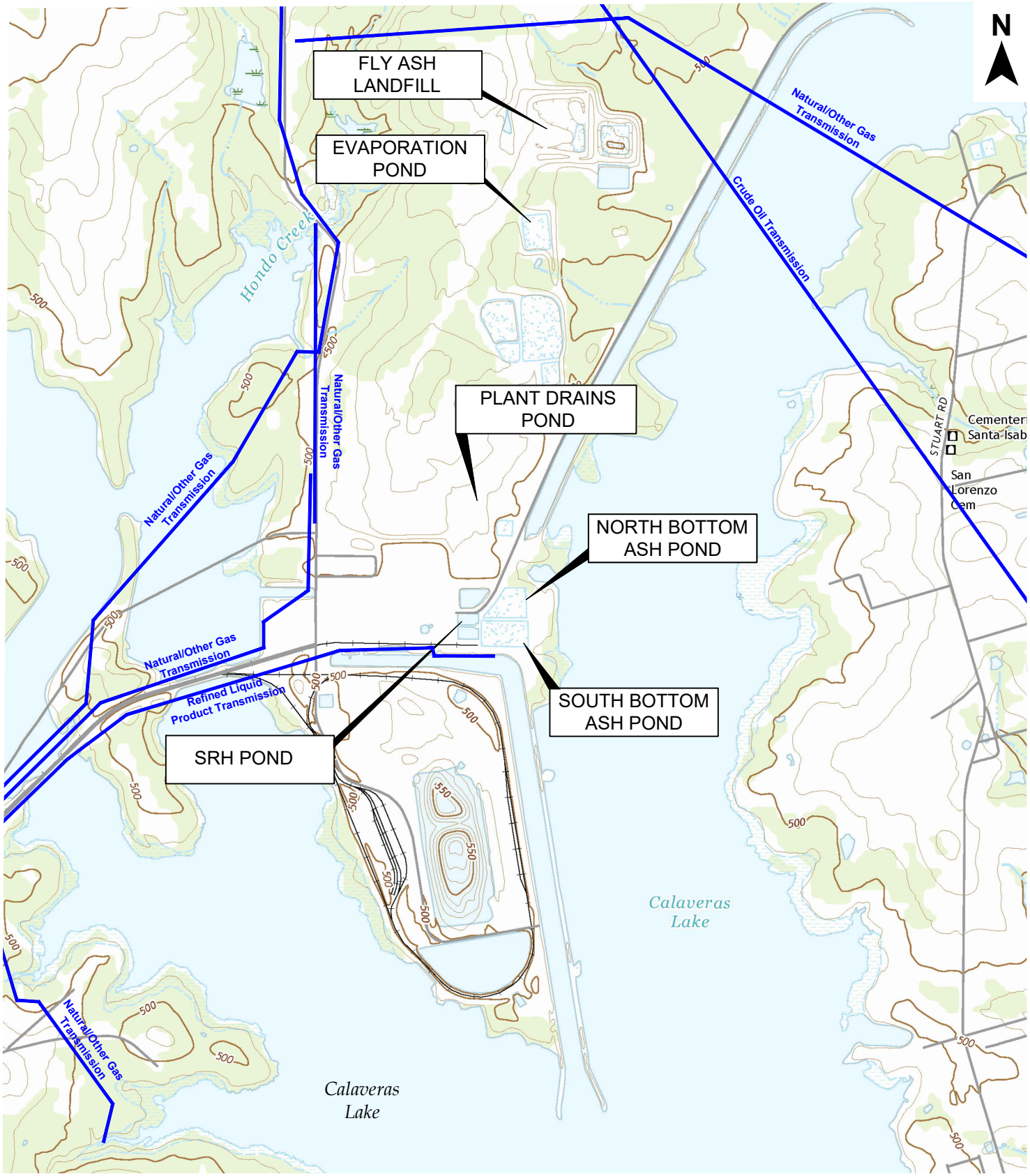
DESIGN:	WZ	DRAWN:	EFC	CHKD.:	WZ
DATE:	2022-11-21	SCALE:	AS SHOWN	REVISION:	0

P:\Projects\0636109 CPS Energy - 2022 CCR Tasks.WZ\GIS\MXD\
fig1_0636109_CPSCalv_WellLocs_111822.mxd

FIGURE 1
CCR WELL NETWORK LOCATION MAP
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Attachment 1-3



SOURCE: USGS 7.5-MINUTE QUADRANGLE, TOPOGRAPHIC SERIES, ELMENDORF, TX, 2022.

Figure 1
CCR Unit Locations and Pipelines
CPS Energy
Calaveras Power Station
San Antonio, Texas

0 2000 4000
SCALE FEET

Environmental Resources Management
erm.com

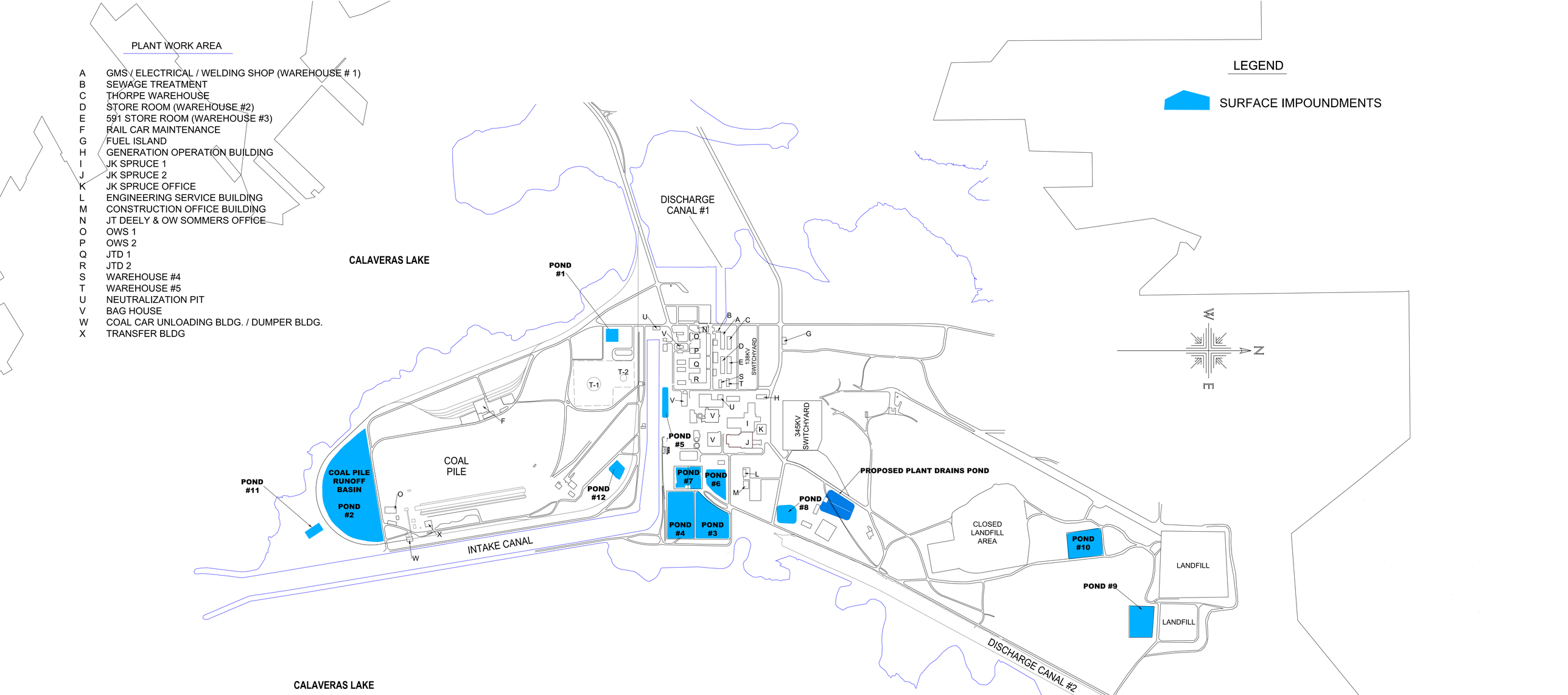
Attachment 1-4

PLANT WORK AREA

A	GMS / ELECTRICAL / WELDING SHOP (WAREHOUSE # 1)
B	SEWAGE TREATMENT
C	THORPE WAREHOUSE
D	STORE ROOM (WAREHOUSE #2)
E	591 STORE ROOM (WAREHOUSE #3)
F	RAIL CAR MAINTENANCE
G	FUEL ISLAND
H	GENERATION OPERATION BUILDING
I	JK SPRUCE 1
J	JK SPRUCE 2
K	JK SPRUCE OFFICE
L	ENGINEERING SERVICE BUILDING
M	CONSTRUCTION OFFICE BUILDING
N	JT DEELY & OW SOMMERS OFFICE
O	OWS 1
P	OWS 2
Q	JTD 1
R	JTD 2
S	WAREHOUSE #4
T	WAREHOUSE #5
U	NEUTRALIZATION PIT
V	BAG HOUSE
W	COAL CAR UNLOADING BLDG. / DUMPER BLDG.
X	TRANSFER BLDG

LEGEND

SURFACE IMPOUNDMENTS



SURFACE IMPOUNDMENTS

1	DIKED OIL STORAGE AREA (NOR UNIT 28)
2	COAL PILE RUNOFF POND (NOR UNIT 018)
3	NORTH BOTTOM ASH POND (NOR UNIT 5)
4	SOUTH BOTTOM ASH POND (NOR UNIT 6)
5	STORM WATER (SOUTHWEST RUNOFF POND 3)
6	STORM WATER (CRP RUNOFF POND 1)
7	SRH / FGD POND (DIVIDED TO NORTH AND SOUTH)
8	STORM WATER (CRP RUNOFF POND 2)
9	FLY ASH RUNOFF POND (NOR UNIT 27)
10	EVAPORATION POND (NOR UNIT 21)
11	CLARIFIER SLUDGE RECYCLING POND (NOR UNIT 25)
12	STORM WATER (COAL CONVEYOR AREA TEMP HOLDING POND) NOR UNIT 32

SURFACE IMPOUNDMENT LOCATION MAP
CPS Energy – Calaveras Power Station
San Antonio, Texas

Attachment 1-5

Environmental Resources Management

DATE: January 2022

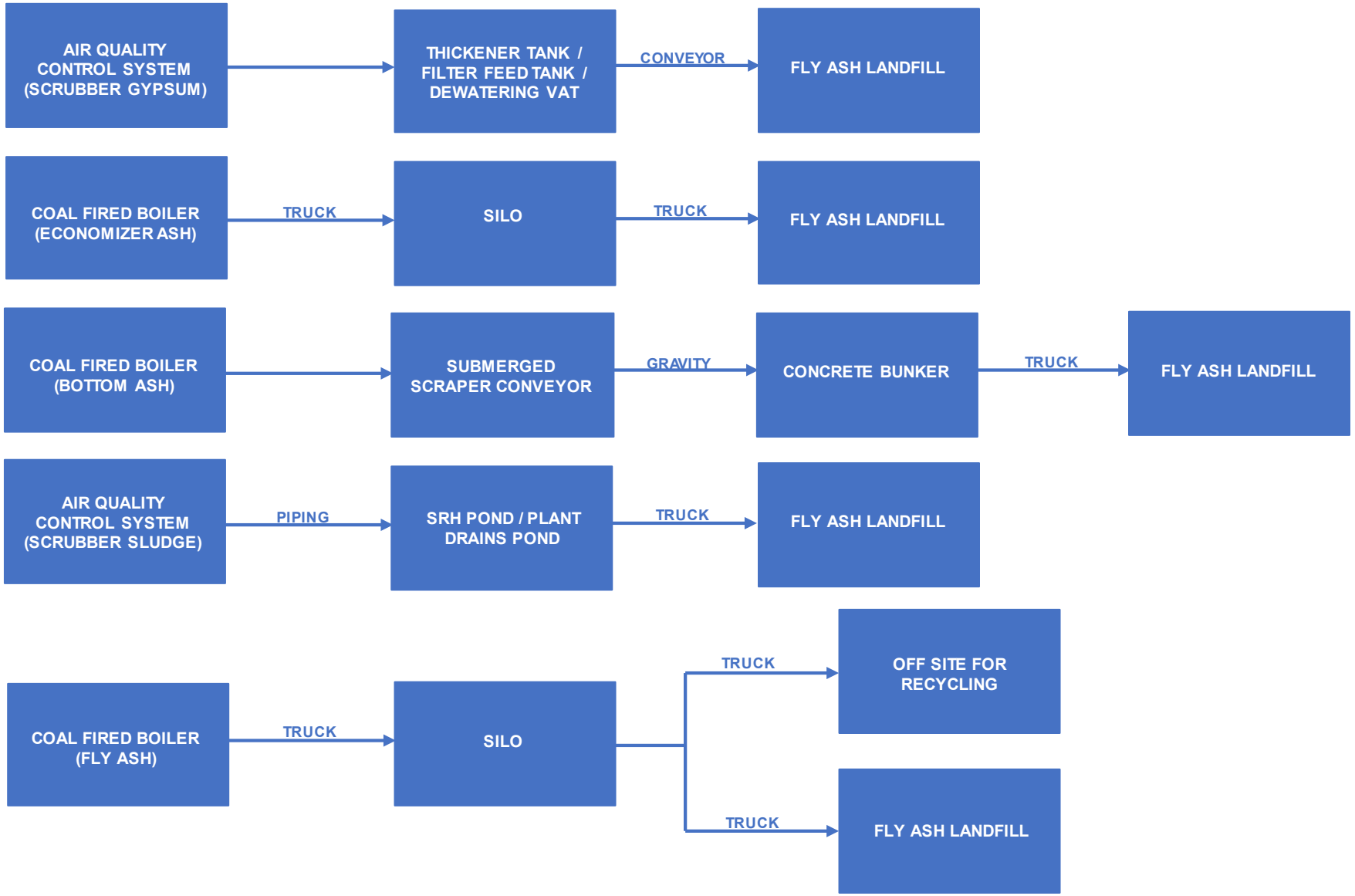
PROJ. NO.: 0503422

FIGURE 1
Surrounding Features Map

CPS Energy – Calaveras Power Station
San Antonio, Texas

ERM®

Attachment 1-6



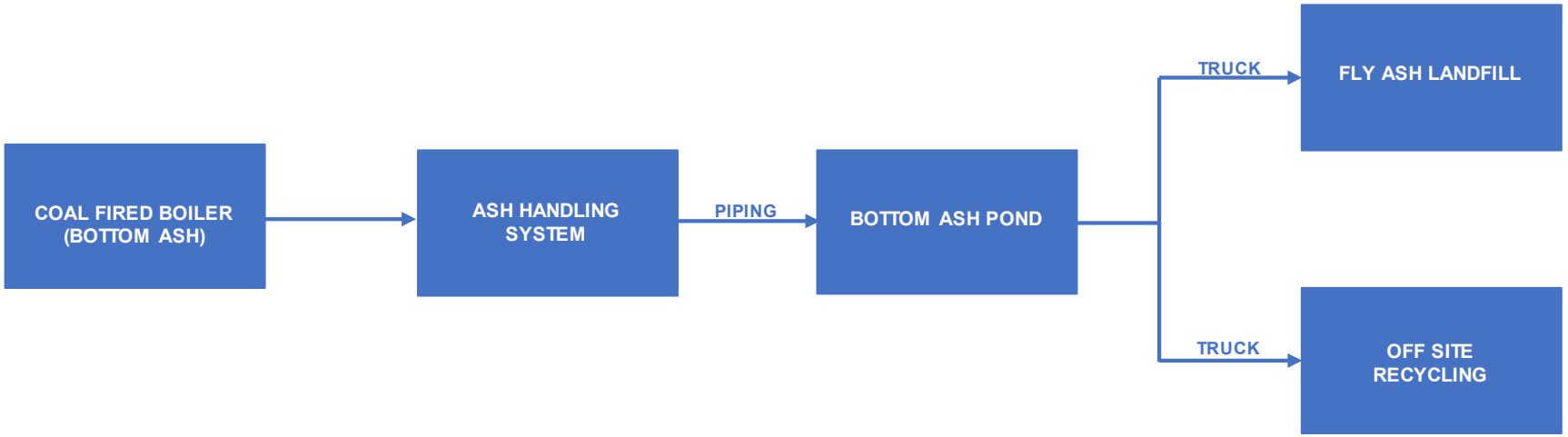
Environmental Resources Management

FIGURE 1
FLY ASH LANDFILL

DATE: June 2022

PROJ.NO.: 0503422

ERM



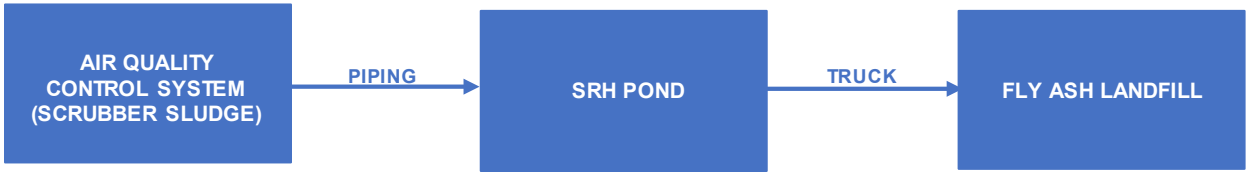
Environmental Resources Management

FIGURE 2
BOTTOM ASH PONDS

DATE: June 2022

PROJ.NO.: 0503422

ERM



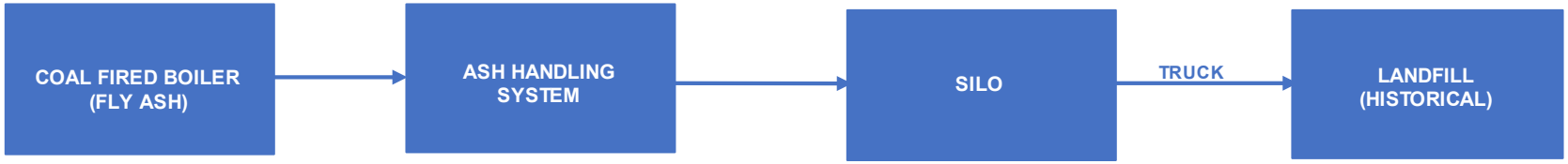
Environmental Resources Management

FIGURE 3
SRH POND

DATE: June 2022

PROJ.NO.: 0503422

ERM



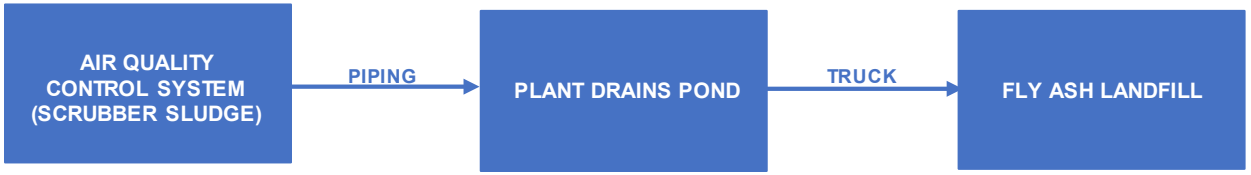
Environmental Resources Management

FIGURE 4
EVAP POND

DATE: June 2022

PROJ.NO.: 0503422

ERM



Environmental Resources Management

FIGURE 5
PLANT DRAINS POND

DATE: June 2022

PROJ.NO.: 0503422

ERM

Attachment 1-7

N

W E

S

PROPOSED WASTEWATER EVAPORATION PONDS

PROPOSED LOW VOLUME WASTE POND

CALAVERAS PLANT SITE

CALAVERAS LAKE

DAM/SPILLWAY

Recirculating Discharge

Recirculating Discharge

Recirculating Discharge

Recirculating Discharge

Recirculating Discharge

Recirculating Discharge

001

002

006

014

015

016

017

018

907

DISCHARGE ROUTE: ONE MILE DOWNSTREAM
(ONLY DURING HIGH PRECIPITATION EVENT)

Calaveras Creek

Parita Creek

Braunig Lake

Legend

CPS Energy Calaveras Plant Property

Adjacent Property Boundaries

~ July 18, 2018 ~

1 inch = 1,100 feet

0 1,100 2,200 4,400 Feet

0 0.5 1 2 Miles

CALAVERAS POWER STATION

ADJACENT LANDOWNERS MAP

Attachment 1-8

PROP_ID	SITUS	Map_ID	OWNER (Last name, First name)	ADDRLN1	MAILING ADDRESS			
337781	9720 ELMENDORF-LA VERNIA RD	001	UNKNOWN					
1138489	FOSTER RD	002	ALEMAN RAUL JR & LONGORIA CAROLINA		24397 LOUISIANA RD	LA FERIA	TX	78559-4358
159059	14398 KILOWATT RD	003	ALMAGUER DAVID & SYLVIA		14398 KILOWATT RD	SAN ANTONIO	TX	78223-9727
336885	8904 S FOSTER RD	004	ALMALIGA LARA		4214 STANLEY PARK	CONVERSE	TX	78109-2801
1178071	14863 ADKINS ELMENDORF RD	005	ARC DG EDFTX001 LLC	% RYAN LLC	PO BOX 460369 DPT 100	HOUSTON	TX	77056-8369
159060	14404 KILOWATT RD	006	ARIAS OBDULIA P	C/O A & M INVESTMENT	PO BOX 654	ELMENDORF	TX	78112-0654
336806	10184 STUART RD	007	ARISPE JESUS S & JUDY K		10184 STUART RD	SAN ANTONIO	TX	78263-9692
157185	13934 S US HIGHWAY 181	009	BAILEY THOMAS G & DIANE C/S		13934 S US HIGHWAY 181	SAN ANTONIO	TX	78223-9636
366623	7963 RICHTER RD	010	BAIN BILLY B & BARBARA		7963 RICHTER RD LOT 2	SAN ANTONIO	TX	78223-9750
366622	7963 RICHTER RD	010	BAIN BILLY E		7963 RICHTER RD LOT 2	SAN ANTONIO	TX	78223-9750
158940	14215 S US HIGHWAY 181	011	BARAJAS ROMUALDO		14215 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4575
158937	14215 S US HIGHWAY 181	011	BARAJAS ROMUALDO		14215 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4575
159602	14186 S US HIGHWAY 181	011	BARAJAS ROMUALDO		14215 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4575
336870	8681 KNOWLTON RD	012	BIESENBACH RICHARD A		8681 KNOWLTON RD	SAN ANTONIO	TX	78263-9715
1125349	13375 LEEWARD LN	013	BISHOP JEFFREY SCOTT		13375 LEEWARD LN	SAN ANTONIO	TX	78263-2383
336467	8857 STUART RD	014	BLOCH DIANE & CHERYL		8857 STUART RD	SAN ANTONIO	TX	78263-9676
366624	8025 RICHTER RD	015	BOSWELL LUTHER B		5003 JOHN YOUNG DR	SAN ANTONIO	TX	78219-1261
336884	9145 S FOSTER RD	016	BOUBLE CHRISTOPHER M & BRUCE H & DONNA T		226 HATCHER AVE	SAN ANTONIO	TX	78223-3326
991075	8890 HILDEBRANDT RD	017	BREHM GENE A		8990 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6038
336962	9560 HILDEBRANDT RD	017	BREHM GENE A & VICKI D		7809 BROADWAY ST	SAN ANTONIO	TX	78209-2558
336693	12331 STUART RD	018	BRISTER ROBERTA J ETAL		12423 STUART RD	SAN ANTONIO	TX	78263-6214
366621	7951 RICHTER RD	019	CHRISTEENA & TIM CASTLEMEN		7951 RICHTER	SAN ANTONIO	TX	78223
366620	14030 S US HIGHWAY 181	020	CALDWELL JAMES JR &	ELIZABETH	14030 S US HIGHWAY 181	SAN ANTONIO	TX	78223-9755
1138490	FOSTER RD	021	CAMARGO JENNIFER ANN & CAMARGO STEPHANIE LEE		1363 W KINGS HWY	SAN ANTONIO	TX	78201-5135
1138491	FOSTER RD	021	CAMARGO JENNIFER ANN & CAMARGO STEPHANIE LEE		1363 W KINGS HWY	SAN ANTONIO	TX	78201-5135
1125341	9802 SPINNAKER PATH	022	CAMPBELL RICHARD K SR		9802 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
159063	14482 KILOWATT RD	023	CAMPOS JAVIER & REBECCA ANN		14482 KILOWATT RD	SAN ANTONIO	TX	78223-9727
158968	14512 KILOWATT RD	024	CAMPOS PRIMO S JR &	HORTENSE	14512 KILOWATT RD	SAN ANTONIO	TX	78223-9727
336788	STUART RD	025	CANO THERESA TERRILL		13271 HUNTERS LARK ST	SAN ANTONIO	TX	78230-2017
1125352	13363 LEEWARD LN	026	CANTU MARIA I & RICHARD O		13363 LEEWARD LN	SAN ANTONIO	TX	78263-2383
159133	14510 ADKINS ELMENDORF RD	027	CARDENAS LOUIS P EST OF	CARDENAS ISABEL L/E	14510 ADKINS ELMENDORF RD	SAN ANTONIO	TX	78223-9756
1125347	13403 LEEWARD LN	028	CARDONA SHERRIE ANN & RONALD		13403 LEEWARD LN	SAN ANTONIO	TX	78263-2384
158954	14420 S US HWY 81	029	CARRANZA JOSE RAMON		14420 S US HIGHWAY 181 LOT 4	SAN ANTONIO	TX	78223-9744
347444	13686 S US HIGHWAY 181	030	CARRANZA RUBEN		760 FALLING LEAVES DR	ADKINS	TX	78101-2623
158011	13221 LAGUNA RD	031	CASSIANO DIANA &	SYLVIA FEATHER	13221 LAGUNA RD UNIT 1	SAN ANTONIO	TX	78223-4512
1138493	8615 FOSTER RD	032	CASTELLANOS JOSE ROGELIO & MARIA LUISA		1254 KEATS ST	SAN ANTONIO	TX	78211-1638
1138502	FOSTER RD	033	CASTELLANOS ROBERTO & ROSA	& CASTELLANOS SAUL E	315 LORRAINE AVE	SAN ANTONIO	TX	78214-1506
1125350	13371 LEEWARD LN	034	CASTILLO RIGOBERTO J JR		13371 LEEWARD LN	SAN ANTONIO	TX	78263-2383
158000	13335 LAGUNA RD	035	CAZARES ROBERTO & NAVARRO JANET		13335 LAGUNA RD	SAN ANTONIO	TX	78223-9704
157186	12819 LAGUNA RD	036	CEMETERY					
1137429	13006 LAGUNA RD	037	CHAGOYA EVA &	PAULINE MARTINEZ	12915 LAGUNA RD	SAN ANTONIO	TX	78223-9706
1125346	13407 LEEWARD LN	038	CHAVARRIA TERA		13407 LEEWARD LN	SAN ANTONIO	TX	78263-2384
1012032	14910 LAGUNA RD	039	CLANTON GEORGE		14910 LAGUNA RD LOT 1	SAN ANTONIO	TX	78223-9730
336964	9540 HILDEBRANDT RD	040	CONNOR CATHERINE E		9540 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6026
336793	10270 STUART RD	041	CONTRERAS LETICIA C &	FREDRICK R SEWARD	10270 STUART RD	SAN ANTONIO	TX	78263-9693
335263	8090 KNOWLTON RD	042	COOPER LEROY		3615 HUNTERS SOUND ST	SAN ANTONIO	TX	78230
336470	8500 STUART RD	043	COVER VIRGINIA R		PO BOX 207	ADKINS	TX	78101-0207
1062375	14790 CASSIANO RD	044	CRANK NOVELLA M		14391 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4527
1165853	BURSHARD RD	045	CRUZ HOMERO		PO BOX 200211	SAN ANTONIO	TX	78220-0211
157992	13228 S US HIGHWAY 181	046	CRUZ LEE ANTHONY		328 MISTY BND	FLORESVILLE	TX	78114-9002
157990	13136 S US HIGHWAY 181	046	CRUZ LEE		328 MISTY BND	FLORESVILLE	TX	78114-9002
157991	13218 S US HIGHWAY 181	046	CRUZ LEE		328 MISTY BND	FLORESVILLE	TX	78114-9002
1054681	CASSIANO RD	047	CRUZ RAFAEL & NORA		6703 PARADISE OAK DR	SAN ANTONIO	TX	78227-2032
1138500	FOSTER RD	048	CUELLAR ERASMO & MARINA		4119 FAMILY TREE	SAN ANTONIO	TX	78222-2701
158952	14350 S US HIGHWAY 181	049	DANYSH ROBERT F		4606 JIM DANIEL	ADKINS	TX	78101-9619
158958	14463 S US HWY 181	049	DANYSH ROBERT F		4606 JIM DANIEL	ADKINS	TX	78101-9619
158959	14451 S US HWY 181	049	DANYSH ROBERT F		4606 JIM DANIEL	ADKINS	TX	78101-9619
158962	14360 S US HIGHWAY 181	049	DANYSH ROBERT		4606 JIM DANIEL	ADKINS	TX	78101-9619
336797	10372 STUART RD	050	DAVIS EVELYN & HERMAN		10372 STUART RD	SAN ANTONIO	TX	78263-9694
362842	9997 HILDEBRANDT RD	051	DELGADO EMIL & BEATRICE		9912 S FOSTER RD	SAN ANTONIO	TX	78223-4450
157238	HILDEBRANDT RD	051	DELGADO EMIL & BEATRICE		9912 S FOSTER RD	SAN ANTONIO	TX	78223-4450
157239	HILDEBRANDT RD	051	DELGADO EMIL A & BEATRICE		9912 S FOSTER RD	SAN ANTONIO	TX	78223-4450
157240	10090 S FOSTER RD	051	DELGADO EMIL A & BEATRICE		9912 S FOSTER RD	SAN ANTONIO	TX	78223-4450
157166	10091 HILDEBRANDT RD	051	DELGADO EMIL & BEATRICE		9912 S FOSTER RD	SAN ANTONIO	TX	78223-4450
336796	10366 STUART RD	052	DENNIS CATHY M		10366 STUART RD	SAN ANTONIO	TX	78263-9694
336873	COVER RD	053	DEWAAL ROBERTA		8535 COVER RD	SAN ANTONIO	TX	78263-9633
337489	12991 STUART RD	054	DOWLEARN JAMES A III		12991 STUART RD	SAN ANTONIO	TX	78263-6258
336972	9460 HILDEBRANDT RD	055	DURY BETTY J		9460 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6028
158973	ADKINS ELMENDORF RD	056	ESPINOZA MARIANO JR		14615 ADKINS ELMENDORF RD	SAN ANTONIO	TX	78223-4245
335172	6590 FM 1628	057	FAUBION GLENN WALLACE		6590 FM 1628	SAN ANTONIO	TX	78263-6123
335175	6590 FM 1628	057	FAUBION GLENN WALLACE		6590 FM 1628	SAN ANTONIO	TX	78263-6123

PROP_ID	SITUS	Map_ID	OWNER (Last name, First name)	ADDRLN1	MAILING ADDRESS			
1054970	8710 KNOWLTON RD	058	FOSTER JOHN D & KAREN S		PO BOX 482	ADKINS	TX	78101-0482
1125353	13359 LEEWARD LN	059	GARCIA DIANA LEE & JUAN M III		13359 LEEWARD LN	SAN ANTONIO	TX	78263-2383
1251870	VISTA CIR	060	GARZA STEVE & LETICIA ANN		13339 LEEWARD LN	SAN ANTONIO	TX	78263-2383
1125384	13339 LEEWARD LN	060	GARZA LETISIA & STEVE		13339 LEEWARD LN	SAN ANTONIO	TX	78263-2383
336872	KNOWLTON	061	GISH KYLE A		11515 N WEIDNER RD	SAN ANTONIO	TX	78233-6016
336469	8857 STUART RD	062	GLAZE PATRICIA ANN		8857 STUART RD # 3	SAN ANTONIO	TX	78263-9676
336468	STUART RD	062	GLAZE PATRICIA		PO BOX 175	ADKINS	TX	78101-0175
1205761	BERNHARDT RD	063	GOLDEN STATE PROPERTIES LLC		1102 E CROCKETT ST	SAN ANTONIO	TX	78202-2807
1205765	STUART RD	063	GOLDEN STATE PROPERTIES LLC		1102 E CROCKETT ST	SAN ANTONIO	TX	78202-2807
1205760	BERNHARDT RD	063	GOLDEN STATE PROPERTIES LLC		1102 E CROCKETT ST	SAN ANTONIO	TX	78202-2807
336543	9471 STUART RD	063	GOLDEN STATE PROPERTIES LLC	% HAYAT AHMADZAL (MNGR)	23906 CRESTRIDGE DR	SAN ANTONIO	TX	78229
1205755	BERHNARDT RD	063	GOLDEN STATE PROPERTIES LLC		1102 E CROCKETT ST	SAN ANTONIO	TX	78202-2807
1205759	STUART RD	063	GOLDEN STATE PROPERTIES LLC		1102 E CROCKETT ST	SAN ANTONIO	TX	78202-2807
156850	10020 S FOSTER RD	064	GONZALES CATARINA EST OF		10020 S FOSTER RD	SAN ANTONIO	TX	78223-4409
1125336	9822 SPINNAKER PATH	065	GONZALES SANTIAGO & IRENE		9822 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
158975	14985 ADKINS ELMENDORF RD	066	GONZALEZ ANTONIO SR		14985 ADKINS ELMENDORF	ELMENDORF	TX	78112-5601
347436	12930 LAGUNA RD	067	GONZALEZ LUSANDRA L &	DAVID M	12930 LAGUNA RD	SAN ANTONIO	TX	78223-9706
1125340	9806 SPINNAKER PATH	068	GONZALEZ ROSALINDA C & SANTIZGO CASTILLO JR		9806 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
336775	11841 STUART RD	069	GRAHAM CHARLOTTE &	ROGER SEARLE	11841 STUART RD LOT 2	SAN ANTONIO	TX	78263-9737
1125345	13411 LEEWARD LN	070	GRAYSON WILLIAM A & JACQUELINE M		13411 LEEWARD LN	SAN ANTONIO	TX	78263-2384
1125334	13218 COMPASS ROSE	071	GREEN TIMOTHY A & RHONDA		13218 COMPASS ROSE	SAN ANTONIO	TX	78263-2382
1198648	BURSHARD RD	072	GUADIANO HERLINDA		4407 GOLF VIEW DR	SAN ANTONIO	TX	78223-1602
1174115	BURSHARD RD	072	GUADIANO HERLINDA		4407 GOLF VIEW DR	SAN ANTONIO	TX	78223-1602
1198649	BURSHARD RD	073	GUERRERO HUMBERTO & ESTRADA JUAN & LOPEZ ROGELIO		6403 MARLIN FLTS	SAN ANTONIO	TX	78244-1676
1125339	9810 SPINNAKER PATH	074	HACKLEY DEMETRIAS D		9810 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
336585	10384 STUART RD	075	HAHN AUDREY LYNNE		PO BOX 693	ADKINS	TX	78101-0693
158971	14395 KILOWATT RD	076	HALLINAN NICHOLAS		14395 KILOWATT RD	SAN ANTONIO	TX	78223-9727
157109	10385 S FOSTER RD	077	HARRISON REESE L JR ETAL		2301 BROADWAY ST	SAN ANTONIO	TX	78215-1157
157111	10454 S FOSTER RD	077	HARRISON REESE L JR ETAL		2301 BROADWAY ST	SAN ANTONIO	TX	78215-1157
157114	11615 CASSIANO RD	077	HARRISON REESE L JR ETAL		2301 BROADWAY ST	SAN ANTONIO	TX	78215-1157
159182	15181 S LOOP 1604	078	HEINESH RANDOLPH A REV TR	RANDOLPH A HEINESH TRUSTEE	505 N SEPULVEDA BLVD STE 7	MANHATTAN BEACH	CA	90266-6743
337009	7915 S FOSTER RD	079	HERBER FRANKLIN D		10786 S FOSTER RD	SAN ANTONIO	TX	78223-4423
1179439	BURSHARD RD	080	HERNANDEZ HUMBERTO P		1826 W LAUREL	SAN ANTONIO	TX	78201-6127
159134	14892 S US HIGHWAY 181	081	HERNANDEZ NORMA JEAN		14892 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4289
335271	8390 KNOWLTON RD	082	HERNANDEZ TAYLER		8390 KNOWLTON RD	SAN ANTONIO	TX	78263-9637
336798	10378 STUART RD	083	HILL WADE L & KARALYN J		10378 STUART RD	SAN ANTONIO	TX	78263-9694
347448	13670 S US HIGHWAY 181	084	HILLYER DERECK		1353 RICE RD	SAN ANTONIO	TX	78220-3522
157188	12940 CASSIANO RD	085	HINOJOSA ERNEST JR	CARRINGTON, I/TRUSTEES ETAL	12999 LAGUNA RD	SAN ANTONIO	TX	78223-9706
336967	9506 HILDEBRANDT RD	086	HUBBELL MARY L ETAL		9494 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6028
336912	10080 HILDEBRANDT RD	087	HUDEL WILLIAM H & PEGGY S		10080 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6016
335304	6685 COOKSEY RD	088	HUMMEL THOMAS E JR &	ROBBIN L	6685 COOKSEY RD	ADKINS	TX	78101-2205
337647	9805 ELMENDORF LAVERNIA RD	089	JACKSON MICHAEL		PO BOX 2204	GLENDORA	CA	91740-2204
336883	9075 S FOSTER RD	090	JEFFERS REBECCA MARIE		9075 S FOSTER RD	SAN ANTONIO	TX	78222-6001
1125335	9826 SPINNAKER PATH	091	JERMIER DANIEL M & SHERRI K		9826 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
336800	10228 STUART RD	092	JOCHEN DENNIS M		10228 STUART RD	SAN ANTONIO	TX	78263-9693
156864	12856 S US HIGHWAY 181	093	UNKNOWN					
156866	CASSIANO RD	093	UNKNOWN					
156865	12856 S US HIGHWAY 181	093	UKNOWN					
337834	14156 E LOOP 1604 S	094	JOSEPH RALPH E		14156 E LOOP 1604 S	SAN ANTONIO	TX	78223-9725
1099677	9665 STUART RD	095	KAVANAGH DANA MARIE	& JONATHAN RYAN	9665 STUART RD	SAN ANTONIO	TX	78263-9638
157187	12832 CASSIANO RD	096	KEILMANN ROBERT		PO BOX 23191	SAN ANTONIO	TX	78223-0191
335306	6795 COOKSEY RD	097	MORGAN GIBSON		9388 CORPORATE DR	SELMA	TX	78154-1249
336976	9362 HILDEBRANDT RD	098	KELLER GILBERT E SR &	MARY ANN RICHTER	9362 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6030
1138494	FOSTER RD	099	MARIA VILLEGAS		11297 S FOSTER RD	SAN ANTONIO	TX	78223-4433
1138495	FOSTER RD	099	RUSSELL & TINA HOWARD		11297 S FOSTER RD	SAN ANTONIO	TX	78223-4433
999812	14894 S US HIGHWAY 181	100	KOEHLER RICHARD JR		PO BOX 251	ELMENDORF	TX	78112-0251
336620	11121 STUART RD	101	KOEHN DELTON & GERALDINE		11121 STUART RD	SAN ANTONIO	TX	78263-9695
156869	12856 S US HIGHWAY 181	102	KRIST STEPHANIE JO		12856 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4284
159183	15181 E LOOP 1604 S	103	KUNERT ROBERT E		9581 ELMENDORF LAVERNIA RD	SAN ANTONIO	TX	78223-9761
159195	9581 ELMENDORF LAVERNIA RD	103	KUNERT ROBERT E		9581 ELMENDORF LAVERNIA RD	SAN ANTONIO	TX	78223-9761
336746	9645 STUART RD	104	KYRISCH NORBERT M & BONNIE A		9645 STUART RD	SAN ANTONIO	TX	78263-9638
999808	S US HWY 181	105	LAGUNA ROAD PROPERTIES LLC		115 E TRAVIS ST STE 533	SAN ANTONIO	TX	78205-1690

PROP_ID	SITUS	Map_ID	OWNER (Last name, First name)	ADDRLN1	MAILING ADDRESS			
1125344	13415 LEEWARD LN	106	LAMM DENNIS W & ROSEMARY		13415 LEEWARD LN	SAN ANTONIO	TX	78263-2384
336792	10340 STUART RD	107	LANE JEANETTE		10340 STUART RD	SAN ANTONIO	TX	78263-9694
1138488	FOSTER RD	108	LE & G INVESTMENTS		11392 S FOSTER RD	SAN ANTONIO	TX	78223-4443
336538	9475 STUART RD	109	LEE GERALD A & MARY JO		9475 STUART RD	SAN ANTONIO	TX	78263-9685
338888	8250 GARDNER RD	110	LONG DAVID B		9690 S FOSTER RD	SAN ANTONIO	TX	78222-6014
1138492	8609 S FOSTER RD	111	LOPEZ ABEL GOMEZ & AFANADOR AMALFI BECERRA		8609 S FOSTER RD	SAN ANTONIO	TX	78222-5912
1138496	FOSTER RD	112	LOPEZ JESUS & MAYRA E	& LOPEZ IDALA	4319 STETSON VW	SAN ANTONIO	TX	78223-5508
1138497	FOSTER RD	112	LOPEZ JESUS & MAYRA E	& LOPEZ IDALA	4319 STETSON VW	SAN ANTONIO	TX	78223-5508
335303	6703 COOKSEY RD	113	LOPEZ JESUS B & CAROLINA		6703 COOKSEY RD	ADKINS	TX	78101-2245
158010	13227 LAGUNA RD	114	LOPEZ LUIS		5126 LARK AVE	SAN ANTONIO	TX	78228-4530
156852	10340 S FOSTER RD	115	LUBIANSKI MARGARET R		10340 S FOSTER RD	SAN ANTONIO	TX	78223-4415
1054682	CASSIANO RD	116	MARTIN CHARLES		325 REGINA ST	SAN ANTONIO	TX	78223-1158
159058	14388 KILOWATT RD	117	MARTINEZ ANABELLE & SAN JUAN		14388 KILOWATT RD	SAN ANTONIO	TX	78223-9727
157171	12933 LAGUNA RD	118	MARTINEZ PAULINE F		12933 LAGUNA RD	SAN ANTONIO	TX	78223-9706
336613	10999 STUART RD	119	MARTINEZ RAMIRO JR		10615 STUART RD	SAN ANTONIO	TX	78263-9697
336569	10615 STUART RD	119	MARTINEZ RAMIRO JR		10615 STUART RD	SAN ANTONIO	TX	78263-9697
158972	14680 KILOWATT RD	120	MARTINEZ SHARI & LESLEY THOMAS HOPKINS		14680 KILOWATT RD APT 3	SAN ANTONIO	TX	78223-9405
157999	13347 LAGUNA RD	121	MASSEY EARL & MARIA		1164 COUNTY ROAD 122	FLORESVILLE	TX	78114-6045
366625	8025 RICHTER RD	122	MCCARTNEY JACK & LINDA		7203 KILLDEE DR	SAN ANTONIO	TX	78223-6054
335247	8090 KNOWLTON RD	123	MCNIEL SUSAN R		4270 RAKOWITZ RD LOT 4	ADKINS	TX	78101-9742
159061	14415 ADKINS ELMENDORF RD	124	JOSE ESCUDERO		PO BOX 953	ELMENDORF	TX	78112-0953
158009	13251 LAGUNA RD	125	MENDEZ SALVADOR MORALES		13251 LAGUNA RD	SAN ANTONIO	TX	78223-4295
158006	13251 LAGUNA RD	125	MENDEZ SALVADOR		13251 LAGUNA RD	SAN ANTONIO	TX	78223-4295
1148450	S FOSTER RD	126	MENDOZA PAUL		12126 JIMMER CV	SAN ANTONIO	TX	78221-3151
336568	10535 STUART RD	127	MENGER ALFRED C JR &	ALMS PATRICIA ANN	10535 STUART RD	SAN ANTONIO	TX	78263-9696
336794	10240 STUART RD	128	MEYER KENNETH J & CARRIE G		10240 STUART RD	SAN ANTONIO	TX	78263-9693
1125348	13379 LEEWARD LN	129	MICKNICZ ANDREW A & ANITA		13379 LEEWARD LN	SAN ANTONIO	TX	78263-2383
1139412	9417 STUART RD	130	MONTEMAYOR JESUS E		9417 STUART RD	SAN ANTONIO	TX	78263-9685
336913	9030 S FOSTER RD	131	MOODY DAVID & TRACY		9030 S FOSTER RD	SAN ANTONIO	TX	78222-6002
1048744	12915 CASSIANO RD	132	MORADO IBALDO R		12915 CASSIANO RD	SAN ANTONIO	TX	78223-4574
1054680	CASSIANO RD	132	MORADO IBALDO R		12915 CASSIANO RD	SAN ANTONIO	TX	78223-4574
336980	9180 HILDEBRANDT RD	133	MORALES ALFONSO ETAL		9180 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6040
336558	9580 STUART RD	134	MORGAN LEANN M		9580 STUART RD	SAN ANTONIO	TX	78263-9614
1048821	CASSIANO RD	135	MUNOZ ALFONSO		3011 TIMBER VIEW DR	SAN ANTONIO	TX	78251-2322
335351	10235 NEW SULPHUR SPRINGS RD	136	MURPHY LINDA		10235 NEW SULPHUR SPRINGS RD	SAN ANTONIO	TX	78263-9759
1251871	9809 VISTA CIR	137	NAVARRO MICHELE M & JAMES RENUARD		9809 VISTA CIR	SAN ANTONIO	TX	78263-4405
159140	14950 LAGUNA RD	138	NEW WILLIAM JR & WANDA J		14950 LAGUNA RD	SAN ANTONIO	TX	78223-9726
159141	14950 LAGUNA RD	138	NEW WILLIAM JR & WANDA J		14950 LAGUNA RD	SAN ANTONIO	TX	78223-9726
336895	9362 S FOSTER RD	139	NGUYEN NHAN		6525 W LAGUNA RD	SAN ANTONIO	TX	78223-9623
336919	S FOSTER RD	139	NGUYEN NHAN		6525 W LAGUNA RD	SAN ANTONIO	TX	78223-9623
336893	9495 S FOSTER RD	139	NGUYEN NHAN		6525 W LAGUNA RD	SAN ANTONIO	TX	78223-9623
159043	14096 S US HIGHWAY 181	140	NICHOLS LINDA LOU		14096 S US HIGHWAY 181 LOT 1	SAN ANTONIO	TX	78223-9748
158969	14450 KILOWATT RD	141	NICKENS JAMES D & DAWN		14450 KILOWATT RD	SAN ANTONIO	TX	78223-9727
336799	10234 STUART RD	142	NIXON GARY GLENN & LAURA ANN		10234 STUART RD	SAN ANTONIO	TX	78263-9693
1211276	14370 S US HIGHWAY 181	143	NORTON LACEY G & NORTON LARISSA N		14370 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4267
1211277	14370 S US HIGHWAY 181	143	NORTON LACEY G & NORTON LARISSA N		14370 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4267
159131	14888 S US HIGHWAY 181	144	JUAN CORDOVA		8510 S KARLOV AVE	CHICAGO	IL	60652-3604
335260	8440 KNOWLTON RD	145	PADALECKI HARRY JR		8440 KNOWLTON RD	SAN ANTONIO	TX	78263-9673
336801	10222 STUART RD	146	PADIER KRISANDRA M		10222 STUART RD	SAN ANTONIO	TX	78263-9693
347445	13684 S US HIGHWAY 181	147	PALACIOS MARIA ELIZA		129 CASTILLO AVE	SAN ANTONIO	TX	78210-2809
335220	9658 COOKSEY RD	148	PALMER MILTON L JR LIVING TRUST	PALMER MILTON L JR TRUSTEE	523 PALMER RD	PLEASANTON	TX	78064-6334
336918	9511 S FOSTER RD	149	PALOMO DANIEL C		PO BOX 75	ELMENDORF	TX	78112-0075
1100526	BURSHARD RD	150	PEREZ RUTH		8331 GLEN CT	SAN ANTONIO	TX	78239-3020
159338	9510 ELMENDORF LAVERNIA RD	151	PIPES CHRISTOPHER M		361 COUNTY ROAD 223	FLORESVILLE	TX	78114-5038
159332	ELMENDORF LAVERNIA	152	PORTER JAMES E		4710 S FLORES ST	SAN ANTONIO	TX	78214-1406
159143	14910 LAGUNA RD	153	POSEY NORMAN O		14910 LAGUNA RD	SAN ANTONIO	TX	78223-9729
335218	10155 NEW SULPHUR SPRINGS RD	154	JENNIFER HOLTON		10155 NEW SULPHUR SPRINGS RD	SAN ANTONIO	TX	78263
337835	14072 S LOOP 1604	155	PRINCE ESTATES LLC		14072 E LOOP 1604 S	SAN ANTONIO	TX	78223-9725
337027	9366 HILDEBRANDT RD	156	PSENCIK ROBERT A & KAREN J		9366 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6030
337010	7893 S FOSTER RD	157	QUINTANILLA MICHELLE & HENRY A JR		7893 S FOSTER RD	SAN ANTONIO	TX	78222-5901
335213	10135 NEW SULPHUR SPRINGS RD	158	RAMIREZ CHARLES & JANIE R		10135 NEW SULPHUR SPRINGS RD	SAN ANTONIO	TX	78263-9610
336920	9658 S FOSTER RD	159	RAMIREZ LIVING TRUST	RAMIREZ DAVID A & LILLIAN L TSTES	9658 S FOSTER RD	SAN ANTONIO	TX	78222-6014
158005	13257 LAGUNA RD	160	RAMIREZ RICARDO	RAMIREZ LAURA	13257 LAGUNA RD	SAN ANTONIO	TX	78223-4295
1125351	13367 LEEWARD LN	161	RANDHAWA JASWINDER & PARAMJIT		13367 LEEWARD LN	SAN ANTONIO	TX	78263-2383
336621	11425 STUART RD	162	RAUSCHUBER GILBERT & GENEVA		2903 TYNE DR	SAN ANTONIO	TX	78222-2009

PROP_ID	SITUS	Map_ID	OWNER (Last name, First name)	ADDRLN1	MAILING ADDRESS			
337638	14162 S LOOP 1604	163	REMPEL JEFF R & PATRICIA B		245 OAK HOLLOW DR	LA VERNIA	TX	78121-5855
347442	13758 S US HIGHWAY 181	164	REYES JESUS JR & TINA M		13762 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4288
347443	13756 S US HIGHWAY 181	164	REYES JESUS JR & TINA M		13762 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4288
1138499	8815 FOSTER RD	165	RIVERA JOSE LOUIS ACEVEDO		254 OELKERS	SAN ANTONIO	TX	78204-2910
157170	12911 LAGUNA RD	166	RODRIGUEZ JENOVEBA R ETAL		12911 LAGUNA RD	SAN ANTONIO	TX	78223-9706
1125343	13419 LEEWARD LN	167	RODRIGUEZ MICHAEL A & MARTHA JO		13419 LEEWARD LN	SAN ANTONIO	TX	78263-2384
1125338	9814 SPINNAKER PATH	168	RODRIGUEZ VIRGIL M & REBECCA L		9814 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
1251824	8535 COVER RD	169	ROSILLO RANCH LLC		13538 CHARTER BEND DR	SAN ANTONIO	TX	78231-2217
337850	14342 S LOOP 1604	170	ALHAYAT PROPERTIES		226 BRYN MAWR CIR	HOUSTON	TX	77024-6811
1138498	8809 FOSTER RD	171	RUTIAGA CESAR R & MARIA D		216 MARGO ST	SAN ANTONIO	TX	78223-5605
156867	12856 S US HIGHWAY 181	172	SAENZ JUAN ANTONIO JR		6815 HARRY RD	SAN ANTONIO	TX	78223-9412
157235	12947 LAGUNA RD	173	SALINAS RAYMOND & SYLVIA G		12961 LAGUNA RD LOT 2	SAN ANTONIO	TX	78223-9752
157234	12961 LAGUNA RD	173	SALINAS RAYMOND & SYLVIA G & YOLANDA		12961 LAGUNA RD LOT 2	SAN ANTONIO	TX	78223-9752
1062376	CASSIANO RD	174	SAN ANTONIO RIVER AUTHORITY		PO BOX 839980	SAN ANTONIO	TX	78283-3980
1138501	FOSTER RD	175	SANCHEZ ERIK & LISA		4102 WINESAP DR	SAN ANTONIO	TX	78222-4842
158965	14528 S US HIGHWAY 181	176	SCHODTS DON & PATSY		14528 S US HIGHWAY 181	SAN ANTONIO	TX	78223-9702
1049728	S FOSTER RD	177	SCHUBERT REINHOLD C		9686 S FOSTER RD	SAN ANTONIO	TX	78222-6014
336897	9686 S FOSTER RD	177	SCHUBERT REINHOLD C		9686 S FOSTER RD	SAN ANTONIO	TX	78222-6014
1251873	VISTA CIR	178	SEGOVIA JESSE & CHELSY CRISP		9817 VISTA CIR	SAN ANTONIO		78251
336795	10360 STUART RD	179	SEGURA CARLOS JR		10360 STUART RD	SAN ANTONIO	TX	78263
335234	10439 NEW SULPHUR SPRINGS RD	180	SEPULVEDA MARCO		19918 PARK RNCH	SAN ANTONIO	TX	78259-1934
336886	7760 BURSHARD RD	181	SHANNON PARTNERS LTD		3326 E SOUTHCROSS BLVD	SAN ANTONIO	TX	78223-1922
336887	7760 BURSHARD RD	181	SHANNON PARTNERS LTD		3326 E SOUTHCROSS BLVD	SAN ANTONIO	TX	78223-1922
335341	10231 NEW SULPHUR SPRINGS RD	182	SHEDROCK DAVID A &	ANTHONY J SHEDROCK SR	10231 NEW SULPHUR SPRINGS RD	SAN ANTONIO	TX	78263-9612
158616	12902 S US HIGHWAY 181	183	SILER SAMUEL DEVONNE &	BARBARA ANN	12902 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4285
158617	12902 S US HIGHWAY 181	183	SILER SAMUEL DEVONNE &	BARBARA ANN	12902 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4285
335180	10590 COOKSEY RD	184	SINCLAIR ELLEN SLIMP MOONEY		10590 COOKSEY RD	ADKINS	TX	78101-2255
335173	6420 FM 1628	185	SMITH JENNIFER LEIGH	SMITH FAMILY TRUST	6420 FM 1628	ADKINS	TX	78101-2275
156844	10036 S FOSTER RD	186	SOLIS GILBERT & REBECCA		10036 S FOSTER RD	SAN ANTONIO	TX	78223-4409
335305	10580 COOKSEY RD	187	SPEER ARTHUR C JR		10580 COOKSEY RD LOT 1	ADKINS	TX	78101-2360
336582	10386 STUART RD	188	SPIVEY ROBERT S		10386 STUART RD	SAN ANTONIO	TX	78263-9694
335225	10225 NEW SULPHUR SPRINGS RD	189	STEVENS WESLEY ROYCE		PO BOX 201015	SAN ANTONIO	TX	78220-8015
335219	10135 NEW SULPHUR SPRINGS RD	189	STEVENS WESLEY ROYCE		PO BOX 201015	SAN ANTONIO	TX	78220-8015
336892	9590 S FOSTER RD	190	STRUNK CARMEN		9590 S FOSTER RD	SAN ANTONIO	TX	78222-6012
336890	9650 S FOSTER RD	190	STRUNK CARMEN G & RONALD		9590 S FOSTER RD	SAN ANTONIO	TX	78222-6012
1063370	9660 S FOSTER RD	191	SYMA JUSTIN ALBERT		1226 W AMBER ST	SAN ANTONIO	TX	78221-2647
1063372	9660 S FOSTER RD	191	SYMA JUSTIN ALBERT		9660 S FOSTER RD	SAN ANTONIO	TX	78222-6014
156846	10042 S FOSTER RD	192	SOLIS ELOISA T		10042 S FOSTER RD	SAN ANTONIO	TX	78223-4409
336888	9578 S FOSTER RD	193	TALBERT TIMOTHY & SANDRA		9578 S FOSTER RD	SAN ANTONIO	TX	78222-6012
159145	14910 LAGUNA RD	194	ESQUINE THERAPY & ANIMAL RESCUE		14910 LAGUNA RD	SAN ANTONIO	TX	78223-9729
1164498	STUART RD	195	TERRILL FERDINAND A		10025 STUART RD	SAN ANTONIO	TX	78263-9670
336786	STUART RD	195	TERRILL FRED		10025 STUART RD	SAN ANTONIO	TX	78263-9670
336552	9955 STUART RD	196	TERRILL JOHN		9955 STUART RD	SAN ANTONIO	TX	78263-9510
1248714	9955 STUART RD	196	TERRILL JOHN		9955 STUART RD	SAN ANTONIO	TX	78263-9510
158978	S US HWY 181	197	THOMAS JOHN A		451 LINDA DR	SAN ANTONIO	TX	78216-7420
157168	12790 LAGUNA RD	198	THOMPSON NATHAN G		11880 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4278
156854	10210 S FOSTER RD	199	TOBIAS KEVIN		12270 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4270
156855	10160 S FOSTER RD	200	TOBIAS KEVIN G & EUGENE B		10210 S FOSTER RD	SAN ANTONIO	TX	78223-4514
1125342	9800 SPINNAKER PATH	201	TOVAR STEVEN & ALICIA T		9800 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
336736	10466 NEW SULPHUR SPRINGS RD	202	TRACY WALKER B		8401 STUART RD	SAN ANTONIO	TX	78263-9653
336474	8401 STUART RD	202	TRACY W B		8401 STUART RD	SAN ANTONIO	TX	78263-9653
157173	12915 LAGUNA RD	203	TREVINO DANIEL C		2318 W HERMOSA DR	SAN ANTONIO	TX	78201-3350
159130	14858 S US HIGHWAY 181	204	TREVINO SHEILA &	PAUL E PHILLIPS	14858 S US HIGHWAY 181	SAN ANTONIO	TX	78223-4289
336624	7660 STUART RD	205	TROSTMANN CATHERINE C & KUNO S		10615 GARRICK LN	HOUSTON	TX	77013-5435
1125354	13355 LEEWARD LN	206	VALDEZ DAVID & MARIA M		13355 LEEWARD LN	SAN ANTONIO	TX	78263-2383
336894	9505 S FOSTER RD	207	VARELA JEANIE L		9505 S FOSTER RD	SAN ANTONIO	TX	78222-6011
1081664	STUART RD	208	VASBINDER ARTHUR D		12055 STUART RD	SAN ANTONIO	TX	78263-9732
336688	12145 STUART RD	209	VEILLEUX THOMAS J SR &	GLENDA DIANE	8204 NEW SULPHUR SPRINGS RD	SAN ANTONIO	TX	78263-2342
336911	10066 HILDEBRANDT RD	210	VERASTEGUI REJINO M & PETRA		10066 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6016
338878	8485 COVER RD	211	WALDREP R B		8485 COVER RD	SAN ANTONIO	TX	78263-9632
158618	12860 S US HIGHWAY 181	212	WALLACE JOHNNY B		222 COUNTY ROAD 446	NIXON	TX	78140-4006
158619	12860 S US HIGHWAY 181	212	WALLACE JOHNNY B		222 COUNTY ROAD 446	NIXON	TX	78140-4006
1125356	13343 LEEWARD LN	213	WEISINGER HIRAM PAUL & DELORES YVONNE		82 KING ARTHURS CT	HAMPSTEAD	NC	28443-4507
337029	9140 HILDEBRANDT RD	214	WENGLER MARK E		9140 HILDEBRANDT RD	SAN ANTONIO	TX	78222-6034

PROP_ID	SITUS	Map_ID	OWNER (Last name, First name)	ADDRLN1	MAILING ADDRESS			
1116524	13952 S US HIGHWAY 181	215	WESCH FRANK H JR &	DOBBS DAVID R SR	13952 S US HIGHWAY 181	SAN ANTONIO	TX	78223-9636
335224	10231 NEW SULPHUR SPRINGS RD	216	WINN RYAN		10165 NEW SULPHUR SPRINGS RD	SAN ANTONIO	TX	78263
1263423	COVER RD	217	GALLEGOS ANTERO & LAURA		2312 MCKINLEY AVE	SAN ANTONIO	TX	78210-3709
336916	9515 S FOSTER RD	218	BROWN FLOYD D		PO BOX 200635	SAN ANTONIO	TX	78220-0635
1156590	14528 S US HIGHWAY 181	219	SCHODTS DAVID		14528 S US HIGHWAY 181	SAN ANTONIO	TX	78223-9702
336869	8575 KNOWLTON RD	220	PAMELA HAECKER		8575 KNOWLTON RD	SAN ANTONIO	TX	78263-9714
1125337	9818 SPINNAKER PATH	221	CARDENAS TIMOTHY JASON		9818 SPINNAKER PATH	SAN ANTONIO	TX	78263-2380
159129	14630 ADKINS ELMENDORF RD	222	CARDENAS CARLOS G &	LETICIA G	14510 ADKINS ELMENDORF RD	SAN ANTONIO	TX	78223-9756
157169	LAGUNA RD	223	PERRYMAN PATRICIA LOU & GOODMAN MICHAEL A		12939 LAGUNA RD	SAN ANTONIO	TX	78223-9706
159062	14525 ADKINS ELMENDORF RD	224	MENDEZ ANJEL CERVANTES		7714 SCHULTZ RD	ELMENDORF	TX	78211
0	DOES NOT EXIST	225	UNKNOWN	DOES NOT EXIST	DOES NOT EXIST			
1315012	COVER RD	226	HERNANDEZ MARIO & HORTENCIA ESCOBAR		227 GABRIEL	SAN ANTONIO	TX	78202
336695	12423 STUART RD	227	BRISTER ROBERTA JOYCE		12423 STUART RD	SAN ANTONIO	TX	78263-6214
1314426	STUART RD	228	K & H PARTNERS LLC		113 E ASHTON BLVD	FLORESVILLE	TX	78114
337834	14156 E LOOP 1604 S	229	JOSEPH RALPH E		14156 E LOOP 1604 S	SAN ANTONIO	TX	78223-9725
1281300	LAGUNA RD	230	TAYLOR JANIS M & KETNICK DAVID J		14910 LAGUNA RD	SAN ANTONIO	TX	78223-9725

Attachment 1-9

PROP_ID	SITUS	Map_ID	Combined Address List
337781	9720 ELMENDORF-LA VERNIA RD	001	
1138489	FOSTER RD	002	ALEMAN RAUL JR & LONGORIA CAROLINA 24397 LOUISIANA RD LA FERIA, TX 78559-4358
159059	14398 KILOWATT RD	003	ALMAGUER DAVID & SYLVIA 14398 KILOWATT RD SAN ANTONIO TX 78223-9727
336885	8904 S FOSTER RD	004	ALMALIGA LARA 4214 STANLEY PARK CONVERSE TX 78109-2801
1178071	14863 ADKINS ELMENDORF RD	005	ARC DG EDFTX001 LLC % RYAN LLC PO BOX 460369 DPT 100 HOUSTON TX 77056-8369
159060	14404 KILOWATT RD	006	ARIAS OBDULIA P C/O A & M INVESTMENT PO BOX 654 ELMENDORF TX 78112-0654
336806	10184 STUART RD	007	ARISPE JESUS S & JUDY K 10184 STUART RD SAN ANTONIO TX 78263-9692
157185	13934 S US HIGHWAY 181	009	BAILEY THOMAS G & DIANE C/S 13934 S US HIGHWAY 181 SAN ANTONIO TX 78223-9636
366623	7963 RICHTER RD	010	BAIN BILLY B & BARBARA 7963 RICHTER RD LOT 2 SAN ANTONIO TX 78223-9750
366622	7963 RICHTER RD	010	BAIN BILLY E 7963 RICHTER RD LOT 2 SAN ANTONIO TX 78223-9750
158940	14215 S US HIGHWAY 181	011	BARAJAS ROMUALDO 14215 S US HIGHWAY 181 SAN ANTONIO TX 78223-4575
158937	14215 S US HIGHWAY 181	011	BARAJAS ROMUALDO 14215 S US HIGHWAY 181 SAN ANTONIO TX 78223-4575
159602	14186 S US HIGHWAY 181	011	BARAJAS ROMUALDO 14215 S US HIGHWAY 181 SAN ANTONIO TX 78223-4575
336870	8681 KNOWLTON RD	012	BIESENBACH RICHARD A 8681 KNOWLTON RD SAN ANTONIO TX 78263-9715
1125349	13375 LEEWARD LN	013	BISHOP JEFFREY SCOTT 13375 LEEWARD LN SAN ANTONIO TX 78263-2383
336467	8857 STUART RD	014	BLOCH DIANE & CHERYL 8857 STUART RD SAN ANTONIO TX 78263-9676
366624	8025 RICHTER RD	015	BOSWELL LUTHER B 5003 JOHN YOUNG DR SAN ANTONIO TX 78219-1261
336884	9145 S FOSTER RD	016	BOUBLE CHRISTOPHER M & BRUCE H & DONNA T 226 HATCHER AVE SAN ANTONIO TX 78223-3326
991075	8890 HILDEBRANDT RD	017	BREHM GENE A 8990 HILDEBRANDT RD SAN ANTONIO TX 78222-6038
336962	9560 HILDEBRANDT RD	017	BREHM GENE A & VICKI D 7809 BROADWAY ST SAN ANTONIO TX 78209-2558
336693	12331 STUART RD	018	BRISTER ROBERTA J ETAL 12423 STUART RD SAN ANTONIO TX 78263-6214
366621	7951 RICHTER RD	019	CHRISTEENA & TIM CASTLEMEN 7951 RICHTER SAN ANTONIO TX 78223
366620	14030 S US HIGHWAY 181	020	CALDWELL JAMES JR & ELIZABETH 14030 S US HIGHWAY 181 SAN ANTONIO TX 78223-9755
1138490	FOSTER RD	021	CAMARGO JENNIFER ANN & CAMARGO STEPHANIE LEE 1363 W KINGS HWY SAN ANTONIO TX 78201-5135

PROP_ID	SITUS	Map_ID	Combined Address List
1138491	FOSTER RD	021	CAMARGO JENNIFER ANN & CAMARGO STEPHANIE LEE 1363 W KINGS HWY SAN ANTONIO TX 78201-5135
1125341	9802 SPINNAKER PATH	022	CAMPBELL RICHARD K SR 9802 SPINNAKER PATH SAN ANTONIO TX 78263-2380
159063	14482 KILOWATT RD	023	CAMPOS JAVIER & REBECCA ANN 14482 KILOWATT RD SAN ANTONIO TX 78223-9727
158968	14512 KILOWATT RD	024	CAMPOS PRIMO S JR & HORTENSE 14512 KILOWATT RD SAN ANTONIO TX 78223-9727
336788	STUART RD	025	CANO THERESA TERRILL 13271 HUNTERS LARK ST SAN ANTONIO TX 78230-2017
1125352	13363 LEEWARD LN	026	CANTU MARIA I & RICHARD O 13363 LEEWARD LN SAN ANTONIO TX 78263-2383
159133	14510 ADKINS ELMENDORF RD	027	CARDENAS LOUIS P EST OF CARDENAS ISABEL L/E 14510 ADKINS ELMENDORF RD SAN ANTONIO TX 78223-9756
1125347	13403 LEEWARD LN	028	CARDONA SHERRIE ANN & RONALD 13403 LEEWARD LN SAN ANTONIO TX 78263-2384
158954	14420 S US HWY 81	029	CARRANZA JOSE RAMON 14420 S US HIGHWAY 181 LOT 4 SAN ANTONIO TX 78223-9744
347444	13686 S US HIGHWAY 181	030	CARRANZA RUBEN 760 FALLING LEAVES DR ADKINS TX 78101-2623
158011	13221 LAGUNA RD	031	CASSIANO DIANA & SYLVIA FEATHER 13221 LAGUNA RD UNIT 1 SAN ANTONIO TX 78223-4512
1138493	8615 FOSTER RD	032	CASTELLANOS JOSE ROGELIO & MARIA LUISA 1254 KEATS ST SAN ANTONIO TX 78211-1638
1138502	FOSTER RD	033	CASTELLANOS ROBERTO & ROSA & CASTELLANOS SAUL E 315 LORRAINE AVE SAN ANTONIO TX 78214-1506
1125350	13371 LEEWARD LN	034	CASTILLO RIGOBERTO J JR 13371 LEEWARD LN SAN ANTONIO TX 78263-2383
158000	13335 LAGUNA RD	035	CAZARES ROBERTO & NAVARRO JANET 13335 LAGUNA RD SAN ANTONIO TX 78223-9704
157186	12819 LAGUNA RD	036	CEMETERY
1137429	13006 LAGUNA RD	037	CHAGOYA EVA & PAULINE MARTINEZ 12915 LAGUNA RD SAN ANTONIO TX 78223-9706
1125346	13407 LEEWARD LN	038	CHAVARRIA TERA 13407 LEEWARD LN SAN ANTONIO TX 78263-2384
1012032	14910 LAGUNA RD	039	CLANTON GEORGE 14910 LAGUNA RD LOT 1 SAN ANTONIO TX 78223-9730
336964	9540 HILDEBRANDT RD	040	CONNOR CATHERINE E 9540 HILDEBRANDT RD SAN ANTONIO TX 78222-6026
336793	10270 STUART RD	041	CONTRERAS LETICIA C & FREDRICK R SEWARD 10270 STUART RD SAN ANTONIO TX 78263-9693
335263	8090 KNOWLTON RD	042	COOPER LEROY 3615 HUNTERS SOUND ST SAN ANTONIO TX 78230
336470	8500 STUART RD	043	COVER VIRGINIA R PO BOX 207 ADKINS TX 78101-0207
1062375	14790 CASSIANO RD	044	CRANK NOVELLA M 14391 S US HIGHWAY 181 SAN ANTONIO TX 78223-4527

PROP_ID	SITUS	Map_ID	Combined Address List
1165853	BURSHARD RD	045	CRUZ HOMERO PO BOX 200211 SAN ANTONIO TX 78220-0211
157992	13228 S US HIGHWAY 181	046	CRUZ LEE ANTHONY 328 MISTY BND FLORESVILLE TX 78114-9002
157990	13136 S US HIGHWAY 181	046	CRUZ LEE 328 MISTY BND FLORESVILLE TX 78114-9002
157991	13218 S US HIGHWAY 181	046	CRUZ LEE 328 MISTY BND FLORESVILLE TX 78114-9002
1054681	CASSIANO RD	047	CRUZ RAFAEL & NORA 6703 PARADISE OAK DR SAN ANTONIO TX 78227-2032
1138500	FOSTER RD	048	CUELLAR ERASMO & MARINA 4119 FAMILY TREE SAN ANTONIO TX 78222-2701
158952	14350 S US HIGHWAY 181	049	DANYSH ROBERT F 4606 JIM DANIEL ADKINS TX 78101-9619
158958	14463 S US HWY 181	049	DANYSH ROBERT F 4606 JIM DANIEL ADKINS TX 78101-9619
158959	14451 S US HWY 181	049	DANYSH ROBERT F 4606 JIM DANIEL ADKINS TX 78101-9619
158962	14360 S US HIGHWAY 181	049	DANYSH ROBERT 4606 JIM DANIEL ADKINS TX 78101-9619
336797	10372 STUART RD	050	DAVIS EVELYN & HERMAN 10372 STUART RD SAN ANTONIO TX 78263-9694
362842	9997 HILDEBRANDT RD	051	DELGADO EMIL & BEATRICE 9912 S FOSTER RD SAN ANTONIO TX 78223-4450
157238	HILDEBRANDT RD	051	DELGADO EMIL & BEATRICE 9912 S FOSTER RD SAN ANTONIO TX 78223-4450
157239	HILDEBRANDT RD	051	DELGADO EMIL A & BEATRICE 9912 S FOSTER RD SAN ANTONIO TX 78223-4450
157240	10090 S FOSTER RD	051	DELGADO EMIL A & BEATRICE 9912 S FOSTER RD SAN ANTONIO TX 78223-4450
157166	10091 HILDEBRANDT RD	051	DELGADO EMIL & BEATRICE 9912 S FOSTER RD SAN ANTONIO TX 78223-4450
336796	10366 STUART RD	052	DENNIS CATHY M 10366 STUART RD SAN ANTONIO TX 78263-9694
336873	COVER RD	053	DEWAAL ROBERTA 8535 COVER RD SAN ANTONIO TX 78263-9633
337489	12991 STUART RD	054	DOWLEARN JAMES A III 12991 STUART RD SAN ANTONIO TX 78263-6258
336972	9460 HILDEBRANDT RD	055	DURY BETTY J 9460 HILDEBRANDT RD SAN ANTONIO TX 78222-6028
158973	ADKINS ELMENDORF RD	056	ESPINOZA MARIANO JR 14615 ADKINS ELMENDORF RD SAN ANTONIO TX 78223-4245
335172	6590 FM 1628	057	FAUBION GLENN WALLACE 6590 FM 1628 SAN ANTONIO TX 78263-6123
335175	6590 FM 1628	057	FAUBION GLENN WALLACE 6590 FM 1628 SAN ANTONIO TX 78263-6123
1054970	8710 KNOWLTON RD	058	FOSTER JOHN D & KAREN S PO BOX 482 ADKINS TX 78101-0482
1125353	13359 LEEWARD LN	059	GARCIA DIANA LEE & JUAN M III 13359 LEEWARD LN SAN ANTONIO TX 78263-2383

PROP_ID	SITUS	Map_ID	Combined Address List
1251870	VISTA CIR	060	GARZA STEVE & LETICIA ANN 13339 LEEWARD LN SAN ANTONIO TX 78263-2383
1125384	13339 LEEWARD LN	060	GARZA LETISIA & STEVE 13339 LEEWARD LN SAN ANTONIO TX 78263-2383
336872	KNOWLTON	061	GISH KYLE A 11515 N WEIDNER RD SAN ANTONIO TX 78233-6016
336469	8857 STUART RD	062	GLAZE PATRICIA ANN 8857 STUART RD # 3 SAN ANTONIO TX 78263-9676
336468	STUART RD	062	GLAZE PATRICIA PO BOX 175 ADKINS TX 78101-0175
1205761	BERNHARDT RD	063	GOLDEN STATE PROPERTIES LLC 1102 E CROCKETT ST SAN ANTONIO TX 78202-2807
1205765	STUART RD	063	GOLDEN STATE PROPERTIES LLC 1102 E CROCKETT ST SAN ANTONIO TX 78202-2807
1205760	BERNHARDT RD	063	GOLDEN STATE PROPERTIES LLC 1102 E CROCKETT ST SAN ANTONIO TX 78202-2807
336543	9471 STUART RD	063	GOLDEN STATE PROPERTIES LLC % HAYAT AHMADZAL (MNGR) 23906 CRESTRIDGE DR SAN ANTONIO TX 78229
1205755	BERHNARDT RD	063	GOLDEN STATE PROPERTIES LLC 1102 E CROCKETT ST SAN ANTONIO TX 78202-2807
1205759	STUART RD	063	GOLDEN STATE PROPERTIES LLC 1102 E CROCKETT ST SAN ANTONIO TX 78202-2807
156850	10020 S FOSTER RD	064	GONZALES CATARINA EST OF 10020 S FOSTER RD SAN ANTONIO TX 78223-4409
1125336	9822 SPINNAKER PATH	065	GONZALES SANTIAGO & IRENE 9822 SPINNAKER PATH SAN ANTONIO TX 78263-2380
158975	14985 ADKINS ELMENDORF RD	066	GONZALEZ ANTONIO SR 14985 ADKINS ELMENDORF ELMENDORF TX 78112-5601
347436	12930 LAGUNA RD	067	GONZALEZ LUSANDRA L & DAVID M 12930 LAGUNA RD SAN ANTONIO TX 78223-9706
1125340	9806 SPINNAKER PATH	068	GONZALEZ ROSALINDA C & SANTIZGO CASTILLO JR 9806 SPINNAKER PATH SAN ANTONIO TX 78263-2380
336775	11841 STUART RD	069	GRAHAM CHARLOTTE & ROGER SEARLE 11841 STUART RD LOT 2 SAN ANTONIO TX 78263-9737
1125345	13411 LEEWARD LN	070	GRAYSON WILLIAM A & JACQUELINE M 13411 LEEWARD LN SAN ANTONIO TX 78263-2384
1125334	13218 COMPASS ROSE	071	GREEN TIMOTHY A & RHONDA 13218 COMPASS ROSE SAN ANTONIO TX 78263-2382
1198648	BURSHARD RD	072	GUADIANO HERLINDA 4407 GOLF VIEW DR SAN ANTONIO TX 78223-1602
1174115	BURSHARD RD	072	GUADIANO HERLINDA 4407 GOLF VIEW DR SAN ANTONIO TX 78223-1602
1198649	BURSHARD RD	073	GUERRERO HUMBERTO & ESTRADA JUAN & LOPEZ ROGELIO 6403 MARLIN FLTS SAN ANTONIO TX 78244-1676
1125339	9810 SPINNAKER PATH	074	HACKLEY DEMETRIAS D 9810 SPINNAKER PATH SAN ANTONIO TX 78263-2380
336585	10384 STUART RD	075	HAHN AUDREY LYNNE PO BOX 693 ADKINS TX 78101-0693

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158971	14395 KILOWATT RD	076	HALLINAN NICHOLAS 14395 KILOWATT RD SAN ANTONIO TX 78223-9727
157109	10385 S FOSTER RD	077	HARRISON REESE L JR ETAL 2301 BROADWAY ST SAN ANTONIO TX 78215-1157
157111	10454 S FOSTER RD	077	HARRISON REESE L JR ETAL 2301 BROADWAY ST SAN ANTONIO TX 78215-1157
157114	11615 CASSIANO RD	077	HARRISON REESE L JR ETAL 2301 BROADWAY ST SAN ANTONIO TX 78215-1157
159182	15181 S LOOP 1604	078	HEINESH RANDOLPH A REV TR RANDOLPH A HEINESH TRUSTEE 505 N SEPULVEDA BLVD STE 7 MANHATTAN BEACH CA 90266-6743
337009	7915 S FOSTER RD	079	HERBER FRANKLIN D 10786 S FOSTER RD SAN ANTONIO TX 78223-4423
1179439	BURSHARD RD	080	HERNANDEZ HUMBERTO P 1826 W LAUREL SAN ANTONIO TX 78201-6127
159134	14892 S US HIGHWAY 181	081	HERNANDEZ NORMA JEAN 14892 S US HIGHWAY 181 SAN ANTONIO TX 78223-4289
335271	8390 KNOWLTON RD	082	HERNANDEZ TAYLER 8390 KNOWLTON RD SAN ANTONIO TX 78263-9637
336798	10378 STUART RD	083	HILL WADE L & KARALYN J 10378 STUART RD SAN ANTONIO TX 78263-9694
347448	13670 S US HIGHWAY 181	084	HILLYER DERECK 1353 RICE RD SAN ANTONIO TX 78220-3522
157188	12940 CASSIANO RD	085	HINOJOSA ERNEST JR CARRINGTON, I/TRUSTEES ETAL 12999 LAGUNA RD SAN ANTONIO TX 78223-9706
336967	9506 HILDEBRANDT RD	086	HUBBELL MARY L ETAL 9494 HILDEBRANDT RD SAN ANTONIO TX 78222-6028
336912	10080 HILDEBRANDT RD	087	HUDEL WILLIAM H & PEGGY S 10080 HILDEBRANDT RD SAN ANTONIO TX 78222-6016
335304	6685 COOKSEY RD	088	HUMMEL THOMAS E JR & ROBBIN L 6685 COOKSEY RD ADKINS TX 78101-2205
337647	9805 ELMENDORF LAVERNIA RD	089	JACKSON MICHAEL PO BOX 2204 GLENDORA CA 91740-2204
336883	9075 S FOSTER RD	090	JEFFERS REBECCA MARIE 9075 S FOSTER RD SAN ANTONIO TX 78222-6001
1125335	9826 SPINNAKER PATH	091	JERMIER DANIEL M & SHERRI K 9826 SPINNAKER PATH SAN ANTONIO TX 78263-2380
336800	10228 STUART RD	092	JOCHEN DENNIS M 10228 STUART RD SAN ANTONIO TX 78263-9693
156864	12856 S US HIGHWAY 181	093	
156866	CASSIANO RD	093	
156865	12856 S US HIGHWAY 181	093	
337834	14156 E LOOP 1604 S	094	JOSEPH RALPH E 14156 E LOOP 1604 S SAN ANTONIO TX 78223-9725
1099677	9665 STUART RD	095	KAVANAGH DANA MARIE & JONATHAN RYAN 9665 STUART RD SAN ANTONIO TX 78263-9638

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157187	12832 CASSIANO RD	096	KEILMANN ROBERT PO BOX 23191 SAN ANTONIO TX 78223-0191
335306	6795 COOKSEY RD	097	MORGAN GIBSON 9388 CORPORATE DR SELMA TX 78154-1249
336976	9362 HILDEBRANDT RD	098	KELLER GILBERT E SR & MARY ANN RICHTER 9362 HILDEBRANDT RD SAN ANTONIO TX 78222-6030
1138494	FOSTER RD	099	MARIA VILLEGAS 11297 S FOSTER RD SAN ANTONIO TX 78223-4433
1138495	FOSTER RD	099	RUSSELL & TINA HOWARD 11297 S FOSTER RD SAN ANTONIO TX 78223-4433
999812	14894 S US HIGHWAY 181	100	KOEHLER RICHARD JR PO BOX 251 ELMENDORF TX 78112-0251
336620	11121 STUART RD	101	KOEHN DELTON & GERALDINE 11121 STUART RD SAN ANTONIO TX 78263-9695
156869	12856 S US HIGHWAY 181	102	KRIST STEPHANIE JO 12856 S US HIGHWAY 181 SAN ANTONIO TX 78223-4284
159183	15181 E LOOP 1604 S	103	KUNERT ROBERT E 9581 ELMENDORF LAVERNIA RD SAN ANTONIO TX 78223-9761
159195	9581 ELMENDORF LAVERNIA RD	103	KUNERT ROBERT E 9581 ELMENDORF LAVERNIA RD SAN ANTONIO TX 78223-9761
336746	9645 STUART RD	104	KYRISCH NORBERT M & BONNIE A 9645 STUART RD SAN ANTONIO TX 78263-9638
999808	S US HWY 181	105	LAGUNA ROAD PROPERTIES LLC 115 E TRAVIS ST STE 533 SAN ANTONIO TX 78205-1690
1125344	13415 LEEWARD LN	106	LAMM DENNIS W & ROSEMARY 13415 LEEWARD LN SAN ANTONIO TX 78263-2384
336792	10340 STUART RD	107	LANE JEANETTE 10340 STUART RD SAN ANTONIO TX 78263-9694
1138488	FOSTER RD	108	LE & G INVESTMENTS 11392 S FOSTER RD SAN ANTONIO TX 78223-4443
336538	9475 STUART RD	109	LEE GERALD A & MARY JO 9475 STUART RD SAN ANTONIO TX 78263-9685
338888	8250 GARDNER RD	110	LONG DAVID B 9690 S FOSTER RD SAN ANTONIO TX 78222-6014
1138492	8609 S FOSTER RD	111	LOPEZ ABEL GOMEZ & AFANADOR AMALFI BECERRA 8609 S FOSTER RD SAN ANTONIO TX 78222-5912
1138496	FOSTER RD	112	LOPEZ JESUS & MAYRA E & LOPEZ IDALA 4319 STETSON VW SAN ANTONIO TX 78223-5508
1138497	FOSTER RD	112	LOPEZ JESUS & MAYRA E & LOPEZ IDALA 4319 STETSON VW SAN ANTONIO TX 78223-5508
335303	6703 COOKSEY RD	113	LOPEZ JESUS B & CAROLINA 6703 COOKSEY RD ADKINS TX 78101-2245
158010	13227 LAGUNA RD	114	LOPEZ LUIS 5126 LARK AVE SAN ANTONIO TX 78228-4530
156852	10340 S FOSTER RD	115	LUBIANSKI MARGARET R 10340 S FOSTER RD SAN ANTONIO TX 78223-4415
1054682	CASSIANO RD	116	MARTIN CHARLES 325 REGINA ST SAN ANTONIO TX 78223-1158
159058	14388 KILOWATT RD	117	MARTINEZ ANABELLE & SAN JUAN 14388 KILOWATT RD SAN ANTONIO TX 78223-9727

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157171	12933 LAGUNA RD	118	MARTINEZ PAULINE F 12933 LAGUNA RD SAN ANTONIO TX 78223-9706
336613	10999 STUART RD	119	MARTINEZ RAMIRO JR 10615 STUART RD SAN ANTONIO TX 78263-9697
336569	10615 STUART RD	119	MARTINEZ RAMIRO JR 10615 STUART RD SAN ANTONIO TX 78263-9697
158972	14680 KILOWATT RD	120	MARTINEZ SHARI & LESLEY THOMAS HOPKINS 14680 KILOWATT RD APT 3 SAN ANTONIO TX 78223-9405
157999	13347 LAGUNA RD	121	MASSEY EARL & MARIA 1164 COUNTY ROAD 122 FLORESVILLE TX 78114-6045
366625	8025 RICHTER RD	122	MCCARTNEY JACK & LINDA 7203 KILLDEE DR SAN ANTONIO TX 78223-6054
335247	8090 KNOWLTON RD	123	MCNIEL SUSAN R 4270 RAKOWITZ RD LOT 4 ADKINS TX 78101-9742
159061	14415 ADKINS ELMENDORF RD	124	JOSE ESCUDERO PO BOX 953 ELMENDORF TX 78112-0953
158009	13251 LAGUNA RD	125	MENDEZ SALVADOR MORALES 13251 LAGUNA RD SAN ANTONIO TX 78223-4295
158006	13251 LAGUNA RD	125	MENDEZ SALVADOR 13251 LAGUNA RD SAN ANTONIO TX 78223-4295
1148450	S FOSTER RD	126	MENDOZA PAUL 12126 JIMMER CV SAN ANTONIO TX 78221-3151
336568	10535 STUART RD	127	MENGER ALFRED C JR & ALMS PATRICIA ANN 10535 STUART RD SAN ANTONIO TX 78263-9696
336794	10240 STUART RD	128	MEYER KENNETH J & CARRIE G 10240 STUART RD SAN ANTONIO TX 78263-9693
1125348	13379 LEEWARD LN	129	MICKNICZ ANDREW A & ANITA 13379 LEEWARD LN SAN ANTONIO TX 78263-2383
1139412	9417 STUART RD	130	MONTEMAYOR JESUS E 9417 STUART RD SAN ANTONIO TX 78263-9685
336913	9030 S FOSTER RD	131	MOODY DAVID & TRACY 9030 S FOSTER RD SAN ANTONIO TX 78222-6002
1048744	12915 CASSIANO RD	132	MORADO IBALDO R 12915 CASSIANO RD SAN ANTONIO TX 78223-4574
1054680	CASSIANO RD	132	MORADO IBALDO R 12915 CASSIANO RD SAN ANTONIO TX 78223-4574
336980	9180 HILDEBRANDT RD	133	MORALES ALFONSO ETAL 9180 HILDEBRANDT RD SAN ANTONIO TX 78222-6040
336558	9580 STUART RD	134	MORGAN LEANN M 9580 STUART RD SAN ANTONIO TX 78263-9614
1048821	CASSIANO RD	135	MUNOZ ALFONSO 3011 TIMBER VIEW DR SAN ANTONIO TX 78251-2322
335351	10235 NEW SULPHUR SPRINGS RD	136	MURPHY LINDA 10235 NEW SULPHUR SPRINGS RD SAN ANTONIO TX 78263-9759
1251871	9809 VISTA CIR	137	NAVARRO MICHELE M & JAMES RENUARD 9809 VISTA CIR SAN ANTONIO TX 78263-4405
159140	14950 LAGUNA RD	138	NEW WILLIAM JR & WANDA J 14950 LAGUNA RD SAN ANTONIO TX 78223-9726
159141	14950 LAGUNA RD	138	NEW WILLIAM JR & WANDA J 14950 LAGUNA RD SAN ANTONIO TX 78223-9726

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336895	9362 S FOSTER RD	139	NGUYEN NHAN 6525 W LAGUNA RD SAN ANTONIO TX 78223-9623
336919	S FOSTER RD	139	NGUYEN NHAN 6525 W LAGUNA RD SAN ANTONIO TX 78223-9623
336893	9495 S FOSTER RD	139	NGUYEN NHAN 6525 W LAGUNA RD SAN ANTONIO TX 78223-9623
159043	14096 S US HIGHWAY 181	140	NICHOLS LINDA LOU 14096 S US HIGHWAY 181 LOT 1 SAN ANTONIO TX 78223-9748
158969	14450 KILOWATT RD	141	NICKENS JAMES D & DAWN 14450 KILOWATT RD SAN ANTONIO TX 78223-9727
336799	10234 STUART RD	142	NIXON GARY GLENN & LAURA ANN 10234 STUART RD SAN ANTONIO TX 78263-9693
1211276	14370 S US HIGHWAY 181	143	NORTON LACEY G & NORTON LARISSA N 14370 S US HIGHWAY 181 SAN ANTONIO TX 78223-4267
1211277	14370 S US HIGHWAY 181	143	NORTON LACEY G & NORTON LARISSA N 14370 S US HIGHWAY 181 SAN ANTONIO TX 78223-4267
159131	14888 S US HIGHWAY 181	144	JUAN CORDOVA 8510 S KARLOV AVE CHICAGO IL 60652-3604
335260	8440 KNOWLTON RD	145	PADALECKI HARRY JR 8440 KNOWLTON RD SAN ANTONIO TX 78263-9673
336801	10222 STUART RD	146	PADIER KRISANDRA M 10222 STUART RD SAN ANTONIO TX 78263-9693
347445	13684 S US HIGHWAY 181	147	PALACIOS MARIA ELIZA 129 CASTILLO AVE SAN ANTONIO TX 78210-2809
335220	9658 COOKSEY RD	148	PALMER MILTON L JR LIVING TRUST PALMER MILTON L JR TRUSTEE 523 PALMER RD PLEASANTON TX 78064-6334
336918	9511 S FOSTER RD	149	PALOMO DANIEL C PO BOX 75 ELMENDORF TX 78112-0075
1100526	BURSHARD RD	150	PEREZ RUTH 8331 GLEN CT SAN ANTONIO TX 78239-3020
159338	9510 ELMENDORF LAVERNIA RD	151	PIPES CHRISTOPHER M 361 COUNTY ROAD 223 FLORESVILLE TX 78114-5038
159332	ELMENDORF LAVERNIA	152	PORTER JAMES E 4710 S FLORES ST SAN ANTONIO TX 78214-1406
159143	14910 LAGUNA RD	153	POSEY NORMAN O 14910 LAGUNA RD SAN ANTONIO TX 78223-9729
335218	10155 NEW SULPHUR SPRINGS RD	154	JENNIFER HOLTON 10155 NEW SULPHUR SPRINGS RD SAN ANTONIO TX 78263
337835	14072 S LOOP 1604	155	PRINCE ESTATES LLC 14072 E LOOP 1604 S SAN ANTONIO TX 78223-9725
337027	9366 HILDEBRANDT RD	156	PSENCIK ROBERT A & KAREN J 9366 HILDEBRANDT RD SAN ANTONIO TX 78222-6030
337010	7893 S FOSTER RD	157	QUINTANILLA MICHELLE & HENRY A JR 7893 S FOSTER RD SAN ANTONIO TX 78222-5901
335213	10135 NEW SULPHUR SPRINGS RD	158	RAMIREZ CHARLES & JANIE R 10135 NEW SULPHUR SPRINGS RD SAN ANTONIO TX 78263-9610
336920	9658 S FOSTER RD	159	RAMIREZ LIVING TRUST RAMIREZ DAVID A & LILLIAN L TSTES 9658 S FOSTER RD SAN ANTONIO TX 78222-6014

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158005	13257 LAGUNA RD	160	RAMIREZ RICARDO RAMIREZ LAURA 13257 LAGUNA RD SAN ANTONIO TX 78223-4295
1125351	13367 LEEWARD LN	161	RANDHAWA JASWINDER & PARAMJIT 13367 LEEWARD LN SAN ANTONIO TX 78263-2383
336621	11425 STUART RD	162	RAUSCHUBER GILBERT & GENEVA 2903 TYNE DR SAN ANTONIO TX 78222-2009
337638	14162 S LOOP 1604	163	REMPEL JEFF R & PATRICIA B 245 OAK HOLLOW DR LA VERNIA TX 78121-5855
347442	13758 S US HIGHWAY 181	164	REYES JESUS JR & TINA M 13762 S US HIGHWAY 181 SAN ANTONIO TX 78223-4288
347443	13756 S US HIGHWAY 181	164	REYES JESUS JR & TINA M 13762 S US HIGHWAY 181 SAN ANTONIO TX 78223-4288
1138499	8815 FOSTER RD	165	RIVERA JOSE LOUIS ACEVEDO 254 OELKERS SAN ANTONIO TX 78204-2910
157170	12911 LAGUNA RD	166	RODRIGUEZ JENOVEBA R ETAL 12911 LAGUNA RD SAN ANTONIO TX 78223-9706
1125343	13419 LEEWARD LN	167	RODRIGUEZ MICHAEL A & MARTHA JO 13419 LEEWARD LN SAN ANTONIO TX 78263-2384
1125338	9814 SPINNAKER PATH	168	RODRIGUEZ VIRGIL M & REBECCA L 9814 SPINNAKER PATH SAN ANTONIO TX 78263-2380
1251824	8535 COVER RD	169	ROSILLO RANCH LLC 13538 CHARTER BEND DR SAN ANTONIO TX 78231-2217
337850	14342 S LOOP 1604	170	ALHAYAT PROPERTIES 226 BRYN MAWR CIR HOUSTON TX 77024-6811
1138498	8809 FOSTER RD	171	RUTIAGA CESAR R & MARIA D 216 MARGO ST SAN ANTONIO TX 78223-5605
156867	12856 S US HIGHWAY 181	172	SAENZ JUAN ANTONIO JR 6815 HARRY RD SAN ANTONIO TX 78223-9412
157235	12947 LAGUNA RD	173	SALINAS RAYMOND & SYLVIA G 12961 LAGUNA RD LOT 2 SAN ANTONIO TX 78223-9752
157234	12961 LAGUNA RD	173	SALINAS RAYMOND & SYLVIA G & YOLANDA 12961 LAGUNA RD LOT 2 SAN ANTONIO TX 78223-9752
1062376	CASSIANO RD	174	SAN ANTONIO RIVER AUTHORITY PO BOX 839980 SAN ANTONIO TX 78283-3980
1138501	FOSTER RD	175	SANCHEZ ERIK & LISA 4102 WINESAP DR SAN ANTONIO TX 78222-4842
158965	14528 S US HIGHWAY 181	176	SCHODTS DON & PATSY 14528 S US HIGHWAY 181 SAN ANTONIO TX 78223-9702
1049728	S FOSTER RD	177	SCHUBERT REINHOLD C 9686 S FOSTER RD SAN ANTONIO TX 78222-6014
336897	9686 S FOSTER RD	177	SCHUBERT REINHOLD C 9686 S FOSTER RD SAN ANTONIO TX 78222-6014
1251873	VISTA CIR	178	SEGOVIA JESSE & CHELSY CRISP 9817 VISTA CIR SAN ANTONIO 78251
336795	10360 STUART RD	179	SEGURA CARLOS JR 10360 STUART RD SAN ANTONIO TX 78263
335234	10439 NEW SULPHUR SPRINGS RD	180	SEPULVEDA MARCO 19918 PARK RNCH SAN ANTONIO TX 78259-1934

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336886	7760 BURSHARD RD	181	SHANNON PARTNERS LTD 3326 E SOUTHCROSS BLVD SAN ANTONIO TX 78223-1922
336887	7760 BURSHARD RD	181	SHANNON PARTNERS LTD 3326 E SOUTHCROSS BLVD SAN ANTONIO TX 78223-1922
335341	10231 NEW SULPHUR SPRINGS RD	182	SHEDROCK DAVID A & ANTHONY J SHEDROCK SR 10231 NEW SULPHUR SPRINGS RD SAN ANTONIO TX 78263-9612
158616	12902 S US HIGHWAY 181	183	SILER SAMUEL DEVONNE & BARBARA ANN 12902 S US HIGHWAY 181 SAN ANTONIO TX 78223-4285
158617	12902 S US HIGHWAY 181	183	SILER SAMUEL DEVONNE & BARBARA ANN 12902 S US HIGHWAY 181 SAN ANTONIO TX 78223-4285
335180	10590 COOKSEY RD	184	SINCLAIR ELLEN SLIMP MOONEY 10590 COOKSEY RD ADKINS TX 78101-2255
335173	6420 FM 1628	185	SMITH JENNIFER LEIGH SMITH FAMILY TRUST 6420 FM 1628 ADKINS TX 78101-2275
156844	10036 S FOSTER RD	186	SOLIS GILBERT & REBECCA 10036 S FOSTER RD SAN ANTONIO TX 78223-4409
335305	10580 COOKSEY RD	187	SPEER ARTHUR C JR 10580 COOKSEY RD LOT 1 ADKINS TX 78101-2360
336582	10386 STUART RD	188	SPIVEY ROBERT S 10386 STUART RD SAN ANTONIO TX 78263-9694
335225	10225 NEW SULPHUR SPRINGS RD	189	STEVENS WESLEY ROYCE PO BOX 201015 SAN ANTONIO TX 78220-8015
335219	10135 NEW SULPHUR SPRINGS RD	189	STEVENS WESLEY ROYCE PO BOX 201015 SAN ANTONIO TX 78220-8015
336892	9590 S FOSTER RD	190	STRUNK CARMEN 9590 S FOSTER RD SAN ANTONIO TX 78222-6012
336890	9650 S FOSTER RD	190	STRUNK CARMEN G & RONALD 9590 S FOSTER RD SAN ANTONIO TX 78222-6012
1063370	9660 S FOSTER RD	191	SYMA JUSTIN ALBERT 1226 W AMBER ST SAN ANTONIO TX 78221-2647
1063372	9660 S FOSTER RD	191	SYMA JUSTIN ALBERT 9660 S FOSTER RD SAN ANTONIO TX 78222-6014
156846	10042 S FOSTER RD	192	SOLIS ELOISA T 10042 S FOSTER RD SAN ANTONIO TX 78223-4409
336888	9578 S FOSTER RD	193	TALBERT TIMOTHY & SANDRA 9578 S FOSTER RD SAN ANTONIO TX 78222-6012
159145	14910 LAGUNA RD	194	ESQUINE THERAPY & ANIMAL RESCUE 14910 LAGUNA RD SAN ANTONIO TX 78223-9729
1164498	STUART RD	195	TERRILL FERDINAND A 10025 STUART RD SAN ANTONIO TX 78263-9670
336786	STUART RD	195	TERRILL FRED 10025 STUART RD SAN ANTONIO TX 78263-9670
336552	9955 STUART RD	196	TERRILL JOHN 9955 STUART RD SAN ANTONIO TX 78263-9510
1248714	9955 STUART RD	196	TERRILL JOHN 9955 STUART RD SAN ANTONIO TX 78263-9510
158978	S US HWY 181	197	THOMAS JOHN A 451 LINDA DR SAN ANTONIO TX 78216-7420

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157168	12790 LAGUNA RD	198	THOMPSON NATHAN G 11880 S US HIGHWAY 181 SAN ANTONIO TX 78223-4278
156854	10210 S FOSTER RD	199	TOBIAS KEVIN 12270 S US HIGHWAY 181 SAN ANTONIO TX 78223-4270
156855	10160 S FOSTER RD	200	TOBIAS KEVIN G & EUGENE B 10210 S FOSTER RD SAN ANTONIO TX 78223-4514
1125342	9800 SPINNAKER PATH	201	TOVAR STEVEN & ALICIA T 9800 SPINNAKER PATH SAN ANTONIO TX 78263-2380
336736	10466 NEW SULPHUR SPRINGS RD	202	TRACY WALKER B 8401 STUART RD SAN ANTONIO TX 78263-9653
336474	8401 STUART RD	202	TRACY W B 8401 STUART RD SAN ANTONIO TX 78263-9653
157173	12915 LAGUNA RD	203	TREVINO DANIEL C 2318 W HERMOSA DR SAN ANTONIO TX 78201-3350
159130	14858 S US HIGHWAY 181	204	TREVINO SHEILA & PAUL E PHILLIPS 14858 S US HIGHWAY 181 SAN ANTONIO TX 78223-4289
336624	7660 STUART RD	205	TROSTMANN CATHERINE C & KUNO S 10615 GARRICK LN HOUSTON TX 77013-5435
1125354	13355 LEEWARD LN	206	VALDEZ DAVID & MARIA M 13355 LEEWARD LN SAN ANTONIO TX 78263-2383
336894	9505 S FOSTER RD	207	VARELA JEANIE L 9505 S FOSTER RD SAN ANTONIO TX 78222-6011
1081664	STUART RD	208	VASBINDER ARTHUR D 12055 STUART RD SAN ANTONIO TX 78263-9732
336688	12145 STUART RD	209	VEILLEUX THOMAS J SR & GLENDA DIANE 8204 NEW SULPHUR SPRINGS RD SAN ANTONIO TX 78263-2342
336911	10066 HILDEBRANDT RD	210	VERASTEGUI REJINO M & PETRA 10066 HILDEBRANDT RD SAN ANTONIO TX 78222-6016
338878	8485 COVER RD	211	WALDREP R B 8485 COVER RD SAN ANTONIO TX 78263-9632
158618	12860 S US HIGHWAY 181	212	WALLACE JOHNNY B 222 COUNTY ROAD 446 NIXON TX 78140-4006
158619	12860 S US HIGHWAY 181	212	WALLACE JOHNNY B 222 COUNTY ROAD 446 NIXON TX 78140-4006
1125356	13343 LEEWARD LN	213	WEISINGER HIRAM PAUL & DELORES YVONNE 82 KING ARTHURS CT HAMPSTEAD NC 28443-4507
337029	9140 HILDEBRANDT RD	214	WENGLER MARK E 9140 HILDEBRANDT RD SAN ANTONIO TX 78222-6034
1116524	13952 S US HIGHWAY 181	215	WESCH FRANK H JR & DOBBS DAVID R SR 13952 S US HIGHWAY 181 SAN ANTONIO TX 78223-9636
335224	10231 NEW SULPHUR SPRINGS RD	216	WINN RYAN 10165 NEW SULPHUR SPRINGS RD SAN ANTONIO TX 78263
1263423	COVER RD	217	GALLEGOS ANTERO & LAURA 2312 MCKINLEY AVE SAN ANTONIO TX 78210-3709
336916	9515 S FOSTER RD	218	BROWN FLOYD D PO BOX 200635 SAN ANTONIO TX 78220-0635
1156590	14528 S US HIGHWAY 181	219	SCHODTS DAVID 14528 S US HIGHWAY 181 SAN ANTONIO TX 78223-9702
336869	8575 KNOWLTON RD	220	PAMELA HAECKER 8575 KNOWLTON RD SAN ANTONIO TX 78263-9714

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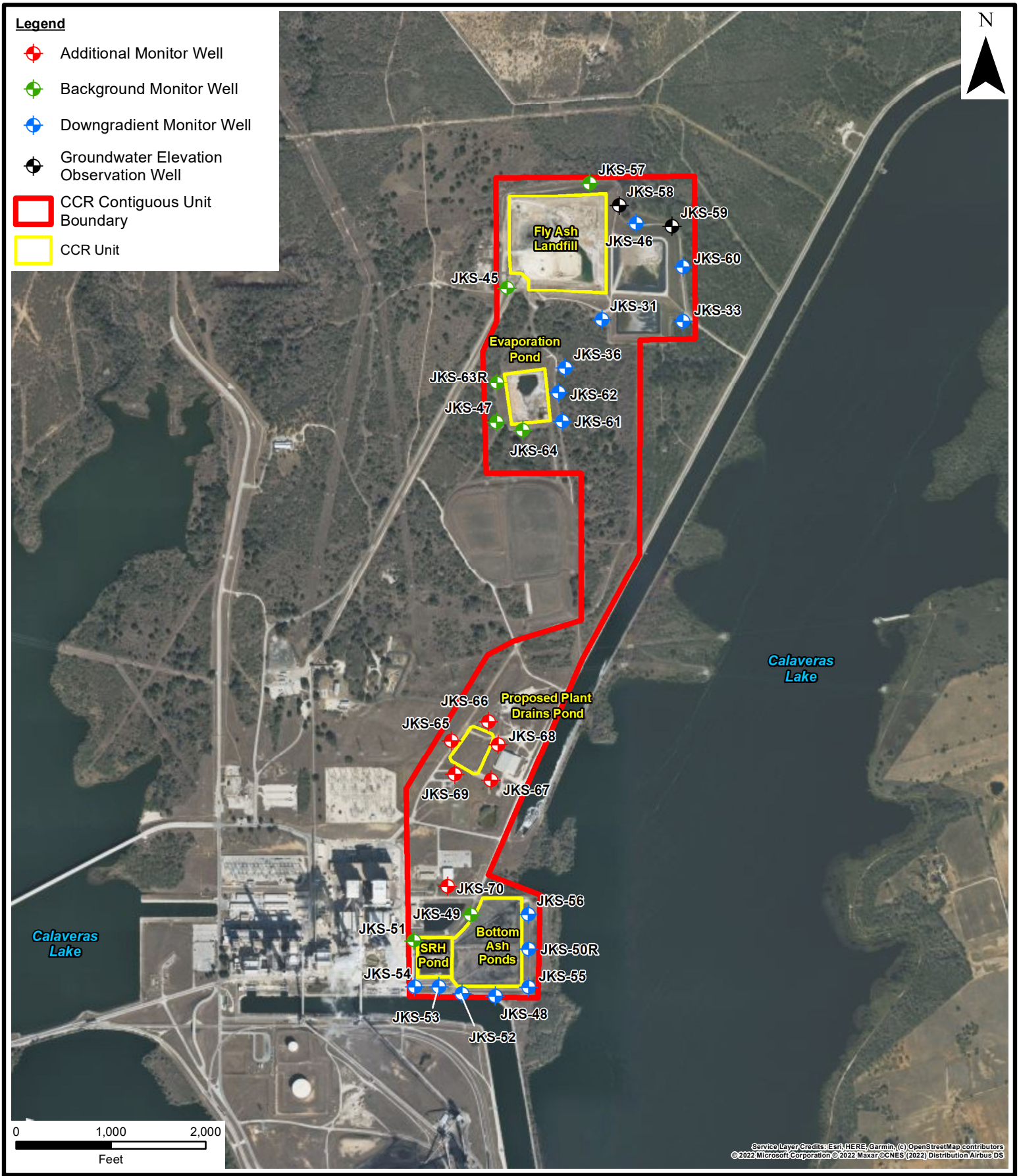
1125337	9818 SPINNAKER PATH	221	CARDENAS TIMOTHY JASON 9818 SPINNAKER PATH SAN ANTONIO TX 78263-2380
159129	14630 ADKINS ELMENDORF RD	222	CARDENAS CARLOS G & LETICIA G 14510 ADKINS ELMENDORF RD SAN ANTONIO TX 78223-9756
157169	LAGUNA RD	223	PERRYMAN PATRICIA LOU & GOODMAN MICHAEL A 12939 LAGUNA RD SAN ANTONIO TX 78223-9706
159062	14525 ADKINS ELMENDORF RD	224	MENDEZ ANJEL CERVANTES 7714 SCHULTZ RD ELMENDORF TX 78211
0	DOES NOT EXIST	225	
1315012	COVER RD	226	HERNANDEZ MARIO & HORTENCIA ESCOBAR 227 GABRIEL SAN ANTONIO TX 78202
336695	12423 STUART RD	227	BRISTER ROBERTA JOYCE 12423 STUART RD SAN ANTONIO TX 78263-6214
1314426	STUART RD	228	K & H PARTNERS LLC 113 E ASHTON BLVD FLORESVILLE TX 78114
337834	14156 E LOOP 1604 S	229	JOSEPH RALPH E 14156 E LOOP 1604 S SAN ANTONIO TX 78223-9725
1281300	LAGUNA RD	230	TAYLOR JANIS M & KETNICK DAVID J 14910 LAGUNA RD SAN ANTONIO TX 78223-9725

Attachment 1-10



Environmental Resources Management

DESIGN:	WZ	DRAWN:	JWR	CHKD.:	WZ
DATE:	08/10/2022	SCALE:	AS SHOWN	REVISION:	1

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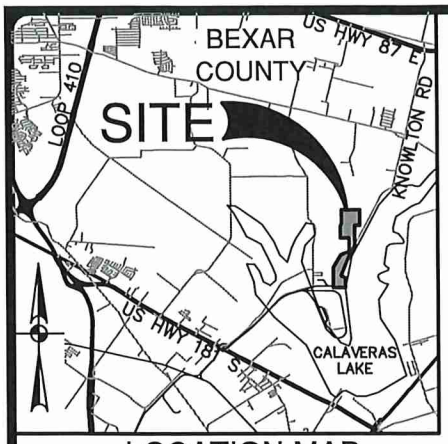
fig1_0503422_CPSCalv_WellLocs.mxd

FIGURE 1
CCR UNITS - CONTIGUOUS BOUNDARY
CPS Energy - Calaveras Power Station San Antonio, Texas

ERM

Attachment 1-11



LOCATION MAP

NOT-TO-SCALE

LEGEND:

DR DEED RECORDS OF BEXAR COUNTY, TEXAS
OPR OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS
MON. MONUMENT
CONC. CONCRETE
POINT
FOUND MONUMENT

NOTES:

1. THIS EXHIBIT IS ISSUED IN CONJUNCTION WITH A METES AND BOUNDS DESCRIPTION PREPARED UNDER JOB NO. 12544-05 BY PAPE-DAWSON ENGINEERS, INC.
2. THE BEARINGS ARE BASED ON THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE FROM THE NORTH AMERICAN DATUM OF 1983 NAD 83 (NA2011) EPOCH 2010.00.
3. DISTANCES SHOWN HEREON ARE IN SURFACE USING A SCALE FACTOR OF 1.00017.

1,000' 0' 500' 1,000'

SCALE: 1"= 1,000'

MATCHLINE A

PABLO VILLAPANDO
SURVEY NO. 141
ABSTRACT 773
COUNTY BLOCK 5147
BEXAR COUNTY

257.181 ACRES

N00°00'00"E 1552.45'
N73°08'22"E 727.53'
N61°53'35"E 334.30'
N29°57'41"E 1604.07'
S28°29'46"W 1373.86'
S23°24'23"W 2596.59'
N90°00'00"E 619.74'
S00°00'00"E 1086.79'
N90°00'00"W 1357.97'
N00°00'00"E 2220.10'
N45°14'14"W 2689.81'

CPS MON. JKS3
IN CONC.

CALAVERAS
POWER STATION

P.O.B.

GRID COORDINATES:
N: 13659648.05
E: 2185595.03

STATE OF TEXAS
REGISTERED
DAVID A. CASANOVA
4251
PROFESSIONAL
LAND SURVEYOR

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

EXHIBIT FOR
CCR CONTIGUOUS UNIT BOUNDARY

DECEMBER 02, 2022

SHEET 1 OF 2
JOB No.: 12544-05

REFERENCE:

Date: Dec 02, 2022, 9:29am User ID: jtree
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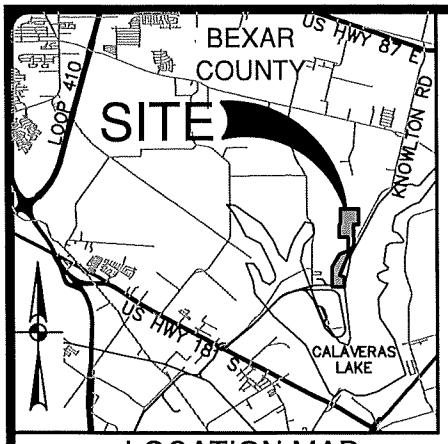

LOCATION MAP

NOT-TO-SCALE

LEGEND:

DR	DEED RECORDS OF BEXAR COUNTY, TEXAS
OPR	OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS
MON.	MONUMENT
CONC.	CONCRETE
⊙	POINT
●	FOUND MONUMENT

NOTES:

1. THIS EXHIBIT IS ISSUED IN CONJUNCTION WITH A METES AND BOUNDS DESCRIPTION PREPARED UNDER JOB NO. 12544-05 BY PAPE-DAWSON ENGINEERS, INC.
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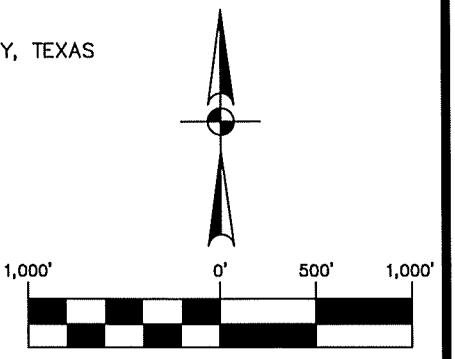
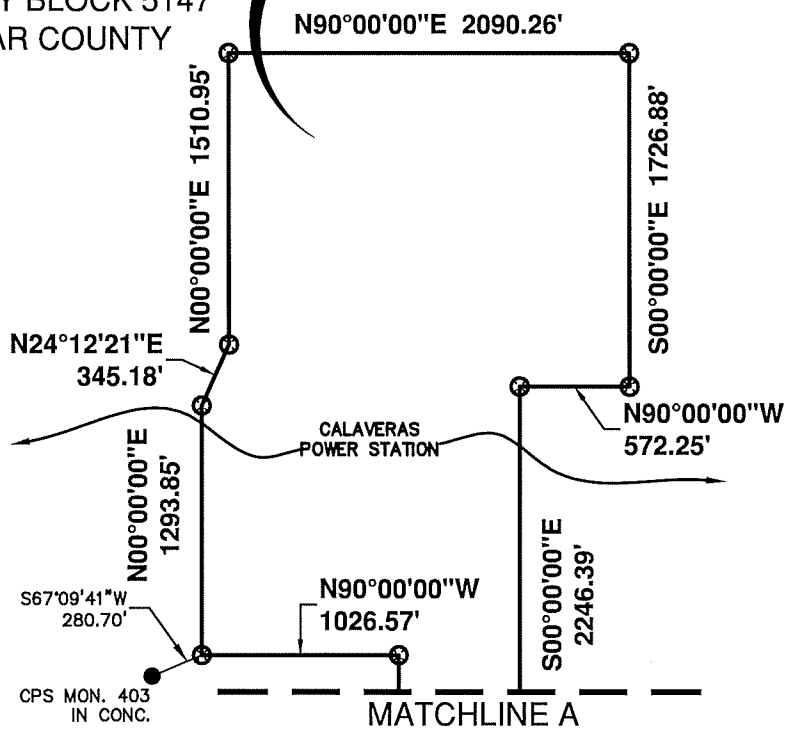
3. DISTANCES SHOWN HEREON ARE IN SURFACE USING A SCALE FACTOR OF 1.00017.



SCALE: 1"= 1,000'

PABLO VILLAPANDO
SURVEY NO. 141
ABSTRACT 773
COUNTY BLOCK 5147
BEXAR COUNTY

257.181 ACRES



PAPE-DAWSON ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

EXHIBIT FOR
CCR CONTIGUOUS UNIT BOUNDARY

DECEMBER 02, 2022

SHEET 2 OF 2
JOB No.: 12544-05

REFERENCE:

Date: Dec 02, 2022, 9:29am User ID: jtree
File: N:\CIVIL\12544-05\12544-05 CCR BNDY.dwg

METES AND BOUNDS DESCRIPTION
FOR

A 257.181 acre tract of land located on the CPS Energy Calaveras Power Station tract and out of the Pablo Villapando Survey No. 141, Abstract 773, County Block 5147, in Bexar County, Texas. Said 257.181 acre tract being more fully described as follows, with bearings based on the Texas Coordinate System established for the South Central Zone from the North American Datum of 1983 NAD 83 (NA2011) epoch 2010.00:

BEGINNING: At a point on said Calaveras Power Station tract, with grid coordinates of N:13659648.05, E:2185595.03, from which CPS Monument No. "JKS3" in concrete, bears N 45°14'14" W, a distance of 2689.81 feet;

THENCE: Over and across said Calaveras Power Station tract the following bearings and distances:

N 00°00'00" E, a distance of 2220.10 feet to a point;

N 29°57'41" E, a distance of 1604.07 feet to a point;

N 61°53'35" E, a distance of 334.30 feet to a point;

N 73°08'22" E, a distance of 727.53 feet to a point;

N 00°00'00" E, a distance of 1552.45 feet to a point;

N 90°00'00" W, a distance of 1026.57 feet to a point, from which CPS Monument No. "403" in concrete, bears S 67°09'41" W, a distance of 280.70 feet;

THENCE: Continuing over and across said Calaveras Power Station tract the following bearings and distances:

N 00°00'00" E, a distance of 1293.85 feet to a point;

N 24°12'21" E, a distance of 345.18 feet to a point;

N 00°00'00" E, a distance of 1510.95 feet to a point;

N 90°00'00" E, a distance of 2090.26 feet to a point;

S 00°00'00" E, a distance of 1726.88 feet to a point;

N 90°00'00" W, a distance of 572.25 feet to a point;

S 00°00'00" E, a distance of 2246.39 feet to a point;

S 28°29'46" W, a distance of 1373.86 feet to a point;

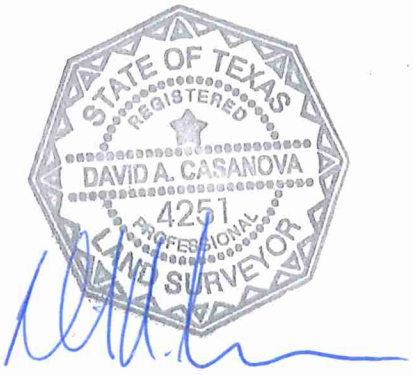
S 23°24'23" W, a distance of 2596.59 feet to a point;

N 90°00'00" E, a distance of 619.74 feet to a point;

S 00°00'00" E, a distance of 1086.79 feet to a point;

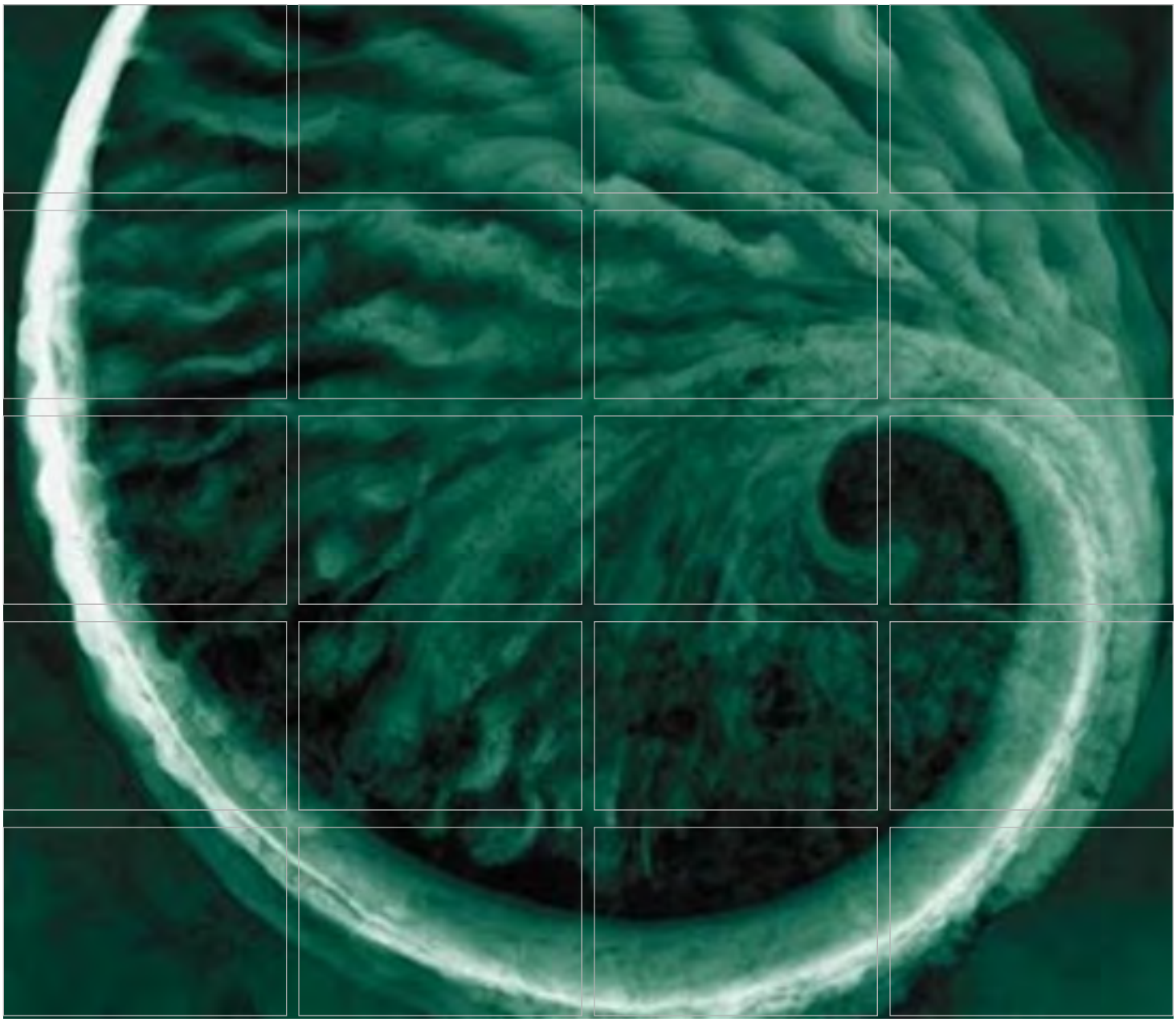
N 90°00'00" W, a distance of 1357.97 feet to the POINT OF BEGINNING and containing 257.181 acres in Bexar County, Texas. Said tract being described in conjunction with a survey made on the ground and a survey map prepared under job number 12544-05 by Pape-Dawson Engineers, Inc.

PREPARED BY:	Pape-Dawson Engineers, Inc.
DATE:	December 02, 2022
JOB NO.	12544-05
DOC. ID.	N:\CIVIL\12544-05\Word\12544-05 FN 257.181 AC.docx



Attachment 2 Location Restrictions Demonstration

Attachment 2-1



Location Restrictions Demonstration – CCR Rule 40 CFR §257.60-64

CPS Energy
Calaveras Power Station - CCR Units
San Antonio, Texas

October 2018

www.erm.com

ERM

The business of sustainability

CPS Energy Calaveras Power Station – CCR Units

Location Restrictions Demonstration – CCR Rule 40 CFR §257.60-64

October 17, 2018

Project No. 0337367

Jeffery A. Bauguss, P.E.
Partner-in-Charge

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Senior Consultant / Project Manager

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Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

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APPENDICES

EXECUTIVE SUMMARY

On behalf of CPS Energy, Environmental Resource Management Southwest, Inc. (ERM) conducted evaluations of the location restrictions for the existing Coal Combustible Residuals (CCR) Units associated with the Calaveras Power Station located southeast of San Antonio, in Bexar County, Texas. The evaluations were conducted through a combination of desktop reviews and obtaining site-specific information from engineering assessments, site investigations, and site visits to assess compliance with Title 40, Code of Federal Regulations, Part 257 (40 CFR Part 257) (aka CCR Rule).

The evaluations, documented in this *Location Restrictions Demonstration*, concluded the following:

Placement Above the Uppermost Aquifer

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report,* as-built drawings, site-specific groundwater elevation data and soil geotechnical data, the bottom (bases) of the Fly Ash Landfill (FAL), Evaporation Pond (EP), Sludge Recycle Holding (SRH) Pond, and South Bottom Ash Pond (BAP) are more than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer. Therefore, these four CCR Units meet the minimum requirements of 40 CFR §257.60.

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report*, as-built drawings, site-specific groundwater elevation data and soil geotechnical data, although portions of the North BAP are unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer, the bottom (base) of the northern portion of the North BAP is less than 5 feet above the uppermost aquifer. Therefore, this CCR Unit does not meet the minimum requirements of 40 CFR §257.60.

Wetlands

Based on the lack of current or historical evidence of wetland hydrology, hydric soils, or hydrophytic vegetation, all five CCR units are not located within any wetlands. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.61.

Fault Areas

Based on a review of published geologic and fault maps and fault and fold databases, all five CCR Units are not located within 60 meters (200 feet) of a fault that has had displacement in Holocene time. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.62.

Seismic Impact Zones

Based on review of published seismic hazard and earthquake maps, all five CCR Units are not located in seismic impact zones. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.63.

Unstable Areas

Based on the review of structural and safety factor assessments, annual inspections, soil boring logs and geologic cross sections, and topographic and karst zones maps, all five CCR Units are not located in unstable areas. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.64.

1.0 INTRODUCTION

On behalf of CPS Energy, Environmental Resource Management Southwest, Inc. (ERM) conducted evaluations of the location restrictions for the existing Coal Combustible Residuals (CCR) Units associated with the Calaveras Power Station located southeast of San Antonio, in Bexar County, Texas. The evaluations were conducted through a combination of desktop reviews and obtaining site-specific information from engineering assessments, site investigations, and site visits to assess compliance with Title 40, Code of Federal Regulations, Part 257 (40 CFR Part 257) (aka CCR Rule).

2.0 BACKGROUND

2.1 SITE DESCRIPTION

CPS Energy owns and operates the Calaveras Power Station located southeast of San Antonio in Bexar County, Texas. Within this power station, there are two coal-fired plants (J.T. Deely Power Plant and J.K. Spruce Power Plant) that generate CCR that are subject to the CCR Rule. A General Site Location Map is provided as **Figure 1**.

CPS Energy has identified five onsite CCR Units:

1. Fly Ash Landfill (FAL);
2. Evaporation Pond (EP);
3. Sludge Recycle Holding (SRH) Pond;
4. North Bottom Ash Pond (BAP); and
5. South BAP.

For the purposes of this document, the FAL and EP are termed the Northern CCR Units and the SRH Pond and BAPs are termed the Southern CCR Units. The CCR Unit locations are shown in **Figure 2**.

2.2 SITE-WIDE GEOLOGY

According to the Bureau of Economic Geology (BEG) *Geologic Atlas of Texas San Antonio Sheet*, the geology in the area of Calaveras Power Station consists of the Carizzo Sand and the Wilcox Group. According to the United States Geological Survey (USGS), the Carizzo Sand consists of medium- to coarse-grained sandstone, with finer grained material towards the top of the formation and the Wilcox Group consists mostly of mudstone, with various amounts of sandstone, lignite, and ironstone concretions. Information presented in Section 2.2 and the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017).

2.2.1 Northern CCR Units

The stratigraphic sequence is generally characterized by approximately 8 feet to 32 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by a clayey/silty to well-sorted sand (groundwater-bearing unit) approximately 5 to over 25 feet thick, underlain by grey to brown, high plasticity clay (lower confining unit). The ground water bearing unit is at its greatest observed thickness near the southwest corner of the EP, and thins towards the northwest (northwest of the FAL). The lower confining unit, generally observed at a depth between approximately 471 feet to 478 feet above mean sea level (msl) was not observed at monitor wells JKS-47 and JKS-60 (drilled to depths of 462 feet and 466 feet above msl, respectively). This possibly suggests the presence of erosional channels or gradational changes in lithology between JKS-45 and JKS-47, and JKS-46 and JKS-60. Interbedded sands and clays were observed within both the unconsolidated material and ground water

bearing unit in monitor wells JKS-57, JKS-58, and JKS-61 through JKS-64. A high plasticity clay interval was observed above the groundwater-bearing unit at monitor well JKS-45, but appears to be discontinuous as it was not encountered during the installation of any other monitor wells in the vicinity of the Northern CCR Units. A CCR Well Network Location Map is provided as **Figure 3**.

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-45, JKS-58, JKS-62, and JKS-64. The laboratory Unified Soil Classification System (USCS) results classify the high plasticity clay unit (above the groundwater-bearing unit) and the lower confining unit as fat clay (CH). Sandy lean clay (CL) and clayey sand (SC) USCS results from JKS-58 and JKS-62, respectively, suggest that the contact between the groundwater bearing unit and lower confining unit is gradational in some areas. The laboratory USCS results classify the groundwater-bearing unit from a silty sand (SM) at JKS-45 to a clayey sand (SC) at JKS-64. Hydraulic conductivities from cohesive samples collected from the lower confining unit were reported on the order of 10^{-7} to 10^{-8} centimeters per second (cm/sec), which is within the range of values for clay.

2.2.2 Southern CCR Units

The stratigraphic sequence is generally characterized by approximately 6 feet to 18 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by clayey/silty sand to moderately-sorted sand (groundwater-bearing unit) approximately 9.5 to 21.5 feet thick, underlain by bedrock (sandstone). Discontinuous silts and interbedded clay material were observed within the groundwater-bearing unit in monitor wells JKS-48, JKS-49, and JKS-51 through JKS-55. A CCR Well Network Location Map is provided as **Figure 3**.

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-48, JKS-53, and JKS-54. The laboratory USCS results classify the groundwater-bearing unit from a silty clayey sand (SC-SM) at JKS-54 to a clayey sand (SC) at JKS-48 and JKS-53. Hydraulic conductivities from cohesive samples collected from the lower confining unit were reported on the order of 10^{-6} to 10^{-8} (cm/sec).

2.3 SITE-WIDE HYDROGEOLOGY

Based on water level measurements and stratigraphic information collected during the advancement of the soil borings, ERM has provided an interpretation of the confining nature of the underlying stratigraphy. Information presented in the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017).

2.3.1 Northern CCR Units

Groundwater in the vicinity of the Northern CCR Units appears to flow towards Lake Calaveras (southeast to east).

The groundwater-bearing unit in the vicinity of the Northern CCR Units appears to exhibit unconfined conditions based on the potentiometric surface of groundwater in relation to the first encountered water during drilling and the lack of continuous confining units (i.e., clay, sandy clay, or silty clay). The potentiometric surface is within approximately three feet of the first water encountered during drilling, and no continuous confining units are observed. The minimal change in elevation and the stratigraphic information indicates that a significant, laterally continuous confining layer is not present above the groundwater-bearing unit in the northern area. However, a laterally continuous lower confining unit was observed in multiple borings below the groundwater bearing unit.

2.3.2 Southern CCR Units

Groundwater in the vicinity of the Southern CCR Units appears to flow radially toward the lake and adjacent channel and away from a groundwater high represented by the water level elevation measured in JKS-49.

The groundwater-bearing unit in the vicinity of the Southern CCR Units appears to exhibit semi-confined conditions with confining units (i.e., clay, sandy clay, or silty clay) present in all the wells except JKS-49 and JKS-56. The potentiometric surface is within approximately 4 feet to 11 feet of where water was first encountered during drilling for all wells except JKS-56, indicative of groundwater under hydraulic head pressure with semi-confined conditions. JKS-56 appears to demonstrate unconfined conditions, due to the approximately 0.5 foot difference between the first encountered water during drilling and the potentiometric surface. There is a bedrock unit underlying the groundwater-bearing unit in the southern area.

2.4 CCR RULE LOCATION RESTRICTION TECHNICAL REQUIREMENTS

The U.S. Environmental Protection Agency (EPA) published rules for the management of CCR generated from electric utilities. The CCR Rule specifies requirements for active and inactive surface impoundments and active piles and landfills that manage CCR.

The evaluations discussed in this report are intended to address the following five location restrictions for the CCR units as outlined in the following CCR Rule requirements:

40 CFR §257.60 Placement Above the Uppermost Aquifer

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must be constructed with a base that is located no less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer, or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table). The owner or operator must demonstrate by the dates specified in paragraph (c) of this section that the CCR

unit meets the minimum requirements for placement above the uppermost aquifer.

40 CFR §257.61 Wetlands

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in § 232.2 of this chapter, unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that the CCR unit meets the requirements of paragraphs (a)(1) through (5) of this section.

(1) Where applicable under section 404 of the Clean Water Act or applicable state wetlands laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve wetlands.

(2) The construction and operation of the CCR unit will not cause or contribute to any of the following:

- (i) A violation of any applicable state or federal water quality standard;
- (ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;
- (iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and
- (iv) A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

(3) The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:

- (i) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR unit;
- (ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;
- (iii) The volume and chemical nature of the CCR;
- (iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;
- (v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and
- (vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

(4) To the extent required under section 404 of the Clean Water Act or applicable state wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by paragraphs (a)(1) through (3) of this section, then minimizing unavoidable impacts to the maximum extent reasonable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and reasonable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and

(5) Sufficient information is available to make a reasoned determination with respect to the demonstrations in paragraphs (a)(1) through (4) of this section.

40 CFR §257.62 Fault Areas

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit.

40 CFR §257.63 Seismic Impact Zones

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

40 CFR §257.64 Unstable Areas

(a) An existing or new CCR landfill, existing or new CCR surface impoundment, or any lateral expansion of a CCR unit must not be located in an unstable area unless the owner or operator demonstrates by the dates specified in paragraph (d) of this section that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted.

3.0 LOCATION RESTRICTIONS EVALUATION

ERM evaluated technical compliance with the five location restrictions outlined in the CCR Rule through a combination of desktop reviews and obtaining site-specific information from engineering assessments, site investigations, and site visits. The certification from a qualified professional engineer stating that this *Location Restrictions Demonstration* meets the CCR Rule requirements is provided in **Appendix A**.

3.1 PLACEMENT ABOVE THE UPPERMOST AQUIFER

The CCR Rule defines an aquifer as "a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells or springs". The CCR Rule also defines uppermost aquifer as "the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season".

ERM obtained site-specific information from engineering assessments and site investigations to evaluate whether the bases of the CCR Units are located more than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer. Information reviewed included:

- *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report, Calaveras Power Station* (ERM, January 2018); and
- *Groundwater Monitoring System, CPS Energy Calaveras Power Station* (ERM, October 2017)

The results of this evaluation are presented below for the individual CCR Units at the Calaveras Power Station.

3.1.1 Fly Ash Landfill (FAL)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the FAL ranges from 514 to 503 feet above msl. The first groundwater beneath the FAL was encountered during well drilling at approximately 483 feet above msl, and static water levels range from 478 to 489 feet above msl based on current and historical water level data. A stratigraphic cross section (Section A-A') depicting the pertinent elevations is provided as **Figure 4**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of fat clay, which typically has a hydraulic conductivity in the 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the FAL is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.2 *Evaporation Pond (EP)*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the EP ranges from 497 to 500 feet above msl. The first groundwater beneath the EP was encountered during well drilling at approximately 486 feet above msl, and static water levels range from 479 to 484 feet above msl based on current and historical water level data. A stratigraphic cross section (Section C-C') depicting the pertinent elevations is provided as **Figure 5**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of interbedded sandy clay, which typically has a hydraulic conductivity in the 10^{-7} to 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the EP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.3 *Sludge Recycle Holding (SRH) Pond*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the SRH Pond is 492 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 487 feet above msl based on available water level data, the first groundwater beneath the SRH Pond was encountered during well drilling at approximately 476 feet above msl. A stratigraphic cross section (Section D-D') depicting the pertinent elevations is provided as **Figure 6**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the SRH Pond is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer. Note that the first groundwater encountered in JKS-51 is perched water and not in hydraulic connection with the deeper, laterally continuous aquifer.

3.1.4 *North Bottom Ash Pond (BAP)*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the North BAP was encountered during well drilling ranging from 480 feet above msl in the south and 483.5 feet above msl in the north. A stratigraphic cross section (Section F-F') depicting the pertinent elevations is provided as **Figure 7**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, although portions of the North BAP are unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer, the base of the

northern portion of the North BAP is less than 5 feet above the uppermost aquifer.

3.1.5 South Bottom Ash Pond (BAP)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Stratigraphic cross sections (Section D-D' and Section F-F') depicting the pertinent elevations are provided as **Figure 6** and **Figure 7**, respectively. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the South BAP was encountered during well drilling at approximately 476 feet above msl. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the South BAP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.2 WETLANDS

40 CFR §232.2 (as referenced in the CCR Rule) defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas". Positive wetland indicators of three environmental parameters including hydrology, hydric soil, and hydrophytic vegetation are normally present within wetlands.

ERM obtained information from a desktop review and a site visit on 16 July 2018 to evaluate whether the CCR Units are located in potential wetlands and waters of the United States. Information reviewed included:

- Site Photographs;
- Historical aerial imagery;
- Topographic maps;
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Surveys;
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI);
- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD);
- USFWS Information for Planning and Consultation (IPAC); and
- Texas Parks and Wildlife Department (TPWD) Calaveras Lake Survey Report.

The results of this evaluation are presented below for the individual CCR Units at the Calaveras Power Station. Supporting information including NWI maps and soil surveys/hydric ratings is provided in **Appendix B**.

3.2.1 *Fly Ash Landfill (FAL)*

Although one intermittent stream was mapped by the NHD north of the FAL, the desktop evaluation indicated that the FAL is not located in any wetlands or waterbodies mapped by the NWI or NHD. Soil survey data indicates that the FAL is located within soils mapped as Aluf sand, 0 to 5% slopes (EuC); Wilco loamy fine sand, 0 to 3 percent slopes (HkB); and Floresville fine sandy loam, 1 to 5 percent slopes, eroded (WeC2). Each of these soils has a hydric rating of "0", indicating that zero percent of the soil components meet the criteria for hydric soils. Review of historical aerial imagery did not indicate any wetlands historically existed in the footprint of the FAL. Pertinent wetlands assessment features associated with the FAL are shown on **Figure 8**.

The site visit confirmed that the FAL was not located in any wetlands or waterbodies. One intermittent stream was observed approximately 100 feet north of the buffer for the FAL that did not exhibit flow at the time of the site visit. The stream appeared to flow toward the southeast, where it lost a defined bed and banks and no longer exhibited an ordinary high water mark; therefore it is not likely jurisdictional waters of the United States.

3.2.2 *Evaporation Pond (EP)*

Although one wetland area [Palustrine Unconsolidated Shore, Temporarily Flooded, diked/impounded (PUSAh)] was mapped by the NWI south of the EP, the desktop evaluation indicated that the EP is not located in any wetlands or waterbodies mapped by the NWI or NHD. Soil survey data indicates that the EP is located within soils mapped as Wilco loamy fine sand, 0 to 3 percent slopes (HkB). This soil has a hydric rating of "0", indicating that zero percent of the soil components meet the criteria for hydric soils. Review of historical aerial imagery did not indicate any wetlands historically existed in the footprint of the EP, and that the area mapped as wetlands south of the EP appeared to result from excavation activity between 1985 and 1995. Pertinent wetlands assessment features associated with the EP are shown on **Figure 9**.

The site visit confirmed that the EP was not located in any wetlands or waterbodies. The wetland area mapped approximately 100 feet south of the buffer for the EP was observed to be two emergent wetlands within depressions resulting from excavation and berms. The wetlands appeared manmade and isolated; therefore they are expected to be non-jurisdictional.

3.2.3 *Sludge Recycle Holding (SRH) Pond*

Although open water areas associated with Calaveras Lake and one wetland area [Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded, diked/impounded (L1UBHh)] were mapped by the NWI south of the SRH Pond (within the intake canal), the desktop evaluation indicated that the SRH Pond is

not located in any wetlands or waterbodies mapped by the NWI or NHD. Soil survey data indicates that the SRH Pond is located within soils mapped as Wilco loamy fine sand, 0 to 3 percent slopes and 3 to 5 percent slopes (HkB and HkC). These soils have a hydric rating of "0", indicating that zero percent of the soil components meet the criteria for hydric soils. Review of historical aerial imagery did not indicate any wetlands historically existed in the footprint of the SRH Pond, and that Calaveras Lake and the intake canal were created between 1966 and 1973. Pertinent wetlands assessment features associated with the SRH Pond are shown on **Figure 10**.

The site visit confirmed that the SRH Pond was not located in any wetlands or waterbodies. A concrete-lined drainage ditch was observed approximately 100 feet south of the buffer for the SRH Pond. The drainage ditch is manmade and associated with a facility outfall; therefore it is expected to be non-jurisdictional.

3.2.4 North and South Bottom Ash Ponds (BAPs)

Although open water areas associated with Calaveras Lake and one wetland area [Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded, diked/impounded (L1UBHh)] were mapped by the NWI south of the BAPs (within intake canal), and the BAPs are mapped as Palustrine, Unconsolidated Shore/Bottom, and Artificially/Permanently Flooded and excavated (PUSKx/PUBHx) areas by the NWI, the desktop evaluation indicated that the BAPs are not located in any wetlands or waterbodies mapped by the NWI or NHD. Soil survey data indicates that the BAPs are located within soils mapped as Wilco loamy fine sand, 0 to 3 percent slopes and 3 to 5 percent slopes (HkB and HkC). These soils have a hydric rating of "0", indicating that zero percent of the soil components meet the criteria for hydric soils. Review of historical aerial imagery did not indicate any wetlands historically existed in the footprint of the BAPs; however, imagery pre-dating the facility construction indicates there may have been an intermittent stream north of the BAPs in the area that is currently a cove of Calaveras Lake. Pertinent wetlands assessment features associated with the BAPs are shown on **Figure 11**.

The site visit confirmed that the BAPs were not located in any wetlands or waterbodies. A concrete-lined drainage ditch was observed approximately 50 feet south of the buffer for the South BAP. The drainage ditch is manmade and is a continuation of the non-jurisdictional drainage ditch described south of the SRH Pond. Although the east buffer of the BAPs is generally approximately 300 feet from Calaveras Lake, there is a cove located approximately 100 feet from the northeast corner of the North BAP. An approximately 6-foot fringe of wetland vegetation was observed along the edge of the water in the cove, but did not extend up towards the buffer of the North BAP.

3.3 FAULT AREAS

The CCR Rule defines fault as "a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side". The CCR Rule also defines displacement as "the relative movement of any two sides of a fault measured in any direction".

ERM obtained information from a desktop review to evaluate whether the CCR Units are located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time. Information reviewed included:

- USGS Geologic Map (https://txpub.usgs.gov/dss/texasgeology);
- USGS Fault Map (https://earthquake.usgs.gov/hazards/qfaults/map/#qfaults); and
- Quaternary Fault and Fold Databases (https://earthquake.usgs.gov/cfusion/qfault/ query_results_AB.cfm) and (https://earthquake.usgs.gov/cfusion/qfault/query_results_ CD.cfm)

The results of this evaluation are presented below for all the CCR Units collectively at the Calaveras Power Station.

The geology underlying the Calaveras Power Station includes the Wilcox Group that consists mostly of Eocene mudstone, with various amounts of sandstone and lignite. The Wilcox Group overlies the Midway Group, a Paleocene clay and sand. According to the Geologic Map provided as **Figure 12**, the Midway Group crops out approximately 7,000 feet north of the closest CCR unit (FAL). An unnamed normal fault is mapped approximately 8,000 feet north of the FAL and bounds the northern exposure of the Midway Group in this area. This fault dies out to the east, and to the west the fault is covered by the Pleistocene Leona Formation and Fluviatile terrace deposits and by the Pliocene Uvalde Gravel. These geologic units are all older than Holocene and do not show displacement.

According to the Fault Map provided as **Figure 13**, there are no Quaternary faults identified in proximity to the Calaveras Power Station. In addition, a review of the Quaternary Fault and Fold Database of the United States did not identify any Class A, Class B, Class C or Class D faults in Bexar County, Texas.

3.4 SEISMIC ZONES

The CCR Rule defines a seismic impact zone as "an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 50 years".

ERM obtained information from a desktop review to evaluate whether the CCR Units are located within a seismic impact zone. Information reviewed included:

- USGS Seismic Hazard Map (https://earthquake.usgs.gov/earthquakes/byregion/images/texas-haz); and
- USGS South Texas Earthquakes 1900-2018 (https://earthquake.usgs.gov/earthquakes/search).

The results of this evaluation are presented below for all the CCR Units collectively at the Calaveras Power Station.

The USGS produced a national Seismic Hazard Map of the 2% probability of exceedance in 50 years of peak ground acceleration. A portion of the Seismic Hazard Map that includes the State of Texas is provided as **Figure 14**. Based on this map, the Calaveras Power Station is located in the mapped area of 2-4%g. Note that the units in **Figure 14** are reported in %g. As such, a value of 2-4%g is equivalent to 0.02-0.04g and not greater than 0.10g in 50 years.

In addition, according to the South Texas Earthquakes Map provided as **Figure 15**, the nearest earthquake in proximity to the Calaveras Power Station was located in western Wilson County, more than 10 miles to the south. The earthquake occurred on 8 August 1984 as a magnitude 3 earthquake at a depth of 5 km. A search of earthquakes in Bexar County did not reveal any historical earthquakes from 1900 to July 2018.

3.5 UNSTABLE AREAS

The CCR Rule defines an unstable area as "a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains". The CCR Rule also defines areas susceptible to mass movement as "those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where, because of natural or human-induced events, the movement of earthen material at, beneath, or adjacent to the CCR unit results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall". In addition, the CCR Rule defines karst terrain means as "an area where karst topography, with its characteristic erosional surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, dolines, collapse shafts (sinkholes), sinking streams, caves, seeps, large springs, and blind valleys".

ERM obtained information from a desktop review and site-specific information from engineering assessments to evaluate whether the CCR Units are located within unstable areas. Information reviewed included:

- *Geotechnical Engineering Study for Ash Pond Berms – Spruce/Deely Generation Units, San Antonio, Texas* (Raba Kistner Consultants, May 2014) (Appendix A in CDM Smith reports);
- *Assessment of Dam Safety of Coal Combustion Surface Impoundments Final Report, J.T. Deely Power Plant* (CDM Smith, June 2014);
- *Assessment of Dam Safety of Coal Combustion Surface Impoundments Final Report, J.K. Spruce Power Plant* (CDM Smith, June 2014);
- *Structural Stability and Safety Factor Assessments, Calaveras Power Station, San Antonio, Texas* (ERM, October 2016);
- *Bexar County Area Karst Zones Map from Delineation of Hydrogeologic Areas and Zones for the Management and Recovery of Endangered Karst Invertebrate Species in Bexar County, Texas* (Veni, George & Associates, April 2003); and
- *Groundwater Monitoring System, CPS Energy Calaveras Power Station* (ERM, October 2017).

The results of this evaluation are presented below for all the CCR Units collectively at the Calaveras Power Station.

3.5.1 Structural Integrity

As summarized in the CDM Smith reports, embankment material is light clay (ASTM "CL") with clay fraction of approximately 45%, and an assumed liquid limit between 35 and 47. Foundation material for the BAPs and SRH Pond consists of sandy clay (ASTM "CL") with clay fraction between 50% and 60%, and liquid limit approximately 51; or clayey sand (ASTM "ML") with clay fraction approximately 35% and liquid limit approximately 33. Foundation material for the EP is similar, except the liquid limits are approximately 55.

No information on the embankment and foundation materials were available for the FAL, but foundation materials are anticipated to be similar to those of the EP based on the proximity of the units.

3.5.2 Structural Stability and Safety Factor Assessments

Structural stability and safety factors for the surface impoundments were summarized in the CDM Smith reports and ERM report. Based on these reports, the surface impoundments are structurally stable, with safety factors that meet the CCR Rule requirements.

Based on the annual inspections of all the CCR Units starting in 2015, no visual evidence of geometry changes or other evidence of differential settlement have occurred at the CCR Units.

3.5.3 Mass Material Movement Considerations

With the exception of the engineered berms that have previously been assessed, slopes at the Calaveras Power Station are gradual, with grades ranging from 0%

to 5%. Based on the annual inspections of all the CCR Units starting in 2015, the land surrounding the CCR Units does not show evidence of movement, including slumping, tension cracks, hummocky topography, or vegetation growth that would suggest slow moving soil (curved tree trunks/trunks angled toward the upward slope). Liquefaction was considered in the CDM Smith reports and considered to be very low risk for the CCR Units based on two factors: 1) the limited potential for earthquakes in the area (discussed in Section 3.4) and 2) presence of cohesive soils. A review of the soil borings and geologic cross sections indicate a variety of clays, silts and clayey silts, and clayey and silty sands in the uppermost 25 to 30 feet below ground surface. At the Southern CCR Units, sandstone was encountered at a depth of approximately 25 feet below ground surface.

In addition, a review of historical topographic maps from before Calaveras Lake was created do not indicate a topography that has experienced extensive mass wasting, other than expected stream incisions in an area of generally flat or gently sloping topography. Also note that the presence of Calaveras Lake is a stabilizing feature in the area. In general, according to CPS Energy, Calaveras Lake is maintained at an elevation of approximately 485 feet above msl, with a variability of approximately 0.5 feet under normal conditions.

3.5.4 Karst Terrain

An evaluation of potential karst terrain was conducted using the Bexar County Area Karst Zones Map provided as **Figure 16**. The Calaveras Power Station is located in Karst Zone 5, which is not known to contain karst invertebrate species and associated karst features. The karst zones are based on a review of geological maps depicting the Edwards Aquifer recharge zone and the Glen Rose Formation within Bexar County, Texas.

4.0 CONCLUSIONS

The evaluations, documented in this *Location Restrictions Demonstration*, concluded the following:

Placement Above the Uppermost Aquifer

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report,* as-built drawings, site-specific groundwater elevation data and soil geotechnical data, the bottom (bases) of the Fly Ash Landfill (FAL), Evaporation Pond (EP), Sludge Recycle Holding (SRH) Pond, and South Bottom Ash Pond (BAP) are more than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer. Therefore, these four CCR Units meet the minimum requirements of 40 CFR §257.60.

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report*, as-built drawings, site-specific groundwater elevation data and soil geotechnical data, although portions of the North BAP are unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer, the bottom (base) of the northern portion of the North BAP is less than 5 feet above the uppermost aquifer. Therefore, this CCR Unit does not meet the minimum requirements of 40 CFR §257.60.

Wetlands

Based on the lack of current or historical evidence of wetland hydrology, hydric soils, or hydrophytic vegetation, all five CCR units are not located within any wetlands. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.61.

Fault Areas

Based on a review of published geologic and fault maps and fault and fold databases, all five CCR Units are not located within 60 meters (200 feet) of a fault that has had displacement in Holocene time. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.62.

Seismic Impact Zones

Based on review of published seismic hazard and earthquake maps, all five CCR Units are not located in seismic impact zones. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.63.

Unstable Areas

Based on the review of structural and safety factor assessments, annual inspections, soil boring logs and geologic cross sections, and topographic and karst zones maps, all five CCR Units are not located in unstable areas. Therefore, all five CCR Units meet the minimum requirements of 40 CFR §257.64.

Figures

October 2018

Environmental Resources Management
206 East 9th Street, Suite 1700
Austin, Texas 78701
(512) 459-4700

Environmental Resources Management

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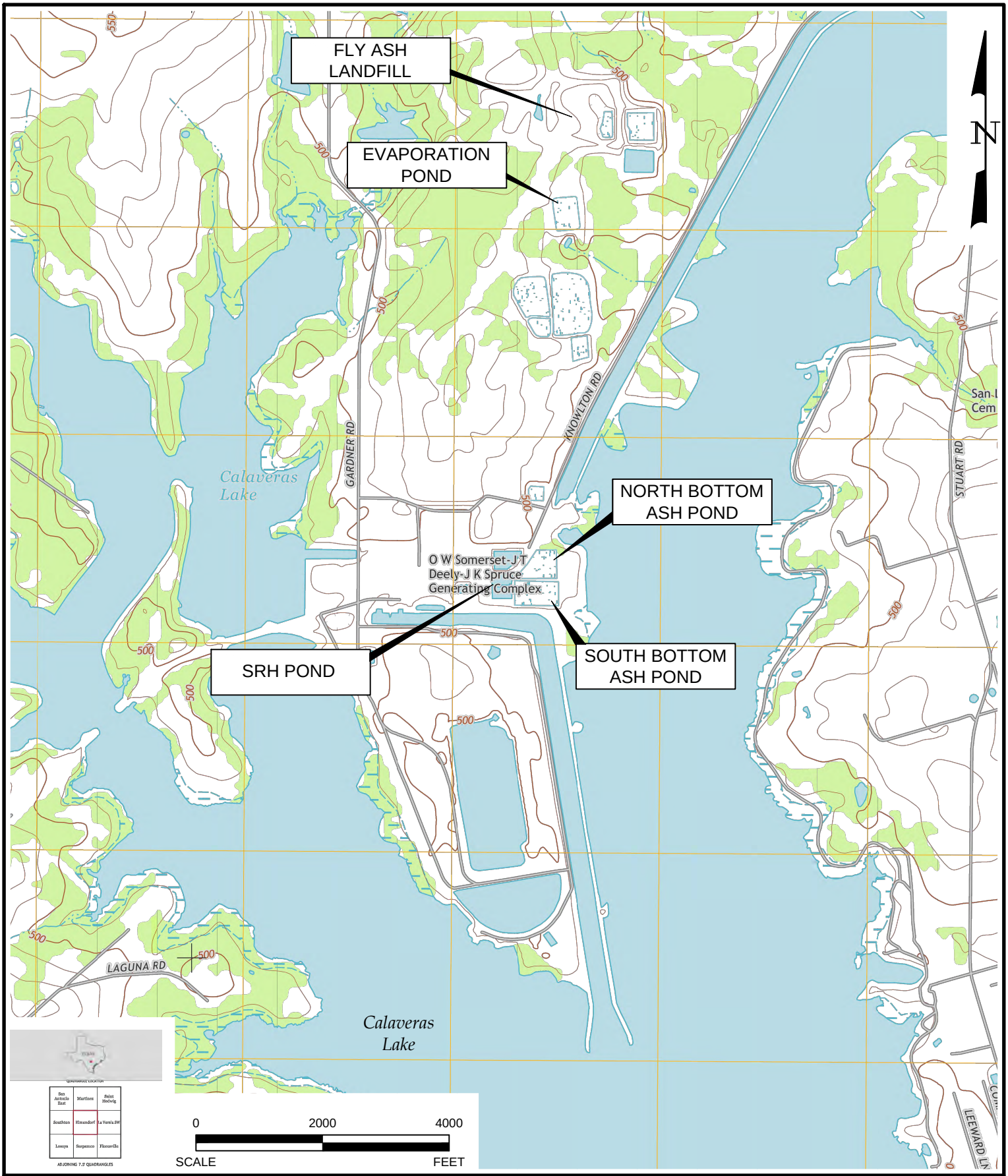
DATE:	7/25/2016	SCALE:	AS SHOWN	REVISION:	1
W.O.NO.:	K:\GIS\CPS\Calaveras\MXD\0337367_CPSCalaveras_SiteLoc.mxd				

FIGURE 1
GENERAL SITE LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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FIGURE 2
CCR UNIT LOCATIONS

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

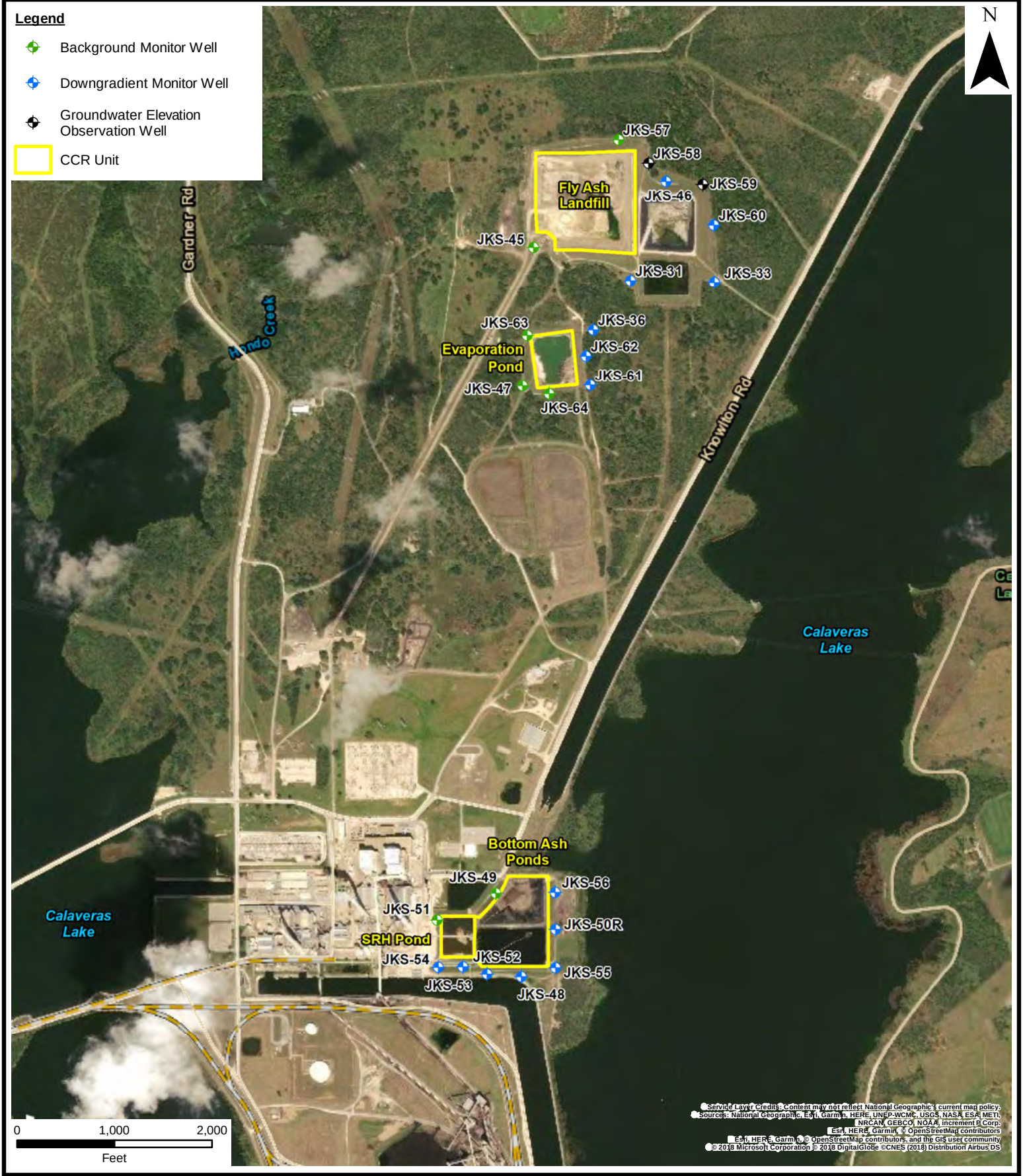

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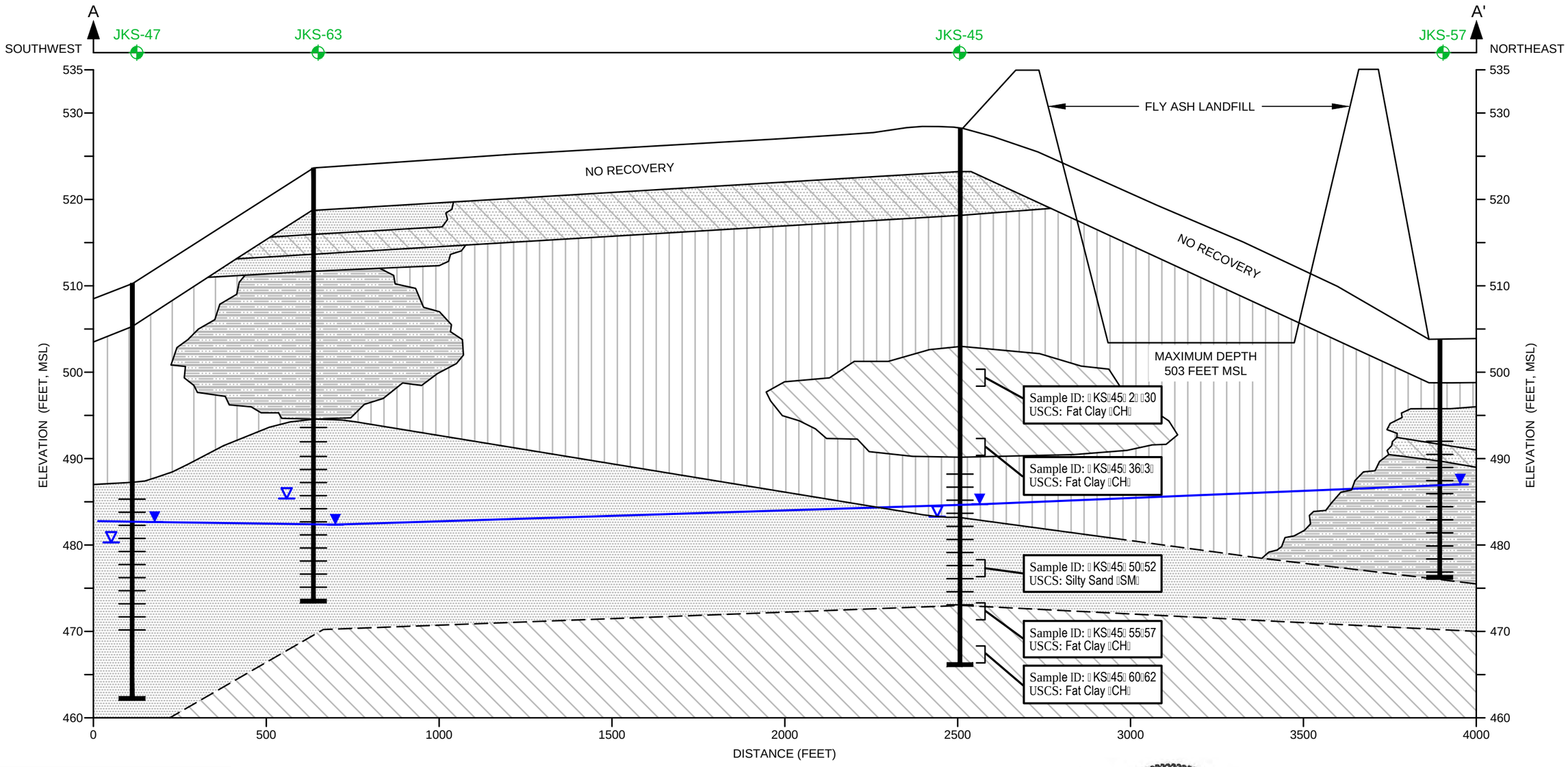
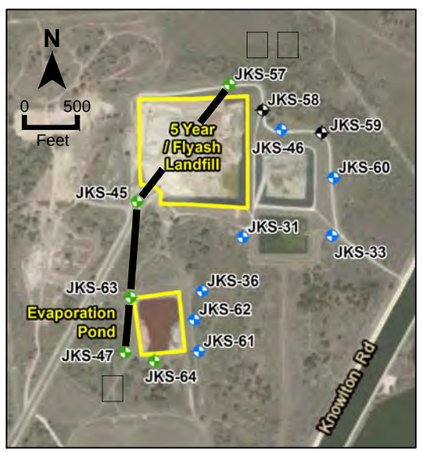
FIGURE 3
CCR WELL NETWORK LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM





LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
12/13/2017

10'
VERTICAL
0
300'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

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Figure 4
Stratigraphic Cross Section A-A'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

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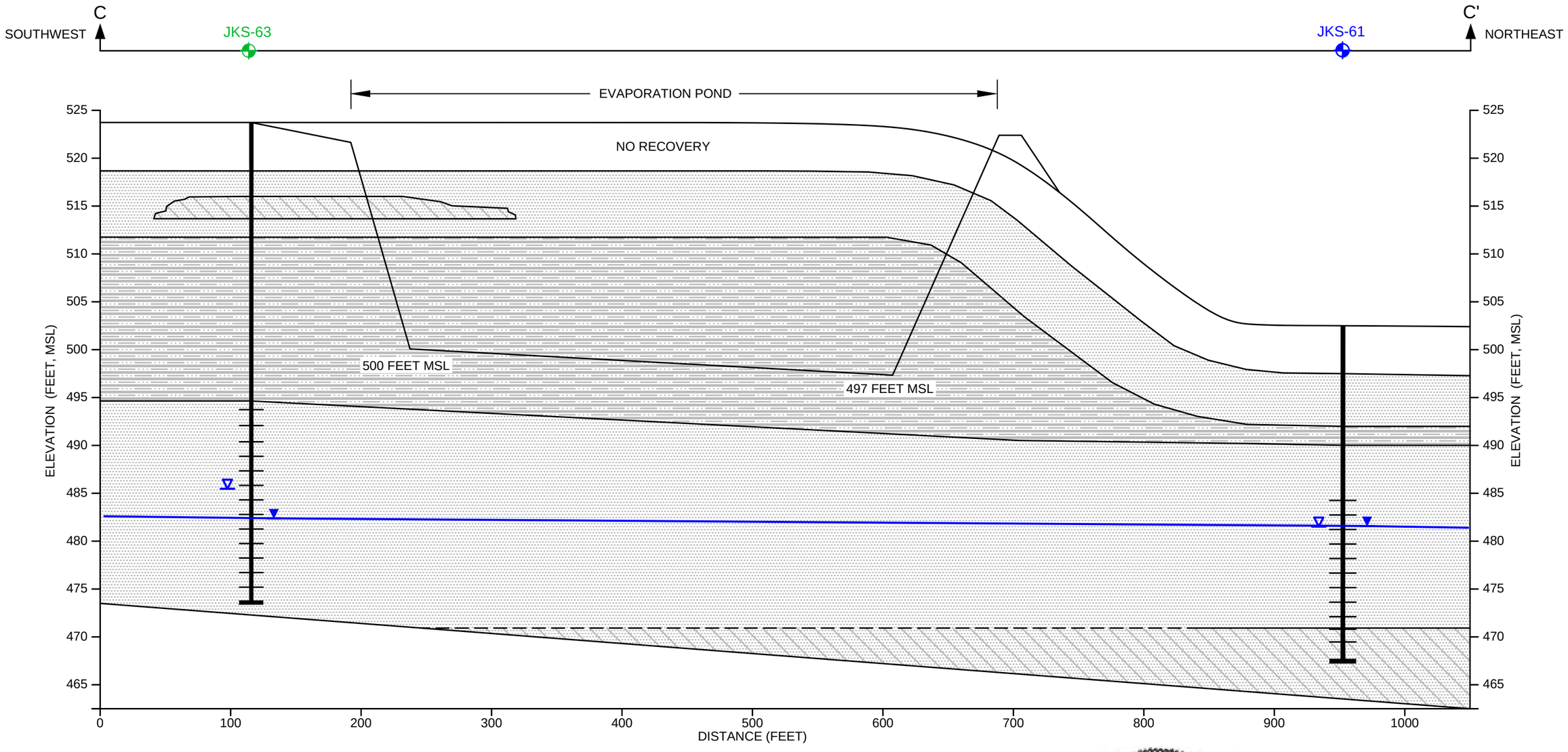
ERM-Southwest, Inc. TX PE Firm No. 2393



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

10'
VERTICAL
0
100'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 5
Stratigraphic Cross Section C-C'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

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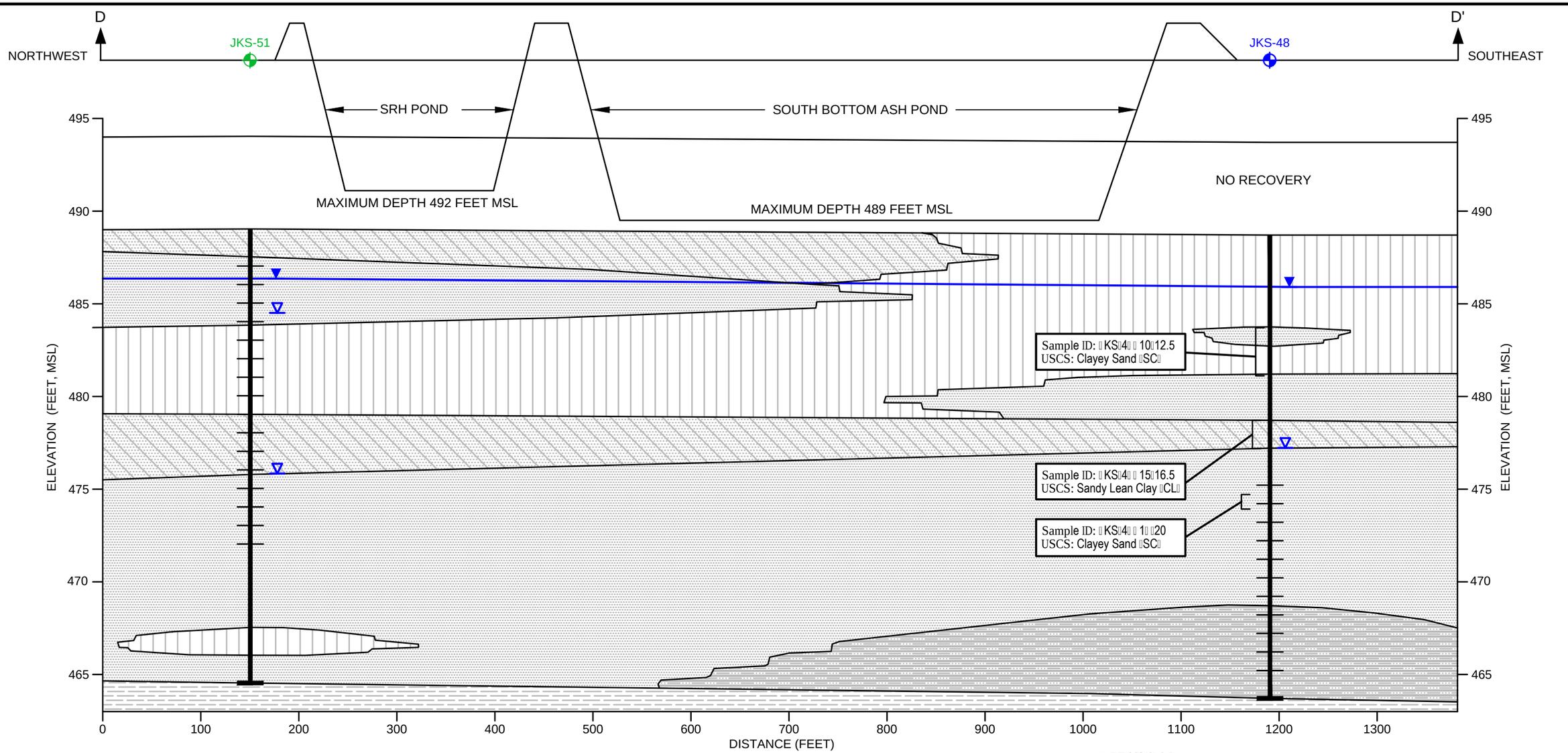
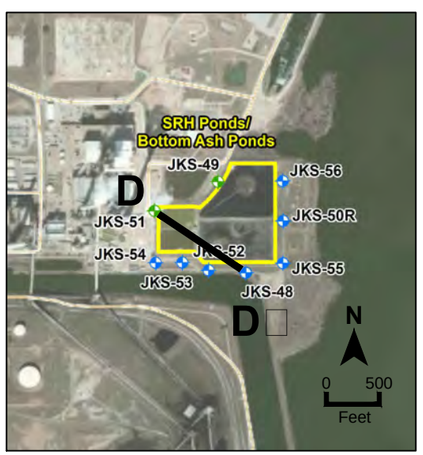
ERM-Southwest, Inc. TX PE Firm No. 2393

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036





LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, SILT, AND CLAY
- BEDROCK (SANDSTONE)

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sa le ID
SCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

5'
VERTICAL
0
100'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

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Figure 6
Stratigraphic Cross Section D-D'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.: WZ
DATE: /17/201	SCALE: AS SHOWN	REV.: 1

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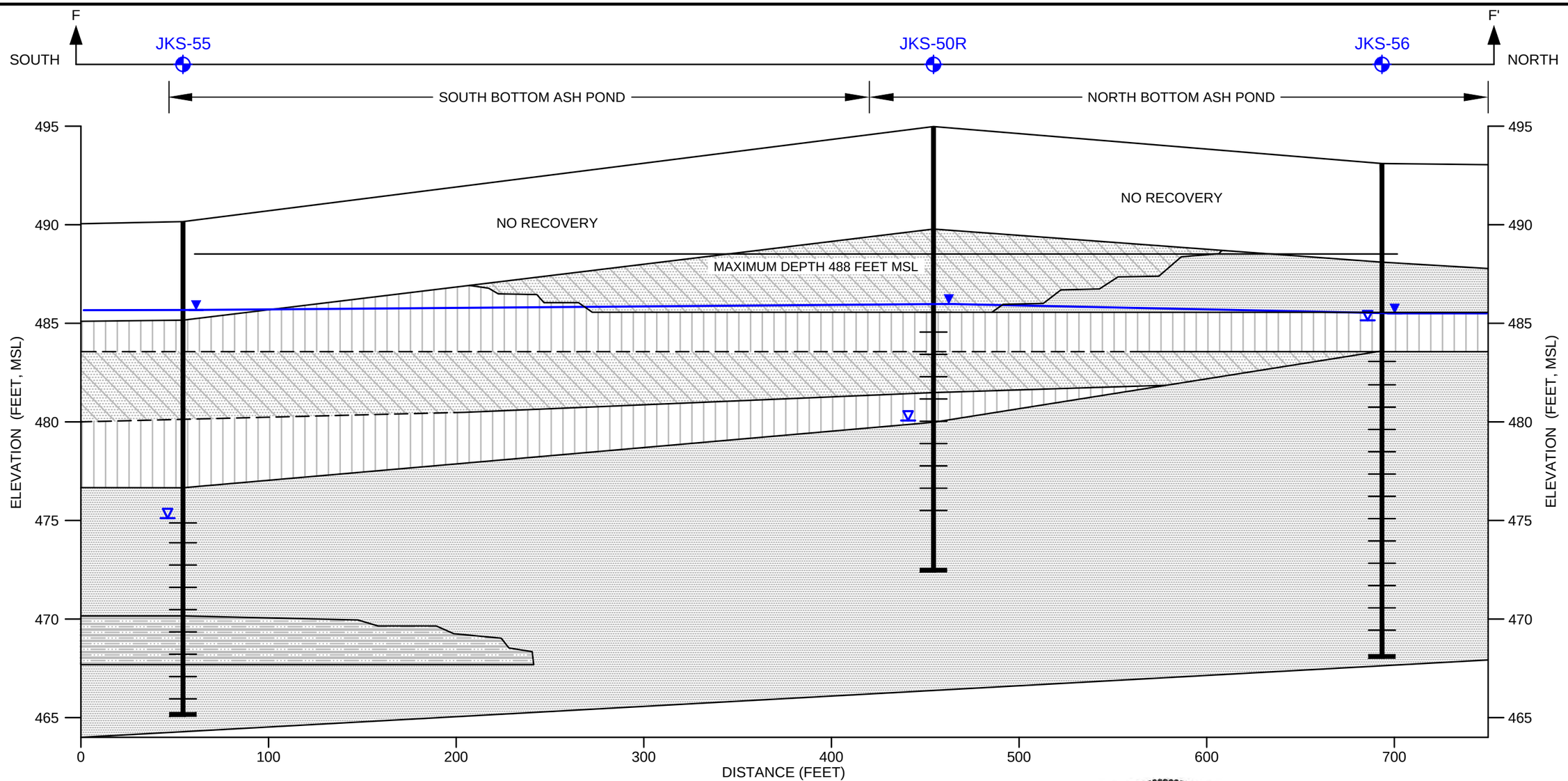
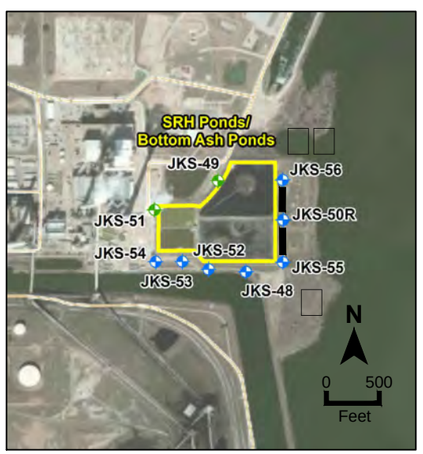
ERM-Southwest, Inc. TX PE Firm No. 2393





LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, AND CLAY
- BEDROCK (SANDSTONE)
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

5'
VERTICAL
0
100'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

ERM-Southwest, Inc. TX PE Firm No. 2393

Environmental Resources Management

Figure 7
Stratigraphic Cross Section F-F'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: EFC	CHKD.: WZ
DATE: /17/201	SCALE: AS SHOWN	REV.: 1

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Legend

- Upland Point
- Intermittent Stream
- Unit Boundary

Figure 8
Fly Ash Landfill
Wetlands Assessment
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Source: Esri - World Topographic Map;

DRAWN BY: GIS

H:\Projects\0352436 CPS Energy Calaveras CCR Engineering.WZ\GIS\MXD\WetlandsAssessment2018\WetlandsAssessment2018.aprx, REVISED: 09/19/2018, SCALE: 1: when printed at 8.5x11

Legend

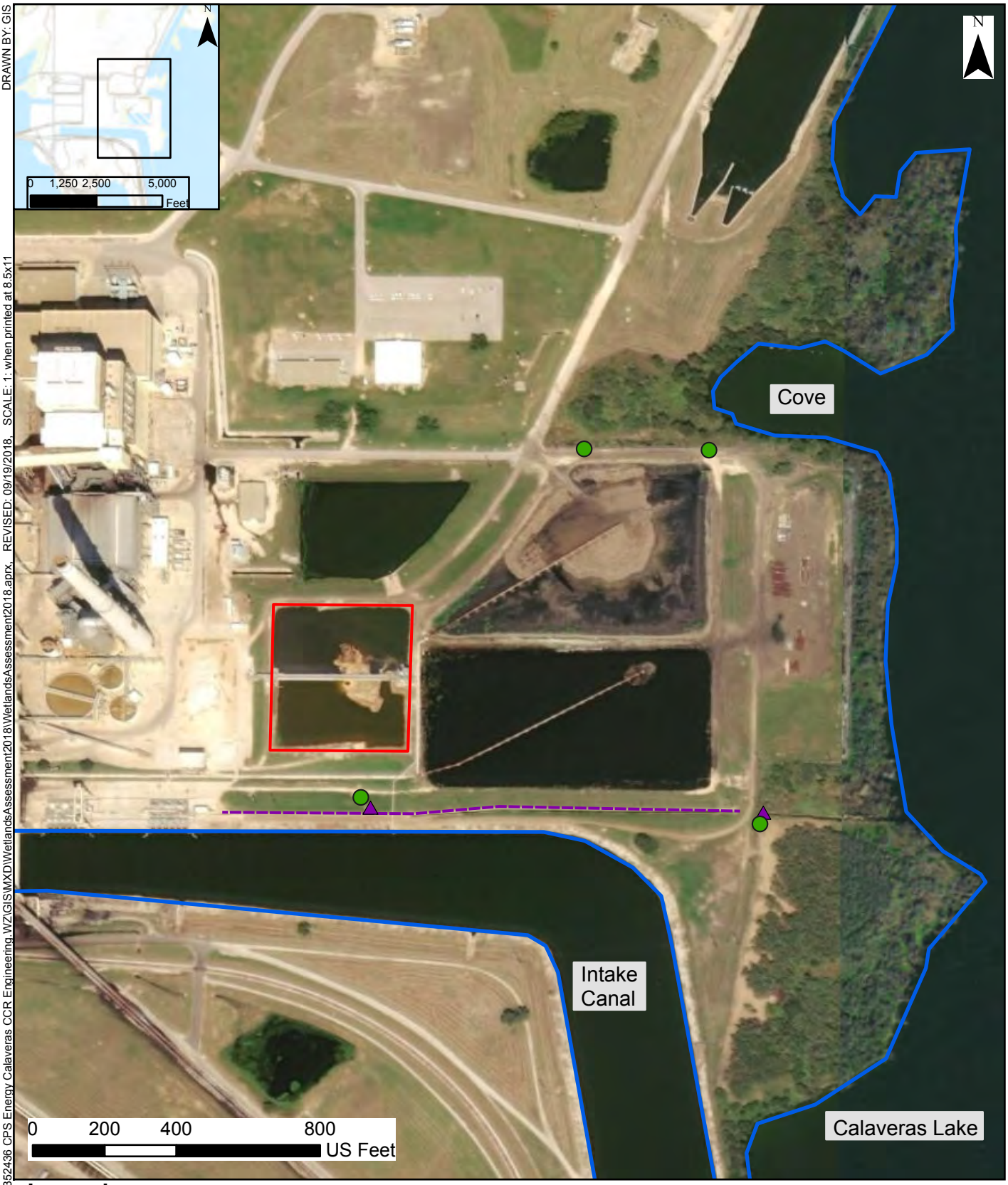
- Upland Point
- Wetland Point
- Wetland Area
- UnitBoundary

Figure 9
Evaporation Pond
Wetlands Assessment
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Source: Esri - World Topographic Map;

DRAWN BY: GIS
\\ushoufs01\data\Houston\Projects\0352436 CPS Energy Calaveras CCR Engineering.WZ\GIS\MXD\WetlandsAssessment2018\WetlandsAssessment2018.aprx, REVISED: 09/19/2018, SCALE: 1: when printed at 8.5x11



DRAWN BY: GIS

REVISED: 09/19/2018, SCALE: 1: when printed at 8.5x11

\\ushoufs01\data\Houston\Projects\0352436 CPS Energy Calaveras CCR Engineering.WZ\GIS\MXD\WetlandsAssessment2018\WetlandsAssessment2018.aprx,

Legend

- Upland Point
- Drain / Outfall
- Ditch
- Unit Boundary

Source: Esri - World Topographic Map;

Figure 10
SRH Pond
Wetlands Assessment
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

DRAWN BY: GIS

\\ushoufs01\data\Houston\Projects\0352436 CPS Energy Calaveras CCR Engineering.WZ\GIS\MXD\WetlandsAssessment2018\WetlandsAssessment2018.aprx, REVISED: 09/19/2018, SCALE: 1: when printed at 8.5x11

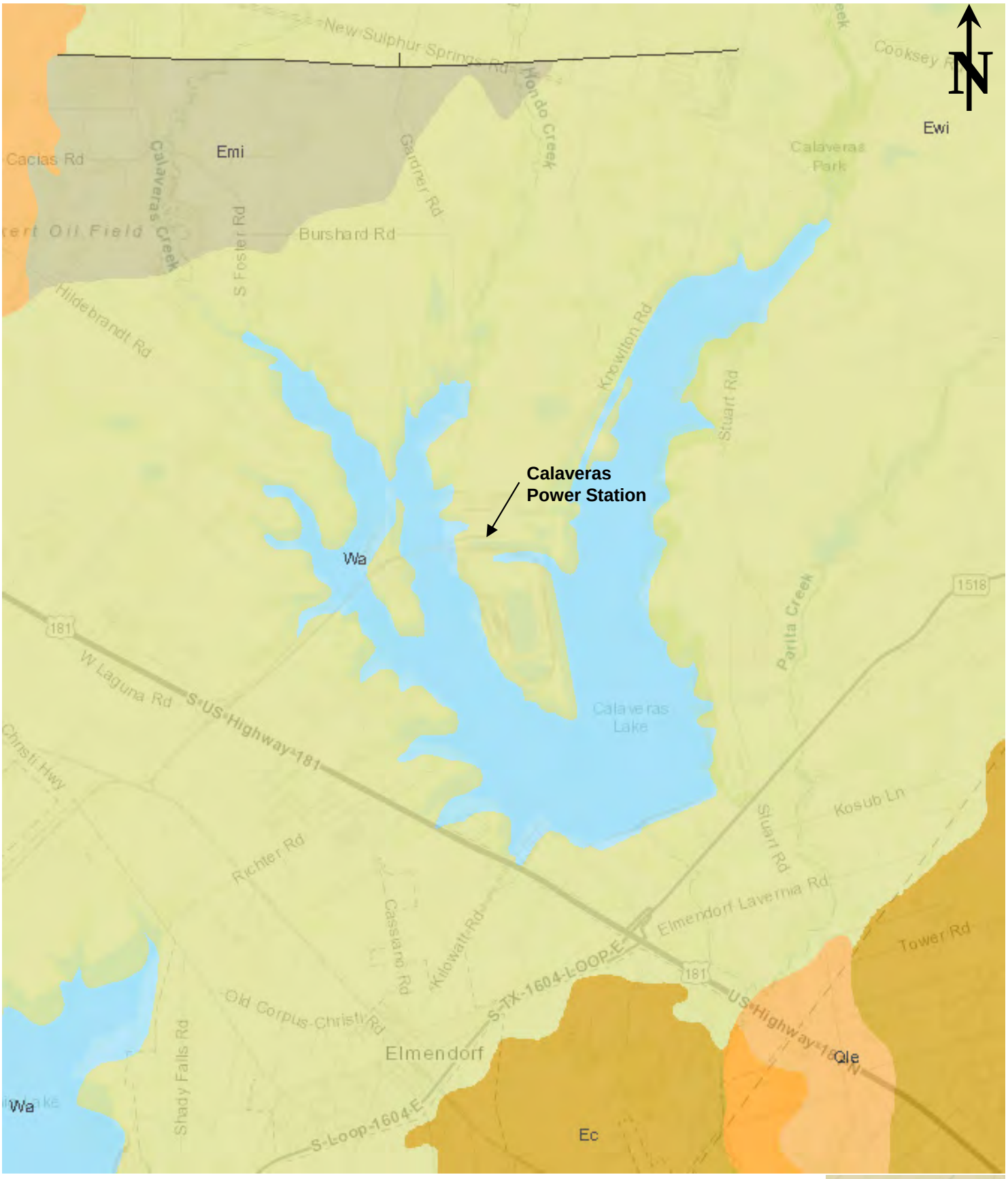
Legend

- Upland Point
- Drain / Outfall
- Ditch
- Unit Boundary

Source: Esri - World Topographic Map;

Figure 11
Bottom Ash Ponds
Wetlands Assessment
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

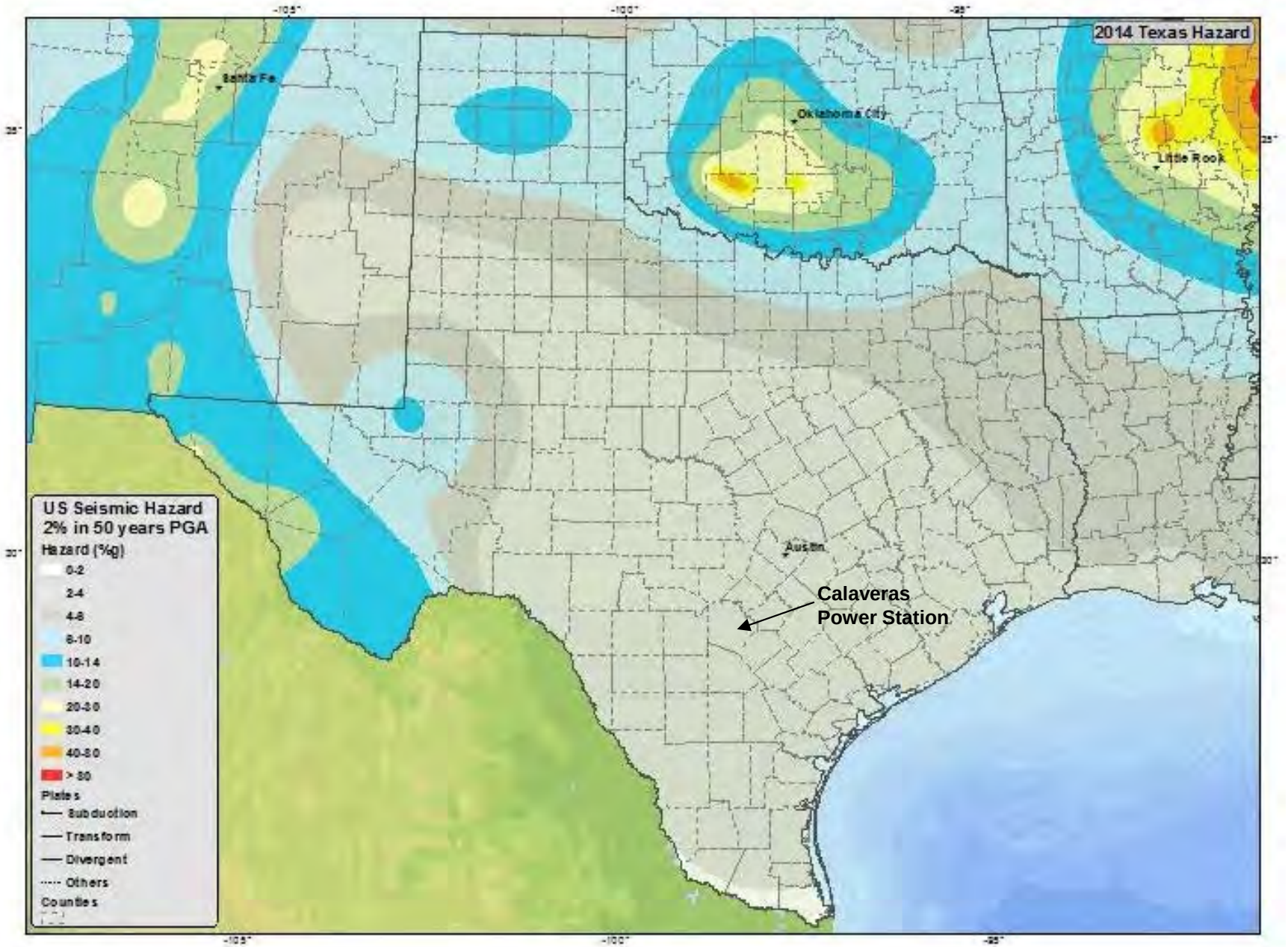


Source: txpub.usgs.gov/dss/texasgeology/

Environmental Resources Management		**FIGURE 12** **USGS Geologic Map** **CPS Energy - Calaveras Power Station** **San Antonio, Texas**	ERM®
DATE: Sep 2018	PROJ. NO.: 0337367		

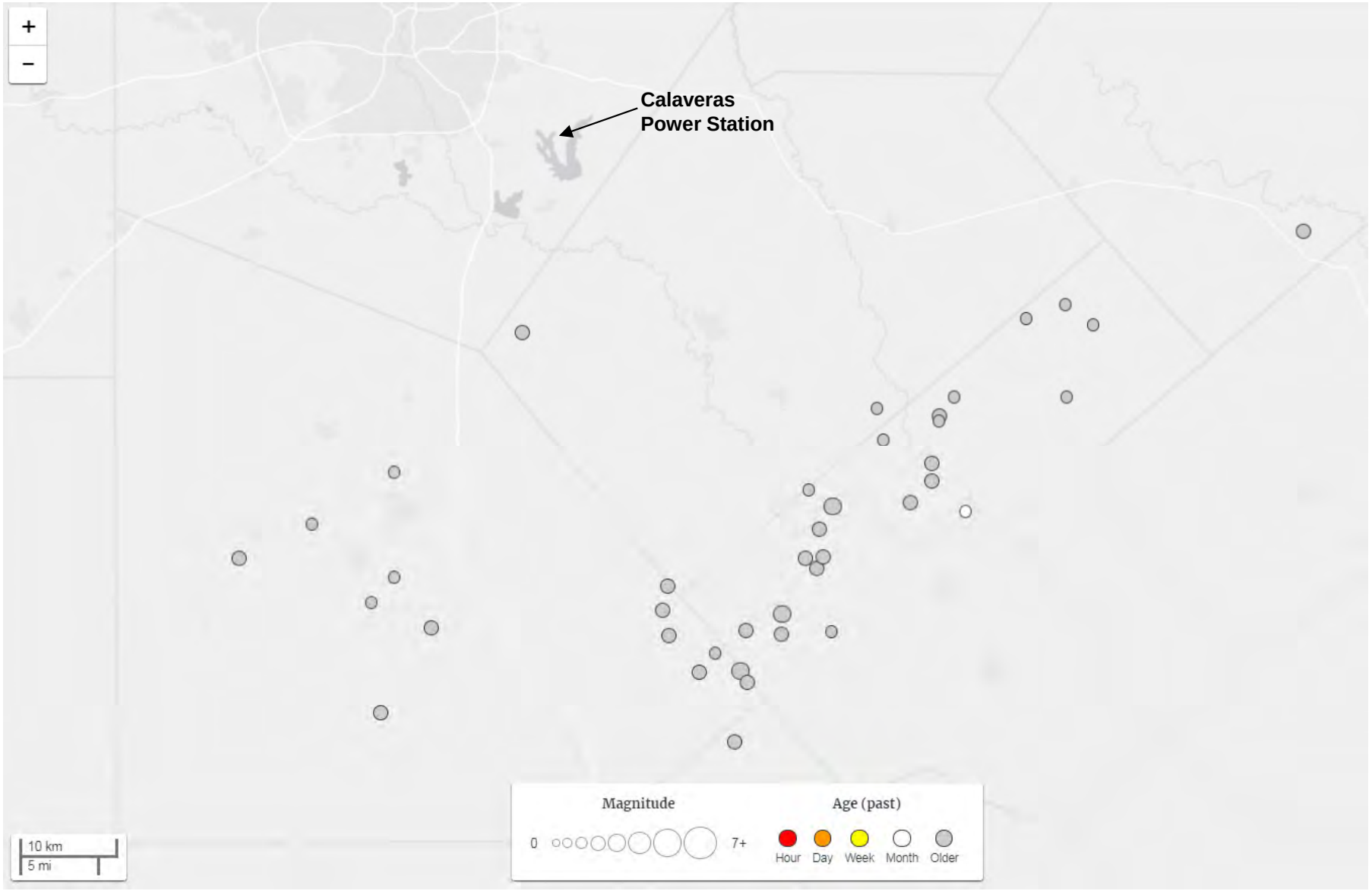
Source:
https://earthquake.usgs.gov/hazards/qfaults/map/#qfaults

Environmental Resources Management	**FIGURE 13** **USGS Fault Map** **CPS Energy - Calaveras Power Station** **San Antonio, Texas**	ERM
DATE: Sep 2018	PROJ. NO.: 0337367	



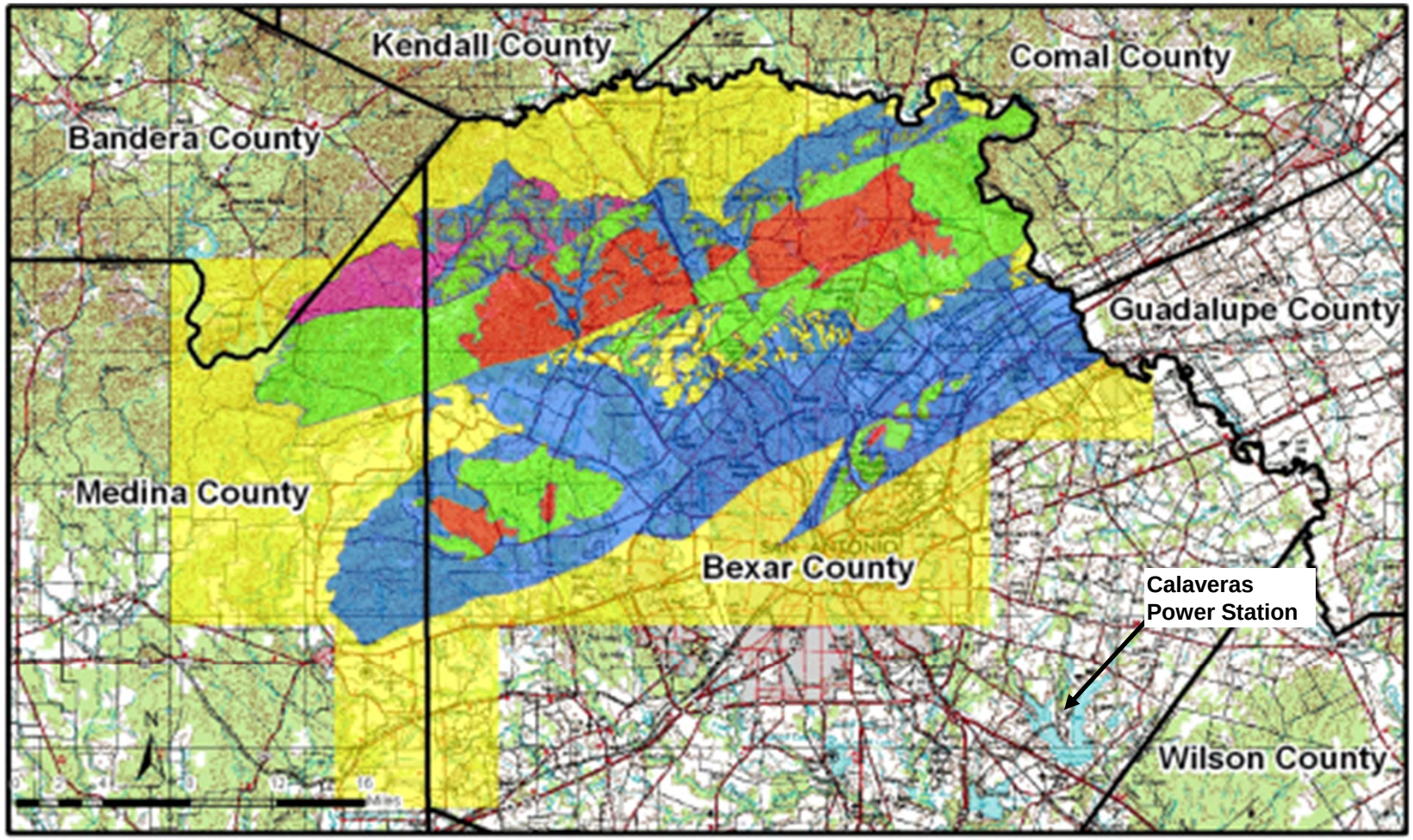
Source: https://earthquake.usgs.gov/earthquakes/byregion/images/texas-haz.jpg

Environmental Resources Management	**FIGURE 14** **Seismic Hazard Map** **CPS Energy – Calaveras Power Station** **San Antonio, Texas**	ERM
DATE: September 2018	PROJ.NO.: 0337367	



Source: Earthquake.usgs.gov/earthquakes/search (7/20/2018 search date)

Environmental Resources Management	**FIGURE 15** **South Texas Earthquakes 1900-2018** **CPS Energy – Calaveras Power Station** **San Antonio, Texas**	ERM
DATE: September 2018	PROJ.NO.: 0337367	



Bexar County Area Karst Zones

Source: SWCA, Bexar County Area Karst Zones

Environmental Resources Management	**FIGURE 16** **Bexar County Area Karst Zones Map** **CPS Energy – Calaveras Power Station** **San Antonio, Texas**	ERM
DATE: September 2018	PROJ.NO.: 0337367	

Certification

Appendix A

October 2018

Environmental Resources Management
206 East 9th Street, Suite 1700
Austin, Texas 78701
(512) 459-4700

LOCATION RESTRICTIONS DEMONSTRATION CERTIFICATION

Calaveras Power Station
San Antonio, Texas
CPS Energy

CERTIFICATION

I hereby verify the accuracy of the information provided in this *Location Restrictions Demonstration* in accordance with the requirements of 40 CFR §257.60, §257.61, §257.62, §257.63, and §257.64.

Jeffery L. Bauguss, P.E.

Texas Licensed Professional Engineer No. 86195

10/15/18

Supporting Information

Appendix B

October 2018

Environmental Resources Management
206 East 9th Street, Suite 1700
Austin, Texas 78701
(512) 459-4700

U.S. Fish and Wildlife Service
National Wetlands Inventory

Northern CCR Units - Calaveras Station

September 18, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Southern CCR Units - Calaveras Station

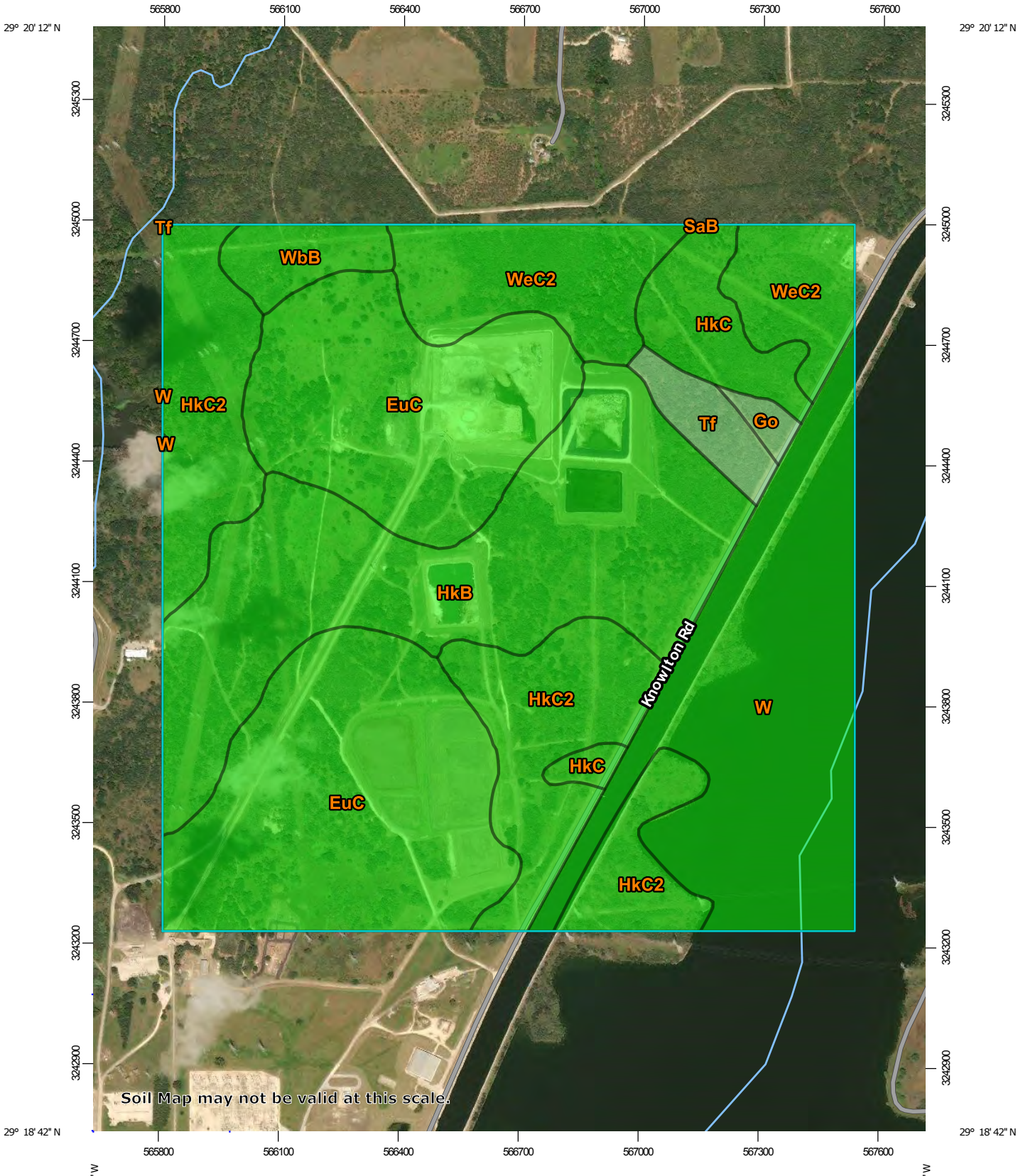
September 18, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Hydric Rating by Map Unit—Bexar County, Texas
(Northern CCR Units - Calaveras Power Station)



Map Scale: 1:13,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bexar County, Texas
Survey Area Data: Version 21, Nov 7, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2015—Oct 31, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EuC	Aluf sand, 0 to 5 percent slopes	0	218.3	28.9%
Go	Gowen clay loam, 0 to 2 percent slopes, occasionally flooded	1	3.9	0.5%
HkB	Wilco loamy fine sand, 0 to 3 percent slopes	0	157.3	20.8%
HkC	Wilco loamy fine sand, 3 to 5 percent slopes	0	28.6	3.8%
HkC2	Wilco loamy fine sand, 3 to 5 percent slopes, eroded	0	117.5	15.6%
SaB	San Antonio clay loam, 1 to 3 percent slopes	0	0.1	0.0%
Tf	Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded	1	13.6	1.8%
W	Water	0	131.1	17.4%
WbB	Floresville fine sandy loam, 1 to 3 percent slopes	0	15.6	2.1%
WeC2	Floresville fine sandy loam, 1 to 5 percent slopes, eroded	0	69.3	9.2%
Totals for Area of Interest			**755.4**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

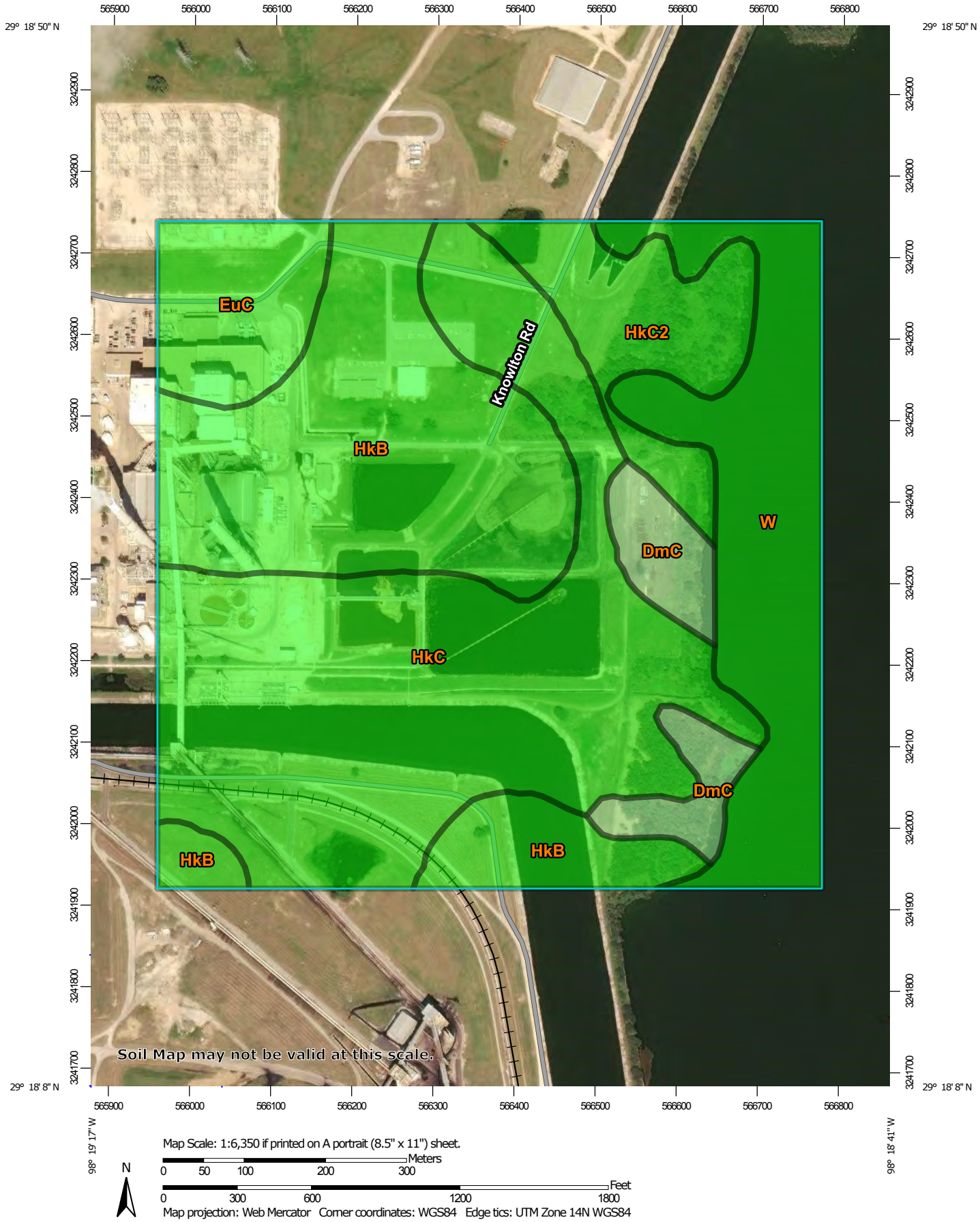
Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Hydric Rating by Map Unit—Bexar County, Texas
(Southern CCR Units - Calaveras Power Station)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bexar County, Texas
Survey Area Data: Version 21, Nov 7, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2015—Oct 31, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DmC	Duval loamy fine sand, 0 to 5 percent slopes	1	8.3	5.0%
EuC	Aluf sand, 0 to 5 percent slopes	0	10.4	6.2%
HkB	Wilco loamy fine sand, 0 to 3 percent slopes	0	45.3	27.2%
HkC	Wilco loamy fine sand, 3 to 5 percent slopes	0	62.1	37.3%
HkC2	Wilco loamy fine sand, 3 to 5 percent slopes, eroded	0	13.2	7.9%
W	Water	0	27.1	16.3%
Totals for Area of Interest			**166.4**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Attachment 2-2

WETLANDS

40 CFR §232.2 (as referenced in the CCR Rule) defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas". Positive wetland indicators of three environmental parameters including hydrology, hydric soil, and hydrophytic vegetation are normally present within wetlands.

ERM obtained information from a desktop review and a site visit to evaluate whether the proposed Plant Drains Pond (PDP) is located in potential wetlands and waters of the United States. Information reviewed included the following:

- Site Photographs;
- Historical aerial imagery;
- Topographic maps;
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Surveys;
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI);
- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD);
- USFWS Information for Planning and Consultation (IPAC); and
- Texas Parks and Wildlife Department (TPWD) Calaveras Lake Survey Report.

The results of this evaluation are presented below for the proposed PDP.

Plant Drains Pond (PDP)

The desktop evaluation of the proposed PDP site determined that there are no wetlands or waterbodies mapped in, or within 300 feet of, the proposed PDP by the NWI. Soil survey data indicates that the PDP will be located within soils mapped as Aluf sand, 0 to 5 percent slopes (EuC) and Wilco loamy fine sand 3 to 5 percent slopes, eroded (HkC2). These soils have a hydric rating of "0", indicating that zero percent of the soil components meet the criteria for hydric soils. Review of historical aerial imagery indicated previous existence of what appeared to be a drainage ditch transecting the site from the southwest to the northeast corner towards Calaveras Lake. The drainage ditch is visible on aerial imagery from 1995 to 2006. In 2008, the area is shown to have been leveled and developed with a parking lot and laydown yards, filling the drainage ditch. Historical imagery shows the area was then re-developed in 2012, clearing the former parking lot and laydown yard and leaving a maintained field similar to current conditions.

The site visit conducted on 15 June 2022 confirmed that the proposed PDP will not be located in any wetlands or waterbodies. The site is located over 300 feet from any existing waterbodies. A culvert was observed approximately 150 feet southwest of the site, which connects to a man-made swale located approximately 100 feet south of the site at the nearest point, where it then curves further to the south away from the site. Vegetation observed within the proposed PDP site was comprised of exclusively upland species.

Attachment 3 Geology Summary

GEOLOGY SUMMARY

EXCERPTS FROM *LOCATION RESTRICTIONS DEMONSTRATION*

DATED OCTOBER 2018 AND INFORMATION COLLECTED DURING

THE INSTALLATION OF ADDITIONAL MONITOR WELLS

BACKGROUND

2.1 SITE DESCRIPTION

CPS Energy owns and operates the Calaveras Power Station located southeast of San Antonio in Bexar County, Texas. Within this power station, there are two coal-fired plants (J.T. Deely Power Plant and J.K. Spruce Power Plant) that generate CCR that are subject to the CCR Rule. A General Site Location Map is provided as **Figure 1**.

CPS Energy has identified five existing CCR Units:

- Fly Ash Landfill (FAL);
- Evaporation Pond (EP);
- Sludge Recycle Holding (SRH) Pond;
- North Bottom Ash Pond (BAP); and
- South BAP.

CPS Energy is also currently constructed the following CCR Unit:

- Plant Drains Pond (PDP)

For the purposes of this document, the FAL and EP are termed the Northern CCR Unit sand the SRH Pond and BAPs are termed the Southern CCR Units. The new PDP is termed the Central CCR Unit. The CCR Unit locations are shown in **Figure 2**.

2.2 SITE-WIDE GEOLOGY

According to the Bureau of Economic Geology (BEG) *Geologic Atlas of Texas San Antonio Sheet*, the geology in the area of Calaveras Power Station consists of the Carizzo Sand and the Wilcox Group. According to the United States Geological Survey (USGS), the Carizzo Sand consists of medium- to coarse-grained sandstone, with finer grained material towards the top of the formation and the Wilcox Group consists mostly of mudstone, with various amounts of sandstone, lignite, and ironstone concretions. Information presented in Section 2.2 and the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017) and from information collected during the installation of additional monitor wells and soil borings. A CCR Well Network Location Map is provided as **Figure 3**.

2.2.1 Northern CCR Units

The stratigraphic sequence is generally characterized by approximately 8 feet to 4132 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by a clayey/silty to well-sorted sand (groundwater-bearing unit) approximately 5 to over 25 feet thick (where observed), underlain by grey to brown, high plasticity clay (lower confining unit). The ground water bearing unit is at its greatest observed thickness near the southwest corner of the EP, and thins towards the northwest (northwest of the FAL). The ground-water-bearing sand unit was not observed during installation of soil borings SB-20220713-01 and SB-20220713-

02, indicating that this unit pinches out near the western extent of the FAL. The lower confining unit, generally observed at a depth between approximately 471 feet to 478 feet above mean sea level (msl) was not observed at monitor wells JKS-47 and JKS-60 (drilled to depths of 462 feet and 466 feet above msl, respectively). This possibly suggests the presence of erosional channels or gradational changes in lithology between JKS-45 and JKS-47, and JKS-46 and JKS-60. Interbedded sands and clays were observed within both the unconsolidated material and ground-water--bearing unit in monitor wells JKS-57, JKS-58, and JKS-61 through JKS-64. High plasticity clay intervals were observed in the upper portion of the unconsolidated material at soil boring SB-20220713-01 and immediately above the groundwater-bearing unit at monitor well JKS-45. However, these clay units appear to be discontinuous as they were not encountered during the installation of any additional soil boring or monitor wells in the vicinity of the Northern CCR Units. Drilling refusal was encountered at soil boring SB-20220713-02 at approximately 47 feet below ground surface, possibly indicating bedrock was encountered (sandstone fragments observed in soil cuttings).

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-45, JKS-58, JKS-62, and JKS-64. The laboratory Unified Soil Classification System (USCS) results classify the high plasticity clay unit (above the groundwater-bearing unit) and the lower confining unit as fat clay (CH). Sandy lean clay (CL) and clayey sand (SC) USCS results from JKS-58 and JKS-62, respectively, suggest that the contact between the groundwater bearing unit and lower confining unit is gradational in some areas. The laboratory USCS results classify the groundwater-bearing unit from a silty sand (SM) at JKS-45 to a clayey sand (SC) at JKS-64. Hydraulic conductivities from cohesive samples collected from the lower confining unit were reported on the order of 10^{-7} to 10^{-8} centimeters per second (cm/sec), which is within the range of values for clay.

2.2.2 Southern CCR Units

The stratigraphic sequence is generally characterized by approximately 6 feet to 18 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by clayey/silty sand to moderately-sorted sand (groundwater-bearing unit) approximately 9.5 to 21.5 feet thick, underlain by bedrock (sandstone). Discontinuous silts and interbedded clay material were observed within the groundwater-bearing unit in monitor wells JKS-48, JKS-49, and JKS-51 through JKS-55.

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-48, JKS-53, and JKS-54. The laboratory USCS results classify the groundwater-bearing unit from a silty clayey sand (SC-SM) at JKS-54 to a clayey sand (SC) at JKS-48 and JKS-53. Hydraulic conductivities from cohesive samples collected from the ~~lower~~ semi-confining unit were reported on the order of 10^{-6} to 10^{-8} (cm/sec).

2.2.3 Central CCR Unit

The stratigraphic sequence is generally characterized by approximately 5 feet to 15 feet of consolidated material (sands, silts, and low to medium plasticity clays), underlain by a

clayey/silty sand to poorly-sorted sand (groundwater-bearing unit) that is at least 22 feet thick, but may be greater than 40 feet thick. Discontinuous silt and clay material were observed within the groundwater-bearing unit in monitor well JKS-65 (west of the proposed unit), geotechnical soil boring B-4[1] (north of the proposed unit), monitor well JKS-68 (northeast of the proposed unit), and in monitoring well JKS-67 and geotechnical soil borings B-10 and B-11[1] (southern extent of the proposed unit). Bedrock (sandstone) was encountered below the groundwater-bearing unit at monitor well JKS-68 at a depth of 27 feet below ground surface but was not observed at any other soil boring or monitor well. However, it is anticipated that the bedrock encountered is acting as a confining layer for the Central CCR Unit, and is present at deeper intervals west of JKS-68 and Calaveras Lake.

Visual classifications of the geologic material described above are consistent with results from the soil materials testing analysis conducted by ERM and Raba Kistner[1,2]. The laboratory USCS results classify the groundwater bearing-unit as a silty sand (SM) at geotechnical soil borings B-3 and B-13. The discontinuous clay lenses observed within the groundwater-bearing unit at monitor well JKS-68 and geotechnical soil borings B-10 and B-11 were classified as sand lean clays (CL).

2.3 SITE-WIDE HYDROGEOLOGY

Based on water level measurements and stratigraphic information collected during the advancement of the soil borings, ERM has provided an interpretation of the confining nature of the underlying stratigraphy. Information presented in the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017) and from information collected during the installation of additional monitor wells and soil borings.

2.3.1 Northern CCR Units

Groundwater in the vicinity of the Northern CCR Units appears to flow towards Lake Calaveras (southeast to east).

The groundwater-bearing unit in the vicinity of the Northern CCR Units appears to exhibit unconfined conditions based on the potentiometric surface of groundwater in relation to the first encountered water during drilling and the lack of continuous confining units (i.e., clay, sandy clay, or silty clay). The potentiometric surface is within approximately three feet of the first water encountered during drilling, and no continuous confining units are observed. The minimal change in elevation and the stratigraphic information indicates that a significant, laterally continuous confining layer is not present above the groundwater-bearing unit in the northern area. However, a laterally continuous lower confining unit was observed in multiple borings below the groundwater bearing unit.

[1] *Geotechnical Engineering Study* (Raba Kistner, 2020)
[2] *Geotechnical Engineering Study* (Raba Kistner, 2018)

2.3.2 *Southern CCR Units*

Groundwater in the vicinity of the Southern CCR Units appears to flow radially toward the lake and adjacent channel and away from a groundwater high represented by the water level elevation measured in JKS-49.

The groundwater-bearing unit in the vicinity of the Southern CCR Units appears to exhibit semi-confined conditions with confining units (i.e., clay, sandy clay, or silty clay) present in all the wells except JKS-49 and JKS-56. The potentiometric surface is within approximately 4 feet to 11 feet of where water was first encountered during drilling for all wells except JKS-56, indicative of groundwater under hydraulic head pressure with semi-confined conditions. JKS-56 appears to demonstrate unconfined conditions, due to the approximately 0.5 foot difference between the first encountered water during drilling and the potentiometric surface. There is a bedrock unit underlying the groundwater-bearing unit in the southern area.

2.3.2 Central CCR Unit

According to groundwater elevation data collected by Raba Kistner[3], groundwater in the vicinity of the Central CCR Unit appears to flow towards Lake Calaveras (southeast to east). Seasonal groundwater flow conditions will be confirmed and interpreted with other site-wide data after the CCR Unit monitoring well network is surveyed and re-evaluated in 2022.

The groundwater-bearing unit in the vicinity of the Central CCR Unit appears to exhibit unconfined conditions based on the potentiometric surface of the groundwater in relation to the first encountered water during drilling for the temporary wells installed by Raba Kistner[3] and the lack of continuous upper confining units. The potentiometric surface observed by Raba Kistner[3] is within three to four feet of the first water encountered during drilling. The minimal change in elevation and the stratigraphic information indicates that a significant, laterally continuous confining layer is not present above the groundwater-bearing unit in the central area. Further investigation of these conditions, and the presence of a lower confining unit, will be conducted when the remaining CCR Unit monitoring wells are installed in 2022.

3.1 PLACEMENT ABOVE THE UPPERMOST AQUIFER

The CCR Rule defines an aquifer as "a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells or springs". The CCR Rule also defines uppermost aquifer as "the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season".

ERM obtained site-specific information from engineering assessments and site investigations to evaluate whether the bases of the CCR Units are located more than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer. Information reviewed included:

[3] *Geotechnical Engineering Study (*Raba Kistner, 2018)

- *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report, Calaveras Power Station* (ERM, January 2018);
- *Groundwater Monitoring System, CPS Energy Calaveras Power Station* (ERM, October 2017);
- *Spruce Plant Drains Project, Issue for Construction* (AECOM, 2022);
- *Geotechnical Engineering Study* (Raba Kistner, 2018); and
- *Geotechnical Engineering Study* (Raba Kistner, 2020).

The results of this evaluation are presented below for the individual CCR Units at the Calaveras Power Station.

3.1.1 Fly Ash Landfill (FAL)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the FAL ranges from 514 to 503 feet above msl. The first groundwater beneath the FAL was encountered during well drilling at approximately 483 feet above msl, and static water levels range from 478 to 489 feet above msl based on current and historical water level data. A stratigraphic cross section (Section A-A') depicting the pertinent elevations is provided as **Figure 4A**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of fat clay, which typically has a hydraulic conductivity in the 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the FAL is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.2 Evaporation Pond (EP)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the EP ranges from 497 to 500 feet above msl. The first groundwater beneath the EP was encountered during well drilling at approximately 486 feet above msl, and static water levels range from 479 to 484 feet above msl based on current and historical water level data. A stratigraphic cross section (Section C-C') depicting the pertinent elevations is provided as **Figure 4C**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of interbedded sandy clay, which typically has a hydraulic conductivity in the 10^{-7} to 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the EP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.3 Sludge Recycle Holding (SRH) Pond

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the SRH Pond is 492 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 487 feet above msl based on available water level data, the first groundwater beneath the SRH Pond was encountered during well drilling at approximately 476 feet above msl. Stratigraphic

cross sections (Section D-D' and Section E-E') depicting the pertinent elevations is provided as **Figure 4D** and **Figure 4E**, respectively. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the SRH Pond is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer. Note that the first groundwater encountered in JKS-51 is perched water and not in hydraulic connection with the deeper, laterally continuous aquifer.

3.1.4 North Bottom Ash Pond (BAP)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the North BAP was encountered during well drilling ranging from 480 feet above msl in the south and 483.5 feet above msl in the north. Stratigraphic cross sections (Section F-F'and Section G-G') depicting the pertinent elevations is provided as **Figure 4F and Figure 4G, respectively**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, although portions of the North BAP are unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer, the base of the northern portion of the North BAP is less than 5 feet above the uppermost aquifer.

3.1.5 South Bottom Ash Pond (BAP)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Stratigraphic cross sections (Section D-D' and Section F-F') depicting the pertinent elevations are provided as **Figure 4D** and **Figure 4F**, respectively. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the South BAP was encountered during well drilling at approximately 476 feet above msl. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the South BAP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.6 Plant Drains Pond (PDP)

Based on the review of the *Spruce Plant Drains Project, Issue for Construction* (AECOM, 2022) design drawings, the lowest design elevation is estimated to be approximately 505 feet above msl. Based on well logs, groundwater beneath the PDP was encountered during well drilling at approximately 486 to 490 above msl, and static water levels ranged from approximately 487 to 491. Stratigraphic cross sections (Section H-H' and Section I-I') depicting pertinent elevations are provided as Figure 4H and Figure 4I, respectively. Based on geotechnical analysis conducted by Raba Kistner in the 2018 and 2020 *Geotechnical Engineering Study* reports, the unit that overlies the first groundwater consists of sandy clay, which has a hydraulic conductivity in the 10^{-7} cm/sec range signifying a low permeability unit. Based on the above information, the anticipated base of the PDP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

Figures

Environmental Resources Management

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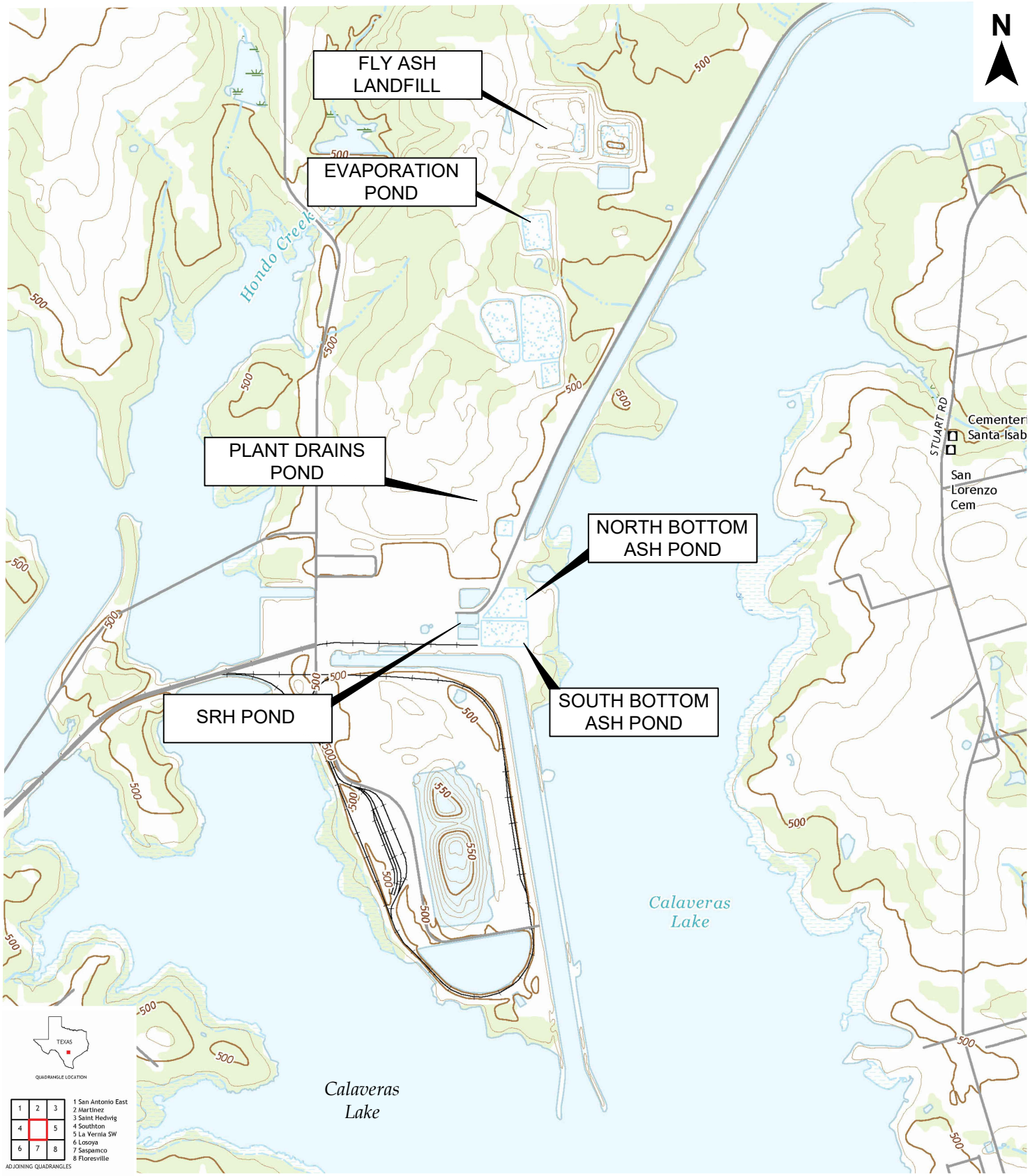
W.O.NO.:	K:\GIS\CPS\Calaveras\MXD\0337367_CPSCalaveras_SiteLoc.mxd				

FIGURE 2.1
FACILITY LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



SOURCE: USGS 7.5-MINUTE QUADRANGLE, TOPOGRAPHIC SERIES, ELMENDORF, TX, 2022.

Figure 1
CCR Unit Locations
CPS Energy
Calaveras Power Station
San Antonio, Texas

0 2000 4000
SCALE FEET

Environmental Resources Management
erm.com

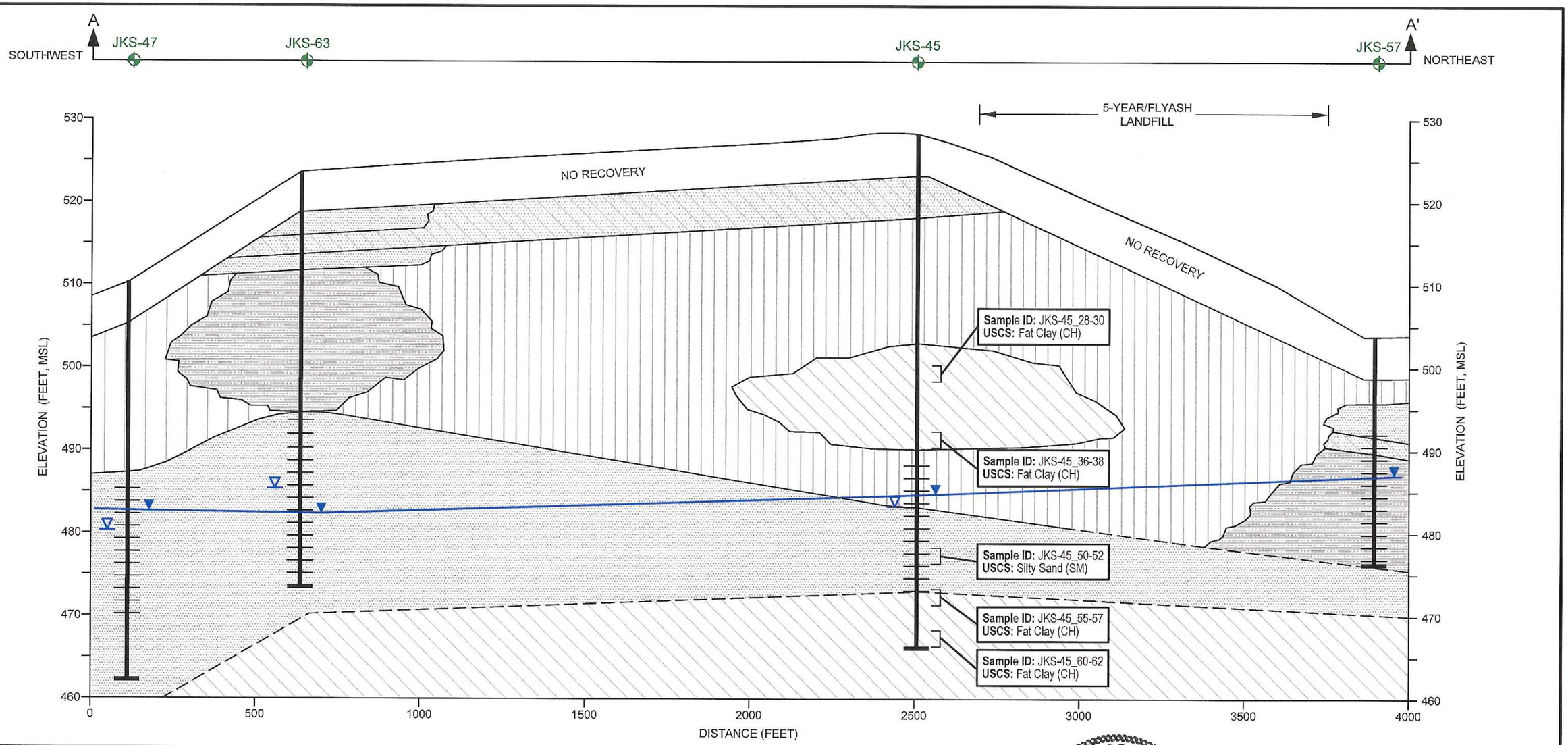
Environmental Resources Management

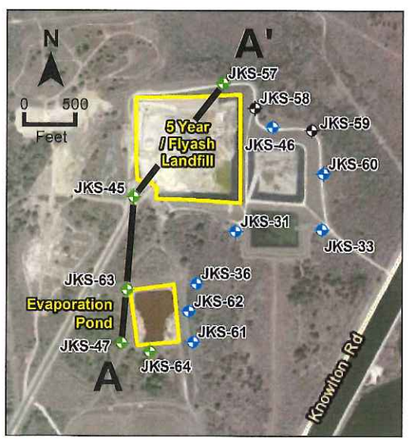
DESIGN:	WZ	DRAWN:	EFC	CHKD.:	WZ
DATE:	2022-12-01	SCALE:	AS SHOWN	REVISION:	0

\\opsbdcfile01\Data\Boston\Team\DMMV\Clients_A_E\CPS_Energy\SanAntonio_TX\APRX\CPS_Energy_SanAntonio_2022\CPS_Energy_SanAntonio_2022.mxd

FIGURE 1
CCR WELL NETWORK LOCATION MAP
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM





LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

VERTICAL 10' / HORIZONTAL 0 300'

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 4A
Stratigraphic Cross Section A-A'

CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.:
DATE: 1/10/2017	SCALE: AS SHOWN	REV.:

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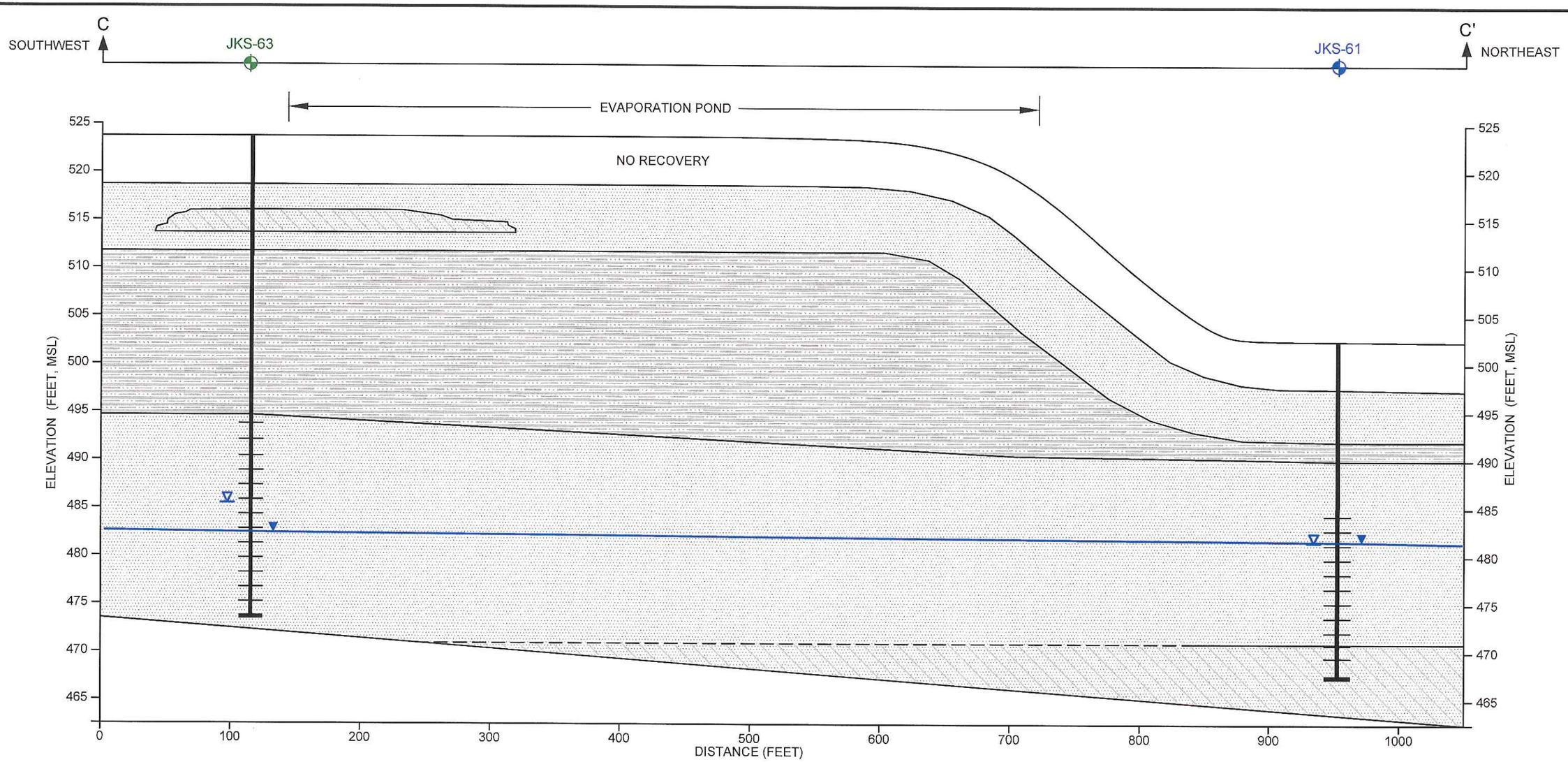
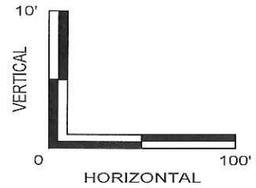


LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017



Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 4C
Stratigraphic Cross Section C-C'

CPS Energy - Calaveras Power Station
San Antonio, Texas

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DATE: 1/10/2017	SCALE: AS SHOWN	REV.:

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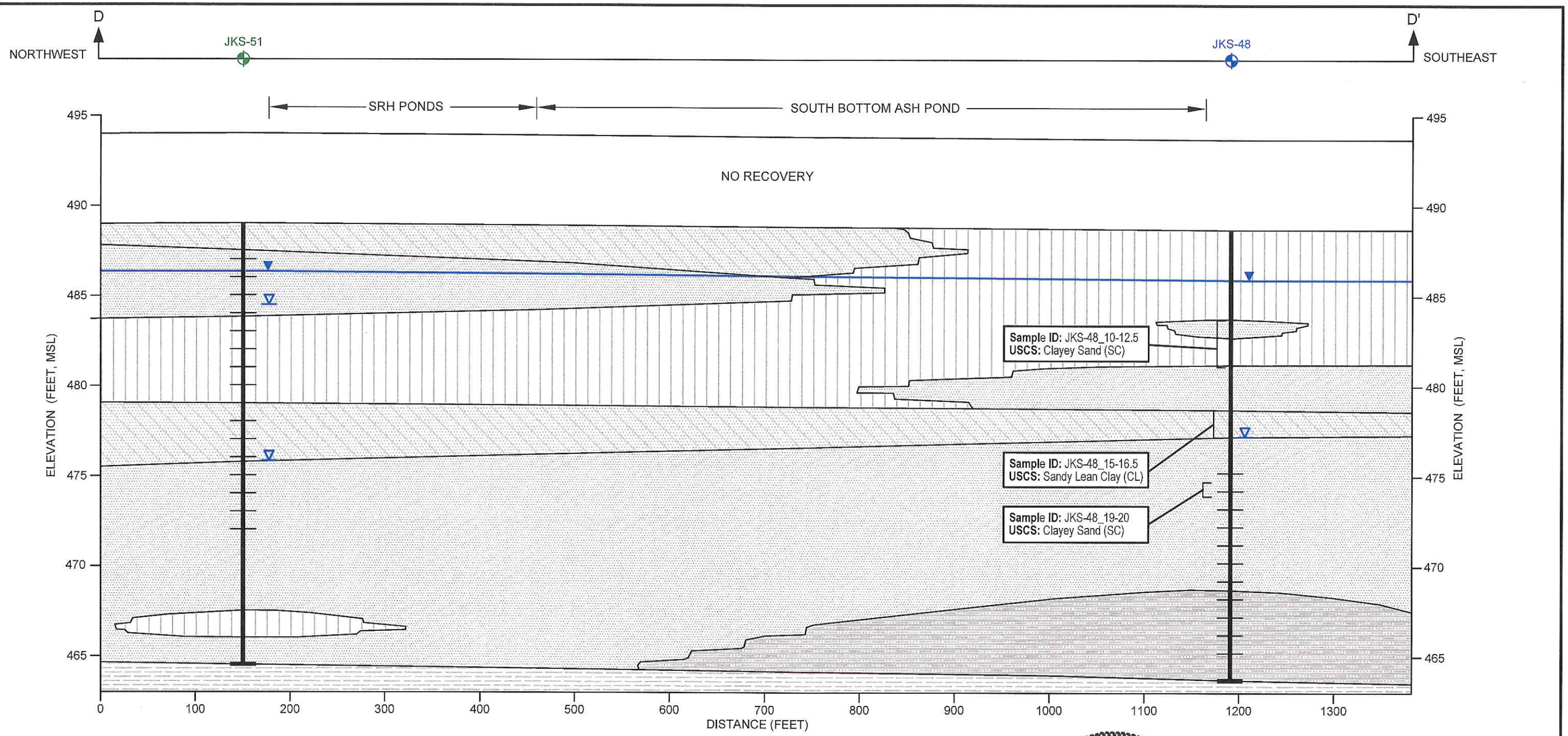
ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, SILT, AND CLAY
- BEDROCK (SANDSTONE)

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

VERTICAL 5' 0
HORIZONTAL 100'

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 4D
Stratigraphic Cross Section D-D'

CPS Energy - Calaveras Power Station
San Antonio, Texas

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DATE: 1/10/2017	SCALE: AS SHOWN	REV.: 1

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ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

E

SOUTHWEST

JKS-54 JKS-53 JKS-52 JKS-55

E'

NORTHEAST

ELEVATION (FEET, MSL)

495 490 485 480 475 470 465 460

NO RECOVERY

NO RECOVERY

Sample ID: JKS-54_13-14
USCS: Silty Clayey Sand (SC-SM)

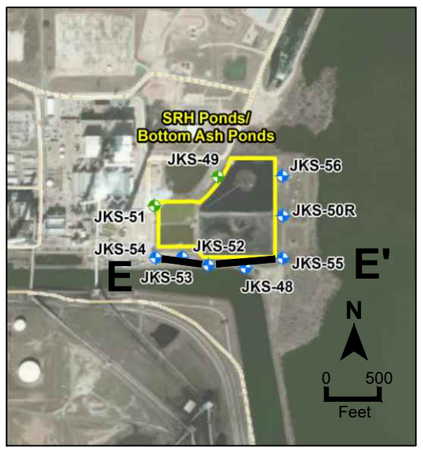
Sample ID: JKS-53_10-12.5
USCS: Clayey Sand (SC)

Sample ID: JKS-53_12.5-15
USCS: Clayey Sand (SC)

Sample ID: JKS-53_20-21
USCS: Clayey Sand (SC)

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, SILT, AND CLAY
- BEDROCK (SANDSTONE)
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST
9/14/22

5' VERTICAL
0 100' HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 4E
Stratigraphic Cross Section E-E'
Hydrogeologic Investigation
CPS Energy - Calaveras Power Station
San Antonio, Texas

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DATE: 9/12/2022	SCALE: AS SHOWN	REV.: 5

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ERM

F

SOUTH

JKS-55

JKS-50R

JKS-56

F'

NORTH

NO RECOVERY

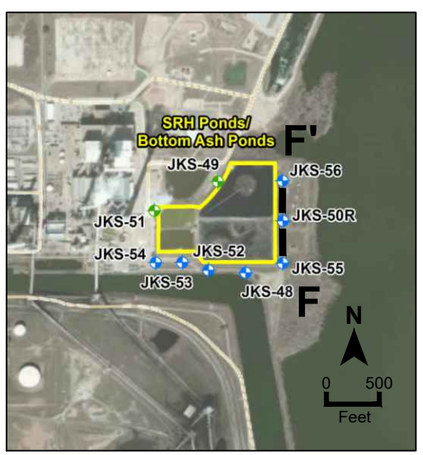
NO RECOVERY

ELEVATION (FEET, MSL)

495
490
485
480
475
470
465

0
100
200
300
400
500
600
700

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, AND CLAY
- BEDROCK (SANDSTONE)
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL

STATE OF TEXAS
NH 9/14/22
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST

5'
VERTICAL
0
100'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 4F
Stratigraphic Cross Section F-F'
Hydrogeologic Investigation
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: EFC/RLM	CHKD.: WZ
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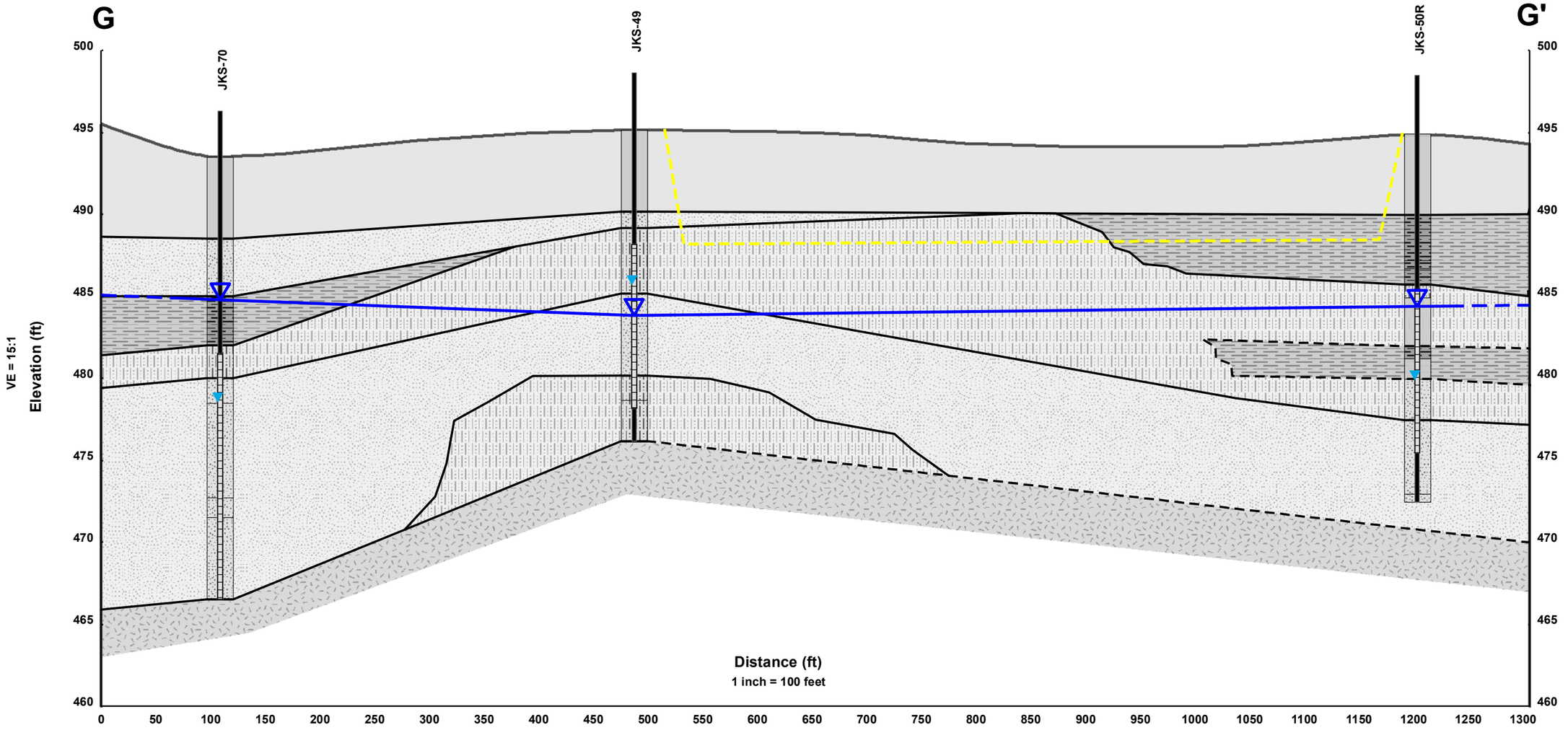

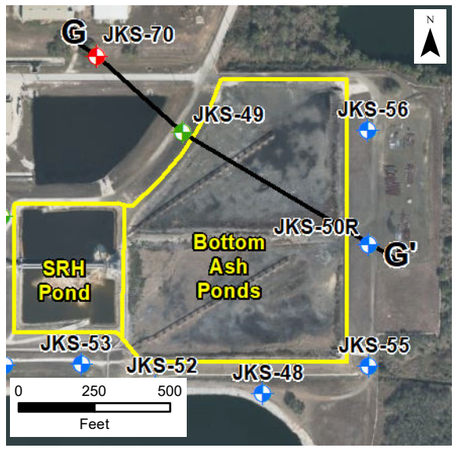

Legend

- Gauged Water Level - October 13, 2022 (dashed where inferred)
- Water Level Encountered During Well / Boring Installation
- Approximate extent of Bottom Ash Ponds

Location Details

- Casing
- Screen

Soil Lithology

- No Recovery
- Sand, Silty Sand, and/or Clayey Sand
- Silt, Sandy Silt, and/or Clayey Silt
- Low to medium plasticity Clay, Sandy Clay, and/or Silty Clay
- Bedrock (Sandstone)

Notes:

1. Monitor well JKS-49, JKS-50R, and JKS-70 installed in April 2016, October 2016, and July 2022, respectively.
2. Location and design elevation of the Bottom Ash Ponds based on ERM 2018 Location Restrictions Demonstration Report.
3. Vertical Exaggeration = 15:1

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Figure 4G

Stratigraphic Cross-Section G-G'

Bottom Ash Ponds
CPS Energy - Calaveras Power Station
San Antonio, Texas

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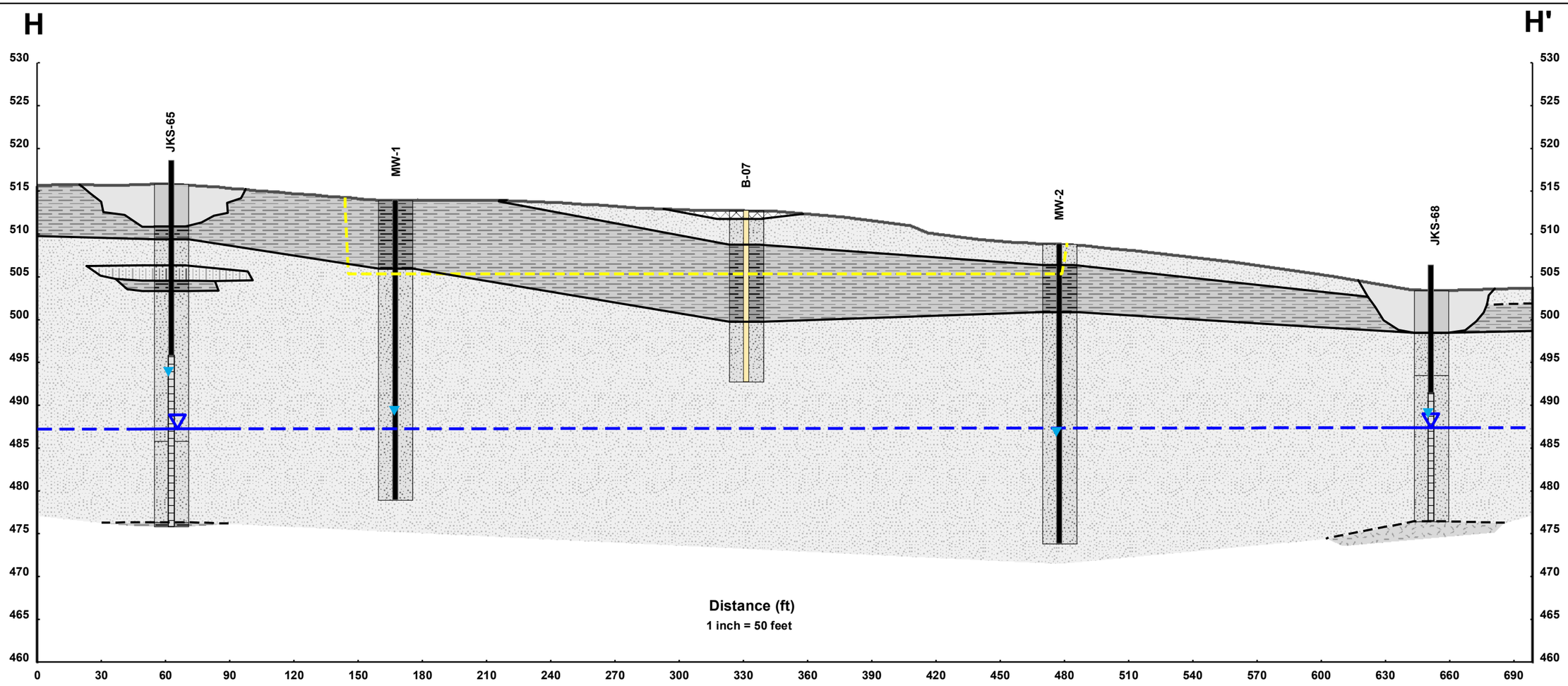

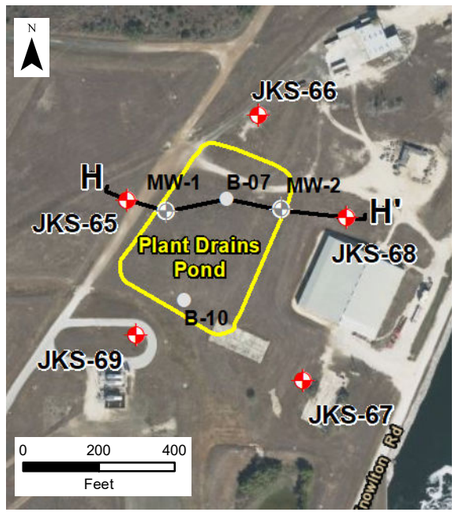

Legend

- Gauged Water Level - November 8, 2022 (dashed where inferred)
- Water Level Encountered During Well / Boring Installation
- Anticipated Lowest Plant Drains Pond Design Elevation

Location Details

- Boring
- Casing
- Screen

Soil Lithology

- No Recovery
- Fill Material
- Sand, Silty Sand, and/or Clayey Sand
- Silt, Sandy Silt, and/or Clayey Silt
- Low to medium plasticity Clay, Sandy Clay, and/or Silty Clay
- Bedrock (Sandstone)

Notes:

1. Monitor well JKS-65 installed in August 2020 and JKS-68 installed in July 2022 by ERM.
2. Monitor wells MW-1 and MW-2 installed in December 2017, as documented in the Raba Kistner 2018 Geotechnical Engineering Study Report.
3. Soil Boring B-7 installed in July 2020, as documented in the Raba Kistner 2020 Geotechnical Engineering Study Report.
4. Approximate location of pond based on the Raba Kistner 2020 Geotechnical Engineering Study Report. The anticipated lowest design elevation based on AECOM Design Drawings entitled "Spruce Plant Drains Project", drawing number 2-470-C0005 dated 5/2/2022.
5. Vertical Exaggeration = 4:1

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Figure 4H
Stratigraphic Cross-Section H-H'
Plant Drains Pond
CPS Energy - Calaveras Power Station
San Antonio, Texas

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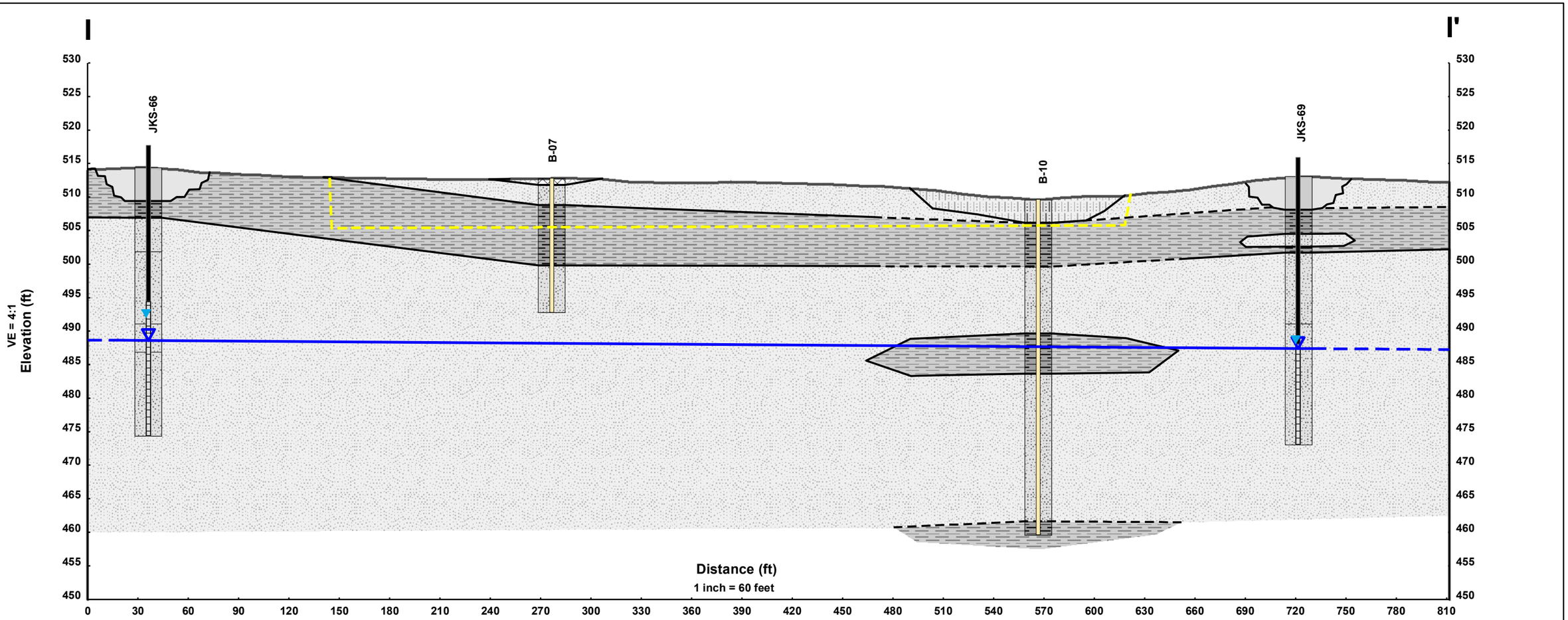

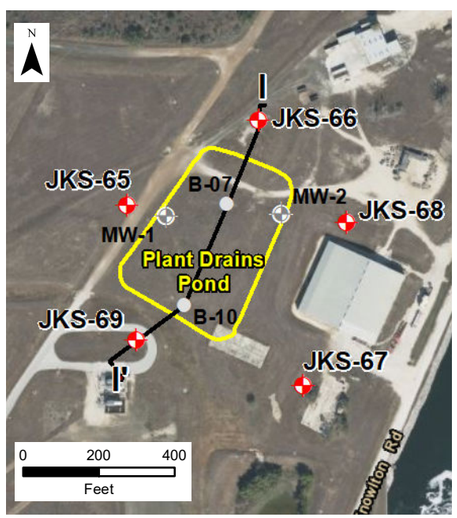

Legend

- Gauged Water Level - November 8, 2022 (dashed where inferred)
- Water Level Encountered During Well / Boring Installation
- Anticipated Lowest Plant Drains Pond Design Elevation

Location Details

- Boring
- Casing
- Screen

Soil Lithology

- No Recovery
- Fill Material
- Sand, Silty Sand, and/or Clayey Sand
- Silt, Sandy Silt, and/or Clayey Silt
- Low to medium plasticity Clay, Sandy Clay, and/or Silty Clay

Notes:

1. Monitor well JKS-66 installed in August 2020 and JKS-69 installed in July 2022 by ERM.
2. Soil Borings B-7 and B-10 installed in July 2020, as documented in the Raba Kistner 2020 Geotechnical Engineering Study Report.
4. Approximate location of pond based on the Raba Kistner 2020 Geotechnical Engineering Study Report. The anticipated lowest design elevation based on AECOM Design Drawings entitled "Spruce Plant Drains Project", drawing number 2-470-C0005 dated 5/2/2022.
5. Vertical Exaggeration = 4:1

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Figure 4I
Stratigraphic Cross-Section I-I'

Plant Drains Pond
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Attachment 3-2

BOTTOM ASH PONDS

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Source: Google Earth Pro, 2020

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POTENTIOMETRIC SURFACE MAP – MARCH 2017
Bottom Ash Ponds CCR Unit
CPS Energy – Calaveras Power Station
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Figure

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DATE:	6/24/2022	SCALE:	AS SHOWN	REVISION:	1

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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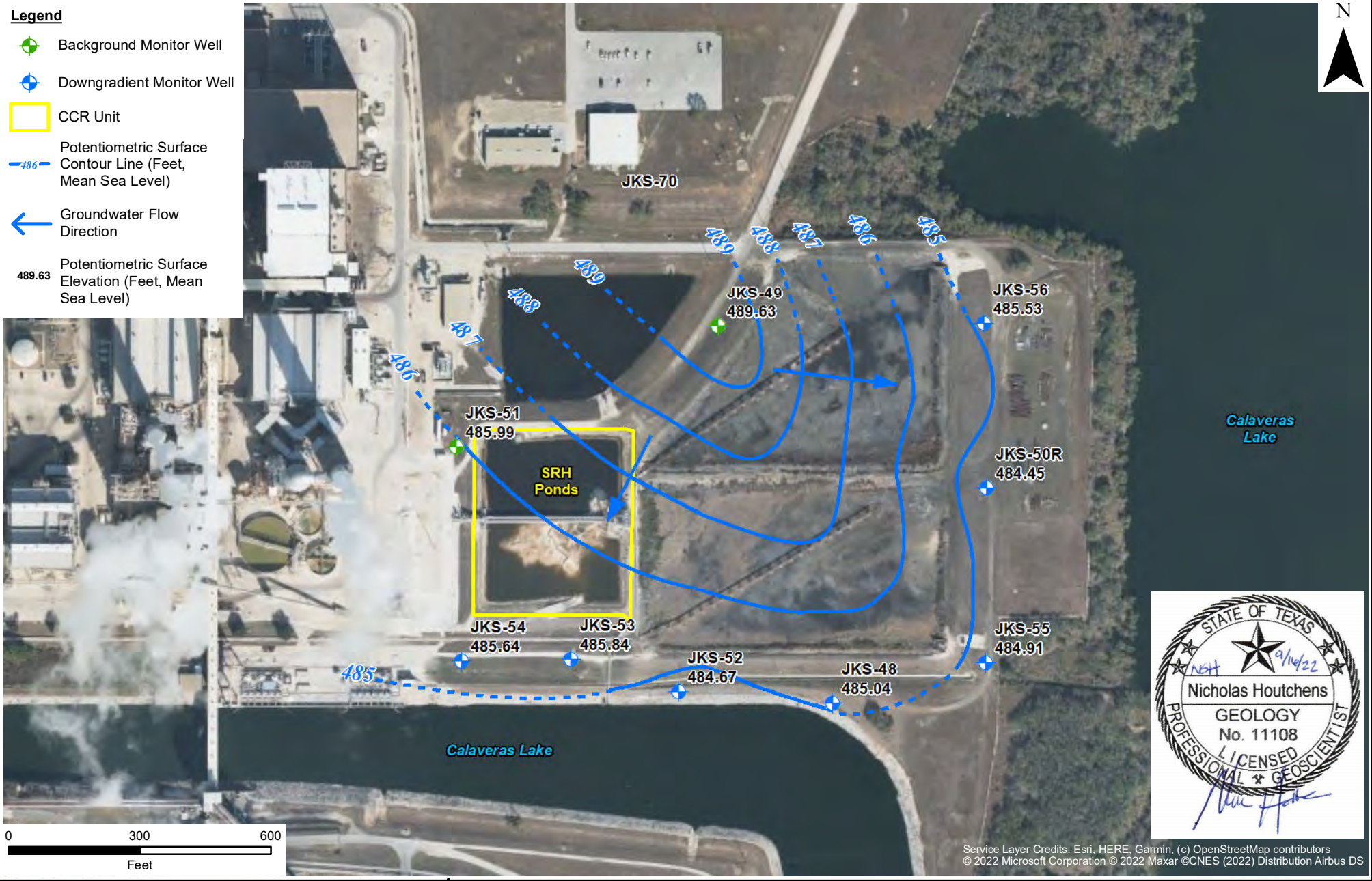

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POTENTIOMETRIC SURFACE MAP - APRIL 2018
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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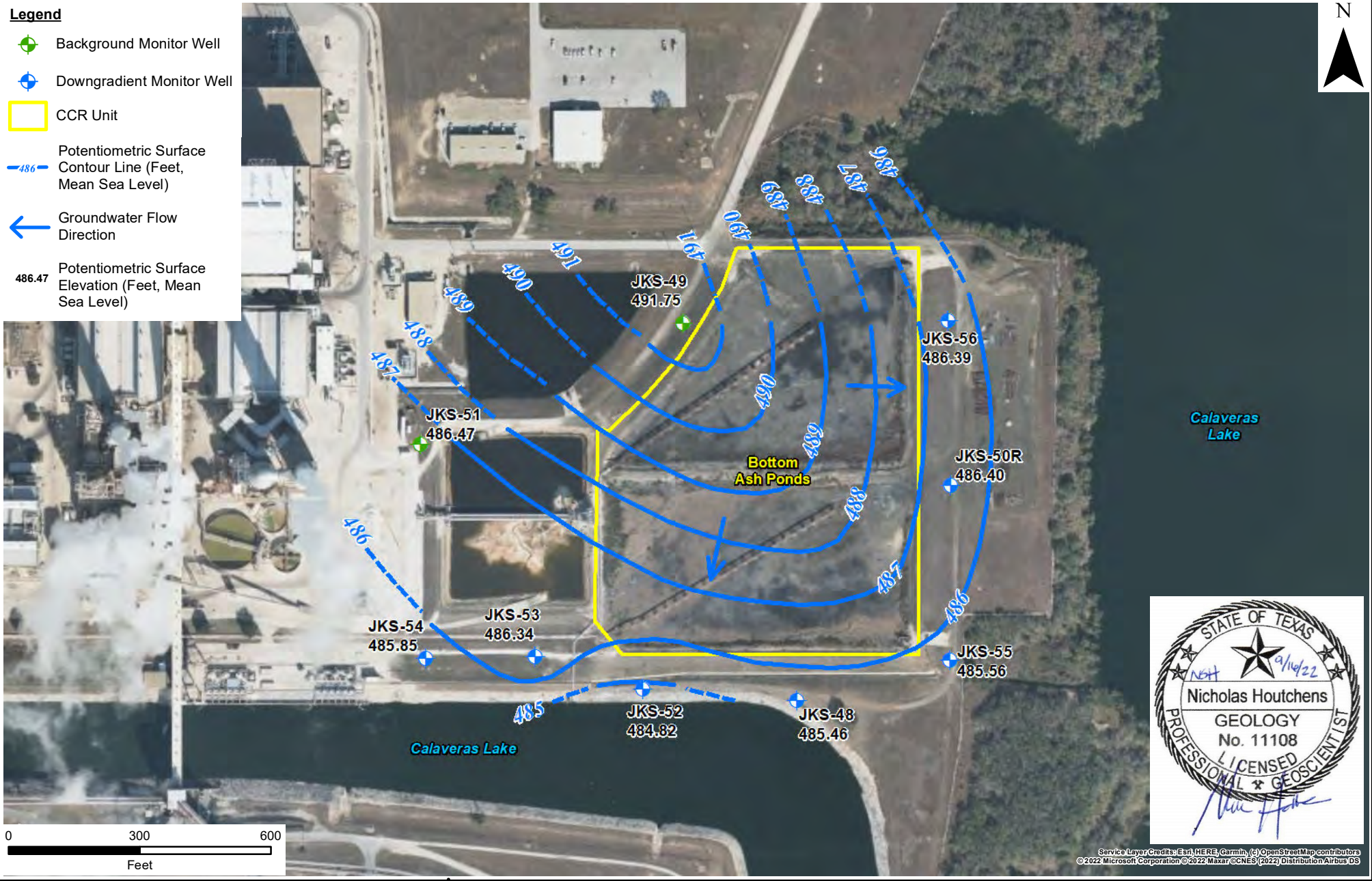

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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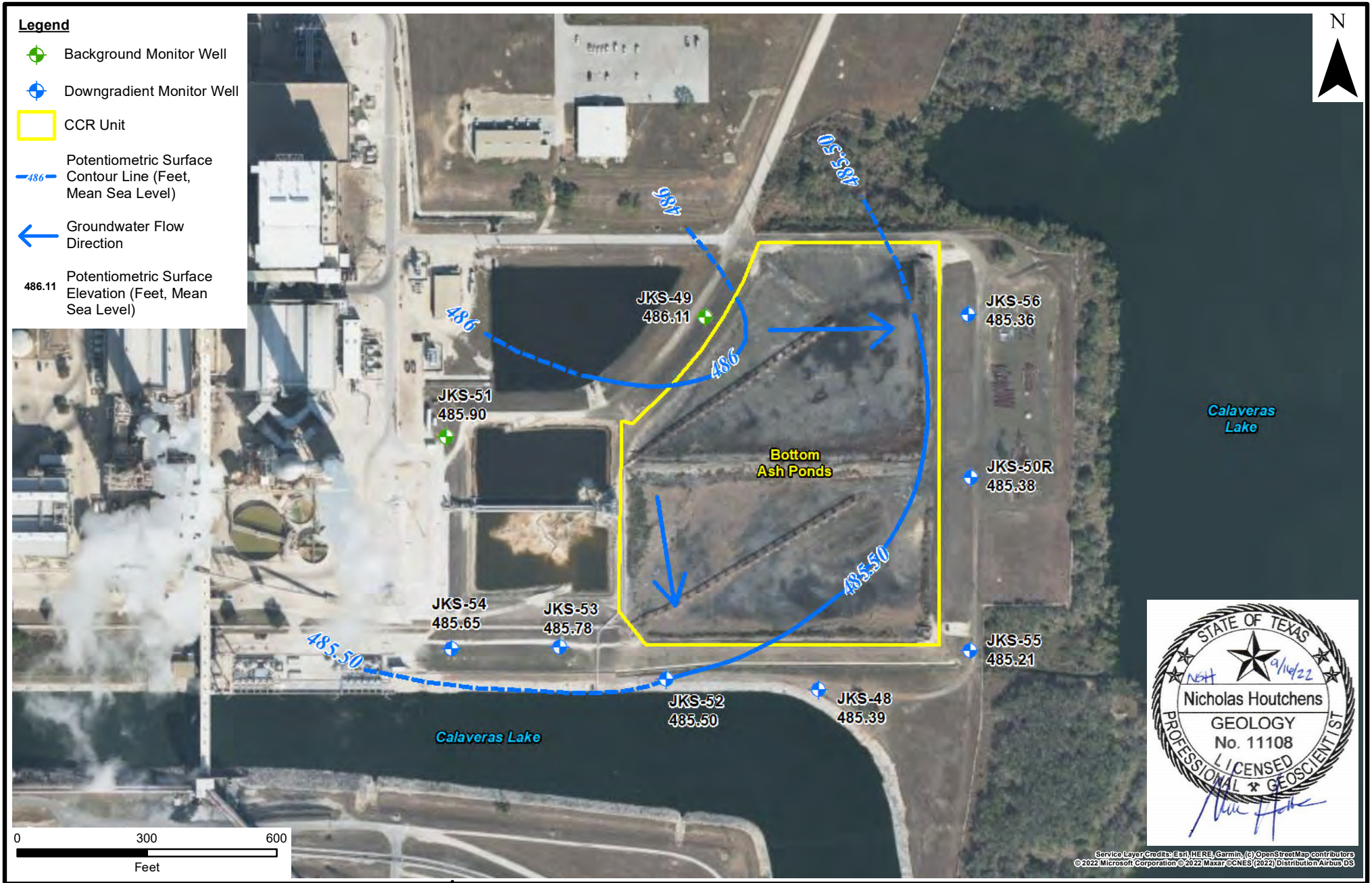

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POTENTIOMETRIC SURFACE MAP - APRIL 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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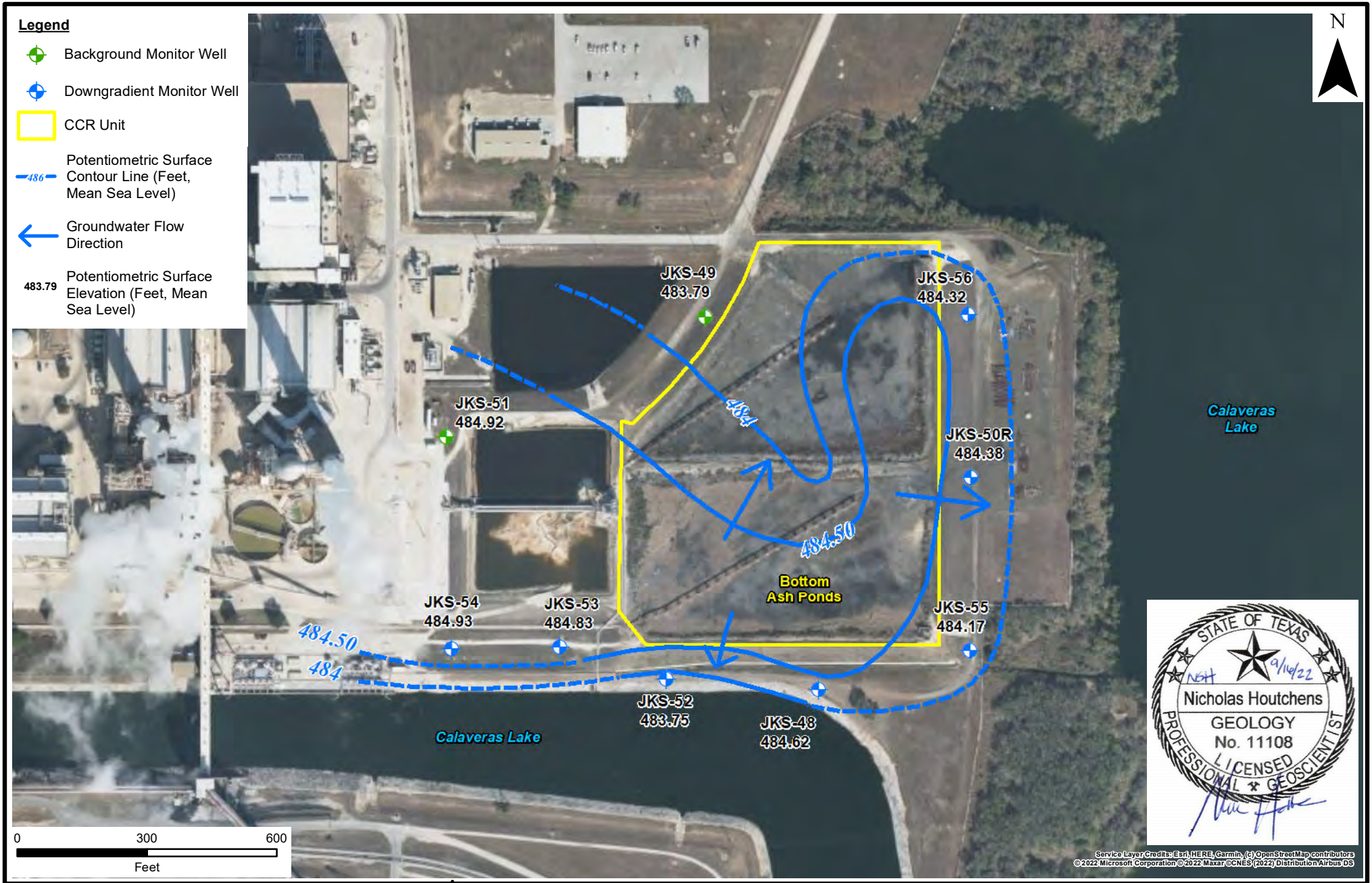

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
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POTENTIOMETRIC SURFACE MAP - APRIL 2020
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2020
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
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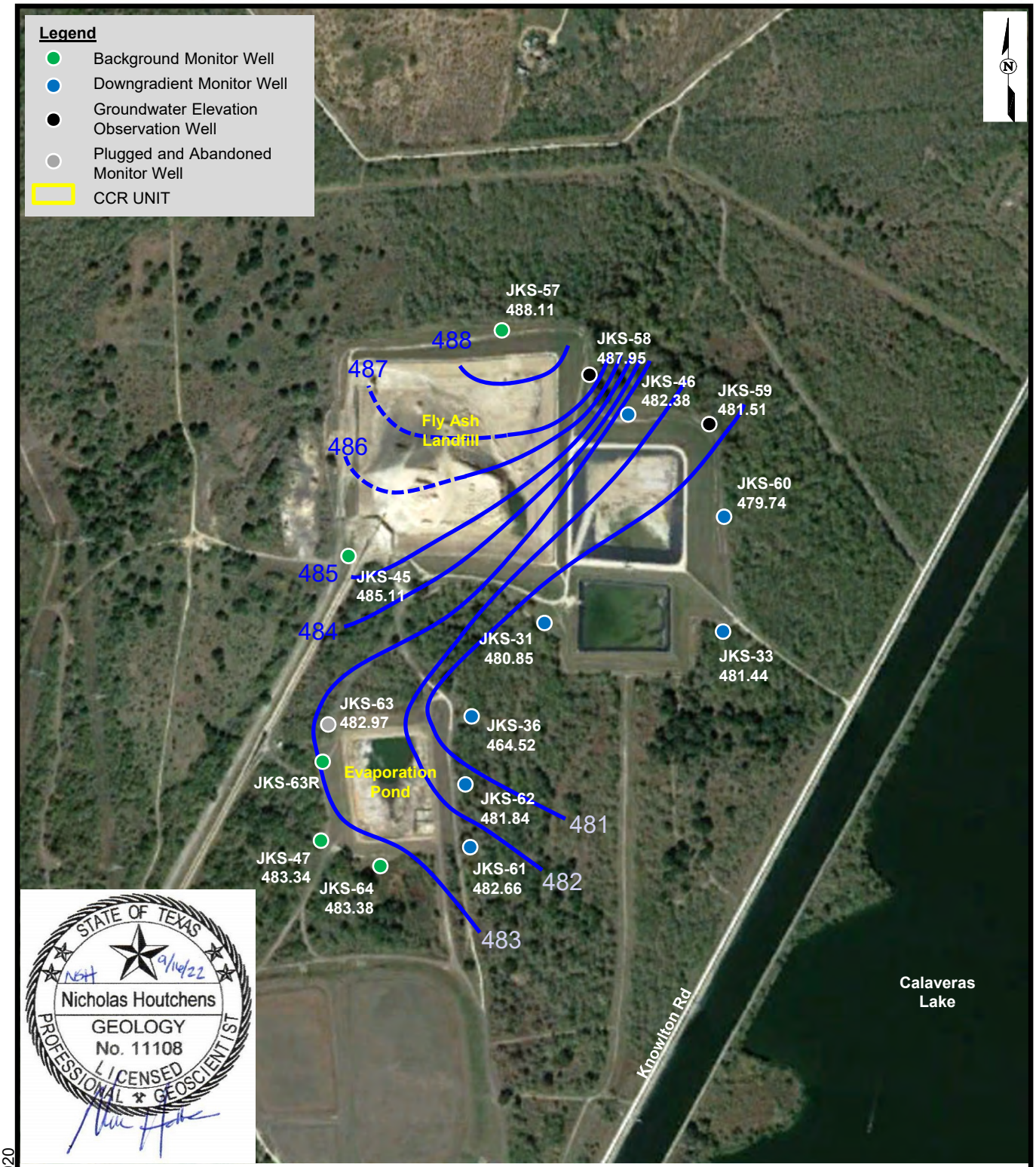
EVAPORATION POND



JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

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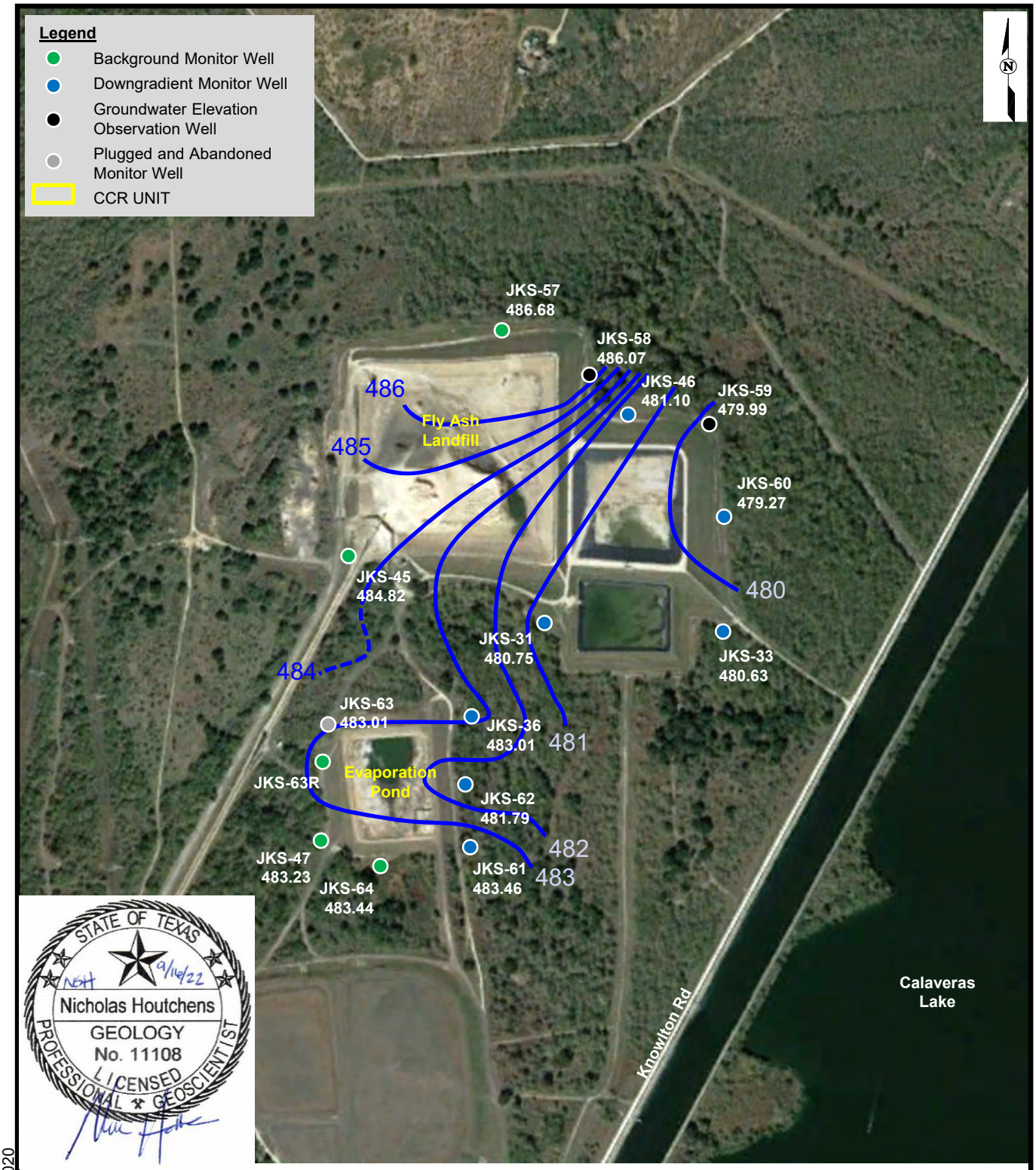
POTENTIOMETRIC SURFACE MAP – May 2017
Evaporation Pond CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Source: Google Earth Pro, 2020

JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

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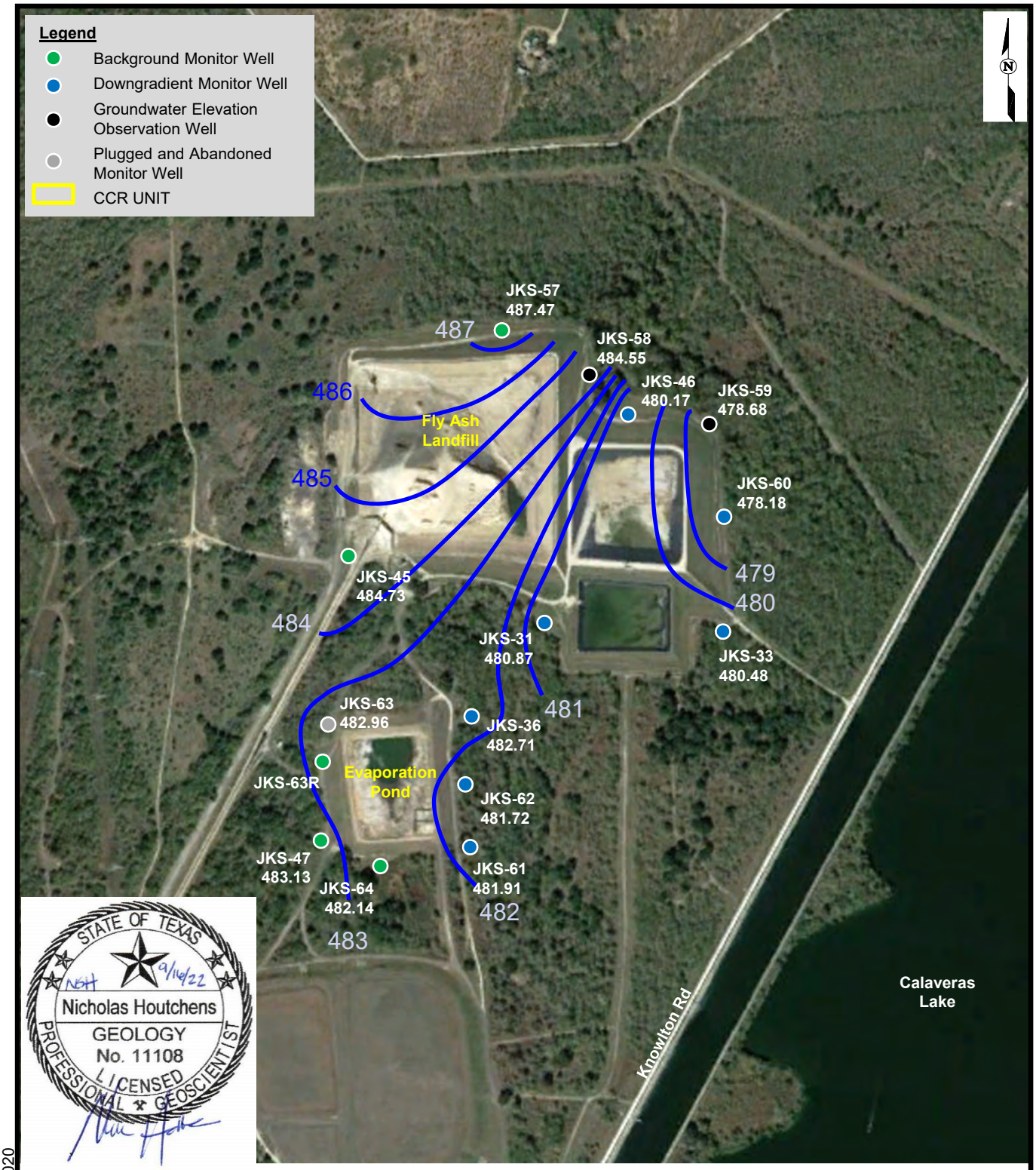
POTENTIOMETRIC SURFACE MAP – June 2017
Evaporation Pond CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

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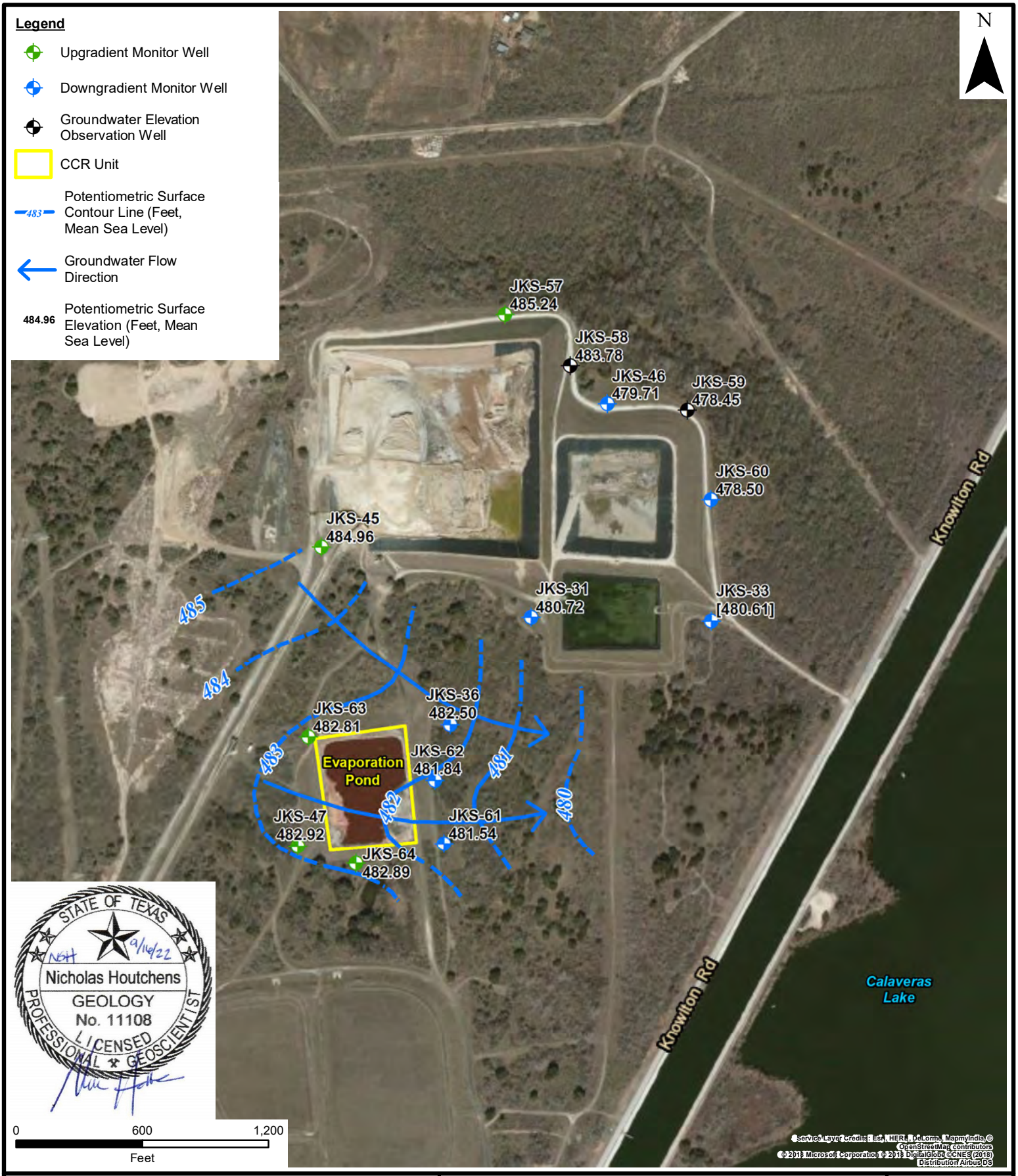
POTENTIOMETRIC SURFACE MAP – August 2017
Evaporation Pond CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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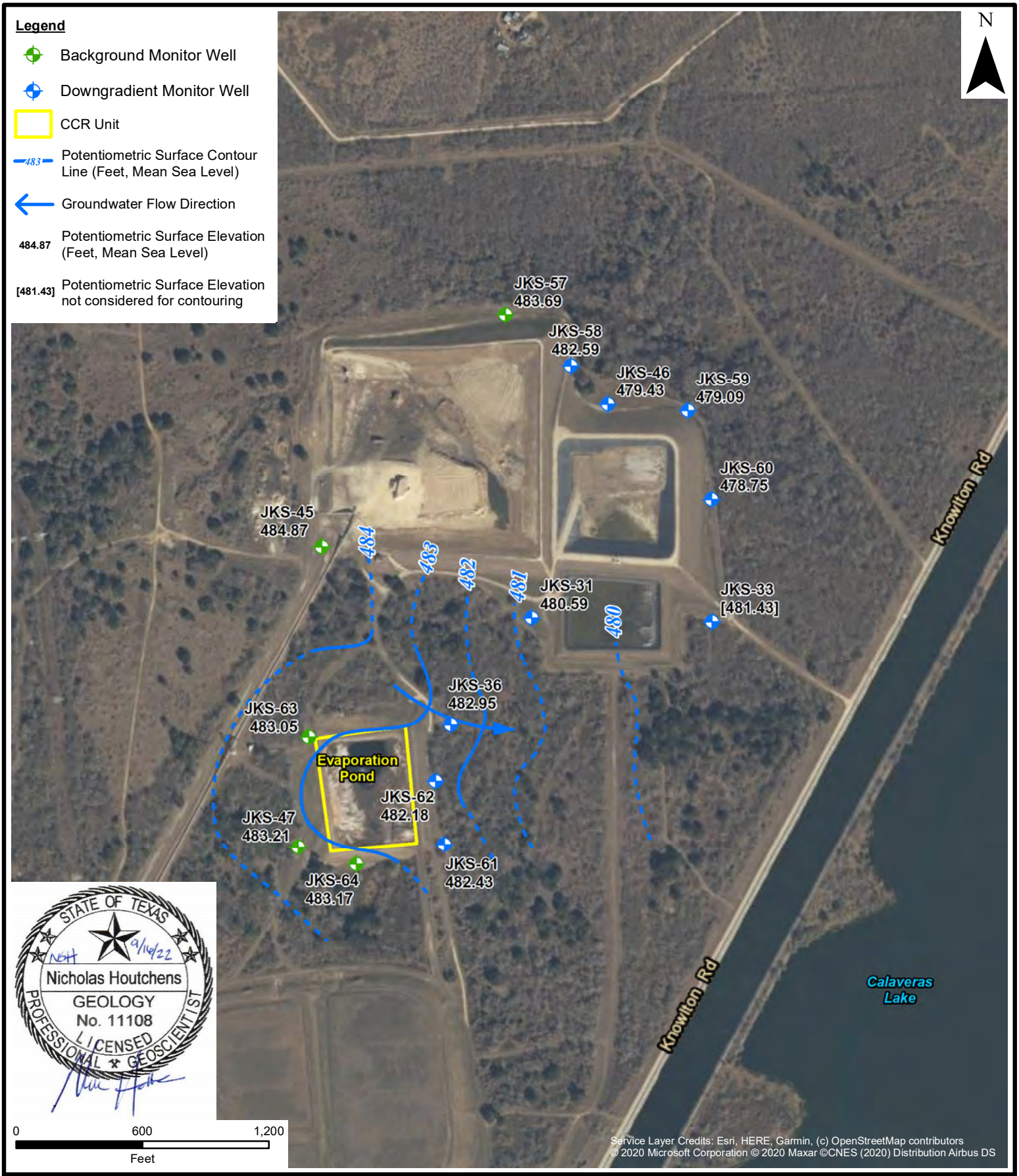

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POTENTIOMETRIC SURFACE MAP - APRIL 2018
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
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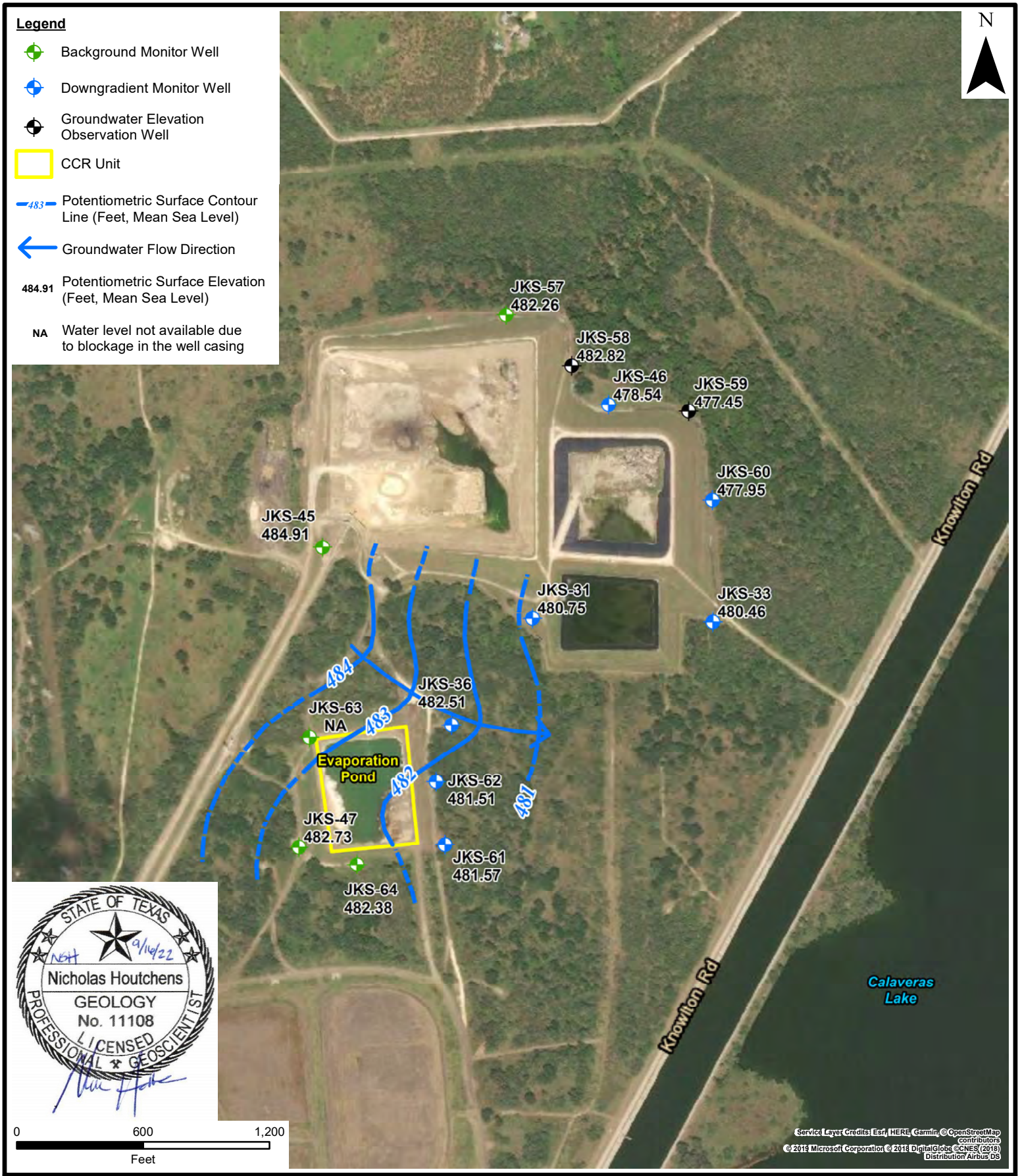

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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POTENTIOMETRIC SURFACE MAP - APRIL 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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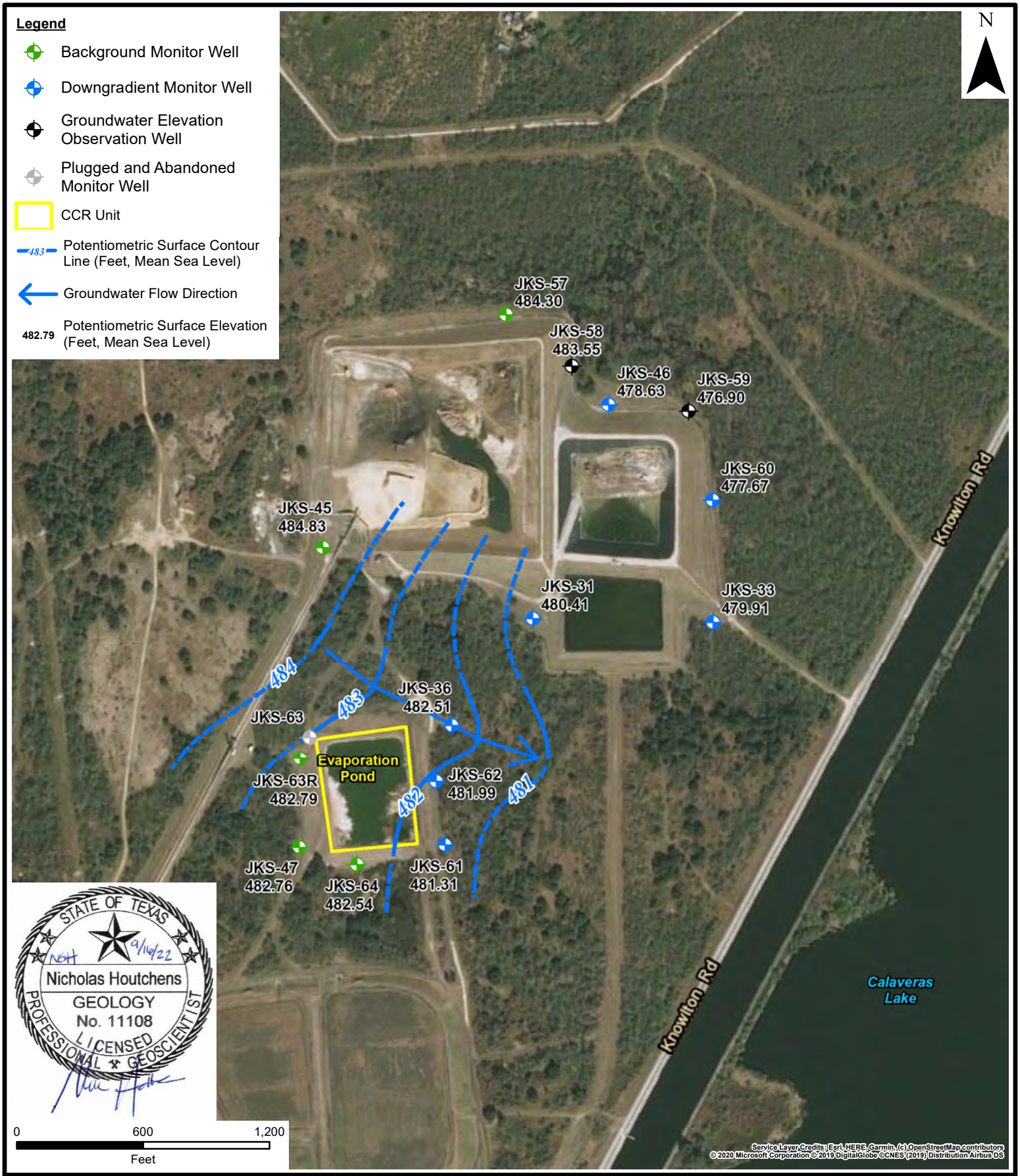

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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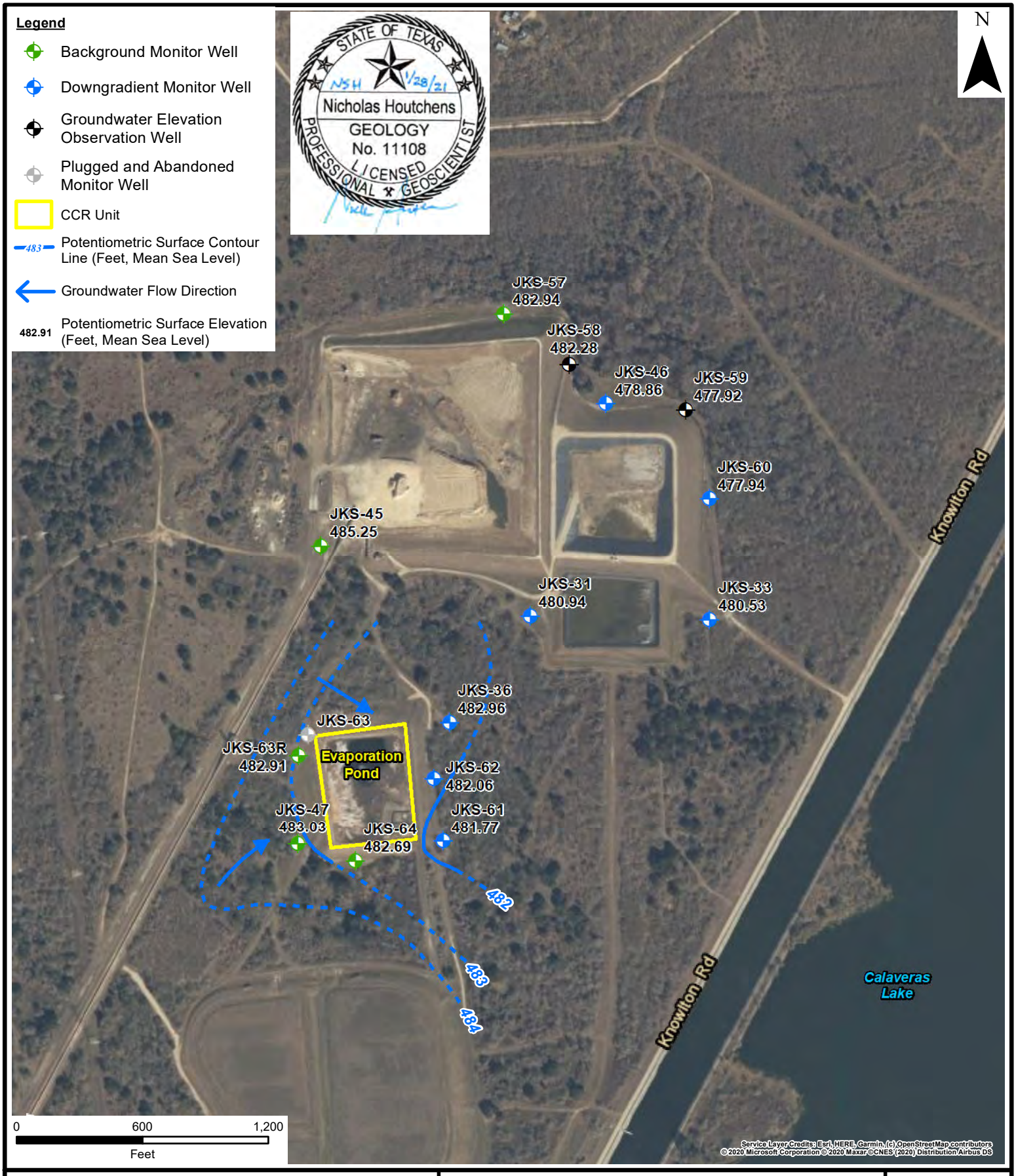

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POTENTIOMETRIC SURFACE MAP - APRIL 2020
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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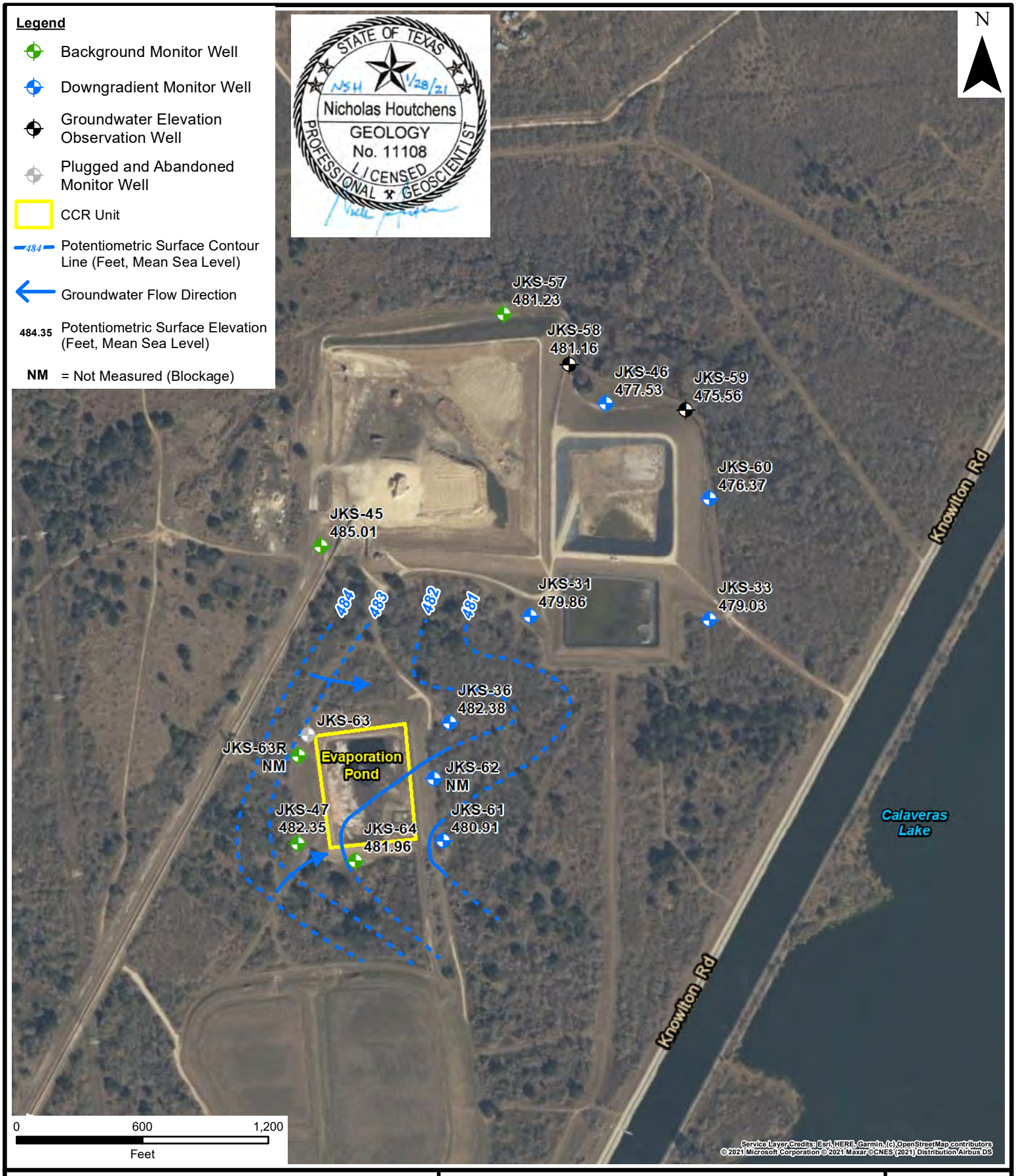

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2020
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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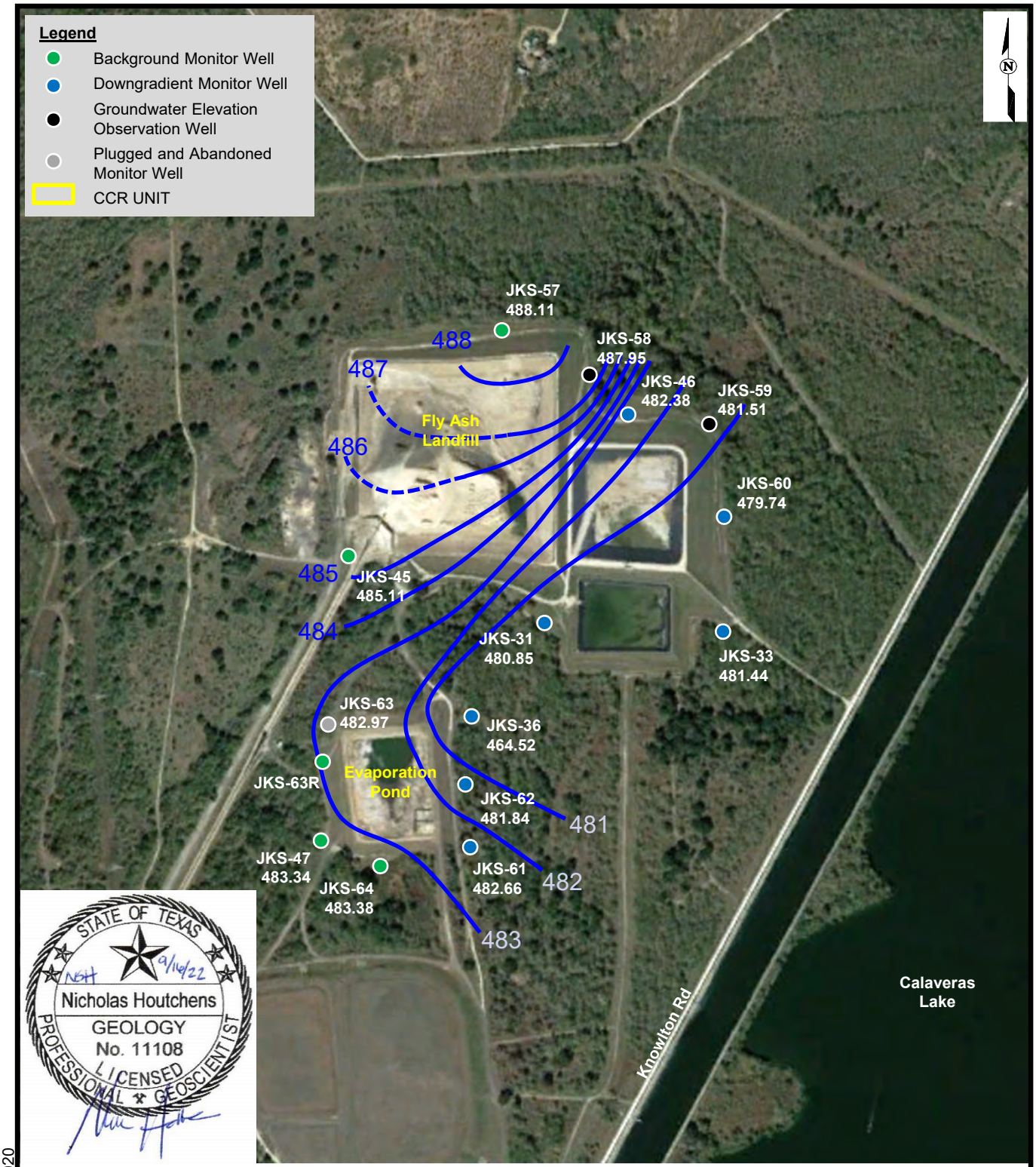
FLY ASH LANDFILL



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Nicholas Houtchens
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JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

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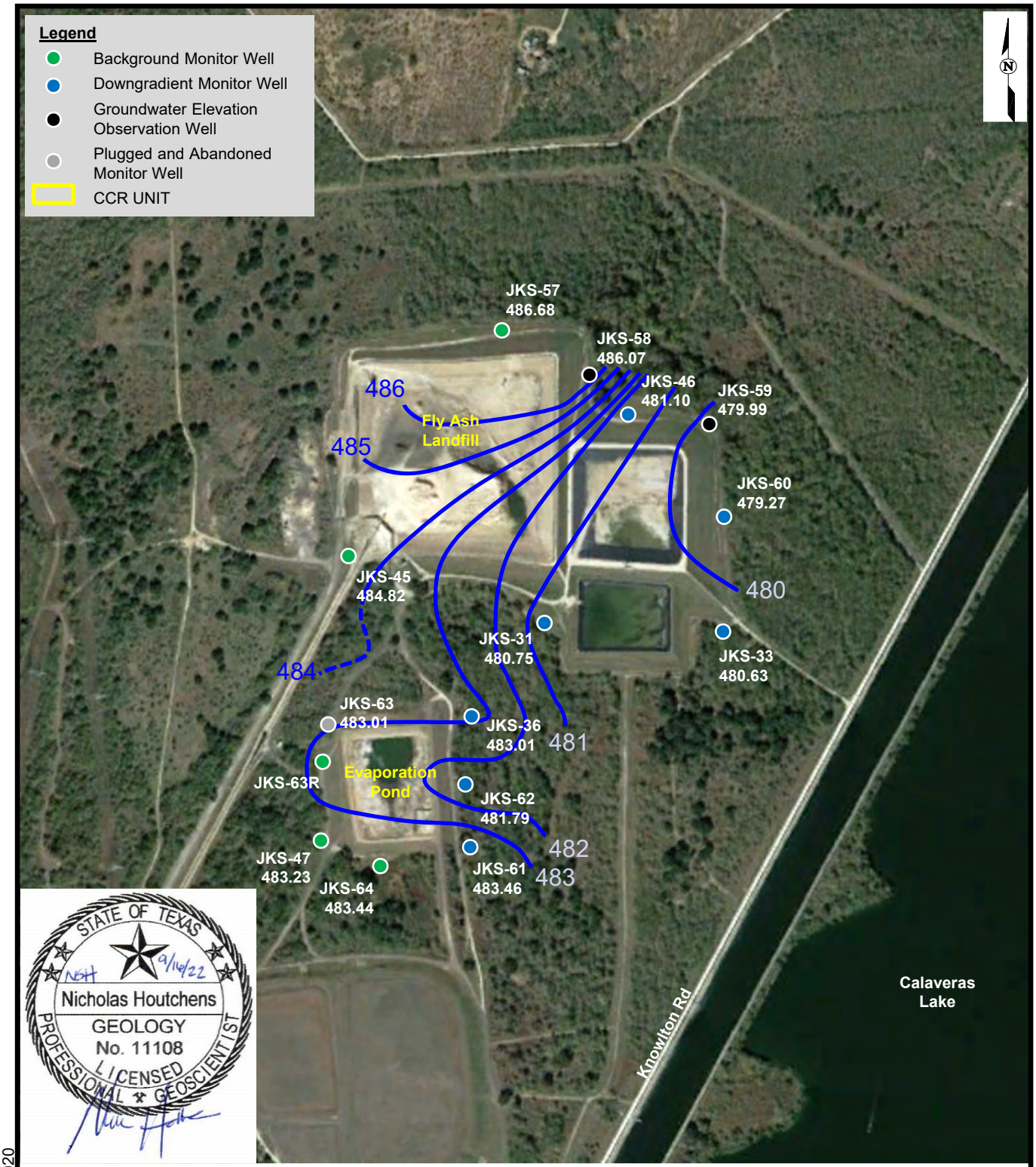
POTENTIOMETRIC SURFACE MAP – May 2017
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

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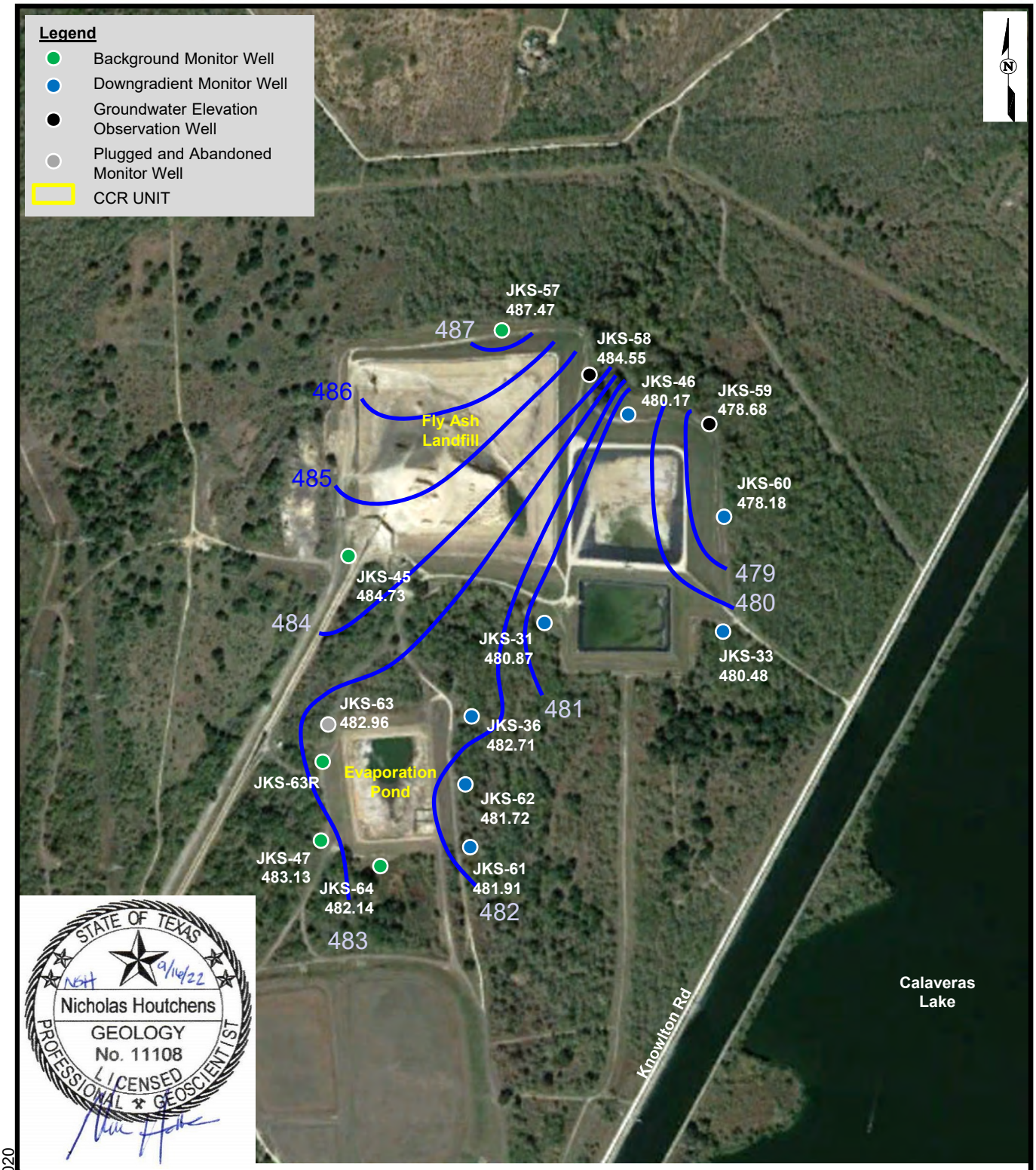
POTENTIOMETRIC SURFACE MAP – June 2017
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

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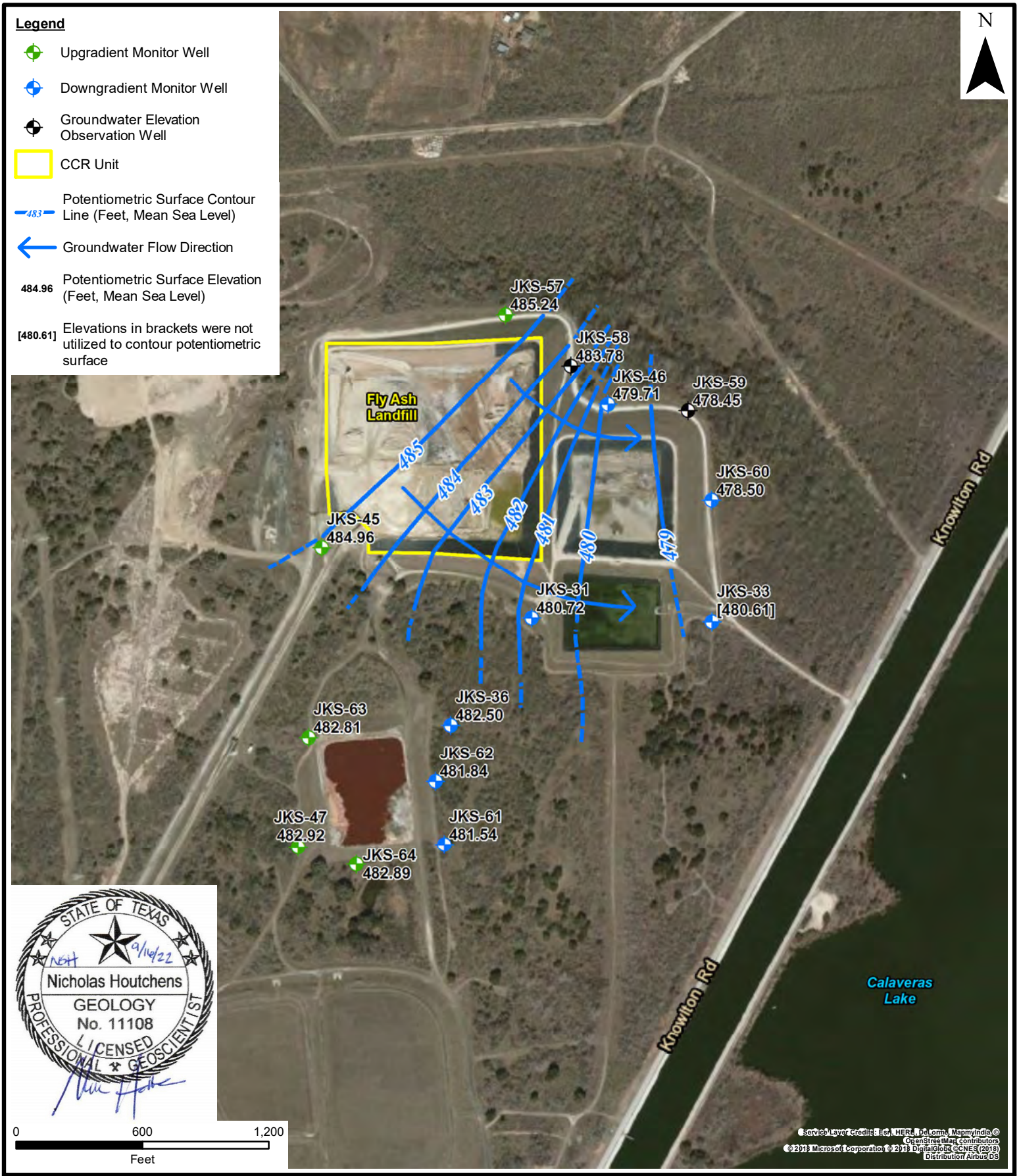
POTENTIOMETRIC SURFACE MAP – August 2017
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
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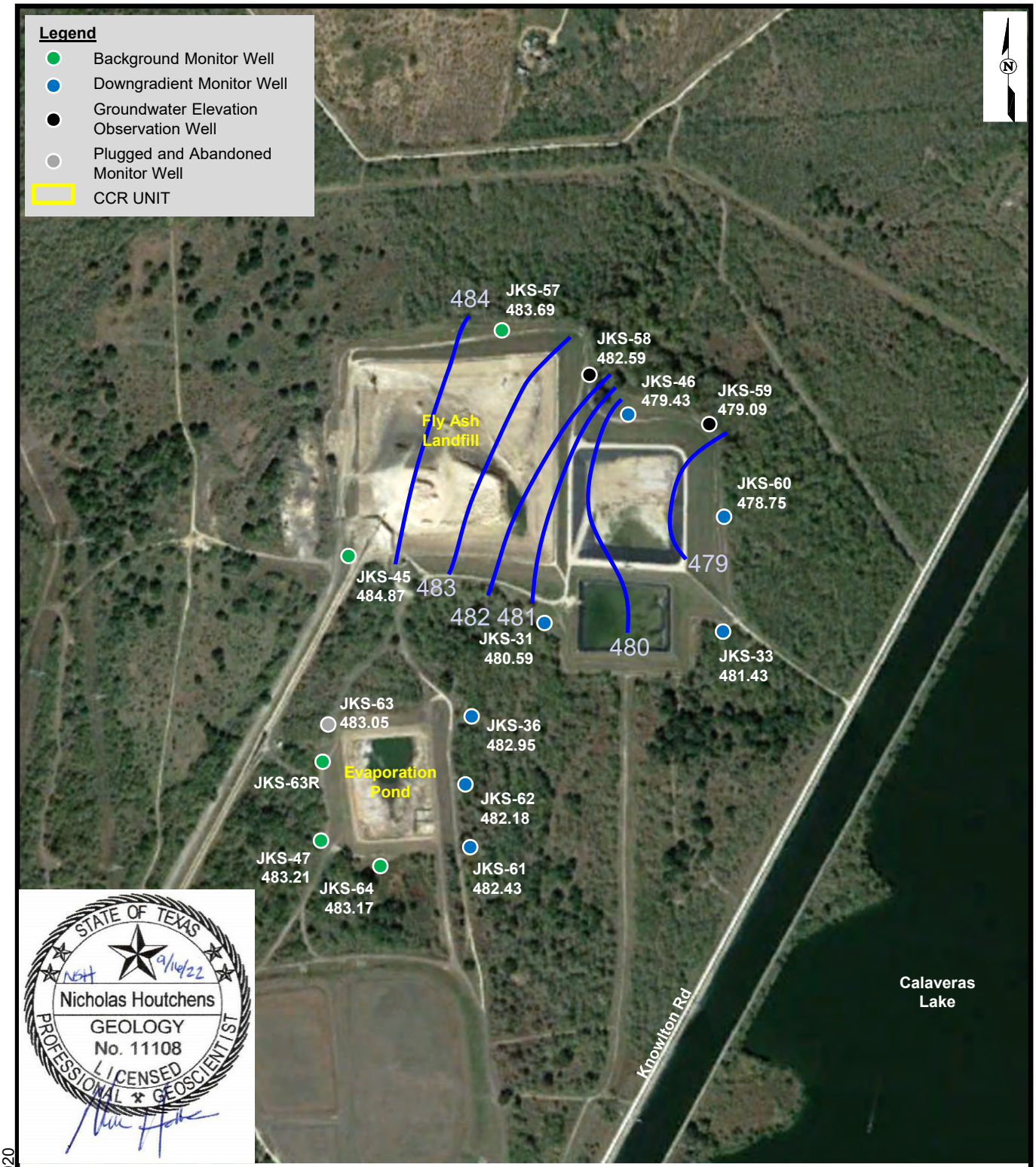

STATE OF TEXAS
9/14/22
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST

JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

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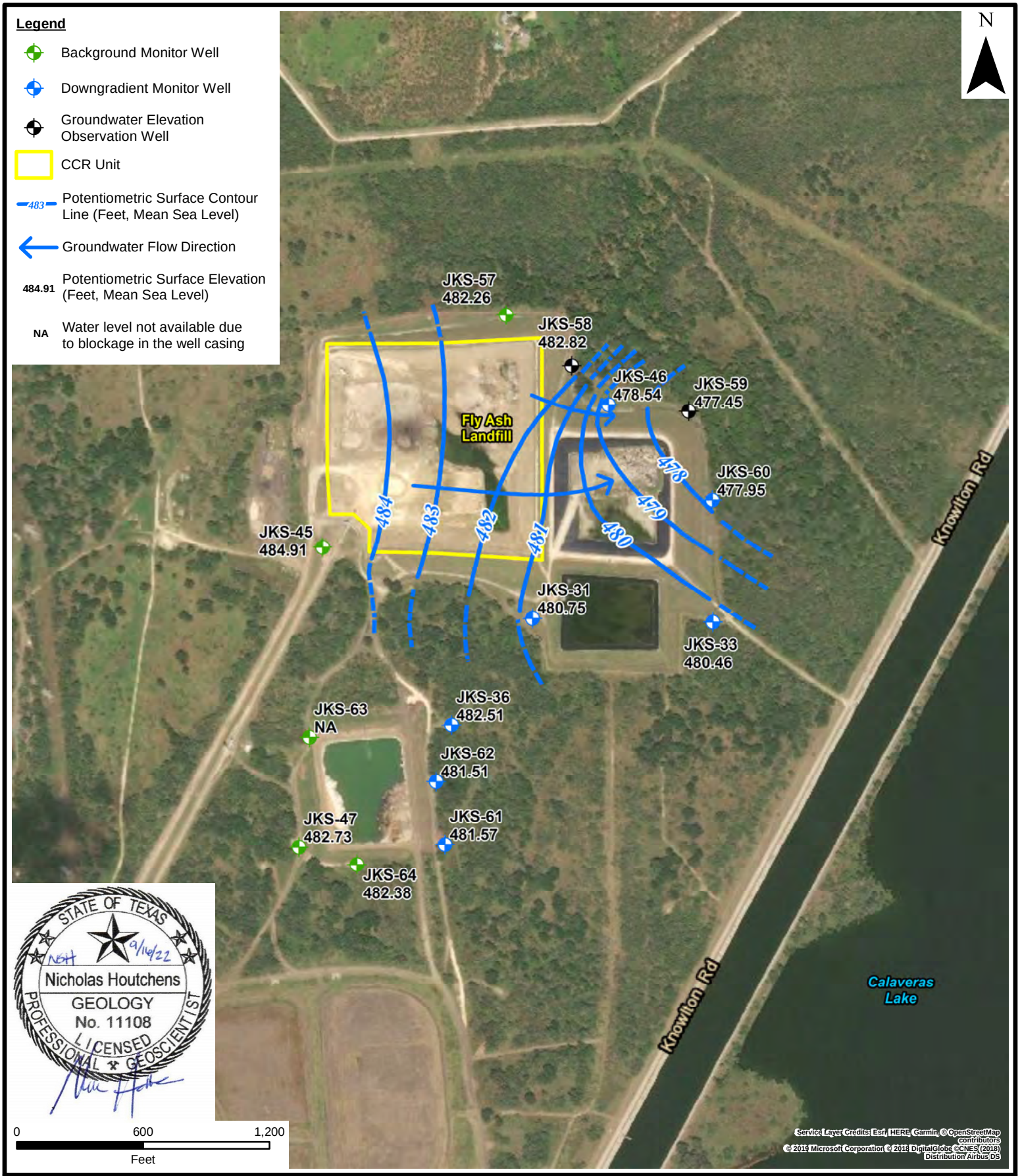
Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – April 2018
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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DATE:	1/14/2019	SCALE:	AS SHOWN	REVISION:	1

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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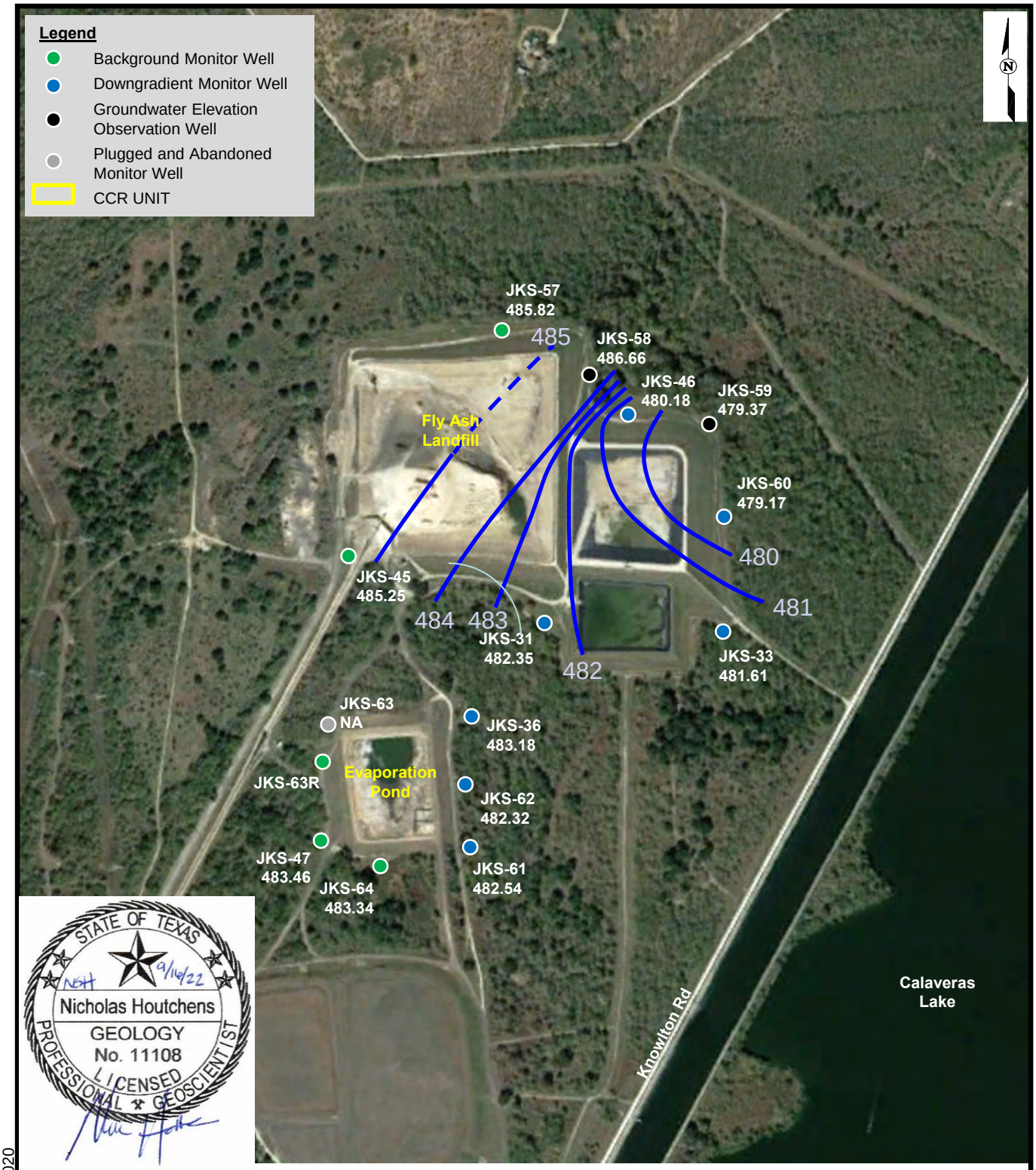

JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

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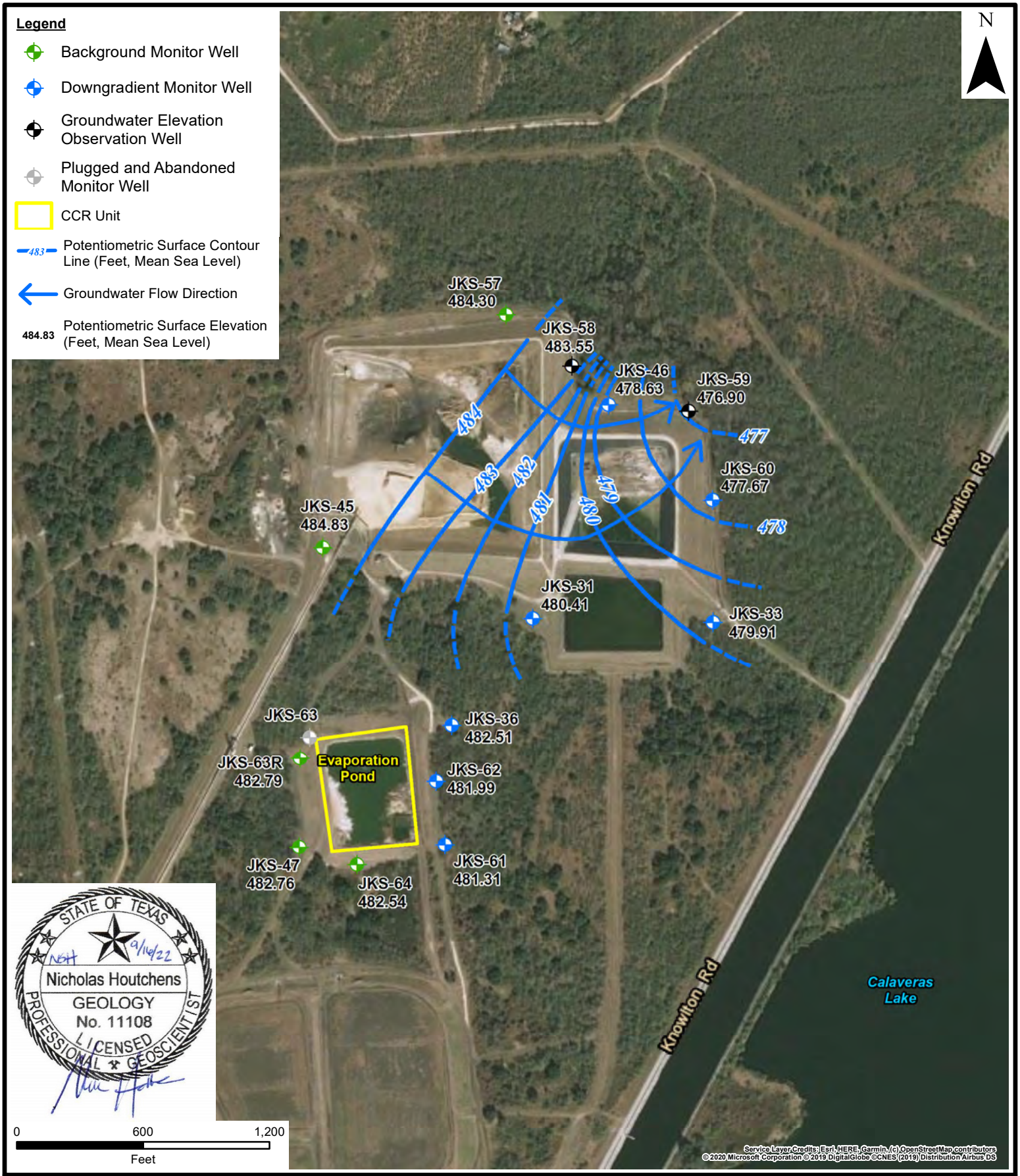
ERM

POTENTIOMETRIC SURFACE MAP – April 2019
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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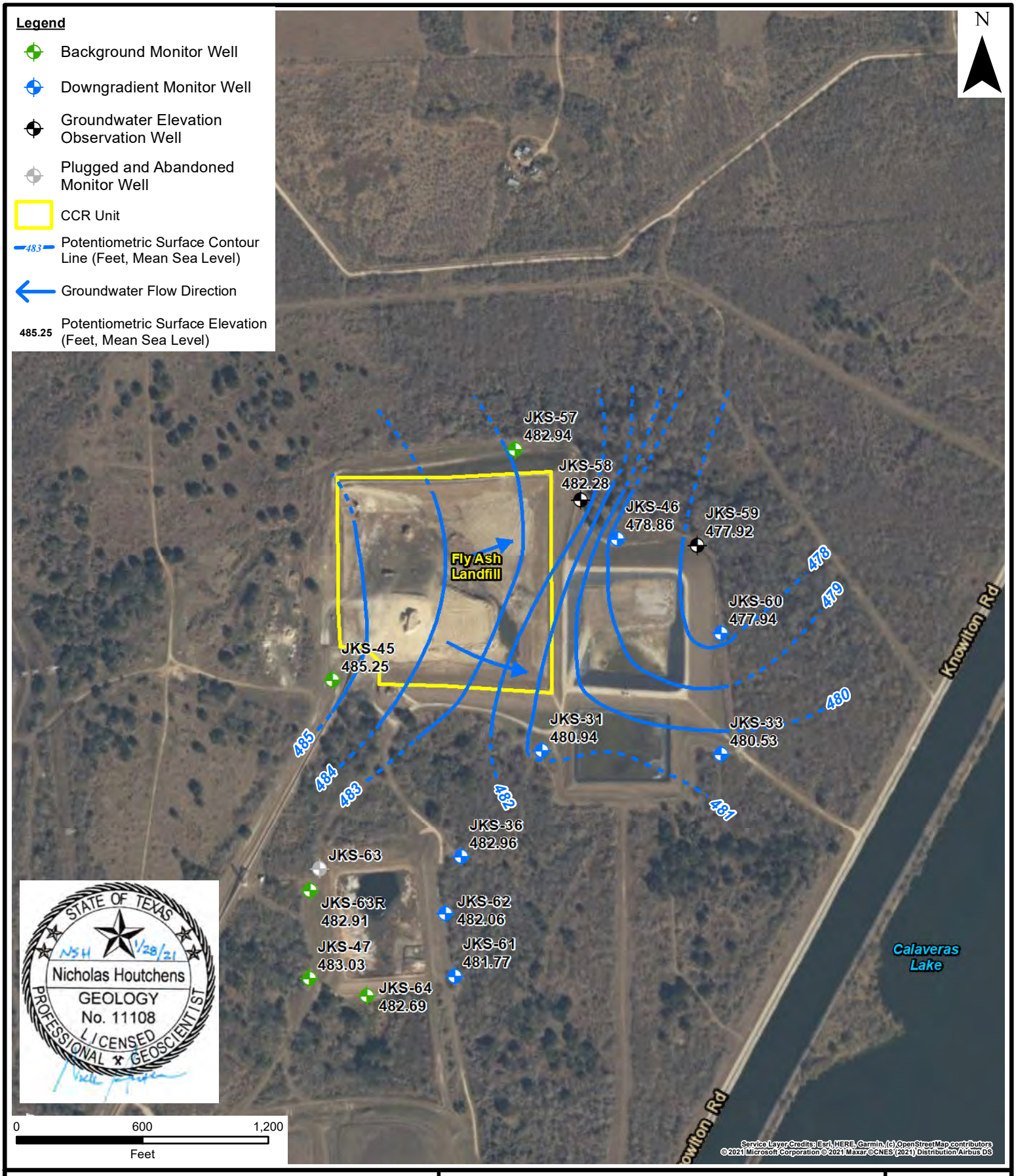

STATE OF TEXAS
NSH 1/28/21
Nicholas Houtchens
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Environmental Resources Management

DESIGN:	NH	DRAWN:	LSC	CHKD.:	WZ
DATE:	1/22/2021	SCALE:	AS SHOWN	REVISION:	2

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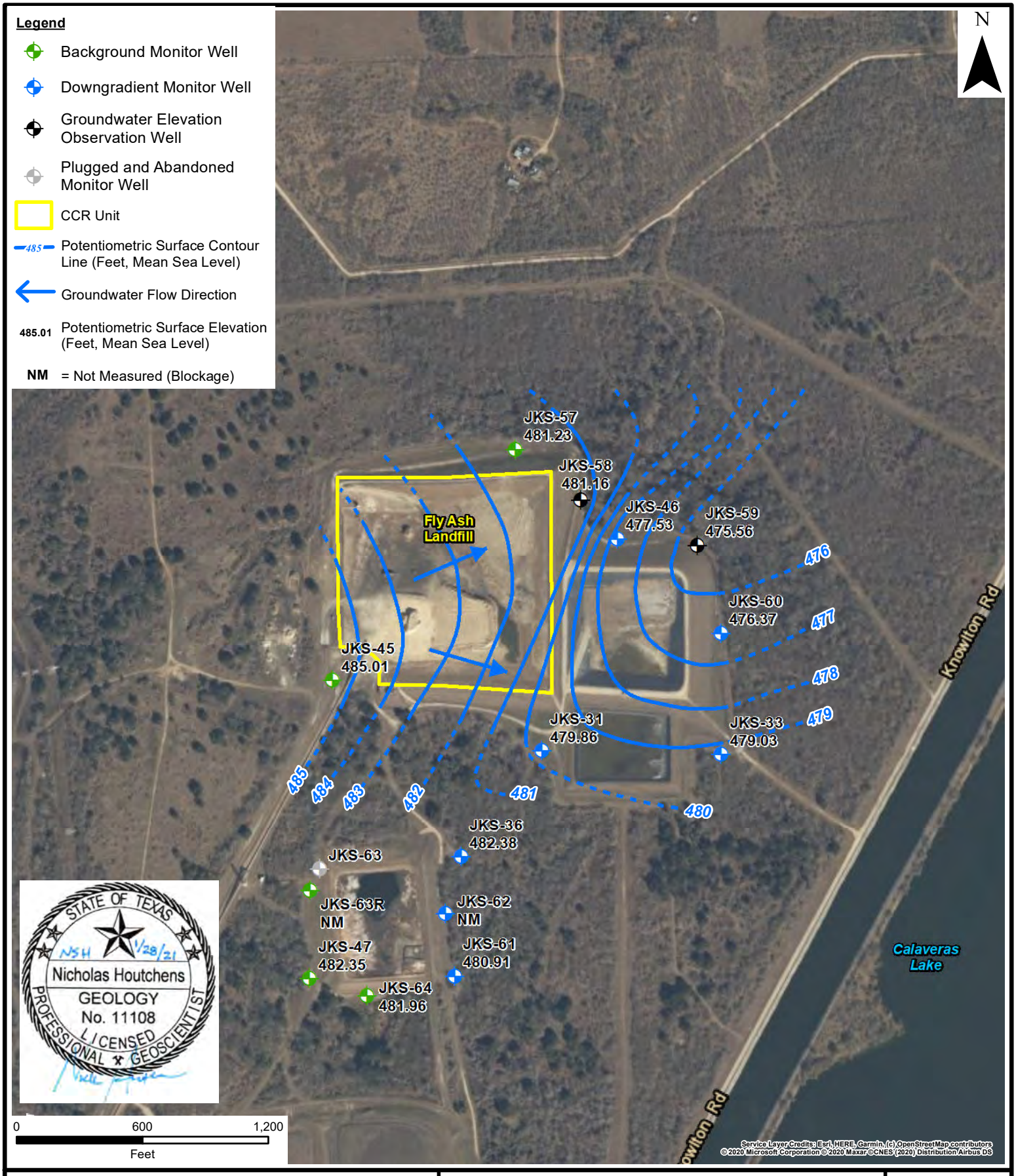
POTENTIOMETRIC SURFACE MAP - APRIL 2020
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

ERM



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2020
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

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SRH POND

STATE OF TEXAS
NSH 9/14/22
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – MARCH 2017
SRH Pond CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure

Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	6/24/2022	SCALE:	AS SHOWN	REVISION:	1

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
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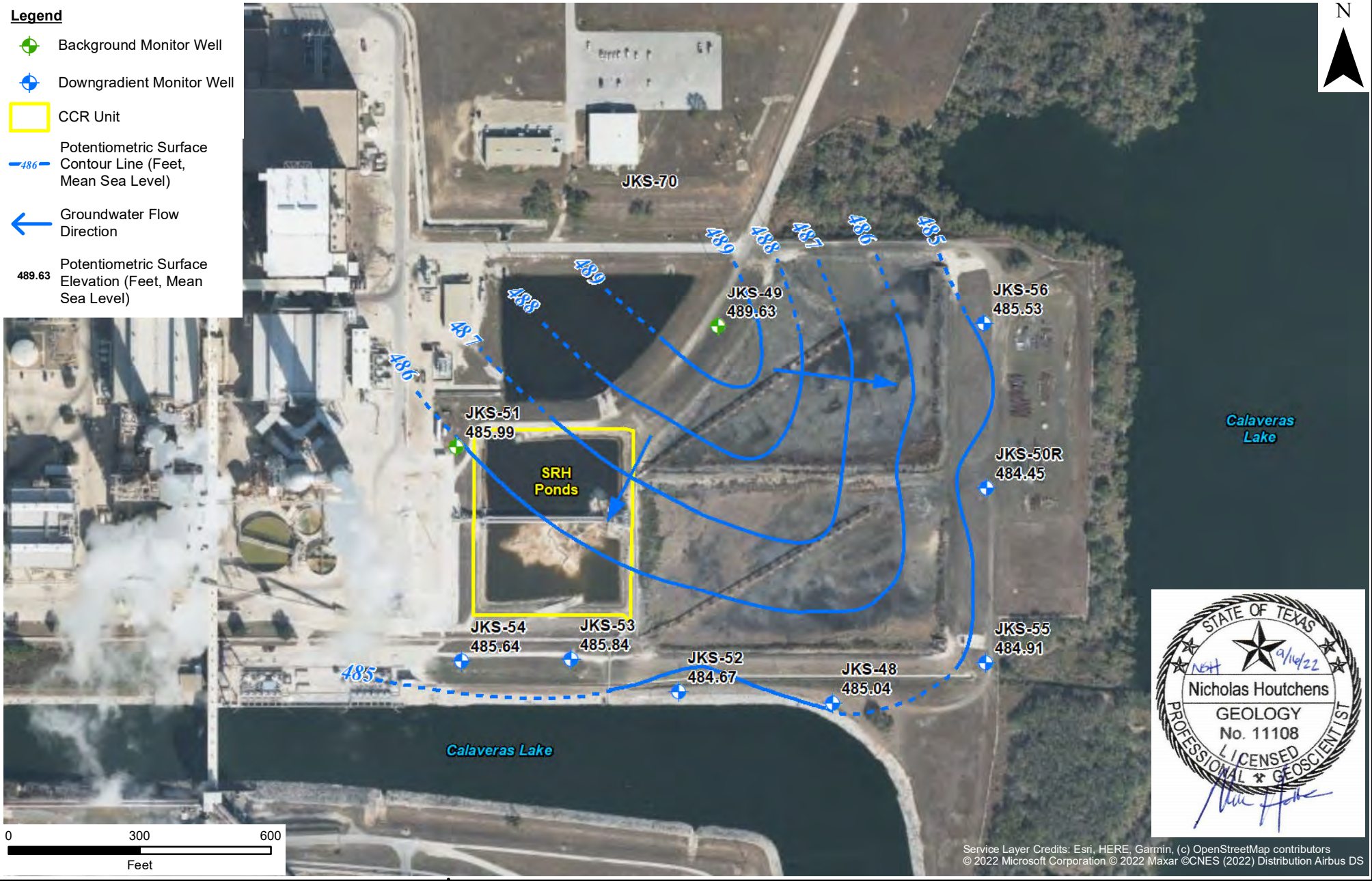

Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - APRIL 2018
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
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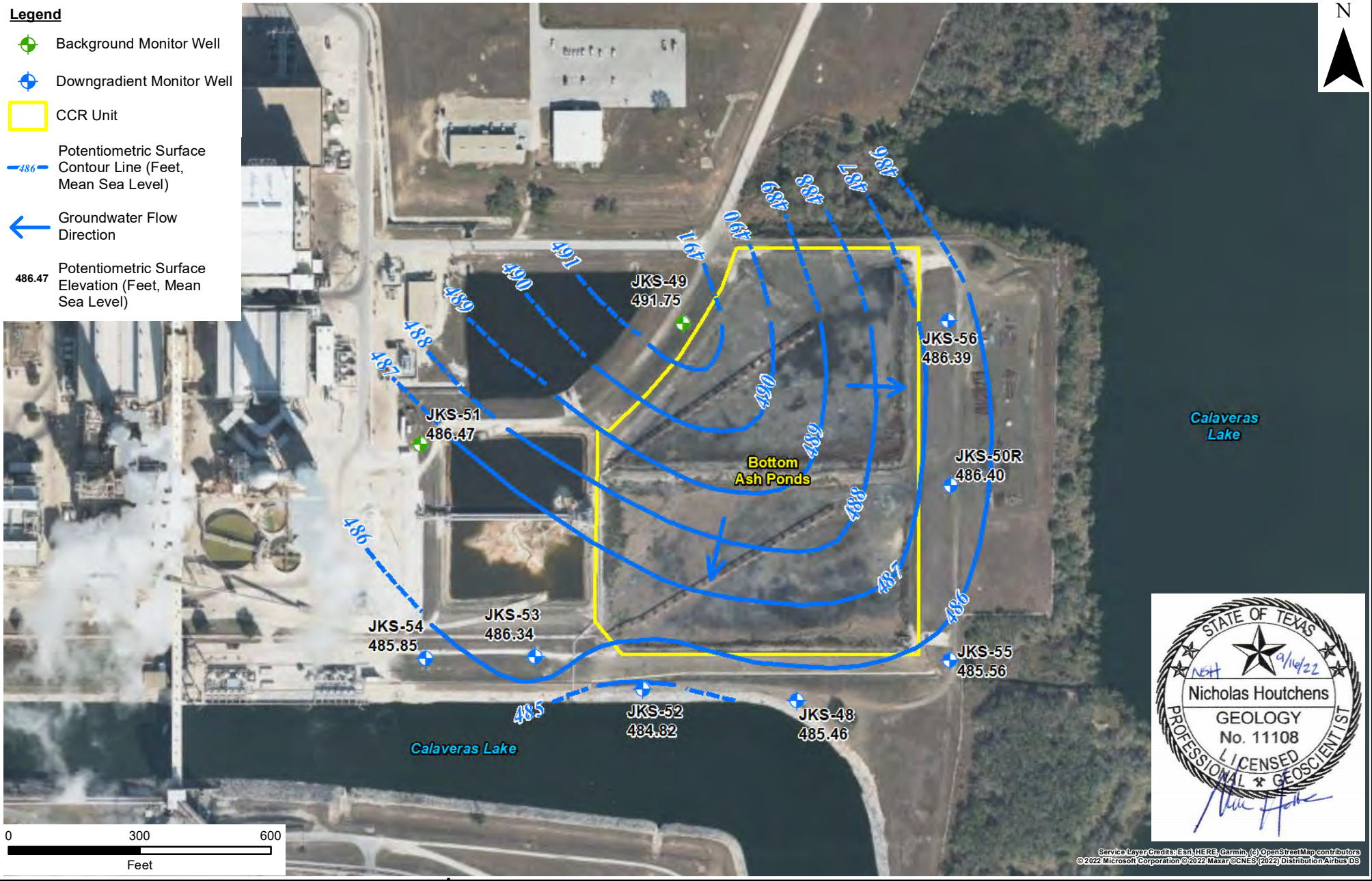
ERM



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
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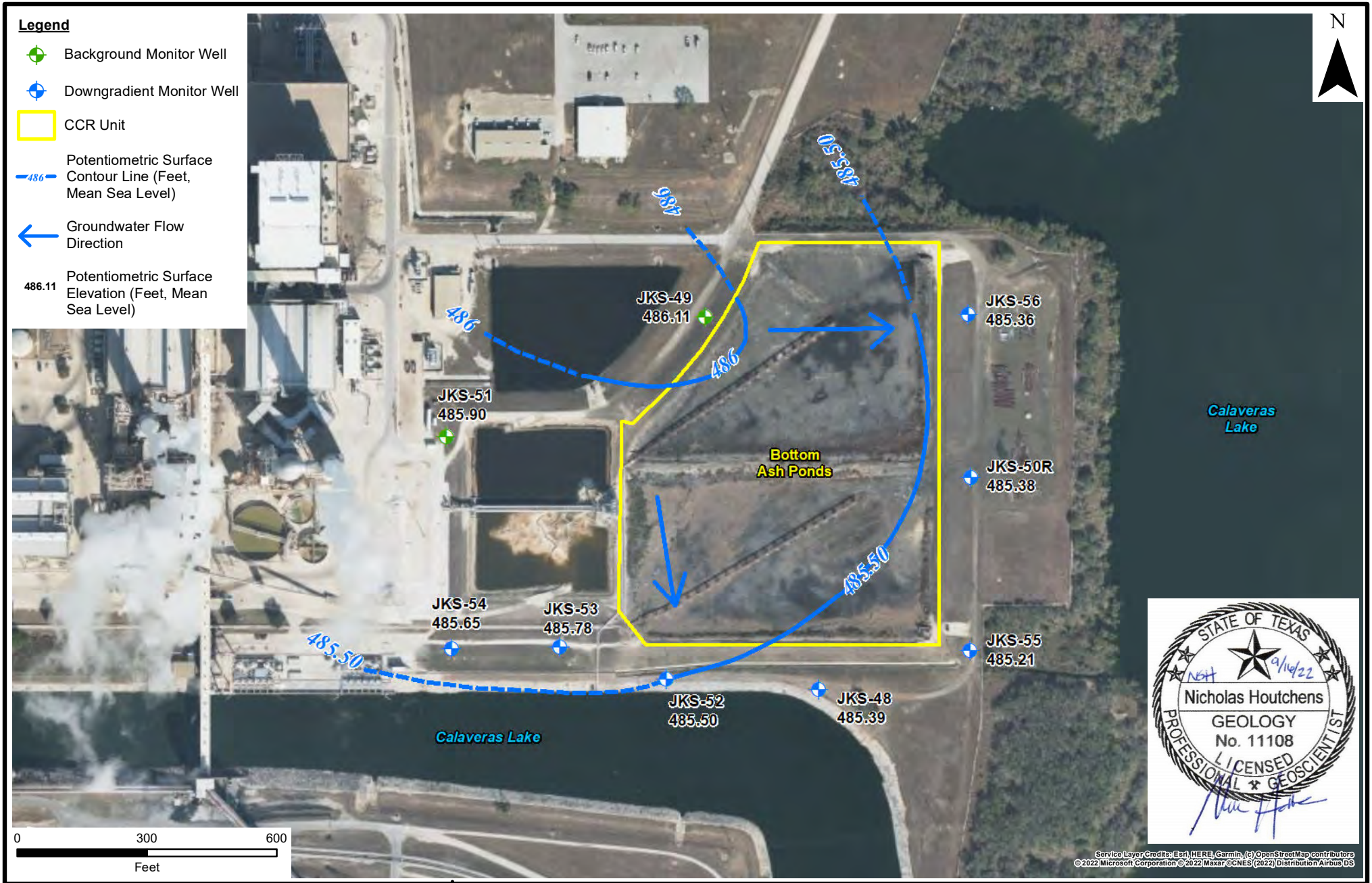

Environmental Resources Management

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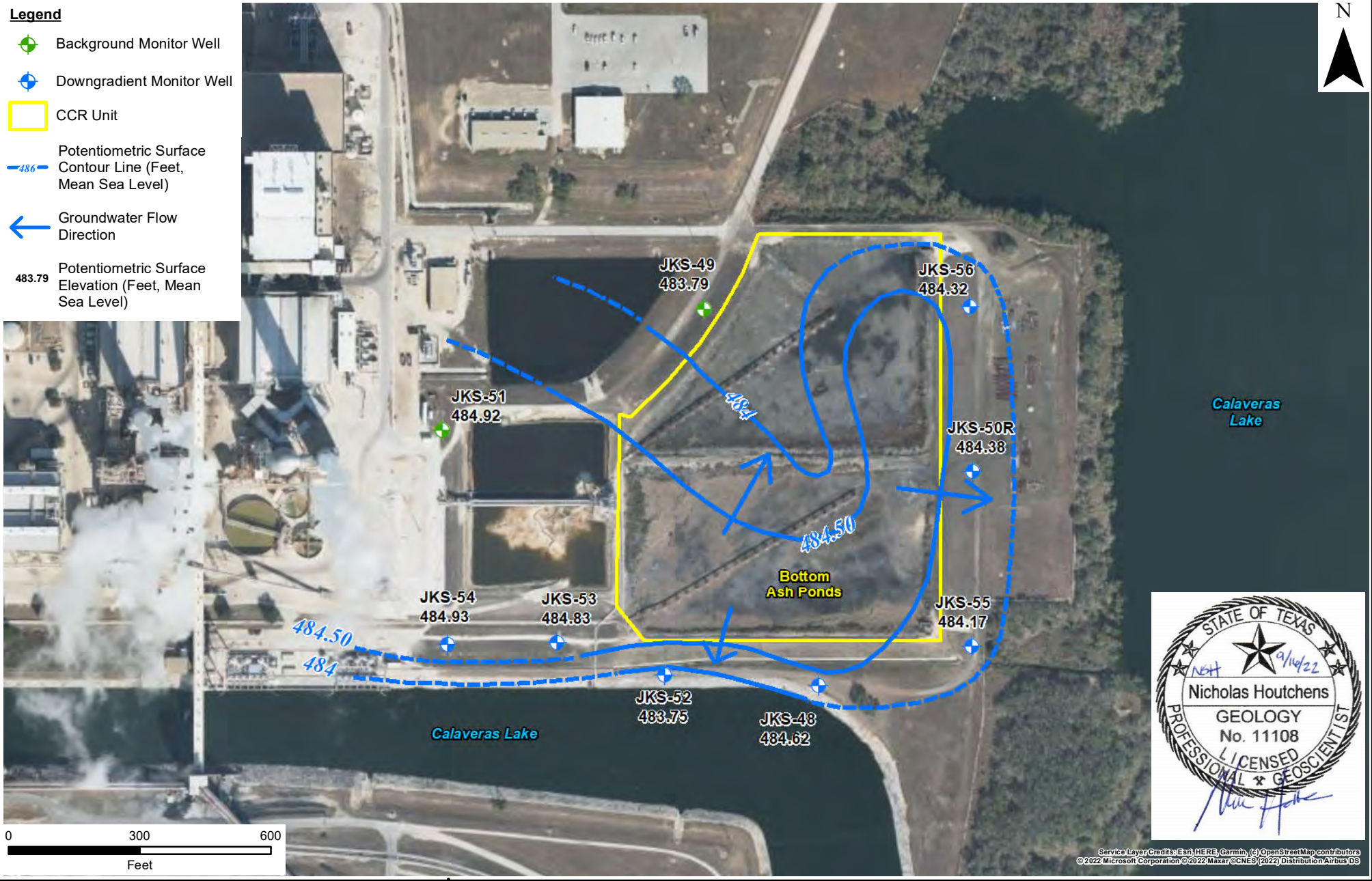
POTENTIOMETRIC SURFACE MAP - APRIL 2019
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

ERM



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

ERM

Environmental Resources Management

DESIGN:	NH	DRAWN:	LSC	CHKD.:	WZ
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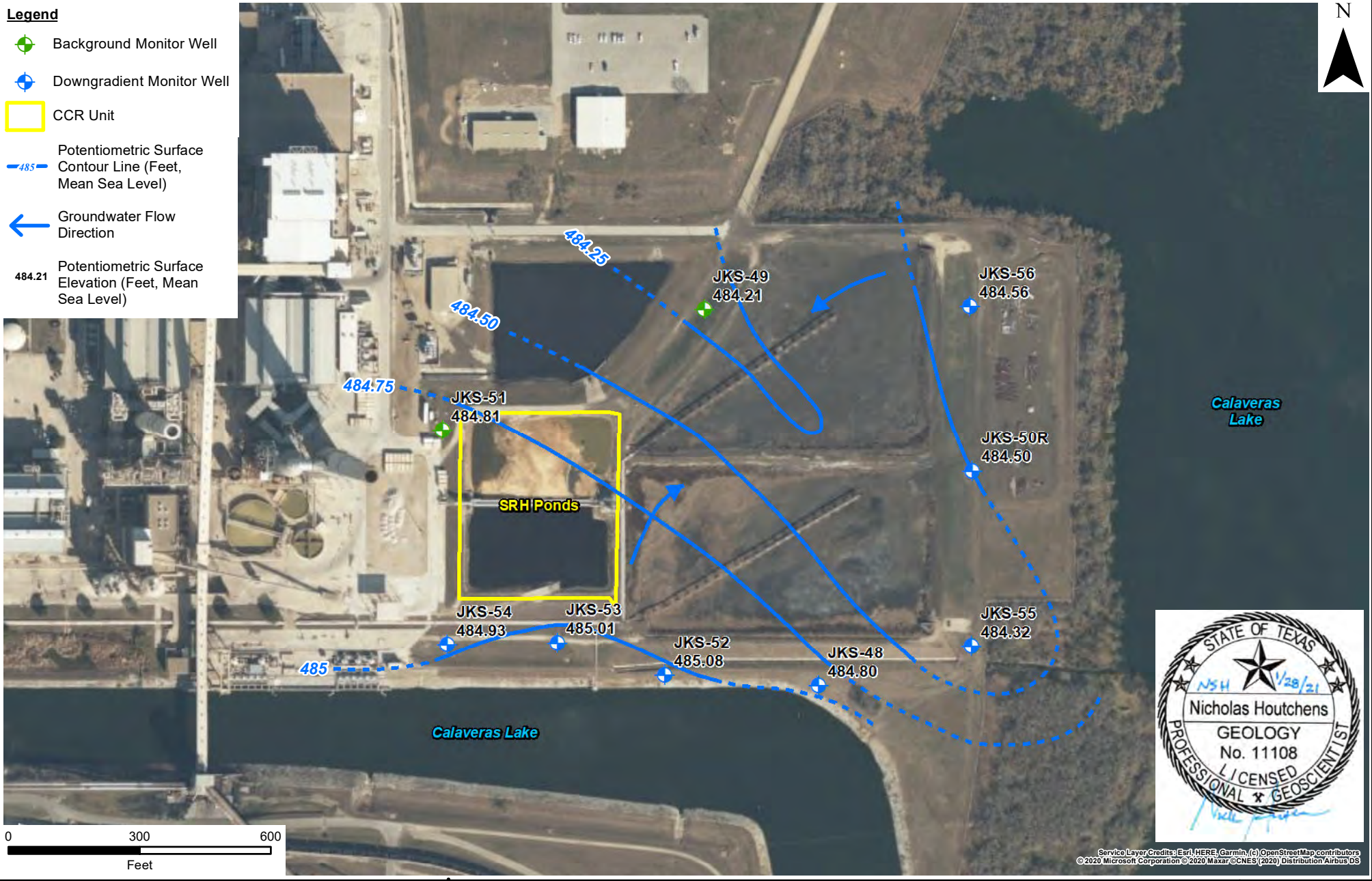
POTENTIOMETRIC SURFACE MAP - APRIL 2020
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

ERM



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POTENTIOMETRIC SURFACE MAP - OCTOBER 2020
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

Texas Registered Engineering Firm F-2393
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Attachment 3-3

BOTTOM ASH PONDS

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-49 Upgradient													
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	3.24	3.28	3.28	3.03 X	3.04 J	2.76	2.85	2.87	2.71	2.70	2.05	2.58	2.47	2.81
Calcium	mg/L	130	146	173	113	127	120	145	147	135	117 D	154 D	127 D	114 J	132
Chloride	mg/L	295 D	383 D	372 D	326	414 D	448 D	459 D	424	446 D	408	449	429	452	435
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	0.697	0.719	0.749	0.793	0.894	0.656
Sulfate	mg/L	211 D	232 D	234 D	194	218 D	227	265 D	219 X	237	237	240	205	217	193
pH - Field Collected	SU	7.19	7.12	7.12	7.02	7.06	6.16	7.05	6.89	7.12	7.12	7.31	6.43	7.15	7.14
Total dissolved solids	mg/L	1250	1240	1190	1100	1450	1440	1490	1730	1310	1210	1290	1380	1240	1380
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00173 J	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000676 J	0.000729 J	0.00123 U	0.00123 U	0.000544 J	0.000538 J	0.000478 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0607	0.0575	0.0503	0.0554	0.0783	0.0721	0.0788	0.0735	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000859 J	0.000572 J	0.00262 U	0.00262 U	0.000963 J	0.000997 J	0.00113 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00102 J	0.00109 J	0.00124 J	0.00155 J	0.00133 J	0.00153 J	0.00155 J	0.00146 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000155 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0137 J	0.0341	0.0295	0.0427	0.0252	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000690 J	0.0000263 U	0.0000490 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00779 J	0.00846	0.00875	0.0106	0.00908 J	0.00938	0.0107	0.0111	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00992 J	0.00597	0.00479	0.00521 J	0.00370 J	0.00235	0.00188 J	0.00141 J	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.198 ± 0.197	0.615 ± 0.272	0.747 ± 0.323	0.195 ± 0.167	0.294 ± 0.192	0.241 ± 0.193	0.159 ± 0.191	0.746 ± 0.274	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.1 ± 0.907	-1.37 ± 1.37	0.854 ± 0.724	1.08 ± 1.72	2.23 ± 0.949	0.658 ± 0.636	0.812 ± 0.604	1.43 ± 0.898	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-51 Upgradient													
	Sample Date	12/8/16	2/22/17	3/28/17	5/3/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.512	0.517	0.473	0.565	0.512	0.525	0.453	0.509	0.465	0.347	0.489	0.648	0.627	0.668
Calcium	mg/L	267	292	322	266	261 X	232	236	256	246	149 D	328	336 D	334 J	298
Chloride	mg/L	403 D	331 D	414 D	447	424 D	455 D	384 D	375	395 D	301	559	574 D	555	493
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	0.305 J	0.291 J	0.329 J	0.405 J	0.470	0.018 U
Sulfate	mg/L	293 D	330 D	348 D	359	342 D	330 D	314 D	302	354 D	260	428	405 D	439	376
pH - Field Collected	SU	6.59	6.51	6.48	6.56	6.40	5.48	6.38	6.20	6.44	6.70	6.66	5.73	6.43	6.47
Total dissolved solids	mg/L	1650	1650	1490	1980	1530	1580	1390	1650	1320	916	1890	2150	2010	1930
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000953 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000412 J	0.000390 J	0.00123 U	0.000392 J	0.000344 J	0.000395 J	0.000418 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0655	0.0563	0.0517	0.0512	0.0534	0.0520	0.0520	0.0564	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000212 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000941 J	0.000525 U	0.00262 U	0.000657 J	0.000874 J	0.00113 J	0.00133 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000350 U	0.0000770 J	0.0000920 J	0.000350 U	0.000124 J	0.0000940 J	0.0000800 J	0.000108 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0322	0.0874	0.0790	0.0958 JX	0.0718	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.000199 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.09 ± 0.376	0.104 ± 0.122	0.618 ± 0.247	0.197 ± 0.145	0.328 ± 0.195	0.0847 ± 0.186	4.83 ± 0.763	0.682 ± 0.309	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.312 ± 0.688	1.09 ± 1.37	2.32 ± 1.45	-1.26 ± 1.37	-0.799 ± 0.928	1.57 ± 0.786	0.762 ± 0.706	0.963 ± 0.954	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
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NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-48 Downgradient													
	Sample Date	12/7/16	2/22/17	3/30/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	2.21	2.14	--	2.08	2.13	2.15 X	2.02	2.23	2.03	2.13	2.22	2.27	2.36	2.36
Calcium	mg/L	130	139	125	NR	111	136 X	134	147	143	128 D	166 D	135 D	130 J	142
Chloride	mg/L	395 D	408 D	435 D	427	440 D	465 D	166 D	427	433 D	438	467	446	485	446
Fluoride	mg/L	1.43	1.21 JH	1.62	1.41 JH	1.07	1.62	0.0960 U	1.22	1.35	1.31	1.46	1.25	0.051 JH	1.05
Sulfate	mg/L	239 D	251 D	266 D	259	253 D	244	140 D	257	282 D	266	271	213	206	170
pH - Field Collected	SU	7.06	6.92	6.86	6.99	6.88	5.92	6.90	6.74	6.91	6.92	7.06	6.12	6.89	6.83
Total dissolved solids	mg/L	1400	1270	1440	1490	1540	1380 J	850	1470	1400	1410	1420	1520	1400	1300
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	--	0.000240 U	0.00120 U	0.00129 J	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000538 J	--	0.000424 J	0.00123 U	0.000452 J	0.000459 J	0.000475 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0717	0.0699	--	0.0659	0.0686	0.0769	0.0725	0.0761	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	--	0.000131 U	0.000654 U	0.000233 J	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	--	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000608 J	--	0.000525 U	0.00262 U	0.000525 U	0.000863 J	0.00130 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00111 J	0.000844 J	--	0.000920 J	0.000987 J	0.00137 J	0.000917 J	0.00106 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	1.43	1.21 JH	1.62	1.41	1.07	1.62	0.0960 U	1.22	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	--	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000203 J	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	NR	0.0536	0.0501	0.0700	0.0551	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000310 JX	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000422 J	--	0.000263 J	0.00128 U	0.000344 J	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	--	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	--	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.139 ± 0.250	0.251 ± 0.149	0.0232 ± 0.136	0.357 ± 0.174	0.46 ± 0.235	0.544 ± 0.259	0.562 ± 0.283	0.26 ± 0.241	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.847 ± 1.14	0.317 ± 1.15	1.1 ± 0.737	-0.109 ± 1.35	0.284 ± 0.662	0.273 ± 0.867	0.459 ± 0.649	0.772 ± 0.931	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-50R Downgradient													
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	4.70	5.18	5.87	5.92	4.87	4.38	4.18	4.54	3.52	5.17	5.85	6.93	5.52	6.79
Calcium	mg/L	126	134	189	120	125	108	130	132	127	116 D	159 D	135 D	126 J	140
Chloride	mg/L	47.7 X	49.0 J	63.9	81.3	111	123	141 D	100	170	87.9	70.0	60.3	102	69.8
Fluoride	mg/L	0.316	0.331 JH	0.447 JH	0.528	0.387 JH	0.390 JH	0.0960 U	0.427 JH	0.335 J	0.392 J	0.319 J	0.380 J	0.510	0.332
Sulfate	mg/L	137 X	146	156	160	146	148	195 D	144	131	141	168	172	194	171
pH - Field Collected	SU	6.83	6.77	NR	6.80	6.63	5.69	6.62	6.43	6.67	6.61	6.80	5.85	6.65	6.63
Total dissolved solids	mg/L	737	808	789	902	914	856	992	947	883	688	842	899	918	863
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.00111 J	0.000735 J	0.00123 U	0.00123 U	0.000520 J	0.000545 J	0.000596 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.133	0.128	0.113	0.117	0.125	0.117	0.123	0.118	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000147 J	0.000187 J	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000174 J	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000189 J	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.00251 J	0.00169 J	0.00262 U	0.00262 U	0.000788 J	0.000759 J	0.00108 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00305 J	0.00345	0.00251	0.00215 J	0.00191 J	0.00216	0.00233	0.00285	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.316	0.331 JH	0.447 JH	0.528	0.387 JH	0.390 JH	0.0960 U	0.427 JH	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000796 J	0.000988 J	0.000627 J	0.000758 U	0.000758 U	0.000178 J	0.000152 U	0.000168 J	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.000476 U	0.00209 J	0.000476 U	0.00621 J	0.000476 U	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00150 J	0.00153 J	0.00125 J	0.00128 U	0.00128 U	0.00102 J	0.00104 J	0.00108 J	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000514 J	0.000454 U	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.102 ± 0.173	0.479 ± 0.216	-0.0714 ± 0.168	0.197 ± 0.183 U	0.245 ± 0.204	0.408 ± 0.226	0 ± 0.176	0.815 ± 0.292	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.99 ± 1.31	-0.428 ± 1.24	0.665 ± 1.14	0.00273 ± 1.33 U	0.783 ± 0.638	1.08 ± 0.832	0.0172 ± 1.12	1.5 ± 0.842	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-52 Downgradient													
	Sample Date	12/7/16	2/21/17	3/28/17	5/2/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	1.66	2.11	1.63	1.51	1.33	1.43	1.46	1.71 X	1.95	1.54	1.46 X	1.65	2.05	2.21
Calcium	mg/L	169	181	189	--	145	140	162	168	175	153 D	195 DX	171 D	174 J	199
Chloride	mg/L	331 D	377 D	323 DX	320	326 D	343 D	417 D	355	360 D	326	336	320	433	408
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	0.720	0.710	0.831	0.808	0.908	0.659
Sulfate	mg/L	277 D	318 D	299 DX	290	287 D	292 D	171 D	289	278 D	292	268	288 D	315	282
pH - Field Collected	SU	7.01	6.47	6.91	6.94	6.87	5.87	6.81	6.63	6.79	6.76	6.91	6.00	6.83	6.78
Total dissolved solids	mg/L	1290	1380	1100	1250	1280	1250	1250	1220	1240	1210	1170	1270	1470	1430
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000565 J	0.000398 J	0.000425 J	0.000427 J	0.000392 J	0.000412 J	0.000448 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0646	0.0583	0.0519	0.0483	0.0527	0.0558	0.0565	0.0616	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000153 J	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000525 U	0.000525 U	0.000525 U	0.000841 J	0.000860 J	0.00123 J	0.00108 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00188 J	0.00233	0.00112 J	0.00119 J	0.00211	0.00183 J	0.00159 J	0.00189 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000292 J	0.000152 U	0.000152 U	0.000163 J	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0471	0.000476 U	--	0.0616	0.0605	0.0827	0.0588	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.000234	0.0000263 U	0.0000263 U	0.0000263 U	0.0000810 J	0.0000263 U	0.0000263 UX	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.00128 J	0.00115 J	0.00102 J	0.000911 J	0.000865 J	0.000843 J	0.000914 J	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.71 ± 0.465	0.608 ± 0.289	0.296 ± 0.169	0 ± 0.150	0.435 ± 0.241	0.449 ± 0.196	0.194 ± 0.194	0.704 ± 0.319	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.65 ± 1.12	0.744 ± 0.833	0.0645 ± 0.649	0.53 ± 1.10	0.928 ± 0.784	1.16 ± 0.867	0.716 ± 0.767	1.54 ± 1.22	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-55 Downgradient													
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.716	0.716	0.785	0.710	0.787	0.651	0.687	0.759	0.645	0.611	0.740	0.771	0.779	0.815
Calcium	mg/L	143	153	181	133	133	118	136	146	134	119 D	165 D	145 D	137 J	154
Chloride	mg/L	384 DX	50.5	403 D	388	395 D	400 D	168 D	386	387 D	429	438	432	452	431
Fluoride	mg/L	0.857	0.352 JH	0.746 JH	0.891	1.14	1.08 JH	0.0960 U	0.864	0.791	0.820	0.822	0.832	1.01	0.727
Sulfate	mg/L	164 X	147	172	173	164	166	139 D	157	168	155	168	159	177	164
pH - Field Collected	SU	6.85	6.80	6.81	6.82	6.72	5.77	6.72	6.53	6.75	6.70	6.90	5.96	6.81	6.77
Total dissolved solids	mg/L	1430	1380	1290	1310	1500	1270	826	1470	1300	1190	1420	1370	1350	1380
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000650 J	0.000520 J	0.00123 U	0.00123 U	0.000507 J	0.000582 J	0.000599 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.103	0.0876	0.0823	0.0758	0.0828	0.0780	0.0801	0.0816	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000134 J	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000625 J	0.000525 U	0.00262 U	0.00262 U	0.000525 U	0.000797 J	0.000903 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00702 J	0.00516	0.00579	0.00750 J	0.00642 J	0.00562	0.00565	0.00565	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.857	0.352 JH	0.746 JH	0.891	1.14	1.08 JH	0.0960 U	0.864	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0136 J	0.0425	0.0354	0.0495	0.0338	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00130 J	0.00123 J	0.00108 J	0.00128 U	0.00128 U	0.000804 J	0.000898 J	0.000837 J	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.694 ± 0.358	0.721 ± 0.320	0.745 ± 0.258	0.576 ± 0.261	0.305 ± 0.190	0.0212 ± 0.171	0.327 ± 0.233	0.588 ± 0.314	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	3.76 ± 1.33	1.87 ± 1.01	-0.0356 ± 1.09	1.01 ± 1.02	0.591 ± 0.843	0.532 ± 0.795	0.234 ± 0.821	1.24 ± 0.848	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-56 Downgradient													
	Sample Date	12/7/16	2/22/17	3/30/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	3.97	4.13	--	4.60	3.98	3.60	3.60 X	3.48	3.95	3.95	3.85	4.47	3.55	4.00
Calcium	mg/L	137	143	127	124	136	116	137	146	126	121 D	150 D	131 D	103 J	120
Chloride	mg/L	131	95.7	96.3	95.6	114	126	146 D	150	121	108 JL	81.0	81.2	101	77.2
Fluoride	mg/L	0.344	0.354 JH	0.333	0.564	0.407 JH	0.401 JH	0.0960 U	0.448 JH	0.37 J	0.428 J	0.372 J	0.452 J	0.552	0.418
Sulfate	mg/L	193	190	188	183	186	194	201 D	200	193	192	193	194	138	140
pH - Field Collected	SU	6.73	6.63	6.56	6.71	6.56	5.63	6.57	6.38	6.64	6.55	6.76	5.84	6.72	6.63
Total dissolved solids	mg/L	1100	969	1020	997	1060	1060	986	1240	992	976	918	968	904	847
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	--	0.00120 U	0.00120 U	0.000240 U	0.00104 J	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00527 J	0.00425	--	0.00350 J	0.00435 J	0.00373	0.00517	0.00451	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.126	0.0974	--	0.0890	0.0921	0.0897	0.103	0.0909	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	--	0.000654 U	0.000654 U	0.000131 U	0.000136 J	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	--	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000654 J	--	0.00276 J	0.00262 U	0.000525 U	0.00498	0.00141 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00560 J	0.00564	--	0.00641 J	0.00687 J	0.00668	0.00771	0.00746	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.344	0.354 JH	0.333	0.564	0.407 JH	0.401 JH	0.0960 U	0.448 JH	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	--	0.000758 U	0.000758 U	0.000152 U	0.000211 J	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.000476 U	0.000476 U	0.00156 J	0.000476 U	0.00598 J	0.000476 U	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000700 J	0.0000263 UX	0.0000263 U	0.0000263 UX	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00360 J	0.00190 J	--	0.00168 J	0.00152 J	0.00156 J	0.00160 J	0.00155 J	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	--	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	--	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.23 ± 0.430	0.254 ± 0.175	0.372 ± 0.215	0.138 ± 0.166	0.273 ± 0.253	0.177 ± 0.213	0.441 ± 0.225	0.397 ± 0.252	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.949 ± 1.38	3.07 ± 1.28	1.09 ± 0.897	1.97 ± 1.35	1.27 ± 0.994	1.16 ± 0.862	1.45 ± 0.895	3.36 ± 1.42	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

EVAPORATION POND

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-47 Upgradient													
	Sample Date	12/8/16	2/28/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.824	0.838	0.696	0.817	0.804	0.828 JH	0.760	1.02	0.844	0.806	0.590	1.05	0.800	0.904
Calcium	mg/L	54.0	62.1	168	26.2	71.1	62.7 JH	66.7	36.1	53.5	83.2 D	128	36.5	43.1	28.4
Chloride	mg/L	107	150	232 D	193	168	148 JH	210 D	68.5	151	186	279	53.9 X	107	60.9
Fluoride	mg/L	0.0360 U	0.0360 U	0.315	0.382 JH	0.213 JH	0.360 U	0.0960 U	0.0360 U	0.0360 U	0.0998 J	0.0985 J	0.154 JH	0.163	0.161
Sulfate	mg/L	213 D	267 D	369 D	299	266 D	248 JH	284 D	171	236	262	347	210 X	257	195
pH - Field Collected	SU	5.82	5.83	5.75	6.00	5.75	5.85	5.90	5.93	5.91	5.72	5.92	4.58	5.87	5.88
Total dissolved solids	mg/L	811	922	1170	1060	979	806 JH	904	677	787	727	1240	665	772	782
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000294 J	0.00120 U	0.000275 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00442 J	0.00130 J	0.00136 J	0.00123 U	0.00185 J	0.00105 J	0.00124 J	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0475	0.0132	0.0180	0.0118 J	0.0154	0.00981	0.0104	0.00785	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000813 J	0.000255 J	0.000131 U	0.000654 U	0.000352 J	0.000131 U	0.000172 J	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000637 J	0.000977 J	0.000797 J	0.000735 J	0.000611 J	0.000814 J	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.234	0.00430	0.000988 J	0.00262 U	0.00262 J	0.000855 J	0.00130 J	0.000525 U	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00915 J	0.00102 J	0.00153 J	0.00113 J	0.00227	0.000976 J	0.00107 J	0.0000699 U	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.0360 U	0.315	0.382 JH	0.213 JH	0.360 U	0.0960 U	0.0360 U	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.00586 J	0.000950 J	0.000448 J	0.000758 U	0.00157 J	0.000202 J	0.000449 J	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.0615	0.0478	0.00238 U	0.0207	0.0720	0.0644	0.0799	0.0521	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000600 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.0317	0.00126 J	0.00173 J	0.00128 J	0.000788 J	0.000581 J	0.000653 J	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.0493	0.0697	0.0518	0.0564	0.0613	0.0577	0.0525	0.0854	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.2 ± 0.342	0.578 ± 0.275	0.630 ± 0.237	0.538 ± 0.192	0.729 ± 0.278	0.304 ± 0.233	1.06 ± 0.361	0.246 ± 0.180	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.66 ± 1.15	1.34 ± 1.05	1.27 ± 0.960 U	2.17 ± 1.01	0.664 ± 0.929	0.771 ± 1.48	1.65 ± 1.05	0.463 ± 0.886	NR	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-63 / JKS-63R Upgradient (A)													
	Sample Date	12/8/16	2/22/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	8/20/19	10/23/19	4/29/20	11/17/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Nov 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.800	0.866	NR	0.981	(1)	1.33 JH	1.23	1.06	1.13	(2)	2.03	1.03	0.950	1.12
Calcium	mg/L	783	914	713	1060	(1)	835	174	872	836	(2)	221	953 D	952	1050
Chloride	mg/L	1230 D	1160 D	1220 D	1340	(1)	1960 JHD	1890 D	1420	1670	(2)	2360 D	2240	2530	2830
Fluoride	mg/L	0.0573 J	0.320	0.297	0.364 JH	(1)	0.0971 JH	0.182 JH	0.0360 U	0.0360 U	(2)	0.206 J	0.352 JH	0.018 U	0.018 U
Sulfate	mg/L	0.0460 U	1860 D	1890 D	1860	(1)	1970 D	1920 D	1820	2110	(2)	1810 D	1750 D	1810	2120
pH - Field Collected	SU	5.61	5.35	5.60	5.85	(1)	5.88	5.82	5.63	5.64	(2)	--	4.76	5.83	5.79
Total dissolved solids	mg/L	5750	4760	4870	5560	(1)	6410	5000	5080	5220	(2)	6660	5200	7240	8190
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000459 J	0.000695 J	0.00120 U	(1)	0.000240 U	0.000424 J	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00332 J	0.00294	0.00128 J	0.00123 U	(1)	0.000893 J	0.000992 J	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0626	0.0540	0.0336	0.0316	(1)	0.0294	0.0258	0.0222	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000930 J	0.000442 J	0.000654 U	(1)	0.000196 J	0.000223 J	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00339 J	0.00405	0.00394	0.00316 J	(1)	0.00282	0.00263	0.00285	NR	NR	NR	NR	NR	NR
Chromium	mg/L	1.49	0.735	0.371	0.114	(1)	0.0742	0.0584	0.0130	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.0802	0.0762	0.0546	0.0331	(1)	0.0137	0.0119	0.0119	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0573 J	0.320	0.297	0.364 JH	(1)	0.0971 JH	0.182 JH	0.0360 U	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.00441 J	0.00599	0.00108 J	0.000758 U	(1)	0.000238 J	0.000551 J	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.116	0.00238 U	0.654	(1)	0.946	1.15	0.791	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.000236	0.000237	0.000206	0.0000400 J	(1)	0.000260	0.000441	0.000376	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.186	0.00789	0.00966	0.00419 J	(1)	0.00281	0.00180 J	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.0188	0.0210	0.0257	0.0188	(1)	0.0288	0.0318	0.0244	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	(1)	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.42 ± 0.573	2.76 ± 0.476	5.79 ± 0.790	4.57 ± 0.577	(1)	6.7 ± 0.744	7.36 ± 0.874	5.04 ± 0.711	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.44 ± 1.44	4.13 ± 1.21	2.04 ± 1.61 U	3.41 ± 0.968	(1)	10.9 ± 2.31	1.79 ± 1.27	6.77 ± 1.48	NR	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-64 Upgradient													
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.839	0.837	1.14	0.962	0.816	0.904 JH	0.835	0.901	0.837	0.805	0.804	0.747	0.711	0.735
Calcium	mg/L	24.0	24.0	31.4	23.8	20.6	21.7 JH	21.6	25.2	23.6	24.4	23.0	24.4	20.3	20.4
Chloride	mg/L	12.7	12.4	11.8	11.0	11.4	11.5	11.5	9.63	14.2	15.5	16.6	17.7	18.2	16.0
Fluoride	mg/L	0.0360 U	0.294 JH	0.332	0.188	0.231 JH	0.157 JH	0.224 JH	0.0360 U	0.0360 U	0.106 J	0.121 J	0.176 JH	0.143	0.101
Sulfate	mg/L	171	182	184	174	172	170 JH	172	164	189	196	193	192 X	209	212
pH - Field Collected	SU	6.46	5.50	6.30	6.33	6.21	6.09	6.20	6.21	6.13	5.97	6.14	4.82	5.86	5.96
Total dissolved solids	mg/L	594	585	611	581	572	555 JH	463	576	549	525	551	588	569	664
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000911 J	0.000730 J	0.000556 J	0.00123 U	0.000476 J	0.000490 J	0.000519 J	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.00768	0.00451	0.00392 J	0.00410 J	0.00320 J	0.00324 J	0.00275 BJ	0.000484 U	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.000525 U	0.000905 J	0.000525 U	0.00262 U	0.000867 J	0.000637 J	0.000961 J	0.000525 U	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000998 J	0.000952 J	0.000851 J	0.000859 J	0.000745 J	0.000856 J	0.000889 J	0.0000699 U	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.294 JH	0.332	0.188	0.231 JH	0.157 JH	0.224 JH	0.0360 U	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000186 J	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.0173 J	0.0146 J	0.00238 U	0.0152 J	0.0173 J	0.0181 J	0.0252	0.0208	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 UX	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000540 J	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000398 J	0.000317 J	0.000255 U	0.00128 U	0.000265 J	0.000255 U	0.000273 J	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.000512 J	0.000550 J	0.000495 J	0.00227 U	0.000468 J	0.000468 J	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.981 ± 0.400	1.16 ± 0.408	0.530 ± 0.284	0.231 ± 0.174	0.258 ± 0.175	0.286 ± 0.247	1.05 ± 0.361	0.531 ± 0.276	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.429 ± 1.56	2.07 ± 1.22	-0.102 ± 1.07 U	0.408 ± 0.764	0.699 ± 0.761	2.49 ± 1.54	0.26 ± 0.639	1 ± 0.834	NR	NR	NR	NR	NR	NR

NOTES:
(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.
(1) Sample not collected due to the well going dry during sampling activities.
(2) Sample not collected due to blockage in the well casing.
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
B: Target analyte or common lab contaminant was identified in the method blank.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
H: Bias in sample result likely to be high.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-36 Downgradient													
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/22/19	4/29/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.308	0.671	0.748	0.731	0.581	0.625 JH	0.663	0.637	0.625	0.686	0.663	0.632	0.459	0.456
Calcium	mg/L	69.7	165	147	282	247	255 JHX	241	289	281	311 D	315 D	265 D	175	259
Chloride	mg/L	14.5	199 D	37.0	355	364 D	379 JHD	319 D	328	347 X	313	285	274	63.3	319
Fluoride	mg/L	0.0360 U	0.439 JH	0.330	1.53	1.26	1.37 JH	1.30	1.32	1.95 X	1.47	1.45	1.41	1.18	1.07
Sulfate	mg/L	49.2	409 D	271 D	726	731 D	775 JHD	707 D	741	816 X	946	697	756 D	189	890
pH - Field Collected	SU	6.71	4.96	6.98	4.04	3.72	3.80	5.20	3.24	3.48	3.61	3.71	3.66	3.42	3.98
Total dissolved solids	mg/L	368	1010	591	1610	1820	1700 JH	1220	1770	1650	1630	1520	1600	1790	1930
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.00123 J	0.00120 U	0.000240 U	0.00121 J	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000588 J	0.00134 J	0.00324 J	0.00276	0.00369	0.00341	0.00372	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0988	0.0967	0.139	0.0270	0.0187	0.0207	0.0372	0.0225	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.00198 J	0.000131 U	0.0259	0.0226	0.0261	0.0212	0.0259	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00257 J	0.00510	0.000548 J	0.0118	0.0102	0.0117	0.0101	0.0113	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.00608	0.0409	0.0100 J	0.00968	0.0156	0.00792	0.0132	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000579 J	0.0871	0.00751	0.220	0.186	0.216	0.195	0.215	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.439 JH	0.330	1.53	1.26	1.37 JH	1.30	1.32	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000164 J	0.000220 J	0.000261 J	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.0123 J	0.119	0.00238 U	0.326	0.340	0.371	0.372	0.379	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.000834	0.000289	0.00143	0.00240	0.00244	0.00160	0.00113	0.00226	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00397 J	0.00261	0.0686	0.00183 J	0.000704 J	0.000791 J	0.00151 J	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.0334	0.0448	0.0313	0.0673	0.0616	0.0697	0.0633	0.0663	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000487 J	0.000332 U	0.00166 U	0.000876 J	0.00114 J	0.000889 J	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.0888 ± 0.151	1.12 ± 0.342	0.453 ± 0.276	4.85 ± 0.656	4.02 ± 0.608	4.32 ± 0.667	6.28 ± 0.845	3.6 ± 0.600	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.14 ± 1.02	2.17 ± 0.979	0.166 ± 0.861 U	4.28 ± 1.19	3.44 ± 1.04	3.95 ± 1.79	2.63 ± 0.928	3.3 ± 1.33	NR	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-61 Downgradient													
	Sample Date	12/7/16	2/23/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/31/18	4/10/19	10/22/19	4/29/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	1.07	1.29	1.15	1.18	0.960	1.01 JH	0.994	0.997	1.09	3.25	2.72	2.90	1.82	1.82
Calcium	mg/L	134	95.9	155	113	115	107 JH	105	135	171	197 D	176	168 D	154	172
Chloride	mg/L	198	158	162	168	193	190 JH	218 D	210	285	213	253	248	312	281
Fluoride	mg/L	0.393	0.503	0.522	0.643 JH	0.459 JH	0.479 JH	0.0960 U	0.0360 U	0.406 J	0.430 J	0.403 J	0.480 J	0.494	0.366
Sulfate	mg/L	401 D	377 JD	382 D	388	408 D	390 JHD	385 D	401	562	548	619	548 D	604	533
pH - Field Collected	SU	6.72	6.51	6.48	6.68	6.53	6.55	7.40	6.27	6.42	6.38	6.52	5.61	6.27	6.57
Total dissolved solids	mg/L	1400	1180	1190	1260	1430	1290 JH	1170	1280	1620	514	1650	1790	1870	2000
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000768 J	0.000709 J	0.00123 U	0.000563 J	0.000622 J	0.000569 J	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0364	0.0186	0.0173	0.0178 J	0.0148	0.0167	0.0153	0.0162	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000911 J	0.000525 U	0.00262 U	0.000525 U	0.000604 J	0.000808 J	0.000525 U	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000719 J	0.000725 J	0.000769 J	0.000779 J	0.000805 J	0.000765 J	0.000855 J	0.0000699 U	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.393	0.503	0.522	0.643 JH	0.459 JH	0.479 JH	0.0960 U	0.0360 U	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0158 J	0.00238 U	0.0120 J	0.0342	0.0336	0.0443	0.0335	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00165 J	0.00129 J	0.000984 J	0.00128 U	0.000776 J	0.000742 J	0.000712 J	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00123 J	0.00123 J	0.00227 U	0.00185 J	0.00154 J	0.00172 J	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.15 ± 0.429	0.723 ± 0.306	0.256 ± 0.237 U	0.237 ± 0.193	0.398 ± 0.239	0.511 ± 0.223	0.821 ± 0.324	0.485 ± 0.212	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.79 ± 1.44	0.358 ± 1.06	0.761 ± 0.688 U	-0.064 ± 0.607	2.03 ± 0.997	0.491 ± 0.813	0.247 ± 0.710	1.64 ± 1.08	NR	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-62 Downgradient													
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20	11/17/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Nov 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.549	0.481	0.597	0.601	0.501	0.485 JH	0.485	0.549	0.522	0.559	0.612	0.528	0.484	0.537
Calcium	mg/L	155	152	220	156	150	134 JH	150	158	160	161 D	205 D	151 D	122	144
Chloride	mg/L	257 D	279 DX	279 D	278	291 D	260 JHD	281 D	241	312	279	336	276	284	284
Fluoride	mg/L	0.246	0.362 JH	0.418	0.388	0.366 JH	0.342 JH	0.233 JH	0.0360 U	0.353 J	0.309 J	0.356 J	0.380 J	0.331	0.295
Sulfate	mg/L	190	187	193	188	184	181 JH	188 D	175	200	183	191	183	190	212
pH - Field Collected	SU	6.79	6.67	6.63	6.71	6.68	6.82	7.51	6.52	6.72	6.58	6.29	5.43	6.54	6.55
Total dissolved solids	mg/L	1120	1170	1140	1100	1080	976 JH	1080	1080	1110	956	1190	1160	1100	1040
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000684 J	0.000293 J	0.000246 U	0.00123 U	0.000254 J	0.000246 U	0.000246 U	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0825	0.0786	0.0813	0.0747	0.0734	0.0737	0.0708	0.0793	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00186 J	0.00109 J	0.000525 U	0.00262 U	0.000551 J	0.000691 J	0.00107 J	0.000525 U	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00110 J	0.000198 J	0.000744 J	0.000350 U	0.000278 J	0.000211 J	0.0000699 U	0.0000699 U	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.246	0.362 JH	0.418	0.388	0.366 JH	0.342 JH	0.233 JH	0.0360 U	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000588 J	0.000152 U	0.000152 U	0.000758 U	0.000154 J	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0129 J	0.00238 U	0.00134 J	0.0353	0.0305	0.0457	0.0263	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000540 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000414 J	0.000259 J	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.222	0.192	0.196	0.195	0.185	0.181	0.191	0.208	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.485 ± 0.229	0.402 ± 0.220	0.665 ± 0.321	0.0997 ± 0.153	0.425 ± 0.233	0.399 ± 0.220	2.02 ± 0.489	0.669 ± 0.279	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.15 ± 1.38	1.53 ± 1.28 U	0.305 ± 1.10 U	-0.138 ± 0.656	0.66 ± 0.760	1.07 ± 0.949	0.673 ± 0.821	0.371 ± 0.631	NR	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

FLY ASH LANDFILL

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-45 Upgradient													
	Sample Date	12/6/16	2/23/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	1.65	1.51	2.27	1.11	2.03	1.91	2.02	2.21	2.28	3.24	2.78	2.98	3.01	2.81
Calcium	mg/L	144	122	184	105	101	103	120	130	128	161 D	195	161 D	141 J	132
Chloride	mg/L	196	187	181 J	160	152	0.803	345 JHD	24.8	118	137	167	144	113	98.7
Fluoride	mg/L	0.0360 U	0.207	0.334	0.337 JH	0.174 J	0.274 JH	0.0960 U	0.131 JH	0.0360 U	0.0360 U	0.0621 UJ	0.101 J	0.100	0.018 U
Sulfate	mg/L	623 D	639 D	661	613 X	602 D	2.95 JH	770 JHD	120	662 D	707	874	698	619	564
pH - Field Collected	SU	5.41	5.17	3.98	5.62	5.13	5.66	5.82	5.60	5.59	5.70	5.03	5.59	5.85	5.94
Total dissolved solids	mg/L	1270	1300	1330	1350	1270	1250	1680 JH	1100	1190	741	1350	1320	1590	1260
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.000240 U	0.000310 J	0.000400 J	0.00120 U	0.00120 U	0.000240 U	0.000348 J	0.000490 J	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000534 J	0.00216	0.00595	0.00123 U	0.00123 U	0.000346 J	0.00283	0.000618 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0185	0.0436	0.103	0.0128 J	0.0176 J	0.0114	0.0480	0.0142	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00261 U	0.000383 J	0.000921 J	0.000654 U	0.000654 U	0.000149 J	0.000408 J	0.000229 J	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000189 J	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00743	0.0152	0.0320	0.00403 J	0.00262 U	0.00313 J	0.0135	0.00272 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00506	0.00465	0.00828	0.00346 J	0.00351 J	0.00277	0.00376	0.00358	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.207	0.334	0.337 JH	0.174 J	0.274 JH	0.0960 U	0.131 JH	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000571 J	0.00419	0.0117	0.000758 U	0.000758 U	0.000479 J	0.00482	0.000968 J	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.0329	0.0601	0.00238 U	0.0600	0.0639	0.0694	0.0935	0.0781	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000320 JX	0.0000263 U	0.0000263 U	0.0000300 J	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00105 J	0.00245	0.00372	0.00128 U	0.00128 U	0.000255 U	0.00115 J	0.000271 J	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.0147	0.0144	0.0174	0.0121	0.0123	0.00990	0.0136	0.0118	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000460 J	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	4.78 ± 0.890	4.29 ± 0.612	7.63 ± 0.795	3.29 ± 0.485	4.24 ± 0.671	4.34 ± 0.607	3.65 ± 0.553	5.07 ± 0.718	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.92 ± 1.19	4.59 ± 1.34	2.27 ± 1.19	1.42 ± 0.908	2.84 ± 1.15	1.83 ± 0.868	1.86 ± 0.827	1.66 ± 0.847	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-57 Upgradient													
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	3.19	3.24	3.17	2.67	3.09	3.08	2.98	3.48	4.49	2.81	3.23	4.14	5.97	3.82
Calcium	mg/L	349	362	413	--	290	327	337	393	409	401 D	477 D	479 D	622 J	592
Chloride	mg/L	70.6	76.2	89.6	130	158	311 D	12.5 JH	185	534 D	3770	119	841	3460	3150
Fluoride	mg/L	3.62	3.32	2.84	2.27	3.42	3.43	0.0960 U	3.28	4.29	2.31	3.03	2.72	4.17	2.99
Sulfate	mg/L	2780 D	1980 DX	2090	2470 D	3080	3410 D	450 JH	3610	4260 D	5000	3570	4240	6510	3890
pH - Field Collected	SU	6.73	6.08	5.13	6.63	6.37	6.72	6.60	6.70	6.63	6.35	6.20	6.19	6.49	6.33
Total dissolved solids	mg/L	4770	3780	3320	4060	5800	5920	850 JH	5850	7390	9750	6000	6700	15100	12200
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00138 J	0.000630 J	0.000654 J	0.000561 J	0.00123 U	0.000480 J	0.000519 J	0.000486 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0311	0.0211	0.0208	0.0174	0.0164 J	0.0149	0.0128	0.0145	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000161 J	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000687 J	0.000525 U	0.000525 U	0.00262 U	0.000739 J	0.000816 J	0.00104 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000520 J	0.00232	0.000297 J	0.000449 J	0.000407 J	0.000748 J	0.000195 J	0.000322 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	3.62	3.32	2.84	2.27	3.42	3.43	0.0960 U	3.28	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000256 J	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.545	0.287 X	0.00238 U	--	0.533	0.649	0.671	0.733	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000300 J	0.0000263 U	0.0000580 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000385 J	0.000278 J	0.000255 U	0.00128 U	0.000329 J	0.000283 J	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00237 J	0.000664 J	0.000594 J	0.000561 J	0.00227 U	0.000612 J	0.000858 J	0.000697 J	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.592 ± 0.325	0.322 ± 0.157	0.519 ± 0.219	0.356 ± 0.176	0.273 ± 0.273	0.338 ± 0.221	0.255 ± 0.176	0.0986 ± 0.153	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.15 ± 0.895	2.31 ± 1.03	0.794 ± 0.818	2.86 ± 1.27	0.903 ± 0.843	0.786 ± 0.900	1.9 ± 0.894	1.73 ± 1.00	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-31 Downgradient													
	Sample Date	12/8/16	2/21/17	3/29/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/22/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.446	0.580	0.642	0.499	0.573	0.510	0.494	0.553	0.485	0.514	0.557	0.483	0.429	0.379
Calcium	mg/L	188	384 X	317	--	216	171	230	228	187	208 D	295 D	200 D	171 J	216
Chloride	mg/L	223 D	477 D	303 D	317	285 D	0.280 UDXF	0.347 U	288	253 D	256	322	267	272	319
Fluoride	mg/L	0.801	0.186 J	0.548	0.865	0.661	0.979 JHXF	0.0960 U	0.735 JH	0.839	0.694	0.791 U	0.784	1.00	0.786
Sulfate	mg/L	697 D	1130 D	768 D	875	782 D	1.17 JHDXF	0.160 JH	803	771 D	774	852	819	877	914
pH - Field Collected	SU	3.94	4.04	6.34	4.29	3.84	5.14	3.99	3.98	3.74	3.07	3.56	2.62	3.70	3.68
Total dissolved solids	mg/L	1470	2290	2430	1850	1730	1500	25.0 U	1890	1420	1390	1660	1620	1890	1700
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000295 J	0.000301 J	0.00120 U	0.000527 J	0.000240 U	0.000559 J	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00151 J	0.0110	0.00834	0.00501	0.00363 J	0.00134 J	0.00556	0.00279	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0167 J	0.0141	0.0198	0.0136	0.0127 J	0.0229	0.0129	0.0122	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00793 J	0.00851	0.00885	0.00814	0.00865 J	0.00593	0.00827	0.00857	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.0200 J	0.000663 J	0.000596 J	0.000525 U	0.00262 U	0.000890 J	0.000849 J	0.000760 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000440 J	0.0399	0.0623	0.0227	0.0173	0.0113	0.0302	0.0192	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.801	0.186 J	0.548	0.865	0.661	0.979 JHXF	0.0960 U	0.735 JH	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000415 J	0.000223 J	0.000344 J	0.000758 U	0.000348 J	0.00233	0.000580 J	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.533	0.510	0.00238 U	--	0.572	0.484	0.615	0.590	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000360 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00163 J	0.00175 J	0.00125 J	0.00227 U	0.00162 J	0.00177 J	0.00155 J	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	2.46 ± 0.574	2.60 ± 0.473	1.44 ± 0.425	1.40 ± 0.338	1.40 ± 0.403	1.28 ± 0.341	1.36 ± 0.399	1.01 ± 0.323	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	7.35 ± 1.59	8.16 ± 2.15	5.33 ± 1.47	5.85 ± 1.79	4.63 ± 1.23	4.44 ± 1.37	3.58 ± 1.22	4.96 ± 1.43	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
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H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-33 Downgradient													
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/26/17	8/29/17	10/10/17	4/5/18	10/30/18	4/10/19	10/22/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.940	1.02	1.05	0.987	1.09	1.01	1.03	1.11	0.990	0.791	1.13	1.18	1.18	1.09
Calcium	mg/L	564	600	553	--	563	558	567	531	552	385 D	631	553 D	573 J	493
Chloride	mg/L	735 D	679 D	731 D	690	692 D	693 D	125 JH	666	786	758	806	773 JLKD	756	751
Fluoride	mg/L	1.86	1.08	1.77	1.36	1.81	1.34	0.480 U	1.69	1.85	1.21	1.23	1.24 JLK	1.68	0.864
Sulfate	mg/L	1850 D	1670 D	1780 D	1710	1690 D	1710 D	3170 D	1640	1810	1740	1640	1690 JLKD	1620	1650
pH - Field Collected	SU	6.51	5.90	4.91	6.52	6.15	5.71	6.49	6.49	6.33	6.26	5.98	5.18	6.30	6.23
Total dissolved solids	mg/L	4000	3990	4310	4410	3750	4070	3580	4320	3970	3320	2650 JLK	4040 JLK	4370	4060
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.00120 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000246 U	0.00123 U	0.000257 J	0.00123 U	0.000279 J	0.000316 J	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0326	0.0318	0.0297	0.0268	0.0279	0.0274	0.0263	0.0264	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000709 J	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000734 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000611 J	0.00262 U	0.000525 U	0.00262 U	0.000525 U	0.00113 J	0.00108 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000690 J	0.000433 J	0.000487 J	0.000435 J	0.000512 J	0.000731 J	0.000902 J	0.000554 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	1.86	1.08	1.77	1.36	1.81	1.34	0.480 U	1.69	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000758 U	0.000152 U	0.000758 U	0.000152 U	0.000157 J	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	--	0.194	0.181	0.255	0.176	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000720 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.00128 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.0314	0.0356	0.0389	0.0368	0.0451	0.0495	0.0546	0.0342	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.00166 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	2.04 ± 0.439	1.14 ± 0.328	2.36 ± 0.522	1.81 ± 0.365	1.73 ± 0.428	1.55 ± 0.422	1.37 ± 0.394	2.23 ± 0.491	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.95 ± 1.16	3.52 ± 1.07	4.69 ± 1.33	3.24 ± 1.26	1.73 ± 0.902	4.11 ± 1.19	1.98 ± 1.01	2.99 ± 1.26	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-46 Downgradient													
	Sample Date	12/6/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.902	0.837	0.645	0.799	0.920	0.801	0.788	1.01	0.828	0.702	0.997	1.01	0.864	0.530
Calcium	mg/L	120	132	145	115	126	117	137	145	140	126 D	212 D	172 D	143 J	107
Chloride	mg/L	11.6	11.8	12.2	10.5	12.6	11.8	327 JHD	11.7	11.6	11.6	13.2	13.0	17.9	23.4
Fluoride	mg/L	1.51	1.38	1.03	1.59	2.25	2.34	0.460 JH	1.83	2.16	1.68	2.52	2.22	1.61 J	0.764
Sulfate	mg/L	700 D	692 D	608 D	677	0.0460 U	780 D	288 JHD	800	864 D	855	1030	1020	1180	734
pH - Field Collected	SU	3.60	3.55	2.10	3.57	2.96	3.54	3.21	3.20	3.15	3.00	2.85	2.62	3.10	3.01
Total dissolved solids	mg/L	1160	1040	926	1030	1270	1180	1170 JH	1390	1300	1220	1550	1500	1970	1160
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00190 J	0.00227	0.00144 J	0.00196 J	0.00277 J	0.00253	0.00295	0.00290	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0429	0.0356	0.0308	0.0307	0.0364	0.0317	0.0323	0.0331	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00381 J	0.00362	0.00340	0.00399 J	0.00459 J	0.00415	0.00462	0.00479	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00110 J	0.000988 J	0.00121 J	0.00120 J	0.00101 J	0.00133 J	0.00141 J	0.00136 J	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.000942 J	0.00140 J	0.00104 J	0.00262 U	0.00262 U	0.00156 J	0.00191 J	0.00202 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.0303	0.0324	0.0329	0.0367	0.0387	0.0383	0.0412	0.0414	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	1.51	1.38	1.03	1.59	2.25	2.34	0.460 JH	1.83	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.0162	0.0134	0.0109	0.0144	0.0192	0.0201	0.0236	0.0257	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.0646	0.000476 U	0.00238 U	0.0673	0.0749	0.0799	0.107	0.0863	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000255 U	0.000255 U	0.000255 U	0.00128 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.0255	0.0266	0.0205	0.0247	0.0296	0.0257	0.0298	0.0283	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00293	0.00292	0.00235	0.00263 J	0.00314 J	0.00300	0.00335	0.00345	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.16 ± 0.701	1.69 ± 0.387	1.80 ± 0.448	1.2 0± 0.315	1.82 ± 0.420	1.40 ± 0.353	1.52 ± 0.375	1.99 ± 0.459	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	4.98 ± 1.41	2.17 ± 1.48	2.96 ± 1.24	1.98 ± 0.957	4.39 ± 1.13	2.80 ± 1.05	2.28 ± 1.13	3.82 ± 1.15	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-60 Downgradient													
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	0.655	0.504	0.449	0.456	0.442	0.394	0.436	0.479	0.399	0.334	0.405	0.377	0.325	0.433
Calcium	mg/L	433	375	290	--	379	336	350	383	363	382 D	501 D	524 D	530 J	380
Chloride	mg/L	411 D	311 D	311 D	285	300 D	319 D	287 JHD	352	366 D	202	149 X	183	168	235
Fluoride	mg/L	0.0360 U	0.319	0.324	0.421	0.306	0.338 JH	0.0960 U	0.284 JH	0.22 J	0.239 J	0.187 UJ	0.231 J	0.188	0.018 U
Sulfate	mg/L	1480 D	999 D	1010 D	976 X	1020 D	818 D	760 JHDX	759	801 D	906	968	1320	1280	963
pH - Field Collected	SU	5.82	5.38	4.21	5.75	6.07	6.44	5.93	5.97	6.09	6.42	5.93	6.23	6.61	6.16
Total dissolved solids	mg/L	2790	2340	2020	2110	2510	2120	1450 JH	2300	1860	1910	2010	2820	3180	2520
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000861 J	0.000592 J	0.000366 J	0.00123 U	0.000367 J	0.000381 J	0.000266 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0702	0.0491	0.0465	0.0450	0.0469	0.0454	0.0490	0.0503	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000774 J	0.000778 J	0.000786 J	0.000695 J	0.000734 U	0.000359 J	0.000608 J	0.000699 J	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000743 J	0.000525 U	0.000525 U	0.00262 U	0.000690 J	0.00204 J	0.00100 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.115	0.0542	0.0423	0.0389	0.0210	0.00896	0.0166	0.0183	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.319	0.324	0.421	0.306	0.338 JH	0.0960 U	0.284 JH	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000216 J	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	--	0.0305	0.0179 J	0.0635	0.0314	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000370 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000726 J	0.000622 J	0.000715 J	0.00148 J	0.00162 J	0.00124 J	0.00103 J	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00168 J	0.00132 J	0.00981	0.0390	0.0244	0.00761	0.00745	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000425 J	0.000412 J	0.000403 J	0.00166 U	0.000332 U	0.000372 J	0.000387 J	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.01 ± 0.578	2.29 ± 0.421	2.74 ± 0.572	1.71 ± 0.378	0.914 ± 0.341	1.57 ± 0.381	1.34 ± 0.378	4.61 ± 0.650	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.57 ± 1.15	2.62 ± 1.04	0.838 ± 0.826	0.269 ± 0.713	2.24 ± 1.02	0.701 ± 0.850	1.72 ± 0.940	2.48 ± 1.60	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

SRH POND

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-49 Upgradient													
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	3.24	3.28	3.28	3.03 X	3.04 J	2.76	2.85	2.87	2.71	2.70	2.05	2.58	2.47	2.81
Calcium	mg/L	130	146	173	113	127	120	145	147	135	117 D	154 D	127 D	114 J	132
Chloride	mg/L	295 D	383 D	372 D	326	414 D	448 D	459 D	424	446 D	408	449	429	452	435
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	0.697	0.719	0.749	0.793	0.894	0.656
Sulfate	mg/L	211 D	232 D	234 D	194	218 D	227	265 D	219 X	237	237	240	205	217	193
pH - Field Collected	SU	7.19	7.12	7.12	7.02	7.06	6.16	7.05	6.89	7.12	7.12	7.31	6.43	7.15	7.14
Total dissolved solids	mg/L	1250	1240	1190	1100	1450	1440	1490	1730	1310	1210	1290	1380	1240	1380
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00173 J	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000676 J	0.000729 J	0.00123 U	0.00123 U	0.000544 J	0.000538 J	0.000478 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0607	0.0575	0.0503	0.0554	0.0783	0.0721	0.0788	0.0735	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000859 J	0.000572 J	0.00262 U	0.00262 U	0.000963 J	0.000997 J	0.00113 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00102 J	0.00109 J	0.00124 J	0.00155 J	0.00133 J	0.00153 J	0.00155 J	0.00146 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000155 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0137 J	0.0341	0.0295	0.0427	0.0252	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000690 J	0.0000263 U	0.0000490 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00779 J	0.00846	0.00875	0.0106	0.00908 J	0.00938	0.0107	0.0111	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00992 J	0.00597	0.00479	0.00521 J	0.00370 J	0.00235	0.00188 J	0.00141 J	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.198 ± 0.197	0.615 ± 0.272	0.747 ± 0.323	0.195 ± 0.167	0.294 ± 0.192	0.241 ± 0.193	0.159 ± 0.191	0.746 ± 0.274	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.1 ± 0.907	-1.37 ± 1.37	0.854 ± 0.724	1.08 ± 1.72	2.23 ± 0.949	0.658 ± 0.636	0.812 ± 0.604	1.43 ± 0.898	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-51 Upgradient													
	Sample Date	12/8/16	2/22/17	3/28/17	5/3/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	**Unit**	**Dec 2016**	**Feb 2017**	**Mar 2017**	**May 2017**	**Jun 2017**	**Jul 2017**	**Aug 2017**	**Oct 2017**	**Apr 2018**	**Oct 2018**	**Apr 2019**	**Oct 2019**	**April 2020**	**Oct 2020**
Appendix III - Detection Monitoring															
Boron	mg/L	0.512	0.517	0.473	0.565	0.512	0.525	0.453	0.509	0.465	0.347	0.489	0.648	0.627	0.668
Calcium	mg/L	267	292	322	266	261 X	232	236	256	246	149 D	328	336 D	334 J	298
Chloride	mg/L	403 D	331 D	414 D	447	424 D	455 D	384 D	375	395 D	301	559	574 D	555	493
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	0.305 J	0.291 J	0.329 J	0.405 J	0.470	0.018 U
Sulfate	mg/L	293 D	330 D	348 D	359	342 D	330 D	314 D	302	354 D	260	428	405 D	439	376
pH - Field Collected	SU	6.59	6.51	6.48	6.56	6.40	5.48	6.38	6.20	6.44	6.70	6.66	5.73	6.43	6.47
Total dissolved solids	mg/L	1650	1650	1490	1980	1530	1580	1390	1650	1320	916	1890	2150	2010	1930
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000953 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000412 J	0.000390 J	0.00123 U	0.000392 J	0.000344 J	0.000395 J	0.000418 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0655	0.0563	0.0517	0.0512	0.0534	0.0520	0.0520	0.0564	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000212 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000941 J	0.000525 U	0.00262 U	0.000657 J	0.000874 J	0.00113 J	0.00133 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000350 U	0.0000770 J	0.0000920 J	0.000350 U	0.000124 J	0.0000940 J	0.0000800 J	0.000108 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0322	0.0874	0.0790	0.0958 JX	0.0718	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.000199 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.09 ± 0.376	0.104 ± 0.122	0.618 ± 0.247	0.197 ± 0.145	0.328 ± 0.195	0.0847 ± 0.186	4.83 ± 0.763	0.682 ± 0.309	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.312 ± 0.688	1.09 ± 1.37	2.32 ± 1.45	-1.26 ± 1.37	-0.799 ± 0.928	1.57 ± 0.786	0.762 ± 0.706	0.963 ± 0.954	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-52 Downgradient													
	Sample Date	12/7/16	2/21/17	3/28/17	5/2/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/21/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	**Unit**	**Dec 2016**	**Feb 2017**	**Mar 2017**	**May 2017**	**Jun 2017**	**Jul 2017**	**Aug 2017**	**Oct 2017**	**Apr 2018**	**Oct 2018**	**Apr 2019**	**Oct 2019**	**April 2020**	**Oct 2020**
Appendix III - Detection Monitoring															
Boron	mg/L	1.66	2.11	1.63	1.51	1.33	1.43	1.46	1.71 X	1.95	1.54	1.46 X	1.65	2.05	2.21
Calcium	mg/L	169	181	189	--	145	140	162	168	175	153 D	195 DX	171 D	174 J	199
Chloride	mg/L	331 D	377 D	323 DX	320	326 D	343 D	417 D	355	360 D	326	336	320	433	408
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	0.720	0.710	0.831	0.808	0.908	0.659
Sulfate	mg/L	277 D	318 D	299 DX	290	287 D	292 D	171 D	289	278 D	292	268	288 D	315	282
pH - Field Collected	SU	7.01	6.47	6.91	6.94	6.87	5.87	6.81	6.63	6.79	6.76	6.91	6.00	6.83	6.78
Total dissolved solids	mg/L	1290	1380	1100	1250	1280	1250	1250	1220	1240	1210	1170	1270	1470	1430
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000565 J	0.000398 J	0.000425 J	0.000427 J	0.000392 J	0.000412 J	0.000448 J	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0646	0.0583	0.0519	0.0483	0.0527	0.0558	0.0565	0.0616	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000153 J	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000525 U	0.000525 U	0.000525 U	0.000841 J	0.000860 J	0.00123 J	0.00108 J	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00188 J	0.00233	0.00112 J	0.00119 J	0.00211	0.00183 J	0.00159 J	0.00189 J	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000292 J	0.000152 U	0.000152 U	0.000163 J	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0471	0.000476 U	--	0.0616	0.0605	0.0827	0.0588	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.000234	0.0000263 U	0.0000263 U	0.0000263 U	0.0000810 J	0.0000263 U	0.0000263 UX	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.00128 J	0.00115 J	0.00102 J	0.000911 J	0.000865 J	0.000843 J	0.000914 J	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.71 ± 0.465	0.608 ± 0.289	0.296 ± 0.169	0 ± 0.150	0.435 ± 0.241	0.449 ± 0.196	0.194 ± 0.194	0.704 ± 0.319	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.65 ± 1.12	0.744 ± 0.833	0.0645 ± 0.649	0.53 ± 1.10	0.928 ± 0.784	1.16 ± 0.867	0.716 ± 0.767	1.54 ± 1.22	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-53 Downgradient													
	Sample Date	12/8/16	2/23/17	3/29/17	5/2/17	6/21/17	7/26/17	8/30/17	10/11/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	1.50	1.38	1.55	1.54	1.47	1.45	1.36	1.45	1.60	1.61	1.42	1.36	1.43	1.47
Calcium	mg/L	134	105	156	NR	94.1	97.0	99.0	113	113	111 D	116	123 D	114 J	117
Chloride	mg/L	383 D	336 D	315 D	322	335 D	329 X	341	313	361	350	354	342	381	359
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	0.392 J	0.265 J	0.270 J	0.352 J	0.428	0.018 U
Sulfate	mg/L	283 D	267 D	238 D	241	236 D	234 X	227	214	249	236	224	213	244	224
pH - Field Collected	SU	6.80	6.63	6.54	6.56	6.67	6.69	6.62	6.50	6.67	6.65	6.60	5.60	6.67	6.60
Total dissolved solids	mg/L	1390	1250	1160	1180	1150	1220	1150	1140	1160	1140	1150	1250	1160	1320
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000284 J	0.000266 J	0.000274 J	0.000276 J	0.000246 U	0.000246 U	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0692	0.0633	0.0633	0.0623	0.0597	0.0638	0.0541	0.0617	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000701 J	0.000525 U	0.000525 U	0.000525 U	0.000557 J	0.000906 J	0.000525 U	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000356 J	0.000140 J	0.000135 J	0.000165 J	0.000137 J	0.000150 J	0.000163 J	0.0000699 U	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.0279	0.0816	0.000476 U	NR	0.0931	0.104	0.125	0.109	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000780 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000470 JX	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000290 J	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.306 ± 0.261	0.909 ± 0.363	0.117 ± 0.211 U	0.519 ± 0.221	0.558 ± 0.232	0.385 ± 0.244	2.76 ± 0.582	0.451 ± 0.270	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.09 ± 1.24	2.33 ± 1.13	1.81 ± 1.61	0.906 ± 1.02	-0.0622 ± 0.583	1.9 ± 1.24	1.44 ± 0.713	0.919 ± 0.853	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-54 Downgradient													
	Sample Date	12/8/16	2/23/17	3/28/17	5/2/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/9/19	10/22/19	4/28/20	10/20/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020	Oct 2020
Appendix III - Detection Monitoring															
Boron	mg/L	1.24	1.16	1.35	1.26	1.14	1.26	1.16	1.28	1.26	1.30	1.38	1.50	1.23	1.31
Calcium	mg/L	114	106	160	--	103	102	95.8	113	111	98.2 D	117	117 D	118 J	129
Chloride	mg/L	345 D	350 D	353 D	344	355 D	354 D	339 D	328	382	356	385	368	380	383
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	0.742	0.643	0.711	0.773	0.861	0.455
Sulfate	mg/L	308 D	312 D	315 D	312	304 D	305 D	298 D	287	309	283	309	341 D	443	398
pH - Field Collected	SU	6.98	6.78	6.92	6.89	6.88	6.91	6.79	6.69	6.86	6.85	6.75	5.60	6.76	6.74
Total dissolved solids	mg/L	1370	1430	1310	1310	1410	1320	1360	1500	1230	1240	1470	1470	1570	1530
Appendix IV - Assessment Monitoring															
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000369 J	0.000898 J	0.000351 J	0.000354 J	0.000484 J	0.000324 J	0.000246 U	NR	NR	NR	NR	NR	NR
Barium	mg/L	0.0631	0.0564	0.0611	0.0537	0.0543	0.0593	0.0471	0.0558	NR	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000162 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000657 J	0.00186 J	0.000525 U	0.000525 U	0.000693 J	0.000765 J	0.000525 U	NR	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000420 J	0.000212 J	0.00199 J	0.000253 J	0.000260 J	0.000532 J	0.000334 J	0.0000699 U	NR	NR	NR	NR	NR	NR
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	NR	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000862 J	0.000152 U	0.000152 U	0.000241 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0452	0.00238 U	--	0.0595	0.0599	0.0712	0.0608	NR	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000620 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000447 J	0.000367 J	0.000377 J	0.000342 J	0.000352 J	0.000260 J	0.000255 U	NR	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.88 ± 0.339	0.878 ± 0.358	0.546 ± 0.213	0.217 ± 0.217	0.433 ± 0.249	0.313 ± 0.254	0.926 ± 0.324	0.42 ± 0.205	NR	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.12 ± 1.11	1.94 ± 1.01	0.429 ± 0.781	0.574 ± 1.41	0.451 ± 0.660	0.766 ± 1.29	1.48 ± 0.968	1.17 ± 0.827	NR	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

PLANT DRAINS POND

Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Plant Drains Ponds

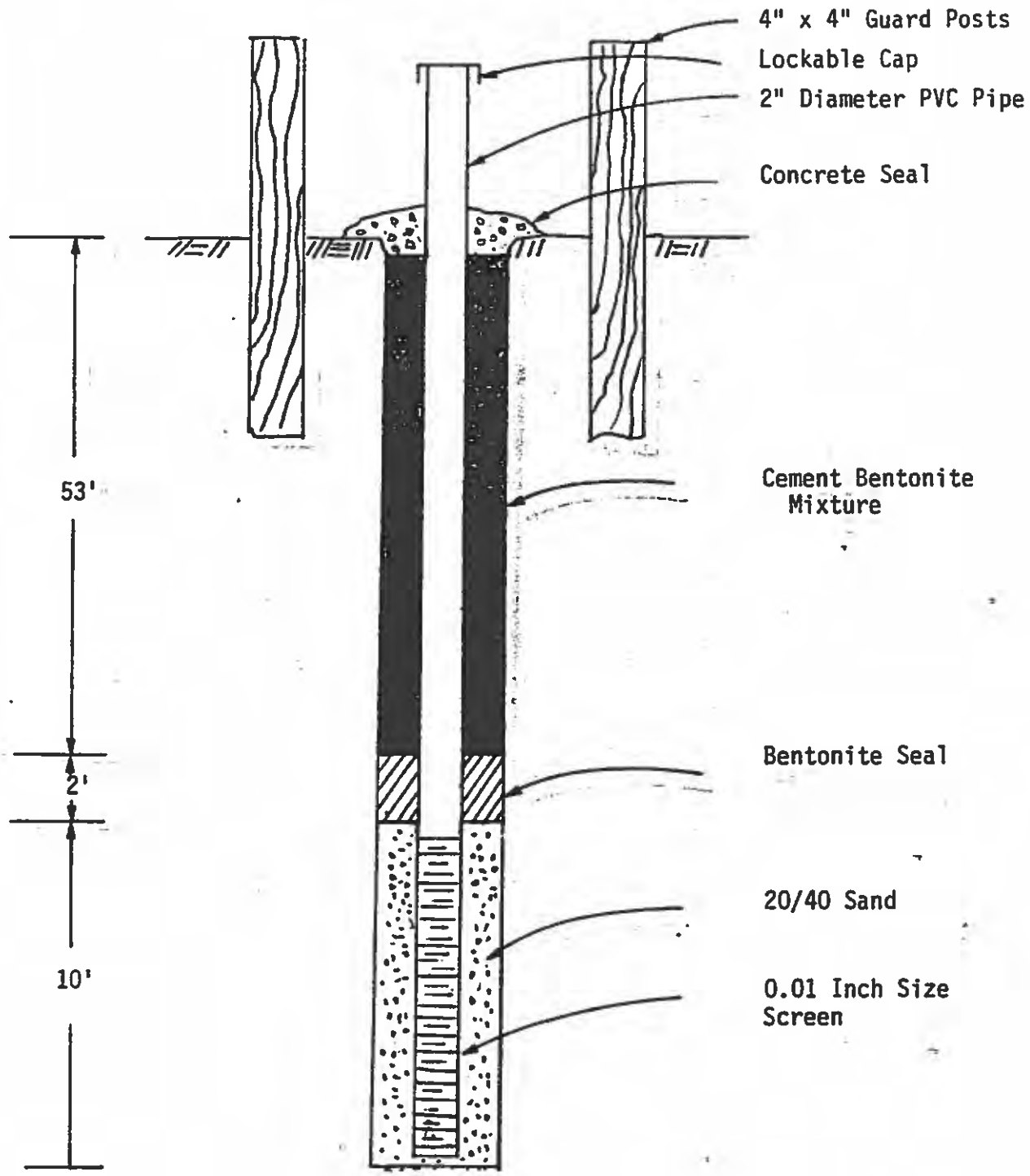
		JKS-65				JKS-66				JKS-67			
	Sample Date	10/21/20	04/13/21	10/19/21	04/13/22	10/21/20	04/13/21	10/19/21	04/13/22	10/21/20	04/13/21	10/19/21	04/13/22
	Task	Event 1	Event 2	Event 3	Event 4	Event 1	Event 2	Event 3	Event 4	Event 1	Event 2	Event 3	Event 4
Constituents	**Unit**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**	**Oct 2020**	**Apr 2021**	**Oct 2021**	**Apr 2022**
Appendix III - Detection Monitoring													
Boron	mg/L	0.276	0.271	0.280	0.254	0.586	0.524	0.589	0.487	0.503	0.460	0.538	0.472
Calcium	mg/L	39.0	25.2	23.8	22.9	44.0	42.0	42.5	39.5	59.7	56.9	52.2	51.6
Chloride	mg/L	140	119	110	115	22.3	26.2	24.2	21.7	64.4	64.6	49.9	59.3
Fluoride	mg/L	0.495	0.578	0.018 U	0.951	0.128	0.131	0.176 U	0.202	0.267	0.307	0.018 U	0.478
Sulfate	mg/L	82.0	68.5	68.4	63.8	62.0	72.0	76.2	73.2	61.6	56.6	55.5	58.2
pH - Field Collected	SU	6.74	6.47	6.48	6.51	6.41	6.16	6.22	6.22	7.00	6.78	6.73	6.82
Total dissolved solids	mg/L	727	579	575	603	355	352	371	398	516	539	529	560
Appendix IV - Assessment Monitoring													
Antimony	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic	mg/L	0.003 J	0.002 J	0.002 J	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 J	0.002 U	0.002 U
Barium	mg/L	0.033	0.026	0.027	0.025	0.060	0.065	0.071	0.070	0.068	0.068	0.079	0.074
Beryllium	mg/L	0.0003 U	0.0003 U	0.0003 U	0.0003 J	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 J
Cadmium	mg/L	0.0003 J	0.0003 J	0.0004 J	0.0005 J	0.0003 J	0.0003 J	0.0004 J	0.0004 J	0.0003 J	0.0003 U	0.0004 J	0.0005 J
Chromium	mg/L	0.001 J	0.001 J	0.053	0.006 J	0.001	0.002 J	0.006 J	0.043	0.001 J	0.001 U	0.001 J	0.001 J
Cobalt	mg/L	0.0003 U	0.0003 U	0.0003 J	0.0003 U	0.002	0.0003 U	0.0003 U	0.002 J	0.0003 U	0.0003 U	0.0003 U	0.0003 U
Fluoride	mg/L	0.495	0.578	0.018 U	0.951	0.003	0.131	0.176 U	0.202	0.267	0.307	0.018 U	0.478
Lead	mg/L	0.004 J	0.006 J	0.007 J	0.006 J	0.002 J	0.004 J	0.005 J	0.004 J	0.003 J	0.002 J	0.004 J	0.003 J
Lithium	mg/L	0.046 J	0.063	0.054	0.055	0.023 J	0.033 J	0.027 J	0.033 J	0.050 U	0.022 J	0.016 J	0.050 U
Mercury	mg/L	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Molybdenum	mg/L	0.002 U	0.002 U	0.005 J	0.002 U	0.002 U	0.002 U	0.002 J	0.003 J	0.002 U	0.002 U	0.002 U	0.002 U
Selenium	mg/L	0.017	0.015	0.014	0.010 J	0.005 J	0.004 J	0.005 J	0.003 J	0.005 J	0.008 J	0.003 J	0.002 U
Thallium	mg/L	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U
Radium-226	pCi/L	0.422 ± 0.213	0.296 ± 0.128	0.364 ± 0.280	0.0995 ± 0.108	0.457 ± 0.215	0.475 ± 0.159	2.58 ± 0.540	0.0748 ± 0.235	0.325 ± 0.186	0.208 ± 0.111	0.253 ± 0.177	0.127 ± 0.113
Radium-228	pCi/L	1.77 ± 0.366	0.457 ± 0.269	0.331 ± 0.322	1.13 ± 0.395	1.76 ± 0.336	0.403 ± 0.264	4.40 ± 0.699	1.04 ± 0.697	0.711 ± 0.313	0.190 ± 0.241	0.280 ± 0.223	0.252 ± 0.281

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
U: Analyte not detected at laboratory reporting limit (RL).

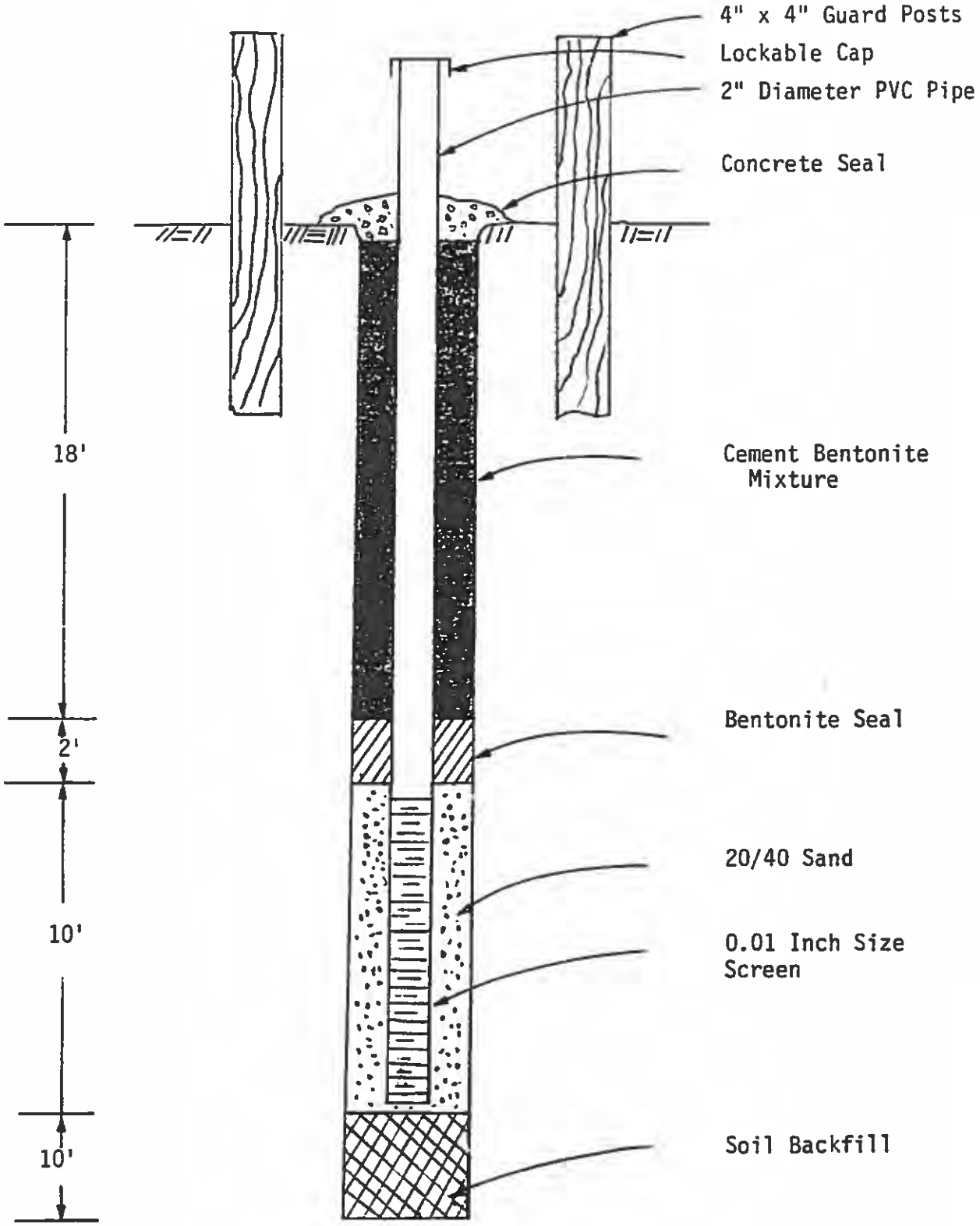
Attachment 3-4

WELL CONSTRUCTION DIAGRAMS AND DRILLING LOGS

Professional Service Industries



PROJECT NAME		
CALAVERAS PLANT - UNITS 5 AND 6 LANDFILL AREA EXPLORATION San Antonio, Texas	Monitor Well No. B-31	
	PROJECT NO. 312-75036	DATE 7-9-87

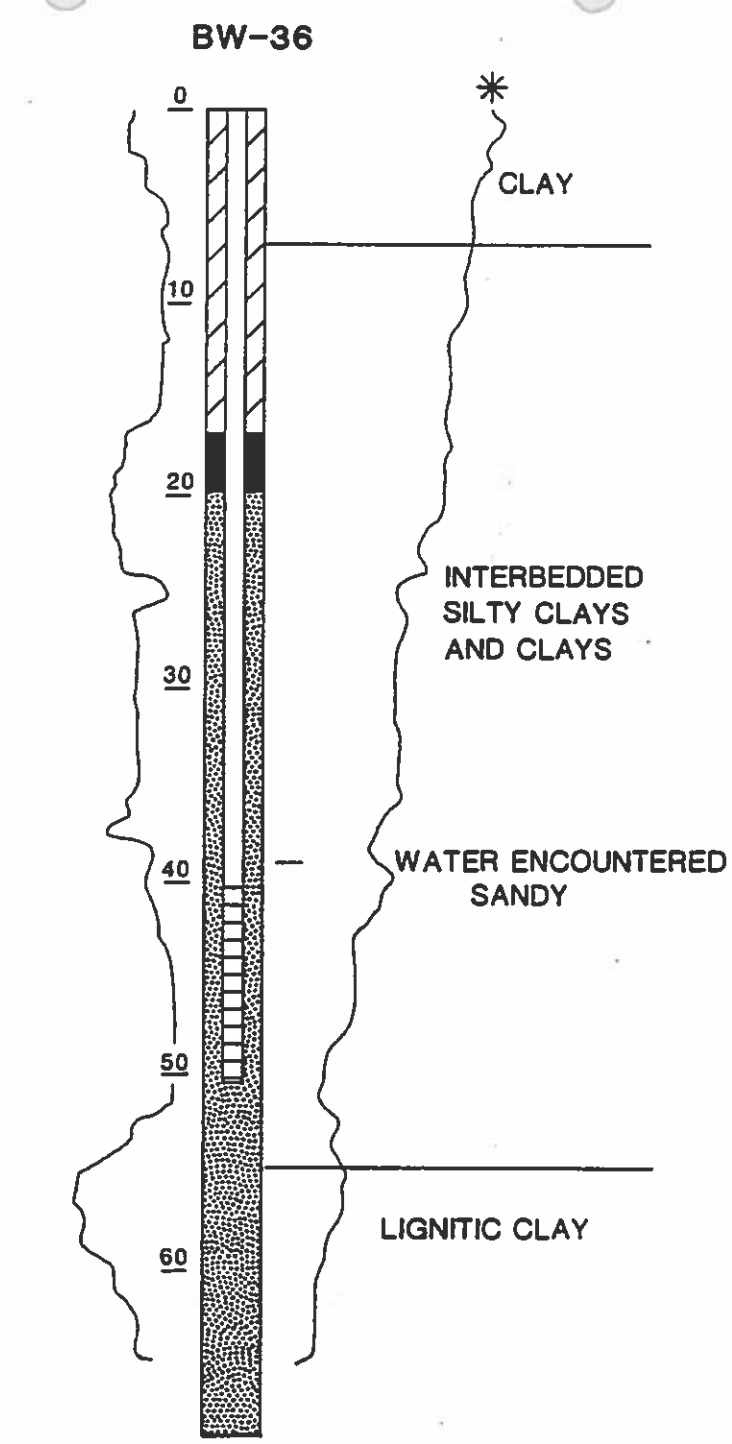


PROJECT NAME

CALAVERAS PLANT - UNITS 5 AND 6
LANDFILL AREA EXPLORATION
San Antonio, Texas

Monitor Well No. B-33

PROJECT NO	DATE
312-75036	7-9-87



*Calibration problem on resistivity curve

ESPEY, HUSTON & ASSOCIATES, INC.
Engineering & Environmental Consultants

FIGURE A-2
MONITORING WELL BW-36
GEOPHYSICAL/LITHOLOGIC LOGS

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
528.31	0			0		0-5	NO RECOVERY: Previously excavated by hydrovac truck.
525	5			100		5-7	SILTY CLAY: Brown; dry to damp; medium stiff; medium plasticity; some white calcareous concretions present. At 5.5' bgs: Slight orange mottling. At 6' bgs: White silt lens.
520	10			50		7-10	CLAY: Grey; dry to damp; stiff; medium to high plasticity; minor silt content at depth; white calcareous concretions throughout. At 7.5' bgs: Orange mottling. At 9' bgs: Yellowish orange silt lens.
515	15			75		10-12.5	SILT: Alternating light grey and yellowish brown, stratified with orange, yellow, and red; damp; loose.
510	20					12.5-15	NO RECOVERY.
						15-22	SILT: Brownish light grey; damp; loose to medium dense; some yellow stringers. At 16' bgs: Alternating pinkish brown stratifications (2" thick). At 16.5' bgs: Orange band (2" thick). At 17.5' bgs: Orange band (1" thick). At 19' bgs: Light grey and pinkish brown laminations; minor clay content; occasional orange silt stringers.

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST
9/14/22

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
505	20			75		22-25	CLAYEY SILT: Pinkish brown laminated with light grey; dry to damp; medium dense to dense; slight plasticity; trace yellow and orange silt stringers.
	25					25-34.5	SILTY CLAY: Dark reddish brown; dry to damp; medium stiff; high plasticity; fractures along planar surfaces.
				100	JKS-45_28-30 **USCS:** Fat Clay (CH) **AL:** 61 / 22 / 39 **-200 Sieve:** 91.6		At 25.5' bgs: Light grey silt lens (2" thick). At 28' bgs: Light grey silt stringers; yellow silt stringers and minor gypsum crystals from 28' to 30' bgs. Non-cohesive grab sample collected from 28'-30' bgs.
500	30						
				100			At 31.5' bgs: Dry; yellow silt stringers; abundant yellowish orange silt stringers to 32' bgs. At 33.5' bgs: Trace gypsum crystals.
495	35					34.5-35	SILT: Dark pinkish brown laminated with greyish brown; dry; dense; some clay content.
						35-36	SILTY CLAY: Very dark reddish brown; damp to moist; medium stiff; high plasticity; trace yellow silt; minor gypsum crystals; brownish black band (2" thick) at 35' bgs.
				100	JKS-45_36-38 **USCS:** Fat Clay (CH) **AL:** 67 / 24 / 43 **-200 Sieve:** 90.5	36-38	CLAY: Pinkish grey; dry; very stiff to hard; very high plasticity (fat). Non-cohesive grab sample collected from 36'-38' bgs.
490						38-43	At 36.5' bgs: Yellow and orange silt stringers to 37.5' bgs. SILT: Orangish brown; dry to damp; medium dense to dense; slight plasticity; slight clay content.
	40						

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ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40			80			At 38.75' bgs: Brownish black band (1.5" thick). At 39.25' bgs: Yellow silt stringers. At 39.5' bgs: Color change to brownish grey; very dense; increased clay content. At 40' bgs: Yellow and orange silt stringers to 43' bgs; some compacted silt pieces to 43' bgs.
485						43-45	CLAYEY SILT: Dark reddish brown; damp; medium dense; slight plasticity; orange silt stringers throughout.
	45			50		45-55	At 44.5' bgs: Trace fine-grained sand content. SAND: Light grey to grey stratified with yellow, orange and red; wet to saturated; fine-grained to medium grained with depth; sub-rounded; well sorted; loose; minor clay lenses (1/16" to 1/8" thick).
480							At 48' bgs: Color change to orangish brown with orange laminations; no clay content.
	50			50	JKS-45_50-52 **USCS:** Silty Sand (SM) **AL:** Non-plastic **-200 Sieve:** 12.6		At 49.5' bgs: Intermixed red color to 50' bgs. At 50' bgs: Color change to pinkish brown. Non-cohesive grab sample collected from 50'-52' bgs.
475							
	55				JKS-45_55-57 **USCS:** Fat Clay (CH) **AL:** 75 / 28 / 47 **-200 Sieve:** 97	55-62	At 54.5' bgs: Brownish orange band (2" thick). CLAY: Dark grey; damp; stiff to very stiff; very high plasticity (fat); occasional light grey silt stringers; fractures along silt stringers. Non-cohesive sample collected from 55'-57' bgs.
470				100			
	60						

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9/14/22

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	60				JKS-45_60-62 **USCS:** Fat Clay (CH) **AL:** 75 / 26 / 49 **-200 Sieve:** 86.4 **k:** 1.82×10^{-8}		Cohesive sample (Shelby tube) collected from 60'-62' bgs.
				100			Boring terminated at 62' bgs.
465	65						
460	70						
455	75						
450	80						

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST
9/14/22

STATE OF TEXAS WELL REPORT for Tracking #424209

Owner:	**CPS Energy**	Owner Well #:	**JKS-45**
Address:	**PO Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station San Antonio, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**528 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**62**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**38**	**56**	**Sand**	**20/40**

Annular Seal Data: **No Data**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**52**	**62**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	Ash
5	8	Lt brn sandy clay
8	14	lt gry sandy clay
14	20	Lt gray sand
20	40	Brn silty clay
40	45	Lt gray sand
45	55	yellow/org silty sand
55	62	Green/gray clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	40
2	Screen	New Plastic (PVC)	40 10	40	55

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

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ERM Environmental Resources Management

JKS-46 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-46 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13667810.11' E. Coord. 2187972.31' Surface Elevation 495.75 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 499.08 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 19.38 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
495.75	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
495				0			
	5					5-8	CLAYEY SAND: Reddish orange; damp to moist; fine-grained; sub-round; well-sorted; medium dense; slight to low plasticity; some silt content.
490				100		8-10	At 7.5' bgs: Dense grey clay lenses (1/2" thick). SANDY CLAY: Reddish orange; medium stiff; slight to low plasticity; minor silt content; dense grey clay lenses (1/2" thick); yellow and yellowish orange silt stringers.
	10					10-11	At 9.5' bgs: Increased silt content. CLAY: Grey; dry; stiff; medium plasticity; minor silt content; fractures along tan silt to fine-grained sand stringers.
485						11-15	SAND: Tan; damp; fine-grained; sub-round, well sorted; loose.
				75			At 13' bgs: Striated with pink and orange.
	15					15-19.5	At 14' bgs: Color change to reddish orange; some silt content; occasional clay lenses. At 14.75' bgs: Orange silt lens. SILT: Red with orange; damp to dry; loose; slight plasticity. At 15.5' bgs: Color change to grey. At 15.75' bgs: Color change to red. At 16' bgs: Color change to tan with yellow; fractures along planar surfaces. At 17' bgs: Moist.
480				85			At 18.75' bgs: Color change to red and orange.
	20					19.5-25	SAND: Tan; moist; fine-grained, coarsens with depth; sub-round; well sorted; loose; minor silt and trace clay; orange and yellow silt stringers.

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ERM Environmental Resources Management

JKS-46
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-46 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13667810.11' E. Coord. 2187972.31' Surface Elevation 495.75 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 499.08 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 19.38 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
475	20			75	No Samples Collected		At 20' bgs: Color change to brownish tan with orange band (2" thick) at 20.25' bgs. At 21.5' bgs: Color change to tannish grey with yellowish orange band (2" thick). At 22.5' bgs: Color change to tan stratified with pinkish orange and orange.
470	25			100		25-30	CLAY: Dark greyish brown; damp to dry; very stiff; high to very high plasticity (fat); fractures along planar surfaces; Light grey and yellowish orange silt lenses throughout.
465	30						At 29.75' bgs: Dark grey silt lenses; some very small gypsum crystals. Boring terminated at 30' bgs.
460	35						
	40						

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STATE OF TEXAS WELL REPORT for Tracking #424210

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-46**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**496 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**13**	**25**	**Sand**	**20/40**

Annular Seal Data: **No Data**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**26**	**30**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN SANDY CLAY
8	14	LT GRY CLAY
14	28	LT GRY SAND
28	30	BRN CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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ERM Environmental Resources Management

JKS-47 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

N. Coord. 13665709.79' E. Coord. 2186503.87' Surface Elevation 510.28 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
510.28	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
510				0			
505	5					5-9.5	CLAYEY SILT: Pinkish brown with grey; damp to moist; loose; slight to low plasticity; occasional yellow and orange silt lenses. At 5.5' bgs: Clay lens (2" thick).
				50			
							At 9.25' bgs: Clay lens (2" thick).
500	10					9.5-20	SILT: Light grey; damp; medium dense; slight plasticity; minor clay content, decreases with depth; abundant yellow and orange silt stringers; fractures along planar surfaces. At 10' bgs: Striated with pinkish brown to 12' bgs.
				90			
							At 12.5' bgs: No clay content. At 13' bgs: Color change to tan; dry; yellow and orange silt stringers.
495	15						
				50			
	20						

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ERM Environmental Resources Management

JKS-47
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

N. Coord. 13665709.79' E. Coord. 2186503.87' Surface Elevation 510.28 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
490	20			75	No Samples Collected	20-23	At 20' bgs: Whitish tan striated with yellow; minor fine-grained sand content. SANDY SILT: Whitish tan; dry; loose; occasional yellow and orange silt stringers, occurrence increases with depth.
						23-48	SAND: Whitish tan; dry to moist with depth; fine-grained; sub-round; well sorted; minor yellow and orange silt stringers; thin clay pinkish brown to brown clay laminations to 23.25' bgs.
485	25			50			At 25' bgs: Color change to tannish brown; very moist.
480	30			100			At 30' bgs: Saturated; Orange band (1" thick) at 30.25' bgs.
475	35			50			At 34' bgs: Orange striations to 35' bgs. At 35' bgs: Trace orange silt stringers.
	40						

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ERM Environmental Resources Management

JKS-47
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

N. Coord. 13665709.79' E. Coord. 2186503.87' Surface Elevation 510.28 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	40				No Samples Collected		At 40' bgs: Clayey sand lens (2" thick). At 40.5' bgs: Occasional pinkish brown silt stringers to 41' bgs. At 14.5' bgs: Abundant yellowish orange silt stringers to 42.5' bgs.
				75			At 41.5' bgs: Orange and brown laminated silt stringers to 43' bgs.
465	45						At 44' bgs: Medium-grained; no silt content.
				100			At 46' bgs: Orangish brown silt layer (1/2" thick). At 46.5' bgs: Color change to greyish tan; fine to medium-grained with decreasing grain size with depth.
460	50						Boring terminated at 48' bgs.
455	55						
	60						

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STATE OF TEXAS WELL REPORT for Tracking #424211

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-47**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 18' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**510 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**48**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**23**	**41**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**23**	**Bentonite 15 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **No Data**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**41**	**48**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN SANDY CLAY
8	14	LT GRAY SANDY CLAY
14	20	LT GRAY SAND
20	40	BRN SILTY CLAY
40	48	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	25
2	Screen	New Plastic (PVC)	40 10	25	40

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ERM Environmental Resources Management

JKS-48 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-48 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13659658.78' E. Coord. 2186490.78' Surface Elevation 493.71 ' Ft MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.50 ' Sump Length 0 '

Top of Casing Elevation 497.19 ' Stickup 3.48 '

Depth to Water: 1. Ft. btoc 11.28 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.71	0			0		0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			100		5-6	CLAYEY SILT: Orangish brown; damp; medium dense to dense; slight to low plasticity. At 5.5' bgs: Brown band (2" thick). At 5.75' bgs: Color change to brown; damp to dry; minor clay content; fractures along planar surfaces.
						6-6.5	SILTY CLAY: Orangish brown heavily mottled with grey and orange; damp; stiff; medium plasticity; occasional grey and orange silt stringers.
						6.5-7	SILT: Brownish tan with grey and orange; damp; medium dense; slight plasticity; trace clay.
						7-7.5	SILTY CLAY: Orangish brown heavily mottled with grey and orange; damp; stiff; medium plasticity; occasional grey and orange silt stringers.
485	10			75	JKS-48_10-12.5 **USCS:** Clayey Sand (SC) **AL:** 35 / 16 / 19 **-200 Sieve:** 44.6	7.5-12.5	CLAYEY SILT: Brown; damp to moist; medium dense; low plasticity; light grey and orange silt stringers. At 9' bgs: Dense silty clay layer (2" thick). At 9.25' bgs: Dense silty clay layer (2" thick). Non-cohesive grab sample collected from 10'-12.5' bgs. At 10.5' bgs: Dense silty clay layer (2" thick).
480	15			80	JKS-48_15-16.5 **USCS:** Sandy Lean Clay (CL) **AL:** 48 / 19 / 29 **-200 Sieve:** 58.9	12.5-15	SAND: Brownish grey; damp to moist; fine-grained; sub-angular; moderately sorted; loose; minor silt content. At 13.5' bgs: Dense clay lens (1" thick). At 14.5' bgs: Color change to dark brown.
						15-16.5	CLAY: Brownish orange heavily mottled with dark brown, orange, and orangish red; moist; stiff; high plasticity; trace silt content, increases with depth; orange silt stringers. Non-cohesive grab sample collected from 15'-16.5' bgs.
						16.5-19	CLAYEY SILTY SAND: Brownish tan; very moist; loose to medium dense; slight plasticity; decreasing clay content with depth; occasional orange silt stringers. At 16.5' bgs: Wet.
475	20				JKS-48_19-20 **USCS:** Clayey Sand (SC) **AL:** 26 / 16 / 10 **-200 Sieve:** 48.7	19-20	SAND: Orangish brown; very moist to wet; fine-grained; sub-angular; moderately sorted; loose; minor silt content, decreases with depth; laminated with light grey clay to 19.25' bgs. Non-cohesive grab sample collected from 19'-20' bgs.

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ERM Environmental Resources Management

JKS-48 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-48 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13659658.78' E. Coord. 2186490.78' Surface Elevation 493.71 ' Ft MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.50 ' Sump Length 0 '

Top of Casing Elevation 497.19 ' Stickup 3.48 '

Depth to Water: 1. Ft. btoc 11.28 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			50		20-22.5	SILTY SAND: Orangish brown; saturated; fine to very-fine grained; sub-angular, poorly sorted; loose; minor clay content. At 20.25' bgs: Thin grey clay laminations.
						22.5-25	SAND: Tannish brown with grey; saturated; fine-grained; sub-angular; moderately sorted; loose; some silt content; orange silt stringers.
	25						At 24.5' bgs: Orange silt lens to 24.75' bgs.
						25-27.5	INTERBEDDED SILTY SAND AND CLAY: Tannish grey; saturated; medium dense; laminated silty fine-grained sand with pinkish brown clay; clay laminations fracture along planar surfaces; yellow and orange silt stringers throughout.
465				50		27.5-30	CLAYEY SILTY SAND: Tannish grey; saturated; loose; slight plasticity; orange 1/16" thick silt laminations throughout.
	30						At 29.5' bgs: Pinkish brown (1/16" thick) clay laminations to 30' bgs.
							Refusal (bedrock) encountered at 30' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST
9/14/22

STATE OF TEXAS WELL REPORT for Tracking #424212

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-48**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**494 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**16.5**	**20.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**16.5**	**Bentonite 15 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**29.5**	**30**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**
112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	20	LT GRAY SAND
20	30	BRN SILTY CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	18.5
2	Screen	New Plastic (PVC)	40 10	18.5	28.5

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
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ERM Environmental Resources Management

JKS-49 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-49 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 19.00 ' Boring Diam. 8.25 "

N. Coord. 13660519.40' E. Coord. 2186229.15' Surface Elevation 495.17 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 498.63 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 9.32 (2016-05-31) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
495.17	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			50		5-6	SAND: Greyish tan; very moist; fine-grained; sub-angular; moderately sorted; loose; orange silt stringers.
						6-10	SILT: Greyish tan; very moist; loose; minor fine-grained sand; occasional yellow silt stringers.
485	10			100		10-15	At 9.5' bgs: Color change to light brown; wet; orange silt stringers. SAND: Light brown; wet; fine-grained; sub-angular; moderately sorted; loose to medium dense; minor silt content; abundant orange silt stringers. At 11.75' bgs: Orange silt lens (2" thick); trace silt stringers. At 12' bgs: Decreasing silt content.
480	15			100		15-16.5	At 14' bgs: Color change to greyish tan. SANDY SILT: Light brown; wet to saturated; loose; occasional orange silt stringers.
						16.5-19	At 16.5' bgs: Pinkish brown clay lens (3/16" thick). SILT: Brownish orange; wet to saturated; loose; non-plastic; minor fine-grained sand content. At 17.5' bgs: Color change to light brown. At 18.25' bgs: Color change to orange; pinkish brown clay lens (1/16" thick). At 18.5' bgs: Minor orange and red sandstone pieces, occurrence increases at depth.
475	20						Refusal (bedrock) encountered at 19' bgs.

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
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9/14/22

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

STATE OF TEXAS WELL REPORT for Tracking #424213

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-49**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**495 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**19**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7**	**17**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**7**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**18**	**19**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	19	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	7
2	Screen	New Plastic (PVC)	40 10	7	17

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ERM Environmental Resources Management

JKS-50 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-50 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 14.00 ' Boring Diam. 8.25 "

N. Coord. 13660122.87' E. Coord. 2186836.72' Surface Elevation 494.87 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 7.50 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 2.50 ' Sump Length 0 '

Top of Casing Elevation 498.20 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 11.76 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.87	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			80		5-7.75	SILTY CLAY: Orangish brown heavily mottled with light grey, brown, and tan; damp; stiff; medium to high plasticity; increasing silt content with depth; orange silt stringers. At 6' bgs: Tan silt lens (2" thick).
						7.75-8.25	At 7.5' bgs: Color change to brownish orange; minor fine-grained sand content.
						8.25-9.25	SAND: Tan; damp; fine-grained, sub-angular; moderately sorted; dense; minor silt content; occasional orange silt stringers.
485	10			25		9.25-10	SILTY CLAY: Orangish brown mottled with grey, brown, red and occasional yellow; damp; stiff; medium plasticity; orange silt stringers throughout.
						10-13	SILT: Tan; moist; loose; trace orange silt stringers. At 9.75' bgs: Soft clay lens (3/16" thick). NO RECOVERY.
						13-13.75	SILTY CLAY: Brown; saturated; loose; low plasticity; orange silt stringers; sandstone pieces (3/8" thick) near 13.75' bgs.
480	15					13.75-14	SANDSTONE: Brownish orange laminated with orange, tan, and dark brown. Refusal (bedrock) encountered at 14' bgs.
475	20						

STATE OF TEXAS 9/14/22 Nicholas Houtchens GEOLOGY No. 11108 LICENSED PROFESSIONAL GEOSCIENTIST

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

STATE OF TEXAS WELL REPORT for Tracking #424216

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-50**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**489 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**14**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**1.5**	**10**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0.5**	**1.5**	**Bentonite 1 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**10**	**14**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	15	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	2.5
2	Screen	New Plastic (PVC)	40 10	2.5	10

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ERM Environmental Resources Management

JKS-50R DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-50R Date Drilled 2016-10-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 22.50 ' Boring Diam. 8.25 "

N. Coord. 13660149.90' E. Coord. 2186841.92' Surface Elevation 494.96 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 9.50 ' Sump Length 0 '

Top of Casing Elevation 498.48 ' Stickup 3.52 '

Depth to Water: 1. Ft. btoc 12.67 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.96	0				No Samples Collected	0-15	See boring log JKS-50 from 4/6/16.
				0			
490	5						
				0			
485	10						
				0			
480	15					15-17.5	CLAYEY SAND: Light brown; wet; loose; trace dark gray sandy clay content; very coarse gravel (2" diam.) present.
				50		17.5-22.0	CLAYEY SILTY SAND: Light brown; saturated; loose; light gray pieces of clay; few large (2" diam.) very coarse (2" diam.) angular rocks present.
475	20						

STATE OF TEXAS
NGH 9/14/22
Nicholas Houtchens
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Environmental Resources Management

JKS-50R
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-50R Date Drilled 2016-10-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 22.50 ' Boring Diam. 8.25 "

N. Coord. 13660149.90' E. Coord. 2186841.92' Surface Elevation 494.96 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 9.50 ' Sump Length 0 '

Top of Casing Elevation 498.48 ' Stickup 3.52 '

Depth to Water: 1. Ft. btoc 12.67 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

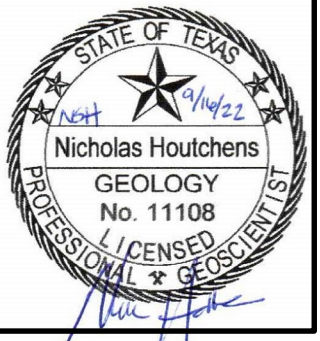
Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					22-22.5	CLAYEY SAND: Brownish gray; dry to damp; loose. Boring terminated at 22.5' bgs.
				50			
470	25						
465	30						
460	35						
455	40						



STATE OF TEXAS WELL REPORT for Tracking #443567

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-50R**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **10/7/2016** Drilling End Date: **10/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**19.5**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7.5**	**19.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**7.5**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	17.5	Clayey sand -light brown
17.5	19.5	Clayey silty sand - light brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	9.5
2	Screen	New Plastic (PVC)	40 10	9.5	19.5

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P.O. Box 12157
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ERM Environmental Resources Management

JKS-51 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-51 Date Drilled 2016-04-07

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 29.50 ' Boring Diam. 8.25 "

N. Coord. 13660243.53' E. Coord. 2185630.39' Surface Elevation 494.04 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 496.92 ' Stickup 2.88 '

Depth to Water: 1. Ft. btoc 10.56 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.04	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			60		5-6.5	SILTY CLAY: Light brown with occasional orange mottling; wet; soft; low plasticity; occasional gravel (1/16" thick).
						6.5-10	SAND: Light brown; very moist; fine-grained; sub-angular; moderately sorted; medium dense; slight plasticity; minor silt and clay content. At 7.5' bgs: Clay lenses (up to 3/4" thick) to 8.5' bgs. At 8.5' bgs: Occasional orange silt stringers to 9.5' bgs. At 9' bgs: Clay lamina (1/16" thick) to 10' bgs. At 9.5' bgs: Wet.
485	10			100		10-15	SILT: Light brown; wet; medium dense; low plasticity; laminated with grey clay (1/16" to 3/16" thick) throughout; minor fine-grained sand; orange silt stringers throughout. At 12.5' bgs: Sand lens (2" thick). At 13.5' bgs: Sand lens (2" thick); fractures in planar surfaces to 14.5' bgs. At 14' bgs: Occasional thin clay lamina to 15' bgs. At 14.5' bgs: Color change to light grey.
480	15			100		15-17.75	CLAY: Pinkish grey; moist; medium stiff; low to medium plasticity; laminated with orange and grey silt (up to 3/4" thick) throughout.
						17.75-18.25	CLAY: Grey; moist; medium stiff; low plasticity; trace silt content; abundant orange silt stringers.
						18.25-19.75	SILTY SAND: Light brown; wet to saturated; very fine to fine-grained; sub-angular; poorly sorted; loose. At 19.25' bgs: Pinkish grey clay lens (2" thick); thin red silt lens below clay; occasional orange silt stringers.
475	20					19.75-26.5	SAND: Light grey; wet; fine-grained; sub-angular; moderately sorted; loose; occasional orange silt stringers.

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ERM Environmental Resources Management

JKS-51 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-51 Date Drilled 2016-04-07

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 29.50 ' Boring Diam. 8.25 "

N. Coord. 13660243.53' E. Coord. 2185630.39' Surface Elevation 494.04 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 496.92 ' Stickup 2.88 '

Depth to Water: 1. Ft. btoc 10.56 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100	No Samples Collected		At 21.25' bgs: Red silt lens (1/16" thick); abundant orange silt stringers.
	25			100			At 24' bgs: Minor silt and trace clay content.
465	30					26.5-27.75	At 26.25' bgs: Reddish orange silt lens (1/16" thick). SANDY SILT: Tannish light grey; wet; loose; slight plasticity; occasional yellow and orange silt stringers.
						27.75-28	At 27.5' bgs: Trace clay content.
460	35					28-29.5	CLAY: Dark brown mottled with tannish brown; moist; stiff; very high plasticity (fat); brown silt stringers throughout.
455	40						SAND: Tannish light grey; wet; fine-grained; sub-angular; moderately sorted; loose; trace silt, occurrence decreases with depth; abundant orange silt stringers. At 29.25' bgs: Color change to light brown; occasional orange silt stringers. Refusal (bedrock) encountered at 29.5' bgs.

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STATE OF TEXAS WELL REPORT for Tracking #424218

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-51**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**491 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**29.5**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**5**	**23**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**5**	**Bentonite 3 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**23**	**29.5**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	20	LT GRAY SAND
20	24	BRN SITY CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	7
2	Screen	New Plastic (PVC)	40 10	7	22

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

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ERM Environmental Resources Management

JKS-52 DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-52 Date Drilled 2016-09-01

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.50 ' Boring Diam. 8.25 "

N. Coord. 13659683.26' E. Coord. 2186139.05' Surface Elevation 493.56 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 19.00 ' Sump Length 0 '

Top of Casing Elevation 493.15 ' Stickup -0.41'

Depth to Water: 1. Ft. btoc 7.30 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.56	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			100		5-7	CLAYEY SILT: Orangish brown with red and light gray; damp; loose; slight plasticity; red nodules throughout. no odor. At 5' bgs: Red clay lens (1" thick). At 5.8' bgs: Light gray clay lens.
						7-8	SILTY CLAY: Tan; damp.
485	10			100		8-10	CLAYEY SILT: Gray with light gray and tan streaks; damp.
						10-12	CLAY: Dark gray to brownish gray, mottled with light gray and bluish gray; damp; medium dense; slight plasticity.
480	15			100		12-12.5	SILTY CLAY: Dark gray.
						12.5-13.5	SAND: Tan with light brownish gray; damp; loose; layered with iron-oxide staining, (1/4" thick).
						13.5-15	CLAYEY SILT: Tan with light brownish gray; damp; medium dense; non-plastic.
475	20			100		15-19	SAND: Tan with gray clay stringers; damp; loose.
						19-20	SAND: Light tan; saturated; loose.

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ERM Environmental Resources Management

JKS-52
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-52 Date Drilled 2016-09-01

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.50 ' Boring Diam. 8.25 "

N. Coord. 13659683.26' E. Coord. 2186139.05' Surface Elevation 493.56 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 19.00 ' Sump Length 0 '

Top of Casing Elevation 493.15 ' Stickup -0.41'

Depth to Water: 1. Ft. btoc 7.30 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-24	SAND: Light orange and tan; damp; medium dense; no odor.
							At 21' bgs: Color change to tan with gray striations.
				100			At 22' bgs: Color change to tan; damp; and loose; At 22.5' bgs: Two gray striations layered within iron-oxide staining.
470						24-25	CLAYEY SAND: Tan; saturated; medium dense.
	25					25-30	INTERBEDDED CLAY AND SAND: Gray and tan; damp; loose.
				100			At 27.5' bgs: Intermittent pinkish gray coloration of clay content to 30' bgs.
465							
	30					30-31	SAND: Gray; damp; loose.
				100		31-32.5	INTERBEDDED CLAY AND SAND: Orange with pinkish gray; damp; loose; medium plasticity.
460							Boring terminated at 32.5' bgs.
	35						
455							
	40						

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STATE OF TEXAS WELL REPORT for Tracking #443571

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-52**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/1/2016** Drilling End Date: **9/1/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**29**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7.5**	**19.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**17**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	24	Sand - light orange and tan
24	29	Clayey sand - tan

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	19
2	Screen	New Plastic (PVC)	40 10	19	29

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

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ERM Environmental Resources Management

JKS-53 DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-53 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13659757.34' E. Coord. 2185892.80' Surface Elevation 491.33 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 494.74 ' Stickup 3.41 '

Depth to Water: 1. Ft. btoc 8.50 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
491.33	0					0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-7.5	SANDY SILTY CLAY: Tan to reddish gray; wet; low plasticity; no odor.
485							At 6' bgs: Pockets of orange colored sand.
				100		7.5-10	SANDY CLAY: Orangish brown and gray; moist; low plasticity.
	10						At 9' bgs: Pockets of orange colored sand.
480					JKS-53_10-12.5 **USCS:** Clayey Sand (SC) **AL:** 30 / 14 / 16 **- #200:** 35.9 **k:** 5.34×10^{-6}	10-15	NO RECOVERY Cohesive sample (Shelby tube) collected from 10'-12' bgs.
				0			Cohesive sample (Shelby tube) collected from 12.5'-15' bgs.
	15				JKS-53_12.5-15 **USCS:** Clayey Sand (SC) **AL:** 29 / 15 / 14 **- #200:** 48.8 **k:** 4.13×10^{-8}	15-16	CLAYEY SAND: Tan; wet; loose; no odor.
475						16-17.5	INTERBEDDED CLAY AND SAND: Orangish light brown sand interbedded with pinkish gray clay.
							At 16.5 - 17' bgs: Tan sand; damp.
				100		17.5-19.5	CLAYEY SAND: Light brown and tannish gray; saturated; loose; slight plasticity.
							At 18.5-19' bgs: Tan sand.
	20					19.5-20	INTERBEDDED CLAY AND SAND: Tan sand interbedded with pinkish gray clay; layered with iron-oxide staining; damp; loose.

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ERM Environmental Resources Management

JKS-53
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-53 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13659757.34' E. Coord. 2185892.80' Surface Elevation 491.33 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 494.74 ' Stickup 3.41 '

Depth to Water: 1. Ft. btoc 8.50 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100	JKS-53_20-21 **USCS:** Clayey Sand (SC) **AL:** 27 / 14 / 13 **- #200:** 37.6	20-25	CLAYEY SAND: Gray with tannish orange staining; saturated; loose. Non-cohesive grab sample collected from 20'-21' bgs. At 22-22.5' bgs: Color change to orangish light brown; moist. At 22.5-25' bgs: Saturated.
465	25			100		25-27	SAND: Reddish brown mixed with light gray; damp; medium dense; dry and crumbly with depth. Boring terminated at 27' bgs.
460	30						
455	35						
	40						

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STATE OF TEXAS WELL REPORT for Tracking #443589

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-53**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/2/2016** Drilling End Date: **9/2/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**17**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**17**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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ERM Environmental Resources Management

JKS-54
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-54 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 8.25 "

N. Coord. 13659753.34' E. Coord. 2185641.96' Surface Elevation 492.69 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.40 ' Stickup 3.71 '

Depth to Water: 1. Ft. btoc 10.79 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
492.69	0					0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-5.8	CLAYEY SILT: Orangish brown with red; damp; loose; non-plastic; no odor.
						5.8-7.2	At 5.8' bgs: White chalky material. CLAYEY SAND: Light brown to tan; damp.
485				100		7.2-8	INTERBEDDED CLAY AND SAND: Gray clay laminations (1" thick).
						8-11.5	CLAYEY SAND: Orangish brown; medium dense.
	10						At 10.8' bgs: Tan; saturated; and loose.
						11.5-12.5	INTERBEDDED CLAY AND SAND: Tan sand interbedded with light pinkish gray clay; damp; clay laminations are 1/4"-1/2" thick.
480				100	JKS-54_13-14 **USCS:** Silty Clayey Sand (SC-SM) **AL:** 22 / 15 / 7 **- #200:** 33.5	12.5-15	CLAYEY SAND: Tan; wet to saturated; loose. Non-cohseive grab sample collected from 13'-14' bgs. At 13.2-14.2' bgs: Saturated.
	15					15-27.5	At 14.9' bgs: Single thin (1" thick) clay layer. INTERBEDDED CLAY AND SAND: Tan fine grained sand and light pinkish gray clay; damp.
475				100			
	20						

STATE OF TEXAS
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ERM Environmental Resources Management

JKS-54
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-54 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 8.25 "

N. Coord. 13659753.34' E. Coord. 2185641.96' Surface Elevation 492.69 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.40 ' Stickup 3.71 '

Depth to Water: 1. Ft. btoc 10.79 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100			
	25			100			At 25-28' bgs: Iron-oxide stained layers between sand and clay; clay content has slight to low plasticity; clay layers are 1/2" thick.
465							Refusal encountered at 28' bgs.
460	30						
455	35						
	40						

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NGH 9/14/22

STATE OF TEXAS WELL REPORT for Tracking #443590

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-54**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/2/2016** Drilling End Date: **9/2/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**22**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**10**	**22**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	22	Sand - light orange and tan

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	22

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-55
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-55 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13659749.76' E. Coord. 2186840.46' Surface Elevation 490.13 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 493.81 ' Stickup 3.68 '

Depth to Water: 1. Ft. btoc 8.36 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
490.13	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
485	5			0		5-11.5	NO RECOVERY
480	10			0		11.5-12.5	NO RECOVERY: Cuttings are saturated; clayey silt material.
						12.5-13.5	SANDY CLAY: Dark olive gray; damp; soft; non-plastic.
						13.5-18.5	CLAYEY SAND: Tannish gray with trace iron-oxide staining; damp; loose.
475	15			100			At 15' bgs: White chalky material (1" thick); wet.
							At 15.5-17.5' bgs: Clayey sand mixed with some gravel. At 16.5' bgs: White chalky layer (1/2" thick).
							At 17.5' bgs: White chalky layer (1/2" thick). At 17.5-18.5' bgs: Saturated; tan clayey sand with trace gravel.
						18.5-19.8	SAND: Gray; wet; fine grained.
	20					19.8-20	SAND: Gray; very dense; moderately to highly cemented.

STATE OF TEXAS NSH 9/14/22 Nicholas Houtchens GEOLOGY No. 11108 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

JKS-55
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-55 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13659749.76' E. Coord. 2186840.46' Surface Elevation 490.13 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 493.81 ' Stickup 3.68 '

Depth to Water: 1. Ft. btoc 8.36 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20					20-21	SANDY CLAY: Gray; damp; soft; slight plasticity.
						21-22.5	INTERBEDDED CLAY AND SAND: Fine grained tan sand interbedded with pinkish gray clay; damp.
				100		22.5-23.5	CLAYEY SAND: Tan; trace gravel; one large piece of sandstone (>1" thick).
						23.5-25	SAND: Pinkish gray; fine grained; damp; very thin layers of iron-oxide staining.
465	25						Boring terminated at 25' bgs.
460	30						
455	35						
	40						

STATE OF TEXAS
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9/16/22

STATE OF TEXAS WELL REPORT for Tracking #443591

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-55**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/6/2016** Drilling End Date: **9/6/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**12**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**12**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-56
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-56 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13660382.47' E. Coord. 2186847.61' Surface Elevation 493.07 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 496.66 ' Stickup 3.59 '

Depth to Water: 1. Ft. btoc 11.20 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.07	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-5.5	SANDY CLAY: Reddish gray; damp; stiff; non-plastic.
						5.5-7	SAND: Light orangish brown; fine grained; damp; loose. At 6.25' bgs: Color changes to tannish gray with some orangish brown.
						7-7.5	SANDY CLAY: Orange; damp; stiff to very stiff; non-plastic.
485				100		7.5-9.5	CLAYEY SILT: Orangish tan; saturated; loose; non-plastic; mixed with some gravel and trace pockets of gray, fine grained sand.
	10					9.5-10	CLAYEY SILTY SAND: Orangish tan; saturated; loose.
						10-13	NO RECOVERY
480				15		13-22.5	CLAYEY SAND: Tan; fine grained; saturated; loose.
	15						At 15' bgs: Small pocket of gray, fine grained, loose sand (1" thick).
							At 16' bgs: Coarse, angular gravel layer (~1-2" thick)
475				50			
	20						

STATE OF TEXAS
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9/14/22

ERM Environmental Resources Management

JKS-56
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-56 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13660382.47' E. Coord. 2186847.61' Surface Elevation 493.07 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 496.66 ' Stickup 3.59 '

Depth to Water: 1. Ft. btoc 11.20 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20						At 20' bgs: Course, angular gravel layer (~1-2" thick)
470				50		22.5-24.9	SAND: Brownish gray; fine grained; saturated; trace clay content.
	25					24.9-25	SANDY CLAY: Reddish brown; saturated; very soft. Boring terminated at 25' bgs.
465	30						
460	35						
455	40						

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9/14/22

STATE OF TEXAS WELL REPORT for Tracking #443592

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-56**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/6/2016** Drilling End Date: **9/6/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**8**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**8**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	10
2	Screen	New Plastic (PVC)	40 10	10	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-57
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-57 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 0.00 "

N. Coord. 13668235.72' E. Coord. 2187486.38' Surface Elevation 503.83 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 506.91 ' Stickup 3.08 '

Depth to Water: 1. Ft. btoc 20.07 (2016-05-21) 2. Ft. ( )

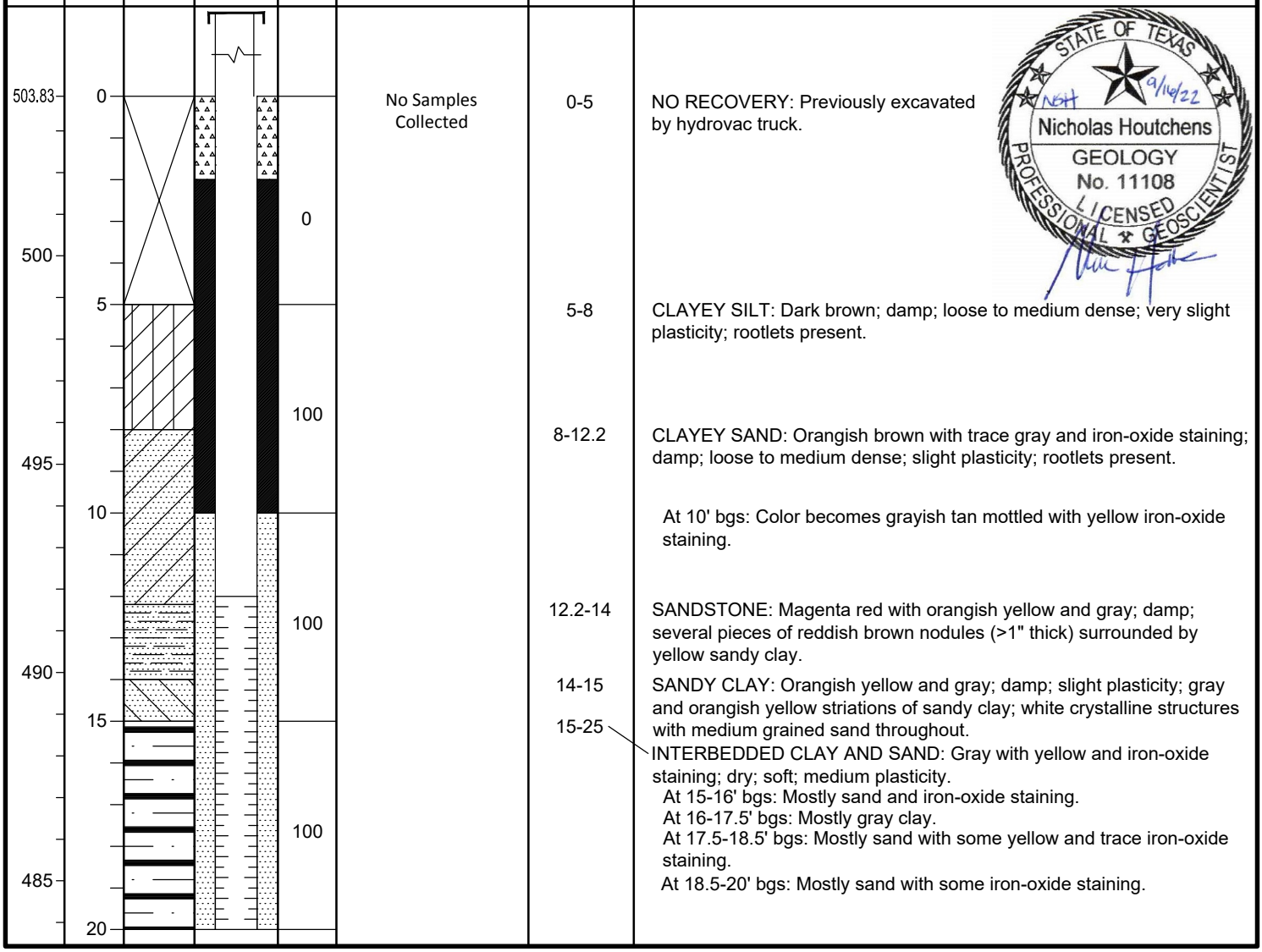
Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
503.83	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
500	5			100		5-8	CLAYEY SILT: Dark brown; damp; loose to medium dense; very slight plasticity; rootlets present.
495	10			100		8-12.2	CLAYEY SAND: Orangish brown with trace gray and iron-oxide staining; damp; loose to medium dense; slight plasticity; rootlets present. At 10' bgs: Color becomes grayish tan mottled with yellow iron-oxide staining.
490	15			100		12.2-14	SANDSTONE: Magenta red with orangish yellow and gray; damp; several pieces of reddish brown nodules (>1" thick) surrounded by yellow sandy clay.
						14-15	SANDY CLAY: Orangish yellow and gray; damp; slight plasticity; gray and orangish yellow striations of sandy clay; white crystalline structures with medium grained sand throughout.
485	20			100		15-25	INTERBEDDED CLAY AND SAND: Gray with yellow and iron-oxide staining; dry; soft; medium plasticity. At 15-16' bgs: Mostly sand and iron-oxide staining. At 16-17.5' bgs: Mostly gray clay. At 17.5-18.5' bgs: Mostly sand with some yellow and trace iron-oxide staining. At 18.5-20' bgs: Mostly sand with some iron-oxide staining.

STATE OF TEXAS
Nicholas Houtchens
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No. 11108
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9/14/22

ERM Environmental Resources Management

JKS-57
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-57 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 0.00 "

N. Coord. 13668235.72' E. Coord. 2187486.38' Surface Elevation 503.83 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 506.91 ' Stickup 3.08 '

Depth to Water: 1. Ft. btoc 20.07 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	20			100			At 20-21' bgs: Mostly sand with yellow and trace iron-oxide staining. At 21-21.5' bgs: 2" thick layer of reddish brown, hard-packed sand; 4" thick layer of tan, very fine grained, loose sand. At 21.5-25' bgs: Mostly dark gray clay; At 22.5' bgs: Reddish brown coloration; At 24-25' bgs: Color is brownish gray with redox stippling.
475	25			100		25-25.5 25.5-27 27-27.5	SAND: Gray; fine grained; dry; medium dense; low plasticity. At 25.5' bgs: Very thin (1/8" thick) brownish red coloration. INTERBEDDED CLAY AND SAND: Brownish gray clay interbedded with fine grained sand; dense; hard-packed. At 26.6' bgs: Thin, tan, dry, very fine grained, sand. SAND: Highly cemented; reddish brown nodules present. Refusal encountered at 27.5' bgs.
470	30						
465	35						
	40						

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No. 11108
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PROFESSIONAL GEOSCIENTIST
9/14/22

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

STATE OF TEXAS WELL REPORT for Tracking #443593

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-57**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**10**	**27**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**
112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	27	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	27

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-58
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-58 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13667994.99' E. Coord. 2187797.39' Surface Elevation 500.94 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 504.45 ' Stickup 3.51 '

Depth to Water: 1. Ft. btoc 21.09 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
500.94	0					0-5	NO RECOVERY: Previously excavated by hydrovac truck.
500				0			
	5					5-6	SAND: Brown; fine grained; moist; very loose.
495						6-7	CLAYEY SAND: Grayish brown with red; fine grained; damp; loose.
				100		7-10	SAND: Red, orange, and gray; damp medium grained; very loose to medium dense; slight gray, soft to medium dense, sandy clay; (clay content increases with depth).
	10					10-17	At 9.8' bgs: Color change to dark gray. At 10' bgs: Hard, sandstone, iron ore piece (>1" thick) SILTY CLAY: Gray with alternating yellow and orange layers; dry; dense; slight plasticity.
490				100			At 12.2' bgs: Brown sand seam (3" thick).
	15						At 16-16.5' bgs: Brownish tan sandy clay. At 16.5-17' bgs: Gray clay has fractured texture.
485				100		17-17.5 17.5-19.5	CLAY: Gray; damp; mixed with coarse grained sand. SAND: Tan; moist to wet. At 18-19.5' bgs: Color change to gray with black staining; no odor; white, crystalline, coarse grained structures present.
	20					19.5-20	CLAYEY SILTY SAND: Orangish brown; dry; gravel and some small sandstone pieces present.

STATE OF TEXAS
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ERM Environmental Resources Management

JKS-58
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-58 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13667994.99' E. Coord. 2187797.39' Surface Elevation 500.94 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 504.45 ' Stickup 3.51 '

Depth to Water: 1. Ft. btoc 21.09 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	20					20-21	CLAY: Gray; dry; stiff; small, tan sandy clay pockets present.
						21-22.5	INTERBEDDED CLAY AND SAND: Gray and orangish tan; damp; clay is pinkish gray interbedded with thing orange sand layers.
				100		22.5-25.5	CLAY: Dark pinkish gray; dry; stiff; several very thin, light gray, silty sand layers.
							At 24.5-24.7' bgs: Tan, dry, silty clay.
475	25				JKS-58_26-27 **USCS:** Sandy Lean Clay (CL) **AL:** 38 / 18 / 20 **- #200:** 50.9	25.5-30	CLAYEY SAND: Tan; moist to saturated. At 25.5-27.5' bgs: No distinct layers. Non-cohesive grab sample collected from 26'-27' bgs. At 27.5' bgs: Thin saturated seam. At 27.5-30' bgs: Yellow and orange layering.
				100			
470	30				JKS-58_30-32.5 **USCS:** Fat Clay (CH) **AL:** 57 / 20 / 37 **- #200:** 89.1 **k:** 1.53×10^{-7}	30-32.5	NO RECOVERY: Cohesive sample (Shelby tune) collected from 30'-32' bgs.
							Boring terminated at 32.5' bgs.
465	35						
	40						

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STATE OF TEXAS WELL REPORT for Tracking #443594

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-58**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**18**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**18**	**Bentonite 4 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	20
2	Screen	New Plastic (PVC)	40 10	20	30

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-59
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-59 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13667779.88' E. Coord. 2188352.07' Surface Elevation 493.53 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.45 ' Stickup 2.92 '

Depth to Water: 1. Ft. btoc 15.49 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.53	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			0		5-6.5	SILTY SAND: Brown; damp; loose.
						6.5-7	SAND: Tan; damp; loose.
				100		7-10	SILTY CLAY: Dark brown; damp; soft; slight plasticity.
485	10						At 9-10' bgs: Decreasing silt content; increasing stiffness; some iron-oxide stained nodules observed.
						10-11	CLAY: Dark brown; damp; medium stiff; low to medium plasticity.
				100		11-15	SILTY CLAY: Dark orangish brown to orangish brown; damp; soft; increasing silt content with depth; increasing gray streaks/fissures with depth.
480	15					15-15.5	CLAY: Dark brown to brown; damp; medium stiff to stiff; low plasticity.
						15.5-18	SILTY SAND: Tan; saturated; loose. At 16' bgs: Wet; crumbly; trace clay content.
				100			At 17.5' bgs: Saturated.
475	20					18-20	SANDY CLAY: Light bluish gray mottled with orange iron-oxide and black staining; moist; medium stiff; slight plasticity.

STATE OF TEXAS
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ERM Environmental Resources Management

JKS-59
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-59 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13667779.88' E. Coord. 2188352.07' Surface Elevation 493.53 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.45 ' Stickup 2.92 '

Depth to Water: 1. Ft. btoc 15.49 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-20.5	CLAY: Brown to light brown; damp; medium stiff to stiff; low plasticity.
						20.5-21	
						21-22.5	SANDY CLAY: Light gray mottled with orangish iron-oxide staining; moist; medium stiff; slight plasticity.
				100			CLAY: Dark pinkish gray; moist; soft; layered with very thin orange/iron-oxide stained silty sand.
						22.5-22.8	
470						22.8-25	SILT: Tan; saturated; very loose.
							CLAY: Dark pinkish gray; soft; layered with very thin orange/iron-oxide stained silty sand.
	25					25-26	SAND: Gray with orange staining; fine grained; saturated; loose.
				100		26-27	CLAY: Gray; saturated; very soft; high plasticity.
							Boring terminated at 27' bgs.
465							
	30						
460							
	35						
455							
	40						

STATE OF TEXAS
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STATE OF TEXAS WELL REPORT for Tracking #443595

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-59**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**10**	**27**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	27	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	27

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Texas Department of Licensing and Regulation
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Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-60
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-60 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 26.00 ' Boring Diam. 8.25 "

N. Coord. 13667357.02 E. Coord. 2188465.44 Surface Elevation 492.68 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 495.70 ' Stickup 3.02 '

Depth to Water: 1. Ft. btoc 17.40 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
492.68	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated with hydrovac truck.
490				0			
	5					5-10	SAND: Grayish tan with orange and yellow; very fine grained; damp; loose; no odor. At 6' bgs: Color change to light pinkish orange.
485				100			At 7.5' bgs: Color change to light gray with trace orange and yellow.
	10					10-10.8	CLAY: Dark gray; moist; soft; slight plasticity.
						10.8-16	SAND: White with yellow; very fine grained; damp; loose.
480				100			At 11.6-13' bgs: Color change to pale yellow. At 13-16' bgs: Color change to light orangish yellow.
	15						At 15' bgs: Thin reddish orange stringer. At 15-16' bgs: Moist.
						16-23.5	SAND: Light orange; very fine grained; damp; very dense; unable to collect soil core, soil descriptions based on observation of auger cuttings.
475				0			At 18-23.5' bgs: Color change to pale yellow.
	20						

STATE OF TEXAS
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ERM Environmental Resources Management

JKS-60
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-60 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 26.00 ' Boring Diam. 8.25 "

N. Coord. 13667357.02 E. Coord. 2188465.44 Surface Elevation 492.68 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 495.70 ' Stickup 3.02 '

Depth to Water: 1. Ft. btoc 17.40 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			0			At 22' bgs: Moisture content increases to wet.
						23.5-25.7	SAND: Tan; fine grained; saturated; loose.
	25			100			At 25.5' bgs: Color change to white with brown; medium grained.
465						25.7-25.9	SILTY SAND: Dark reddish staining; saturated.
						25.9-26	CLAY-SHALE: Shaley clay; tan; wet; dense.
	30						Boring terminated at 26' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS
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STATE OF TEXAS WELL REPORT for Tracking #443596

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-60**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**8**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**8**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	10
2	Screen	New Plastic (PVC)	40 10	10	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-61
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-61 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 35.00 ' Boring Diam. 8.25 "

N. Coord. 13665721.04' E. Coord. 2187196.65' Surface Elevation 502.52 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.00 ' Sump Length 0 '

Top of Casing Elevation 505.51 ' Stickup 2.99 '

Depth to Water: 1. Ft. btoc 24.46 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
502.52	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated with hydrovac truck.
500				0			
	5					5-5.2 5.2-10.5	SANDY SILT: Dark brown; damp; loose; contains rootlets. SAND: Light tannish orange; damp; fine grained; loose.
495				100			At 7.8' bgs: Thin (1/4"), dark gray, sandy clay layer. At 8.2' bgs: Thin (1/4"), dark gray, sandy clay layer.
	10					10.5-12.5	INTERBEDDED CLAY AND SAND: Light gray to white; very fine grained; very hard packed; very thin (1/10") pinkish gray clay stringers throughout. At 10.5' bgs: Pinkish gray clay layer (1" thick).
490				100		12.5-20	SAND: Light gray to white with trace yellow and orange colorations; dry; very fine grained; very hard packed. At 12.5-15' bgs: Sand is cemented.
	15						
485				100			At 16.5-19' bgs: Three clay stringers (1/4" thick).
	20						

STATE OF TEXAS
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No. 11108
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PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

JKS-61
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-61 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 35.00 ' Boring Diam. 8.25 "

N. Coord. 13665721.04' E. Coord. 2187196.65' Surface Elevation 502.52 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.00 ' Sump Length 0 '

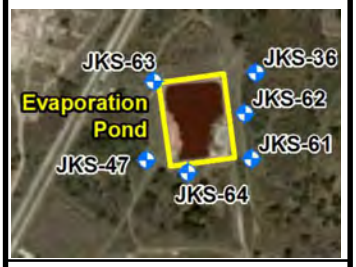
Top of Casing Elevation 505.51 ' Stickup 2.99 '

Depth to Water: 1. Ft. btoc 24.46 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-22.5	CLAYEY SAND: Gray with trace orange; damp; fine grained; loose; trace clay content present. At 21' bgs: Color change to tan with orange and gray; moisture content becomes wet. At 21.8' bgs: Thin pinkish gray clay seam (1/4" thick).
480				100		22.5-25	SAND: Gray with orange, tan, and yellow; fine grained; wet; loose.
	25					25-31.5	CLAYEY SAND: Gray; fine grained; wet to saturated; loose. At 25-25.8' bgs: Saturated.
475				100			At 27.5-28.5' bgs: Saturated.
	30						At 30-31' bgs: Saturated.
				100			At 31-32.5' bgs: Wet.
470						31.5-32.5	SANDY CLAY: Pinkish gray; damp; medium dense; slightly plastic; very thin sand stringers throughout (1/10" thick).
						32.5-33	CLAYEY SILTY SAND: Gray; saturated; loose.
						33-35	SANDY CLAY: Pinkish gray; damp; medium dense; slightly plastic; very thin sand stringers throughout (1/10" thick).
	35						Boring terminated at 35' bgs.
465							
	40						

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Nicholas Houtchens
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No. 11108
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Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

STATE OF TEXAS WELL REPORT for Tracking #443597

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-61**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**33**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**15**	**33**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**15**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	33	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	18
2	Screen	New Plastic (PVC)	40 10	18	33

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
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ERM Environmental Resources Management

JKS-62
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-62 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 37.00 ' Boring Diam. 8.25 "

N. Coord. 13666020.13' E. Coord. 2187153.88' Surface Elevation 506.71 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

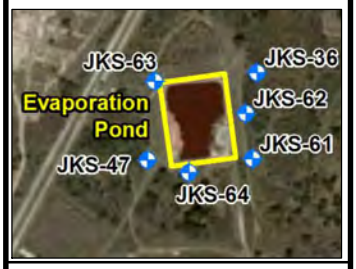
Top of Casing Elevation 509.84 ' Stickup 3.13 '

Depth to Water: 1. Ft. btoc 28.90 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

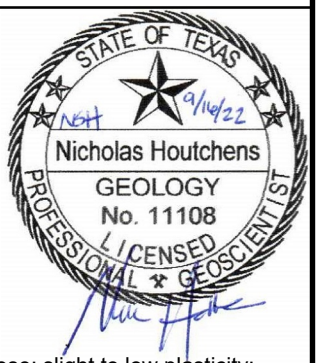
Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
506.71	0			0		0-5	NO RECOVERY: Previously excavated with hydrovac truck.
505	5					5-6	SANDY SILT: Dark brown; damp; very loose; slight to low plasticity; trace rootlets.
						6-9	INTERBEDDED CLAY AND SAND: Light gray; dry; sand content fine grained, loose; clay content is pinkish gray with slight to low plasticity.
500				100			
						9-15	CLAYEY SAND: Light gray with yellowish orange and pale yellow; very fine grained; dry; trace clay content. At 10' bgs: Color change to light pinkish brown and yellowish orange; moisture content increases to damp; sand is loose; clay is soft. At 11' bgs: Color change to white/light gray and tan, clay is darker gray; moisture content decreases to dry; very dense; crumbles easily.
495	10						
				100			
	15					15-20	SAND: White; dry; dense but crumbles easily.
490				50			
	20						

ERM Environmental Resources Management

JKS-62
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-62 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 37.00 ' Boring Diam. 8.25 "

N. Coord. 13666020.13' E. Coord. 2187153.88' Surface Elevation 506.71 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

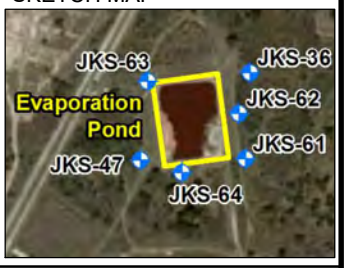
Top of Casing Elevation 509.84 ' Stickup 3.13 '

Depth to Water: 1. Ft. btoc 28.90 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
485	20			50		20-25	SAND: Light gray to tannish gray; fine grained; dry to damp; loose. At 21.2' bgs: Moisture content increases to damp. At 21.4' bgs: Yellow and iron-oxide staining.
480	25			100		25-27.5	INTERBEDDED CLAY AND SAND: Gray; fine grained; wet; loose. At 25.5' bgs: Iron-oxide staining and thin (1/4" thick) pinkish gray clay layer.
						27.5-29.5	At 27.5' bgs: Iron-oxide staining and thin (1/4" thick) pinkish gray clay layer. CLAYEY SAND: Gray with iron-oxide staining; saturated; loose; trace clay content. At 29' bgs: Increased iron-oxide staining with clay layers.
475	30			0		29.5-30 30-30.5 30.5-31 31-31.5 31.5-35	INTERBEDDED CLAY AND SAND: Pinkish gray; damp; medium dense; slight plasticity. SAND: Gray; fine grained; damp. INTERBEDDED CLAY AND SAND: Orange, fine grained, moist sand; gray, low plasticity clay; loose to medium dense. CLAY: Brown; moist; loose to medium dense. At 31.5 bgs: Thin reddish brown nodule layer (1/4" thick). CLAY: Brown; damp; soft; high plasticity; unable to collect soil core; descriptions based on observation of auger cuttings.
470	35			0	JKS-62_35-37 **USCS:** Clayey Sand (SC) **AL:** 38 / 17 / 21 **- #200:** 32.3 **k:** 6.63×10^{-7}	35-37	NO RECOVERY: Cohesive sample (Shelby tube) collected from 35'-37' bgs.
	40						Boring terminated at 35' bgs.

STATE OF TEXAS
9/14/22
Nicholas Houtchens
GEOLOGY
No. 11108
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STATE OF TEXAS WELL REPORT for Tracking #443598

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-62**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**18**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**18**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	20
2	Screen	New Plastic (PVC)	40 10	20	30

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
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(512) 463-7880

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

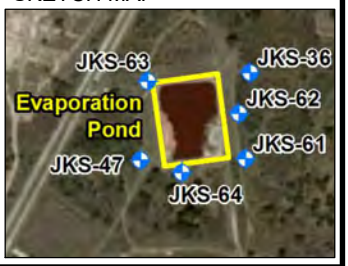
Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
523.55	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
520	5			100		5-5.5 5.5-6 6-7.8	SAND: Brown; fine-grained; moist; loose. CLAYEY SAND: Tan; moist; single piece of gray. SILTY SAND: Brown lense; fine grained; moist; loose; trace rootlets.
515	10			100		7.8-10.2	SANDY CLAY: Reddish brown to dark gray with red; dry to damp; very stiff; hard-packed; non-plastic.
510	15			75		10.2-12.2	CLAYEY SAND: Orange to pinkish orange; dry to damp; very dense.
505	20					12.2-18	INTERBEDDED CLAY AND SAND: Tan; very fine-grained; very dense/hard-packed; layered with thin gray sandy clay seams. At 15' bgs: Sand color changes to very light gray to white; pinkish gray sandy clay seams throughout; layered with pale yellow colorations.
						18-20	SAND: Gray to brownish orange; dry; very fine-grained; medium dense; crumbles easily.

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
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9/14/22

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
500	20			80		20-30	INTERBEDDED CLAY AND SAND: Light gray; very fine-grained; dry to damp; dense/hard-packed; layered with thin pinkish gray clay seams and iron-oxide staining.
495	25			80			
490	30			80		30-39	SAND: Gray; dry to saturated; fine-grained; very hard packed; crumbles easily.
							At 32.5' bgs: Medium-grained.
485	35			80			At 38-39' bgs: Saturated.
	40					39-39.5	CLAYEY SAND: Dark reddish brown; wet; loose.
						39.5-50	SAND: Gray; wet; fine-grained; loose.

STATE OF TEXAS
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ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	40			80			
	45			80			At 45' bgs: Moisture content increases to saturated; trace iron-oxide staining.
475	50						Boring terminated at 50' bgs.
470							
	55						
465							
	60						

STATE OF TEXAS
9/14/22
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST

STATE OF TEXAS WELL REPORT for Tracking #443599

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-63**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**50**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**28**	**50**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**28**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	50	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	30
2	Screen	New Plastic (PVC)	40 10	30	50

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Evaporation Pond Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.00 "

N. Coord. 13668452.91 E. Coord. 2186879.12 Surface Elevation 519.15' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

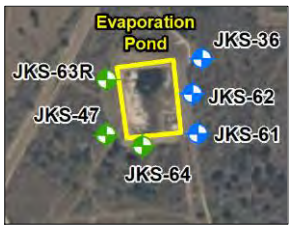
Top of Casing Elevation 522.27' Stickup 3.12 '

Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 39.27 (2019-08-20)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011). Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
519.15	0			100	No Samples Collected	0-3.5	SAND: Brown; dry to damp; very-fine grained; sub-angular; poorly sorted; loose; minor silt and trace clay content; no odor. Ground surface to 5 ft. bgs logged via post hole digger soil cuttings.
	5			100		3.5-7.5	SANDY CLAY: Brown with occasional red and black mottling; damp; medium stiff; low plasticity; trace silt content; no odor. At 4' bgs: Color change to reddish brown. At 5' bgs: Stiff; medium plasticity. At 6' bgs: Occasional thin, light brown, very-fine grained sand seams. At 6.5' bgs: Interbedded clay and sand seam (6" thick); dry; clay content dark brown, stiff; sand content very-fine grained, sub-angular; occasional light brown and yellow silt stringers.
510.00				90		7.5-8.5	CLAYEY SAND: Reddish brown; damp; medium dense; non-plastic to slightly plastic; very-fine grained; sub-angular; minor yellow silt stringers; no odor.
	10			100		8.5-10	SILT: Light grey; dry; loose to medium dense; non-plastic; minor to occasional very-fine grained sand content, with increasing sand content with depth; minor yellow silt stringers; no odor.
				100		10-17.5	SAND: Light grey; dry; loose to medium dense; very-fine grained; sub-angular; poorly to moderately sorted; trace clay content; occasional yellow silt stringers; no odor. At 12.5' bgs: Medium dense.
	15			100			At 15' bgs: Medium dense to loose.
500.00				100		17.5-24	INTERBEDDED CLAY AND SAND: Light grey (sand content) and light brown (clay content); dry to damp; clay content medium stiff, slight to low plasticity; sand content medium dense, very-fine grained, sub-angular; occasional yellow silt stringers; no odor. At 19' bgs: Decreasing clay content; sand content fine grained.
	20						

STATE OF TEXAS 9/14/22 NBH Nicholas Houtchens GEOLOGY No. 11108 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Evaporation Pond Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.00 "

N. Coord. 13668452.91 E. Coord. 2186879.12 Surface Elevation 519.15' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

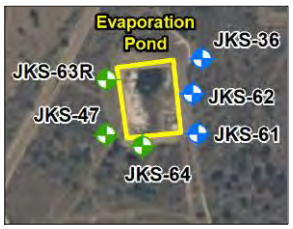
Top of Casing Elevation 522.27' Stickup 3.12 '

Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 39.27 (2019-08-20)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011). Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
499.0	20			100	No Samples Collected		At 22' bgs: Sand seam (3" thick); light grey; fine grained; no clay content. At 22.5' bgs: Increasing clay content; medium stiff to stiff.
				100		24-50	SAND: Light brownish grey; damp; medium dense to loose; fine grained; sub-angular; poorly sorted; minor yellow silt stringers; no odor. At 25' bgs: Trace red silty clay content; medium plasticity.
	25			60			
				100			At 27.5' bgs: No clay content.
490.0	30			80			At 30' bgs: Minor clay content to 31' bgs.
				100			At 31.5' bgs: Moist. At 32' bgs: Occasional to abundant yellow and orange silt stringers. At 32.5' bgs: Very moist; minor to occasional yellow and orange silt stringers.
	35			80			At 35' bgs: Fine to very-fine grained; trace yellow and orange silt stringers. At 36' bgs: Wet.
				60			At 37.5' bgs: Saturated; fine grained; no clay content.
480.0	40						

STATE OF TEXAS NGH 9/14/22 Nicholas Houtchens GEOLOGY No. 11108 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Evaporation Pond Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.00 "

N. Coord. 13668452.91 E. Coord. 2186879.12 Surface Elevation 519.15' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

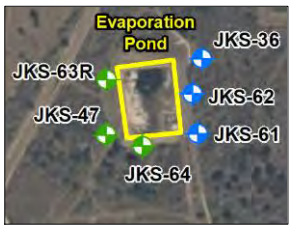
Top of Casing Elevation 522.27' Stickup 3.12 '

Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 39.27 (2019-08-20)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011). Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
479.0	40			80	No Samples Collected		At 40' bgs: Abundant orange silt stringers.
				80			At 42.5' bgs: Fine to medium grained; occasional orange silt stringers.
	45			60			At 45' bgs: Fine grained;
				60			At 47.5' bgs: Trace orange silt stringers.
470.0	50						Boring terminated at 50' bgs.
	55						
460.0	60						

STATE OF TEXAS
NSH 9/14/22
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST

STATE OF TEXAS WELL REPORT for Tracking #511515

Owner:	**CPS Energy**	Owner Well #:	**JKS-63R**
Address:	**P.O. Box 2906** **San Antonio , TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station** **12940 US 181** **San Antonio, TX 78263**	Latitude:	**29° 19' 27.98" N**
		Longitude:	**098° 18' 56.77" W**
Well County:	**Bexar**	Elevation:	**516 ft. above sea level**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **5/2/2019** Drilling End Date: **5/2/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.25	**0**	**50**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
33	**50**	**Sand**	**12/20**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1.16 Bags/Sacks**
2	**33**	**Bentonite 15.08 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **36 ft.** below land surface on **2019-05-02**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Vortex Drilling**

4412 Bluemel Road
San Antonio, TX 78240

Driller Name: **James E. Neal** License Number: **4868**

Apprentice Name: **Tony Elmendorf**

Comments: **No Data**

Report Amended on 7/12/2019 by Request #28256

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**3.5**	**Sand**
3.5	**7.5**	**Sandy Clay**
7.5	**8.5**	**Clayey Sand**
8.5	**10**	**Silt**
10	**17.5**	**Sand**
17.5	**24**	**Interbedded Clay and Sand**
24	**50**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Top Cap (Locking)**	**New Plastic (PVC)**	**40**		
2	**Bottom Cap**	**New Plastic (PVC)**	**40**		
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**35**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**35**	**50**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
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Austin, TX 78711
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ERM Environmental Resources Management

JKS-64
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-64 Date Drilled 2016-09-09

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13665627.14' E. Coord. 2186778.76' Surface Elevation 504.38 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 507.84 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 25.06 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
504.38	0			0		0-5	NO RECOVERY: Previously excavated with hydrovac truck.
500	5			100		5-6.5	SILTY SAND: Brown; moist; loose.
						6.5-8	INTERBEDDED CLAY AND SAND: Pinkish gray and orange; fine grained, orange sand; pinkish gray clay layered with iron-oxide staining; damp; non-plastic.
495	10			100		8-13	SAND: Light gray and pale yellow; dry; very fine-grained; dense; very hard-packed; trace clay content; layered appearance.
490	15			100		13-22.5	INTERBEDDED CLAY AND SAND: Light gray and pale yellow, fine-grained sand; dark gray, slightly plastic, clay is medium stiff.
485	20						At 17' bgs: Thickness of clay layers increases (1-2" thick); low plasticity.

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
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9/14/22

ERM Environmental Resources Management

JKS-64
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-64 Date Drilled 2016-09-09

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13665627.14' E. Coord. 2186778.76' Surface Elevation 504.38 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

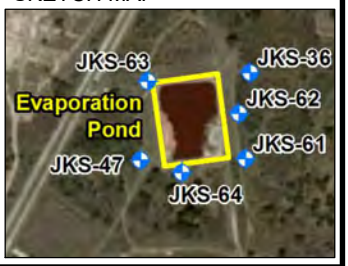
Top of Casing Elevation 507.84 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 25.06 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20				JKS-64_20-30 **USCS:** Clayey Sand (SC) **AL:** 29 / 14 / 15 **- #200:** 30.1		At 20' bgs: Saturated; clay color changes to pinkish gray. Non-cohesive grab sample collected from 20'-30' bgs.
				100		22.5-25	SAND: Gray with bluish gray and orange; fine-grained; loose.
480							At 23.8' bgs: Bluish gray, low plasticity clay (1/2" thick); sand color changes to greenish blue.
	25					25-30	INTERBEDDED CLAY AND SAND: Tannish gray; wet to saturated; fine-grained; wet to saturated; loose; clay layers are pinkish gray with iron-oxide staining.
				100			At 26.8' bgs: Wet. At 27.5' bgs: Saturated. At 28.3' bgs: Wet.
475							
	30					30-32	At 30' bgs: Gray clay; dense/stiff; low plasticirty; 1" thick. NO RECOVERY: Geotechnical sample collected, but not analyzed.
							Boring terminated at 32' bgs.
470							
	35						
465							
	40						

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
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PROFESSIONAL GEOSCIENTIST
9/14/22

STATE OF TEXAS WELL REPORT for Tracking #443600

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-64**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/9/2016** Drilling End Date: **9/9/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**12**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**12**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	30

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

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Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-65
DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-65 Date Drilled 2020-08-19

Project Plant Drains Pond CCR Unit Owner CPS Energy

Location Calaveras Power Station Boring T.D. 40.00 ' Boring Diam. 8.25 "

N. Coord. 13664675.83 E. Coord. 2186405.30 Surface Elevation 515.82' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length ''0.00 ''

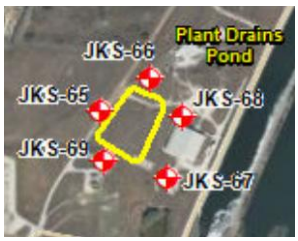
Top of Casing Elevation 518.53' Stickup 2.71'

Depth to Water: 1. Ft. 22.50' (SB Installation) 2. Ft. _____ (_____)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES
Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011)
Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
515.82	0			0	No Samples Collected	0-5.0	NO RECOVERY: Soil removed by hydro-excavation.
510.82	5			100		5.0-6.5	SANDY SILTY CLAY: Light brown to light yellowish brown, damp, stiff, low plasticity, sand content very fine grained, black and red silt stringers, abundant wood fragments, no odor.
						6.5-9.5	SILTY SAND: Light yellowish brown, dry, medium dense, very fine grained, minor clay and trace aggregate content, no odor. At 9' bgs: Light grey clay lens (2" thick).
				100		9.5-11.3	CLAYEY SILT: Light brownish grey, damp to moist, loose, slight plasticity, occasional very fine grained sand content, occasional yellow silt stringers, no odor. At 10' bgs: Increasing clay content, decreasing sand content.
505.82	10			90		11.3-12.5	CLAY: Light grey, moist, medium stiff to stiff, low to medium plasticity, minor to occasional silt content, some orange/yellow/dark reddish brown silt stringers, no odor.
						12.5-30.0	SAND: Light grey, damp, medium dense to loose (with depth), very fine grained, poorly sorted, sub-angular, minor silt content, no odor. At 13.5' bgs: Abundant orange silt lenses (0.3" thick). At 13.8' bgs: Minor yellow silt stringers. At 17' bgs: Moist, trace dark brown silt stringers. At 17.5' bgs: Occasional yellow/orange silt stringers. At 18' bgs: Minor clay content. At 19' bgs: No clay and deceasing silt content. At 20' bgs: Increasing silt content, occasional yellow silt stringers.
				100			
500.82	15			100			
495.82	20						

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST
11/28/22

ERM Environmental Resources Management

JKS-65
DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-65 Date Drilled 2020-08-19

Project Plant Drains Pond CCR Unit Owner CPS Energy

Location Calaveras Power Station Boring T.D. 40.00 ' Boring Diam. 8.25 "

N. Coord. 13664675.83 E. Coord. 2186405.30 Surface Elevation 515.82' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length ''0.00 ''

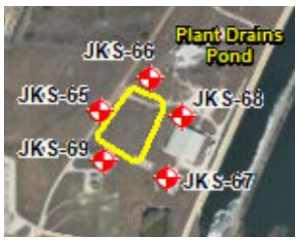
Top of Casing Elevation 518.53' Stickup 2.71'

Depth to Water: 1. Ft. 22.50' (SB Installation) 2. Ft. _____ (_____)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES
Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
495.82	20			100	No Samples Collected		At 21.8' bgs: Trace to minor clay content, occasional yellow/orange silt stringers.
				75			At 22.5' bgs: Color change to light brown, very moist to wet, orange silt stringers.
490.82	25			60			At 25' bgs: Wet.
				100			At 27.5' bgs: Light grey coloring present.
485.82	30			60		30.0-39.5	At 29' bgs: Dark red/orange silt lenses (1" thick). SILTY SAND: Light brown with minor light grey, wet, loose, very fine grained, minor clay content, occasional red/orange silt stringers, no odor.
				60			At 32.5' bgs: Saturated.
480.82	35			100			At 36' bgs: Increasing clay content.
				80		39.5-40.0	At 37.4' bgs: light grey and orange silty clay lens (1" thick). SANDY CLAY: Light orangish brown with minor light grey mottling, wet, soft to medium stiff, low plasticity, sand content very fine grained, occasional silt, minor orange/yellow silt stringers, no odor. Color change to light grey at 39.9' bgs.
475.82	40						At 40' bgs: Boring terminated

STATE OF TEXAS
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STATE OF TEXAS WELL REPORT for Tracking #551889

Owner:	**CPS Energy**	Owner Well #:	**JKS-65**
Address:	**P.O. Box 2906 San Antonio , TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station 12940 US 181 San Antonio, TX 78263**	Latitude:	**29° 18' 50.56" N**
		Longitude:	**098° 19' 02.52" W**
Well County:	**Bexar**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **8/17/2020** Drilling End Date: **8/19/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.25	**0**	**40**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
18	**40**	**Sand**	**12/20**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1.16 Bags/Sacks**
2	**18**	**Bentonite 8 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **22.5 ft.** below land surface on **2020-08-17**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Vortex Drilling Partners, LP**

4412 Bluemel Road
San Antonio, TX 78240

Driller Name: **James E. Neal** License Number: **4868**

Apprentice Name: **Joe Lopez**

Comments: **No Data**

Report Amended on 8/28/2020 by Request #32573

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**No recovery**
5	**6.5**	**Sandy Silty Clay**
6.5	**9.5**	**Silty Sand**
9.5	**11.3**	**Clayey Silt**
11.3	**12**	**Clay**
12	**30**	**Sand**
30	**39.5**	**Silty Sand**
39.5	**40**	**Sandy Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Top Cap (Locking)**	**New Plastic (PVC)**	**40**		
2	**Bottom Cap**	**New Plastic (PVC)**	**40**		
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**20**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**20**	**40**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

ERM Environmental Resources Management

JKS-66
DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-66 Date Drilled 2020-08-18

Project Plant Drains Pond CCR Unit Owner CPS Energy

Location Calaveras Power Station Boring T.D. 40.00 ' Boring Diam. 8.25 "

N. Coord. 13664900.45 E. Coord. 2186752.50 Surface Elevation 514.35' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0.00'

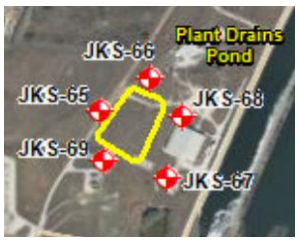
Top of Casing Elevation 517.65' Stickup 3.30'

Depth to Water: 1. Ft. 22.50' (SB Installation) 2. Ft. _____ (_____)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES
Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
514.35	0			0	No Samples Collected	0-5.0	NO RECOVERY: Soil removed by hydro-excavation.
509.35	5			100		5.0-7.5	SANDY CLAY: Orangish brown with trace orange and red mottling, damp to moist, medium stiff, low plasticity, sand content very fine grained, occasional silt content, no odor. At 7' bgs: Occasional light grey clay lenses.
				75		7.5-12.5	CLAYEY SAND: Orangish brown, moist, loose, slight plasticity, very fine to fine grained, trace light grey clay lenses (abundant at 9.8' bgs), no odor.
504.35	10			90			At 9.5' bgs: Yellowish brown sand lens, fine grained, well sorted (1" thick). At 10' bgs: Minor orange/red/dark brown silt stringers. At 10.3' bgs: Sand lens (similar to above - 1" thick). At 11.5' bgs: Light grey clay lens (1" thick; also observed at 12.3' bgs).
				60		12.5-23.3	SAND: Light brownish grey, damp, loose, very fine to fine grained, well sorted, sub-angular, occasional red/orange silt stringers, no odor.
499.35	15			60			At 14.5' bgs: Red silt clay lens. At 15' bgs: Minor yellow silt stringers.
				80			At 17.5' bgs: Minor dark brown silt stringers. At 17.8' bgs: Trace red silty clay lens (0.5" thick). At 19' bgs: Thin, horizontally layered orange/yellow/dark brown silt stringers. At 20' bgs: Occasional yellow/orange silt stringers.
494.35	20						

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
LICENSED
PROFESSIONAL GEOSCIENTIST
11/28/22

ERM Environmental Resources Management

JKS-66
DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-66 Date Drilled 2020-08-18

Project Plant Drains Pond CCR Unit Owner CPS Energy

Location Calaveras Power Station Boring T.D. 40.00 ' Boring Diam. 8.25 "

N. Coord. 13664900.45 E. Coord. 2186752.50 Surface Elevation 514.35' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0.00'

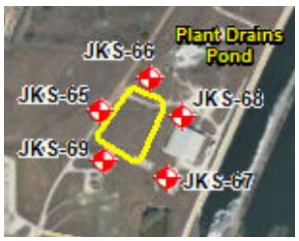
Top of Casing Elevation 517.65' Stickup 3.30'

Depth to Water: 1. Ft. 22.50' (SB Installation) 2. Ft. _____ (_____)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES
Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011)
Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.35	20			60	No Samples Collected		At 22.5' bgs: Very moist to wet, abundant orange/yellow silt stringers.
				80		23.3-27.5	CLAYEY SAND: Light brown with abundant orange coloring, moist, loose, non-plastic to slightly plastic, very fine grained, minor silt content, no odor.
489.35	25			60			At 25' bgs: Wet to 25.5' bgs, orange/light brown sandy clay lens.
				80		27.5-40.0	At 25.5' bgs: No orange coloring. SAND: Light brown, wet, loose, very fine grained, poorly sorted, sub-angular, minor silt content, trace orange silt stringers, no odor.
484.35	30			90			At 30' bgs: Saturated. At 31.8' bgs: Orange silty clay lens (1-2" thick).
				100			At 32.5' bgs: Trace orange silt stringers.
479.35	35			100			At 34.3' bgs: Light brown clay lens, medium plasticity (2" thick). At 35' bgs: Trace to minor orange silt stringers.
				100			At 37.5' bgs: Wet, minor clay content, abundant orange silt stringers.
474.35	40						At 39' bgs: Some red silt stringers. At 40' bags: Boring Terminated.

STATE OF TEXAS
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STATE OF TEXAS WELL REPORT for Tracking #551899

Owner:	**CPS Energy**	Owner Well #:	**JKS-66**
Address:	**P.O. Box 2906** **San Antonio , TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station** **12940 US 181** **San Antonio, TX 78263**	Latitude:	**29° 18' 52.65" N**
		Longitude:	**098° 18' 58.53" W**
Well County:	**Bexar**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **8/17/2020** Drilling End Date: **8/19/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.25	**0**	**40**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
18	**40**	**Sand**	**12/20**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1.16 Bags/Sacks**
2	**18**	**Bentonite 7 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **22.5 ft.** below land surface on **2020-08-18**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Vortex Drilling Partners, LP**

4412 Bluemel Road
San Antonio, TX 78240

Driller Name: **James E. Neal** License Number: **4868**

Apprentice Name: **Joe Lopez**

Comments: **No Data**

Report Amended on 8/28/2020 by Request #32574

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**No recovery**
5	**7.5**	**Sandy Clay**
7.5	**12.5**	**Clayey Sand**
12.5	**23.3**	**Sand**
23.3	**27.5**	**Clayey Sand**
27.5	**40**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Top Cap (Locking)**	**New Plastic (PVC)**	**40**		
2	**Bottom Cap**	**New Plastic (PVC)**	**40**		
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**20**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**20**	**40**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

Environmental Resources Management

JKS-67
DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-67 Date Drilled 2020-08-18

Project Plant Drains Pond CCR Unit Owner CPS Energy

Location Calaveras Power Station Boring T.D. 25.00' Boring Diam. 8.25"

N. Coord. 13664200.80 E. Coord. 2186869.58 Surface Elevation 500.48' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0.00'

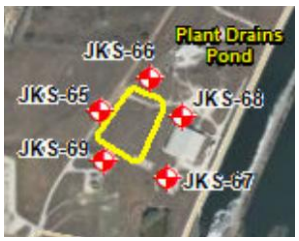
Top of Casing Elevation 503.29' Stickup 2.81'

Depth to Water: 1. Ft. 12.00' (SB Installation) 2. Ft. _____ (_____)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log / Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
500.48	0		0	No Samples Collected	0-5.0	NO RECOVERY: Soil removed by hydro-excavation
495.48	5		80		5.0- 7.5	SILTY SAND: Dark brown, dry, loose, very fine grained, abundant gravel content (up to 1") and root material, no odor.
			100		7.5-9.5	SILTY CLAYEY SAND: Brown, damp, dense to very dense (very compact), very fine grained, minor gravel content, abundant dark brown and occasional orange silt stringers, no odor
490.48	10		100		9.5-10.0	CLAYEY SAND: Brown, damp to moist, loose to medium dense, slight plasticity, very fine grained, heavily layered with dark brown/orange silt stringers, no odor.
			60		10.0-11.0	
					11.0-12.5	SAND: Light brown, very moist, loose, very fine grained, poorly sorted, sub-angular, trace dark brown silt stringers, no odor.
					12.5-15.0	CLAYEY SILTY SAND: Light brown with some dark brown and orange coloring, very moist, loose, slight plasticity, very fine grained, no odor. At 12' bgs: Wet.
485.48	15		60			SANDY CLAY: Light grey with some orange mottling, wet, soft, slight to low plasticity, sand content very fine grained, no odor.
					15.0-20.3	SILTY CLAYEY SAND: Light brown, wet, loose, very fine grained, minor to occasional dark brown/brown silt stringers, no odor.
			100			At 17.5' bgs: Saturated.
480.48	20					

STATE OF TEXAS
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11/28/22

ERM Environmental Resources Management

JKS-67
DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-67 Date Drilled 2020-08-18

Project Plant Drains Pond CCR Unit Owner CPS Energy

Location Calaveras Power Station Boring T.D. 25.00' Boring Diam. 8.25"

N. Coord. 13664200.80 E. Coord. 2186869.58 Surface Elevation 500.48' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0.00'

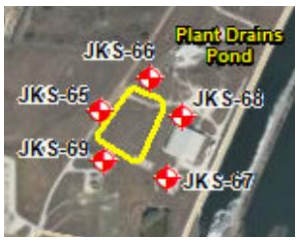
Top of Casing Elevation 503.29' Stickup 2.81'

Depth to Water: 1. Ft. 12.00' (SB Installation) 2. Ft. _____ (_____)

Drilling Company Vortex Drilling Partners, LP Driller James E. Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP



NOTES
Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log / Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480.48	20			No Samples Collected	20.3-25.0	SAND: Brown, saturated, loose, very fine grained, poorly sorted, sub-angular, minor silt content, abundant orange fine grained sand stringers and trace dark brown silt stringers, no odor.
			100			
			100			At 24.5' bgs: Sand very fine to fine grained, light brown colored layer (2" thick).
475.48	25					At 25' bgs: Boring Terminated.
			60			
			80			
470.48	30					
			90			
			100			
465.48	35					
			100			
			100			
460.48	40					

STATE OF TEXAS
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No. 11108
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11/28/22

STATE OF TEXAS WELL REPORT for Tracking #551902

Owner:	**CPS Energy**	Owner Well #:	**JKS-67**
Address:	**P.O. Box 2906 San Antonio , TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station 12940 US 181 San Antonio, TX 78263**	Latitude:	**29° 18' 45.98" N**
		Longitude:	**098° 18' 57.53" W**
Well County:	**Bexar**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **8/17/2020** Drilling End Date: **8/19/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.25	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
18	**25**	**Sand**	**12/20**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1.16 Bags/Sacks**
2	**8**	**Bentonite 4.5 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **10 ft.** below land surface on **2020-08-17**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Vortex Drilling Partners, LP**

4412 Bluemel Road
San Antonio, TX 78240

Driller Name: **James E. Neal** License Number: **4868**

Apprentice Name: **Joe Lopez**

Comments: **No Data**

Report Amended on 8/28/2020 by Request #32575

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**No recovery**
5	**7.5**	**Silty Sand**
7.5	**9.5**	**Silty Clayey Sand**
9.5	**10**	**Clayey Sand**
10	**11**	**Sand**
11	**12.5**	**Clayey Silty Sand**
12.5	**15**	**Sandy Clay**
15	**20.3**	**Silty Clayey Sand**
20.3	**25**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Top Cap (Locking)**	**New Plastic (PVC)**	**40**		
2	**Bottom Cap**	**New Plastic (PVC)**	**40**		
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**10**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**10**	**25**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

ERM Environmental Resources Management

JKS-68
DRILLING LOG

Proj. No. 0636109 Boring/Well ID JKS-68 Date Drilled 2022-07-12

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 27.00' Boring Diam. 7.25"

N. Coord. 13664629.59 E. Coord. 2186983.08 Surface Elevation 503.41' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0.00'

Top of Casing Elevation 506.34' Stickup 2.93'

Depth to Water: 1. Ft. 15.00' (Installation) 2. Ft. _____ (_____)

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
503.41	0				0-5.0	NO RECOVERY: Soil removed by hydro-excavation.
498.41	5				5.0- 9.9	SILTY SAND: Light greyish brown, damp, loose, very fine grained, sub-angular, decreasing silt content with depth, occasional dark brown and minor orange silt stringers, no odor.
493.41	10				9.9-16.0	SAND: Light orangish brown, moist, loose, very fine grained, poorly sorted, sub-angular, occasional silt content, abundant orange silt stringers, no odor. At 12.0' bgs: Very moist. At 13.7' bgs: Color change to light brown At 14.2' bgs: Horizontally layered orange silt lenses.
488.41	15					At 15.0' bgs: Very moist to wet.
					16.0-27.0	SILTY SAND: Light greyish brown, very moist to wet, loose, very fine grained, sub-angular, abundant orange silt stringers, no odor. At 19.0' bgs: Color change to light brown.
483.41	20					At 20.0' bgs: Wet.

STATE OF TEXAS
NSH 11/28/22
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No. 11108
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ERM Environmental Resources Management

JKS-68
DRILLING LOG

Proj. No. 0636109 Boring/Well ID JKS-68 Date Drilled 2022-07-12

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 27.00' Boring Diam. 7.25"

N. Coord. 13664629.59 E. Coord. 2186983.08 Surface Elevation 503.41' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0.00'

Top of Casing Elevation 506.34' Stickup 2.93'

Depth to Water: 1. Ft. 15.00' (Installation) 2. Ft. _____ (_____)

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
483.41	20			JKS-68_23-25 USCS: Sandy Lean Clay (CL) AL: 30 / 16 / 40 -200 Sieve: 68.3		At 21.0' bgs: No silt content. At 23.0' bgs: Sandy clay lens to 25' bgs. Non-cohesive grab sample collected from 23'-25' bgs. At 26.0' bgs: Refusal with split-spoon, switch to solid core bit (soil logged via cuttings). At 27.0' bgs: Drilling refusal (possible bedrock).
478.41	25					
476.41						
	30					
	35					
	40					

STATE OF TEXAS
Nicholas Houtchens
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11/28/22

STATE OF TEXAS WELL REPORT for Tracking #612892

Owner:	**CPS Energy**	Owner Well #:	**JKS-68**
Address:	**P.O. Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 50.01" N**
Well Location:	**12940 US 181 San Antonio, TX 78263**	Longitude:	**098° 18' 56.05" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **7/12/2022** Drilling End Date: **7/12/2022**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.25	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
10	**27**	**Sand**	**16/30**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1 Bags/Sacks**
2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **15 ft.** below land surface on **2022-07-12**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Envirotech Drilling Services LLC**

PO BOX 19064
Houston, TX 77224

Driller Name: **Jaime Vasquez** License Number: **58171**

Comments: **No Data**

Report Amended on 8/24/2022 by Request #37320

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**No recovery**
5	**9.9**	**Silty Sand (light greyish brown)**
9.9	**16**	**Sand (light orangish brown)**
16	**27**	**Silty Sand (light greyish brown)**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**12**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**12**	**27**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Austin, TX 78711
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ERM Environmental Resources Management

JKS-69
DRILLING LOG

Proj. No. 0636109 Boring/Well ID JKS-69 Date Drilled 2022-07-12

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 40.00' Boring Diam. 7.25"

N. Coord. 13664320.12 E. Coord. 2186428.47 Surface Elevation 513.01' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.00'

Top of Casing Elevation 515.82' Stickup 2.81'

Depth to Water: 1. Ft. 25.00' (Installation) 2. Ft. _____ (_____)

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
513.01	0			No samples collected	0-5.0	NO RECOVERY: Soil removed by hydro-excavation.
508.01	5				5.0- 8.6	SILTY CLAY: Light orangish brown, moist, medium stiff to stiff, low plasticity, occasional very fine grained sand content, no odor. At 6.5' bgs: Occasional light grey and orange silt stringers to 7.3' bgs.
					8.6-10.5	SILTY SAND: Light orangish brown, moist, loose, very fine grained, sub-angular, minor clay content, no odor.
503.01	10				10.5-11.4	At 10.0' bgs: Color change to orange, increasing clay content. SILTY CLAY: Light grey, moist, soft, low plasticity, abundant orange silt stringers, no odor. Orange sandy clay lens (1" thick) at 10.7' bgs.
					11.4-22.0	At 11.1' bgs: Gradational contact with sand unit below, orange silty sandy clay lens to 11.4' bgs. SAND: Light orangish brown, moist to very moist, medium dense, very fine grained, well sorted, sub-angular, trace silt, minor to occasional orange silt stringers, no odor. At 12.2' bgs: Color Change to light brown.
498.01	15					
						At 18.5' bgs: Decreasing orange silt stringers.
493.01	20					

STATE OF TEXAS
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ERM Environmental Resources Management

JKS-69
DRILLING LOG

Proj. No. 0636109 Boring/Well ID JKS-69 Date Drilled 2022-07-12

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 40.00' Boring Diam. 7.25"

N. Coord. 13664320.12 E. Coord. 2186428.47 Surface Elevation 513.01' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.00'

Top of Casing Elevation 515.82' Stickup 2.81'

Depth to Water: 1. Ft. 25.00' (Installation) 2. Ft. _____ (_____)

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.01	20				22.0-40.0	At 20.5' bgs: Color change to light orangish brown, abundant orange silt stringers. At 21.5' bgs: Minor clay content. SILTY SAND: Light orangish brown, very moist, loose, very fine grained, sub-angular, occasional orange silt stringers (occurrence increases with depth), no odor. At 23.0' bgs: Color change to light brown. At 24.0' bgs: Intermixed pinkish brown color. At 25.0' bgs: Very moist to wet, no silt stringers.
488.01	25					At 27.6' bgs: Horizontal dark brown banding (2" or less).
483.01	30					At 32.0' bgs: Wet to saturated. Refusal with split-spoon, switch to solid core bit (soil logged via cuttings).
478.01	35					
473.01	40					At 40.0' bgs: Boring terminated.

STATE OF TEXAS
11/28/22
Nicholas Houtchens
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STATE OF TEXAS WELL REPORT for Tracking #612893

Owner:	**CPS Energy**	Owner Well #:	**JKS-69**
Address:	**P.O. Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 46.99" N**
Well Location:	**12940 US 181 San Antonio, TX 78263**	Longitude:	**098° 19' 02.31" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **7/12/2022** Drilling End Date: **7/12/2022**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.25	**0**	**40**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
23	**40**	**Sand**	**16/30**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1 Bags/Sacks**
2	**23**	**Bentonite 6 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **25 ft.** below land surface on **2022-07-12**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Envirotech Drilling Services LLC**

PO BOX 19064
Houston, TX 77224

Driller Name: **Jaime Vasquez** License Number: **58171**

Comments: **No Data**

Report Amended on 8/24/2022 by Request #37321

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**No recovery**
5	**8.6**	**Silty clay (light orangish brown)**
8.6	**10.5**	**Silty sand (light orangish brown)**
10.5	**11.4**	**Silty clay (light grey)**
11.4	**22**	**Sand (light orangish brown)**
22	**40**	**Silty sand (light orangish brown)**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**25**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**25**	**40**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
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(512) 334-5540

Environmental Resources Management

JKS-70
DRILLING LOG

Proj. No. 0636109 Boring/Well ID JKS-70 Date Drilled 2022-07-12

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 27.00' Boring Diam. 7.25"

N. Coord. 13663092.09 E. Coord. 2186316.21 Surface Elevation 493.51' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0.00'

Top of Casing Elevation 496.29' Stickup 2.78'

Depth to Water: 1. Ft. 15.00' (Installation) 2. Ft. _____ (_____)

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.51	0			No samples collected	0-5.0	NO RECOVERY: Soil removed by hydro-excavation.
488.51	5				5.0-8.5	SILTY SAND: Brown, moist, loose to medium dense, very fine grained, sub-angular, interbedded with low plasticity clay (light grey), abundant orange and minor yellow silt stringers, no odor.
					8.5-11.5	SILTY CLAY: Brown, moist with increasing moisture content with depth, medium stiff, low plasticity, abundant very fine grained sand stringers, occasional orange silt stringers, no odor.
483.51	10					At 10.0' bgs: Decreasing moisture content, increasing plasticity, abundant orange silt stringers.
					11.5-13.5	SILT: Brown to orangish brown, damp, medium dense, trace clay and minor very fine grained sand content, occasional clay lenses (light grey, low to medium plasticity), abundant orange and occasional dark brown silt stringers, no odor.
					13.5-15.0	At 12.8' bgs: Color change to orangish brown and dark brown. SILTY SAND: Orangish brown, damp, medium dense, very fine grained, sub-angular, minor clay content (decreases with depth), no odor.
478.51	15				15.0-20.8	At 13.9' bgs: Light grey, low plasticity clay lens (1" thick). SAND: Light grey to light brown, very moist to wet, medium dense (increasing density with depth), very fine grained, poorly sorted, sub-angular, abundant orange silt stringers, no odor.
						At 18.5' bgs: Trace clay content.
473.51	20					At 20.0' bgs: Wet, abundant red silt stringers to 20.3' bgs.

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ERM Environmental Resources Management

JKS-70
DRILLING LOG

Proj. No. 0636109 Boring/Well ID JKS-70 Date Drilled 2022-07-12

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 27.00' Boring Diam. 7.25"

N. Coord. 13663092.09 E. Coord. 2186316.21 Surface Elevation 493.51' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0.00'

Top of Casing Elevation 496.29' Stickup 2.78'

Depth to Water: 1. Ft. 15.00' (Installation) 2. Ft. _____ (_____)

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Texas Coordinate System - South Central Zone from North American datum of NAD 83 (NA2011) Elevations in NAVD88 (Geoid03).

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
473.51	20				20.8-22.0	At 20.4' bgs: Abundant orange silt stringers. SILTY CLAYEY SAND: Brown, wet, loose, very fine grained, sub-angular, abundant dark brown silt stringers, no odor.
					22.0-27.0	SAND: Light greyish brown, wet, very dense, very fine grained, well sorted, sub-angular, trace dark brown silt stringers, no odor.
468.51	25					At 25.0' bgs: Saturated.
466.51						At 27.0' bgs: Drilling refusal (possible bedrock).
	30					
	35					
	40					

STATE OF TEXAS
Nicholas Houtchens
GEOLOGY
No. 11108
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11/28/22

STATE OF TEXAS WELL REPORT for Tracking #612894

Owner:	**CPS Energy**	Owner Well #:	**JKS-70**
Address:	**P.O. Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 34.83" N**
Well Location:	**12940 US 181 San Antonio, TX 78263**	Longitude:	**098° 19' 03.65" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **7/12/2022** Drilling End Date: **7/12/2022**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.25**	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**10**	**27**	**Sand**	**16/30**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Concrete 1 Bags/Sacks**
	2	**10**	**Bentonite 2.5 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **15 ft.** below land surface on **2022-07-12**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Envirotech Drilling Services LLC**

PO BOX 19064
Houston, TX 77224

Driller Name: **Jaime Vasquez** License Number: **58171**

Comments: **No Data**

Report Amended on 9/1/2022 by Request #37418

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**0 - 5 ft: No recovery**
5	**8.5**	**5 - 8.5 ft: Silty sand (light grey & brown)**
8.5	**11.5**	**8.5 - 11.5 ft: Silty clay (brown)**
11.5	**13.5**	**11.5 - 13.5 ft: Silt (brown to orangish brown)**
13.5	**15**	**13.5 - 15 ft: Silty sand (orangish brown)**
15	**20.8**	**15 - 20.8 ft: Sand (light grey to light brown)**
20.8	**22**	**20.8 - 22 ft: Silty clayey sand (brown with dark brown)**
22	**27**	**22 - 27 ft: Sand (light greyish brown)**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**12**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**12**	**27**

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Please include the report's Tracking Number on your written request.

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ERM Environmental Resources Management

SB-20220713-01 DRILLING LOG

Proj. No. 0636109 Boring/Well ID SB-20220713-01 Date Drilled 2022-07-13

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 60.00' Boring Diam. 7.25"

N. Coord. - E. Coord. - Surface Elevation 0.00 Ft. MSL Datum

Screen: Type N/A Diam. N/A Length N/A Slot Size N/A

Casing: Type N/A Diam. N/A Length N/A Sump Length N/A

Top of Casing Elevation N/A Stickup N/A

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

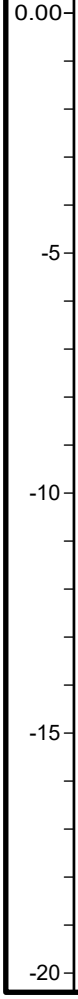
Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

DRAFT



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0.00	0			No samples collected	0-5.0	NO RECOVERY: Soil removed by hydro-excavation.
-5	5				5.0-9.0	SILT: Orange, dry, very dense, minor fine grained sand content, occasional red and yellow silt stringers, no odor.
						At 7.0' bgs: Color change to light greyish brown, abundant silt stringers (red, yellow, orange, and dark brown).
					9.0-14.0	At 8.5' bgs: Increasing sand content. CLAY: Brownish grey, damp, very stiff, high plasticity, occasional red, yellow, orange silt stringers, no odor.
-10	10					
					14.0-15.0	At 13.7' bgs: Dark brown, medium plasticity, blocky, silty clay lens (3" thick). SAND: Light brown, dry to damp, loose, fine grained, well sorted, sub-angular, minor orange silt stringers, minor clay lenses (grey, high plasticity, 2" or less thickness), no odor.
-15	15				15.0-18.7	SILTY CLAY: Grey, dry to damp, stiff to very stiff, medium plasticity, abundant red, yellow, and orange silt stringers (up to 1" thick) to 17' bgs, no odor.
						At 17.0' bgs: Increasing silt content, minor yellow silt stringers. At 17.8' bgs: Fine grained, sub-angular, poorly sorted sand lens (2" thick).
					18.7-21.0	SILTY SAND: Light brown, dry, loose to medium dense, fine grained, sub-angular, abundant orange and red silt/fine grained sand stringers, minor clay content (at depth), no odor. At 19.0' bgs: Refusal with split-spoon, switch to solid core bit to 20' bgs (soil logged via cuttings).
-20	20					

ERM Environmental Resources Management

SB-20220713-01 DRILLING LOG

Proj. No. 0636109 Boring/Well ID SB-20220713-01 Date Drilled 2022-07-13

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 60.00' Boring Diam. 7.25"

N. Coord. - E. Coord. - Surface Elevation 0.00 Ft. MSL Datum

Screen: Type N/A Diam. N/A Length N/A Slot Size N/A

Casing: Type N/A Diam. N/A Length N/A Sump Length N/A

Top of Casing Elevation N/A Stickup N/A

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

DRAFT

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
-20	20				21.0-31.7	SILTY CLAY: Brownish grey, damp, very stiff, medium plasticity, abundant orange silt stringers to 22' bgs, no odor. At 22.0' bgs: Slight decrease in silt content with depth, occasional yellow silt stringers. At 24.0' bgs: Horizontally oriented light grey silt stringers.
-25	25					At 25.0' bgs: Damp to moist, slight increase in plasticity, slight decrease in silt content, occasional orange and yellow silt stringers.
-30	30					At 30.0' bgs: Silty clay interbedded with horizontally oriented grey, orange, and yellow silt lamina (<1" thick).
					31.7-33.0	CLAYEY SAND: Light greyish brown, damp, loose, slightly plastic, occasional silt content, descreasing clay content with depth, abundant orange and yellow silt stringers, no odor.
					33.0-35.0	CLAY: Brownish grey to dark grey, damp, very stiff, high plasticity, trace silt content (decreases with depth), abundant light grey, orange, and yellow silt stringers, no odor.
-35	35				35.0-38.7	CLAYEY SILT: Light greyish brown, damp, slight plasticity, abundant alternating lenses of yellow silt and dark brown clay, no odor. At 37.5' bgs: Decreasing clay content to 38' bgs, orange silt stringers at 37.9' bgs.
-40	40				38.7-41.0	SILTY CLAY: Light grey, damp, medium stiff to stiff, slight to low plasticity, abundant light grey and minor yellow silt stringers, occasional intermixed dark brown clay lenses, no odor.

Environmental Resources Management

SB-20220713-01
DRILLING LOG

Proj. No. 0636109 Boring/Well ID SB-20220713-01 Date Drilled 2022-07-13

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 60.00' Boring Diam. 7.25"

N. Coord. - E. Coord. - Surface Elevation 0.00 Ft. MSL Datum

Screen: Type N/A Diam. N/A Length N/A Slot Size N/A

Casing: Type N/A Diam. N/A Length N/A Sump Length N/A

Top of Casing Elevation N/A Stickup N/A

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

DRAFT

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
-40	40				41.0-60.0	CLAY: Very dark grey, dry to damp, very stiff, high plasticity, blocky texture (soil breaks along silt stringer seams), abundant light grey and orange silt stringers to 41.5' bgs.
						At 43.0' bgs: Refusal with split-spoon, switch to solid core bit to 45' bgs (soil logged via cuttings).
-45	45					At 45.0' bgs: Clay interbedded with light grey, very fine grained silty sand.
						At 46.7' bgs: Light grey silt lens (2-3" thick).
						At 47.0' bgs: Refusal with split-spoon, switch to solid core bit to 50' bgs (soil logged via cuttings).
-50	50					
						At 51.5' bgs: Grey silt lens (0.5' thick).
-55	55					
-60	60					At 60.0' bgs: Boring terminated.

STATE OF TEXAS WELL REPORT for Tracking #612895

Owner:	**CPS Energy**	Owner Well #:	**SB-20220713-01**
Address:	**P.O. Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
		Latitude:	**29° 19' 43.87" N**
Well Location:	**12940 US 181 San Antonio, TX 78263**	Longitude:	**098° 18' 56.58" W**
Well County:	**Bexar**	Elevation:	**No Data**
		****Plugged Within 48 Hours****	

****This well has been plugged**** **Plugging Report Tracking #221710**

Type of Work: **New Well** Proposed Use: **Environmental Soil Boring**

Drilling Start Date: **7/13/2022** Drilling End Date: **7/13/2022**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.25**	**0**	**60**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Open Hole**

Annular Seal Data: **No Data**

Seal Method: **Not Applicable**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **No Data**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Envirotech Drilling Services LLC**

PO BOX 19064
Houston, TX 77224

Driller Name: **Jaime Vasquez** License Number: **58171**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**No recovery**
5	**9**	**Silt (orange)**
9	**14**	**Clay (brownish grey)**
14	**15**	**Sand (light brown)**
15	**18.7**	**Silty clay (grey)**
18.7	**21**	**Silty sand (light grey)**
21	**31.7**	**Silty clay (brownish grey)**
31.7	**33**	**Clayey sand (light greyish brown)**
33	**35**	**Clay (brownish grey to dark grey)**
35	**38.7**	**Clayey silt (light greyish brown)**
38.7	**41**	**Silty clay (light grey)**
41	**60**	**Clay (very dark grey)**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
No Data			

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #221710

Owner:	**CPS Energy**	Owner Well #:	**SB-20220713-01**
Address:	**P.O. Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78263**	Latitude:	**29° 19' 43.87" N**
		Longitude:	**098° 18' 56.58" W**
Well County:	**Bexar**	Elevation:	**No Data**

Well Type: **Environmental Soil Boring**

Drilling Information

Company: **Envirotech Drilling Services LLC** Date Drilled: **7/13/2022**

Driller: **Jaime Vasquez** License Number: **58171**

Well Report Tracking #612895

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.25**	**0**	**60**

Plugging Information

Date Plugged: **7/13/2022** Plugger:

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

No Data

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**60**	**Bentonite 21 Bags/Sacks**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Envirotech Drilling Services LLC**

PO BOX 19064
Houston, TX 77224

Driller Name: **Jaime Vasquez** License Number: **58171**

Comments: **No Data**

ERM Environmental Resources Management

SB-20220713-02 DRILLING LOG

Proj. No. 0636109 Boring/Well ID SB-20220713-02 Date Drilled 2022-07-14

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 47.0' Boring Diam. 7.25"

N. Coord. - E. Coord. - Surface Elevation 0.00 Ft. MSL Datum

Screen: Type N/A Diam. N/A Length N/A Slot Size N/A

Casing: Type N/A Diam. N/A Length N/A Sump Length N/A

Top of Casing Elevation N/A Stickup N/A

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

DRAFT

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0.00	0			No samples collected	0-5.0	NO RECOVERY: Soil removed by hydro-excavation.
-5	5				5.0-7.1	SILTY CLAY: Greyish brown, dry, stiff, medium plasticity, interbedded with light brown silt (lamina up to 0.5" thick), occasional orange silt stringers, no odor.
					7.1-10.0	SILTY SAND: Light brown, dry, dense, very fine grained, sub-angular, minor orange silt stringers to 8.5' bgs. At 8.5' bgs: Greyish brown, medium plasticity clay lens (4" thick), minor yellow silt stringers.
-10	10				10.0-15.0	SILT: Light grey, dense to very dense, interbedded with dark brown, medium plasticity clay, minor very fine grained sand content, abundant orange and yellow silt stringers, no odor. At 12.2' bgs: Orange silt lens (2' thick). At 13.0' bgs: Orange silt lens (2' thick). At 13.3' bgs: Increasing occurrence of clay lenses, clay content very dark brown. At 14.5 bgs: Color change to orange, very dense, trace dark brown clay content (no longer interbedded).
-15	15				15.0-20.5	SILTY CLAY: Dark brown, dry, very stiff, medium plasticity, interbedded with abundant light grey, orange, and yellow silt lamina, no odor. At 18.6' bgs: Light greyish brown silt lens (2" thick). At 18.8' bgs: Slightly decreasing occurrence of silt lamina.
-20	20					

ERM Environmental Resources Management

SB-20220713-02 DRILLING LOG

Proj. No. 0636109 Boring/Well ID SB-20220713-02 Date Drilled 2022-07-14

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 47.0' Boring Diam. 7.25"

N. Coord. - E. Coord. - Surface Elevation 0.00 Ft. MSL Datum

Screen: Type N/A Diam. N/A Length N/A Slot Size N/A

Casing: Type N/A Diam. N/A Length N/A Sump Length N/A

Top of Casing Elevation N/A Stickup N/A

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

DRAFT

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
-20	20				20.5-25.0	NO RECOVERY: Refusal with split-spoon, switch to solid core bit to 25' bgs (very hard layer encountered); rock fragments observed within drill cuttings.
-25	25				25.0-29.5	SILTY CLAY: Dark brown, dry, very stiff, medium plasticity, interbedded with abundant light grey, orange, and yellow silt lamina, no odor. At 26.4' bgs: Light grey silt lens (1" thick). At 27.1' bgs: Color change to very dark brown.
-30	30				29.5-47.0	CLAY: Very dark grey, dry, very stiff, high plasticity, occasional light grey and orange silt stringers. At 30.0' bgs: Blocky texture, minor light grey silt and no orange silt stringers.
-35	35					At 36.0': Refusal with split-spoon, switch to solid core bit to 40' bgs (soil logged via cuttings).
-40	40					At 40.0' bgs: Increasing silt content to 43' bgs.

ERM Environmental Resources Management

SB-20220713-02 DRILLING LOG

Proj. No. 0636109 Boring/Well ID SB-20220713-02 Date Drilled 2022-07-14

Project 2022 Well Installation Owner CPS Energy

Location Calaveras Power Station Boring T.D. 47.0' Boring Diam. 7.25"

N. Coord. - E. Coord. - Surface Elevation 0.00 Ft. MSL Datum

Screen: Type N/A Diam. N/A Length N/A Slot Size N/A

Casing: Type N/A Diam. N/A Length N/A Sump Length N/A

Top of Casing Elevation N/A Stickup N/A

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Envirotech Drilling Services, LLC Driller Juan Martinez

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

DRAFT

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
-40	40					
-45	45					At 43.0' bgs: Trace silt stringers. At 46.0' bgs: Refusal with split-spoon, switch to solid core bit to 47' bgs (soil logged via cuttings). At 47.0' bgs: Drilling refusal (possible bedrock).
-50	50					
-55	50					
-60	60					

STATE OF TEXAS WELL REPORT for Tracking #612896

Owner: **CPS Energy**

Address: **P.O. Box 2906**
San Antonio, TX 78299

Well Location: **12940 US 181**
San Antonio, TX 78263

Well County: **Bexar**

Owner Well #: **SB-20220713-02**

Grid #: **68-46-5**

Latitude: **29° 19' 47.37" N**

Longitude: **098° 18' 56.27" W**

Elevation: **No Data**

****Plugged Within 48 Hours****

****This well has been plugged****

Plugging Report Tracking #221711

Type of Work: **New Well**

Proposed Use: **Environmental Soil Boring**

Drilling Start Date: **7/13/2022** Drilling End Date: **7/14/2022**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.25**	**0**	**47**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Open Hole**

Annular Seal Data: **No Data**

Seal Method: **Not Applicable**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **No Data**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Envirotech Drilling Services LLC**

PO BOX 19064
Houston, TX 77224

Driller Name: **Jaime Vasquez** License Number: **58171**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**No recovery**
5	**7.1**	**Silty clay (greyish brown)**
7.1	**10**	**Silty sand (light brown)**
10	**14.5**	**Silt interbedded with clay (light grey with dark brown)**
14.5	**15**	**Silt (orange)**
15	**20.5**	**Silty clay (dark brown)**
20.5	**25**	**No recovery**
25	**29.5**	**Silty clay (dark brown)**
29.5	**47**	**Clay (very dark grey)**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
No Data			

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #221711

Owner:	**CPS Energy**	Owner Well #:	**SB-20220713-02**
Address:	**P.O. Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78263**	Latitude:	**29° 19' 47.37" N**
		Longitude:	**098° 18' 56.27" W**
Well County:	**Bexar**	Elevation:	**No Data**

Well Type: **Environmental Soil Boring**

Drilling Information

Company: **Envirotech Drilling Services LLC** Date Drilled: **7/14/2022**

Driller: **Jaime Vasquez** License Number: **58171**

Well Report Tracking #612896

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.25**	**0**	**47**

Plugging Information

Date Plugged: **7/14/2022** Plugger:

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

No Data

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**47**	**Bentonite 16 Bags/Sacks**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

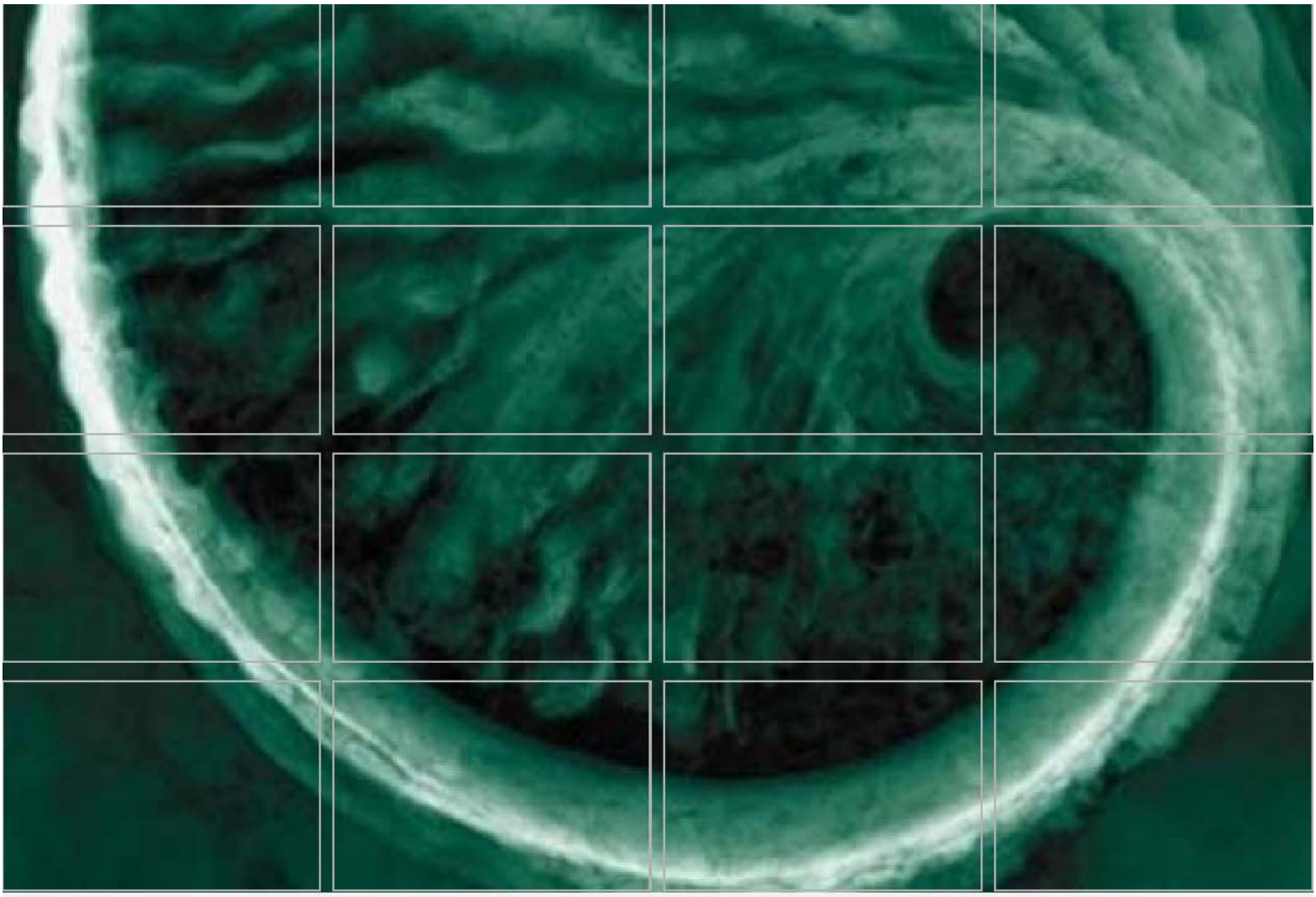
Company Information: **Envirotech Drilling Services LLC**

PO BOX 19064
Houston, TX 77224

Driller Name: **Jaime Vasquez** License Number: **58171**

Comments: **No Data**

Attachment 4 CCR Fugitive Dust Control Plan



CCR Fugitive Dust Control Plan

CPS Energy
Calaveras Power Station
San Antonio, Texas

October 15, 2015
Updated November 16, 2022

CPS Energy

CCR Fugitive Dust Control Plan
Calaveras Power Station

San Antonio, Texas

October 15, 2015
Updated November 16, 2022

Project Nos. 0294192 and 0636109

Charles Johnson
Senior Engineer, P.E.

Walter Zverina
Project Manager

Environmental Resources Management
Southwest, Inc.
840 W. Sam Houston Parkway N.
Suite 600
Houston, Texas 77024
T: 281-600-1000
F: 281-600-1001

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

RECORD OF TECHNICAL PLAN AMENDMENTS, REVISIONS OR REVIEWS

Technical amendments/revisions to this Fugitive Dust Control Plan should be recorded here. A P.E. certification is required for technical changes and must be included on a new certification page – See Section 2.

Date	Amendment/ Revision or Update	Summary of Changes to Plan and/or Update Observations	Pages or Sections Changed
10/15/2015	Initial	Initial Plan Issued	Entire Plan
11/16/2022	Update	Updates based on TCEQ comments	Entire Plan

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

CPS Energy owns and operates the Calaveras Power Station (Facility) in San Antonio, Texas. Within this Facility, two power plants are coal fired plants (JT Deely Power Plant and JK Spruce Power Plant). The JT Deely Power Plant ceased operation at the end of December 2018. The JK Spruce Power Plant and CCR units associated with both power plants that receive or historically received coal combustion residuals (CCR) are subject to regulation under Title 40, Code of Federal Regulations, Part 257, Subpart D (CCR Rule), except for on-site landfills that ceased receiving CCR prior to October 19, 2015. Additionally, Boral Material Technologies (BMT) performs CCR management tasks at the Facility in addition to operating and maintaining a CCR pile at the Facility.

This document serves as the CCR Fugitive Dust Control Plan (Plan) for CPS Energy. The Plan is intended to satisfy the air criteria requirements of the CCR regulations promulgated in 40 CFR Part 257.80.

This Plan requires CPS Energy to adopt measures that will effectively minimize CCR from becoming airborne at the Facility, including CCR fugitive dust originating from CCR units, CCR piles, roads, and other CCR management activities. A Facility site map showing the pertinent CCR units, CCR piles, roads, and other CCR management activities is provided in Appendix A.

1.1 PLAN REQUIREMENTS AND DEFINITIONS

The CCR regulations promulgated in 40 CFR Part 257 require the preparation, certification and implementation of a Fugitive Dust Control Plan for all regulated CCR units and associated areas (e.g., haul roads and associated CCR management activities). The requirement to prepare and implement this Plan is applicable to owners and operators of CCR units covered under the Rule, including:

- New and existing landfills;
- New and existing surface impoundments;
- CCR units located off-site of the electric utilities' or independent power producers' facilities that receive CCR for disposal; and
- Certain inactive CCR surface impoundments if the CCR unit still contains CCR and liquids.

The Plan contains specific terms that are defined as follows in 40 CFR 257.2, Definitions and associated Federal Registers as noted:

- **Coal combustion residuals (CCR)** – means fly ash, bottom ash, boiler slag and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.
- **CCR fugitive dust** – means solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.

- **CCR landfill –** means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.
- **CCR pile or pile –** means any non-containerized accumulation of solid, non-flowing CCR that is placed on the land. Note: As stated in the CCR Rule Preamble, piles placed on the land and used as "temporary storage" to manage CCR on-site prior to disposal in a landfill or subsequent beneficial use are considered as a CCR landfill and subject to the requirements of the Rule (unless containerized or contained by some other method of preventing environmental exposure).
- **CCR surface impoundment –** means a natural topographic depression, manmade excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.
- **Facility –** means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, disposing, or otherwise conducting solid waste management of CCR. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).
- **Qualified professional engineer –** means an individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under this subpart. Professional engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.

1.2 MANAGEMENT OF THE PLAN

CPS Energy will periodically assess the effectiveness of this Plan through the following procedures and amend the Plan as appropriate:

- CPS Energy and BMT will log observations of fugitive dust emissions using the Visual Observation Record in Appendix B.
- CPS Energy will review the Visual Observation Records of the affected CCR units. These Visual Observation Records may indicate cause for additional or modified handling processes and/or dust control measures.
- BMT will be responsible for periodically assessing the effectiveness of the Plan for their operations and recommend Plan amendments to CPS Energy as needed. CPS Energy will also be responsible for periodic assessment of the effective of the BMT operations to comply with this Plan.

A completed copy of the Plan, certified by a qualified professional engineer, will be generated and placed in the CPS Energy Operating Record by October 19, 2015. CPS Energy will amend this Plan in accordance with the requirements of

§257.80(b)(6) whenever a change that will substantially affect this written Plan, such as construction and operation of a new CCR unit. CPS Energy will amend this Plan whenever necessary and place a copy of the current updated Plan in the Operating Record in accordance with the Recordkeeping requirements of §257.105(g)(1).

An amended Plan will be certified by a qualified professional engineer as in accordance with the requirements of §257.80(b)(7).

1.3 REPORTING REQUIREMENTS

CPS Energy will prepare an annual CCR fugitive dust control report that includes the following information:

- Description of the actions taken by CPS Energy during the reporting year to control fugitive dust;
- A record of all citizen complaints received during the calendar year; and
- A summary of any corrective measures taken ~~in response to received citizen complaints~~.

CPS Energy will complete the initial annual report no later than 14 months after placing the initial Fugitive Dust Control Plan in the Operating Records. The initial Fugitive Dust Control Plan will be placed in the Operating Record by October 19, 2015. The initial annual report is due on December 19, 2016.

CPS Energy will record citizen complaints of fugitive dust emissions using the log in Appendix C.

1.4 NOTIFICATION REQUIREMENTS

CPS Energy will notify the Texas Commission on Environmental Quality (TCEQ) Industrial Hazardous Waste Permit Section - CCR Program (ihwper@tceq.texas.gov) as required under §257.106(g)(1) and (2) when the following documents are made available in the Operating Record:

- Initial and subsequent amendments to this Plan; and
- Annual CCR fugitive dust control report.

1.5 INTERNET POSTING REQUIREMENTS

CPS Energy will post the following documents as required under §257.107(g)(1) and (2) within 30 days of placing in the Operating Record:

- Initial and subsequent amendments to this Plan; and
- Annual CCR fugitive dust control report.

1.6 COMPLIANCE WITH OTHER REGULATORY REQUIREMENTS

This Plan is designed to comply with the federal CCR fugitive dust control requirements found in 40 CFR Part 257.80 and is not intended to incorporate procedures to fully comply with the requirements of any other regulation. The Facility does not intend to duplicate or deviate from the requirements for fugitive dust control required under other regulations or permits such as Title V and NSR air permits and Texas air quality regulations under 30 TAC Part 1, Chapter 111, Control of Air Pollution from Visible Emissions and Particulate Matter.

2.0 PROFESSIONAL ENGINEER'S CERTIFICATION

40 CFR Part 257.80(b)(7) of the CCR regulations require that the Fugitive Dust Control Plan meets the requirements of the Rule. This certification is provided below:

> *"I hereby certify that I have reviewed the CCR unit management practices for the CPS Energy Calaveras Power Station in San Antonio, Texas, and being familiar with the provisions of 40 CFR Part 257.80, attest that this Fugitive Dust Control Plan has been prepared in accordance with good engineering practices."*

Seal:

Charles Johnson, P.E.
Printed Name of Registered Professional Engineer

Signature of Registered Professional Engineer

Date: _____

128280
Registration No.

Texas
State

3.0 *POTENTIAL SOURCES OF DUST AND CONTROL MEASURES*

CPS Energy and their contractor Boral Material Technologies (BMT) handle CCR in various units. A site map of the Facility is included in Appendix A. The site map depicts the following areas where CCR is managed:

- 5-Year/Fly Ash Landfill
- Evaporation Pond
- Mobile Ash Conditioning System
- Radial Stacker
- North and South Bottom Ash Ponds
- Sludge Recycle Holding (SRH) Ponds
- Sludge Handling Conveyors
- Concrete Bottom Ash Bins
- Emergency Stackout
- Paved Roads maintained by CPS Energy
- Unpaved Roads maintained by CPS Energy and BMT

The CCR units, types of CCR materials managed, management methods, and dust control measures with explanations on how the measures are applicable and appropriate for site conditions are presented in Table 3-1. Examples of control measures that may be appropriate include: locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drip points; using wind barriers, compaction or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover.

TABLE 3-1: CCR Fugitive Dust Management and Control Measures

CCR Units	CCR Materials Managed	Management Methods	Dust Control Measures
5-Year/Fly Ash Landfill	Fly Ash Economizer Ash MACS Ash FGD Gypsum Bottom Ash	• Fly Ash is transported on-site in covered or enclosed dump trucks, enclosed pneumatic trailers or vacuum trucks. Fly Ash is shipped off-site in enclosed pneumatic trailers or covered dump trucks. • Economizer Ash may be unloaded into the MACS or unloaded into the Landfill. • Fly Ash used for the production of MACS Ash will travel from the silos on paved roads and then travel along an unpaved road in covered or enclosed dump trucks or enclosed pneumatic trailers to the Landfill. Once the truck arrives at the Landfill, the truck will unload Fly Ash into the MACS. • Once MACS Ash has been produced, the MACS Ash will remain stored in the Landfill for future sales. • FGD Gypsum is mechanically transported to the Landfill by the covered Sludge Handling Conveyors and is discharged from a Radial Stacker located in the southwest corner of the Landfill. • Moist Bottom Ash is transported to the Landfill along paved and unpaved roads in dump trucks. Drier Bottom Ash is transported to the Landfill along paved and unpaved roads in covered dump trucks. • FGD Gypsum and Bottom Ash are stored in the Landfill for future sales. • FGD Gypsum and Bottom Ash that are shipped off-site will travel on paved and unpaved roads in covered dump trucks.	• Fly Ash is transported in covered or enclosed trucks, in enclosed pneumatic trailers or vacuum trucks. • Significant spills along roads will be collected and deposited into the Landfill. • Paved roads are swept monthly by a motorized street sweeper. Prior to mechanical sweeping, if necessary, any significant accumulations should be collected. To minimize the spread of dust, sweeping activities will not be conducted during high wind events. Collected material from the sweeping activities will be deposited into the Landfill. • CPS Energy and BMT ~~will conduct periodic~~document visual observations for emission of windblown dust in the Landfill and on the roads quarterly; however visual observation of windblown dust is conducted more or less continuously while personnel are present. CPS Energy and BMT~~and~~ will use water trucks to apply water spray to areas where drying has caused apparent windblown dust. • The dust collector for the MACS will be in operation during unloading. If the dust collector is not operable, BMT will make necessary repairs prior to unloading. • A stabilized exit will be used to control the release of loose CCR materials on truck wheels as the trucks leave the Landfill. A description of the construction and maintenance of the stabilized exit is provided in Appendix D. • The above dust control measures are applicable and appropriate for the Facility based on the type, moisture content, and storage, transportation, and disposal methods of CCR at the Facility.

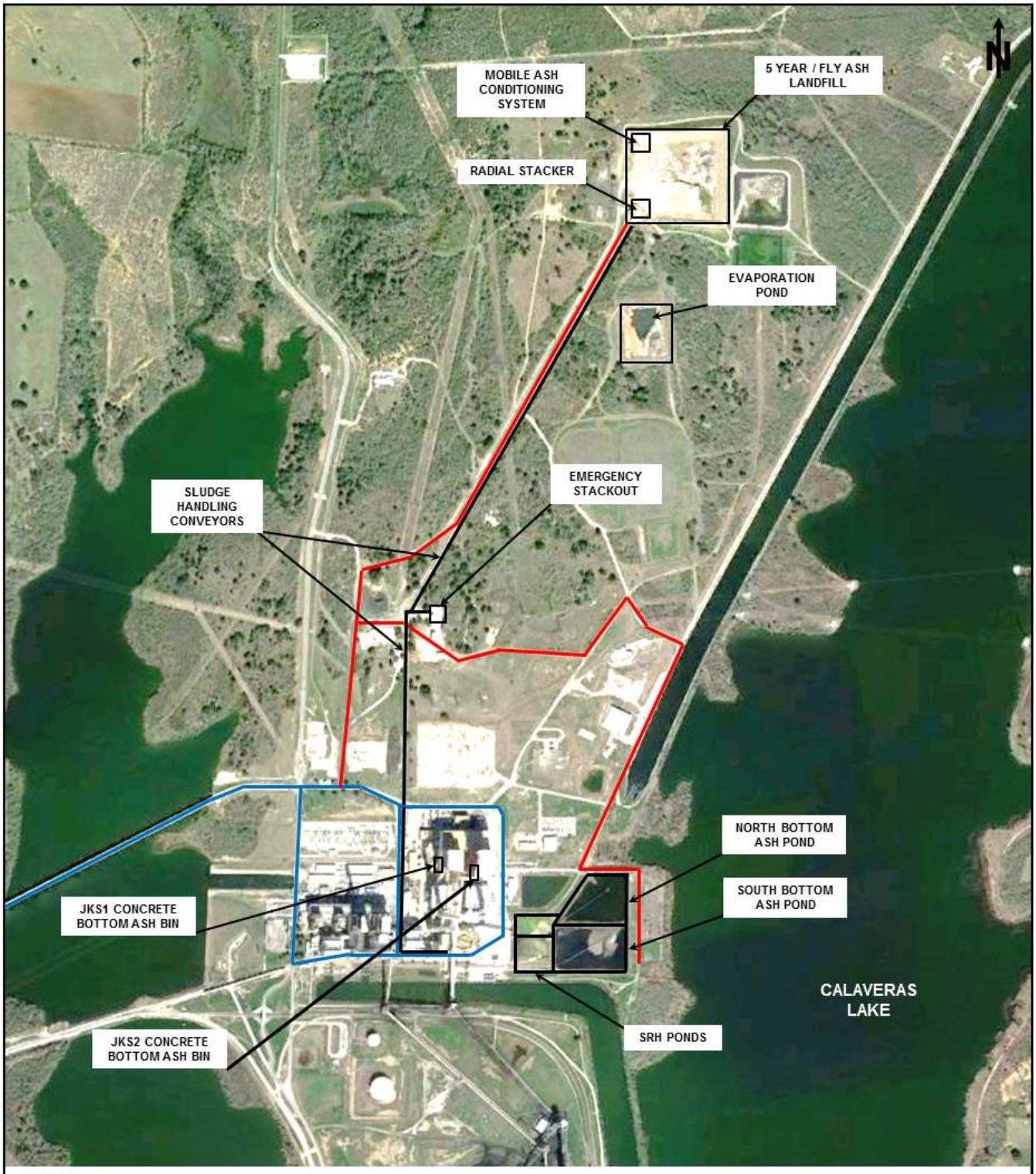
CCR Units	CCR Materials Managed	Management Methods	Dust Control Measures
North and South Bottom Ash Ponds	Bottom Ash	• Bottom Ash is sluiced and conveyed to the North and South Bottom Ash Ponds through piping. • Once sufficient Bottom Ash is collected in a Bottom Ash Pond, the Pond will be dewatered and BMT will use a front end loader to remove the Bottom Ash. • Bottom Ash that is shipped off-site will travel along paved roads and unpaved roads in covered dump trucks. • Moist Bottom Ash is transported to the Landfill along paved and unpaved roads in dump trucks. Drier Bottom Ash is transported to the Landfill along paved and unpaved roads in covered dump trucks.	• Sluiced Bottom Ash is conveyed through piping. • Dry Bottom Ash is transported in covered dump trucks. • Paved roads are swept monthly by a motorized street sweeper. Prior to mechanical sweeping, if necessary, any significant accumulations should be collected. To minimize the spread of dust, sweeping activities will not be conducted during high wind events. Collected material from the sweeping activities will be deposited into the Landfill. • CPS Energy and BMT will ~~conduct periodic~~document visual observations for emission of windblown dust on the roads quarterly; however visual observation of windblown dust is conducted more or less continuously while personnel are present. CPS Energy and BMT~~and~~ will use water trucks to apply water spray to areas where drying has caused apparent windblown dust. • The above dust control measures are applicable and appropriate for the Facility based on the type, moisture content, and storage, transportation, and disposal methods of CCR at the Facility.
Sludge Handling Conveyors and Radial Stacker	FGD Gypsum	• FGD Gypsum is mechanically transported to the Landfill by the covered Sludge Handling Conveyors and is discharged from a Radial Stacker located in the southwest corner of the Landfill.	• CPS Energy will ~~conduct~~ document periodic visual observations of the Conveyors for releases of FGD Gypsum that results in visible dust emissions quarterly; however visual observation of windblown dust is conducted more or less continuously while personnel are present.~~.~~ • Any significant releases of FGD Gypsum along the Conveyors will be collected and deposited in the Landfill. • CPS Energy will adjust CCR drop height or shroud as appropriate to minimize windblown dust from Conveyors and Radial Stacker. • The above dust control measures are applicable and appropriate for the Facility based on the type, moisture content, and storage, transportation, and disposal methods of CCR at the Facility.

CCR Units	CCR Materials Managed	Management Methods	Dust Control Measures
JKS1 and JKS2 Concrete Bottom Ash Bins	Bottom Ash	• Bottom Ash is removed from the boilers by drag chain conveyor and is discharged into a concrete collection bins for temporary storage. • BMT will use a front end loader to remove Bottom Ash from inside the concrete collection bins. • Moist Bottom Ash is transported along paved and unpaved roads in dump trucks and will be stored in the Landfill for future sales.	• CPS Energy and BMT will ~~conduct~~ document periodic visual observations for emission of windblown dust on the roads quarterly; however visual observation of windblown dust is conducted more or less continuously while personnel are present. CPS Energy and BMT~~and~~ will use water trucks to apply water spray to areas where drying has caused apparent windblown dust. • The above dust control measures are applicable and appropriate for the Facility based on the type, moisture content, and storage, transportation, and disposal methods of CCR at the Facility.
Emergency Stackout	FGD Gypsum	• If Radial Stacker or Sludge Handling Conveyors become inoperable, FGD Gypsum will be discharged at the Emergency Stackout. • BMT or CPS Energy will use a front end loader and dump trucks to move the moist FGD Gypsum from the Emergency Stackout to the Landfill along unpaved roads.	• CPS Energy and BMT will ~~conduct~~ document periodic visual inspections for emission of windblown dust at the Stackout and on the roads quarterly; however visual observation of windblown dust is conducted more or less continuously while personnel are present. CPS Energy and BMT~~and~~ will use water trucks to apply water spray to areas where drying has caused apparent windblown dust. • The above dust control measures are applicable and appropriate for the Facility based on the type, moisture content, and storage, transportation, and disposal methods of CCR at the Facility.

Facility Site Map

Appendix A

Environmental Resources Management Southwest, Inc.
CityCentre Four
840 W. Sam Houston Parkway N. Suite 600
Houston, Texas 77024
(512) 281-1000



LEGEND

Paved roads swept by street sweeper

Unpaved roads wetted by water trucks

0 400 800

APPROX. SCALE

Environmental Resources Management

DATE: October 2015

PROJ. NO.: 0294192/A7780

FIGURE 1
Facility Site Map
CPS Energy
San Antonio, Texas

ERM

Visual Observation Record

Appendix B

Environmental Resources Management Southwest, Inc.
CityCentre Four
840 W. Sam Houston Parkway N. Suite 600
Houston, Texas 77024
(512) 281-1000

Visual Observation Record – Fugitive Dust Emissions

CPS Energy

Calaveras Power Station

Date and Time Emission Observed	
Person Observing Emission	
Description of Emission	
Area of Site Emission was Observed	
Corrective Actions Description and Timetable (if applicable)	
Follow-Up Actions (if applicable)	

Citizen Complaint Log

Appendix C

Environmental Resources Management
CityCentre Four
840 W. Sam Houston Parkway N. Suite 600
Houston, Texas 77024
(512) 281-1000

Citizen Complaint Log – Fugitive Dust Emissions

CPS Energy

Calaveras Power Station

Date and Time Complaint Received	
Person Receiving Complaint	
Method Complaint Registered or Received	
Description of Complaint	
Area of Site Originating Complaint (if applicable)	
Corrective Actions Description and Timetable (if applicable)	
Follow-Up Actions (if applicable)	

Description of Stabilized Exit

Appendix D

Environmental Resources Management Southwest, Inc.
CityCentre Four
840 W. Sam Houston Parkway N. Suite 600
Houston, Texas 77024
(512) 281-1000

STABILIZED EXIT

This section describes the construction and maintenance of a stabilized exit to control the release of loose coal combustion residual (CCR) materials on truck wheels as the trucks leave the 5-year/fly ash landfill area. Truck traffic must exit the landfill area only through the stabilized exit.

Construction Materials

Coarse aggregates shall consist of crushed stone, gravel, or a combination of both. Coarse aggregates should consist of open graded rock 3 to 8 inch nominal diameter in size. Coarse aggregates shall be composed of clean, hard, durable materials free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic matter.

General Construction

The stabilized exit will be used in conjunction with the existing cattle guard and will be constructed on a section of the unpaved road located between the top of the landfill exit ramp and the cattle guard.

The stabilized exit width should be at least 14 feet for one-way traffic and shall be sufficient for all egress. The length of the stabilized exit should be between 20 to 50 feet. The thickness of the coarse aggregates in the stabilized exit shall be between 6 and 8 inches.

Construction Methods

1. Excavate the designated exit area to a depth of 3 to 4 inches into the existing grade.
2. If the subgrade material is existing roadbase or other hard material, place the coarse aggregate into the excavation until the thickness is not greater than 8 inches. If the subgrade material is existing soil, then a geotextile fabric should be first placed into the excavation to reduce the potential for the aggregate to sink too much into the existing soil subgrade. The coarse aggregate will then be placed into the fabric lined excavation until the thickness is not greater than 8 inches.
3. The area around the stabilized exit shall be graded to provide sufficient drainage away from the stabilized exit.

Maintenance Methods

The stabilized exit area shall be inspected monthly. If necessary, provide periodic top dressing with additional coarse aggregates to maintain the required depth.

Once the top 3 to 4 inches of the coarse aggregates becomes filled with CCR materials (based on visual observation), then the 3 to 4 inch layer should be removed and replaced with another layer of coarse aggregates to the required depth. The CCR impacted aggregates removed during this maintenance task should be placed within the landfill.

Unless otherwise directed, maintain the stabilized exit until the landfill is no longer accepting CCR.

Attachment 5 Annual Inspection and Fugitive Dust Control Report

Environmental Resources Management

CityCentre Four
840 West Sam Houston Pkwy N.
Suite 600
Houston, Texas 77024
(281) 600-1000
(281) 600-1001 (Fax)

January 28, 2021 (Revised November 17, 2022)

Mr. Michael Malone
CPS Energy
145 Navarro Street
San Antonio, Texas 78205

Project No. 0352436

Subject: CCR Units – 2020 Annual Inspection and Fugitive Dust Control Report
Calaveras Power Station
San Antonio, Texas

Dear Mr. Malone:

Environmental Resources Management (ERM) conducted an inspection of coal combustion residual (CCR) units for two power plants located at the CPS Energy Calaveras Power Station in Bexar County, Texas. The CCR units are shared by the J.K. Spruce and J.T. Deely Power Plants, which are co-located at 12940 U.S. Highway 181 South in San Antonio, Texas. The CCR units utilized by the power plants are described in Table 1. Although the J.T. Deely Power Plant ceased operation at the end of December 2018 and sluiced bottom ash is no longer being received at the Bottom Ash Ponds (BAPs), the BAPs will continue to be inspected until the units have undergone closure.

Table 1. Calaveras Power Station CCR Unit Descriptions

Unit Name	Unit ID	Purpose of Unit
Fly Ash Landfill (a.k.a. 5-Year Landfill)	010	Receives fly ash, bottom ash, economizer ash, scrubber sludge from flue gas desulphurization ponds, and flue gas desulphurization gypsum (temporary storage).
Evaporation Pond	021	Receives boiler chemical cleaning waste and other authorized liquid wastes.
North Bottom Ash Pond (North BAP)	005	Formerly received sluiced bottom ash.
South Bottom Ash Pond (South BAP)	006	Formerly received sluiced bottom ash.
Sludge Recycle Holding (SRH) Pond (North and South)	026	Receives flue gas desulphurization scrubber sludge.

The annual inspection was conducted by Mr. Charles Johnson, P.E., on December 15, 2020. Photographs taken during the inspection are provided in Attachment 1. No issues were observed that indicated immediate stability or operational issues at the CCR units. Details of the observations made by Mr. Johnson are provided below.

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

Unit Descriptions

All units are built with above-grade earthen embankments reportedly composed of sandy clay and clayey sand fill. Some units have CCR ash used in the surface roadways of the features (e.g., Fly Ash Landfill and BAPs). Figure 1, provided in Attachment 2, shows the locations of each CCR unit. Dimensions of the CCR units were not measured during the annual inspection.

Based on a comparison of recent and historical aerial photographs dating back to 1995, no significant changes in the dimensions or geometry of the units were observed. Table 2 provides a summary of the unit dimensions. The dimensions presented below are approximate and are based on publically available imagery as well as on an assessment conducted by CDM Smith (June 2014).

Table 2: Calaveras Power Station CCR Unit Dimensions

Dimension	Fly Ash Landfill	Evaporation Pond	North BAP	South BAP	SRH Pond
Length (feet)	1,000	500	680-370 (a)	400	440
Width (feet)	950	400	460	680	330
Depth (feet)	32.5	22	12	12	8
Avg. Crest Width (feet)	20	20	15	15	15
Perimeter (feet)	4,000	1,800	2,100	2,200	1,550
Interior Slopes, H:V	3:1	3:1	2:1	2:1	3:1
Exterior Slopes, H:V	3:1	3:1	3:1	3:1	3:1
Total Area (acres)	21.8	4.5	6.0	7.0	3.5

(a) Length ranges from 680 to 370 feet along the southern and northern sides of the North BAP.

The Evaporation Pond is reportedly lined with 30-mil polyvinylchloride (PVC) geomembrane. There are no inlet or outlet structures to the Evaporation Pond. A four-inch polyethylene pipe is present in the eastern embankment and supplies water for equipment washout purposes within the Evaporation Pond area. Liquid from boiler chemical cleanouts and other authorized liquid wastes are trucked to the Evaporation Pond, and are allowed to evaporate. Periodically, dried material is removed from the Evaporation Pond and placed in the Fly Ash Landfill.

The North and South BAPs are reportedly lined with clay, but the thickness and hydraulic conductivity of the clay are unknown. Both BAPs have two discharge points. One 24-inch steel pipe in each BAP allows water to be returned to the plant for reuse. Both BAPs also have outlet structures consisting of a horizontal 12-inch steel discharge pipe at an approximate elevation of 489 feet MSL (bottom drain used to empty the pond), and a vertical 12-inch steel overflow pipe at an approximate of elevation 499 feet MSL (normal operation level pool drain). The outfall structure is in one corner of each BAP (northeast for North BAP and southeast for South BAP) and is partially surrounded by steel sheet piling. The sheet piling and pond berms create an opening for water to reach the discharge pipes. This opening is typically protected by floating sorbent booms. Water from these outlets discharges to Calaveras Lake through a TPDES permitted outfall. Sluiced bottom ash has not been received at the BAPs since the end of December 2018 and water is no longer present in the units.

The interior slopes of the SRH Pond are reportedly covered with 30-mil HDPE liner and a 6-inch thick concrete slab. The SRH Pond is delineated into a north side and south side by a concrete divider wall with a sluice gate that allows the two sides to be isolated from each other. Water is pumped from the SRH Pond to clarifiers via two 18-inch steel pipes. The SRH Pond had two eight-foot-wide concrete overflow chutes that discharged to the South BAP. These overflow chutes have been filled with road base/caliche as of the 2019 annual inspection since the BAPs are undergoing closure.

The Fly Ash Landfill is reportedly lined with a 30-mil HDPE liner covered with a 10-ounce geotextile and 12 inches of sand. The bottom of the Fly Ash Landfill slopes from west-to-east, from approximately 514 feet MSL to 503 feet MSL. The top berm is at an approximate elevation of 535.5 feet MSL, for a total landfill depth of approximately 32.5 feet at the deepest point. Storm water collects in the southeast corner of the Fly Ash Landfill and is allowed to settle. A water quality sample is collected and analyzed prior to discharge through a TPDES permitted outfall.

No electronic instrumentation is associated with the CCR units. Rebar rods, used by CPS Energy to monitor water levels, are present at the Evaporation Pond.

Unit History

The Evaporation Pond was originally constructed as a fly ash landfill. In 1990, a pond liner was installed. Then in 1996, the unit was converted from a landfill to an impoundment. Fly ash was placed in the landfill prior to it being used as an impoundment. The top of the Evaporation Pond is at an approximate elevation of 522 feet MSL and the bottom is at an approximate elevation of 500 feet MSL.

The North and South BAPs were constructed in 1977, and the SRH Pond was constructed in 1992. Embankments are reported to have been constructed of on-site material. The top of the SRH Pond embankments is at an approximate elevation of 500 feet MSL, and the bottom at an approximate elevation of 492 feet MSL. Up to a foot of ash and other material have been added to the roads on the top of the BAP embankments, making the top elevation approximately 501 feet MSL. The bottom of the BAPs is at an approximate elevation of 489 feet MSL.

The Fly Ash Landfill was constructed in 1992. Liner on the side slopes was originally not covered with a protective layer, and began to show signs of deterioration. Portions of the liner on the north and west side embankments were repaired in 2010 and all side slopes are currently covered with a protective layer of coarse CCR.

Except for the ceased operations at the BAPs, no other changes to unit operations or dimensions were reported to have occurred during the life of the units.

Structural Integrity

There is no reported historic evidence of structural instability in the CCR units.

Geotechnical properties of the foundation and abutment materials, on which the ponds were constructed, are provided in *Geotechnical Engineering Study for Ash Pond Berms – Spruce/Deely Generation Units, San Antonio, Texas* by Raba Kistner Consultants, Inc. (May 2014), and are summarized in *Assessment of Dam Safety of Coal Combustion Surface Impoundments Final Report* for the J.K. Spruce and J.T. Deely Power Plants by CDM Smith (June 2014).

As summarized in the CDM Smith report, embankment material is light clay (ASTM "CL") with a clay fraction of approximately 45%, and an assumed liquid limit between 35 and 47. Foundation material for the BAPs and SRH Pond consists of sandy clay (ASTM "CL") with a clay fraction between 50% and 60%, and a liquid limit of approximately 51; or clayey sand (ASTM "ML") with a clay fraction of approximately 35%, and a liquid limit of approximately 33. Evaporation Pond material is similar, except the liquid limit for the foundation materials is approximately 55.

No information on the embankment and foundation materials were available for the Fly Ash Landfill, but foundation materials are anticipated to be similar to those of the Evaporation Pond based on the proximity of the units.

Annual Inspection Summary

Signage was present at each CCR unit and no issues were observed that presented an immediate threat to structural integrity of the CCR units.

Fly Ash Landfill

The Fly Ash Landfill was at approximately 40% of the approximate 900,000 cubic yard capacity based on calculations provided by CPS Energy. Approximately 4 to 6 acres of the Fly Ash Landfill interior were covered with discrete piles of ash, the largest piles approximately 20 feet in height.

Grass along the exterior embankment slopes was observed to be generally well maintained and no woody plants were observed. No significant rutting, erosion, animal burrows, or other problems were observed at the time of the annual inspection.

Weekly inspection records from January 2, 2020 through December 28, 2020 reported no issues and therefore, no corrective actions were needed or taken.

Since the 2019 annual inspection, there have been no noticeable changes in the geometry of the Fly Ash Landfill, or any other changes that appear likely to have affected the stability or operation of the Fly Ash Landfill.

Evaporation Pond

The Evaporation Pond had approximately 8 feet of freeboard available at the time of the inspection. This corresponds to approximately 6 feet below the top of the geomembrane liner as measured by a set of rebar rods recently installed within the Evaporation Pond by CPS Energy. Based on information provided by CPS Energy, accounting for accumulated solids, the Evaporation Pond had an available capacity of approximately 15% or 12 acre-feet, with approximately 70 acre-feet of water and CCR contained within the Evaporation Pond.

Grass along the exterior embankment slopes was observed to be generally well maintained and no woody plants were observed. No significant rutting, erosion, animal burrows, seepage, or other problems were observed at the time of the annual inspection.

Weekly inspection records from January 2, 2020 through December 28, 2020 reported no issues and therefore, no corrective actions were needed or taken.

Since the 2019 annual inspection, there have been no noticeable changes in the geometry of the Evaporation Pond, or any other changes that appear likely to have affected the stability of the Evaporation Pond. Based on information provided by CPS Energy, the maximum depth of the water and CCR in the Evaporation Pond during 2020 was 20 feet, which corresponds to two feet of freeboard and a volume of approximately 74 acre-feet. The minimum amount of CCR and water contained was reported to be 85% of the capacity, comprised primarily of accumulated solids and a minimal volume of water, which corresponds to a volume of approximately 70 acre-feet.

North Bottom Ash Pond

The North BAP was offline, drained, and substantially empty of water and CCR at the time of the inspection.

Grass along the western and eastern exterior embankment slopes was observed to be generally well maintained. Some woody plant growth was observed on the north exterior embankment slope and some minor erosion was observed on the north interior embankment slope. Corrosion was observed on the overflow discharge pipe and nearby sheet piling. No significant rutting, erosion, animal burrows, seepage, or other problems were was observed at the time of the annual inspection.

Weekly inspection records from January 2, 2020 through December 28, 2020 reported no issues and therefore, no corrective actions were needed or taken.

Since the 2019 annual inspection, there have been no noticeable changes in the geometry of the North BAP, or any other changes that appear likely to have affected the stability of the North BAP. Based on information provided by CPS Energy, the North BAP was substantially empty of water and CCR for all of 2020.

South Bottom Ash Pond

The South BAP was offline, drained, and substantially empty of water and CCR at the time of the inspection.

Grass along the external embankment slopes was observed to be generally well maintained and no woody plants were observed. Corrosion was observed on the overflow discharge pipe and nearby sheet piling. No significant rutting, erosion, animal burrows, seepage, or other problems were observed at the time of the annual inspection.

Weekly inspection records from January 2, 2020 through December 28, 2020 reported no issues and therefore, no corrective actions were needed or taken.

Since the 2019 annual inspection, there have been no noticeable changes in the geometry of the South BAP, or any other changes that appear likely to have affected the stability of the South BAP. Based on information provided by CPS Energy, the South BAP was substantially empty of water and CCR for all of 2020.

Sludge Recycle Holding (SRH) Pond

The SRH Pond contained water at the time of the inspection. Only the north side of the pond was in use during the inspection and appeared to have approximately two feet of freeboard. The south side of the pond was not in use and appeared to be approximately 75% full with CCR solids with approximately 2 feet of freeboard. This corresponds to a combined available capacity (including freeboard) of approximately 6 acre-feet, with approximately 17 acre-feet of water and CCR contained within the SRH Pond.

Grass along the external embankment slopes was observed to be generally well maintained. No significant rutting, erosion, animal burrows, seepage, or other problems were observed at the time of the annual inspection. Spillways that flow to the South BAP were filled with road base/caliche since the BAPs are undergoing closure.

Weekly inspection records from January 2, 2020 through December 28, 2020 reported no issues and therefore, no corrective actions were needed or taken.

Since the 2019 annual inspection, there have been no noticeable changes in the geometry of the SRH Pond, or any other changes that appear likely to have affected the stability of the SRH Pond. Based on information provided by CPS Energy, the maximum depth of the water and CCR in the SRH Pond during 2020 was 6 feet, which corresponds to two feet of freeboard and a volume of approximately 17 acre-ft. The minimum depth was 0 feet (one side of the pond was empty while the other was in operation), which corresponds to a volume of approximately 8 acre-feet.

Fugitive Dust Control

ERM assessed compliance with the *Fugitive Dust Control Plan* (FDCP) in conjunction with the annual inspection. CPS Energy reported no citizen complaints regarding fugitive dust emissions from the CCR units or the handling equipment. Paved roads are reportedly swept twice per month, which is more frequent than the minimum monthly requirement specified in

the FDCP. Haul roads were reportedly watered daily each morning and additionally as needed when handling CCR. Releases from conveyors are monitored and cleaned as needed. Visual observations are made quarterly at each CCR unit.

Emission observations are recorded on a standard opacity form utilized for non-CCR inspections and not on the form provided in the FDCP. The standard opacity form contains more detailed information than the FDCP form. Emissions were observed and recorded during various operations (i.e., truck loading at ash silos/dust collectors, ash dumping at landfill) associated with the CCR units and handling equipment. Reported opacity observations were within the limits of the New Source Performance Standard and therefore, no corrective actions were needed or taken.

ERM appreciates the opportunity to work with CPS Energy on this project. Should you have any questions, please contact us at 281-600-1000.

Sincerely,

Environmental Resources Management

Charles Johnson

Charles Johnson, P.E.

cc: Gregg Tieken, CPS Energy

Attachments:

Attachment 1 Photographs
Attachment 2 Figure 1

Photographs

Attachment 1

Environmental Resources Management
CityCentre Four
840 West Sam Houston Pkwy N., Suite 600
Houston, Texas 77024
(281) 600-1000

Photograph: 1	Fly Ash Landfill – standing on west berm – facing east. Radial stacker located in southwest corner of landfill. Photo taken 12/15/2020.

Photograph: 2	Fly Ash Landfill – standing on west berm – facing northeast. Photo taken 12/15/2020.

Photograph: 3	Fly Ash Landfill – standing on northwest corner – facing west. Photo taken 12/15/2020.

Photograph: 4	Fly Ash Landfill – standing on northwest corner – facing west. Photo taken 12/15/2020.

Photograph: 5	Fly Ash Landfill – standing on southeast corner – facing west. Radial stacker located in southwest corner and stormwater discharge piping in southeast corner of landfill. Photo taken 12/15/2020.

Photograph: 6	Fly Ash Landfill – standing on southeast corner – facing west. Radial stacker located in southwest corner and stormwater discharge piping in southeast corner of landfill. Photo taken 12/15/2020.

Photograph: 7	Fly Ash Landfill – standing on southeast corner – facing north. Photo taken 12/15/2020.

Photograph: 8	Fly Ash Landfill – standing on southeast corner – facing north. Photo taken 12/15/2020.

Photograph: 9	Evaporation Pond – standing on the northeast corner – facing west. Photo taken 12/15/2020.

Photograph: 10	Evaporation Pond – standing on the northeast corner – facing south. Photo taken 12/15/2020.

Photograph: 11	Evaporation Pond – standing on the southwest corner – facing north. Photo taken 12/15/2020.

Photograph: 12	Evaporation Pond – standing on the southwest corner – facing east. Photo taken 12/15/2020.

Photograph: 13	Evaporation Pond – standing on the northeast corner – facing west. Photo taken 12/15/2020.

Photograph: 14	Evaporation Pond – standing on the northeast corner – facing south. Photo taken 12/15/2020.

Photograph: 15	Evaporation Pond – standing on the southwest corner – facing north. Photo taken 12/15/2020.

Photograph: 16	Evaporation Pond – standing on the southwest corner – facing east. Photo taken 12/15/2020.

Photograph: 17	North Bottom Ash Pond – standing on northwest corner – facing east. Photo taken 12/15/2020.

Photograph: 18	North Bottom Ash Pond – standing on northwest corner – facing southwest. Photo taken 12/15/2020.

Photograph: 19	North Bottom Ash Pond – standing on southwest corner – facing northeast. Photo taken 12/15/2020.

Photograph: 20	North Bottom Ash Pond – standing on southwest corner – facing east. Photo taken 12/15/2020.

Photograph: 21	South Bottom Ash Pond – standing on northeast corner – facing south. Photo taken 12/15/2020.

Photograph: 22	South Bottom Ash Pond – standing on northeast corner – facing west. Photo taken 12/15/2020.

Photograph: 23	South Bottom Ash Pond – standing on southeast corner – facing west. Photo taken 12/15/2020.

Photograph: 24	South Bottom Ash Pond – standing on southwest corner – facing northeast. Photo taken 12/15/2020.

Photograph: 25	North SRH Pond – standing on northeast corner – facing south. Photo taken 12/15/2020.

Photograph: 26	North SRH Pond – standing on northeast corner – facing west. Photo taken 12/15/2020.

Photograph: 27	North SRH Pond – standing on northwest corner – facing south. Photo taken 12/15/2020.

Photograph: 28	North SRH Pond – standing on northwest corner – facing south. Photo taken 12/15/2020.

Photograph: 29	North SRH Pond – standing on southeast corner – facing north. Spillway structure. Photo taken 12/15/2020.

Photograph: 30	South SRH Pond – standing on the northwest corner – facing east. Photo taken 12/15/2020.

Photograph: 31	South SRH Pond – standing on the northwest corner – facing southeast. Photo taken 12/15/2020.

Photograph: 32	South SRH Pond – standing on the southwest corner – facing north. Photo taken 12/15/2020.

Photograph: 33	South SRH Pond – standing on the southwest corner – facing east. Photo taken 12/15/2020.

Photograph: 34	South SRH Pond – standing on the southeast corner – facing west. Photo taken 12/15/2020.

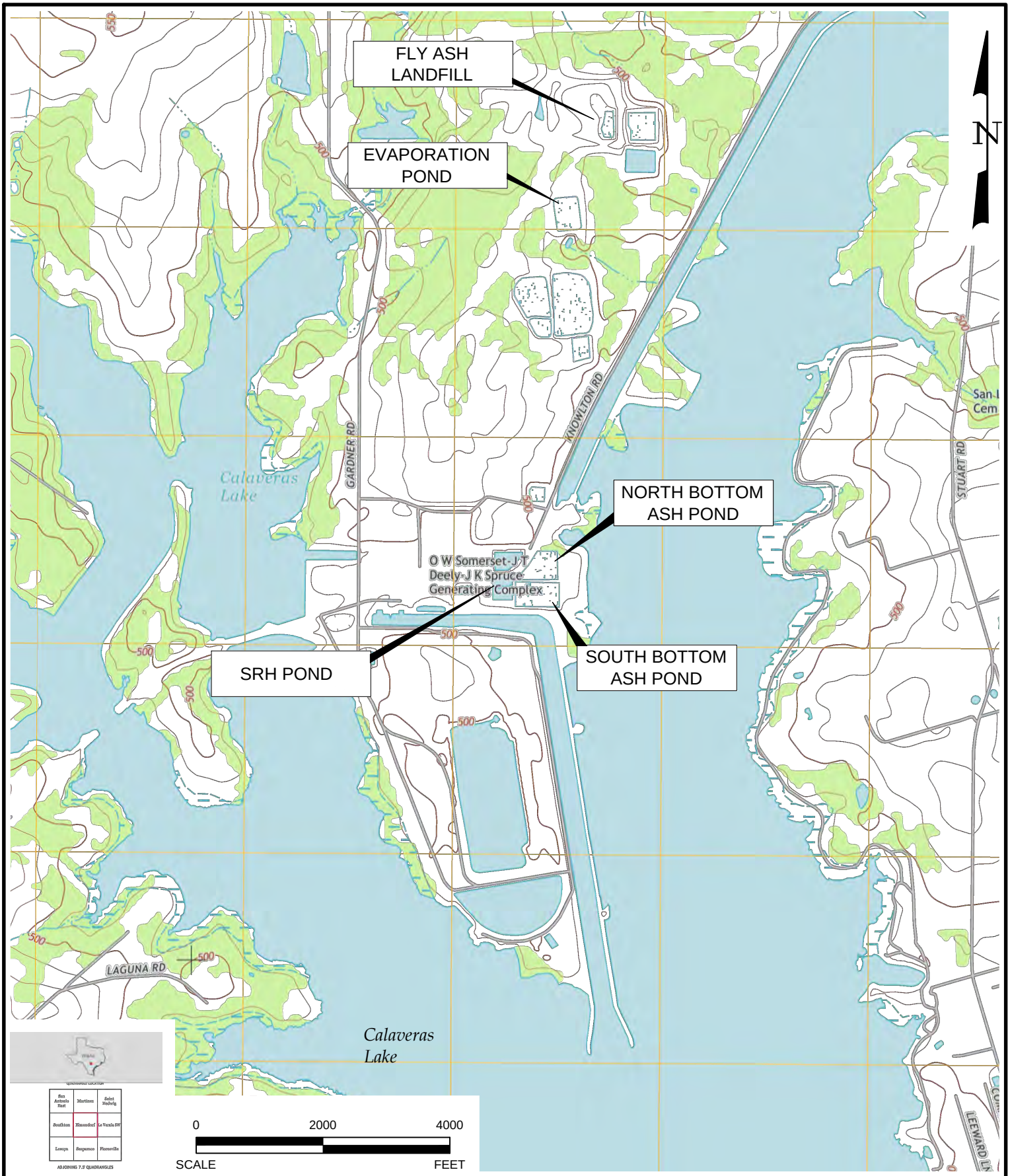
Photograph: 35	South SRH Pond – standing on northwest corner – facing south. Photo taken 12/15/2020.

Photograph: 36	South SRH Pond – standing on east corner – facing north. Spillway structure. Photo taken 12/15/2020.

Figure 1

Attachment 2

Environmental Resources Management
CityCentre Four
840 West Sam Houston Pkwy N., Suite 600
Houston, Texas 77024
(281) 600-1000



Environmental Resources Management

DESIGN: CC	DRAWN: RLM	CHKD.: CC
DATE: 1/5/2016	SCALE: AS SHOWN	REV.:
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FIGURE 1
CCR Unit Locations
Calaveras Power Station
San Antonio, Texas

ERM

Attachment 6-1 CCR Waste Tables

Table I.6. – CCR Waste Management Units

CCR Unit No.[1]	Unit Name	N.O.R. No.[1]	Unit Description[2]	Capacity	Unit Status[3]
021	Evaporation Pond	021	Receives boiler chemical cleaning waste and other authorized liquid wastes.	99 acre-feet	Active
010	Fly Ash Landfill	010	Receives fly ash, bottom ash, economizer ash, scrubber sludge from flue gas desulphurization ponds, and flue gas desulphurization gypsum (temporary storage).	900,000 cubic yards	Active
026	SRH Pond	026	Receives flue gas desulphurization scrubber sludge.	28 acre-feet	Active
005	North Bottom Ash Pond	005	Formerly received sluiced bottom ash – currently dewatered and undergoing closure.	72 acre-feet	Inactive
006	South Bottom Ash Pond	006	Formerly received sluiced bottom ash – currently dewatered and undergoing closure.	84 acre-feet	Inactive
To be determined[4]	Plant Drains Pond	To be determined[4]	Receives flue gas desulphurization scrubber sludge.	18.3 acre-feet	Proposed

[1] Registered Unit No. and N.O.R. No. cannot be reassigned to new units or used more than once.
[2] If a unit has been transferred, the applicant should indicate which facility/permit it has been transferred to in the Unit Description column.
[3] Unit Status options: Active, Closed, Inactive (built but not managing waste), Proposed (not yet built), Never Built, Transferred, Post-Closure.
[4] CCR Unit No. will be determined after the Plant Drains Pond has been added to the facility's N.O.R.

Table I.6.A. – Waste Management Information

Waste No.[1]	Waste Type(s)	Source	Maximum Volume (tons/year)
1	Liquid - Water/glycol-based antifreeze mixture	Cooling System (EP)	25
2	Liquid - Neutralized acid/base tank/vessel clean waste	Tank Vessel Cleaning (EP)	25
3	Liquid - Uncontaminated water	Intake, Pumps, Vaults, etc. (EP)	5
4	Liquid - High pressure boiler related cleaning waste	HP Boiler, Cooling system cleans (EP)	2000
5	Liquid - Condenser cleaning waste	Condenser Cleaning (EP)	1000
6	Liquid - Neutralized acid/base spill waste	Chemical Spills (EP)	5
7	Liquid - Water/soap mixture turbine cleaning waste	Turbine Clean (EP)	50
8	Liquid - Boiler cleaning waste	Boiler Clean (EP)	1000
9	Liquid - Laboratory analyte solution waste	Laboratory Waste (EP)	1

Table I.6.A. – Waste Management Information

Waste No.[1]	Waste Type(s)	Source	Maximum Volume (tons/year)
10	Liquid - Waste plasma cutter liquid	Plasma Cutter Waste (EP)	0.5
11	Liquid - High pressure steam turbine cleaning waste	HP Turbine Clean (EP)	1000
12	Liquid - Metal cleaning waste	Metal Cleaning Waste (EP)	1000
13	Liquid - Neutralized ion exchange waste	Water Treatment Waste (EP)	100
14	Liquid - Class 2 lead paint abatement water	Class 2 lead paint (EP)	1
15	Liquid - Lead paint abatement water	Lead paint (EP)	1
16	Solid - Ash, coal, scrubber sludge runoff solids	Stormwater runoff solids (FAL)	5
17	Solid - Fly ash/ economizer ash solids	Coal combustion residual (FAL)	142,000
18	Solid - Spend catalyst	Air emission control systems (FAL)	100
19	Solid - Ion exchange solids	Water Treatment solids (FAL)	5
20	Solid - Coal dust collection bags	Coal combustion dust collection system (FAL)	100

Table I.6.A. – Waste Management Information

Waste No.[1]	Waste Type(s)	Source	Maximum Volume (tons/year)
21	Solid - Coal runoff solids removed from ponds	Coal pile runoff solids (FAL)	500
22	Solid - Bottom ash	Coal combustion residual (FAL)	60,000
23	Solid - Solids/silt removed from lake bottom	Lake bottoms (FAL)	100
24	Solid - Solids from air preheated basket	Air emissions control system (FAL)	100
25	Solid - Fly ash collection bags	Dust collection system (FAL)	75
26	Solid - Scrubber sludge (fly ash, bottom ash, coal dust)	Air emissions control system (FAL)	11,000
27	Solid - Scrubber sludge	Air emissions system (SRHP and PDP)	1
28	Solid - Bottom ash	Bottom ash (BAPs)	25,000

[1] Assign waste number sequentially. Do not remove waste number wastes which are no longer generated.

Table I.6.B. – Wastes Managed in Registered Units

Waste No.[1]	Waste	TCEQ Waste Form Codes and Classification Codes
1	Water/glycol-based antifreeze mixture (EP)	296-2
2	Neutralized acid/base tank/vessel clean waste (EP)	119-2
3	Uncontaminated water (EP)	119-2
4	High pressure boiler related cleaning waste (EP)	119-2
5	Condenser cleaning waste (EP)	119-2
6	Neutralized acid/base spill waste (EP)	119-2
7	Water/soap mixture turbine cleaning waste (EP)	119-2
8	Boiler cleaning waste (EP)	119-2
9	Laboratory analyte solution waste (EP)	119-2
10	Waste plasma cutter liquid (EP)	110-2
11	High pressure steam turbine cleaning waste (EP)	119-2
12	Metal cleaning waste (EP)	114-2
13	Neutralized ion exchange waste (EP)	119-2
14	Class 2 lead paint abatement water (EP)	119-2
15	Lead paint abatement water (EP)	119-2
16	Ash, coal, scrubber sludge runoff solids (FAL)	409-2
17	Fly ash/economizer ash solids (FAL)	304-2
18	Spend catalyst (FAL)	393-2
19	Ion exchange solids (FAL)	403-2

Table I.6.B. – Wastes Managed in Registered Units

Waste No.[1]	Waste	TCEQ Waste Form Codes and Classification Codes
20	Coal dust collection bags (FAL)	409-2
21	Coal runoff solids removed from ponds (FAL)	609-2
22	Bottom ash (FAL)	304-2
23	Solids/silt removed from lake bottom (FAL)	301-2
24	Solids from air preheated basket (FAL)	319-2
25	Fly ash collection bags (FAL)	319-2
26	Scrubber sludge (fly ash, bottom ash, coal dust) (FAL)	392-2
27	Scrubber sludge (SRHP and PDP)	392-2
28	Bottom ash (BAPs)	304-2

[1] from Table I.6.A., first column

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
1	Cooling System or spill (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH TSS O&G	EPA 1311-3010 pH – pH meter TSS – SM2450D O&G – EPA 1664A	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12 TSS – 2.5 O&G – 4.75
2	Waste collection tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
3	At source (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
4	Waste collection tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
5	Waste collection tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
6	At spill or collection drum/tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
7	Waste collection tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
8	Waste collection tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
9	At source (EP)	Grab or Composite	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
10	At source (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
11	Waste collection tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
12	Waste collection tank (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
13	At source (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
14	At source (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
15	At source (EP)	Grab	Varies[2]	RCRA 11 TCLP Metals pH	EPA 1311-3010 pH – pH meter	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01 pH 2.5-12
16	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
17	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
18	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
19	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
20	At time of removal (FAL)	Composite	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
21	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
22	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
23	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
24	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
25	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
26	At source (FAL)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
27	At source (SRHP and PDP)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01
28	At Source (BAPs)	Grab	Varies[2]	RCRA 11 TCLP Metals	EPA 1311-3010	Antimony 0.1 Arsenic 0.01 Barium 0.01 Beryllium 0.04 Cadmium 0.01 Chromium 0.01 Mercury 0.002 Lead 0.01 Nickel 0.1 Selenium 0.01 Silver 0.01

[1] From Table I.6.A., first column

[2] Frequency varies – samples are collected if the process has changed and no analytical results are available or at project initiation unless (1) process knowledge dictates no sample is needed or (2) process has remained unchanged and recent analytical results are available that adequately characterize the waste.

Attachment 6-2 Landfill Tables

Table IV.A. – Landfills Characteristics

Registered Unit No.	Landfill	N.O.R. No.	Waste Nos.[1]	Rated Capacity	Dimensions[2]	Distance from lowest liner to groundwater[3]	Action Leakage Rate (if required)	Unit will manage CCR Waste and non-CCR Waste (state all that apply)
010	Fly Ash Landfill (FAL) aka 5-Year Landfill	010	16 17 18 19 20 21 22 23 24 25 26	900,000 cubic yards	23 surface acreage Average: 1,000 ft long x 950 ft wide x 26 ft deep	<5 feet	Not Applicable	CCR Waste and Non-CCR Waste

[1] From Table I.6.A., first column
[2] Dimensions should be provided as average length, width and depth, also include the surface acreage for the unit.
[3] Based on *Location Restriction Demonstration* (ERM, 2018).

Table IV.B. – Landfill Liner System

Registered Unit No.[1]	Landfill	Geomembrane Liner Material	Geomembrane Liner Permeability (cm/sec)	Geomembrane Liner Thickness	Soil Liner Material	Soil Liner Permeability (cm/sec)	Soil Liner Thickness
010	Fly Ash Landfill (FAL) aka 5-Year Landfill	HDPE	~$1*10^{-13}$ cm/sec	30 mil	Not Applicable	Not Applicable	Not Applicable

[1] This number should match the Registration Unit No. given on Table IV.A.

Table IV.C. – Landfill Leachate Collection System

Registered Unit No.[1]	Landfill Name	Drainage Media	Collection Pipes (including risers)	Filter Fabric	Geofabric	Sump Material
010	Fly Ash Landfill (FAL) aka 5-Year Landfill	Sand, Coarse CCR, and a Composite Synthetic Drainage Net	The landfill does not have collection pipes and risers. A composite synthetic drainage net (CSDN) was installed on the interior side slopes at the interior toe of slopes to facilitate drainage above the liner. A low area of the landfill is used to collect accumulated stormwater which is periodically sampled and analyzed prior to storm water being discharged through a Texas Pollutant Discharge Elimination System (TPDES) permitted outfall.	Geotextile / CSDN	Geotextile / CSDN	Sand and Coarse CCR

[1] This number should match the Registration Unit No. given on Table IV.A.

Table IV.D. – Inspection Schedule of Landfills

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
Liner	Liner condition (if visible) showing signs of damage or deterioration.	At interval not exceeding 7 days
Embankments	General condition of embankments including grass coverage on exterior embankments, grass height, rutting, erosion, poor drainage, tree growth, cattails or other aquatic plant growth, depressions, bulges, cracks/tears, sinkholes, animal burrows, sloughing, damp/moist areas during dry conditions, and evidence of seepage.	At interval not exceeding 7 days
Pump System	General condition of pump system including corrosion, concrete spalling and cracking, blockage, missing parts, exposed electrical wiring, and damaged/leaking pipes and valves.	At interval not exceeding 7 days

Attachment 6-3 Surface Impoundment Tables

Table V.A. – Surface Impoundment Characteristics

Registered Unit No.	Surface Impoundment Name	N.O.R. No.	Waste Nos.[1]	Rated Capacity	Dimensions[2]	Distance from lowest liner to ground-water[3]	Action Leakage Rate (if required)	Unit will manage CCR Waste and non-CCR Waste (state all that apply)
021	Evaporation Pond (EP)	021	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	99 acre-feet	4.5 surface acreage Average: 500 ft long x 400 ft wide x 22 ft deep	>5 feet	NA	CCR Waste and Non-CCR Waste
005	North Bottom Ash Pond (North BAP)	005	28	72 acre feet	6.1 surface acreage Average: 525 ft long x 460 ft wide x 12 ft deep	<5 feet	NA	CCR Waste

Table V.A. – Surface Impoundment Characteristics

Registered Unit No.	Surface Impoundment Name	N.O.R. No.	Waste Nos.[1]	Rated Capacity	Dimensions[2]	Distance from lowest liner to ground-water[3]	Action Leakage Rate (if required)	Unit will manage CCR Waste and non-CCR Waste (state all that apply)
006	South Bottom Ash Pond (South BAP)	006	28	84 acre-feet	6.8 surface acreage Average: 400 ft long x 680 ft wide x 12 ft deep	>5 feet	NA	CCR Waste
026	SRH Pond	026	27	28 acre-feet	Divided pond: 1.5 surface acreage each (3.0 total) Average: 440 ft long x 330 ft wide x 8 ft deep	>5 feet	NA	CCR Waste and Non-CCR Waste
To be determined[4]	Plant Drains Pond	To be determined[4]	27	12.2 acre-feet at maximum normal operating level 18.3 acre-feet at inside crest elevation	Divided pond: 1.7 acres each (3.4 total) Average: 450 ft long x 150 ft wide x 7 ft deep	>5 feet	NA	CCR Waste and Non-CCR Waste

[1] From Table I.6.A., first column
[2] Dimensions should be provided as average length, width and depth, also include the surface acreage for the unit.
[3]. Based on review of Record Drawings and static water levels observed during monitor well installation.
[4] Registered Unit No. will be determined after the Plant Drains Pond has been added to the facility's N.O.R.

Table V.B. – Surface Impoundment Liner System

Registered Unit No.[1]	Surface Impoundment Name	Geomembrane Liner Material	Geomembrane Liner Permeability (cm/sec)	Geomembrane Liner Thickness	Soil Liner Material	Soil Liner Permeability (cm/sec)	Soil Liner Thickness
021	Evaporation Pond (EP)	PVC	~$1*10^{-11}$ cm/sec	30 mil	Cohesive Soil	Not Documented	12 inches
005	North Bottom Ash Pond (North BAP)	None	NA	NA	Clay	Not Documented	Not Documented
006	South Bottom Ash Pond (South BAP)	None	NA	NA	Clay	Not Documented	Not Documented
026	SRH Pond	HDPE	~$1*10^{-13}$ cm/sec	30 mil	Not Documented	Not Documented	Not Documented
To be deter-mined[2]	Plant Drains Pond	HDPE	~$1*10^{-13}$ cm/sec (blank sheet, no defects)	60 mil	New CETCO Resistex 200 FLW9 geosynthetic clay liner	3×10^{-9} cm/sec (ASTM D5887) - Manufacturer published data. 7.59×10^{-10} cm/sec (ASTM D6766) – CPS Spruce representative leachate.	0.8 cm (Manufacturer correspondence).

[1] This number should match the Registration Unit No. given on Table V.A.
[2] Registered Unit No. will be determined after the Plant Drains Pond has been added to the facility's N.O.R.

Table V.J. – Inspection Schedule of Surface Impoundments

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
Liner	Liner condition (if visible) showing signs of damage or deterioration.	At interval not exceeding 7 days
Freeboard	Document sufficient freeboard according to Inflow Design Flood Control System Plan.	At interval not exceeding 7 days
Embankments	General condition of embankments including grass coverage on exterior embankments, grass height, rutting, erosion, poor drainage, tree growth, cattails or other aquatic plant growth, depressions, bulges, cracks/tears, sinkholes, animal burrows, sloughing, damp/moist areas during dry conditions, and evidence of seepage.	At interval not exceeding 7 days
Pump System	General condition of pump system including corrosion, concrete spalling and cracking, blockage, missing parts, exposed electrical wiring, and damaged/leaking pipes and valves.	At interval not exceeding 7 days
Emergency Spillway	General condition of spillway(s) including condition of concrete and reinforcement, indication of blockage, trees, burrows, erosion, access, sinkholes, exposed joints, and displacement, and condition of gates, if present.	At interval not exceeding 7 days
Instrumentation	None present at the impoundments. If new instrumentation is added it will be monitored and condition inspected monthly.	Monthly

Attachment 6-4 Groundwater Monitoring System Tables

Table VI.A. – Unit Groundwater Detection Monitoring Systems[1]

Evaporation Pond						
Well Number(s):	JKS-36	JKS-47	JKS-61	JKS-62	JKS-63R	JKS-64
Hydrogeologic Unit Monitored	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost
Type (e.g., point of compliance, background, observation)	Point of Compliance	Background	Point of Compliance	Point of Compliance	Background	Background
Up or Down Gradient	Downgradient	Upgradient	Downgradient	Downgradient	Upgradient	Upgradient
Casing Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Slot Size (in.)	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch
Top of Casing Elevation (Ft, MSL)	508.41	513.63	505.51	509.84	526.86	507.84
Surface Elevation (Ft, MSL)	506.95	510.28	502.52	506.71	523.55	504.38
Well Depth (Ft, BGS)	50.0	40.0	33.0	30.0	50.0	30.0
Well Depth (Ft, BTOC)	51.5	43.4	36.0	33.1	53.3	33.5
Screen Interval From (Ft, BGS) To (Ft, BGS)	40.0-50.0	25.0-40.0	18.0-33.0	20.0-30.0	30.0-50.0	15.0-30.0
Screen Interval From (Ft, BTOC) To (Ft, BTOC)	41.5-51.5	28.4-43.4	21.0-36.0	23.1-33.1	33.3-53.3	18.5-33.5

[1] From Tables in Section I.; MSL: Mean Sea Level; BGS: Below Grade Surface; BTOC: Below Top of Casing

Table VI.A. – Unit Groundwater Detection Monitoring Systems[1]

Fly Ash Landfill								
Well Number(s):	JKS-31	JKS-33	JKS-45	JKS-46	JKS-57	JKS-58	JKS-59	JKS-60
Hydrogeologic Unit Monitored	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost
Type (e.g., point of compliance, background, observation)	Point of Compliance	Point of Compliance	Background	Point of Compliance	Background	Observation	Observation	Point of Compliance
Up or Down Gradient	Down-gradient	Down-gradient	Upgradient	Down-gradient	Upgradient	Down-gradient	Down-gradient	Down-gradient
Casing Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Slot Size (in.)	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch
Top of Casing Elevation (Ft, MSL)	507.45	498.71	531.46	499.08	506.91	504.45	496.45	495.7

Surface Elevation (Ft, MSL)	505.27	497.77	528.31	495.75	503.83	500.94	493.53	492.68
Well Depth (Ft, BGS)	65.0	29.0	55.0	25.0	27.0	30.0	27.0	25.0
Well Depth (Ft, BTOC)	67.2	30.0	58.2	28.3	30.1	33.5	29.9	28.0
Screen Interval From (Ft, BGS) To (Ft, BGS)	55.0-65.0	19.0-29.0	40.0-55.0	15.0-25.0	12.0-27.0	20.0-30.0	12.0-27.0	10.0-25.0
Screen Interval From (Ft, BTOC) To (Ft, BTOC)	57.2-67.2	20.0-30	43.2-58.2	18.3-28.3	15.1-30.1	23.5-33.5	14.9-29.9	13-28

[1] From Tables in Section I.; MSL: Mean Sea Level; BGS: Below Grade Surface; BTOC: Below Top of Casing

Table VI.A. – Unit Groundwater Detection Monitoring Systems[1]

SRH Pond						
Well Number(s):	JKS-49	JKS-51	JKS-52	JKS-53	JKS-54	JKS-70
Hydrogeologic Unit Monitored	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost
Type (e.g., point of compliance, background, observation)	Background	Background	Point of Compliance	Point of Compliance	Point of Compliance	Background
Up or Down Gradient	Upgradient	Upgradient	Down-gradient	Down-gradient	Down-gradient	Upgradient
Casing Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Slot Size (in.)	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch
Top of Casing Elevation (Ft, MSL)	498.63	496.92	493.15	494.74	496.40	496.29
Surface Elevation (Ft, MSL)	495.17	494.04	493.56	491.33	492.69	493.51
Well Depth (Ft, BGS)	17.0	22.0	29.0	25.0	22.0	27.0
Well Depth (Ft, BTOC)	20.5	24.9	28.6	28.4	25.7	29.8
Screen Interval From (Ft, BGS) To (Ft, BGS)	7.0-17.0	7.0-22.0	19.0-29.0	15.0-25.0	12.0-22.0	12.0-27.0
Screen Interval From (Ft, BTOC) To (Ft, BTOC)	10.5-20.5	9.9-24.9	18.6-28.6	18.4-28.4	15.7-25.7	14.8-29.8

[1] From Tables in Section I.; MSL: Mean Sea Level; BGS: Below Grade Surface; BTOC: Below Top of Casing

Table VI.A. – Unit Groundwater Detection Monitoring Systems[1]

North and South Bottom Ash Ponds								
Well Number(s):	JKS-48	JKS-49	JKS-50R	JKS-51	JKS-52	JKS-55	JKS-56	JKS-70
Hydrogeologic Unit Monitored	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost
Type (e.g., point of compliance, background, observation)	Point of Compliance	Background	Point of Compliance	Background	Point of Compliance	Point of Compliance	Point of Compliance	Background
Up or Down Gradient	Down-gradient	Upgradient	Down-gradient	Upgradient	Down-gradient	Down-gradient	Down-gradient	Upgradient
Casing Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Slot Size (in.)	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch
Top of Casing Elevation (Ft, MSL)	497.19	498.63	498.48	496.92	493.15	493.81	496.66	496.29
Surface Elevation (Ft, MSL)	493.71	495.17	494.87	494.04	494.96	490.13	493.07	493.51
Well Depth (Ft, BGS)	28.52	17.04	19.67	22.0	25.08	25.02	25.01	27.0
Well Depth (Ft, BTOC)	32.0	20.5	23.0	24.9	28.6	28.7	28.6	29.8

Screen Interval From (Ft, BGS) To (Ft, BGS)	18.5-28.5	7.0-17.0	9.7-19.7	7.0-22.0	15.1-25.1	15.0-25.0	10.0-25.0	12.0-27.0
Screen Interval From (Ft, BTOC) To (Ft, BTOC)	22.0-32.0	10.5-20.5	13.0-23.0	9.9-24.9	18.6-28.6	18.7-28.7	13.6-28.6	14.8-29.8

[1] From Tables in Section I.; MSL: Mean Sea Level; BGS: Below Grade Surface; BTOC: Below Top of Casing

Table VI.A. – Unit Groundwater Detection Monitoring Systems[1]

Plant Drains Pond					
Well Number(s):	JKS-65	JKS-66	JKS-67	JKS-68	JKS-69
Hydrogeologic Unit Monitored	Uppermost	Uppermost	Uppermost	Uppermost	Uppermost
Type (e.g., point of compliance, background, observation)	Point of Compliance	Background	Point of Compliance	Point of Compliance	Point of Compliance
Up or Down Gradient	Downgradient	Upgradient	Downgradient	Downgradient	Downgradient
Casing Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Diameter (in.) and Material	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC	2-inch PVC
Screen Slot Size (in.)	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch
Top of Casing Elevation (Ft, MSL)	518.53	517.65	503.29	506.34	515.82
Surface Elevation (Ft, MSL)	515.82	514.35	500.48	503.41	513.01
Well Depth (Ft, BGS)	40.0	40.0	25.0	27.0	40.0
Well Depth (Ft, BTOC)	42.7	43.3	27.8	29.9	42.8
Screen Interval From (Ft, BGS) To (Ft, BGS)	20.0-40.0	20.0-40.0	10.0-25.0	12.0-27.0	25.0-40.0

Screen Interval From (Ft, BTOC) To (Ft, BTOC)	22.7-42.7	23.3-43.3	12.8-27.8	14.9-29.9	27.8-42.8

[1] From Tables in Section I.; MSL: Mean Sea Level; BGS: Below Grade Surface; BTOC: Below Top of Casing

Attachment 6-5 Groundwater Monitoring Tables

Table VI.C. – CCR Units Under Detection Monitoring

N.O.R. Unit No.	Unit Description[1,2]	Well(s)	Constituent(s)	Date of SSI Determination	Date of Assessment Monitoring Notification[3]
021	Evaporation Pond	JKS-36 JKS-47 JKS-61 JKS-62 JKS-63R JKS-64	Boron Calcium Chloride Fluoride Sulfate pH TDS	Not Applicable – Written Demonstrations (aka Alternative Source Demonstrations) determined no SSI	Not Applicable
010	Fly Ash Landfill	JKS-31 JKS-33 JKS-45 JKS-46 JKS-57 JKS-58 JKS-59 JKS-60	Boron Calcium Chloride Fluoride Sulfate pH TDS	Not Applicable – Written Demonstrations (aka Alternative Source Demonstrations) determined no SSI	Not Applicable
026	SRH Pond	JKS-49 JKS-51 JKS-52 JKS-53 JKS-54 JKS-70	Boron Calcium Chloride Fluoride Sulfate pH TDS	Not Applicable – Written Demonstrations (aka Alternative Source Demonstrations) determined no SSI	Not Applicable

Table VI.C. – CCR Units Under Detection Monitoring

N.O.R. Unit No.	Unit Description[1,2]	Well(s)	Constituent(s)	Date of SSI Determination	Date of Assessment Monitoring Notification[3]
005 / 006	North Bottom Ash Pond / South Bottom Ash Pond	JKS-48 JKS-49 JKS-51 JKS-50R JKS-52 JKS-55 JKS-56 JKS-70	Boron Calcium Chloride Fluoride Sulfate pH TDS	Not Applicable – Written Demon-strations (aka Alternative Source Demonstrations) determined no SSI	Not Applicable
To be determined[4]	Plant Drains Pond (Proposed)	JKS-65 JKS-66 JKS-67 JKS-68 JKS-69	Boron Calcium Chloride Fluoride Sulfate pH TDS	Not Applicable – Monitoring network to be completed in July 2022	Not Applicable

[1] Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been requested pursuant to 40 CFR §257.103.
[2] Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been made pursuant to 40 CFR §257.103.
[3] Enter month, day, and year.
[4] NOR Unit No. will be determined after the Plant Drains Pond has been added to the facility's N.O.R.

Table VI.C.1. – Groundwater Detection Monitoring Parameters

Parameter	Sampling Frequency	Analytical Method	Practical Quantification Limit (mg/L)	Concentration Limit[1]
Boron	Semiannual	6010B	0.05	Varies[2]
Calcium	Semiannual	6010B	0.2	Varies[2]
Chloride	Semiannual	300.0	0.5	Varies[2]
Fluoride	Semiannual	300.0	0.5	Varies[2]
Sulfate	Semiannual	300.0	0.5	Varies[2]
pH	Semiannual	Field collected	Not Applicable	Varies[2]
Total Dissolved Solids	Semiannual	SM2540C	5	Varies[2]

[1] The concentration limit is the basis for determining whether a release has occurred from the CCR unit/area.

[2] The concentration limit varies by CCR unit each year based on the upper prediction limits (UPLs) and lower prediction limits (LPLs) calculated during the statistical analyses performed for the *Annual Groundwater Monitoring and Corrective Action Reports*. See Attachment 16 for the most recent *Annual Groundwater Sampling and Corrective Action Report* for each of the four existing CCR units (ERM, 2021).

Table VI.D. – CCR Units Under Assessment Monitoring[1]

N.O.R. Unit No.	Unit Description[2,3]	Well(s)	Constituent(s)	Date of SSI Determination	Date of Assessment Monitoring Notification[4]

[1] Not Applicable at this time - all the existing CCR units have only been evaluated for Appendix III constituents under Detection Monitoring. No statistically significant increases have been determined that would require evaluation of these Appendix IV constituents.

[2] Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been requested pursuant to 40 CFR §257.103.

[3] Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been made pursuant to 40 CFR §257.103.

[4] Enter month, day, and year

Table VI.D.2. – Groundwater Assessment Monitoring Parameters[1]

Parameter	Sampling Frequency	Analytical Method	Practical Quantification Limit (mg/L)	Concentration Limit[2]
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Cobalt				
Fluoride				
Lead				
Lithium				
Mercury				
Molybdenum				
Selenium				
Thallium				
Radium 226 and 228 combined				

[1] Not Applicable at this time - all the existing CCR units have only been evaluated for Appendix III constituents under Detection Monitoring. No statistically significant increases have been determined that would require evaluation of these Appendix IV constituents.

[2] The concentration limit is the basis for determining whether a release has occurred from the CCR unit/area

Attachment 6-6 Closure Tables

Table VII.A.1. – Unit Closure

For each unit to be registered, list the unit components to be decontaminated, the possible methods of decontamination, and the possible methods of disposal of wastes and waste residues generated during unit closure.

Equipment or CCR Unit	Possible Methods of Decontamination[1]	Possible Methods of Disposal[1]
Evaporation Pond	Closure by leaving CCR in place	Not Applicable
Fly Ash Landfill	Closure by leaving CCR in place	Not Applicable[2]
SRH Pond	Closure by removal of CCR	Beneficial use and/or placement into Fly Ash Landfill
North Bottom Ash Pond	Closure by removal of CCR	Beneficial use and/or placement into Fly Ash Landfill
South Bottom Ash Pond	Closure by removal of CCR	Beneficial use and/or placement into Fly Ash Landfill
Plant Drains Pond (Proposed)	Closure by removal of CCR	Beneficial use and/or placement into Fly Ash Landfill

[1] Applicants may list more than one appropriate method.
[2] Some CCR for beneficial use are temporarily stored in the Fly Ash Landfill. Any CCR designated for beneficial use will be removed prior to closure of the Fly Ash Landfill, however, other CCR may remain within the Fly Ash Landfill after closure.

Table VII.A.2. – CCR Units Under Alternative Closure Notification

Registered Unit No.	N.O.R. Unit No.	Unit Description[1,2]	Date of Receipt of Last Waste[3]	Date of Closure Notification[3]
021	021	Evaporation Pond	To be determined[4]	To be determined[4]
026	026	SRH Pond	To be determined[4]	To be determined[4]

[1] Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been requested pursuant to 40 CFR §257.103.
[2] Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been made pursuant to 40 CFR §257.103.
[3] Enter month, day, and year.
[4] An *Alternative Capacity Infeasibility Demonstration* for the SRH Pond and the *Alternative Capacity Infeasibility Demonstration* for the Evaporation Pond were prepared for and submitted to EPA on 30 November 2020 to demonstrate that CCR and non-CCR wastestreams must continue to be managed in those surface impoundments based on a lack of alternative capacity. A letter from the EPA dated 11 January 2022 indicated that EPA has reviewed both demonstrations and determined that both demonstrations are complete. As a consequence of the submission of complete demonstrations, the deadlines for the CCR units covered by the demonstrations to cease receipt of waste is tolled until EPA completes their review and issues a final decision on the demonstrations.

Attachment 6-7 Post Closure Tables

Table VIII.A.1. – Post-Closure Cost Summary for Existing Registered Units

Unit	Cost
Evaporation Pond	$1,500,000[1]
Fly Ash Landfill	$2,100,000[1]
SRH Pond	Not Applicable[2]
Bottom Ash Ponds	Not Applicable[2]
Total Existing Unit Post-Closure Cost Estimate	$ (in 2022 Dollar)[3]

Table VIII.A.2. - Post-Closure Cost Summary for Proposed Registered Units

Unit	Cost
Plant Drains Pond	Not Applicable[2]
Total Proposed Unit Post-Closure Cost Estimate	$0 (in 2022 Dollar)[3]

[1] Post-closure care costs assume 30 years of groundwater sampling/ monitoring, 30 years of regulatory support/ reporting, and 30 years of inspection, operation, and maintenance costs being performed by a combination of CPS Energy and third-party personnel.
[2] Not Applicable – Elected to close the unit by removing and decontaminating all areas affected by releases from the unit (closure by removal of CCR), therefore the unit is not subject to post-closure care.
[3] As units are added or deleted from these tables through future registration amendments, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

Attachment 6-8 Post Closure Period Tables

Table VIII.B. – Post-Closure Period

Unit Name	Date Certified Closed	Authorized Post-Closure Period (Yrs.)	Earliest Date Post-Closure Ends[1]
Evaporation Pond	Not closed at this time	30 years	To be determined
Fly Ash Landfill	Not closed at this time	30 years	To be determined
SRH Pond	Not Applicable[2]		
Bottom Ash Ponds	Not Applicable[2]		

[1] Post-Closure Care shall continue beyond the specified date until the Executive Director has approved the applicant's request to reduce or terminate the post-closure period, consistent with 30 TAC §352.1241 – Post-Closure Care Requirements.

[2] Not Applicable – Elected to close the unit by removing and decontaminating all areas affected by releases from the unit (closure by removal of CCR), therefore the unit will not be subject to post-closure care.

Attachment 7 Run-on and Run-off Controls Plan

ERM

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27 October 2021

Mr. Michael Malone
CPS Energy
500 McCullough Avenue
San Antonio, Texas 78215

Project No: 0352436

Subject: Run-on/Run-off Control Plan – 5-Year Update
Calaveras Power Station
San Antonio, Texas

Dear Mr. Malone:

Environmental Resources Management Southwest, Inc. (ERM) is pleased to provide this Run-On/Run-Off Control System Plan (ROROCSP) for the Calaveras Power Station to assist CPS Energy in complying with Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) [aka. the Coal Combustion Residual (CCR) Rule]. This ROROCSP is the 5-year update required under 40 CFR §257.81 Run-On and Run-Off Controls for CCR Landfills.

CPS Energy owns and operates the Calaveras Power Station, which is located in unincorporated Bexar County, Texas, approximately 13 miles southeast of San Antonio. Currently, CPS Energy operates the following CCR landfill at the Power Station:

- Fly Ash Landfill (FAL)

The FAL is of bermed construction with a top elevation of approximately 535.5 feet mean sea level (MSL). Based on topographic maps of the surrounding area, the original pre-construction ground surface is approximately 525 feet MSL at the highest point (northwest corner), dropping to 500 feet MSL at the southeast corner. Therefore, the lowest point on the berm is approximately 10 feet above the surrounding ground surface. The FAL has a single active area, with no closed portions and no interior berms or other physical divisions.

40 CFR §257.81(a)(1) requires that CCR landfills be designed to prevent flow onto the active portion of the CCR unit during the peak discharge from the 25-year, 24-hour storm. Because the FAL is surrounded by berms raised at least 10 feet above surrounding ground surface, no storm water run-on can enter the active area.

Because the FAL is an elevated bermed structure, the drainage area is limited to the area that receives direct rainfall within the interior footprint of the unit. The interior of the FAL slopes from an elevation of 514 feet MSL in the northwest corner, to 503 feet MSL in the southeast. The top of the berms are therefore a minimum of 21.5 feet above the interior of the FAL. The 25-year, 24-hour design storm rainfall for the area is approximately 8.1 inches, according to the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 11: Precipitation-Frequency Atlas of the United States and obtained from the Precipitation Frequency Data Server (PFDS).

Texas Registered Engineering Firm F-2393
Texas Board of Professional Geoscientist Firm 50036

As required by 40 CFR §257.81(a)(2), the berms have sufficient capacity to collect and control the design storm.

Storm water collects in the southeast corner of the FAL and is allowed to settle. A water quality sample is collected and analyzed prior to storm water being discharged through a Texas Pollutant Discharge Elimination System (TPDES) permitted outfall. The analysis and permitting via TPDES meet the requirements of 40 CFR §257.81(b).

Based on our evaluation of the available information for the FAL, this ROROCSP meets the requirements of 40 CFR §257.81.

Sincerely,

Environmental Resources Management Southwest, Inc.

Charles Johnson, P.E.

Attachment 8 Liner Design Criteria – Existing Surface Impoundments

October 14, 2016

Subject: Liner Design Criteria for Existing CCR Surface Impoundments
Calaveras Power Station
San Antonio, Texas

To File:

The purpose of this memorandum is to document the liner design criteria of the existing Coal Combustion Residual (CCR) impoundments at the CPS Energy Calaveras Power Station and to comply with Title 40, Code of Federal Regulations, Part 257 (40 CFR §257), Subpart D Coal Combustion Residual (CCR) Rules.

The Calaveras Power Station has five CCR impoundments: the North and South Sludge Recycle Holding (SRH) Ponds, the North and South Bottom Ash Ponds (BAPs), and the Evaporation Pond (EP). All ponds were constructed as diked impoundments. The SRH Ponds were constructed as a single impoundment with a divider wall that separates the impoundment into the North and South Ponds. A gate present in the divider wall is closed during normal operating procedures, but can be opened. The North and South BAPs share a common embankment that separates the BAPs, and are immediately east of the SRH Ponds. Only one BAP is typically in operation at one time. These four ponds are located east of the main plant. The EP is approximately a mile north of the main plant, and receives boiler chemical cleaning wastes via vacuum truck. While this material is not considered CCR under the regulation, the EP was originally constructed as a fly ash landfill in 1990, and then converted to a fly ash impoundment in 1996. It currently contains solids that are six inches to two feet below the top of the impoundment.

40 CFR §257.71 requires that owner and or operators of an existing CCR impoundment document whether or not a unit was constructed under guidelines listed in said portion of the CCR Rules. This particular portion of the CCR Rule regards the composition of the liner and the estimated hydraulic conductivity. A summary and liner description for each impoundment is described in the remainder of this document. The descriptions are based on Construction Drawings and information gathered from review of internal company files.

The North SRH Pond bottom liner consists of a six-inch layer of 4,000 psi concrete over one-foot of compacted sand overlying a 30-mil High Density Polyethylene (HDPE) geomembrane. The South SRH Pond bottom liner also has a six-inch layer of 4,000 psi concrete. Under the concrete is one-foot of compacted fill overlaying a 10-oz. Geotextile, a 30-mil HDPE geomembrane and another 10-oz. Geotextile. The side slopes for both SRH Ponds consist of a 10-oz. Geotextile and a 30-mil HDPE geomembrane over prepared subgrade. There is no mention or description of any clay liner or associated hydrologic conductivity values.

Research into the liner construction of the North and South BAPs resulted in no construction drawings or design specifications. However, historical files identified design standardsutilized during the probable time of construction. This standard liner construction would have consisted of 18-inches of clay compacted in 3 to 6 inch lifts. The existence of a clay liner is consist with field observations and current use of both BAPs. Bottom ash is sluiced into one of the ponds while the other is dewatered, bottom ash harvested and recycled for beneficial use. The operating impoundment holds the wet bottom ash as well as water. The units are inspected weekly and show no signs of seepage along the berm walls and no subsurface drainage is evident. There is no mention or description of any clay liner or associated hydrologic conductivity values.

The EP side and bottom liner consist of a one-foot layer of cohesive soil overlying a 30-mil Polyvinylchloride geomembrane and an additional one-foot of cohesive soil. The subgrade consists of two-feet of soil, with all large rock removed, and compacted to 50% density. There is no mention or description of any clay liner or associated hydrologic conductivity values.

Based on the review of existing construction drawings, files and field observations, each CCR impoundment appears to have either a geomembrane or clay liner on the slopes and base. However, based on the design criteria required per 40 CFR §257.71, each existing CCR impoundment is designated as "Unlined."

Sincerely,

Michael M. Malone, P.E.
Sr. Manager, Environmental Management

Attachment 9 Alternative Capacity Infeasibility Demonstration and EPA Completeness Letter

Attachment 9-1

November 30, 2020

Mr. Andrew Wheeler
Administrator
US EPA

Dear Mr. Wheeler:

On August 28, 2020, the EPA finalized revisions to the CCR Rule that would require unlined CCR surface impoundments to cease receipt of waste as soon as technically feasible, but no later than April 11, 2021, unless the owner/operator can demonstrate that CCR and/or non-CCR wastestreams must continue to be managed in that CCR surface impoundment based on a lack of alternative capacity.

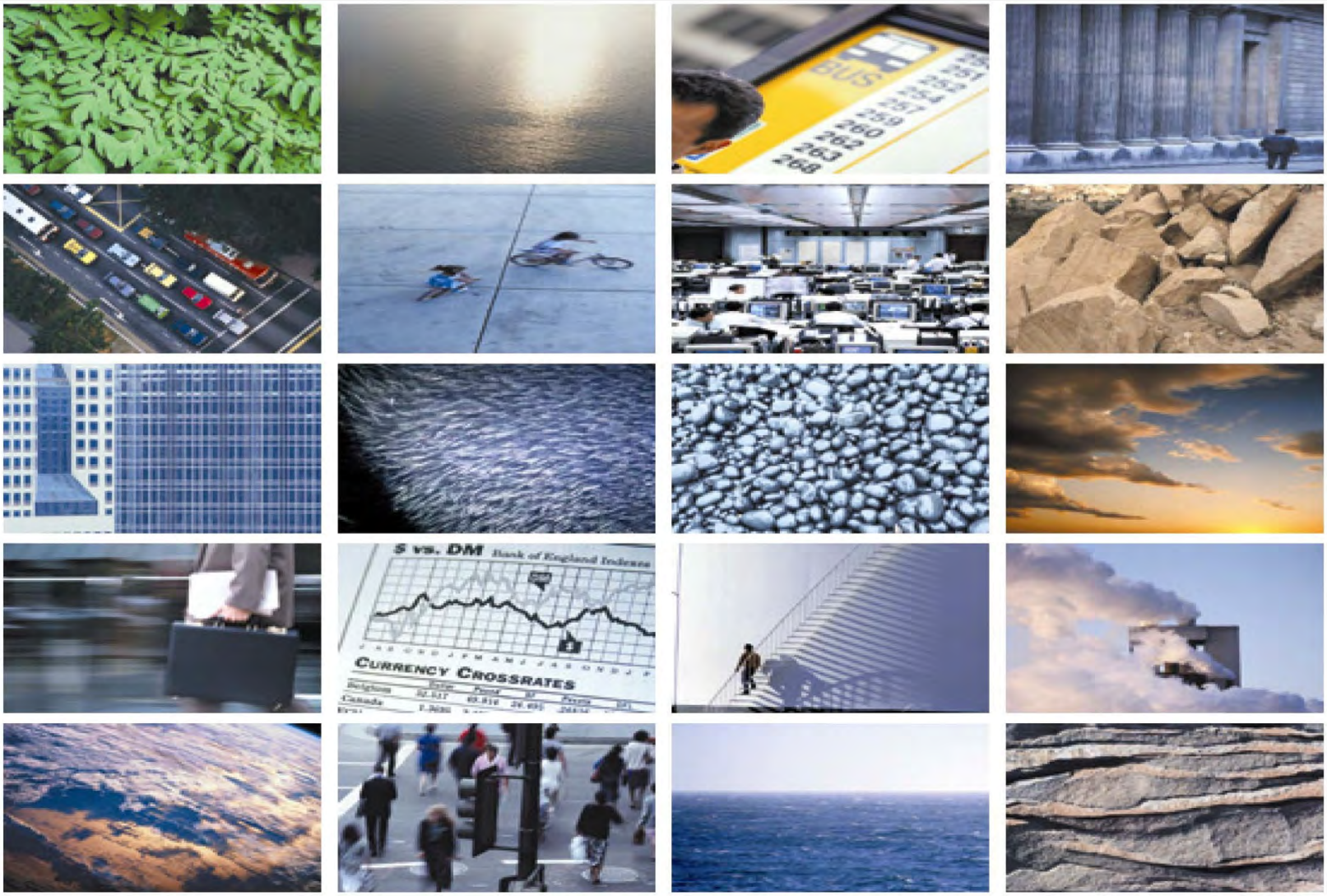
This Alternative Capacity Infeasibility Demonstration revises the original version submitted on November 6, 2020. This version was prepared to document and explain in greater detail why development of alternative capacity by April 11, 2021 is infeasible for the Evaporation Pond, an unlined CCR surface impoundment, at the CPS Energy Calaveras Power Station located in Bexar County, Texas.

Please call me at (210) 353-3625 with any questions.

Sincerely,

Michael M. Malone, P.E., LEED Green Associate, R.E.M.
CPS Energy Senior Manager
Environmental Management

cc: Kirsten Hillyer
Frank Behan
Richard Huggins



Alternative Capacity Infeasibility Demonstration

Evaporation Pond
CPS Energy Calaveras Power Station
Bexar County, Texas

30 November 2020

Project No.: 0503422

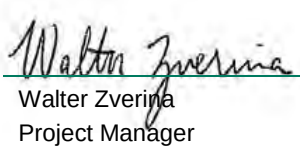
Signature Page

30 November 2020

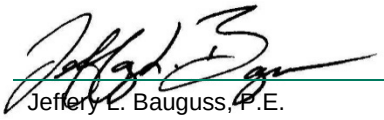
Alternative Capacity Infeasibility Demonstration

Evaporation Pond
CPS Energy Calaveras Power Station
Bexar County, Texas

Charles Johnson, P.E.
Senior Consultant



Walter Zverina
Project Manager



Jeffery L. Bauguss, P.E.
Partner

Environmental Resources Management Southwest, Inc.
Capitol Tower
206 East 9th Street, Suite 1700
Austin, Texas 78701

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1. INTRODUCTION

Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) Subpart D (a.k.a. the Coal Combustion Residual (CCR) Rule) was published in the Federal Register in April 2015 and became effective in October 2015. Under the CCR Rule, CPS Energy operates active surface impoundments and a landfill primarily for temporary storage and historically for disposal of fly ash and bottom ash.

On August 28, 2020, the Environmental Protection Agency (EPA) finalized revisions to the CCR Rule that would require unlined CCR surface impoundments to cease receipt of waste as soon as technically feasible but no later than April 11, 2021, unless the owner/operator can demonstrate that CCR and/or non-CCR wastestreams must continue to be managed in that CCR surface impoundment based on a lack of alternative capacity. On behalf of CPS Energy, this Alternative Capacity Infeasibility Demonstration (Demonstration) was prepared to document, under the finalized 40 CFR §257.103(f), that development of alternative capacity is infeasible for the Evaporation Pond (EP), an unlined CCR surface impoundment, at the CPS Energy Calaveras Power Station located in Bexar County, Texas.

1.1 Demonstration Purpose and Objectives

This Demonstration was prepared in accordance with requirements in finalized 40 CFR §257.103(f) to demonstrate that CCR and/or non-CCR flows must continue to be managed in the EP because it is infeasible to complete measures necessary to provide alternative disposal capacity on-site or off-site by April 11, 2021. CPS Energy therefore requests to keep operating the EP until May 26, 2022, which is the anticipated fastest technically feasible time in which development of alternative capacity can be completed.

1.2 Organization of the Demonstration

This Demonstration is organized into the following sections:

- Facility Description and Unit Description
- Work Plan - 40 CFR §257.103(f)(1)(iv)(A) and 40 CFR §257.103(f)(1)(i)-(ii)
- Compliance with Subpart D - 40 CFR §257.103(f)(1)(iv)(B) and 40 CFR §257.103(f)(1)(iii)

2. FACILITY DESCRIPTION AND UNIT DESCRIPTION

CPS Energy owns and operates the Calaveras Power Station located at 12940 U.S. Highway 181 South in San Antonio, Texas. A Facility Location Map is provided as Figure 2.1. The Calaveras Power Station consists of three power plants of which two plants (J.T. Deely and J.K. Spruce) are subject to regulation under the CCR Rule. Specifically, CPS Energy operates three CCR units at the Calaveras Power Station: EP, Fly Ash Landfill, and the Sludge Recycle Holding Pond. Although the J.T. Deely Power Plant ceased operation at the end of December 2018, and sluiced bottom ash is no longer being received at the Bottom Ash Ponds (BAPs), the BAPs will continue to be monitored until the units have undergone closure. A CCR Unit Location Map is provided as Figure 2.2.

Groundwater in the vicinity of all the CCR units at the Calaveras Power Station has been monitored since December 2016. No statistically significant increase (SSI) of Appendix III constituents above background levels has been determined for any of the CCR units, and therefore, CPS Energy is currently in, and will continue with, a detection monitoring program.

The existing EP was originally constructed as a fly ash landfill in 1990, and then converted to a fly ash impoundment in 1996. The function of the fly ash impoundment changed from storing fly ash to dewatering various liquid wastestreams by evaporation after 1996. The existing EP contains a liner system, but the liner design does not meet the specific liner requirements of the CCR Rule (40 CFR §257.72), and is therefore considered unlined. There are no inlet or outlet structures to the existing EP. A four-inch polyethylene pipe is present in the eastern embankment and supplies water for equipment washout purposes within the EP area.

The primary operational functions of the existing EP include receiving non-CCR flows (industrial wastestreams) that are trucked to the EP, and allowing the evaporation of these industrial wastestreams. Currently, the existing EP does not receive any CCR flows, but in addition to the non-CCR industrial wastestreams from the J.K. Spruce Plant, the EP also receives non-CCR industrial wastestreams from other CPS Energy power generation facilities. Cessation of non-CCR flows to the existing EP requires alternative capacity that will, at a minimum, fulfill these primary operational functions, or the power plants designs must be modified to eliminate these flows.

3. WORK PLAN

In accordance with 40 CFR §257.103(f)(1)(iv)(A) and 40 CFR §257.103(f)(1)(i)-(ii), this section provides:

1. A narrative that no alternative disposal capacity is available on-site or off-site,
2. A narrative that it is technically infeasible to obtain alternative capacity prior to April 11, 2021,
3. A narrative regarding the selected option and justification for the selected alternative capacity,
4. A detailed schedule and narrative discussion of the fastest technically feasible time to complete the development of the selected alternative capacity, and
5. A narrative discussion of the progress made to date to obtain alternative capacity.

3.1 Alternative Capacity On-Site

The cessation of non-CCR flows to the EP requires alternative capacity that, at a minimum, will replace the primary operational functions, or the power plants designs must be modified to eliminate these flows. Two alternatives were evaluated to obtain alternative capacity on-site including:

1. Retrofitting an existing surface impoundment
2. Constructing a new surface impoundment

A summary of the evaluated alternatives is provided below. Importantly, and as detailed in the description of each, both alternatives require several years to complete and do not provide for alternative capacity at this time, but CPS Energy is actively working towards construction of its selected alternative (Alternative 2). Details of each evaluated alternative are provided in Section 3.4 of this Demonstration.

- Alternative 1 – Retrofitting an existing surface impoundment to receive the EP flow is a more complex alternative and was not selected for the following reasons:
  - The duration for the removal of all CCR in the existing EP and the design, procurement, and installation of a new liner system is longer than the selected alternative (Alternative 2). In addition, the footprint of the existing EP is not large enough to handle both the planned sanitary and industrial wastestreams.
  - Excluding the existing EP, there are nine other active surface impoundments (both CCR and non-CCR surface impoundments) at the Calaveras Power Station. Six of these nine surface impoundments are needed for stormwater management and release to Calaveras Lake as permitted discharges. These six surface impoundments also do not have sufficient capacity to receive industrial wastestreams in addition to their designed stormwater capacity. Since these six surface impoundments are unavailable for added capacity and since the industrial wastestreams managed in the EP would not meet the low discharge permit limits for metals (specifically iron and copper), these surface impoundments are not available for retrofit as alternative capacity. In addition, a major amendment for a discharge permit renewal would take between one and two years for approval.
  - As for the three active surface impoundments not associated with stormwater management, the footprint of two are not large enough to handle the industrial wastestreams managed in the EP and one (SRH Pond) is being closed as an unlined CCR surface impoundment. Therefore, these three surface impoundments are also not available for retrofit as alternative capacity.
  - The two inactive surface impoundments, the North and South Bottom Ash Ponds, have ceased receiving flow and will be clean closed. The schedule for release of these surface impoundments for re-development following closure is unknown and these surface impoundments will not be available for retrofit until all closure activities are complete.

- Alternative 2 – The selected alternative, designing and constructing a new lined surface impoundment, is the least complex alternative and it can be implemented in the shortest duration. An overall duration of 22 months is expected for this alternative to allow the cessation of non-CCR flow to the EP by May 26, 2022. Constructing a new lined surface impoundment also retains the primary operational functionality of the existing EP and requires minimal modifications to the existing power plants.

3.2 Alternative Capacity Off-site

The existing EP currently manages a variety of wastewaters generated at the Calaveras Power Station. The large majority of the wastes are metal cleaning wastes generated during discrete maintenance events. This section documents the infeasibility of obtaining alternate capacity off-site for the large majority of the wastes managed at the EP.

Obtaining off-site management and disposal capacity as an alternate to manage flows to the EP includes transportation of wastewaters currently managed by the EP for disposal or treatment at an off-site facility. The only off-site wastewater treatment facility in the vicinity (approximately 20 miles away) of the Calaveras Power Station is the San Antonio Water Service (SAWS) Steven M. Clouse Water Recycling Center (Clouse WRC). No industrial wastewater treatment facilities exist in San Antonio and the surrounding area capable of treating the wastewaters currently managed by the EP (see reasons listed below). Other wastewater treatment facilities in San Antonio and the surrounding area are municipal systems owned by SAWS, the San Antonio River Authority, surrounding municipalities, or private companies and these facilities are subject to the same limitations as the SAWS Clouse WRC considered in this Demonstration. A list of the facilities considered was obtained from EPA's Facility Registry Service and is provided in Exhibit 3.1.

Exhibit 3.1 – Off-Site Treatment Facilities

Facility Name	Street	City	EPA FRS ID
BFI TESSMAN ROAD LANDFILL	7000 I-10 EAST	SAN ANTONIO	110060901653
BFI WASTE TESSMAN ROAD LANDFILL	7790 TESSMAN ROAD	SAN ANTONIO	110002371781
BRIDGEWOOD WWTP	SW CORNER DOMINION SUBDIVISION ADJACENT LEON CRK	SAN ANTONIO	110014436627
CIBOLO CREEK MUNICIPAL AUTHORITY WWTP	12423 AUTHORITY LANE	SCHERTZ	110000504990
CITY OF CASTROVILLE WWTF	818 ALSACE AVE	CASTROVILLE	110027991957
CITY OF HONDO WASTE WATER PLANT	1400 FEET EAST OF THE INTERSECTION OF FM 462 AND 3	HONDO	110070356320
CITY OF LA COSTE WWTP	11331 CR 584	LA COSTE	110009773959
CITY OF LA VERNIA WWTP	2000' E. FMR 775, APPROX 400' E SE INTEX RV ST AND	LA VERNIA	110009779784
CITY OF LYTLE WWTP	2300F SE FMR 3175 IH-35	LYTLE	110006687228
CITY OF NIXON	HIGHWAY 80 NORTH & US HWY 87	NIXON	110009778213
CITY OF SAN ANTONIO	SALADO CREEK WWTP	SAN ANTONIO	110014389704
CITY OF SCHERTZ WWFT	6700FT SW INTERSECTION OF	BEXAR COUNTY	110024412410
CITY OF SEGUIN GERONIMO CREEK WWTP	450 SEITZ RD	SEGUIN	110034285299
CITY OF SMILEY WWTP	APPROX 4200' NW OF INTERX FMR 108	SMILEY	110009746490
CITY OF STOCKDALE WWTP	OLD FLORESVILLE ROAD, CR #401	STOCKDALE	110009746301
COVEL GARDENS LANDFILL AND RECYCLING	8611 COVEL RD	SAN ANTONIO	110070377738
DISPOSAL PROPERTIES	4303 PROFIT DRIVE	SAN ANTONIO	110000464818
DOS RIOS WATER RECYCLING CENTER	3495 VALLEY RD	SAN ANTONIO	110000501840
DOS RIOS WATER RECYCLING CENTER	3495 VALLEY RD	SAN ANTONIO	110014434727
FIRST RESPONDERS ACADEMY WWTP	15775 IH 35 S	ATASCOSA	110063878184
GERONIMO CREEK WWTP	450 SEITZ RD	SEGUIN	110000501430
GONZALES WARM SPRINGS WWTF	1000' S OF THE INTX OF FM 1586 AND FM 2019	GONZALES COUNTY	110009780317
HIGHWAY 181 SOUTH WWTP	14542 CASSIANO RD	SAN ANTONIO	110020063474
HONDO WWTP	1400' E OF INTERX OF FM 462	HONDO	110039914554
LEON CREEK WATER RECYCLING CENTER	1104 MAUERMANN RD	SAN ANTONIO	110031272655
LIQUID ENVIRONMENTAL SOLUTIONS OF TEXAS	10360 W US HIGHWAY 90	SAN ANTONIO	110038485975
MARION WWTP	1400' W OF FM 465 & 1800' S OF	MARION	110009745927
MARTINEZ II CREEK WWTF	1280 FM 1516 S	SAN ANTONIO	110034410812
MARTINEZ III WWTF	.35MI S LOOP 1604, IH-10 AND LP 1604	SAN ANTONIO	110010921413
MEDINA COUNTY WCID 2 WWTF	414 CR 512	MEDINA COUNTY	110009777544
MEDIO CREEK WATER RECYC. CTR.	2231 HUNT LANE	SAN ANTONIO	110064605146
MITCHELL LAKE WWTF	10762 PLEASANTON RD	SAN ANTONIO	110006823376
NELSON GARDENS	8339 COVEL RD	SAN ANTONIO	110033180607
ODO J RIEDL	12423 AUTHORITY LANE	SCHERTZ	110070365759
PAPER RETRIEVER OF TEXAS	7510 GRISSOM RD	SAN ANTONIO	110070673293
POST OAK MUNICIPAL SOLID WASTE LANDFILL	7787 FM RD 1150	SEGUIN	110070708905
POTRANCO RANCH SUBDIVISON WWTP	APPROX 3.54 MI W OF ST HWY 211	MEDINA COUNTY	110063881009
QUAIL RUN WWTP	500' SSE OF PINE VALLEY DR	WILSON COUNTY	110024412474
SALADO CREEK WWTP	13496 BLUE WING ROAD	SAN ANTONIO	110039694195
SALATRILLO CREEK WWTF	9638 SCHAEFER RD	CONVERSE	110070356078
SALATRILLO CREEK WWTP	9638 SCHAEFER ROAD	CONVERSE	110001123640
SAN ANTONIO WATER SYSTEM	LESLIE ROAD	SAN ANTONIO	110002151536
SANTA CLARA CREEK	3930 LINNE RD	SEGUIN	110064854867
SAWS MEDIO CREEK WATER RECYCLING CENTER	2231 HUNT LN	SAN ANTONIO	110070365451
SOMERSET WWTP	4300F SE CITY HALL,3500F S	SOMERSET	110006683589
SOUTH CENTRAL WATER CO WWTF	500FT NE N LAKE HOUSTON PKWY	HOUSTON	110022417133
SOUTH REGIONAL WATER RECLAMATION PLANT	7424 TRAINER HALE RD	CITY OF SCHERTZ	110064779306
STANDARD INDUSTRIES	8189 NELSON RD	SAN ANTONIO	110020479828
UPPER MARTINEZ CREEK WWTF	ON 8203 BINZ-EMGELMAN SAN ANTONIO TX 78219	SAN ANTONIO	110070360659
WALNUT BRANCH WWTP	101 EAST KLEIN	SEGUIN	110000501449
WALNUT BRANCH WWTP	EAST KLEIN ST & S. AUSTIN ST	SEGUIN	110039946994
WOMAN HOLLERING TREATMENT PLANT	8705 GREAVES LN	SCHERTZ	110064781179

Transportation and disposal of wastewater off-site as an alternative is infeasible for the following reasons:

- Management of EP wastewaters off-site are subject to EPA Categorical Industrial User pretreatment standards [40 CFR 423.17] and San Antonio industrial user local limits prior to being transported off-site and introduced to the SAWS publicly owned treatment works (POTW). The large majority of the wastewaters managed by the EP are metal cleaning wastes; estimated to be approximately 800,000 gallons annually and typically generated during discrete maintenance events over a relatively short period of time. Available analytical data indicates concentrations of copper in the wastewater

generated during these maintenance events are above the EPA Categorical standard and local limit. As a result, these wastewaters require pretreatment to remove dissolved metals before they can be treated at the off-site POTW. This pretreatment of metal cleaning wastewaters requires construction of an on-site wastewater treatment facility (WWTF). The requirement to pretreat EP wastewaters removes any benefit of management off-site.

- Management of wastewater off-site would also require transportation of wastewater by tanker truck. The resulting truck traffic, especially during discrete metal cleaning maintenance events, would substantially increase 1) the risk of a traffic accident, 2) the risk of a spill or release to the environment, and 3) fuel consumption and carbon emissions.

3.3 Role of EP in Continued Plant Operations

The J.K. Spruce Plant has a generation capacity of 1,410 MW and comprises approximately 18.3% of the CPS Energy's generation portfolio. The J.K. Spruce Plant is an essential part of the baseload capacity within the CPS Energy fleet, particularly during peak demand periods. During the summer of 2019, the Electric Reliability Council of Texas (ERCOT) reported that they were forced to rely on demand response reserves to maintain reliability with the grid. Although reserve margins are expected to grow in coming years, the Capacity Demand and Reserves (CDR) report indicates a continuation limited reserve margin in the near term.

The existing EP receives boiler chemical cleanouts and other chemical cleaning wastes generated during maintenance events. CPS Energy must manage the wastestreams generated during these needed maintenance events for the continued safe operation of the J.K. Spruce Plant and other CPS Energy power generation facilities.

Maintenance needed for continued operation of the J.K. Spruce Plant and other CPS Energy power generation facilities is dependent on the continued operation of the existing EP until alternative capacity is available. If non-CCR flows to the EP cease on or prior to April 11, 2021 without alternative capacity available, the J.K. Spruce Plant and other CPS Energy power generation facilities will not be able to continue operation.

3.4 Narrative Discussing the Approach Selected to Obtain Alternative Capacity for CCR and/or Non-CCR Wastestreams

The existing EP is located generally northeast of the J.K. Spruce Plant and is approximately 5.1 acres in size. The existing EP contains a liner system, but the liner design does not meet the specific liner requirements of the CCR Rule, and is therefore considered unlined. The existing EP was originally constructed as a fly ash landfill in 1990, and then converted to a fly ash impoundment in 1996. The function of the fly ash impoundment changed from storing fly ash to dewatering various liquid wastes by evaporation after 1996.

Currently, the existing EP does not receive any CCR flows, but in addition to the non-CCR industrial wastestreams from the J.K. Spruce Plant, the EP also receives non-CCR industrial wastestreams from other CPS Energy power generation facilities. During typical plant operations, the non-CCR flow volume of nonhazardous liquids to the existing EP ranges between 1,000,000 and 2,000,000 gallons per year. The existing EP does not have an inlet pipe or discharge pipe and only receives various non-CCR flows discharged via tanker trucks, which include:

- Boiler cleaning liquid waste
- Ion exchange wastewater
- Steam turbine cleaning liquid waste

- Plasma cutter liquid waste
- Acid/base vessel cleaning liquid waste
- Spill cleanup liquid waste
- Laboratory analyte solution liquid waste
- Air preheater basket cleaning liquid waste
- Heat exchanger condenser cleaning liquid waste
- Circulating water from service activities on plant equipment

The cessation of the non-CCR flows (industrial wastestreams) to the existing EP requires alternative capacity that, at a minimum, will replace the primary operational functions of receiving and allowing the evaporation of these industrial wastestreams, or the power plants designs must be modified to eliminate these flows.

The alternatives evaluated by CPS Energy for providing alternative capacity for these flows included the following:

- Alternative 1 - Retrofitting an existing surface impoundment
- Alternative 2 - Constructing a new surface impoundment

CPS Energy is in the process of reducing their environmental risk exposure by eliminating/reducing the number of outfalls and wastestreams that return to Calaveras Lake. During the initial EP alternatives evaluation, CPS Energy recognized that if they added a separate wastewater treatment facility (WWTF) to manage the industrial wastestreams, they would be adding a wastestream and thus increasing their environmental risk exposure. During the initial EP alternatives evaluation, CPS Energy also recognized they could combine the efforts of this project with a separate ongoing project which involved constructing a new EP for storing and treating domestic wastewater (i.e., sanitary waste). Domestic wastewater is currently being treated at four existing wastewater treatment plants (WWTPs) on-site. By combining the projects, CPS Energy could utilize a single EP to store and treat both domestic wastewater and the industrial wastestreams.

3.4.1 Retrofitting an Existing Surface Impoundment

All the existing surface impoundments at the Calaveras Power Station have a liner system; however, none of these systems meet the specific liner requirements in the CCR Rule (40 CFR §257.72) and are therefore classified as unlined. All surface impoundments (including CCR and non-CCR surface impoundments) at the Calaveras Power Station are listed in Exhibit 3.2. A Surface Impoundment Location Map is provided as Figure 3.1.

Exhibit 3.2 – Calaveras Power Station Surface Impoundments

Name	Description	Storage Capacity (MM gallons)	Liner	Status
Pond #1	Diked Oil Storage Area	0.2	Unlined	Active
Pond #2	Coal Pile Runoff Pond	32.6	Unlined	Active
Pond #3	North Bottom Ash Pond	20.5	Unlined	Inactive
Pond #4	South Bottom Ash Pond	22.5	Unlined	Inactive
Pond #5	Stormwater (Southwest Runoff Pond 3)	1.7	Unlined	Active
Pond #6	Stormwater (CRP Runoff Pond 1)	5.9	Unlined	Active
Pond #7	SRH Pond	4.0	Unlined	Active
Pond #8	Stormwater (CRP Runoff Pond 2)	2.7	Unlined	Active
Pond #9	Stormwater Runoff (Fly Ash) Pond	9.7	Unlined	Active
Pond #10	Evaporation Pond	5.1	Unlined	Active
Pond #11	Clarifier Sludge Recycling Pond	0.8	Unlined	Active
Pond #12	Stormwater (Coal conveyor area temporary holding pond)	1.1	Unlined	Active

Excluding the existing EP, there are nine other active surface impoundments (both CCR and non-CCR surface impoundments) at the Calaveras Power Station. Six of these nine surface impoundments are needed for stormwater management and release to Calaveras Lake as permitted discharges. These six surface impoundments also do not have sufficient capacity to receive industrial wastestreams in addition to their designed stormwater capacity. Since these six surface impoundments are unavailable for added capacity and since the industrial wastestreams managed in the EP would not meet the low discharge permit limits for metals (specifically iron and copper), these surface impoundments are not available for retrofit as alternative capacity. In addition, a major amendment for a discharge permit renewal would take between one and two years for approval.

As for the three active surface impoundments not associated with stormwater management, the footprint of two are not large enough to handle the industrial wastestreams managed in the EP and one (SRH Pond) is being closed as an unlined CCR surface impoundment. Therefore, these three surface impoundments are also not available for retrofit as alternative capacity. The two inactive surface impoundments, the North and South Bottom Ash Ponds, have ceased receiving flow and will be clean closed. The schedule for release of these surface impoundments for re-development following closure is unknown and these surface impoundments will not be available for retrofit until all closure activities are complete.

The anticipated combined flow volume to the existing EP was also reviewed and it was determined that the existing EP footprint is not large enough to handle both the sanitary and industrial wastestreams. In addition, the duration for the removal of all CCR in the existing EP and the design, procurement, and installation of a new liner system is longer than the selected alternative (constructing a new surface impoundment).

3.4.2 Constructing a New Surface Impoundment

The selected alternative, constructing a new lined surface impoundment, is the least complex alternative and it can be implemented in the shortest duration of time. CPS Energy has been working on preliminary design and evaluation of alternative capacity since May 2019. Now that CPS Energy has selected an option, the detailed design, contractor selection, and construction work has commenced. An overall duration of 22 months is expected for this alternative to allow the cessation of non-CCR flow to the EP by May 26, 2022. Constructing a new lined surface impoundment also retains the primary operational functionality of the existing EP and requires minimal modifications to the existing power plants. In

addition, Alternative 2 allows for a single EP, constructed with a liner system compliant with State requirements, to store and treat both domestic wastewater and the industrial wastestreams and allows for the existing EP to be closed per the CCR Rule and thus minimizing the potential environmental compliance risks from continuing to use the existing EP.

A primary goal of the alternatives evaluated was to consolidate wastewater flows at the Calaveras Power Station so that treatment can be accomplished at a single, centralized location as opposed to the four existing WWTPs located on-site. The consolidation approach is shown on the process flow diagram (PFD) provided as Exhibit 3.3. The proposed alignment for consolidating flows and preliminary layout for the new EP is shown on the preliminary site plan provided as Exhibit 3.4.

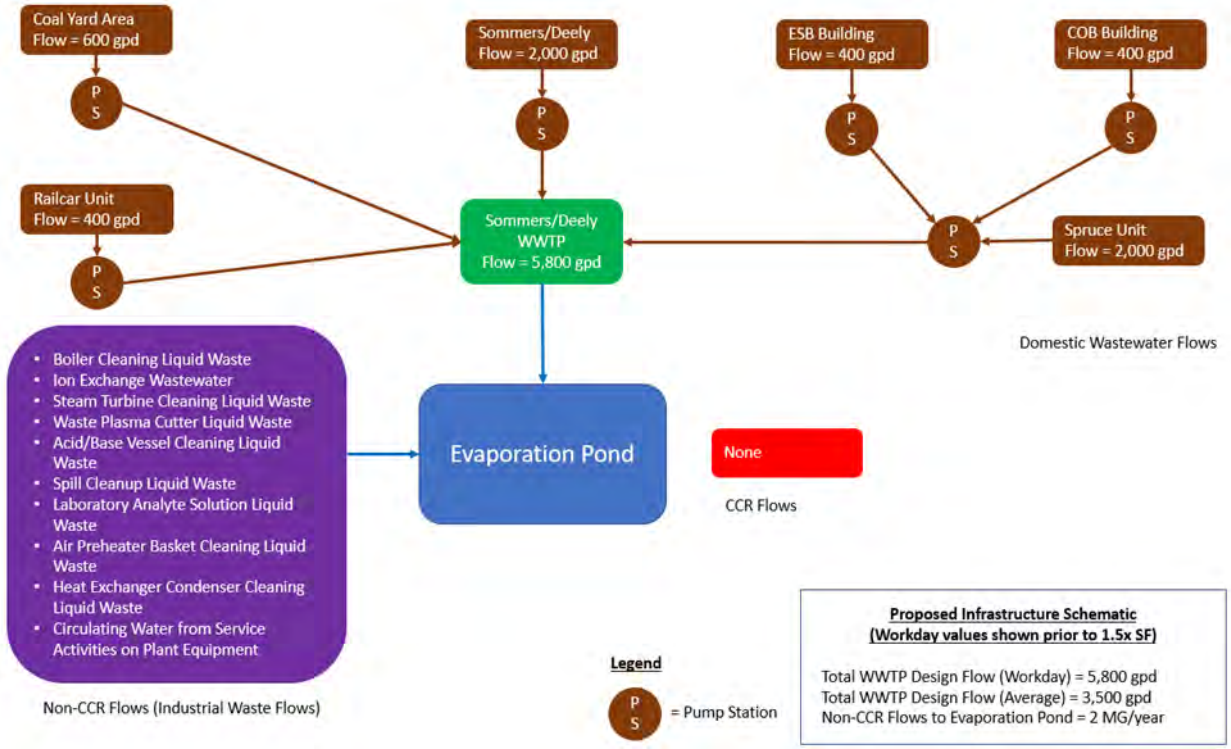
Temporary storage tanks were evaluated for the period while the new EP is being planned and constructed. The existing EP has a hydraulic retention capacity of over 5,000,000 gallons. During typical plant operations, the non-CCR flow volume of nonhazardous liquids to the existing EP ranges between 1,000,000 and 2,000,000 gallons per year. These flows are intermittent and mostly occur during discrete maintenance/ cleaning events over a relatively short period of time. The existing EP does not have an inlet or discharge pipe and only receives various non-CCR flows discharged via tanker trucks. In the short term, while the new EP is being planned and constructed, an estimated 1,000,000 gallons of storage will be required for the various power plants to continue operation.

Utilizing frac tanks with capacities of 21,000 gallons, approximately 50 frac tanks would be required to replace the estimated 1,000,000 gallons of storage. Finding a suitable location for 50 frac tanks would be difficult at the site and the overall footprint would be even larger due to the spill containment measures required for the frac tanks. Due to the large number of frac tanks required, the risk of spill or release to the environment would be greatly increased. An additional downside of frac tanks is that they would not allow for evaporation of the liquids and ultimately the contents would have to be discharged into the new EP once it is in service.

The other option for temporary storage is modular tanks. The maximum height of a modular tank is about 12 feet, however, using a 6-foot high tank would allow for greater surface area for additional evaporation. Modular tanks may be constructed with a bolted steel frame and geosynthetic membrane liner and require a large flat graded area. To store a volume of 1,000,000 gallons, a 6-foot high tank (assuming a water height of 4 feet) would require approximately 34,000 square feet of flat space. A flat space of this size is limited at the site. An additional downside of modular tanks is the increased likelihood of a failure resulting in a release to the environment.

Due to the limited area available for installation and the risk of release to the environment, temporary storage tanks are technically not a feasible option.

Exhibit 3.3: Proposed Process Flow Diagram for Consolidating WWTP Flows



Based on the work completed to date, CPS Energy identified the following primary scope items for construction of the new EP:

- Construction of the new EP to store and treat domestic wastewater and industrial wastestreams. The preliminary footprint is approximately 6.5 acres and consists of two cells to assist with pond maintenance. The new EP will be constructed with a liner system that will be compliant with State requirements.
- Redirection of the existing industrial wastestreams to the new EP.
- Commencement of closure of the existing EP.
- Consolidation of domestic wastewater flows from the four existing WWTPs. A PFD of the proposed improvements for the domestic waste is shown as Exhibit 3-3. New pumps will be provided at each existing WWTP for pumping from the various units to the Sommers/Deely WWTP. A preliminary force main alignment is shown on Exhibit 3-4; however, the Sommers/Deely WWTP will be relocated to be adjacent to the new EP.
- Direction of WWTP flows to the new EP.

Exhibit 3.4: Proposed Site Plan

3.4.3 Summary of Alternatives Evaluated and Selected Alternative

A summary of the two evaluated alternatives is provided below.

- Alternative 1 – Retrofitting an existing surface impoundment to receive the EP flow is a more complex alternative and was not selected for the following reasons:
  - The duration for the removal of all CCR in the existing EP and the design, procurement, and installation of a new liner system is longer than the selected alternative (Alternative 2). In addition, the footprint of the existing EP is not large enough to handle both the planned sanitary and industrial wastestreams.
  - Excluding the existing EP, there are nine other active surface impoundments (both CCR and non-CCR surface impoundments) at the Calaveras Power Station. Six of these nine surface impoundments are needed for stormwater management and release to Calaveras Lake as permitted discharges. These six surface impoundments also do not have sufficient capacity to receive industrial wastestreams in addition to their designed stormwater capacity. Since these six surface impoundments are unavailable for added capacity and since the industrial wastestreams managed in the EP would not meet the low discharge permit limits for metals (specifically iron and copper), these surface impoundments are not available for retrofit as alternative capacity. In addition, a major amendment for a discharge permit renewal would take between one and two years for approval.
  - As for the three active surface impoundments not associated with stormwater management, the footprint of two are not large enough to handle the industrial wastestreams managed in the EP and one (SRH Pond) is being closed as an unlined CCR surface impoundment. Therefore, these three surface impoundments are also not available for retrofit as alternative capacity.
  - The two inactive surface impoundments, the North and South Bottom Ash Ponds, have ceased receiving flow and will be clean closed. The schedule for release of these surface impoundments for re-development following closure is unknown and these surface impoundments will not be available for retrofit until all closure activities are complete.
- Alternative 2 – The selected alternative, constructing a new lined surface impoundment, is the least complex alternative and it can be implemented in the shortest duration of time. An overall duration of 22 months is expected for this alternative to allow the cessation of CCR and non-CCR flow to the EP by May 26, 2022. Constructing a new lined surface impoundment also retains the primary operational functionality of the existing EP and requires minimal modifications to the existing power plants.

3.5 Detailed Schedule of the Fastest Feasible Time to Complete Measures Necessary for Alternative Capacity

Engineering, construction, procurement and start-up of the new EP will require approximately 22 months. A graphic schedule for the activities outlined in Sections 3.6 and 3.7 is included as Figure 3.2.

3.6 Narrative Discussion of the Schedule and Visual Timeline Representation

As shown in Figure 3.2 and described in Sections 3.6 and 3.7, CPS Energy has already undertaken significant planning steps towards initiating closure of the existing EP. This section is focused on the remaining work necessary to obtain alternative disposal capacity for the industrial wastestreams and domestic wastewater flows. The durations shown in the schedule in Figure 3.2 are based on a number of factors, including a 50-hour per week construction schedule, the estimated piping quantities for the new EP, and the estimated volume of earthwork required.

Detailed engineering for the water redirection and new EP construction will begin after the study phase and is scheduled to be completed in March of 2021. Preparation of equipment specifications and the technical specifications will occur concurrently with detailed engineering. The construction contract will include construction of the new EP and installation of the major utility corridors (i.e., piping to/from the WWTP to the new Sommers/Deely WWTP and new EP) and new lift stations. Construction drawings for the new EP design will be submitted to the Texas Commission on Environmental Quality (TCEQ) for General Permit, Texas Pollutant Discharge Elimination (TPDES) and Engineer's Certification of Surface Impoundment review and permit approval. A Tree Survey and Cultural Resources review will be submitted to the City of San Antonio for review and approval. The permit drawings will be submitted following the 60% review meeting and this effort is anticipated to take up to five months to complete. CPS Energy will issue the detailed design drawings for bid prior to receiving the permit, but will not award the construction contract until the TCEQ approval is received. Bid documents will be issued in March of 2021. Three months were included for the bid period and bid review, with the construction contract award and contract negotiations completing in October of 2021.

In the bidding phase, potential contractors will be issued a RFP in March 2021 for the procurement and construction project. The bid, selection and award phase includes the following tasks:

- Contractor Bid Period – 8 weeks
  A duration of 8 weeks is planned for the bidders to prepare their proposals. A bidder meeting will be scheduled shortly following issue of the Request for Proposal. The meeting may be held at the site during which the bidders can walkdown the project area and present their questions. The bidders may also formally submit questions throughout the bid cycle.
  The project scope includes vendor engineered procurements, shop fabricated components, construction, start-up and commissioning. The construction scope includes civil earthworks, structural, mechanical, electrical, instrumentations and control system modifications. This broad scope may require some bidders to engage subcontractors or partners to execute this work. This type of arrangement typically requires a longer period of time for the bidders to prepare a response due to these formalized agreements.
- Bid Evaluation and Management Review – 8 weeks
  Proposals received by the submittal date will be evaluated. The initial review involves an assessment to confirm the proposals are complete and meet the minimum requirements of the RFP. Proposals submitted will then be evaluated versus the specifications and preliminary design documents. This involves a detailed assessment of the proposed equipment, material quantities, staffing and schedule. Included is a review of the proposed means and methods and any alternates that may improve the design or reduce cost. Other criteria such as experience performing similar work, safety record and proposed project staffing are also evaluated. The duration of the initial evaluation of the bids is 4 - 6 weeks and is dependent on the quality of the proposals. During this process, bidders may be requested to provide additional information or clarify their offering.
  The preliminary evaluation and a preliminary ranking of the bidders will be issued to CPS Energy management for review. A period of 2 to 4 weeks is planned for management review and approval to move forward with a recommendation to the Board of Trustees. The overall evaluation period from receipt of proposals to recommendation to the Board is 8 weeks.

- Contract Negotiation – 6 to 8 weeks

  Prior to CPS Energy Board of Trustees approval, the negotiations with the recommended bidder(s) will be initiated. During this period, the bidders will be requested to address any clarifications and exceptions, respond to any outstanding questions and finalize the project terms and conditions. Negotiations require legal review and management approval. A project of this size typically requires multiple meetings over a period of 6 to 8 weeks to address all technical and commercial items.

- CPS Energy Board Review and Approval – 8 weeks

  At the end of the negotiation period, the recommendation will be presented to the CPS Energy Board of Trustees. CPS Energy is governed by a Board comprised of citizens representing each quadrant of the city and the San Antonio mayor. The Board meets monthly and the agenda is set 1 month prior to each meeting. As a result, a minimum of 2 months is required for Board review and approval.

- Contract Award – 2 to 4 weeks

  Following Board approval, CPS Energy Procurement will enter into a formal contract agreement with the selected vendor. A period of 2 to 4 weeks is planned for this procurement process.

During construction of the new EP, the anticipated worker schedule will involve work 5 days per week, working approximately 10 hours per day. If weather or other delays are encountered, the worker schedule may be adjusted (increased) for additional workdays in the event that the contractor gets behind schedule. The contractor will mobilize following contract award. Procurement of major equipment, including pumps, piping, and liner materials, will occur while the contractor proceeds with site clearing and major earthwork activities. In general, construction work will proceed as follows:

- Contractor will begin construction of the new EP, including mobilization, site clearing and earthwork to build the pond berms (October 2021 – January 2022).
- Contractor will install TCEQ-required leak detection system, composite liner system, and protective cover over the pond bottom (January – April 2022).
- Startup and commissioning of the new EP (April – May 2022). At this point, CPS Energy can relocate non-CCR flows to the new EP and may begin closure of the existing EP.
- Contractor will install force main/lift stations to consolidate WWTP flows and direct them to the new Sommers/Deely WWTP location (April – May 2022).
- Contractor will relocate the Sommers/Deely WWTP effluent to the new EP (May-July 2022).
- Startup and commissioning of the new force main and Sommers/Deely WWTP (August – September 2022).

The new EP construction is expected to be finalized by May 26, 2022, allowing for final receipt of non-CCR wastestreams in the existing EP. The actual dates and duration may be altered by a number of factors, including delays caused by adverse weather, contractor efficiency, or potential craft shortages associated with COVID-19. Note that the existing EP closure activity is not considered part of this Demonstration.

3.7 Narrative Discussion of the Progress Made to Obtain Alternative Capacity for the CCR and/or Non-CCR Wastestreams

As described in Section 3.6 and as shown in Figure 3.2, CPS Energy has made considerable progress in developing a path forward for obtaining alternative disposal capacity for the non-CCR wastestreams that are currently managed in the existing EP. As of the date of this Demonstration, a 30% design has been completed for the project as part of the initial study/evaluation and a design review meeting has been conducted. CPS Energy has evaluated multiple iterations of the project scoping and cost estimate

development in order to find the best compliance solution for the Calaveras Power Station. EPA should note CPS Energy did not have a CCR closure trigger under the original CCR Rule as published in 2015. CPS Energy has evaluated alternatives as described in Section 3.4, and is in the process of developing the project design to support procurement of the new equipment and construction of the required scope items.

4. COMPLIANCE WITH SUBPART D

As identified in 40 CFR §257.103(f)(1)(iv)(B), to demonstrate that the criteria in 40 CFR §257.103(f)(1)(iii) have been met, the owner or operator must submit all of the following, if applicable:

1. A certification signed by the owner of operator that the facility is in compliance with all of the requirements of this subpart (See Appendix A);
2. Visual representation of hydrogeologic information at and around the CCR unit(s) that supports the design, construction and installation of the groundwater monitoring system. This includes all of the following:
    i. Map(s) of groundwater monitoring well locations in relation to the CCR unit(s) (See Appendix B);
    ii. Well construction diagrams and drilling logs for all groundwater monitoring wells (See Appendix C); and
    iii. Maps that characterize the direction of groundwater flow accounting for seasonal variations (See Appendix D);
3. Constituent concentrations, summarized in table form, at each groundwater monitoring well monitored during each sampling event (See Appendix E);
4. A description of site hydrogeology including stratigraphic cross-sections (See Appendix F);
5. Any corrective measures assessment conducted as required at §257.96 (Not Applicable – no corrective measures assessment has been required);
6. Any progress reports on corrective action remedy selection and design and the report of final remedy selection require at §257.97(a) (Not Applicable – no corrective action remedy has been required);
7. The most recent structural stability assessment required at §257.73(d) (See Appendix G); and
8. The most recent safety factor assessment required at §257.73(e) (See Appendix G).

FIGURES

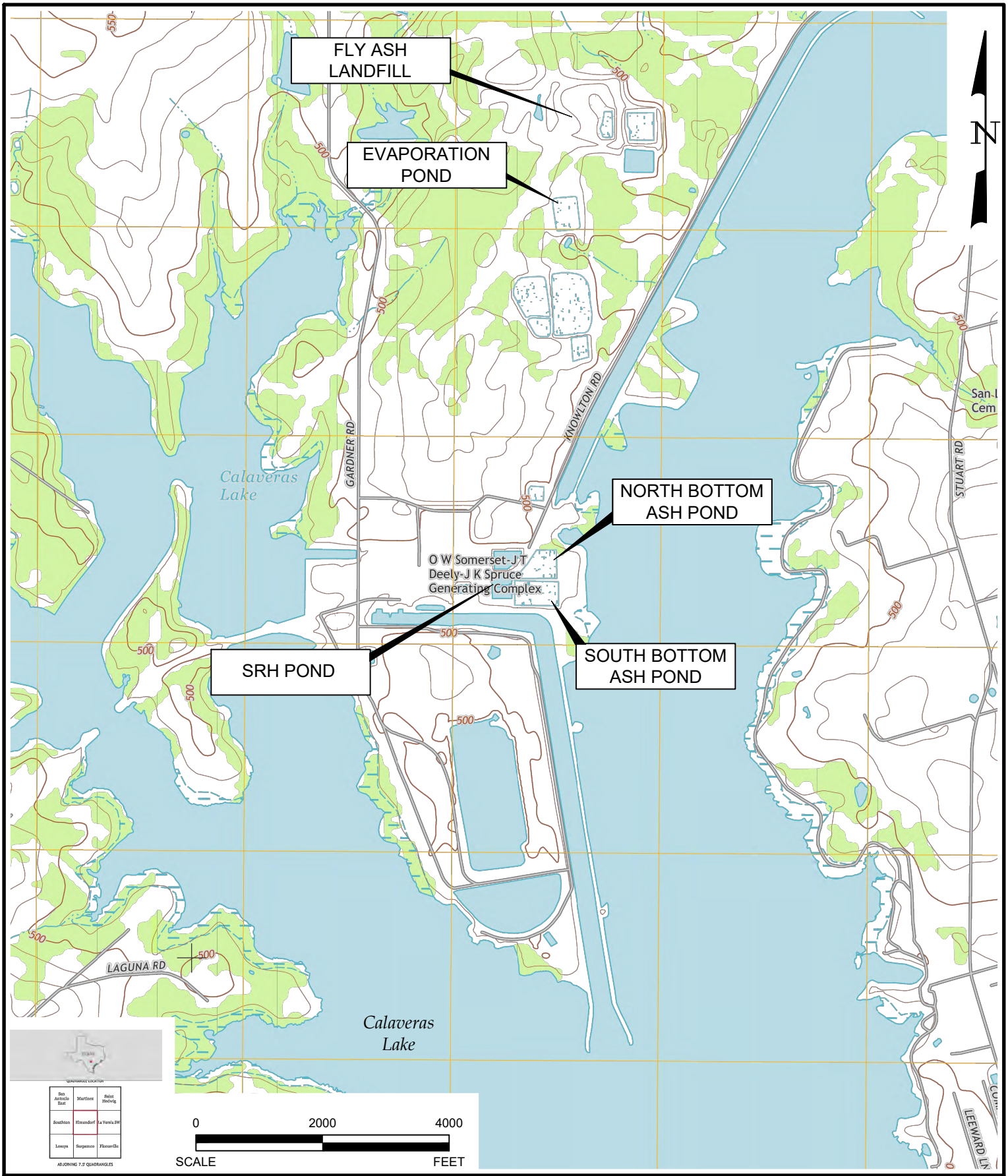
Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	7/25/2016	SCALE:	AS SHOWN	REVISION:	1
W.O.NO.:	K:\GIS\CPS\Calaveras\MXD\0337367_CPSCalaveras_SiteLoc.mxd				

FIGURE 2.1
FACILITY LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

DESIGN: CC	DRAWN: RLM	CHKD.: CC
DATE: 9/19/2018	SCALE: AS SHOWN	REV.:
W.O. NO.: T:\DWG\AutoCAD\dwg\0337367\0337367_CCRUnitLocs_topo.dwg		

FIGURE 2.2
CCR UNIT LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

PLANT WORK AREA

A	GMS / ELECTRICAL / WELDING SHOP (WAREHOUSE # 1)
B	SEWAGE TREATMENT
C	THORPE WAREHOUSE
D	STORE ROOM (WAREHOUSE #2)
E	591 STORE ROOM (WAREHOUSE #3)
F	RAIL CAR MAINTENANCE
G	FUEL ISLAND
H	GENERATION OPERATION BUILDING
I	JK SPRUCE 1
J	JK SPRUCE 2
K	JK SPRUCE OFFICE
L	ENGINEERING SERVICE BUILDING
M	CONSTRUCTION OFFICE BUILDING
N	JT DEELY & OW SOMMERS OFFICE
O	OWS 1
P	OWS 2
Q	JTD 1
R	JTD 2
S	WAREHOUSE #4
T	WAREHOUSE #5
U	NEUTRALIZATION PIT
V	BAG HOUSE
W	COAL CAR UNLOADING BLDG. / DUMPER BLDG.
X	TRANSFER BLDG

LEGEND

SURFACE IMPOUNDMENTS

CALAVERAS LAKE

DISCHARGE CANAL #1

POND #1

COAL PILE RUNOFF BASIN

POND #2

POND #11

COAL PILE

POND #12

INTAKE CANAL

POND #5

POND #7

POND #6

POND #4

POND #3

345KV SWITCHYARD

138KV SWITCHYARD

T-1

T-2

PROPOSED PLANT DRAINS POND

POND #8

CLOSED LANDFILL AREA

POND #10

LANDFILL

POND #9

LANDFILL

DISCHARGE CANAL #2

CALAVERAS LAKE

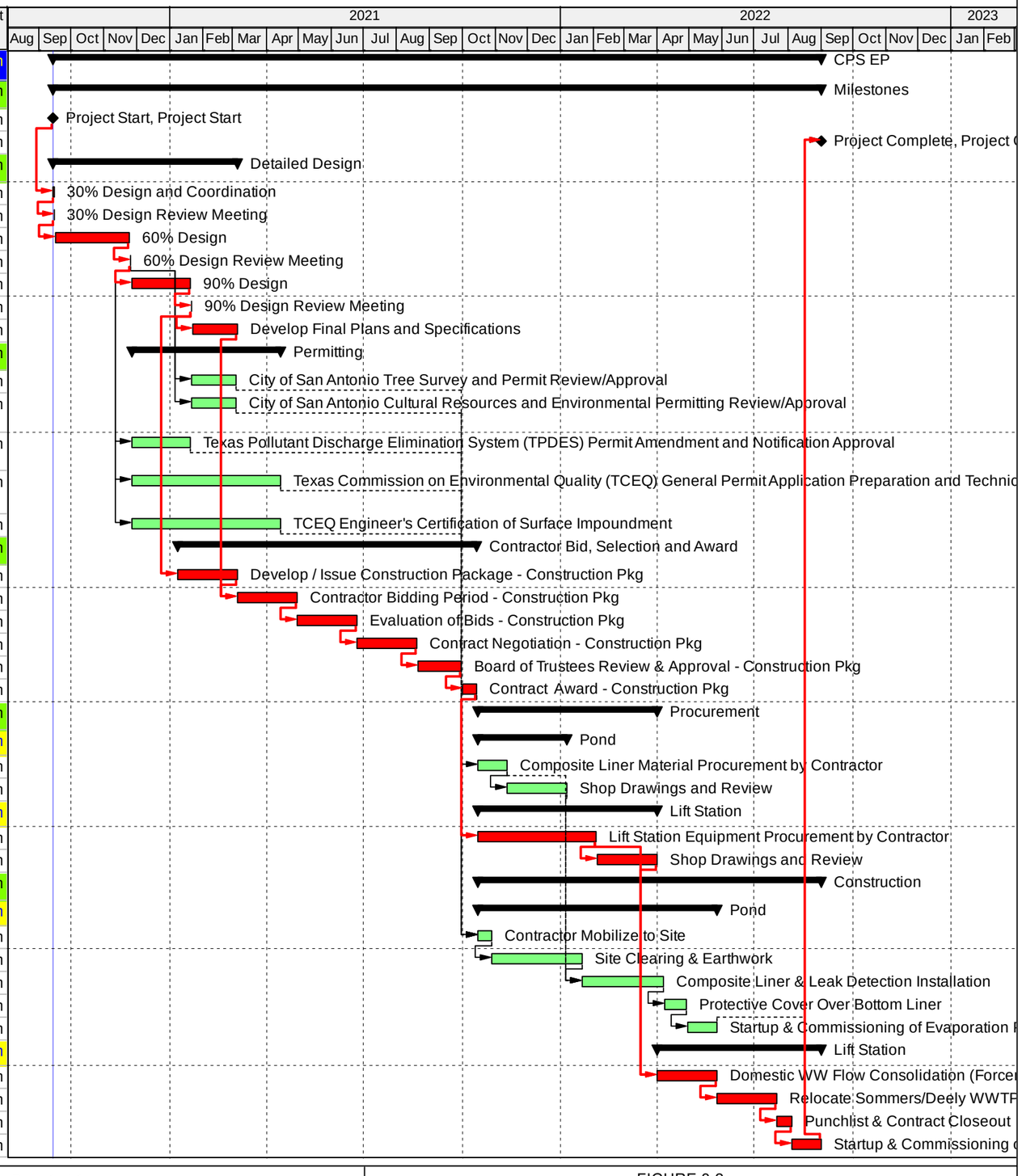
SURFACE IMPOUNDMENTS

1	DIKED OIL STORAGE AREA (NOR UNIT 28)
2	COAL PILE RUNOFF POND (NOR UNIT 018)
3	NORTH BOTTOM ASH POND (NOR UNIT 5)
4	SOUTH BOTTOM ASH POND (NOR UNIT 6)
5	STORM WATER (SOUTHWEST RUNOFF POND 3)
6	STORM WATER (CRP RUNOFF POND 1)
7	SRH / FGD POND (DIVIDED TO NORTH AND SOUTH)
8	STORM WATER (CRP RUNOFF POND 2)
9	FLY ASH RUNOFF POND (NOR UNIT 27)
10	EVAPORATION POND (NOR UNIT 21)
11	CLARIFIER SLUDGE RECYCLING POND (NOR UNIT 25)
12	STORM WATER (COAL CONVEYOR AREA TEMP HOLDING POND) NOR UNIT 32

FIGURE 3.1
SURFACE IMPOUNDMENT LOCATION MAP
CPS Energy – Calaveras Power Station
San Antonio, Texas

CPS Extension Project

Activity ID	Activity Name	Duration	Start	Finish	Total Float
CPS EP		25.7m	14-Sep-20	01-Sep-22	0.0m
Milestones		25.7m	14-Sep-20	01-Sep-22	0.0m
1	Project Start	0.0m		14-Sep-20	0.0m
40	Project Complete	0.0m		01-Sep-22	0.0m
Detailed Design		6.2m	14-Sep-20	04-Mar-21	0.0m
2	30% Design and Coordination	0.1m	14-Sep-20	14-Sep-20*	0.0m
3	30% Design Review Meeting	0.1m	15-Sep-20*	15-Sep-20	0.0m
4	60% Design	2.5m	16-Sep-20	24-Nov-20	0.0m
5	60% Design Review Meeting	0.1m	25-Nov-20	25-Nov-20	0.0m
6	90% Design	2.0m	26-Nov-20	20-Jan-21	0.0m
7	90% Design Review Meeting	0.1m	21-Jan-21	21-Jan-21	0.0m
8	Develop Final Plans and Specifications	1.5m	22-Jan-21	04-Mar-21	0.0m
Permitting		5.0m	26-Nov-20	14-Apr-21	10.1m
10	City of San Antonio Tree Survey and Permit Review/Approval	1.5m	21-Jan-21	03-Mar-21	11.6m
11	City of San Antonio Cultural Resources and Environmental Permitting Review/Approval	1.5m	21-Jan-21	03-Mar-21	11.6m
12	Texas Pollutant Discharge Elimination System (TPDES) Permit Amendment and Notification Approval	2.0m	26-Nov-20	20-Jan-21	13.1m
13	Texas Commission on Environmental Quality (TCEQ) General Permit Application Preparation and Technical Report Review/Appr	5.0m	26-Nov-20	14-Apr-21	10.1m
14	TCEQ Engineer's Certification of Surface Impoundment	5.0m	26-Nov-20	14-Apr-21	10.1m
Contractor Bid, Selection and Award		10.0m	08-Jan-21	14-Oct-21	0.0m
16	Develop / Issue Construction Package - Construction Pkg	2.0m	08-Jan-21	04-Mar-21	0.0m
17	Contractor Bidding Period - Construction Pkg	2.0m	05-Mar-21*	29-Apr-21	0.0m
18	Evaluation of Bids - Construction Pkg	2.0m	30-Apr-21	24-Jun-21	0.0m
19	Contract Negotiation - Construction Pkg	2.0m	25-Jun-21	19-Aug-21	0.0m
20	Board of Trustees Review & Approval - Construction Pkg	1.5m	20-Aug-21	30-Sep-21	0.0m
21	Contract Award - Construction Pkg	0.5m	01-Oct-21	14-Oct-21	0.0m
Procurement		6.0m	15-Oct-21	31-Mar-22	1.0m
Pond		3.0m	15-Oct-21	06-Jan-22	4.0m
23	Composite Liner Material Procurement by Contractor	1.0m	15-Oct-21	11-Nov-21	4.0m
24	Shop Drawings and Review	2.0m	12-Nov-21	06-Jan-22	4.0m
Lift Station		6.0m	15-Oct-21	31-Mar-22	0.0m
26	Lift Station Equipment Procurement by Contractor	4.0m	15-Oct-21	03-Feb-22	0.0m
27	Shop Drawings and Review	2.0m	04-Feb-22	31-Mar-22	0.0m
Construction		11.5m	15-Oct-21	01-Sep-22	0.0m
Pond		8.0m	15-Oct-21	26-May-22	3.5m
30	Contractor Mobilize to Site	0.5m	15-Oct-21	28-Oct-21	3.5m
31	Site Clearing & Earthwork	3.0m	29-Oct-21	20-Jan-22	3.5m
32	Composite Liner & Leak Detection Installation	2.8m	21-Jan-22	07-Apr-22	3.5m
33	Protective Cover Over Bottom Liner	0.8m	08-Apr-22	28-Apr-22	3.5m
34	Startup & Commissioning of Evaporation Pond	1.0m	29-Apr-22	26-May-22	3.5m
Lift Station		5.5m	01-Apr-22	01-Sep-22	0.0m
36	Domestic WW Flow Consolidation (Forcemain/Lift Station)	2.0m	01-Apr-22	26-May-22	0.0m
37	Relocate Sommers/Deely WWTP	2.0m	27-May-22	21-Jul-22	0.0m
38	Punchlist & Contract Closeout	0.5m	22-Jul-22	04-Aug-22	0.0m
39	Startup & Commissioning of Lift Station Equipment	1.0m	05-Aug-22	01-Sep-22	0.0m



Remaining Level of Effort · Actual Work · Critical Remaining Work · S...
Actual Level of Effort · Remaining Work · Milestone

FIGURE 3.2
NEW EVAPORATION POND PROJECT SCHEDULE
CPS Energy - Calaveras Power Station - San Antonio, Texas

APPENDIX A OWNER CERTIFICATION OF COMPLIANCE

ALTERNATIVE CAPACITY DEMONSTRATION CERTIFICATION
40 CFR §257.103(f)(1)(iv)(B)(1)

CPS Energy Calaveras Power Station
San Antonio, Texas

CERTIFICATION

As owner and operator of the Evaporation Pond, I hereby certify that the Calaveras Power Station is in compliance with all the requirements of Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.

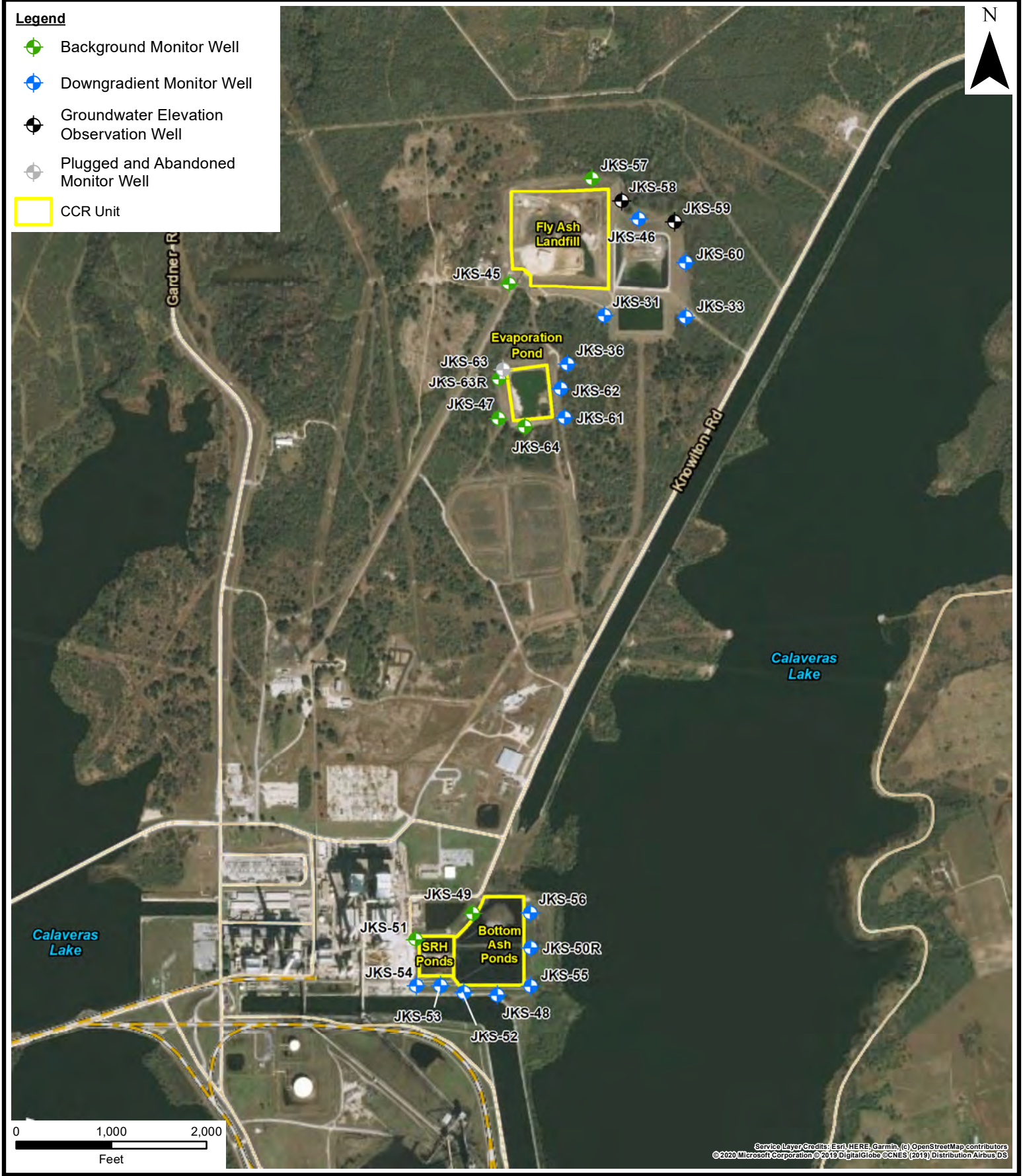
11/2/20

Benjamin L. Ethridge, P.E.

Senior VP Power Generation

CPS Energy

APPENDIX B GROUNDWATER MONITORING WELL LOCATIONS MAP



Environmental Resources Management

DESIGN:	WZ	DRAWN:	EFC	CHKD.:	WZ
DATE:	1/17/2020	SCALE:	AS SHOWN	REVISION:	0

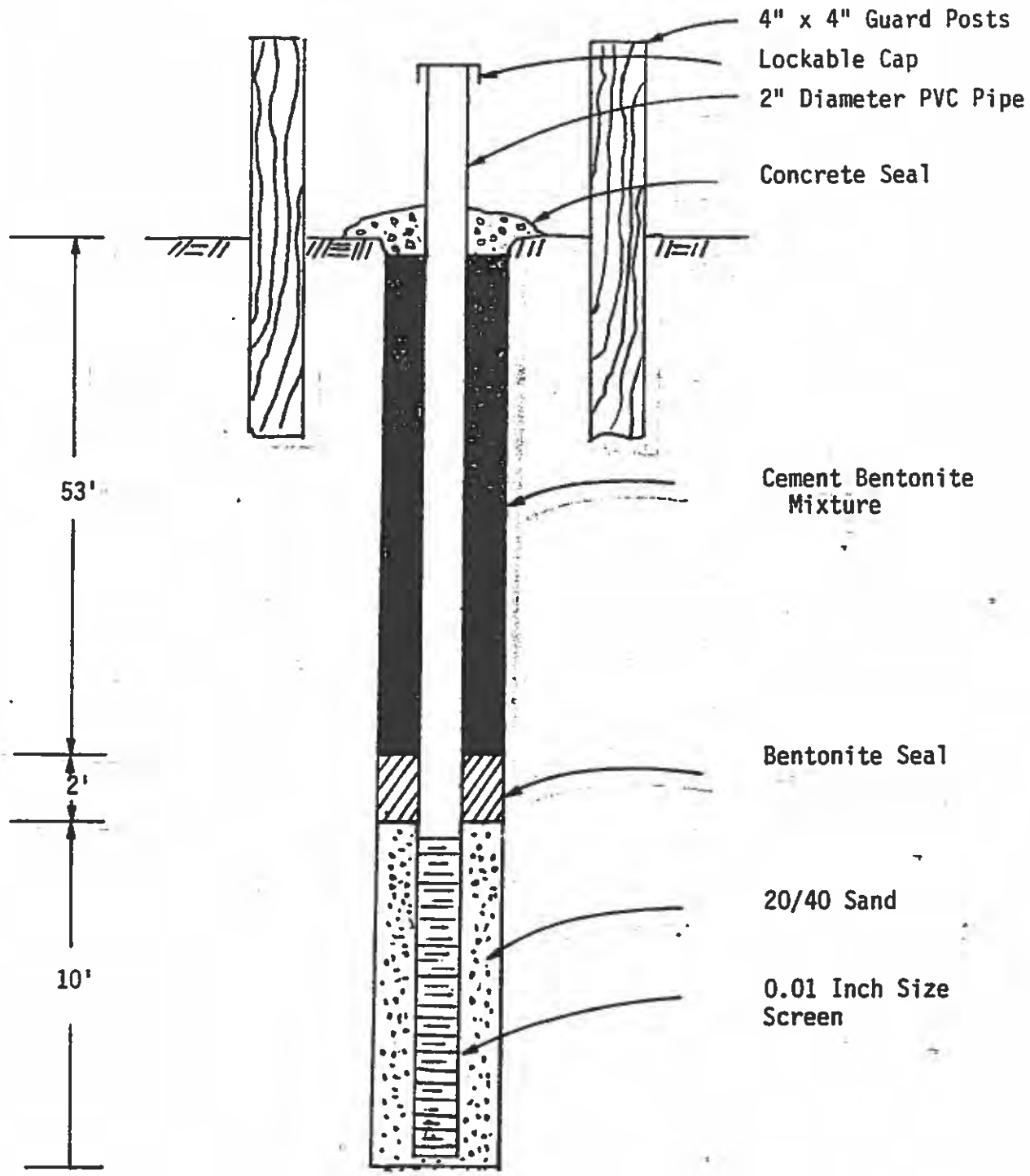
\\ushoufs01\Data\Houston\Projects\0503422 CPS Energy Calaveras 2019 CCR Tasks.WZ\GIS_CAD\MXD\2019gwmon\fig1_0503422_CPSCalv_WellLocs.mxd

FIGURE 1
CCR WELL NETWORK LOCATION MAP
CPS Energy - Calaveras Power Station
San Antonio, Texas

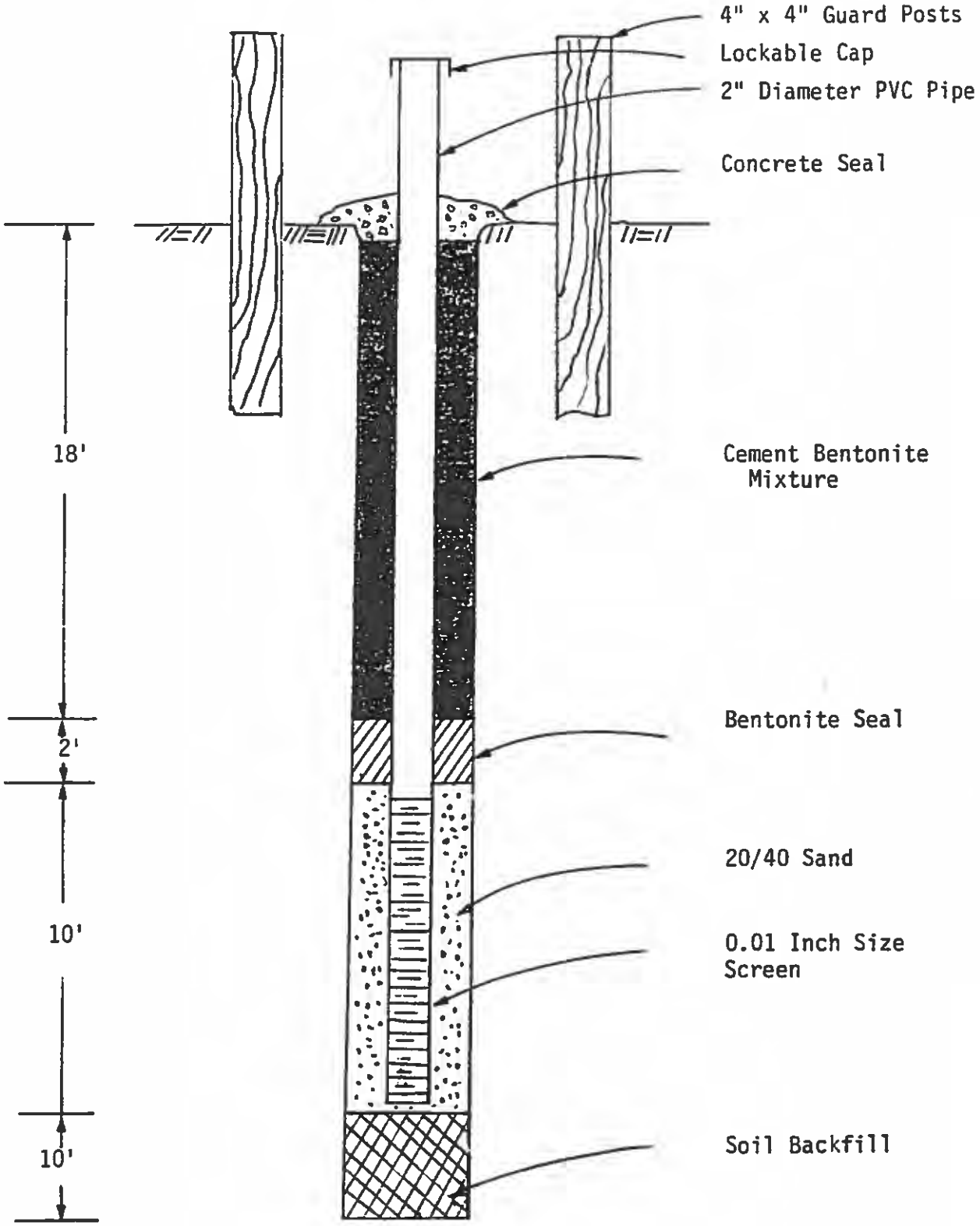
ERM

APPENDIX C WELL CONSTRUCTION DIAGRAMS AND DRILLING LOGS

Professional Service Industries



PROJECT NAME		
CALAVERAS PLANT - UNITS 5 AND 6 LANDFILL AREA EXPLORATION San Antonio, Texas	Monitor Well No. B-31	
	PROJECT NO. 312-75036	DATE 7-9-87

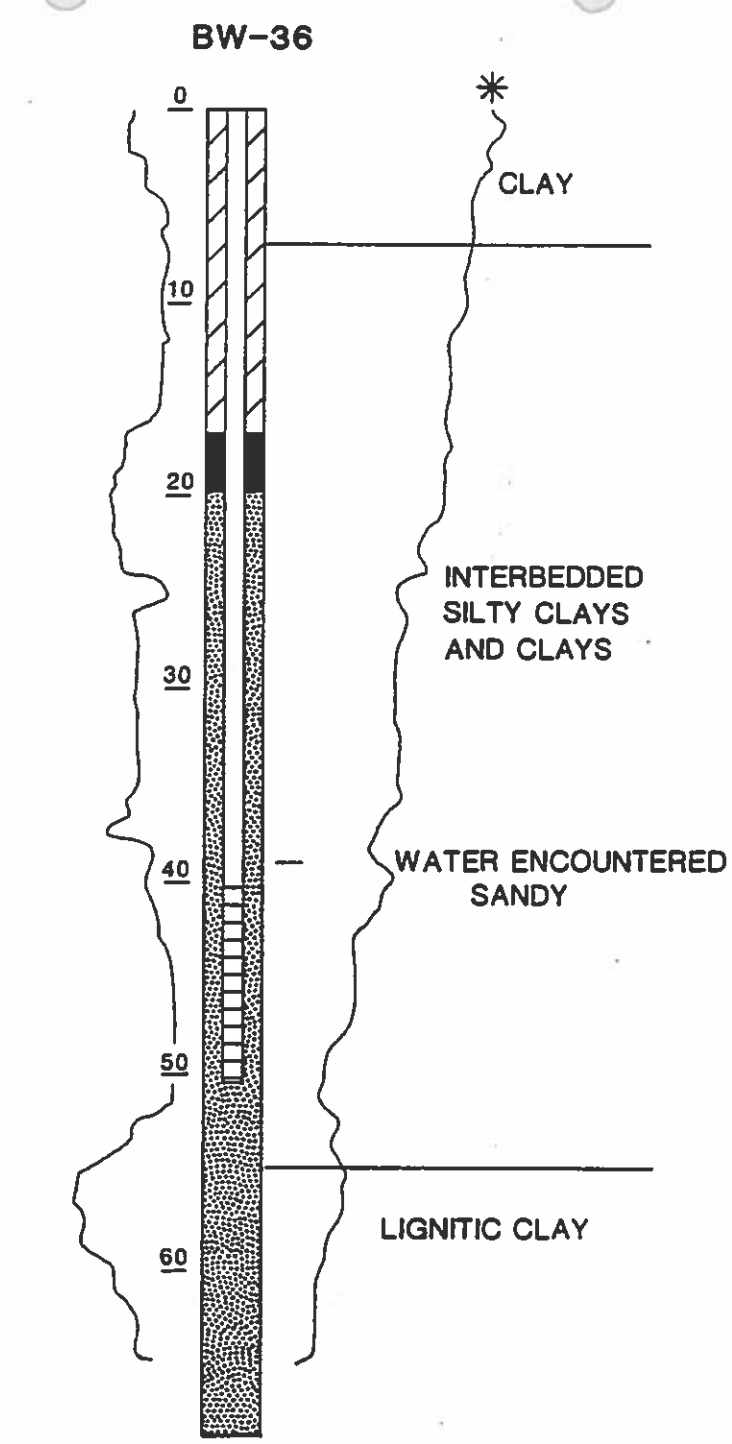


PROJECT NAME

CALAVERAS PLANT - UNITS 5 AND 6
LANDFILL AREA EXPLORATION
San Antonio, Texas

Monitor Well No. B-33

PROJECT NO	DATE
312-75036	7-9-87



*Calibration problem on resistivity curve

ESPEY, HUSTON & ASSOCIATES, INC.
Engineering & Environmental Consultants

FIGURE A-2
MONITORING WELL BW-36
GEOPHYSICAL/LITHOLOGIC LOGS

ERM Environmental Resources Management

JKS-45
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

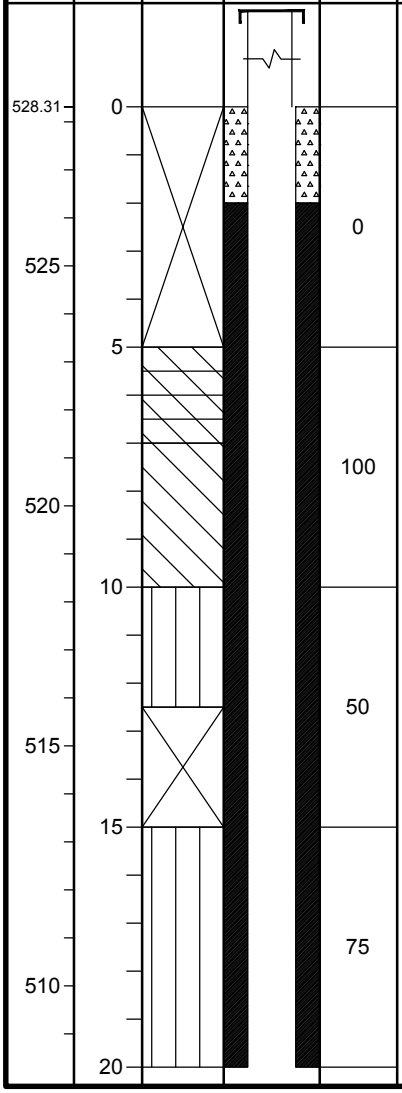
Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
528.31	0			0		0-5	NO RECOVERY: Previously excavated by hydrovac truck.
525	5			100		5-7	SILTY CLAY: Brown; dry to damp; medium stiff; medium plasticity; some white calcareous concretions present. At 5.5' bgs: Slight orange mottling. At 6' bgs: White silt lens.
520	10			50		7-10	CLAY: Grey; dry to damp; stiff; medium to high plasticity; minor silt content at depth; white calcareous concretions throughout. At 7.5' bgs: Orange mottling. At 9' bgs: Yellowish orange silt lens.
515	15			75		10-12.5	SILT: Alternating light grey and yellowish brown, stratified with orange, yellow, and red; damp; loose; non-plastic.
510	20					12.5-15	NO RECOVERY.
						15-22	SILT: Brownish light grey; damp; loose to medium dense; non-plastic; some yellow stringers. At 16' bgs: Alternating pinkish brown stratifications (2" thick). At 16.5' bgs: Orange band (2" thick). At 17.5' bgs: Orange band (1" thick). At 19' bgs: Light grey and pinkish brown laminations; minor clay content; occasional orange silt stringers.

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
505	20			75		22-25	CLAYEY SILT: Pinkish brown laminated with light grey; dry to damp; medium dense to dense; slight plasticity; trace yellow and orange silt stringers.
	25					25-34.5	SILTY CLAY: Dark reddish brown; dry to damp; medium stiff; low plasticity; fractures along planar surfaces.
				100			At 25.5' bgs: Light grey silt lens (2" thick).
500					JKS-45_28-30 **USCS:** Fat Clay (CH) **AL:** 61 / 22 / 39 **-200 Sieve:** 91.6		At 28' bgs: Light grey silt stringers; yellow silt stringers and minor gypsum crystals from 28' to 30' bgs. Non-cohesive grab sample collected from 28'-30' bgs.
	30						
				100			At 31.5' bgs: Dry; yellow silt stringers; abundant yellowish orange silt stringers to 32' bgs.
495							At 33.5' bgs: Trace gypsum crystals.
	35					34.5-35	SILT: Dark pinkish brown laminated with greyish brown; dry; dense; non-plastic; some clay content.
						35-36	SILTY CLAY: Very dark reddish brown; damp to moist; medium stiff; low plasticity; trace yellow silt; minor gypsum crystals; brownish black band (2" thick) at 35' bgs.
				100	JKS-45_36-38 **USCS:** Fat Clay (CH) **AL:** 67 / 24 / 43 **-200 Sieve:** 90.5	36-38	CLAY: Pinkish grey; dry; very stiff to hard; very high plasticity (fat). Non-cohesive grab sample collected from 36'-38' bgs.
490						38-43	At 36.5' bgs: Yellow and orange silt stringers to 37.5' bgs. SILT: Orangish brown; dry to damp; medium dense to dense; slight plasticity; slight clay content.
	40						

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40						At 38.75' bgs: Brownish black band (1.5" thick). At 39.25' bgs: Yellow silt stringers. At 39.5' bgs: Color change to brownish grey; very dense; increased clay content. At 40' bgs: Yellow and orange silt stringers to 43' bgs; some compacted silt pieces to 43' bgs.
485				80		43-45	CLAYEY SILT: Dark reddish brown; damp; medium dense; slight plasticity; orange silt stringers throughout.
	45					45-55	At 44.5' bgs: Trace fine-grained sand content. SAND: Light grey to grey stratified with yellow, orange and red; wet to saturated; fine-grained to medium grained with depth; sub-rounded; well sorted; loose; non-plastic; minor clay lenses (1/16" to 1/8" thick).
480				50			At 48' bgs: Color change to orangish brown with orange laminations; no clay content.
	50				JKS-45_50-52 **USCS:** Silty Sand (SM) **AL:** Non-plastic **-200 Sieve:** 12.6		At 49.5' bgs: Intermixed red color to 50' bgs. At 50' bgs: Color change to pinkish brown. Non-cohesive grab sample collected from 50'-52' bgs.
475				50			
	55				JKS-45_55-57 **USCS:** Fat Clay (CH) **AL:** 75 / 28 / 47 **-200 Sieve:** 97	55-62	At 54.5' bgs: Brownish orange band (2" thick). CLAY: Dark grey; damp; stiff to very stiff; very high plasticity (fat); occasional light grey silt stringers; fractures along silt stringers. Non-cohesive sample collected from 55'-57' bgs.
470				100			
	60						

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
465	60			100	JKS-45_60-62 **USCS:** Fat Clay (CH) **AL:** 75 / 26 / 49 **-200 Sieve:** 86.4 **k:** 1.82×10^{-8}		Cohesive sample (Shelby tube) collected from 60'-62' bgs. Boring terminated at 62' bgs.
460	65						
455	70						
450	75						
	80						

STATE OF TEXAS WELL REPORT for Tracking #424209

Owner:	**CPS Energy**	Owner Well #:	**JKS-45**
Address:	**PO Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station San Antonio, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**528 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**62**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**38**	**56**	**Sand**	**20/40**

Annular Seal Data: **No Data**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**52**	**62**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	Ash
5	8	Lt brn sandy clay
8	14	lt gry sandy clay
14	20	Lt gray sand
20	40	Brn silty clay
40	45	Lt gray sand
45	55	yellow/org silty sand
55	62	Green/gray clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	40
2	Screen	New Plastic (PVC)	40 10	40	55

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-46
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-46 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13667810.11' E. Coord. 2187972.31' Surface Elevation 495.75 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 499.08 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 19.38 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
495.75	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
495				0			
	5					5-8	CLAYEY SAND: Reddish orange; damp to moist; fine-grained; sub-round; well-sorted; medium dense; slight to low plasticity; some silt content.
490				100			At 7.5' bgs: Dense grey clay lenses (1/2" thick).
						8-10	SANDY CLAY: Reddish orange; medium stiff; slight to low plasticity; minor silt content; dense grey clay lenses (1/2" thick); yellow and yellowish orange silt stringers. At 9.5' bgs: Increased silt content.
	10					10-11	CLAY: Grey; dry; stiff; medium plasticity; minor silt content; fractures along tan silt to fine-grained sand stringers.
485						11-15	SAND: Tan; damp; fine-grained; sub-round, well sorted; loose; non-plastic.
				75			At 13' bgs: Striated with pink and orange.
							At 14' bgs: Color change to reddish orange; some silt content; occasional clay lenses.
	15					15-19.5	At 14.75' bgs: Orange silt lens. SILT: Red with orange; damp to dry; loose; slight plasticity. At 15.5' bgs: Color change to grey. At 15.75' bgs: Color change to red. At 16' bgs: Color change to tan with yellow; fractures along planar surfaces. At 17' bgs: Moist.
480				85			At 18.75' bgs: Color change to red and orange.
	20					19.5-25	SAND: Tan; moist; fine-grained, coarsens with depth; sub-round; well sorted; loose; non-plastic; minor silt and trace clay; orange and yellow silt stringers.

ERM Environmental Resources Management

JKS-46
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-46 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13667810.11' E. Coord. 2187972.31' Surface Elevation 495.75 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 499.08 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 19.38 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
475	20				No Samples Collected		At 20' bgs: Color change to brownish tan with orange band (2" thick) at 20.25' bgs. At 21.5' bgs: Color change to tannish grey with yellowish orange band (2" thick). At 22.5' bgs: Color change to tan stratified with pinkish orange and orange.
				75			
470	25					25-30	CLAY: Dark greyish brown; damp to dry; very stiff; high to very high plasticity (fat); fractures along planar surfaces; Light grey and yellowish orange silt lenses throughout.
				100			
465	30						At 29.75' bgs: Dark grey silt lenses; some very small gypsum crystals. Boring terminated at 30' bgs.
460	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #424210

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-46**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**496 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**13**	**25**	**Sand**	**20/40**

Annular Seal Data: **No Data**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**26**	**30**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN SANDY CLAY
8	14	LT GRY CLAY
14	28	LT GRY SAND
28	30	BRN CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-47
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

N. Coord. 13665709.79' E. Coord. 2186503.87' Surface Elevation 510.28 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
510.28	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
510				0			
505	5					5-9.5	CLAYEY SILT: Pinkish brown with grey; damp to moist; loose; slight to low plasticity; occasional yellow and orange silt lenses. At 5.5' bgs: Clay lens (2" thick).
				50			
							At 9.25' bgs: Clay lens (2" thick).
500	10					9.5-20	SILT: Light grey; damp; medium dense; slight plasticity; minor clay content, decreases with depth; abundant yellow and orange silt stringers; fractures along planar surfaces. At 10' bgs: Striated with pinkish brown to 12' bgs.
				90			At 12.5' bgs: No clay content. At 13' bgs: Color change to tan; dry; yellow and orange silt stringers.
495	15						
				50			
	20						

ERM Environmental Resources Management

JKS-47
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

N. Coord. 13665709.79' E. Coord. 2186503.87' Surface Elevation 510.28 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
490	20			75	No Samples Collected	20-23	At 20' bgs: Whitish tan striated with yellow; minor fine-grained sand content. SANDY SILT: Whitish tan; dry; loose; non-plastic; occasional yellow and orange silt stringers, occurrence increases with depth.
485	25			50		23-48	SAND: Whitish tan; dry to moist with depth; fine-grained; sub-round; well sorted; minor yellow and orange silt stringers; thin clay pinkish brown to brown clay laminations to 23.25' bgs. At 25' bgs: Color change to tannish brown; very moist.
480	30			100			At 30' bgs: Saturated; Orange band (1" thick) at 30.25' bgs.
475	35			50			At 34' bgs: Orange striations to 35' bgs. At 35' bgs: Trace orange silt stringers.
	40						

ERM Environmental Resources Management

JKS-47
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

N. Coord. 13665709.79' E. Coord. 2186503.87' Surface Elevation 510.28 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	40				No Samples Collected		At 40' bgs: Clayey sand lens (2" thick). At 40.5' bgs: Occasional pinkish brown silt stringers to 41' bgs. At 14.5' bgs: Abundant yellowish orange silt stringers to 42.5' bgs.
				75			At 41.5' bgs: Orange and brown laminated silt stringers to 43' bgs.
465	45						At 44' bgs: Medium-grained; no silt content.
				100			At 46' bgs: Orangish brown silt layer (1/2" thick). At 46.5' bgs: Color change to greyish tan; fine to medium-grained with decreasing grain size with depth.
460	50						Boring terminated at 48' bgs.
455	55						
	60						

STATE OF TEXAS WELL REPORT for Tracking #424211

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-47**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 18' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**510 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**48**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**23**	**41**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**23**	**Bentonite 15 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **No Data**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**41**	**48**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN SANDY CLAY
8	14	LT GRAY SANDY CLAY
14	20	LT GRAY SAND
20	40	BRN SILTY CLAY
40	48	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	25
2	Screen	New Plastic (PVC)	40 10	25	40

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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(512) 463-7880

ERM Environmental Resources Management

JKS-48 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-48 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13659658.78' E. Coord. 2186490.78' Surface Elevation 493.71 ' Ft MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.50 ' Sump Length 0 '

Top of Casing Elevation 497.19 ' Stickup 3.48 '

Depth to Water: 1. Ft. btoc 11.28 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.71	0			0		0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			100		5-6	CLAYEY SILT: Orangish brown; damp; medium dense to dense; slight to low plasticity. At 5.5' bgs: Brown band (2" thick). At 5.75' bgs: Color change to brown; damp to dry; minor clay content; fractures along planar surfaces.
						6-6.5	SILTY CLAY: Orangish brown heavily mottled with grey and orange; damp; stiff; medium plasticity; occasional grey and orange silt stringers.
						6.5-7	SILT: Brownish tan with grey and orange; damp; medium dense; slight plasticity; trace clay.
						7-7.5	SILTY CLAY: Orangish brown heavily mottled with grey and orange; damp; stiff; medium plasticity; occasional grey and orange silt stringers.
485	10			75	JKS-48_10-12.5 **USCS:** Clayey Sand (SC) **AL:** 35 / 16 / 19 **-200 Sieve:** 44.6	7.5-12.5	CLAYEY SILT: Brown; damp to moist; medium dense; low plasticity; light grey and orange silt stringers. At 9' bgs: Dense silty clay layer (2" thick). At 9.25' bgs: Dense silty clay layer (2" thick). Non-cohesive grab sample collected from 10'-12.5' bgs. At 10.5' bgs: Dense silty clay layer (2" thick).
480	15			80	JKS-48_15-16.5 **USCS:** Sandy Lean Clay (CL) **AL:** 48 / 19 / 29 **-200 Sieve:** 58.9	12.5-15	SAND: Brownish grey; damp to moist; fine-grained; sub-angular; moderately sorted; loose; non-plastic; minor silt content. At 13.5' bgs: Dense clay lens (1" thick). At 14.5' bgs: Color change to dark brown.
						15-16.5	CLAY: Brownish orange heavily mottled with dark brown, orange, and orangish red; moist; stiff; high plasticity; trace silt content, increases with depth; orange silt stringers. Non-cohesive grab sample collected from 15'-16.5' bgs.
						16.5-19	CLAYEY SILTY SAND: Brownish tan; very moist; loose to medium dense; slight plasticity; decreasing clay content with depth; occasional orange silt stringers. At 16.5' bgs: Wet.
475	20				JKS-48_19-20 **USCS:** Clayey Sand (SC) **AL:** 26 / 16 / 10 **-200 Sieve:** 48.7	19-20	SAND: Orangish brown; very moist to wet; fine-grained; sub-angular; moderately sorted; loose; non-plastic; minor silt content, decreases with depth; laminated with light grey clay to 19.25' bgs. Non-cohesive grab sample collected from 19'-20' bgs.

ERM Environmental Resources Management

JKS-48
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-48 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13659658.78' E. Coord. 2186490.78' Surface Elevation 493.71 ' Ft MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.50 ' Sump Length 0 '

Top of Casing Elevation 497.19 ' Stickup 3.48 '

Depth to Water: 1. Ft. btoc 11.28 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-22.5	SILTY SAND: Orangish brown; saturated; fine to very-fine grained; sub-angular, poorly sorted; loose; non-plastic; minor clay content. At 20.25' bgs: Thin grey clay laminations.
				50		22.5-25	SAND: Tannish brown with grey; saturated; fine-grained; sub-angular; moderately sorted; loose; non-plastic; some silt content; orange silt stringers.
470							At 24.5' bgs: Orange silt lens to 24.75' bgs.
	25					25-27.5	INTERBEDDED SILTY SAND AND CLAY: Tannish grey; saturated; medium dense; laminated silty fine-grained sand with pinkish brown clay; clay laminations fracture along planar surfaces; yellow and orange silt stringers throughout.
				50		27.5-30	CLAYEY SILTY SAND: Tannish grey; saturated; loose; slight plasticity; orange 1/16" thick silt laminations throughout.
465							At 29.5' bgs: Pinkish brown (1/16" thick) clay laminations to 30' bgs.
	30						Refusal (bedrock) enountered at 30' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #424212

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-48**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**494 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**16.5**	**20.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**16.5**	**Bentonite 15 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**29.5**	**30**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**
112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	20	LT GRAY SAND
20	30	BRN SILTY CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	18.5
2	Screen	New Plastic (PVC)	40 10	18.5	28.5

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ERM Environmental Resources Management

JKS-49 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-49 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 19.00 ' Boring Diam. 8.25 "

N. Coord. 13660519.40' E. Coord. 2186229.15' Surface Elevation 495.17 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 498.63 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 9.32 (2016-05-31) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
495.17	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
495				0			
490	5					5-6	SAND: Greyish tan; very moist; fine-grained; sub-angular; moderately sorted; loose; non-plastic; orange silt stringers.
						6-10	SILT: Greyish tan; very moist; loose; non-plastic; minor fine-grained sand; occasional yellow silt stringers.
				50			
485	10					10-15	At 9.5' bgs: Color change to light brown; wet; orange silt stringers. SAND: Light brown; wet; fine-grained; sub-angular; moderately sorted; loose to medium dense; non-plastic; minor silt content; abundant orange silt stringers. At 11.75' bgs: Orange silt lens (2" thick); trace silt stringers. At 12' bgs: Decreasing silt content.
				100			
							At 14' bgs: Color change to greyish tan.
480	15					15-16.5	SANDY SILT: Light brown; wet to saturated; loose; non-plastic; occasional orange silt stringers. At 16.5' bgs: Pinkish brown clay lens (3/16" thick).
				100		16.5-19	SILT: Brownish orange; wet to saturated; loose; non-plastic; minor fine-grained sand content. At 17.5' bgs: Color change to light brown. At 18.25' bgs: Color change to orange; pinkish brown clay lens (1/16" thick). At 18.5' bgs: Minor orange and red sandstone pieces, occurrence increases at depth.
475	20						Refusal (bedrock) enountered at 19' bgs.

STATE OF TEXAS WELL REPORT for Tracking #424213

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-49**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**495 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**19**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7**	**17**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**7**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**18**	**19**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	19	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	7
2	Screen	New Plastic (PVC)	40 10	7	17

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ERM Environmental Resources Management

JKS-50 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-50 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 14.00 ' Boring Diam. 8.25 "

N. Coord. 13660122.87' E. Coord. 2186836.72' Surface Elevation 494.87 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 7.50 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 2.50 ' Sump Length 0 '

Top of Casing Elevation 498.20 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 11.76 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.87	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			80		5-7.75	SILTY CLAY: Orangish brown heavily mottled with light grey, brown, and tan; damp; stiff; medium to high plasticity; increasing silt content with depth; orange silt stringers. At 6' bgs: Tan silt lens (2" thick).
						7.75-8.25	At 7.5' bgs: Color change to brownish orange; minor fine-grained sand content.
						8.25-9.25	SAND: Tan; damp; fine-grained, sub-angular; moderately sorted; dense; non-plastic; minor silt content; occasional orange silt stringers.
485	10			25		9.25-10	SILTY CLAY: Orangish brown mottled with grey, brown, red and occasional yellow; damp; stiff; medium plasticity; orange silt stringers throughout.
						10-13	SILT: Tan; moist; loose; non-plastic; trace orange silt stringers. At 9.75' bgs: Soft clay lens (3/16" thick). NO RECOVERY.
						13-13.75	SILTY CLAY: Brown; saturated; loose; low plasticity; orange silt stringers; sandstone pieces (3/8" thick) near 13.75' bgs.
480	15					13.75-14	SANDSTONE: Brownish orange laminated with orange, tan, and dark brown. Refusal (bedrock) enountered at 14' bgs.
475	20						

STATE OF TEXAS WELL REPORT for Tracking #424216

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-50**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**489 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**14**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**1.5**	**10**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0.5**	**1.5**	**Bentonite 1 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**10**	**14**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	15	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	2.5
2	Screen	New Plastic (PVC)	40 10	2.5	10

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ERM Environmental Resources Management

JKS-50R DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-50R Date Drilled 2016-10-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 22.50 ' Boring Diam. 8.25 "

N. Coord. 13660149.90' E. Coord. 186841.92' Surface Elevation 494.96 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 9.50 ' Sump Length 0 '

Top of Casing Elevation 498.48 ' Stickup 3.52 '

Depth to Water: 1. Ft. btoc 12.67 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.96	0				No Samples Collected	0-15	See boring log JKS-50 from 4/6/16.
				0			
490	5						
				0			
485	10						
				0			
480	15					15-17.5	CLAYEY SAND: Light brown; wet; loose; trace dark gray sandy clay content; very coarse gravel (2" diam.) present.
				50		17.5-22.5	CLAYEY SILTY SAND: Light brown; saturated; loose; light gray pieces of clay; few large (2" diam.) very coarse (2" diam.) angular rocks present.
475	20						

Environmental Resources Management

JKS-50R DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-50R Date Drilled 2016-10-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 22.50 ' Boring Diam. 8.25 "

N. Coord. 13660149.90' E. Coord. 186841.92' Surface Elevation 494.96 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 9.50 ' Sump Length 0 '

Top of Casing Elevation 498.48 ' Stickup 3.52 '

Depth to Water: 1. Ft. btoc 12.67 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20						
				50		22-22.5	CLAYEY SAND: Brownish gray; dry to damp; loose. Boring terminated at 22.5' bgs.
470	25						
465	30						
460	35						
455	40						

STATE OF TEXAS WELL REPORT for Tracking #443567

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-50R**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **10/7/2016** Drilling End Date: **10/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**19.5**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7.5**	**19.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**7.5**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	17.5	Clayey sand -light brown
17.5	19.5	Clayey silty sand - light brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	9.5
2	Screen	New Plastic (PVC)	40 10	9.5	19.5

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-51 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-51 Date Drilled 2016-04-07

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 29.50 ' Boring Diam. 8.25 "

N. Coord. 13660243.53' E. Coord. 2185630.39' Surface Elevation 494.04 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 496.92 ' Stickup 2.88 '

Depth to Water: 1. Ft. btoc 10.56 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.04	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			60		5-6.5	SILTY CLAY: Light brown with occasional orange mottling; wet; soft; low plasticity; occasional gravel (1/16" thick).
						6.5-10	SAND: Light brown; very moist; fine-grained; sub-angular; moderately sorted; medium dense; slight plasticity; minor silt and clay content. At 7.5' bgs: Clay lenses (up to 3/4" thick) to 8.5' bgs. At 8.5' bgs: Occasional orange silt stringers to 9.5' bgs. At 9' bgs: Clay lamina (1/16" thick) to 10' bgs. At 9.5' bgs: Wet.
485	10			100		10-15	SILT: Light brown; wet; medium dense; low plasticity; laminated with grey clay (1/16" to 3/16" thick) throughout; minor fine-grained sand; orange silt stringers throughout. At 12.5' bgs: Sand lens (2" thick). At 13.5' bgs: Sand lens (2" thick); fractures in planar surfaces to 14.5' bgs. At 14' bgs: Occasional thin clay lamina to 15' bgs. At 14.5' bgs: Color change to light grey.
480	15			100		15-17.75	CLAY: Pinkish grey; moist; medium stiff; low to medium plasticity; laminated with orange and grey silt (up to 3/4" thick) throughout. CLAY: Grey; moist; medium stiff; low plasticity; trace silt content; abundant orange silt stringers.
						17.75-18.25 18.25-19.75	SILTY SAND: Light brown; wet to saturated; very fine to fine-grained; sub-angular; poorly sorted; loose; non-plastic. At 19.25' bgs: Pinkish grey clay lens (2" thick); thin red silt lens below clay; occasional orange silt stringers.
475	20					19.75-26.5	SAND: Light grey; wet; fine-grained; sub-angular; moderately sorted; loose; non-plastic; occasional orange silt stringers.

ERM Environmental Resources Management

JKS-51
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-51 Date Drilled 2016-04-07

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 29.50 ' Boring Diam. 8.25 "

N. Coord. 13660243.53' E. Coord. 2185630.39' Surface Elevation 494.04 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 496.92 ' Stickup 2.88 '

Depth to Water: 1. Ft. btoc 10.56 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100	No Samples Collected		At 21.25' bgs: Red silt lens (1/16" thick); abundant orange silt stringers.
	25			100			At 24' bgs: Minor silt and trace clay content.
465	30					26.5-27.75	At 26.25' bgs: Reddish orange silt lens (1/16" thick). SANDY SILT: Tannish light grey; wet; loose; slight plasticity; occasional yellow and orange silt stringers. At 27.5' bgs: Trace clay content.
						27.75-28	CLAY: Dark brown mottled with tannish brown; moist; stiff; very high plasticity (fat); brown silt stringers throughout.
						28-29.5	SAND: Tannish light grey; wet; fine-grained; sub-angular; moderately sorted; loose; non-plastic; trace silt, occurrence decreases with depth; abundant orange silt stringers. At 29.25' bgs: Color change to light brown; occasional orange silt stringers.
460	35						Refusal (bedrock) enountered at 29.5' bgs.
455	40						

STATE OF TEXAS WELL REPORT for Tracking #424218

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-51**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**491 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**29.5**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**5**	**23**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**5**	**Bentonite 3 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**23**	**29.5**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	20	LT GRAY SAND
20	24	BRN SITY CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	7
2	Screen	New Plastic (PVC)	40 10	7	22

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-52
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-52 Date Drilled 2016-09-01

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.50 ' Boring Diam. 8.25 "

N. Coord. 13659683.26' E. Coord. 2186139.05' Surface Elevation 493.56 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 19.00 ' Sump Length 0 '

Top of Casing Elevation 493.15 ' Stickup -0.41'

Depth to Water: 1. Ft. btoc 7.30 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.56	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-7	CLAYEY SILT: Orangish brown with red and light gray; damp; loose; slight plasticity; red nodules throughout. no odor. At 5' bgs: Red clay lense (1" thick). At 5.8' bgs: Light gray clay lensee.
				100		7-8	SILTY CLAY: Tan; damp.
485						8-10	CLAYEY SILT: Gray with light gray and tan streaks; damp.
	10					10-12	CLAY: Dark gray to brownish gray, mottled with light gray and bluish gray; damp; medium dense; slight plasticity.
				100		12-12.5	SILTY CLAY: Dark gray.
						12.5-13.5	SAND: Tan with light brownish gray; damp; loose; layered with iron-oxide staining, (1/4" thick).
480						13.5-15	CLAYEY SILT: Tan with light brownish gray; damp; medium dense; non-plastic.
	15					15-19	SAND: Tan with gray clay stringers; damp; loose.
				100			
475						19-20	SAND: Light tan; saturated; loose.
	20						

ERM Environmental Resources Management

JKS-52
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-52 Date Drilled 2016-09-01

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.50 ' Boring Diam. 8.25 "

N. Coord. 13659683.26' E. Coord. 2186139.05' Surface Elevation 493.56 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 19.00 ' Sump Length 0 '

Top of Casing Elevation 493.15 ' Stickup -0.41'

Depth to Water: 1. Ft. btoc 7.30 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-24	SAND: Light orange and tan; damp; medium dense; no odor.
				100			At 21' bgs: Color change to tan with gray striations.
							At 22' bgs: Color change to tan; damp; and loose; At 22.5' bgs: Two gray striations layered within iron-oxide staining.
470						24-25	CLAYEY SAND: Tan; saturated; medium dense.
	25					25-30	INTERBEDDED CLAY AND SAND: Gray and tan; damp; loose.
				100			At 27.5' bgs: Intermittent pinkish gray coloration of clay content to 30' bgs.
465							
	30					30-31	SAND: Gray; damp; loose.
				100		31-32.5	INTERBEDDED CLAY AND SAND: Orange with pinkish gray; damp; loose; medium plasticity.
460							Boring terminated at 32.5' bgs.
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443571

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-52**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/1/2016** Drilling End Date: **9/1/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**29**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7.5**	**19.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**17**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	24	Sand - light orange and tan
24	29	Clayey sand - tan

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	19
2	Screen	New Plastic (PVC)	40 10	19	29

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-53
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-53 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13659757.34' E. Coord. 2185892.80' Surface Elevation 491.33 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 494.74 ' Stickup 3.41 '

Depth to Water: 1. Ft. btoc 8.50 (2016-05-21) 2. Ft. ( )

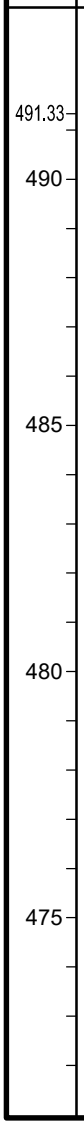
Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
						0-5	NO RECOVERY: Previously excavated by hydrovac truck.
				0			
						5-7.5	SANDY SILTY CLAY: Tan to reddish gray; wet; low plasticity; no odor.
							At 6' bgs: Pockets of orange colored sand.
				100		7.5-10	SANDY CLAY: Orangish brown and gray; moist; low plasticity.
							At 9' bgs: Pockets of orange colored sand.
					JKS-53_10-12.5 **USCS:** Clayey Sand (SC) **AL:** 30 / 14 / 16 **- #200:** 35.9 **k:** 5.34×10^{-6}	10-15	NO RECOVERY Cohesive sample (Shelby tube) collected from 10'-12' bgs.
				0			Cohesive sample (Shelby tube) collected from 12.5'-15' bgs.
					JKS-53_12.5-15 **USCS:** Clayey Sand (SC) **AL:** 29 / 15 / 14 **- #200:** 48.8 **k:** 4.13×10^{-8}		
						15-16	CLAYEY SAND: Tan; wet; loose; non-plastic; no odor.
						16-17.5	INTERBEDDED CLAY AND SAND: Orangish light brown sand interbedded with pinkish gray clay.
							At 16.5 - 17' bgs: Tan sand; damp.
				100		17.5-19.5	CLAYEY SAND: Light brown and tannish gray; saturated; loose; slight plasticity.
							At 18.5-19' bgs: Tan sand.
						19.5-20	INTERBEDDED CLAY AND SAND: Tan sand interbedded with pinkish gray clay; layered with iron-oxide staining; damp; loose.

ERM Environmental Resources Management

JKS-53
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-53 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13659757.34' E. Coord. 2185892.80' Surface Elevation 491.33 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 494.74 ' Stickup 3.41 '

Depth to Water: 1. Ft. btoc 8.50 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100	JKS-53_20-21 **USCS:** Clayey Sand (SC) **AL:** 27 / 14 / 13 **- #200:** 37.6	20-25	CLAYEY SAND: Gray with tannish orange staining; saturated; loose; non-plastic. Non-cohesive grab sample collected from 20'-21' bgs. At 22-22.5' bgs: Color change to orangish light brown; moist. At 22.5-25' bgs: Saturated.
465	25			100		25-27	SAND: Reddish brown mixed with light gray; damp; medium dense; non-plastic; dry and crumbly with depth. Boring terminated at 27' bgs.
460	30						
455	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443589

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-53**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/2/2016** Drilling End Date: **9/2/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**17**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**17**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-54
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-54 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 8.25 "

N. Coord. 13659753.34' E. Coord. 2185641.96' Surface Elevation 492.69 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.40 ' Stickup 3.71 '

Depth to Water: 1. Ft. btoc 10.79 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
492.69	0					0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-5.8	CLAYEY SILT: Orangish brown with red; damp; loose; non-plastic; no odor.
						5.8-7.2	At 5.8' bgs: White chalky material. CLAYEY SAND: Light brown to tan; damp.
485				100		7.2-8	INTERBEDDED CLAY AND SAND: Gray clay laminations (1" thick).
						8-11.5	CLAYEY SAND: Orangish brown; medium dense; non-plastic.
	10						At 10.8' bgs: Tan; saturated; and loose.
						11.5-12.5	INTERBEDDED CLAY AND SAND: Tan sand interbedded with light pinkish gray clay; damp; clay laminations are 1/4"-1/2" thick.
480				100	JKS-54_13-14 **USCS:** Silty Clayey Sand (SC-SM) **AL:** 22 / 15 / 7 **- #200:** 33.5	12.5-15	CLAYEY SAND: Tan; wet to saturated; loose; non-plastic. Non-cohseive grab sample collected from 13'-14' bgs.
							At 13.2-14.2' bgs: Saturated.
	15						At 14.9' bgs: Single thin (1" thick) clay layer.
						15-27.5	INTERBEDDED CLAY AND SAND: Tan fine grained sand and light pinkish gray clay; damp.
475				100			
	20						

ERM Environmental Resources Management

JKS-54
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-54 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 8.25 "

N. Coord. 13659753.34' E. Coord. 2185641.96' Surface Elevation 492.69 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.40 ' Stickup 3.71 '

Depth to Water: 1. Ft. btoc 10.79 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100			
	25			100			At 25-28' bgs: Iron-oxide stained layers between sand and clay; clay content has slight to low plasticity; clay layers are 1/2" thick.
465							Refusal encountered at 28' bgs.
460	30						
	35						
455	40						

STATE OF TEXAS WELL REPORT for Tracking #443590

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-54**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/2/2016** Drilling End Date: **9/2/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**22**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**10**	**22**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	22	Sand - light orange and tan

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	22

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Texas Department of Licensing and Regulation
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Austin, TX 78711
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ERM Environmental Resources Management

JKS-55
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-55 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13659749.76' E. Coord. 2186840.46' Surface Elevation 490.13 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 493.81 ' Stickup 3.68 '

Depth to Water: 1. Ft. btoc 8.36 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
490.13	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
				0			
485	5					5-11.5	NO RECOVERY: Moderately to highly cemented sand.
				0			
480	10						
				0		11.5-12.5	NO RECOVERY: Cuttings are saturated; clayey silt material.
						12.5-13.5	SANDY CLAY: Dark olive gray; damp; soft; non-plastic.
						13.5-18.5	CLAYEY SAND: Tannish gray with trace iron-oxide staining; damp; loose; non-plastic.
475	15						At 15' bgs: White chalky material (1" thick); wet.
							At 15.5-17.5' bgs: Clayey sand mixed with some gravel. At 16.5' bgs: White chalky layer (1/2" thick).
				100			At 17.5' bgs: White chalky layer (1/2" thick). At 17.5-18.5' bgs: Saturated; tan clayey sand with trace gravel.
						18.5-19.8	SAND: Gray; wet; fine grained.
	20					19.8-20	SAND: Gray; very dense; moderately to highly cemented.

ERM Environmental Resources Management

JKS-55
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-55 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13659749.76' E. Coord. 2186840.46' Surface Elevation 490.13 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 493.81 ' Stickup 3.68 '

Depth to Water: 1. Ft. btoc 8.36 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20					20-21	SANDY CLAY: Gray; damp; soft; slight plasticity.
						21-22.5	INTERBEDDED CLAY AND SAND: Fine grained tan sand interbedded with pinkish gray clay; damp.
				100		22.5-23.5	CLAYEY SAND: Tan; trace gravel; one large piece of sandstone (>1" thick).
						23.5-25	SAND: Pinkish gray; fine grained; damp; very thin layers of iron-oxide staining.
465	25						Boring terminated at 25' bgs.
460	30						
455	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443591

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-55**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/6/2016** Drilling End Date: **9/6/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**12**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**12**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

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Texas Department of Licensing and Regulation
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ERM Environmental Resources Management

JKS-56
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-56 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13660382.47' E. Coord. 2186847.61' Surface Elevation 493.07 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 496.66 ' Stickup 3.59 '

Depth to Water: 1. Ft. btoc 11.20 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.07	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-5.5	SANDY CLAY: Reddish gray; damp; stiff; non-plastic.
						5.5-7	At 5.5' bgs: Gray sandstone piece (>1" thick). SAND: Light orangish brown; fine grained; damp; loose. At 6.25' bgs: Color changes to tannish gray with some orangish brown.
						7-7.5	SANDY CLAY: Orange; damp; stiff to very stiff; non-plastic.
485				100	0	7.5-9.5	CLAYEY SILT: Orangish tan; saturated; loose; non-plastic; mixed with some gravel and trace pockets of gray, fine grained sand.
	10					9.5-10	CLAYEY SILTY SAND: Orangish tan; saturated; loose; non-plastic.
						10-13	NO RECOVERY
480				15		13-22.5	CLAYEY SAND: Tan; fine grained; saturated; loose; non-plastic.
	15						At 15' bgs: Small pocket of gray, fine grained, loose sand (1" thick). At 16' bgs: Coarse, angular gravel layer (~1-2" thick)
475				50			
	20						

ERM Environmental Resources Management

JKS-56
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-56 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13660382.47' E. Coord. 2186847.61' Surface Elevation 493.07 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 496.66 ' Stickup 3.59 '

Depth to Water: 1. Ft. btoc 11.20 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20						At 20' bgs: Course, angular gravel layer (~1-2" thick)
470				50		22.5-24.9	SAND: Brownish gray; fine grained; saturated; trace clay content.
	25					24.9-25	SANDY CLAY: Reddish brown; saturated; very soft. Boring terminated at 25' bgs.
465	30						
460	35						
455	40						

STATE OF TEXAS WELL REPORT for Tracking #443592

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-56**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/6/2016** Drilling End Date: **9/6/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**8**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**8**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	10
2	Screen	New Plastic (PVC)	40 10	10	25

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-57
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-57 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 0.00 "

N. Coord. 13668235.72' E. Coord. 2187486.38' Surface Elevation 503.83 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 506.91 ' Stickup 3.08 '

Depth to Water: 1. Ft. btoc 20.07 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
503.83	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
500	5			0		5-8	CLAYEY SILT: Dark brown; damp; loose to medium dense; very slight plasticity; rootlets present.
495	10			100		8-12.2	CLAYEY SAND: Orangish brown with trace gray and iron-oxide staining; damp; loose to medium dense; slight plasticity; rootlets present. At 10' bgs: Color becomes grayish tan mottled with yellow iron-oxide staining.
490	15			100		12.2-14	SANDSTONE: Magenta red with orangish yellow and gray; damp; several pieces of reddish brown nodules (>1" thick) surrounded by yellow sandy clay.
						14-15	SANDY CLAY: Orangish yellow and gray; damp; slight plasticity; gray and orangish yellow striations of sandy clay; white crystalline structures with medium grained sand throughout.
485	20			100		15-25	INTERBEDDED CLAY AND SAND: Gray with yellow and iron-oxide staining; dry; soft; medium plasticity. At 15-16' bgs: Mostly sand and iron-oxide staining. At 16-17.5' bgs: Mostly gray clay. At 17.5-18.5' bgs: Mostly sand with some yellow and trace iron-oxide staining. At 18.5-20' bgs: Mostly sand with some iron-oxide staining.

ERM Environmental Resources Management

JKS-57
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-57 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 0.00 "

N. Coord. 13668235.72' E. Coord. 2187486.38' Surface Elevation 503.83 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 506.91 ' Stickup 3.08 '

Depth to Water: 1. Ft. btoc 20.07 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	20			100			At 20-21' bgs: Mostly sand with yellow and trace iron-oxide staining. At 21-21.5' bgs: 2" thick layer of reddish brown, hard-packed sand; 4" thick layer of tan, very fine grained, loose sand. At 21.5-25' bgs: Mostly dark gray clay; At 22.5' bgs: Reddish brown coloration; At 24-25' bgs: Color is brownish gray with redox stippling.
475	25			100		25-25.5 25.5-27 27-27.5	SAND: Gray; fine grained; dry; medium dense; low plasticity. At 25.5' bgs: Very thin (1/8" thick) brownish red coloration. INTERBEDDED CLAY AND SAND: Brownish gray clay interbedded with fine grained sand; dense; hard-packed. At 26.6' bgs: Thin, tan, dry, very fine grained, sand. SAND: Highly cemented; reddish brown nodules present. Refusal encountered at 27.5' bgs.
470	30						
465	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443593

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-57**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**10**	**27**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**
112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	27	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	27

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-58
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-58 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13667994.99' E. Coord. 2187797.39' Surface Elevation 500.94 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 504.45 ' Stickup 3.51 '

Depth to Water: 1. Ft. btoc 21.09 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
500.94	0					0-5	NO RECOVERY: Previously excavated by hydrovac truck.
500				0			
	5					5-6	SAND: Brown; fine grained; moist; very loose.
495						6-7	CLAYEY SAND: Grayish brown with red; fine grained; damp; loose; non-plastic.
				100		7-10	SAND: Red, orange, and gray; damp medium grained; very loose to medium dense; slight gray, soft to medium dense, sandy clay; (clay content increases with depth).
	10					10-17	At 9.8' bgs: Color change to dark gray. At 10' bgs: Hard, sandstone, iron ore piece (>1" thick). SILTY CLAY: Gray with alternating yellow and orange layers; dry; dense; slight plasticity.
490				100			
							At 12.2' bgs: Brown sand seam (3" thick).
	15						
485							At 16-16.5' bgs: Brownish tan sandy clay. At 16.5-17' bgs: Gray clay has fractured texture.
				100		17-17.5	CLAY: Gray; damp; mixed with coarse grained sand.
						17.5-19.5	SAND: Tan; moist to wet. At 18-19.5' bgs: Color change to gray with black staining; no odor; white, crystalline, coarse grained structures present.
	20					19.5-20	CLAYEY SILTY SAND: Orangish brown; dry; gravel and some small sandstone pieces present.

ERM Environmental Resources Management

JKS-58 DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-58 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13667994.99' E. Coord. 2187797.39' Surface Elevation 500.94 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 504.45 ' Stickup 3.51 '

Depth to Water: 1. Ft. btoc 21.09 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	20					20-21	CLAY: Gray; dry; stiff; small, tan sandy clay pockets present.
						21-22.5	INTERBEDDED CLAY AND SAND: Gray and orangish tan; damp; clay is pinkish gray interbedded with thing orange sand layers.
				100		22.5-25.5	CLAY: Dark pinkish gray; dry; stiff; several very thin, light gray, silty sand layers.
							At 24.5-24.7' bgs: Tan, dry, silty clay.
475	25				JKS-58_26-27 **USCS:** Sandy Lean Clay (CL) **AL:** 38 / 18 / 20 **- #200:** 50.9	25.5-30	CLAYEY SAND: Tan; moist to saturated. At 25.5-27.5' bgs: No distinct layers. Non-cohesive grab sample collected from 26'-27' bgs. At 27.5' bgs: Thin saturated seam. At 27.5-30' bgs: Yellow and orange layering.
				100			
470	30				JKS-58_30-32.5 **USCS:** Fat Clay (CH) **AL:** 57 / 20 / 37 **- #200:** 89.1 **k:** 1.53×10^{-7}	30-32.5	NO RECOVERY: Cohesive sample (Shelby tune) collected from 30'-32' bgs.
							Boring terminated at 32.5' bgs.
465	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443594

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-58**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**18**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**18**	**Bentonite 4 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	20
2	Screen	New Plastic (PVC)	40 10	20	30

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-59
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-59 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13667779.88' E. Coord. 2188352.07' Surface Elevation 493.53 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.45 ' Stickup 2.92 '

Depth to Water: 1. Ft. btoc 15.49 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.53	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-6.5	SILTY SAND: Brown; damp; loose.
						6.5-7	SAND: Tan; damp; loose.
						7-10	SILTY CLAY: Dark brown; damp; soft; slight plasticity.
485				100			At 9-10' bgs: Decreasing silt content; increasing stiffness; some iron-oxide stained nodules observed.
	10					10-11	CLAY: Dark brown; damp; medium stiff; low to medium plasticity.
						11-15	SILTY CLAY: Dark orangish brown to orangish brown; damp; soft; increasing silt content with depth; increasing gray streaks/fissures with depth.
480				100			
	15					15-15.5	CLAY: Dark brown to brown; damp; medium stiff to stiff; low plasticity.
						15.5-18	SILTY SAND: Tan; saturated; loose. At 16' bgs: Wet; crumbly; trace clay content.
475				100			At 17.5' bgs: Saturated.
	20					18-20	SANDY CLAY: Light bluish gray mottled with orange iron-oxide and black staining; moist; medium stiff; slight plasticity.

ERM Environmental Resources Management

JKS-59
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-59 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13667779.88' E. Coord. 2188352.07' Surface Elevation 493.53 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.45 ' Stickup 2.92 '

Depth to Water: 1. Ft. btoc 15.49 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100		20-20.5	CLAY: Brown to light brown; damp; medium stiff to stiff; low plasticity.
						20.5-21	
						21-22.5	SANDY CLAY: Light gray mottled with orangish iron-oxide staining; moist; medium stiff; slight plasticity.
							CLAY: Dark pinkish gray; moist; soft; layered with very thin orange/iron-oxide stained silty sand.
						22.5-22.8	
						22.8-25	SILT: Tan; saturated; very loose.
							CLAY: Dark pinkish gray; soft; layered with very thin orange/iron-oxide stained silty sand.
	25			100		25-26	SAND: Gray with orange staining; fine grained; saturated; loose.
465						26-27	CLAY: Gray; saturated; very soft; high plasticity.
	30						Boring terminated at 27' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443595

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-59**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**10**	**27**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	27	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	27

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-60
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-60 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 26.00 ' Boring Diam. 8.25 "

N. Coord. 13667357.02 E. Coord. 2188465.44 Surface Elevation 492.68 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 495.70 ' Stickup 3.02 '

Depth to Water: 1. Ft. btoc 17.40 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
492.68	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated with hydrovac truck.
490				0			
	5					5-10	SAND: Grayish tan with orange and yellow; very fine grained; damp; loose; no odor. At 6' bgs: Color change to light pinkish orange.
485				100			At 7.5' bgs: Color change to light gray with trace orange and yellow.
	10					10-10.8	CLAY: Dark gray; moist; soft; slight plasticity.
						10.8-16	SAND: White with yellow; very fine grained; damp; loose.
							At 11.6-13' bgs: Color change to pale yellow.
480				100			At 13-16' bgs: Color change to light orangish yellow.
	15						At 15' bgs: Thin reddish orange stringer. At 15-16' bgs: Moist.
						16-23.5	SAND: Light orange; very fine grained; damp; very dense; unable to collect soil core, soil descriptions based on observation of auger cuttings.
475				0			At 18-23.5' bgs: Color change to pale yellow.
	20						

ERM Environmental Resources Management

JKS-60
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-60 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 26.00 ' Boring Diam. 8.25 "

N. Coord. 13667357.02 E. Coord. 2188465.44 Surface Elevation 492.68 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 495.70 ' Stickup 3.02 '

Depth to Water: 1. Ft. btoc 17.40 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			0			At 22' bgs: Moisture content increases to wet.
						23.5-25.7	SAND: Tan; fine grained; saturated; loose.
	25			100			At 25.5' bgs: Color change to white with brown; medium grained.
						25.7-25.9	SILTY SAND: Dark reddish staining; saturated.
465						25.9-26	CLAY-SHALE: Shaley clay; tan; wet; dense; non-plastic.
	30						Boring terminated at 26' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443596

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-60**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**8**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**8**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	10
2	Screen	New Plastic (PVC)	40 10	10	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-61
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-61 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 35.00 ' Boring Diam. 8.25 "

N. Coord. 13665721.04' E. Coord. 2187196.65' Surface Elevation 502.52 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.00 ' Sump Length 0 '

Top of Casing Elevation 505.51 ' Stickup 2.99 '

Depth to Water: 1. Ft. btoc 24.46 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
502.52	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated with hydrovac truck.
500				0			
	5					5-5.2 5.2-10.5	SANDY SILT: Dark brown; damp; loose; contains rootlets. SAND: Light tannish orange; damp; fine grained; loose.
495				100			At 7.8' bgs: Thin (1/4"), dark gray, sandy clay layer. At 8.2' bgs: Thin (1/4"), dark gray, sandy clay layer.
	10					10.5-12.5	INTERBEDDED CLAY AND SAND: Light gray to white; very fine grained; very hard packed; very thin (1/10") pinkish gray clay stringers throughout. At 10.5' bgs: Pinkish gray clay layer (1" thick).
490				100		12.5-20	SAND: Light gray to white with trace yellow and orange colorations; dry; very fine grained; very hard packed. At 12.5-15' bgs: Sand is cemented.
	15						At 16.5-19' bgs: Three clay stringers (1/4" thick).
485				100			
	20						

ERM Environmental Resources Management

JKS-61
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-61 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 35.00 ' Boring Diam. 8.25 "

N. Coord. 13665721.04' E. Coord. 2187196.65' Surface Elevation 502.52 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.00 ' Sump Length 0 '

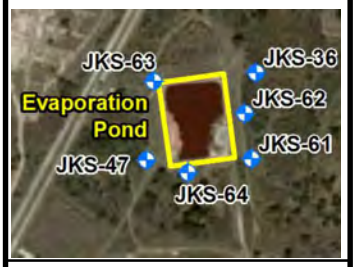
Top of Casing Elevation 505.51 ' Stickup 2.99 '

Depth to Water: 1. Ft. btoc 24.46 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-22.5	CLAYEY SAND: Gray with trace orange; damp; fine grained; loose; trace clay content present. At 21' bgs: Color change to tan with orange and gray; moisture content becomes wet. At 21.8' bgs: Thin pinkish gray clay seam (1/4" thick).
480				100		22.5-25	SAND: Gray with orange, tan, and yellow; fine grained; wet; loose.
	25					25-31.5	CLAYEY SAND: Gray; fine grained; wet to saturated; loose. At 25-25.8' bgs: Saturated.
475				100			At 27.5-28.5' bgs: Saturated.
	30						At 30-31' bgs: Saturated.
				100			At 31-32.5' bgs: Wet.
						31.5-32.5	SANDY CLAY: Pinkish gray; damp; medium dense; non-plastic to plastic; very thin sand stringers throughout (1/10" thick).
470						32.5-33	CLAYEY SILTY SAND: Gray; saturated; loose.
						33-35	SANDY CLAY: Pinkish gray; damp; medium dense; slightly plastic; very thin sand stringers throughout (1/10" thick).
	35						Boring terminated at 35' bgs.
465							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443597

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-61**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**33**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**15**	**33**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**15**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	33	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	18
2	Screen	New Plastic (PVC)	40 10	18	33

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-62
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-62 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 37.00 ' Boring Diam. 8.25 "

N. Coord. 13666020.13' E. Coord. 2187153.88' Surface Elevation 506.71 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

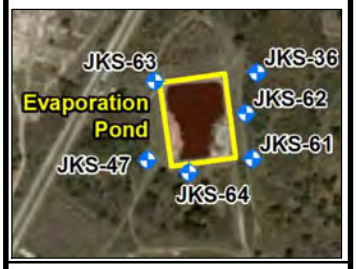
Top of Casing Elevation 509.84 ' Stickup 3.13 '

Depth to Water: 1. Ft. btoc 28.90 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
506.71	0					0-5	NO RECOVERY: Previously excavated with hydrovac truck.
505				0			
	5					5-6	SANDY SILT: Dark brown; damp; very loose; slight to low plasticity; trace rootlets.
						6-9	INTERBEDDED CLAY AND SAND: Light gray; dry; sand content fine grained, loose; clay content is pinkish gray with slight to low plasticity.
500				100			
						9-15	CLAYEY SAND: Light gray with yellowish orange and pale yellow; very fine grained; dry; trace clay content. At 10' bgs: Color change to light pinkish brown and yellowish orange; moisture content increases to damp; sand is loose; clay is soft and non-plastic. At 11' bgs: Color change to white/light gray and tan, clay is darker gray; moisture content decreases to dry; very dense; crumbles easily.
	10						
495				100			
	15					15-20	SAND: White; dry; dense but crumbles easily.
490				50			
	20						

ERM Environmental Resources Management

JKS-62
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-62 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 37.00 ' Boring Diam. 8.25 "

N. Coord. 13666020.13' E. Coord. 2187153.88' Surface Elevation 506.71 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 509.84 ' Stickup 3.13 '

Depth to Water: 1. Ft. btoc 28.90 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
485	20			50		20-25	SAND: Light gray to tannish gray; fine grained; dry to damp; loose. At 21.2' bgs: Moisture content increases to damp. At 21.4' bgs: Yellow and iron-oxide staining.
480	25			100		25-27.5	INTERBEDDED CLAY AND SAND: Gray; fine grained; wet; loose. At 25.5' bgs: Iron-oxide staining and thin (1/4" thick) pinkish gray clay layer. At 27.5' bgs: Iron-oxide staining and thin (1/4" thick) pinkish gray clay layer.
						27.5-29.5	CLAYEY SAND: Gray with iron-oxide staining; saturated; loose; trace clay content. At 29' bgs: Increased iron-oxide staining with clay layers.
475	30			0		29.5-30 30-30.5 30.5-31 31-31.5 31.5-35	INTERBEDDED CLAY AND SAND: Pinkish gray; damp; medium dense; slight plasticity. SAND: Gray; fine grained; damp. INTERBEDDED CLAY AND SAND: Orange, fine grained, moist sand; gray, low plasticity clay; loose to medium dense. CLAY: Brown; moist; loose to medium dense; non plastic. At 31.5 bgs: Thin reddish brown nodule layer (1/4" thick). CLAY: Brown; damp; soft; high plasticity; unable to collect soil core; descriptions based on observation of auger cuttings.
470	35			0	JKS-62_35-37 **USCS:** Clayey Sand (SC) **AL:** 38 / 17 / 21 **- #200:** 32.3 **k:** 6.63×10^{-7}	35-37	NO RECOVERY: Cohesive sample (Shelby tube) collected from 35'-37' bgs. Boring terminated at 35' bgs.
	40						

STATE OF TEXAS WELL REPORT for Tracking #443598

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-62**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**18**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**18**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	20
2	Screen	New Plastic (PVC)	40 10	20	30

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Please include the report's Tracking Number on your written request.

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(512) 463-7880

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

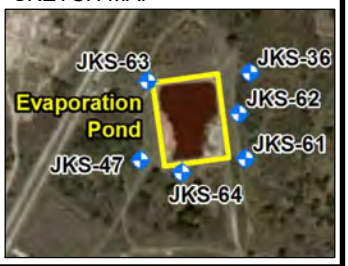
Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
523.55	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
520	5			100		5-5.5 5.5-6 6-7.8	SAND: Brown; fine-grained; moist; loose. CLAYEY SAND: Tan; moist; single piece of gray, non-plastic clay. SILTY SAND: Brown lense; fine grained; moist; loose; trace rootlets.
515	10			100		7.8-10.2	SANDY CLAY: Reddish brown to dark gray with red; dry to damp; very stiff; hard-packed; non-plastic.
510	15			75		10.2-12.2	CLAYEY SAND: Orange to pinkish orange; dry to damp; very dense; non-plastic.
505	20					12.2-18	INTERBEDDED CLAY AND SAND: Tan; very fine-grained; very dense/hard-packed; layered with thin gray sandy clay seams. At 15' bgs: Sand color changes to very light gray to white; pinkish gray sandy clay seams throughout; layered with pale yellow colorations.
						18-20	SAND: Gray to brownish orange; dry; very fine-grained; medium dense; crumbles easily.

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
500	20			80		20-30	INTERBEDDED CLAY AND SAND: Light gray; very fine-grained; dry to damp; dense/hard-packed; layered with thin pinkish gray clay seams and iron-oxide staining.
495	25			80			
490	30			80		30-39	SAND: Gray; dry to saturated; fine-grained; very hard packed; crumbles easily.
							At 32.5' bgs: Medium-grained.
485	35			80			At 38-39' bgs: Saturated.
	40					39-39.5	CLAYEY SAND: Dark reddish brown; wet; loose.
						39.5-50	SAND: Gray; wet; fine-grained; loose.

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	40			80			
	45			80			At 45' bgs: Moisture content increases to saturated; trace iron-oxide staining.
475	50						Boring terminated at 50' bgs.
470	55						
465	60						

STATE OF TEXAS WELL REPORT for Tracking #443599

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-63**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**50**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**28**	**50**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**28**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	50	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	30
2	Screen	New Plastic (PVC)	40 10	30	50

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Calaveras Power Station - Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.25 "

N. Coord. NA E. Coord. NA Surface Elevation 0.00 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

Top of Casing Elevation 0.00 ' Stickup 3.50 '

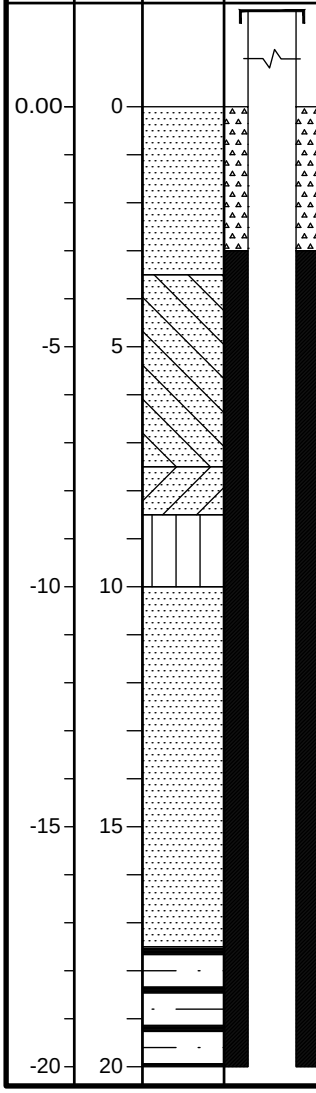
Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 0.00 ( )

Drilling Company Vortex Drilling Partners, LP Driller James Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0.00	0			100	No Samples Collected	0-3.5	SAND: Brown; dry to damp; very-fine grained; sub-angular; poorly sorted; loose; minor silt and trace clay content; no odor. Ground surface to 5 ft. bgs logged via post hole digger soil cuttings.
						3.5-7.5	SANDY CLAY: Brown with occasional red and black mottling; damp; medium stiff; low plasticity; trace silt content; no odor. At 4' bgs: Color change to reddish brown. At 5' bgs: Stiff; medium plasticity.
-5	5			100			At 6' bgs: Occasional thin, light brown, very-fine grained sand seams. At 6.5' bgs: Interbedded clay and sand seam (6" thick); dry; clay content dark brown, stiff; sand content very-fine grained, sub-angular; occasional light brown and yellow silt stringers.
				90		7.5-8.5	CLAYEY SAND: Reddish brown; damp; medium dense; non-plastic to slightly plastic; very-fine grained; sub-angular; minor yellow silt stringers; no odor.
						8.5-10	SILT: Light grey; dry; loose to medium dense; non-plastic; minor to occasional very-fine grained sand content, with increasing sand content with depth; minor yellow silt stringers; no odor.
-10	10			100		10-17.5	SAND: Light grey; dry; loose to medium dense; very-fine grained; sub-angular; poorly to moderately sorted; trace clay content; occasional yellow silt stringers; no odor. At 12.5' bgs: Medium dense.
				100			
-15	15			100			At 15' bgs: Medium dense to loose.
						17.5-24	INTERBEDDED CLAY AND SAND: Light grey (sand content) and light brown (clay content); dry to damp; clay content medium stiff, slight to low plasticity; sand content medium dense, very-fine grained, sub-angular; occasional yellow silt stringers; no odor. At 19' bgs: Decreasing clay content; sand content fine grained.
-20	20			100			

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Calaveras Power Station - Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.00 "

N. Coord. NA E. Coord. NA Surface Elevation 0.00 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

Top of Casing Elevation 0.00 ' Stickup 3.50 '

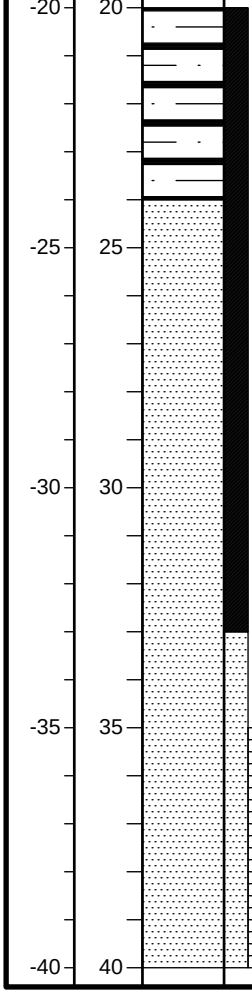
Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 0.00 ( )

Drilling Company Vortex Drilling Partners, LP Driller James Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
					No Samples Collected		
				100			At 22' bgs: Sand seam (3" thick); light grey; fine grained; no clay content. At 22.5' bgs: Increasing clay content; medium stiff to stiff.
				100		24-50	SAND: Light brownish grey; damp; medium dense to loose; fine grained; sub-angular; poorly sorted; minor yellow silt stringers; no odor. At 25' bgs: Trace red silty clay content; medium plasticity.
				60			
				100			At 27.5' bgs: No clay content.
				80			At 30' bgs: Minor clay content to 31' bgs.
				100			At 31.5' bgs: Moist. At 32' bgs: Occasional to abundant yellow and orange silt stringers. At 32.5' bgs: Very moist; minor to occasional yellow and orange silt stringers.
				80			At 35' bgs: Fine to very-fine grained; trace yellow and orange silt stringers. At 36' bgs: Wet.
				60			At 37.5' bgs: Saturated; fine grained; no clay content.

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Calaveras Power Station - Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.00 "

N. Coord. NA E. Coord. NA Surface Elevation 0.00 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

Top of Casing Elevation 0.00 ' Stickup 3.50 '

Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 0.00 ( )

Drilling Company Vortex Drilling Partners, LP Driller James Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
-40	40			80	No Samples Collected		At 40' bgs: Abundant orange silt stringers.
				80			At 42.5' bgs: Fine to medium grained; occasional orange silt stringers.
-45	45			60			At 45' bgs: Fine grained;
				60			At 47.5' bgs: Trace orange silt stringers.
-50	50						Boring terminated at 50' bgs.
-55	55						
-60	60						

STATE OF TEXAS WELL REPORT for Tracking #511515

Owner:	**CPS Energy**	Owner Well #:	**JKS-63R**
Address:	**P.O. Box 2906** **San Antonio , TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station** **12940 US 181** **San Antonio, TX 78263**	Latitude:	**29° 19' 27.98" N**
		Longitude:	**098° 18' 56.77" W**
Well County:	**Bexar**	Elevation:	**516 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **5/2/2019** Drilling End Date: **5/2/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.25	**0**	**50**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
33	**50**	**Sand**	**12/20**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1.16 Bags/Sacks**
2	**33**	**Bentonite 15.08 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **36 ft.** below land surface on **2019-05-02**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Vortex Drilling**

4412 Bluemel Road
San Antonio, TX 78240

Driller Name: **James E. Neal** License Number: **4868**

Apprentice Name: **Tony Elmendorf**

Comments: **No Data**

Report Amended on 7/12/2019 by Request #28256

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**3.5**	**Sand**
3.5	**7.5**	**Sandy Clay**
7.5	**8.5**	**Clayey Sand**
8.5	**10**	**Silt**
10	**17.5**	**Sand**
17.5	**24**	**Interbedded Clay and Sand**
24	**50**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Top Cap (Locking)**	**New Plastic (PVC)**	**40**		
2	**Bottom Cap**	**New Plastic (PVC)**	**40**		
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**35**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**35**	**50**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

ERM Environmental Resources Management

JKS-64
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-64 Date Drilled 2016-09-09

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13665627.14' E. Coord. 2186778.76' Surface Elevation 504.38 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 507.84 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 25.06 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
504.38	0			0		0-5	NO RECOVERY: Previously excavated with hydrovac truck.
500	5			100		5-6.5	SILTY SAND: Brown; moist; loose.
						6.5-8	INTERBEDDED CLAY AND SAND: Pinkish gray and orange; fine grained, orange sand; pinkish gray clay layered with iron-oxide staining; damp; non-plastic.
495	10			100		8-13	SAND: Light gray and pale yellow; dry; very fine-grained; dense; very hard-packed; trace clay content; layered appearance.
490	15			100		13-22.5	INTERBEDDED CLAY AND SAND: Light gray and pale yellow, fine-grained sand; dark gray, slightly plastic, medium stiff clay.
485	20						At 17' bgs: Thickness of clay layers increases (1-2" thick); low plasticity.

ERM Environmental Resources Management

JKS-64
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-64 Date Drilled 2016-09-09

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13665627.14' E. Coord. 2186778.76' Surface Elevation 504.38 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

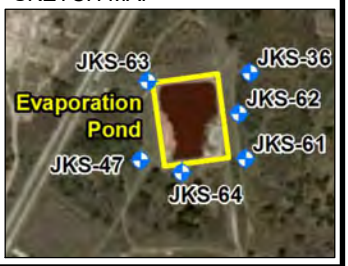
Top of Casing Elevation 507.84 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 25.06 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20				JKS-64_20-30 **USCS:** Clayey Sand (SC) **AL:** 29 / 14 / 15 **- #200:** 30.1		At 20' bgs: Saturated; clay color changes to pinkish gray. Non-cohesive grab sample collected from 20'-30' bgs.
				100		22.5-25	SAND: Gray with bluish gray and orange; fine-grained; loose.
480							At 23.8' bgs: Bluish gray, low plasticity clay (1/2" thick); sand color changes to greenish blue.
	25					25-30	INTERBEDDED CLAY AND SAND: Tannish gray; wet to saturated; fine-grained; wet to saturated; loose; clay layers are pinkish gray with iron-oxide staining.
				100			At 26.8' bgs: Wet. At 27.5' bgs: Saturated. At 28.3' bgs: Wet.
475							
	30					30-32	At 30' bgs: Gray clay; dense/stiff; low plasticirty; 1" thick. NO RECOVERY: Geotechnical sample collected, but not analyzed.
							Boring terminated at 32' bgs.
470							
	35						
465							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443600

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-64**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/9/2016** Drilling End Date: **9/9/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**12**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**12**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	30

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

APPENDIX D GROUNDWATER FLOW DIRECTION MAPS

All monitoring wells associated with the CCR units were gauged for water levels during the eight background monitoring events between December 2016 and October 2017 and were gauged semi-annually in 2018 and 2019. Potentiometric surface maps that are representative of groundwater water level conditions during these periods are provided in Appendix D. Note: Water levels were also gauged semi-annually in 2020 and these potentiometric surface maps will be provided in the 2020 Annual Groundwater Monitoring and Corrective Action Reports for the CCR units.

Based on the water levels at these CCR units, the following wells were selected as background wells because they were consistently upgradient and/or an evaluation of historical data indicated they were representative of background groundwater conditions as presented in the Written Demonstration – Responses to Potential Statistically Significant Increases dated 27 April 2020:

- Bottom Ash Ponds – Wells JKS-49 and JKS-51
- Evaporation Pond – Wells JKS-63/63R, JKS-47, and JKS-64
- Fly Ash Landfill – Wells JKS-57 and JKS-45
- SRH Pond – Wells JKS-49 and JKS-51

BOTTOM ASH PONDS

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – MARCH 2017
Southern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure

Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	1/31/2018	SCALE:	AS SHOWN	REVISION:	1

P:\Projects\0337367 CPS Energy CCR GW Investigation.WZ\Eight Background Sampling Events\GIS\MXD\2017_CAR\0337367_CPSCalv_pmapS_BotAshPonds_oct2017.mxd

POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

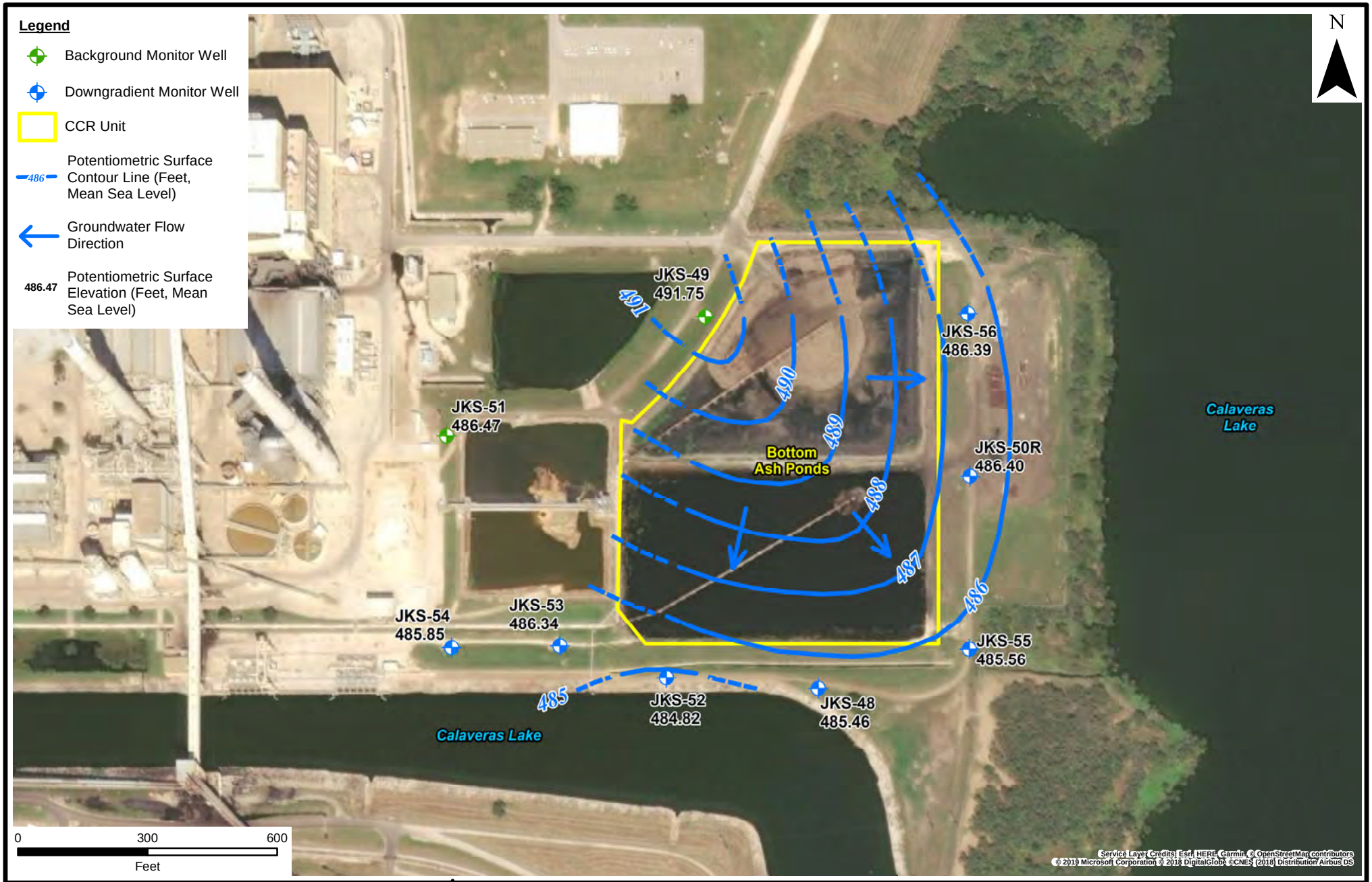
ERM

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – April 2018
Bottoms Ash Ponds CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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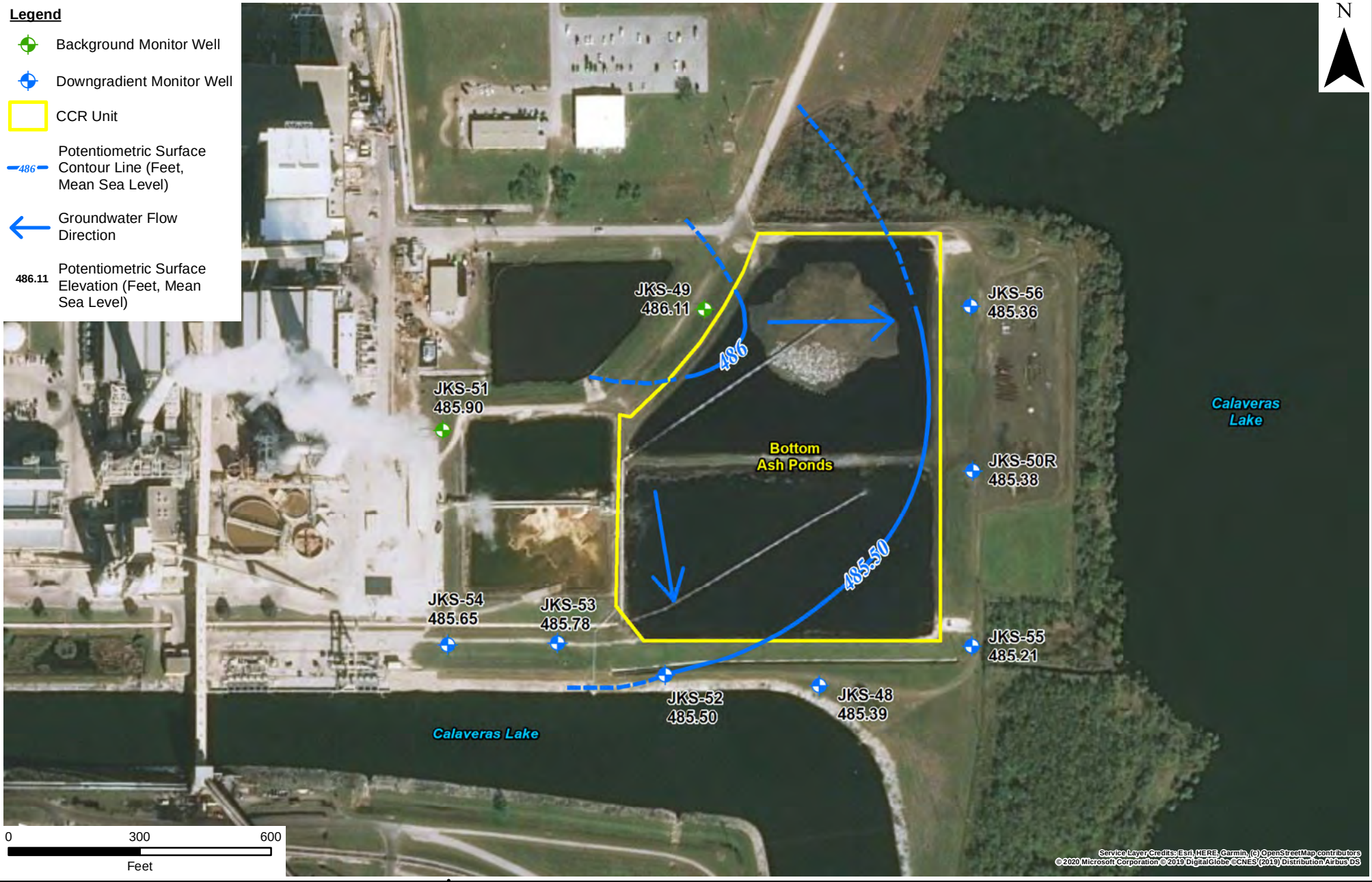
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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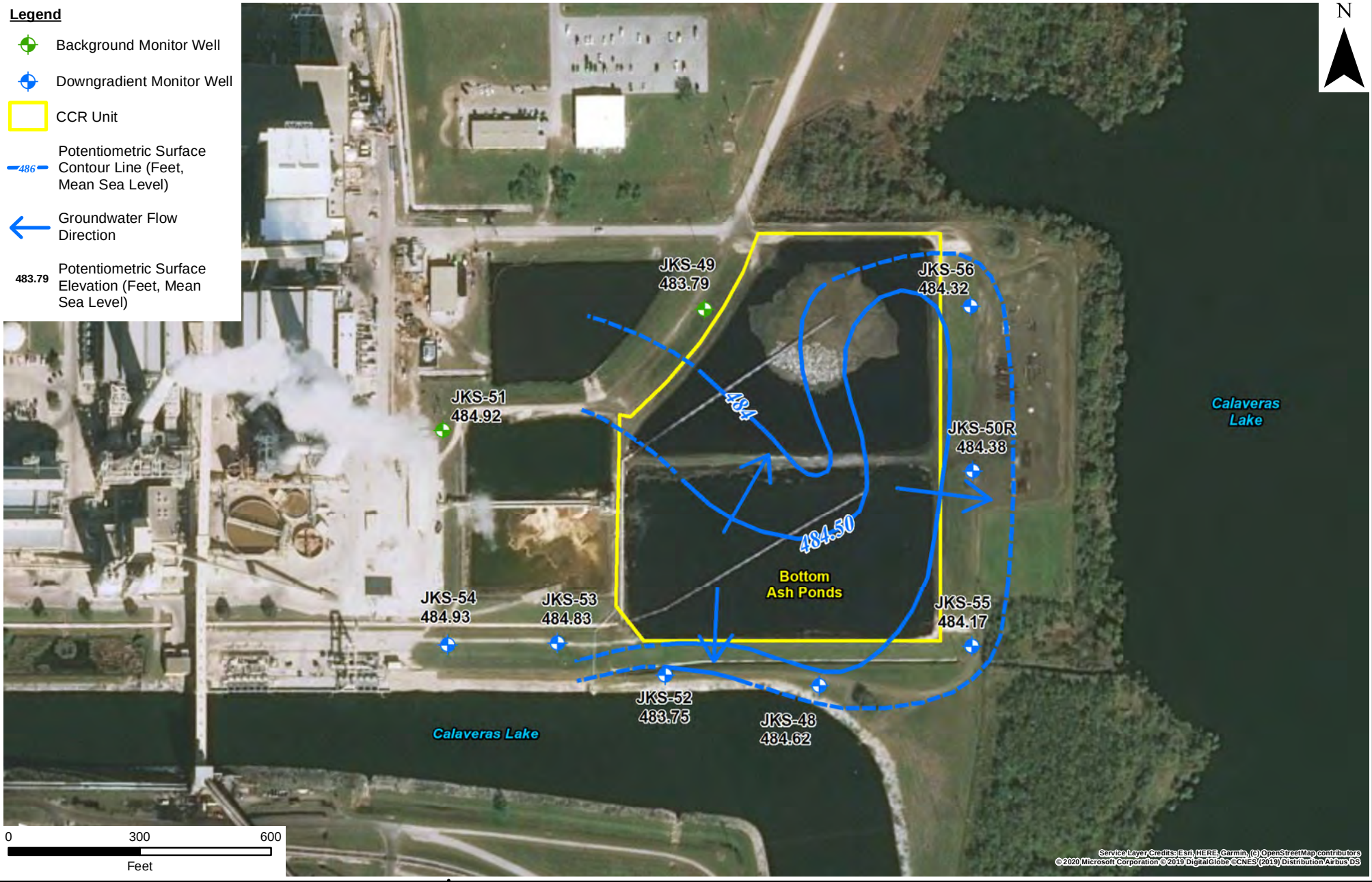
POTENTIOMETRIC SURFACE MAP - APRIL 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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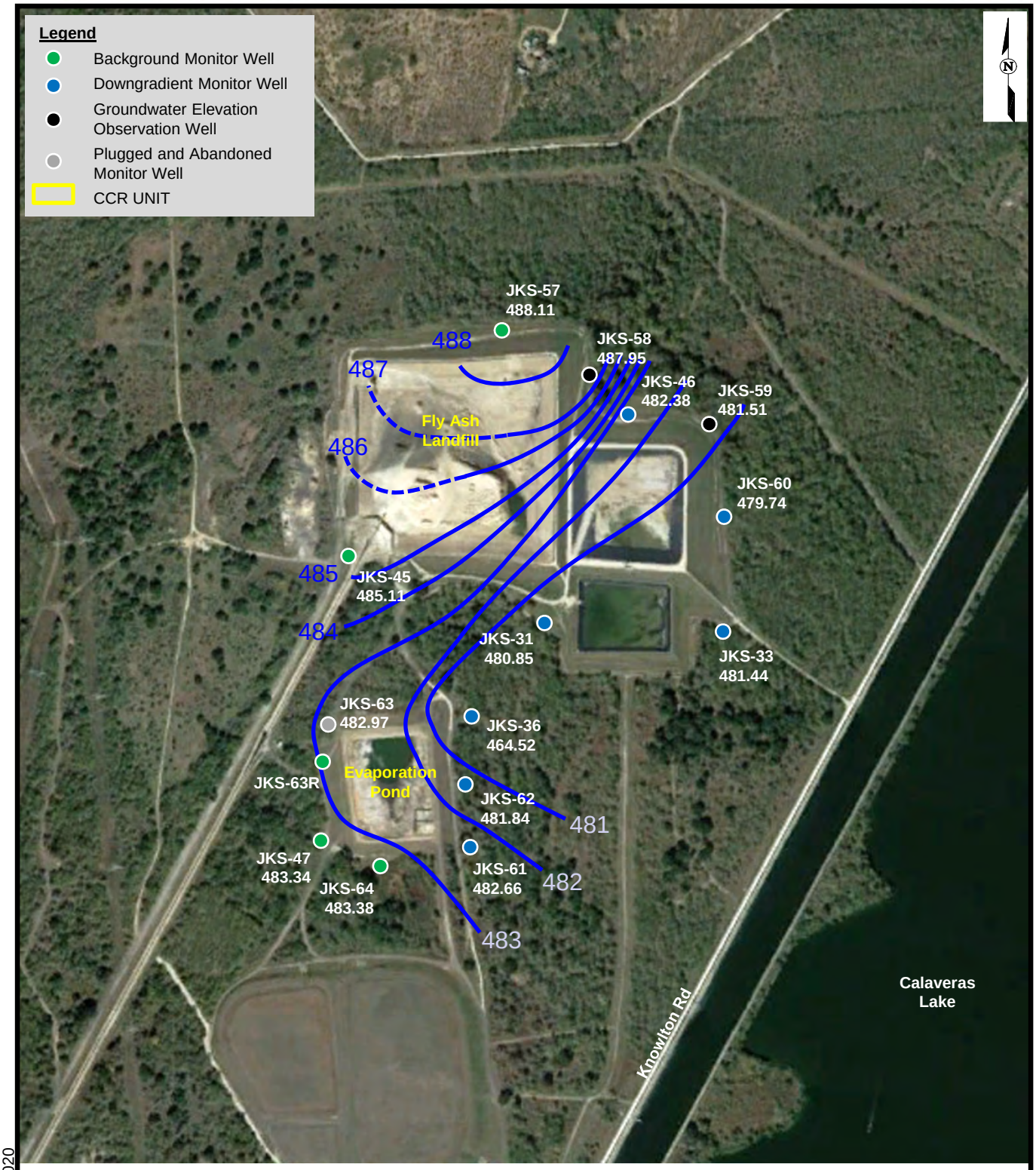
POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

EVAPORATION POND



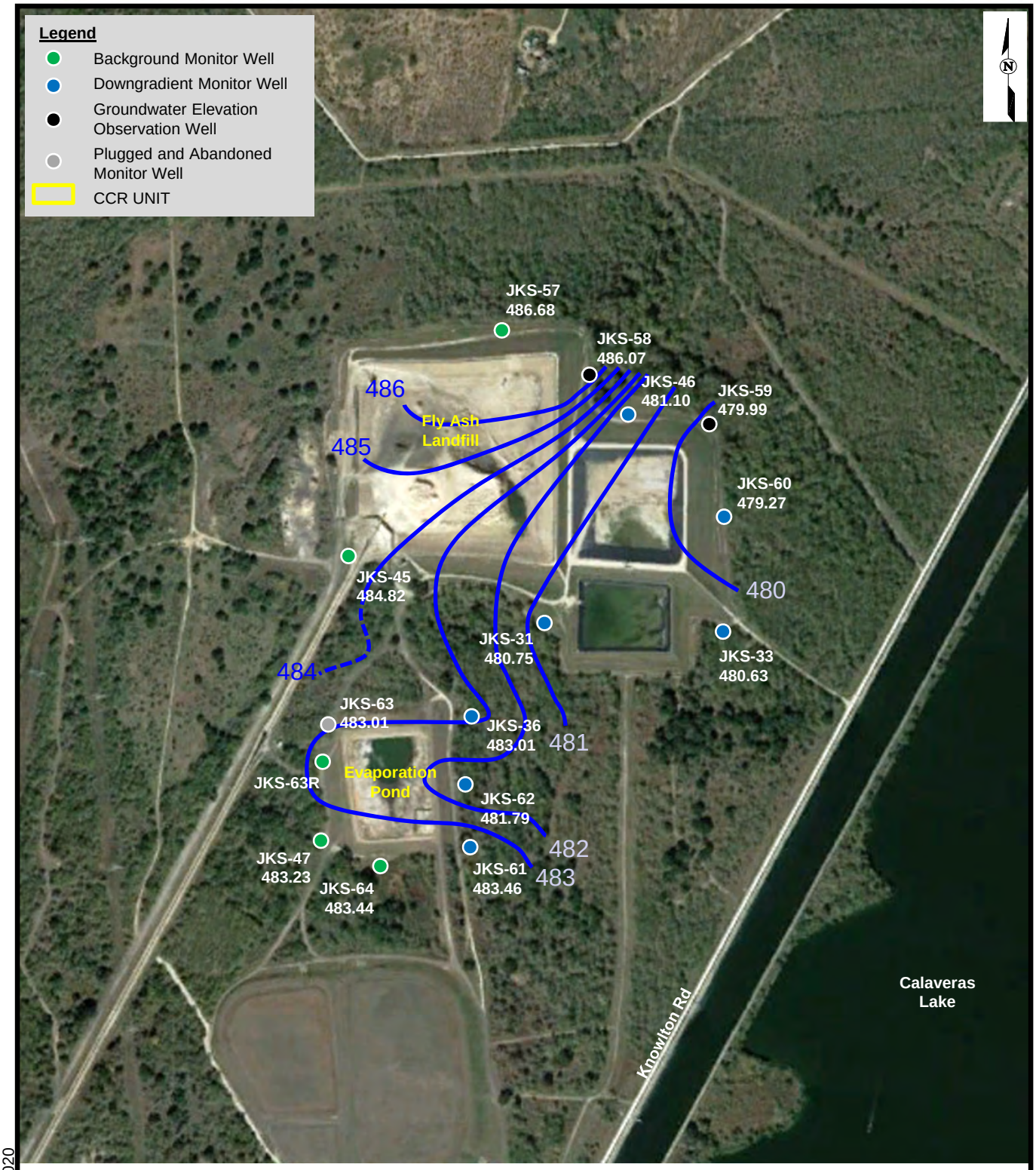
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – May 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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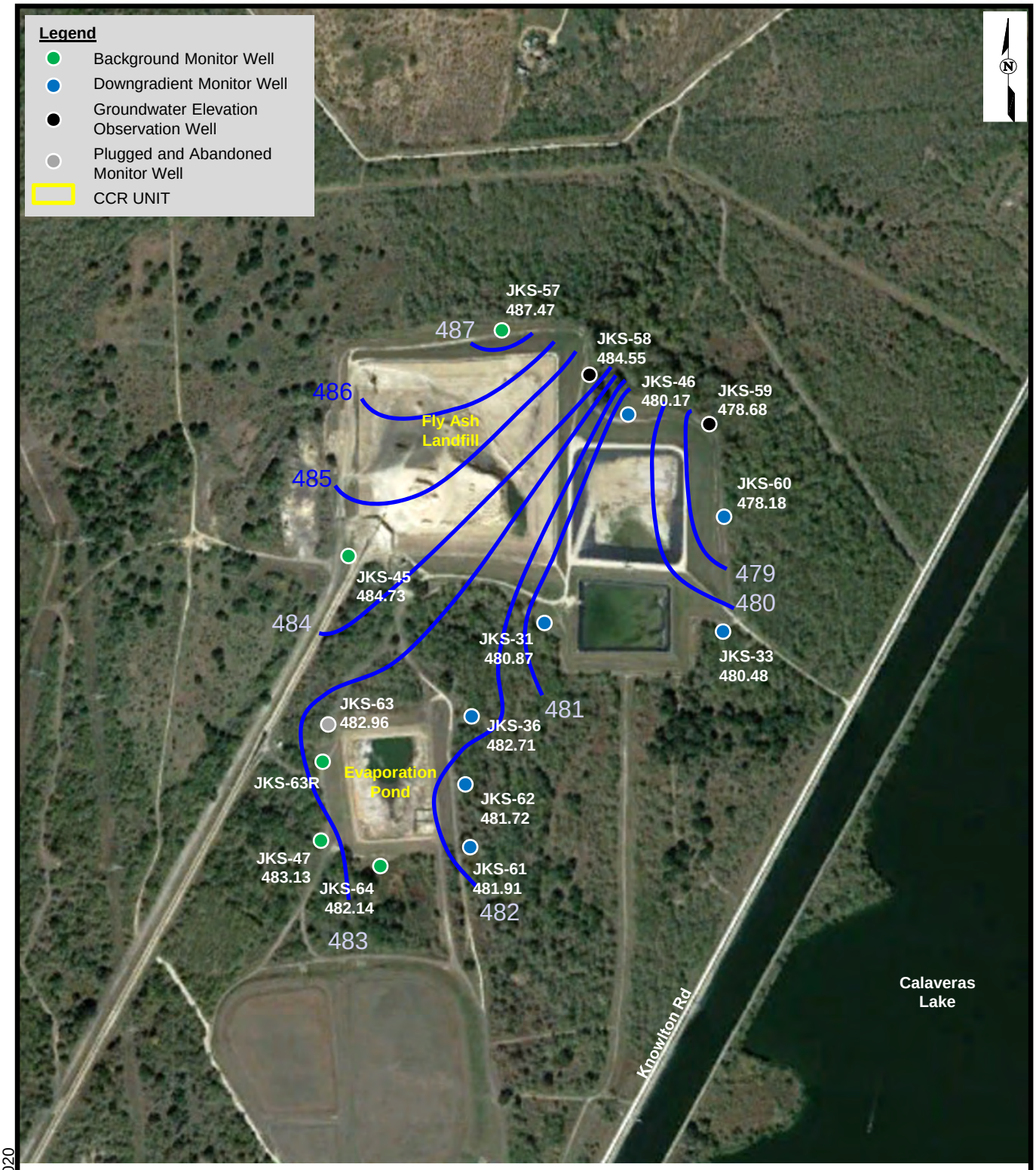
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – June 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



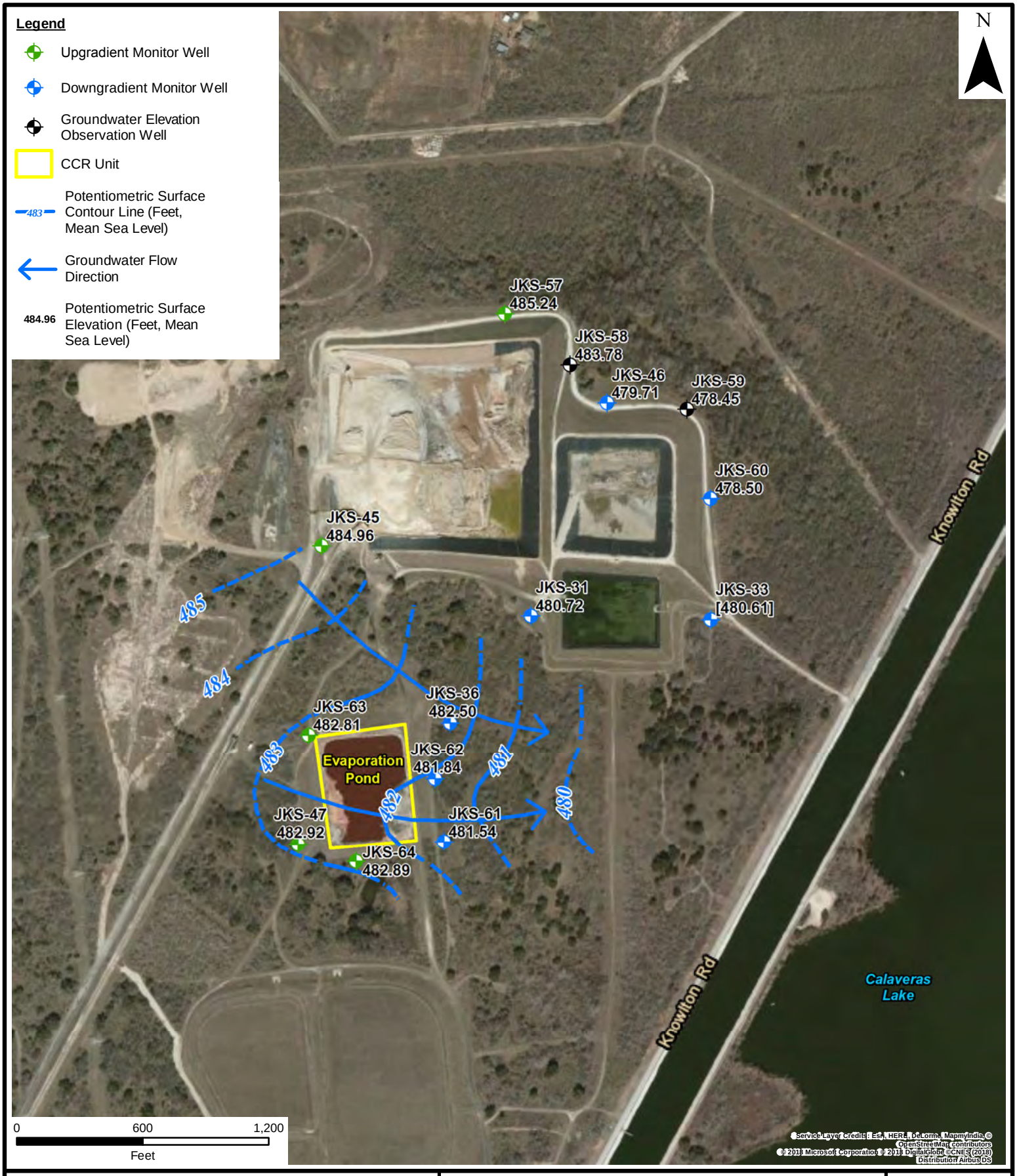
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – August 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Environmental Resources Management

DESIGN:	NH	DRAWN:	AJB	CHKD.:	WZ
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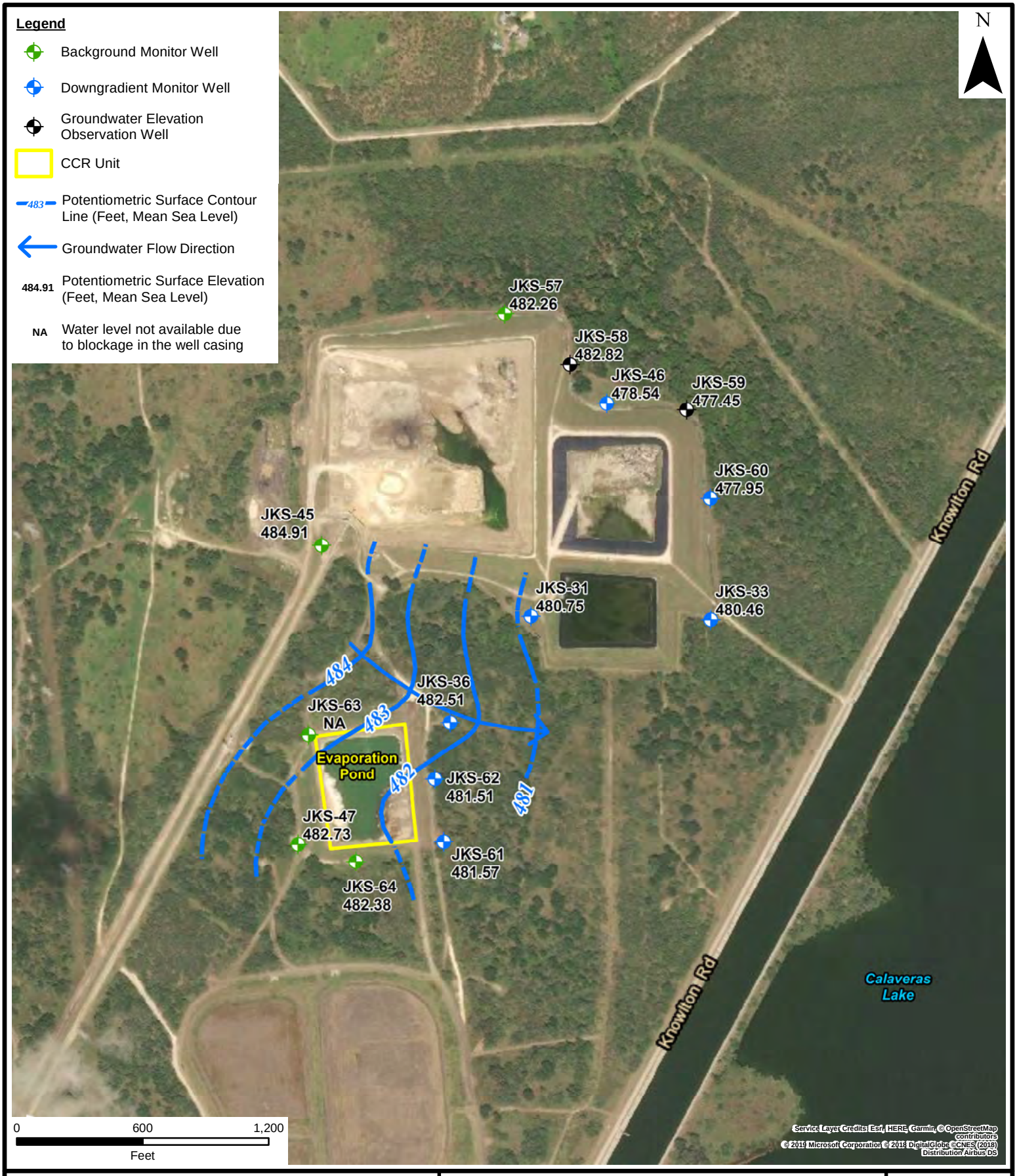
POTENTIOMETRIC SURFACE MAP - APRIL 2018
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Environmental Resources Management

DESIGN:	NH	DRAWN:	AJB	CHKD.:	WZ
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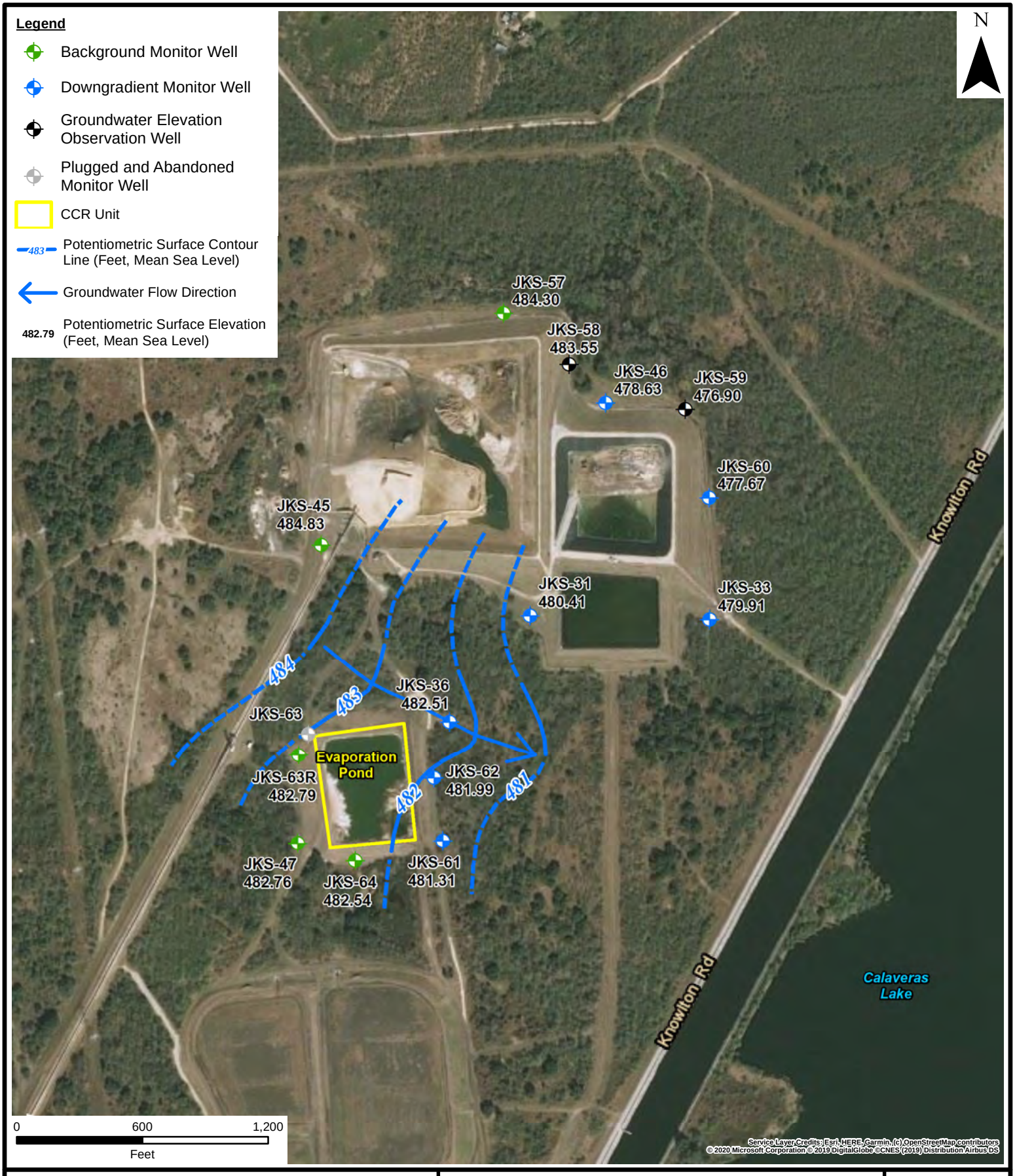
POTENTIOMETRIC SURFACE MAP - APRIL 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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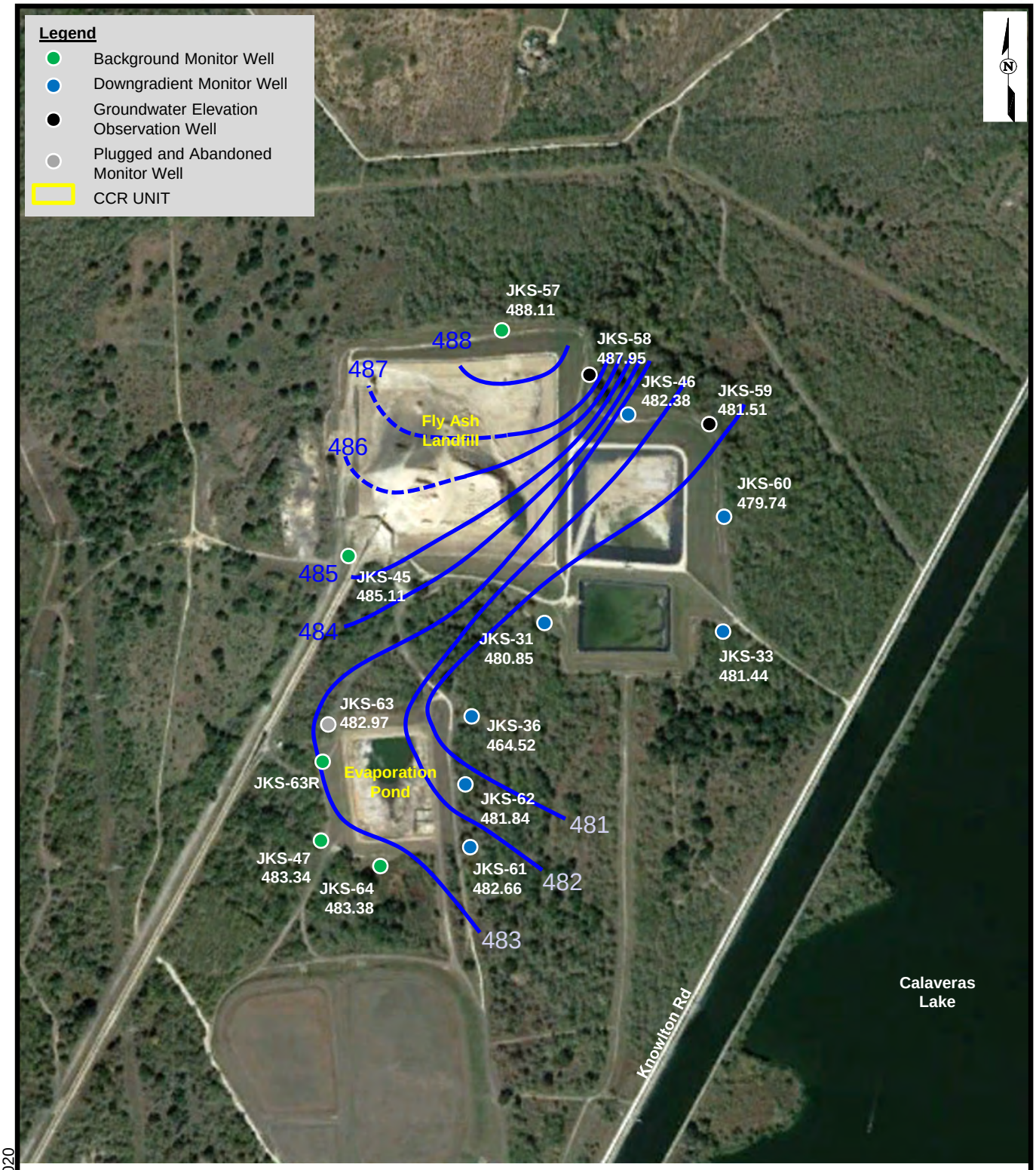
POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

FLY ASH LANDFILL



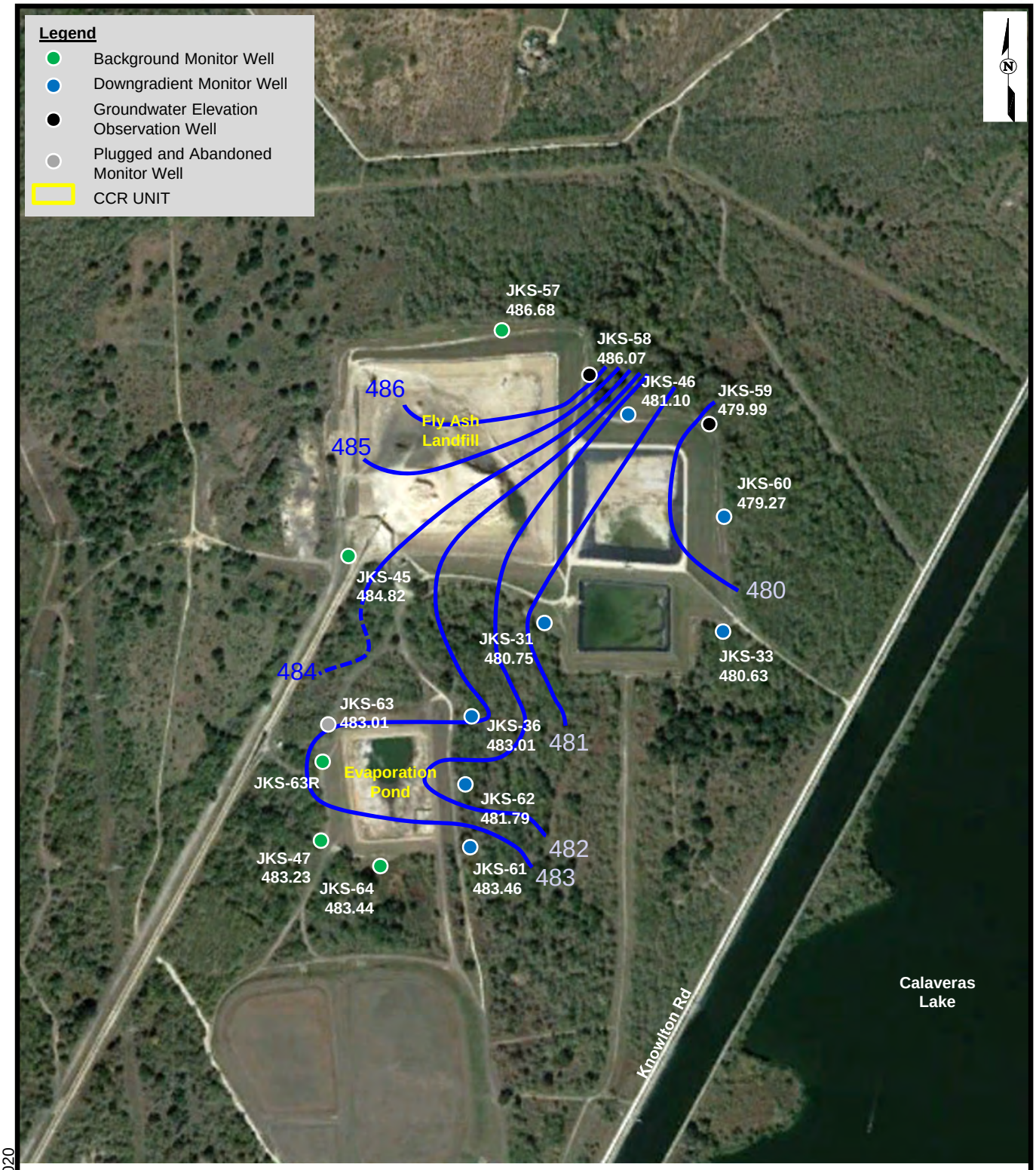
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – May 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



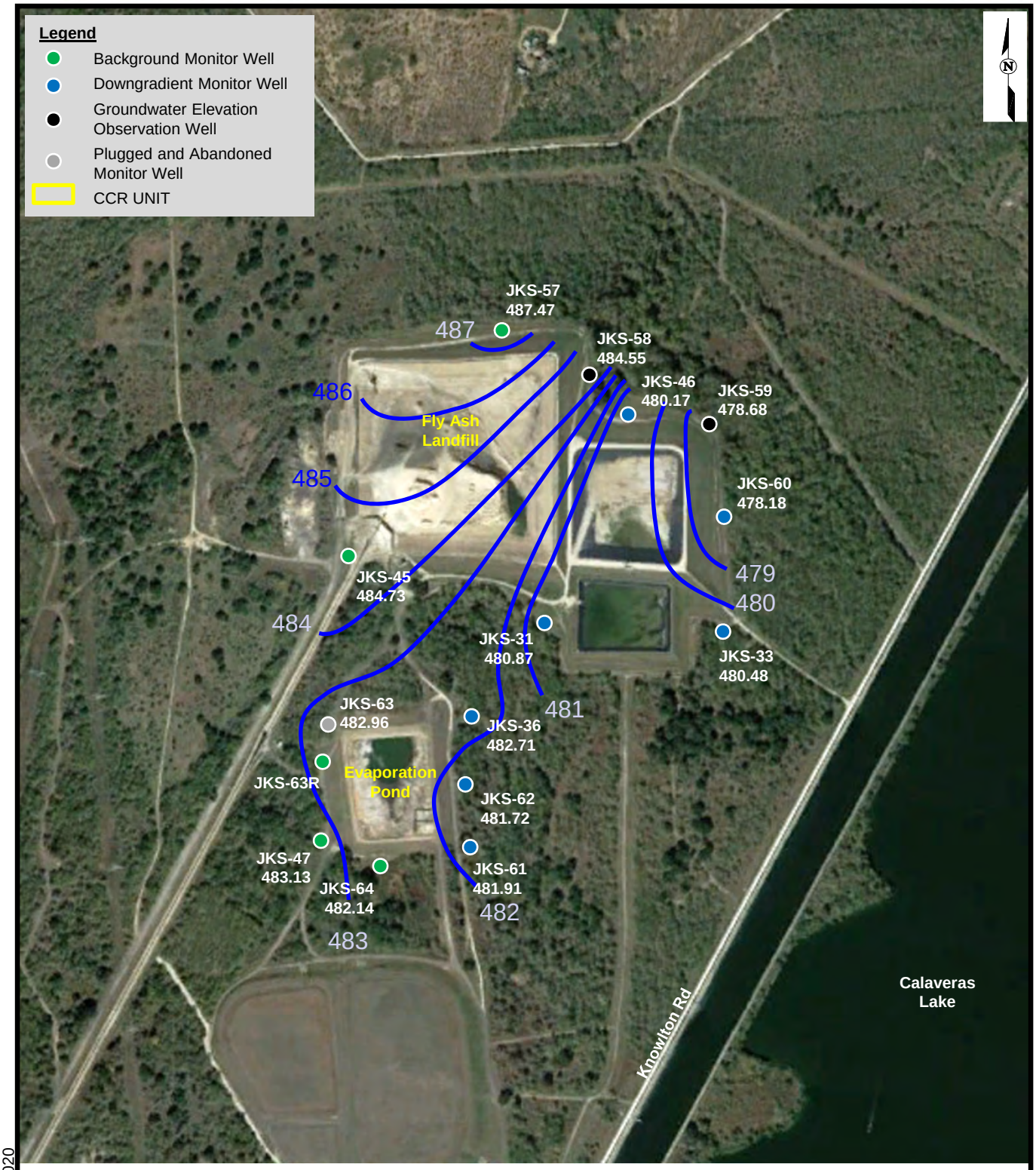
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – June 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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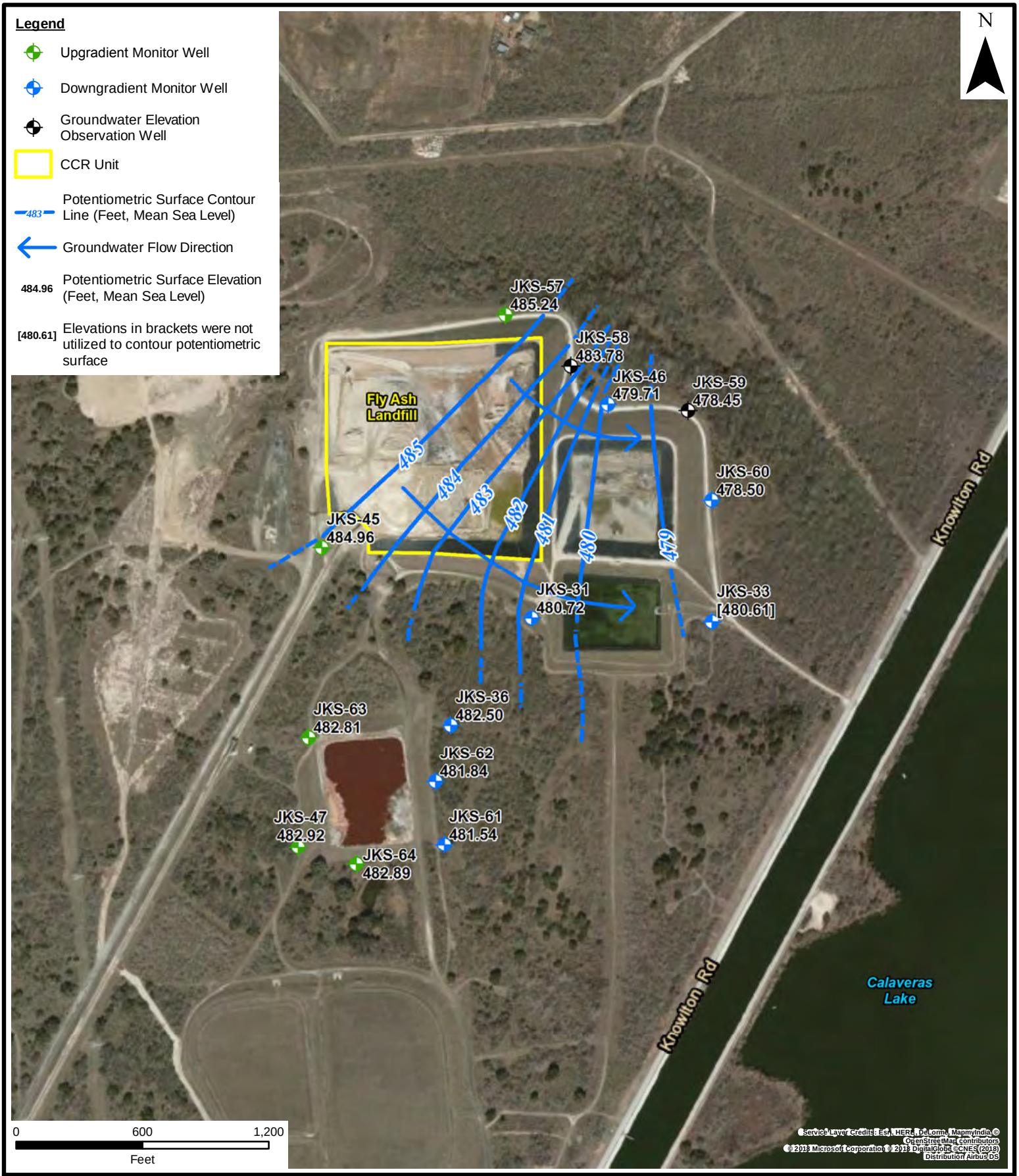
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – August 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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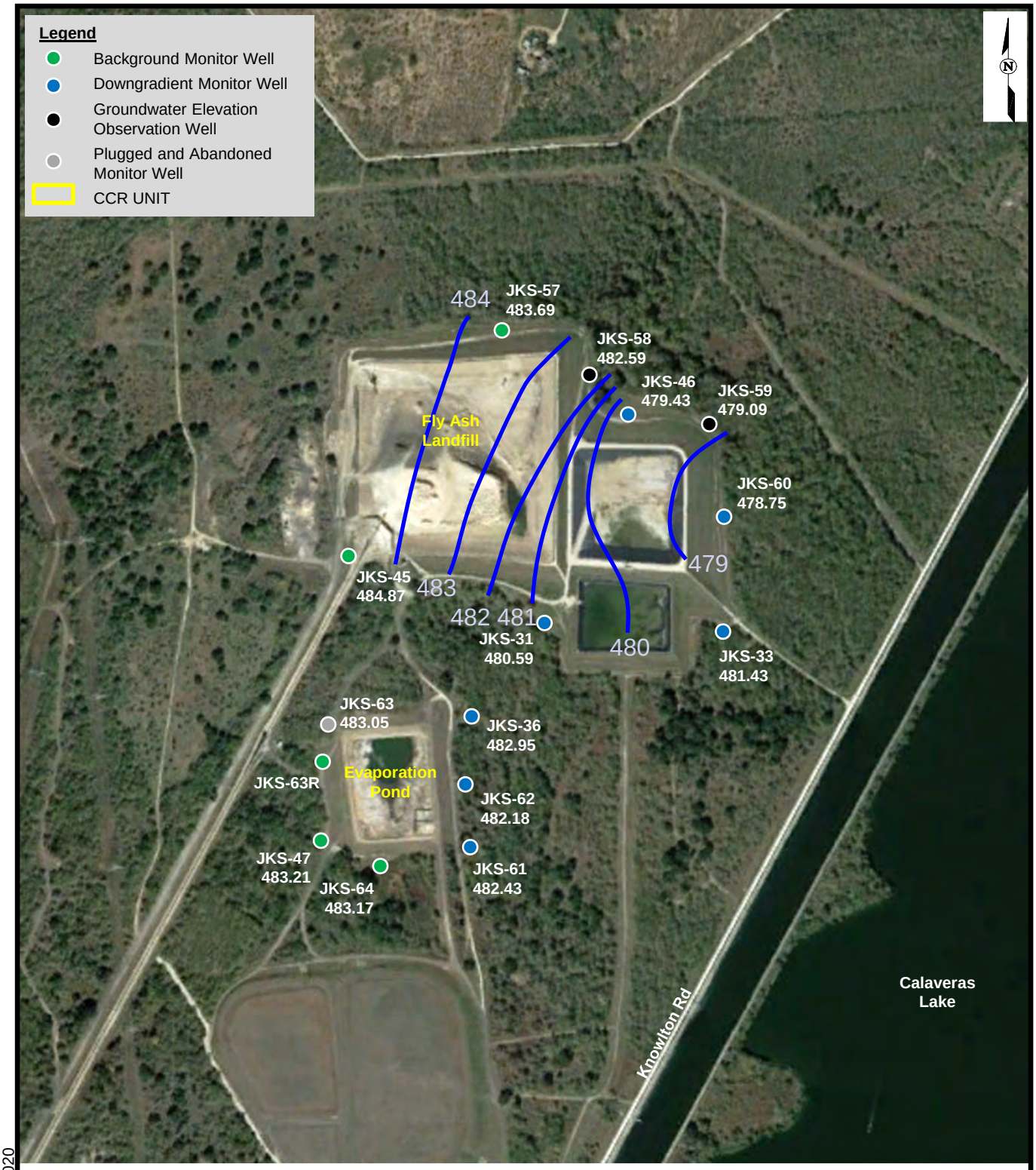
POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



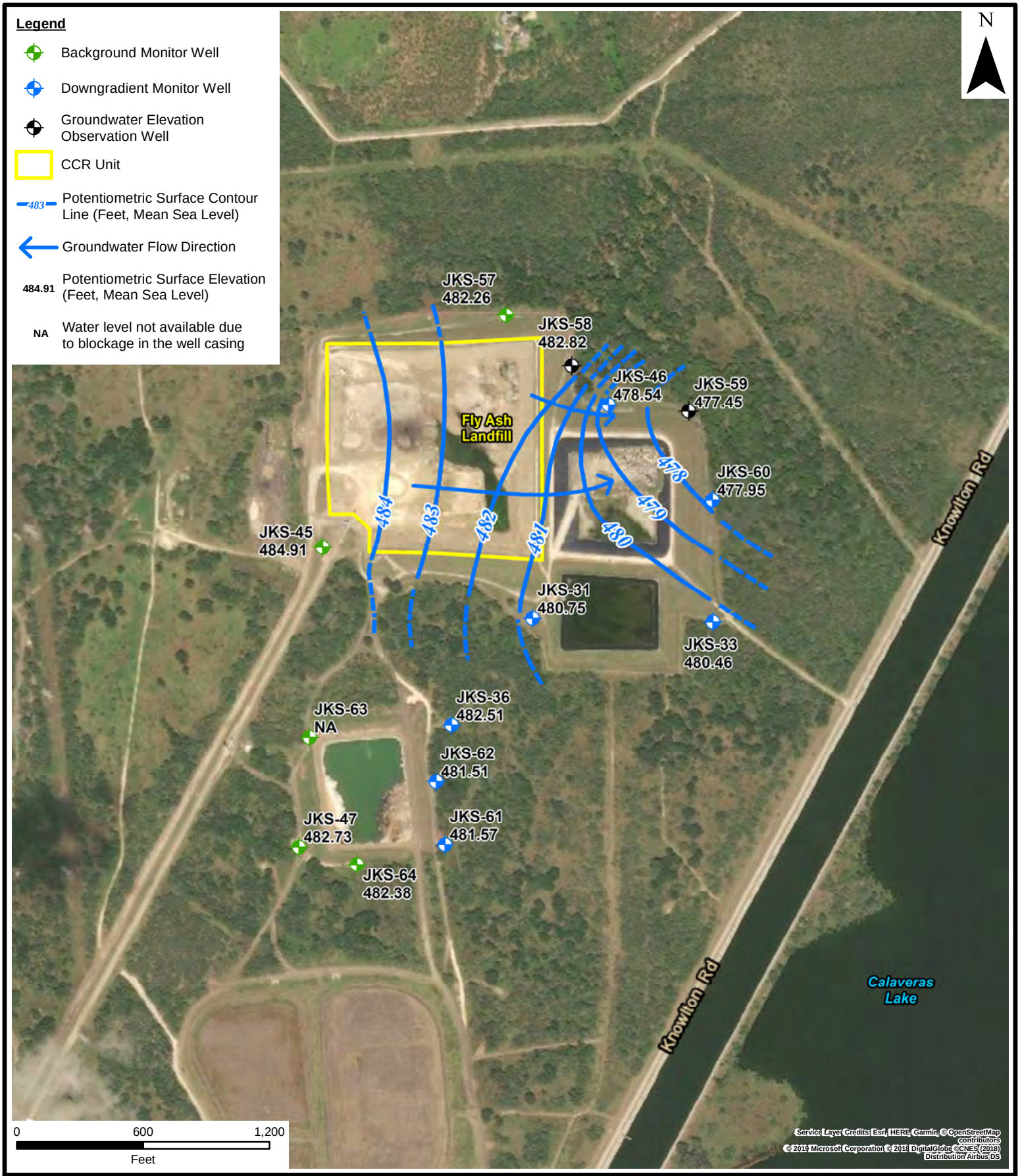
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – April 2018
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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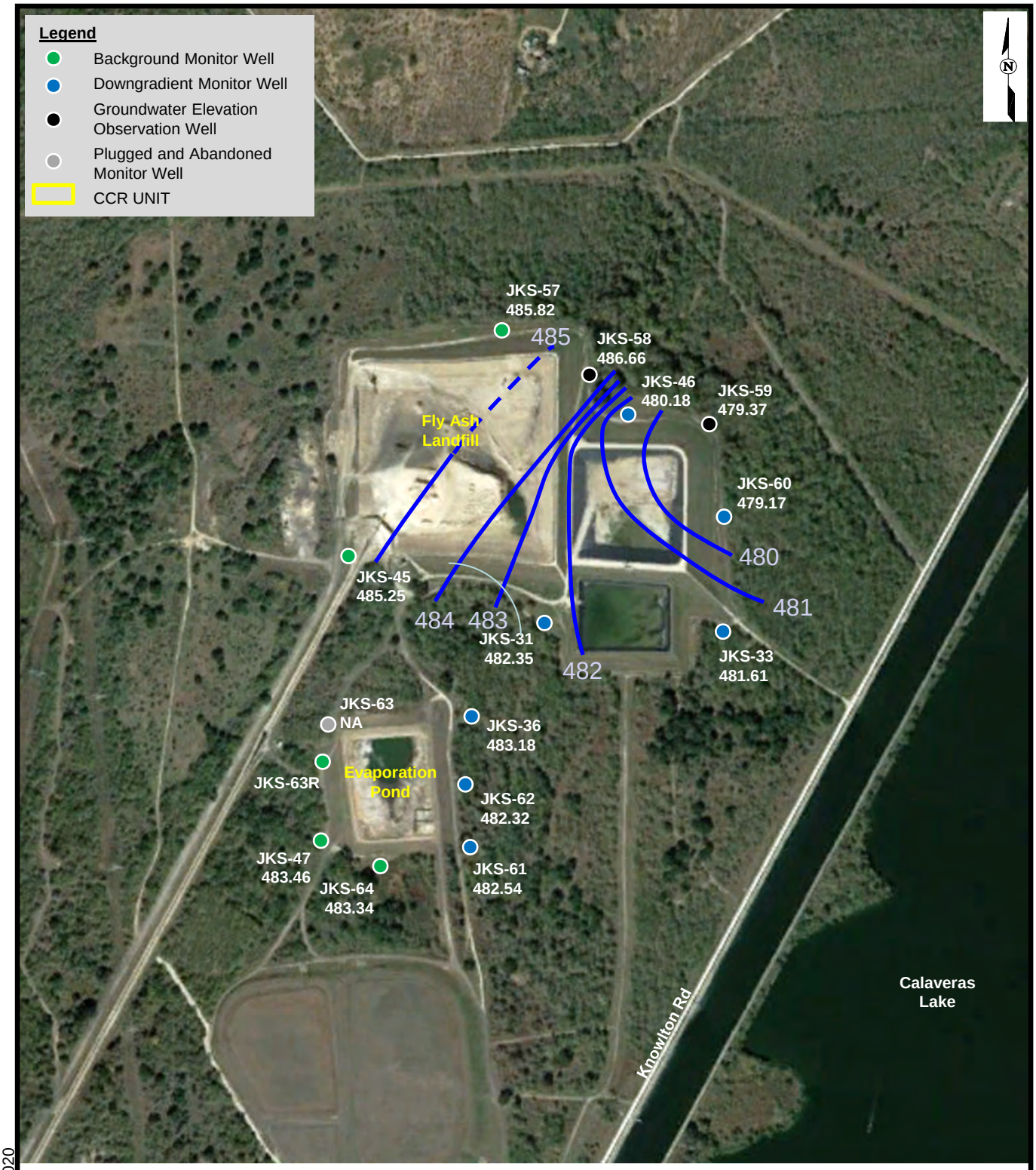
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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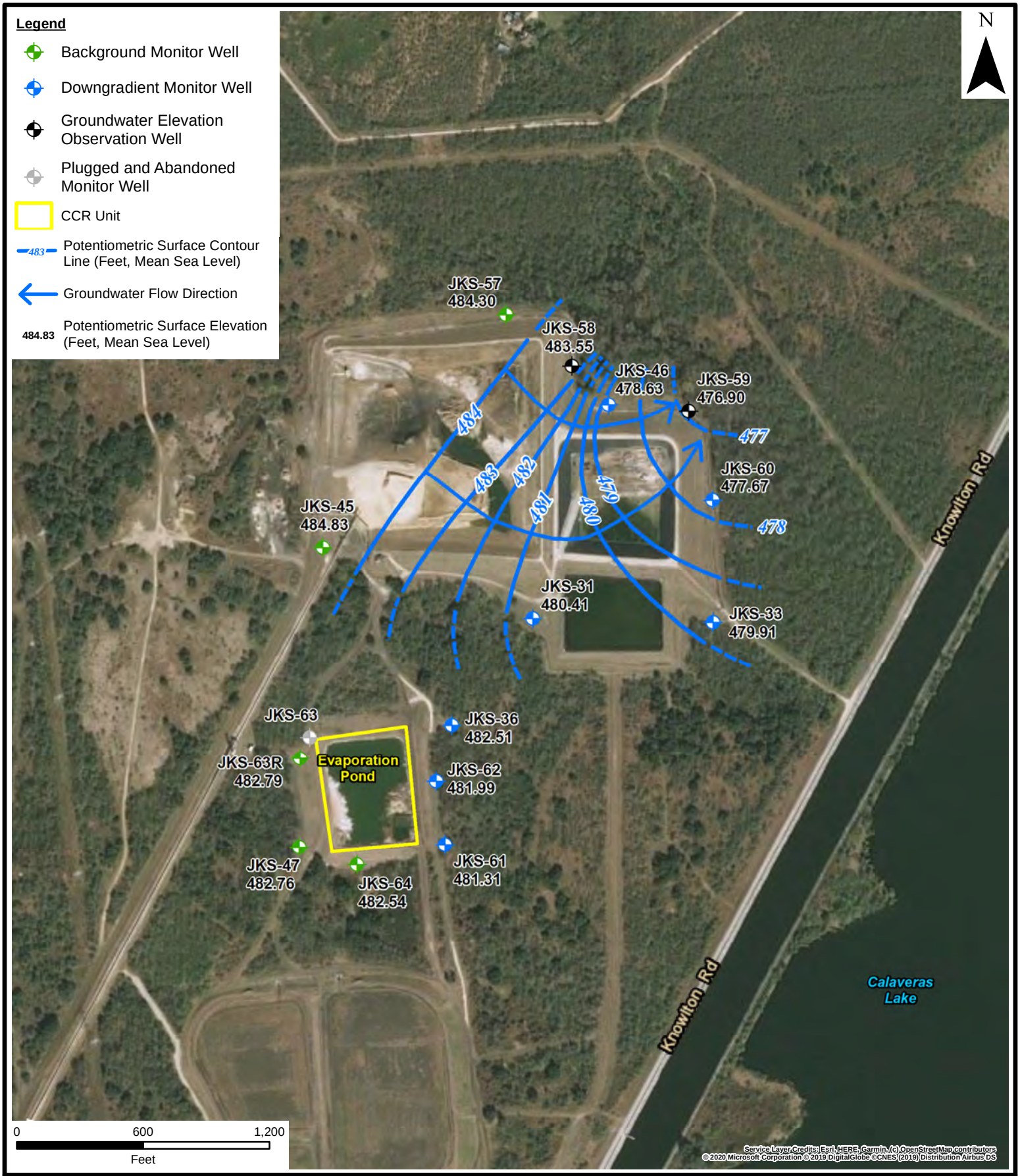
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – April 2019
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

SRH POND

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – MARCH 2017
Southern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure

Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Environmental Resources Management

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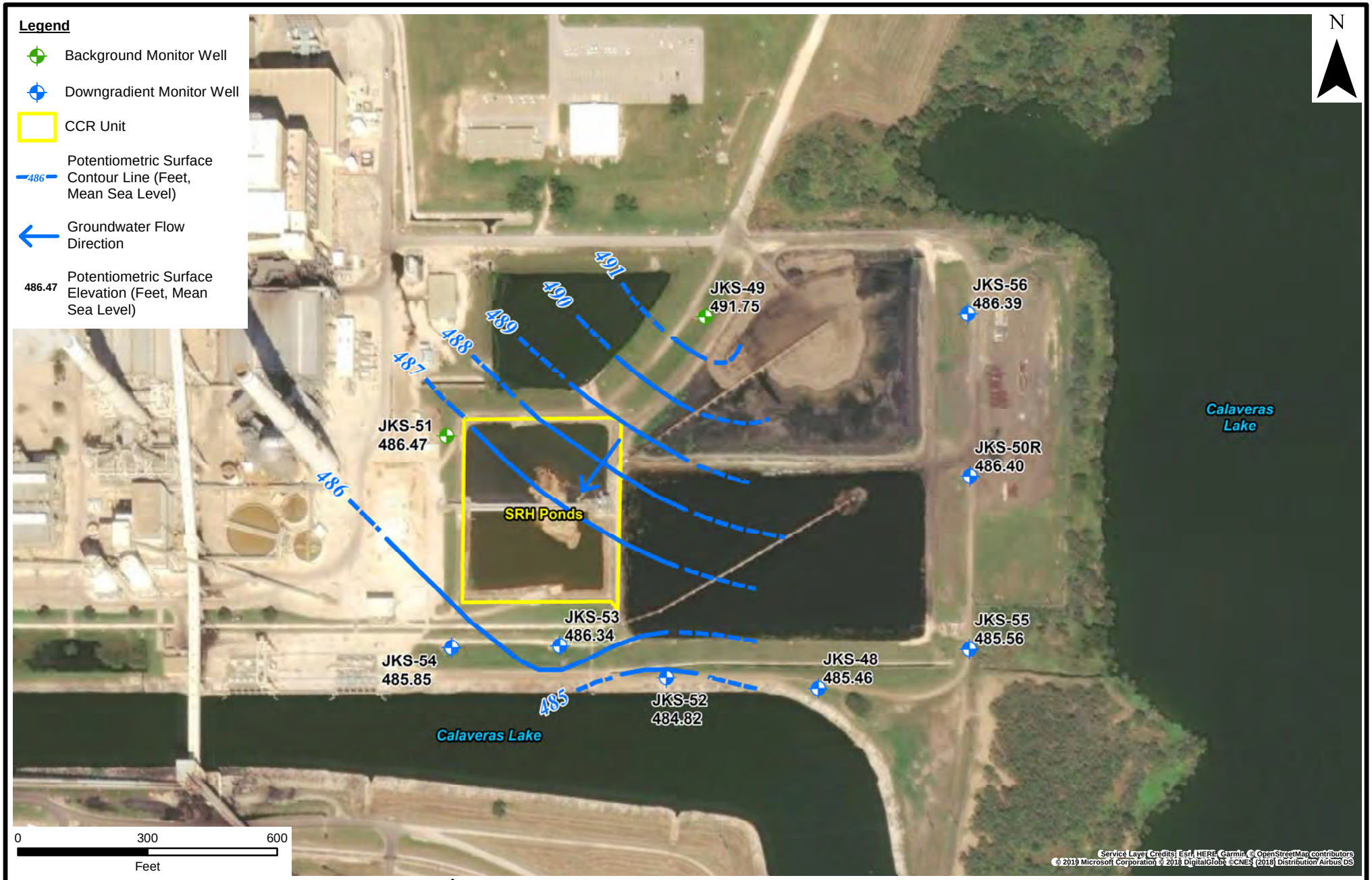
POTENTIOMETRIC SURFACE MAP - APRIL 2018
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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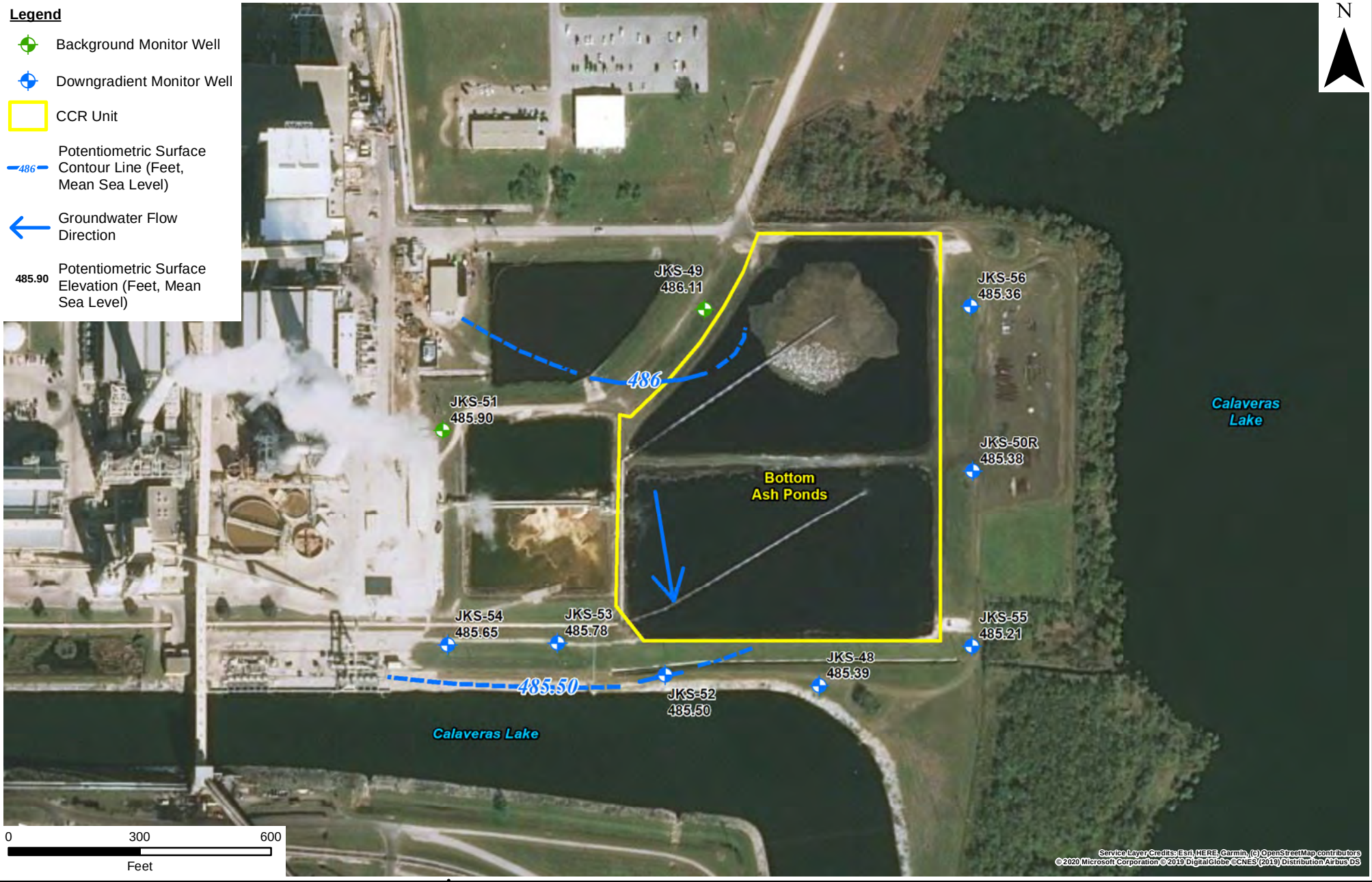
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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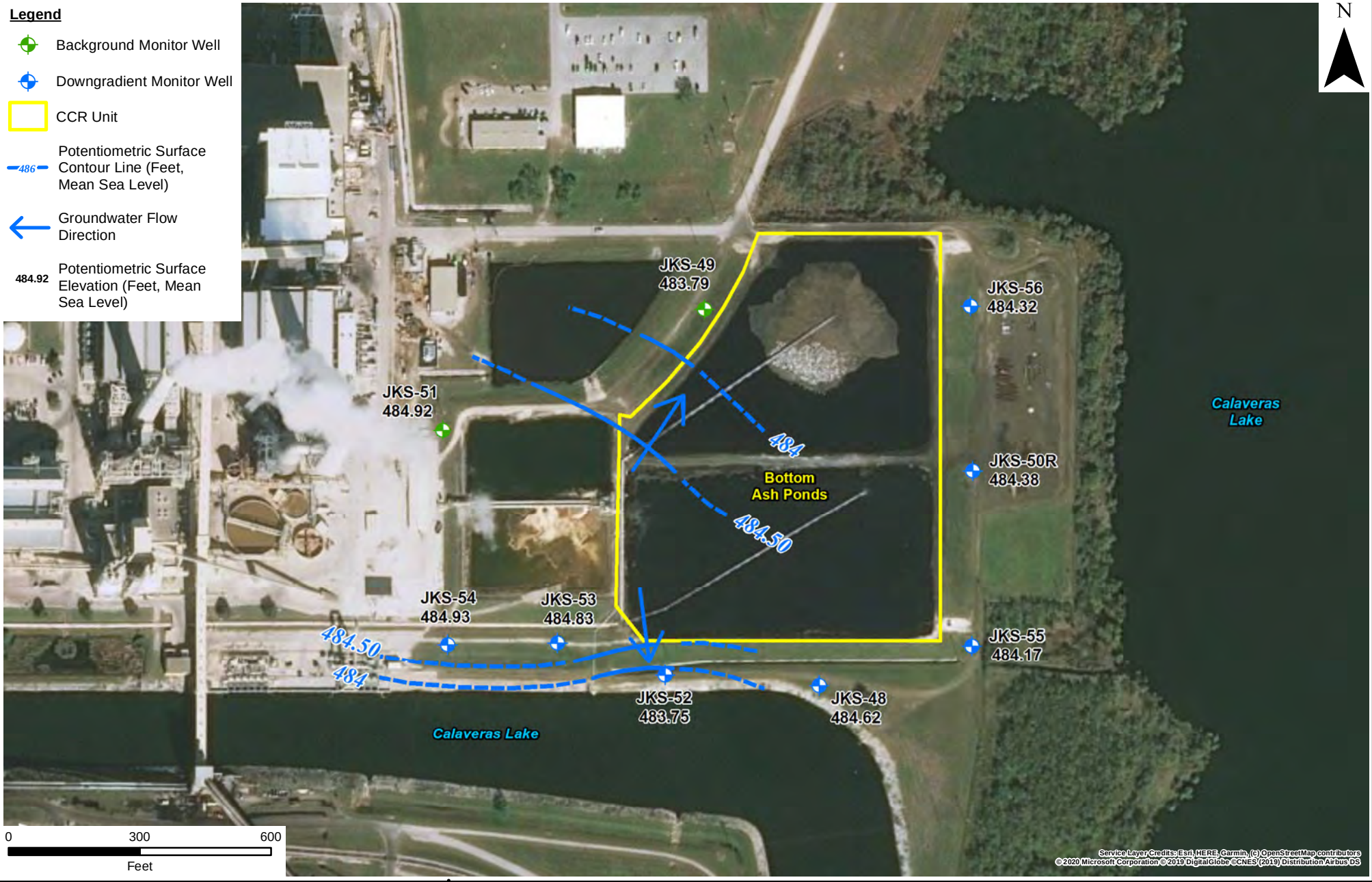
POTENTIOMETRIC SURFACE MAP - APRIL 2019
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

APPENDIX E CONSTITUENT CONCENTRATIONS SUMMARY TABLES

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-49 Upgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.24	3.28	3.28	3.03 X	3.04 J	2.76	2.85	2.87	2.71	2.70	2.05	2.58	2.47
Calcium	mg/L	130	146	173	113	127	120	145	147	135	117 D	154 D	127 D	114 J
Chloride	mg/L	295 D	383 D	372 D	326	414 D	448 D	459 D	424	446 D	408	449	429	452
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	0.697	0.719	0.749	0.793	0.894
Sulfate	mg/L	211 D	232 D	234 D	194	218 D	227	265 D	219 X	237	237	240	205	217
pH - Field Collected	SU	7.19	7.12	7.12	7.02	7.06	6.16	7.05	6.89	7.12	7.12	7.31	6.43	7.15
Total dissolved solids	mg/L	1250	1240	1190	1100	1450	1440	1490	1730	1310	1210	1290	1380	1240
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00173 J	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000676 J	0.000729 J	0.00123 U	0.00123 U	0.000544 J	0.000538 J	0.000478 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0607	0.0575	0.0503	0.0554	0.0783	0.0721	0.0788	0.0735	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000859 J	0.000572 J	0.00262 U	0.00262 U	0.000963 J	0.000997 J	0.00113 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00102 J	0.00109 J	0.00124 J	0.00155 J	0.00133 J	0.00153 J	0.00155 J	0.00146 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000155 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0137 J	0.0341	0.0295	0.0427	0.0252	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000690 J	0.0000263 U	0.0000490 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00779 J	0.00846	0.00875	0.0106	0.00908 J	0.00938	0.0107	0.0111	NR	NR	NR	NR	NR
Selenium	mg/L	0.00992 J	0.00597	0.00479	0.00521 J	0.00370 J	0.00235	0.00188 J	0.00141 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.198 ± 0.197	0.615 ± 0.272	0.747 ± 0.323	0.195 ± 0.167	0.294 ± 0.192	0.241 ± 0.193	0.159 ± 0.191	0.746 ± 0.274	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.1 ± 0.907	-1.37 ± 1.37	0.854 ± 0.724	1.08 ± 1.72	2.23 ± 0.949	0.658 ± 0.636	0.812 ± 0.604	1.43 ± 0.898	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-51 Upgradient												
	Sample Date	12/8/16	2/22/17	3/28/17	5/3/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.512	0.517	0.473	0.565	0.512	0.525	0.453	0.509	0.465	0.347	0.489	0.648	0.627
Calcium	mg/L	267	292	322	266	261 X	232	236	256	246	149 D	328	336 D	334 J
Chloride	mg/L	403 D	331 D	414 D	447	424 D	455 D	384 D	375	395 D	301	559	574 D	555
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	0.305 J	0.291 J	0.329 J	0.405 J	0.470
Sulfate	mg/L	293 D	330 D	348 D	359	342 D	330 D	314 D	302	354 D	260	428	405 D	439
pH - Field Collected	SU	6.59	6.51	6.48	6.56	6.40	5.48	6.38	6.20	6.44	6.70	6.66	5.73	6.43
Total dissolved solids	mg/L	1650	1650	1490	1980	1530	1580	1390	1650	1320	916	1890	2150	2010
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000953 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000412 J	0.000390 J	0.00123 U	0.000392 J	0.000344 J	0.000395 J	0.000418 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0655	0.0563	0.0517	0.0512	0.0534	0.0520	0.0520	0.0564	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000212 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000941 J	0.000525 U	0.00262 U	0.000657 J	0.000874 J	0.00113 J	0.00133 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000350 U	0.0000770 J	0.0000920 J	0.000350 U	0.000124 J	0.0000940 J	0.0000800 J	0.000108 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0322	0.0874	0.0790	0.0958 JX	0.0718	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.000199 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.09 ± 0.376	0.104 ± 0.122	0.618 ± 0.247	0.197 ± 0.145	0.328 ± 0.195	0.0847 ± 0.186	4.83 ± 0.763	0.682 ± 0.309	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.312 ± 0.688	1.09 ± 1.37	2.32 ± 1.45	-1.26 ± 1.37	-0.799 ± 0.928	1.57 ± 0.786	0.762 ± 0.706	0.963 ± 0.954	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-48 Downgradient												
	Sample Date	12/7/16	2/22/17	3/30/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	2.21	2.14	--	2.08	2.13	2.15 X	2.02	2.23	2.03	2.13	2.22	2.27	2.36
Calcium	mg/L	130	139	125	NR	111	136 X	134	147	143	128 D	166 D	135 D	130 J
Chloride	mg/L	395 D	408 D	435 D	427	440 D	465 D	166 D	427	433 D	438	467	446	485
Fluoride	mg/L	1.43	1.21 JH	1.62	1.41 JH	1.07	1.62	0.0960 U	1.22	1.35	1.31	1.46	1.25	0.051 JH
Sulfate	mg/L	239 D	251 D	266 D	259	253 D	244	140 D	257	282 D	266	271	213	206
pH - Field Collected	SU	7.06	6.92	6.86	6.99	6.88	5.92	6.90	6.74	6.91	6.92	7.06	6.12	6.89
Total dissolved solids	mg/L	1400	1270	1440	1490	1540	1380 J	850	1470	1400	1410	1420	1520	1400
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	--	0.000240 U	0.00120 U	0.00129 J	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000538 J	--	0.000424 J	0.00123 U	0.000452 J	0.000459 J	0.000475 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0717	0.0699	--	0.0659	0.0686	0.0769	0.0725	0.0761	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	--	0.000131 U	0.000654 U	0.000233 J	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	--	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000608 J	--	0.000525 U	0.00262 U	0.000525 U	0.000863 J	0.00130 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00111 J	0.000844 J	--	0.000920 J	0.000987 J	0.00137 J	0.000917 J	0.00106 J	NR	NR	NR	NR	NR
Fluoride	mg/L	1.43	1.21 JH	1.62	1.41	1.07	1.62	0.0960 U	1.22	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	--	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000203 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	NR	0.0536	0.0501	0.0700	0.0551	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000310 JX	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000422 J	--	0.000263 J	0.00128 U	0.000344 J	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	--	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	--	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.139 ± 0.250	0.251 ± 0.149	0.0232 ± 0.136	0.357 ± 0.174	0.46 ± 0.235	0.544 ± 0.259	0.562 ± 0.283	0.26 ± 0.241	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.847 ± 1.14	0.317 ± 1.15	1.1 ± 0.737	-0.109 ± 1.35	0.284 ± 0.662	0.273 ± 0.867	0.459 ± 0.649	0.772 ± 0.931	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-50R Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	4.70	5.18	5.87	5.92	4.87	4.38	4.18	4.54	3.52	5.17	5.85	6.93	5.52
Calcium	mg/L	126	134	189	120	125	108	130	132	127	116 D	159 D	135 D	126 J
Chloride	mg/L	47.7 X	49.0 J	63.9	81.3	111	123	141 D	100	170	87.9	70.0	60.3	102
Fluoride	mg/L	0.316	0.331 JH	0.447 JH	0.528	0.387 JH	0.390 JH	0.0960 U	0.427 JH	0.335 J	0.392 J	0.319 J	0.380 J	0.510
Sulfate	mg/L	137 X	146	156	160	146	148	195 D	144	131	141	168	172	194
pH - Field Collected	SU	6.83	6.77	NR	6.80	6.63	5.69	6.62	6.43	6.67	6.61	6.80	5.85	6.65
Total dissolved solids	mg/L	737	808	789	902	914	856	992	947	883	688	842	899	918
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.00111 J	0.000735 J	0.00123 U	0.00123 U	0.000520 J	0.000545 J	0.000596 J	NR	NR	NR	NR	NR
Barium	mg/L	0.133	0.128	0.113	0.117	0.125	0.117	0.123	0.118	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000147 J	0.000187 J	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000174 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000189 J	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.00251 J	0.00169 J	0.00262 U	0.00262 U	0.000788 J	0.000759 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00305 J	0.00345	0.00251	0.00215 J	0.00191 J	0.00216	0.00233	0.00285	NR	NR	NR	NR	NR
Fluoride	mg/L	0.316	0.331 JH	0.447 JH	0.528	0.387 JH	0.390 JH	0.0960 U	0.427 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000796 J	0.000988 J	0.000627 J	0.000758 U	0.000758 U	0.000178 J	0.000152 U	0.000168 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.000476 U	0.00209 J	0.000476 U	0.00621 J	0.000476 U	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00150 J	0.00153 J	0.00125 J	0.00128 U	0.00128 U	0.00102 J	0.00104 J	0.00108 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000514 J	0.000454 U	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.102 ± 0.173	0.479 ± 0.216	-0.0714 ± 0.168	0.197 ± 0.183 U	0.245 ± 0.204	0.408 ± 0.226	0 ± 0.176	0.815 ± 0.292	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.99 ± 1.31	-0.428 ± 1.24	0.665 ± 1.14	0.00273 ± 1.33 U	0.783 ± 0.638	1.08 ± 0.832	0.0172 ± 1.12	1.5 ± 0.842	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-52 Downgradient												
	Sample Date	12/7/16	2/21/17	3/28/17	5/2/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.66	2.11	1.63	1.51	1.33	1.43	1.46	1.71 X	1.95	1.54	1.46 X	1.65	2.05
Calcium	mg/L	169	181	189	--	145	140	162	168	175	153 D	195 DX	171 D	174 J
Chloride	mg/L	331 D	377 D	323 DX	320	326 D	343 D	417 D	355	360 D	326	336	320	433
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	0.720	0.710	0.831	0.808	0.908
Sulfate	mg/L	277 D	318 D	299 DX	290	287 D	292 D	171 D	289	278 D	292	268	288 D	315
pH - Field Collected	SU	7.01	6.47	6.91	6.94	6.87	5.87	6.81	6.63	6.79	6.76	6.91	6.00	6.83
Total dissolved solids	mg/L	1290	1380	1100	1250	1280	1250	1250	1220	1240	1210	1170	1270	1470
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000565 J	0.000398 J	0.000425 J	0.000427 J	0.000392 J	0.000412 J	0.000448 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0646	0.0583	0.0519	0.0483	0.0527	0.0558	0.0565	0.0616	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000153 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000525 U	0.000525 U	0.000525 U	0.000841 J	0.000860 J	0.00123 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00188 J	0.00233	0.00112 J	0.00119 J	0.00211	0.00183 J	0.00159 J	0.00189 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000292 J	0.000152 U	0.000152 U	0.000163 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0471	0.000476 U	--	0.0616	0.0605	0.0827	0.0588	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.000234	0.0000263 U	0.0000263 U	0.0000263 U	0.0000810 J	0.0000263 U	0.0000263 UX	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.00128 J	0.00115 J	0.00102 J	0.000911 J	0.000865 J	0.000843 J	0.000914 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.71 ± 0.465	0.608 ± 0.289	0.296 ± 0.169	0 ± 0.150	0.435 ± 0.241	0.449 ± 0.196	0.194 ± 0.194	0.704 ± 0.319	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.65 ± 1.12	0.744 ± 0.833	0.0645 ± 0.649	0.53 ± 1.10	0.928 ± 0.784	1.16 ± 0.867	0.716 ± 0.767	1.54 ± 1.22	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-55 Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.716	0.716	0.785	0.710	0.787	0.651	0.687	0.759	0.645	0.611	0.740	0.771	0.779
Calcium	mg/L	143	153	181	133	133	118	136	146	134	119 D	165 D	145 D	137 J
Chloride	mg/L	384 DX	50.5	403 D	388	395 D	400 D	168 D	386	387 D	429	438	432	452
Fluoride	mg/L	0.857	0.352 JH	0.746 JH	0.891	1.14	1.08 JH	0.0960 U	0.864	0.791	0.820	0.822	0.832	1.01
Sulfate	mg/L	164 X	147	172	173	164	166	139 D	157	168	155	168	159	177
pH - Field Collected	SU	6.85	6.80	6.81	6.82	6.72	5.77	6.72	6.53	6.75	6.70	6.90	5.96	6.81
Total dissolved solids	mg/L	1430	1380	1290	1310	1500	1270	826	1470	1300	1190	1420	1370	1350
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000650 J	0.000520 J	0.00123 U	0.00123 U	0.000507 J	0.000582 J	0.000599 J	NR	NR	NR	NR	NR
Barium	mg/L	0.103	0.0876	0.0823	0.0758	0.0828	0.0780	0.0801	0.0816	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000134 J	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000625 J	0.000525 U	0.00262 U	0.00262 U	0.000525 U	0.000797 J	0.000903 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00702 J	0.00516	0.00579	0.00750 J	0.00642 J	0.00562	0.00565	0.00565	NR	NR	NR	NR	NR
Fluoride	mg/L	0.857	0.352 JH	0.746 JH	0.891	1.14	1.08 JH	0.0960 U	0.864	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0136 J	0.0425	0.0354	0.0495	0.0338	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00130 J	0.00123 J	0.00108 J	0.00128 U	0.00128 U	0.000804 J	0.000898 J	0.000837 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.694 ± 0.358	0.721 ± 0.320	0.745 ± 0.258	0.576 ± 0.261	0.305 ± 0.190	0.0212 ± 0.171	0.327 ± 0.233	0.588 ± 0.314	NR	NR	NR	NR	NR
Radium-228	pCi/L	3.76 ± 1.33	1.87 ± 1.01	-0.0356 ± 1.09	1.01 ± 1.02	0.591 ± 0.843	0.532 ± 0.795	0.234 ± 0.821	1.24 ± 0.848	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-56 Downgradient												
	Sample Date	12/7/16	2/22/17	3/30/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.97	4.13	--	4.60	3.98	3.60	3.60 X	3.48	3.95	3.95	3.85	4.47	3.55
Calcium	mg/L	137	143	127	124	136	116	137	146	126	121 D	150 D	131 D	103 J
Chloride	mg/L	131	95.7	96.3	95.6	114	126	146 D	150	121	108 JL	81.0	81.2	101
Fluoride	mg/L	0.344	0.354 JH	0.333	0.564	0.407 JH	0.401 JH	0.0960 U	0.448 JH	0.37 J	0.428 J	0.372 J	0.452 J	0.552
Sulfate	mg/L	193	190	188	183	186	194	201 D	200	193	192	193	194	138
pH - Field Collected	SU	6.73	6.63	6.56	6.71	6.56	5.63	6.57	6.38	6.64	6.55	6.76	5.84	6.72
Total dissolved solids	mg/L	1100	969	1020	997	1060	1060	986	1240	992	976	918	968	904
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	--	0.00120 U	0.00120 U	0.000240 U	0.00104 J	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00527 J	0.00425	--	0.00350 J	0.00435 J	0.00373	0.00517	0.00451	NR	NR	NR	NR	NR
Barium	mg/L	0.126	0.0974	--	0.0890	0.0921	0.0897	0.103	0.0909	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	--	0.000654 U	0.000654 U	0.000131 U	0.000136 J	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	--	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000654 J	--	0.00276 J	0.00262 U	0.000525 U	0.00498	0.00141 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00560 J	0.00564	--	0.00641 J	0.00687 J	0.00668	0.00771	0.00746	NR	NR	NR	NR	NR
Fluoride	mg/L	0.344	0.354 JH	0.333	0.564	0.407 JH	0.401 JH	0.0960 U	0.448 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	--	0.000758 U	0.000758 U	0.000152 U	0.000211 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.000476 U	0.000476 U	0.00156 J	0.000476 U	0.00598 J	0.000476 U	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000700 J	0.0000263 UX	0.0000263 U	0.0000263 UX	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00360 J	0.00190 J	--	0.00168 J	0.00152 J	0.00156 J	0.00160 J	0.00155 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	--	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	--	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.23 ± 0.430	0.254 ± 0.175	0.372 ± 0.215	0.138 ± 0.166	0.273 ± 0.253	0.177 ± 0.213	0.441 ± 0.225	0.397 ± 0.252	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.949 ± 1.38	3.07 ± 1.28	1.09 ± 0.897	1.97 ± 1.35	1.27 ± 0.994	1.16 ± 0.862	1.45 ± 0.895	3.36 ± 1.42	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-47 Upgradient												
	Sample Date	12/8/16	2/28/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.824	0.838	0.696	0.817	0.804	0.828 JH	0.760	1.02	0.844	0.806	0.590	1.05	0.800
Calcium	mg/L	54.0	62.1	168	26.2	71.1	62.7 JH	66.7	36.1	53.5	83.2 D	128	36.5	43.1
Chloride	mg/L	107	150	232 D	193	168	148 JH	210 D	68.5	151	186	279	53.9 X	107
Fluoride	mg/L	0.0360 U	0.0360 U	0.315	0.382 JH	0.213 JH	0.360 U	0.0960 U	0.0360 U	0.0360 U	0.0998 J	0.0985 J	0.154 JH	0.163
Sulfate	mg/L	213 D	267 D	369 D	299	266 D	248 JH	284 D	171	236	262	347	210 X	257
pH - Field Collected	SU	5.82	5.83	5.75	6.00	5.75	5.85	5.90	5.93	5.91	5.72	5.92	4.58	5.87
Total dissolved solids	mg/L	811	922	1170	1060	979	806 JH	904	677	787	727	1240	665	772
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000294 J	0.00120 U	0.000275 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00442 J	0.00130 J	0.00136 J	0.00123 U	0.00185 J	0.00105 J	0.00124 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0475	0.0132	0.0180	0.0118 J	0.0154	0.00981	0.0104	0.00785	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000813 J	0.000255 J	0.000131 U	0.000654 U	0.000352 J	0.000131 U	0.000172 J	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000637 J	0.000977 J	0.000797 J	0.000735 J	0.000611 J	0.000814 J	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.234	0.00430	0.000988 J	0.00262 U	0.00262 J	0.000855 J	0.00130 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00915 J	0.00102 J	0.00153 J	0.00113 J	0.00227	0.000976 J	0.00107 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.0360 U	0.315	0.382 JH	0.213 JH	0.360 U	0.0960 U	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.00586 J	0.000950 J	0.000448 J	0.000758 U	0.00157 J	0.000202 J	0.000449 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0615	0.0478	0.00238 U	0.0207	0.0720	0.0644	0.0799	0.0521	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000600 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.0317	0.00126 J	0.00173 J	0.00128 J	0.000788 J	0.000581 J	0.000653 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0493	0.0697	0.0518	0.0564	0.0613	0.0577	0.0525	0.0854	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.2 ± 0.342	0.578 ± 0.275	0.630 ± 0.237	0.538 ± 0.192	0.729 ± 0.278	0.304 ± 0.233	1.06 ± 0.361	0.246 ± 0.180	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.66 ± 1.15	1.34 ± 1.05	1.27 ± 0.960 U	2.17 ± 1.01	0.664 ± 0.929	0.771 ± 1.48	1.65 ± 1.05	0.463 ± 0.886	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-63 / JKS-63R Upgradient (A)												
	Sample Date	12/8/16	2/22/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	8/20/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.800	0.866	NR	0.981	(1)	1.33 JH	1.23	1.06	1.13	(2)	2.03	1.03	0.950
Calcium	mg/L	783	914	713	1060	(1)	835	174	872	836	(2)	221	953 D	952
Chloride	mg/L	1230 D	1160 D	1220 D	1340	(1)	1960 JHD	1890 D	1420	1670	(2)	2360 D	2240	2530
Fluoride	mg/L	0.0573 J	0.320	0.297	0.364 JH	(1)	0.0971 JH	0.182 JH	0.0360 U	0.0360 U	(2)	0.206 J	0.352 JH	0.018 U
Sulfate	mg/L	0.0460 U	1860 D	1890 D	1860	(1)	1970 D	1920 D	1820	2110	(2)	1810 D	1750 D	1810
pH - Field Collected	SU	5.61	5.35	5.60	5.85	(1)	5.88	5.82	5.63	5.64	(2)	--	4.76	5.83
Total dissolved solids	mg/L	5750	4760	4870	5560	(1)	6410	5000	5080	5220	(2)	6660	5200	7240
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000459 J	0.000695 J	0.00120 U	(1)	0.000240 U	0.000424 J	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00332 J	0.00294	0.00128 J	0.00123 U	(1)	0.000893 J	0.000992 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0626	0.0540	0.0336	0.0316	(1)	0.0294	0.0258	0.0222	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000930 J	0.000442 J	0.000654 U	(1)	0.000196 J	0.000223 J	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00339 J	0.00405	0.00394	0.00316 J	(1)	0.00282	0.00263	0.00285	NR	NR	NR	NR	NR
Chromium	mg/L	1.49	0.735	0.371	0.114	(1)	0.0742	0.0584	0.0130	NR	NR	NR	NR	NR
Cobalt	mg/L	0.0802	0.0762	0.0546	0.0331	(1)	0.0137	0.0119	0.0119	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0573 J	0.320	0.297	0.364 JH	(1)	0.0971 JH	0.182 JH	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.00441 J	0.00599	0.00108 J	0.000758 U	(1)	0.000238 J	0.000551 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.116	0.00238 U	0.654	(1)	0.946	1.15	0.791	NR	NR	NR	NR	NR
Mercury	mg/L	0.000236	0.000237	0.000206	0.0000400 J	(1)	0.000260	0.000441	0.000376	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.186	0.00789	0.00966	0.00419 J	(1)	0.00281	0.00180 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0188	0.0210	0.0257	0.0188	(1)	0.0288	0.0318	0.0244	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	(1)	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.42 ± 0.573	2.76 ± 0.476	5.79 ± 0.790	4.57 ± 0.577	(1)	6.7 ± 0.744	7.36 ± 0.874	5.04 ± 0.711	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.44 ± 1.44	4.13 ± 1.21	2.04 ± 1.61 U	3.41 ± 0.968	(1)	10.9 ± 2.31	1.79 ± 1.27	6.77 ± 1.48	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-64 Upgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.839	0.837	1.14	0.962	0.816	0.904 JH	0.835	0.901	0.837	0.805	0.804	0.747	0.711
Calcium	mg/L	24.0	24.0	31.4	23.8	20.6	21.7 JH	21.6	25.2	23.6	24.4	23.0	24.4	20.3
Chloride	mg/L	12.7	12.4	11.8	11.0	11.4	11.5	11.5	9.63	14.2	15.5	16.6	17.7	18.2
Fluoride	mg/L	0.0360 U	0.294 JH	0.332	0.188	0.231 JH	0.157 JH	0.224 JH	0.0360 U	0.0360 U	0.106 J	0.121 J	0.176 JH	0.143
Sulfate	mg/L	171	182	184	174	172	170 JH	172	164	189	196	193	192 X	209
pH - Field Collected	SU	6.46	5.50	6.30	6.33	6.21	6.09	6.20	6.21	6.13	5.97	6.14	4.82	5.86
Total dissolved solids	mg/L	594	585	611	581	572	555 JH	463	576	549	525	551	588	569
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000911 J	0.000730 J	0.000556 J	0.00123 U	0.000476 J	0.000490 J	0.000519 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.00768	0.00451	0.00392 J	0.00410 J	0.00320 J	0.00324 J	0.00275 BJ	0.000484 U	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.000525 U	0.000905 J	0.000525 U	0.00262 U	0.000867 J	0.000637 J	0.000961 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000998 J	0.000952 J	0.000851 J	0.000859 J	0.000745 J	0.000856 J	0.000889 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.294 JH	0.332	0.188	0.231 JH	0.157 JH	0.224 JH	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000186 J	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0173 J	0.0146 J	0.00238 U	0.0152 J	0.0173 J	0.0181 J	0.0252	0.0208	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 UX	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000540 J	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000398 J	0.000317 J	0.000255 U	0.00128 U	0.000265 J	0.000255 U	0.000273 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.000512 J	0.000550 J	0.000495 J	0.00227 U	0.000468 J	0.000468 J	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.981 ± 0.400	1.16 ± 0.408	0.530 ± 0.284	0.231 ± 0.174	0.258 ± 0.175	0.286 ± 0.247	1.05 ± 0.361	0.531 ± 0.276	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.429 ± 1.56	2.07 ± 1.22	-0.102 ± 1.07 U	0.408 ± 0.764	0.699 ± 0.761	2.49 ± 1.54	0.26 ± 0.639	1 ± 0.834	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-36 Downgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/22/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.308	0.671	0.748	0.731	0.581	0.625 JH	0.663	0.637	0.625	0.686	0.663	0.632	0.459
Calcium	mg/L	69.7	165	147	282	247	255 JHX	241	289	281	311 D	315 D	265 D	175
Chloride	mg/L	14.5	199 D	37.0	355	364 D	379 JHD	319 D	328	347 X	313	285	274	63.3
Fluoride	mg/L	0.0360 U	0.439 JH	0.330	1.53	1.26	1.37 JH	1.30	1.32	1.95 X	1.47	1.45	1.41	1.18
Sulfate	mg/L	49.2	409 D	271 D	726	731 D	775 JHD	707 D	741	816 X	946	697	756 D	189
pH - Field Collected	SU	6.71	4.96	6.98	4.04	3.72	3.80	5.20	3.24	3.48	3.61	3.71	3.66	3.42
Total dissolved solids	mg/L	368	1010	591	1610	1820	1700 JH	1220	1770	1650	1630	1520	1600	1790
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.00123 J	0.00120 U	0.000240 U	0.00121 J	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000588 J	0.00134 J	0.00324 J	0.00276	0.00369	0.00341	0.00372	NR	NR	NR	NR	NR
Barium	mg/L	0.0988	0.0967	0.139	0.0270	0.0187	0.0207	0.0372	0.0225	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.00198 J	0.000131 U	0.0259	0.0226	0.0261	0.0212	0.0259	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00257 J	0.00510	0.000548 J	0.0118	0.0102	0.0117	0.0101	0.0113	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.00608	0.0409	0.0100 J	0.00968	0.0156	0.00792	0.0132	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000579 J	0.0871	0.00751	0.220	0.186	0.216	0.195	0.215	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.439 JH	0.330	1.53	1.26	1.37 JH	1.30	1.32	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000164 J	0.000220 J	0.000261 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0123 J	0.119	0.00238 U	0.326	0.340	0.371	0.372	0.379	NR	NR	NR	NR	NR
Mercury	mg/L	0.000834	0.000289	0.00143	0.00240	0.00244	0.00160	0.00113	0.00226	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00397 J	0.00261	0.0686	0.00183 J	0.000704 J	0.000791 J	0.00151 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0334	0.0448	0.0313	0.0673	0.0616	0.0697	0.0633	0.0663	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000487 J	0.000332 U	0.00166 U	0.000876 J	0.00114 J	0.000889 J	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.0888 ± 0.151	1.12 ± 0.342	0.453 ± 0.276	4.85 ± 0.656	4.02 ± 0.608	4.32 ± 0.667	6.28 ± 0.845	3.6 ± 0.600	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.14 ± 1.02	2.17 ± 0.979	0.166 ± 0.861 U	4.28 ± 1.19	3.44 ± 1.04	3.95 ± 1.79	2.63 ± 0.928	3.3 ± 1.33	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-61 Downgradient												
	Sample Date	12/7/16	2/23/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/31/18	4/10/19	10/22/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.07	1.29	1.15	1.18	0.960	1.01 JH	0.994	0.997	1.09	3.25	2.72	2.90	1.82
Calcium	mg/L	134	95.9	155	113	115	107 JH	105	135	171	197 D	176	168 D	154
Chloride	mg/L	198	158	162	168	193	190 JH	218 D	210	285	213	253	248	312
Fluoride	mg/L	0.393	0.503	0.522	0.643 JH	0.459 JH	0.479 JH	0.0960 U	0.0360 U	0.406 J	0.430 J	0.403 J	0.480 J	0.494
Sulfate	mg/L	401 D	377 JD	382 D	388	408 D	390 JHD	385 D	401	562	548	619	548 D	604
pH - Field Collected	SU	6.72	6.51	6.48	6.68	6.53	6.55	7.40	6.27	6.42	6.38	6.52	5.61	6.27
Total dissolved solids	mg/L	1400	1180	1190	1260	1430	1290 JH	1170	1280	1620	514	1650	1790	1870
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000768 J	0.000709 J	0.00123 U	0.000563 J	0.000622 J	0.000569 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0364	0.0186	0.0173	0.0178 J	0.0148	0.0167	0.0153	0.0162	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000911 J	0.000525 U	0.00262 U	0.000525 U	0.000604 J	0.000808 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000719 J	0.000725 J	0.000769 J	0.000779 J	0.000805 J	0.000765 J	0.000855 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.393	0.503	0.522	0.643 JH	0.459 JH	0.479 JH	0.0960 U	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0158 J	0.00238 U	0.0120 J	0.0342	0.0336	0.0443	0.0335	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00165 J	0.00129 J	0.000984 J	0.00128 U	0.000776 J	0.000742 J	0.000712 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00123 J	0.00123 J	0.00227 U	0.00185 J	0.00154 J	0.00172 J	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.15 ± 0.429	0.723 ± 0.306	0.256 ± 0.237 U	0.237 ± 0.193	0.398 ± 0.239	0.511 ± 0.223	0.821 ± 0.324	0.485 ± 0.212	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.79 ± 1.44	0.358 ± 1.06	0.761 ± 0.688 U	-0.064 ± 0.607	2.03 ± 0.997	0.491 ± 0.813	0.247 ± 0.710	1.64 ± 1.08	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-62 Downgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.549	0.481	0.597	0.601	0.501	0.485 JH	0.485	0.549	0.522	0.559	0.612	0.528	0.484
Calcium	mg/L	155	152	220	156	150	134 JH	150	158	160	161 D	205 D	151 D	122
Chloride	mg/L	257 D	279 DX	279 D	278	291 D	260 JHD	281 D	241	312	279	336	276	284
Fluoride	mg/L	0.246	0.362 JH	0.418	0.388	0.366 JH	0.342 JH	0.233 JH	0.0360 U	0.353 J	0.309 J	0.356 J	0.380 J	0.331
Sulfate	mg/L	190	187	193	188	184	181 JH	188 D	175	200	183	191	183	190
pH - Field Collected	SU	6.79	6.67	6.63	6.71	6.68	6.82	7.51	6.52	6.72	6.58	6.29	5.43	6.54
Total dissolved solids	mg/L	1120	1170	1140	1100	1080	976 JH	1080	1080	1110	956	1190	1160	1100
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000684 J	0.000293 J	0.000246 U	0.00123 U	0.000254 J	0.000246 U	0.000246 U	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0825	0.0786	0.0813	0.0747	0.0734	0.0737	0.0708	0.0793	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00186 J	0.00109 J	0.000525 U	0.00262 U	0.000551 J	0.000691 J	0.00107 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00110 J	0.000198 J	0.000744 J	0.000350 U	0.000278 J	0.000211 J	0.0000699 U	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.246	0.362 JH	0.418	0.388	0.366 JH	0.342 JH	0.233 JH	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000588 J	0.000152 U	0.000152 U	0.000758 U	0.000154 J	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0129 J	0.00238 U	0.00134 J	0.0353	0.0305	0.0457	0.0263	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000540 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000414 J	0.000259 J	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.222	0.192	0.196	0.195	0.185	0.181	0.191	0.208	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.485 ± 0.229	0.402 ± 0.220	0.665 ± 0.321	0.0997 ± 0.153	0.425 ± 0.233	0.399 ± 0.220	2.02 ± 0.489	0.669 ± 0.279	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.15 ± 1.38	1.53 ± 1.28 U	0.305 ± 1.10 U	-0.138 ± 0.656	0.66 ± 0.760	1.07 ± 0.949	0.673 ± 0.821	0.371 ± 0.631	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-45 Upgradient												
	Sample Date	12/6/16	2/23/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.65	1.51	2.27	1.11	2.03	1.91	2.02	2.21	2.28	3.24	2.78	2.98	3.01
Calcium	mg/L	144	122	184	105	101	103	120	130	128	161 D	195	161 D	141 J
Chloride	mg/L	196	187	181 J	160	152	0.803	345 JHD	24.8	118	137	167	144	113
Fluoride	mg/L	0.0360 U	0.207	0.334	0.337 JH	0.174 J	0.274 JH	0.0960 U	0.131 JH	0.0360 U	0.0360 U	0.0621 UJ	0.101 J	0.100
Sulfate	mg/L	623 D	639 D	661	613 X	602 D	2.95 JH	770 JHD	120	662 D	707	874	698	619
pH - Field Collected	SU	5.41	5.17	3.98	5.62	5.13	5.66	5.82	5.60	5.59	5.70	5.03	5.59	5.85
Total dissolved solids	mg/L	1270	1300	1330	1350	1270	1250	1680 JH	1100	1190	741	1350	1320	1590
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000310 J	0.000400 J	0.00120 U	0.00120 U	0.000240 U	0.000348 J	0.000490 J	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000534 J	0.00216	0.00595	0.00123 U	0.00123 U	0.000346 J	0.00283	0.000618 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0185	0.0436	0.103	0.0128 J	0.0176 J	0.0114	0.0480	0.0142	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00261 U	0.000383 J	0.000921 J	0.000654 U	0.000654 U	0.000149 J	0.000408 J	0.000229 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000189 J	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00743	0.0152	0.0320	0.00403 J	0.00262 U	0.00313 J	0.0135	0.00272 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00506	0.00465	0.00828	0.00346 J	0.00351 J	0.00277	0.00376	0.00358	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.207	0.334	0.337 JH	0.174 J	0.274 JH	0.0960 U	0.131 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000571 J	0.00419	0.0117	0.000758 U	0.000758 U	0.000479 J	0.00482	0.000968 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.0329	0.0601	0.00238 U	0.0600	0.0639	0.0694	0.0935	0.0781	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000320 JX	0.0000263 U	0.0000263 U	0.0000300 J	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00105 J	0.00245	0.00372	0.00128 U	0.00128 U	0.000255 U	0.00115 J	0.000271 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.0147	0.0144	0.0174	0.0121	0.0123	0.00990	0.0136	0.0118	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000460 J	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	4.78 ± 0.890	4.29 ± 0.612	7.63 ± 0.795	3.29 ± 0.485	4.24 ± 0.671	4.34 ± 0.607	3.65 ± 0.553	5.07 ± 0.718	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.92 ± 1.19	4.59 ± 1.34	2.27 ± 1.19	1.42 ± 0.908	2.84 ± 1.15	1.83 ± 0.868	1.86 ± 0.827	1.66 ± 0.847	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-57 Upgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.19	3.24	3.17	2.67	3.09	3.08	2.98	3.48	4.49	2.81	3.23	4.14	5.97
Calcium	mg/L	349	362	413	--	290	327	337	393	409	401 D	477 D	479 D	622 J
Chloride	mg/L	70.6	76.2	89.6	130	158	311 D	12.5 JH	185	534 D	3770	119	841	3460
Fluoride	mg/L	3.62	3.32	2.84	2.27	3.42	3.43	0.0960 U	3.28	4.29	2.31	3.03	2.72	4.17
Sulfate	mg/L	2780 D	1980 DX	2090	2470 D	3080	3410 D	450 JH	3610	4260 D	5000	3570	4240	6510
pH - Field Collected	SU	6.73	6.08	5.13	6.63	6.37	6.72	6.60	6.70	6.63	6.35	6.20	6.19	6.49
Total dissolved solids	mg/L	4770	3780	3320	4060	5800	5920	850 JH	5850	7390	9750	6000	6700	15100
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00138 J	0.000630 J	0.000654 J	0.000561 J	0.00123 U	0.000480 J	0.000519 J	0.000486 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0311	0.0211	0.0208	0.0174	0.0164 J	0.0149	0.0128	0.0145	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000161 J	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000687 J	0.000525 U	0.000525 U	0.00262 U	0.000739 J	0.000816 J	0.00104 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000520 J	0.00232	0.000297 J	0.000449 J	0.000407 J	0.000748 J	0.000195 J	0.000322 J	NR	NR	NR	NR	NR
Fluoride	mg/L	3.62	3.32	2.84	2.27	3.42	3.43	0.0960 U	3.28	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000256 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.545	0.287 X	0.00238 U	--	0.533	0.649	0.671	0.733	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000300 J	0.0000263 U	0.0000580 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000385 J	0.000278 J	0.000255 U	0.00128 U	0.000329 J	0.000283 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00237 J	0.000664 J	0.000594 J	0.000561 J	0.00227 U	0.000612 J	0.000858 J	0.000697 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.592 ± 0.325	0.322 ± 0.157	0.519 ± 0.219	0.356 ± 0.176	0.273 ± 0.273	0.338 ± 0.221	0.255 ± 0.176	0.0986 ± 0.153	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.15 ± 0.895	2.31 ± 1.03	0.794 ± 0.818	2.86 ± 1.27	0.903 ± 0.843	0.786 ± 0.900	1.9 ± 0.894	1.73 ± 1.00	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-31 Downgradient												
	Sample Date	12/8/16	2/21/17	3/29/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.446	0.580	0.642	0.499	0.573	0.510	0.494	0.553	0.485	0.514	0.557	0.483	0.429
Calcium	mg/L	188	384 X	317	--	216	171	230	228	187	208 D	295 D	200 D	171 J
Chloride	mg/L	223 D	477 D	303 D	317	285 D	0.280 UDXF	0.347 U	288	253 D	256	322	267	272
Fluoride	mg/L	0.801	0.186 J	0.548	0.865	0.661	0.979 JHXF	0.0960 U	0.735 JH	0.839	0.694	0.791 U	0.784	1.00
Sulfate	mg/L	697 D	1130 D	768 D	875	782 D	1.17 JHDXF	0.160 JH	803	771 D	774	852	819	877
pH - Field Collected	SU	3.94	4.04	6.34	4.29	3.84	5.14	3.99	3.98	3.74	3.07	3.56	2.62	3.70
Total dissolved solids	mg/L	1470	2290	2430	1850	1730	1500	25.0 U	1890	1420	1390	1660	1620	1890
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000295 J	0.000301 J	0.00120 U	0.000527 J	0.000240 U	0.000559 J	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00151 J	0.0110	0.00834	0.00501	0.00363 J	0.00134 J	0.00556	0.00279	NR	NR	NR	NR	NR
Barium	mg/L	0.0167 J	0.0141	0.0198	0.0136	0.0127 J	0.0229	0.0129	0.0122	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00793 J	0.00851	0.00885	0.00814	0.00865 J	0.00593	0.00827	0.00857	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.0200 J	0.000663 J	0.000596 J	0.000525 U	0.00262 U	0.000890 J	0.000849 J	0.000760 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000440 J	0.0399	0.0623	0.0227	0.0173	0.0113	0.0302	0.0192	NR	NR	NR	NR	NR
Fluoride	mg/L	0.801	0.186 J	0.548	0.865	0.661	0.979 JHXF	0.0960 U	0.735 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000415 J	0.000223 J	0.000344 J	0.000758 U	0.000348 J	0.00233	0.000580 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.533	0.510	0.00238 U	--	0.572	0.484	0.615	0.590	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000360 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00163 J	0.00175 J	0.00125 J	0.00227 U	0.00162 J	0.00177 J	0.00155 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	2.46 ± 0.574	2.60 ± 0.473	1.44 ± 0.425	1.40 ± 0.338	1.40 ± 0.403	1.28 ± 0.341	1.36 ± 0.399	1.01 ± 0.323	NR	NR	NR	NR	NR
Radium-228	pCi/L	7.35 ± 1.59	8.16 ± 2.15	5.33 ± 1.47	5.85 ± 1.79	4.63 ± 1.23	4.44 ± 1.37	3.58 ± 1.22	4.96 ± 1.43	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-33 Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/26/17	8/29/17	10/10/17	4/5/18	10/30/18	4/10/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.940	1.02	1.05	0.987	1.09	1.01	1.03	1.11	0.990	0.791	1.13	1.18	1.18
Calcium	mg/L	564	600	553	--	563	558	567	531	552	385 D	631	553 D	573 J
Chloride	mg/L	735 D	679 D	731 D	690	692 D	693 D	125 JH	666	786	758	806	773 JLKD	756
Fluoride	mg/L	1.86	1.08	1.77	1.36	1.81	1.34	0.480 U	1.69	1.85	1.21	1.23	1.24 JLK	1.68
Sulfate	mg/L	1850 D	1670 D	1780 D	1710	1690 D	1710 D	3170 D	1640	1810	1740	1640	1690 JLKD	1620
pH - Field Collected	SU	6.51	5.90	4.91	6.52	6.15	5.71	6.49	6.49	6.33	6.26	5.98	5.18	6.30
Total dissolved solids	mg/L	4000	3990	4310	4410	3750	4070	3580	4320	3970	3320	2650 JLK	4040 JLK	4370
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.00120 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000246 U	0.00123 U	0.000257 J	0.00123 U	0.000279 J	0.000316 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0326	0.0318	0.0297	0.0268	0.0279	0.0274	0.0263	0.0264	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000709 J	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000734 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000611 J	0.00262 U	0.000525 U	0.00262 U	0.000525 U	0.00113 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000690 J	0.000433 J	0.000487 J	0.000435 J	0.000512 J	0.000731 J	0.000902 J	0.000554 J	NR	NR	NR	NR	NR
Fluoride	mg/L	1.86	1.08	1.77	1.36	1.81	1.34	0.480 U	1.69	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000758 U	0.000152 U	0.000758 U	0.000152 U	0.000157 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	--	0.194	0.181	0.255	0.176	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000720 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.00128 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0314	0.0356	0.0389	0.0368	0.0451	0.0495	0.0546	0.0342	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.00166 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	2.04 ± 0.439	1.14 ± 0.328	2.36 ± 0.522	1.81 ± 0.365	1.73 ± 0.428	1.55 ± 0.422	1.37 ± 0.394	2.23 ± 0.491	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.95 ± 1.16	3.52 ± 1.07	4.69 ± 1.33	3.24 ± 1.26	1.73 ± 0.902	4.11 ± 1.19	1.98 ± 1.01	2.99 ± 1.26	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
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L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-46 Downgradient												
	Sample Date	12/6/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.902	0.837	0.645	0.799	0.920	0.801	0.788	1.01	0.828	0.702	0.997	1.01	0.864
Calcium	mg/L	120	132	145	115	126	117	137	145	140	126 D	212 D	172 D	143 J
Chloride	mg/L	11.6	11.8	12.2	10.5	12.6	11.8	327 JHD	11.7	11.6	11.6	13.2	13.0	17.9
Fluoride	mg/L	1.51	1.38	1.03	1.59	2.25	2.34	0.460 JH	1.83	2.16	1.68	2.52	2.22	1.61 J
Sulfate	mg/L	700 D	692 D	608 D	677	0.0460 U	780 D	288 JHD	800	864 D	855	1030	1020	1180
pH - Field Collected	SU	3.60	3.55	2.10	3.57	2.96	3.54	3.21	3.20	3.15	3.00	2.85	2.62	3.10
Total dissolved solids	mg/L	1160	1040	926	1030	1270	1180	1170 JH	1390	1300	1220	1550	1500	1970
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00190 J	0.00227	0.00144 J	0.00196 J	0.00277 J	0.00253	0.00295	0.00290	NR	NR	NR	NR	NR
Barium	mg/L	0.0429	0.0356	0.0308	0.0307	0.0364	0.0317	0.0323	0.0331	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00381 J	0.00362	0.00340	0.00399 J	0.00459 J	0.00415	0.00462	0.00479	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00110 J	0.000988 J	0.00121 J	0.00120 J	0.00101 J	0.00133 J	0.00141 J	0.00136 J	NR	NR	NR	NR	NR
Chromium	mg/L	0.000942 J	0.00140 J	0.00104 J	0.00262 U	0.00262 U	0.00156 J	0.00191 J	0.00202 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.0303	0.0324	0.0329	0.0367	0.0387	0.0383	0.0412	0.0414	NR	NR	NR	NR	NR
Fluoride	mg/L	1.51	1.38	1.03	1.59	2.25	2.34	0.460 JH	1.83	NR	NR	NR	NR	NR
Lead	mg/L	0.0162	0.0134	0.0109	0.0144	0.0192	0.0201	0.0236	0.0257	NR	NR	NR	NR	NR
Lithium	mg/L	0.0646	0.000476 U	0.00238 U	0.0673	0.0749	0.0799	0.107	0.0863	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000255 U	0.000255 U	0.000255 U	0.00128 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0255	0.0266	0.0205	0.0247	0.0296	0.0257	0.0298	0.0283	NR	NR	NR	NR	NR
Thallium	mg/L	0.00293	0.00292	0.00235	0.00263 J	0.00314 J	0.00300	0.00335	0.00345	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.16 ± 0.701	1.69 ± 0.387	1.80 ± 0.448	1.2 0± 0.315	1.82 ± 0.420	1.40 ± 0.353	1.52 ± 0.375	1.99 ± 0.459	NR	NR	NR	NR	NR
Radium-228	pCi/L	4.98 ± 1.41	2.17 ± 1.48	2.96 ± 1.24	1.98 ± 0.957	4.39 ± 1.13	2.80 ± 1.05	2.28 ± 1.13	3.82 ± 1.15	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-60 Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.655	0.504	0.449	0.456	0.442	0.394	0.436	0.479	0.399	0.334	0.405	0.377	0.325
Calcium	mg/L	433	375	290	--	379	336	350	383	363	382 D	501 D	524 D	530 J
Chloride	mg/L	411 D	311 D	311 D	285	300 D	319 D	287 JHD	352	366 D	202	149 X	183	168
Fluoride	mg/L	0.0360 U	0.319	0.324	0.421	0.306	0.338 JH	0.0960 U	0.284 JH	0.22 J	0.239 J	0.187 UJ	0.231 J	0.188
Sulfate	mg/L	1480 D	999 D	1010 D	976 X	1020 D	818 D	760 JHDX	759	801 D	906	968	1320	1280
pH - Field Collected	SU	5.82	5.38	4.21	5.75	6.07	6.44	5.93	5.97	6.09	6.42	5.93	6.23	6.61
Total dissolved solids	mg/L	2790	2340	2020	2110	2510	2120	1450 JH	2300	1860	1910	2010	2820	3180
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000861 J	0.000592 J	0.000366 J	0.00123 U	0.000367 J	0.000381 J	0.000266 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0702	0.0491	0.0465	0.0450	0.0469	0.0454	0.0490	0.0503	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000774 J	0.000778 J	0.000786 J	0.000695 J	0.000734 U	0.000359 J	0.000608 J	0.000699 J	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000743 J	0.000525 U	0.000525 U	0.00262 U	0.000690 J	0.00204 J	0.00100 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.115	0.0542	0.0423	0.0389	0.0210	0.00896	0.0166	0.0183	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.319	0.324	0.421	0.306	0.338 JH	0.0960 U	0.284 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000216 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	--	0.0305	0.0179 J	0.0635	0.0314	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000370 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000726 J	0.000622 J	0.000715 J	0.00148 J	0.00162 J	0.00124 J	0.00103 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00168 J	0.00132 J	0.00981	0.0390	0.0244	0.00761	0.00745	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000425 J	0.000412 J	0.000403 J	0.00166 U	0.000332 U	0.000372 J	0.000387 J	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.01 ± 0.578	2.29 ± 0.421	2.74 ± 0.572	1.71 ± 0.378	0.914 ± 0.341	1.57 ± 0.381	1.34 ± 0.378	4.61 ± 0.650	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.57 ± 1.15	2.62 ± 1.04	0.838 ± 0.826	0.269 ± 0.713	2.24 ± 1.02	0.701 ± 0.850	1.72 ± 0.940	2.48 ± 1.60	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-49 Upgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.24	3.28	3.28	3.03 X	3.04 J	2.76	2.85	2.87	2.71	2.70	2.05	2.58	2.47
Calcium	mg/L	130	146	173	113	127	120	145	147	135	117 D	154 D	127 D	114 J
Chloride	mg/L	295 D	383 D	372 D	326	414 D	448 D	459 D	424	446 D	408	449	429	452
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	0.697	0.719	0.749	0.793	0.894
Sulfate	mg/L	211 D	232 D	234 D	194	218 D	227	265 D	219 X	237	237	240	205	217
pH - Field Collected	SU	7.19	7.12	7.12	7.02	7.06	6.16	7.05	6.89	7.12	7.12	7.31	6.43	7.15
Total dissolved solids	mg/L	1250	1240	1190	1100	1450	1440	1490	1730	1310	1210	1290	1380	1240
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00173 J	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000676 J	0.000729 J	0.00123 U	0.00123 U	0.000544 J	0.000538 J	0.000478 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0607	0.0575	0.0503	0.0554	0.0783	0.0721	0.0788	0.0735	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000859 J	0.000572 J	0.00262 U	0.00262 U	0.000963 J	0.000997 J	0.00113 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00102 J	0.00109 J	0.00124 J	0.00155 J	0.00133 J	0.00153 J	0.00155 J	0.00146 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000155 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0137 J	0.0341	0.0295	0.0427	0.0252	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000690 J	0.0000263 U	0.0000490 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00779 J	0.00846	0.00875	0.0106	0.00908 J	0.00938	0.0107	0.0111	NR	NR	NR	NR	NR
Selenium	mg/L	0.00992 J	0.00597	0.00479	0.00521 J	0.00370 J	0.00235	0.00188 J	0.00141 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.198 ± 0.197	0.615 ± 0.272	0.747 ± 0.323	0.195 ± 0.167	0.294 ± 0.192	0.241 ± 0.193	0.159 ± 0.191	0.746 ± 0.274	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.1 ± 0.907	-1.37 ± 1.37	0.854 ± 0.724	1.08 ± 1.72	2.23 ± 0.949	0.658 ± 0.636	0.812 ± 0.604	1.43 ± 0.898	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-51 Upgradient												
	Sample Date	12/8/16	2/22/17	3/28/17	5/3/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.512	0.517	0.473	0.565	0.512	0.525	0.453	0.509	0.465	0.347	0.489	0.648	0.627
Calcium	mg/L	267	292	322	266	261 X	232	236	256	246	149 D	328	336 D	334 J
Chloride	mg/L	403 D	331 D	414 D	447	424 D	455 D	384 D	375	395 D	301	559	574 D	555
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	0.305 J	0.291 J	0.329 J	0.405 J	0.470
Sulfate	mg/L	293 D	330 D	348 D	359	342 D	330 D	314 D	302	354 D	260	428	405 D	439
pH - Field Collected	SU	6.59	6.51	6.48	6.56	6.40	5.48	6.38	6.20	6.44	6.70	6.66	5.73	6.43
Total dissolved solids	mg/L	1650	1650	1490	1980	1530	1580	1390	1650	1320	916	1890	2150	2010
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000953 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000412 J	0.000390 J	0.00123 U	0.000392 J	0.000344 J	0.000395 J	0.000418 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0655	0.0563	0.0517	0.0512	0.0534	0.0520	0.0520	0.0564	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000212 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000941 J	0.000525 U	0.00262 U	0.000657 J	0.000874 J	0.00113 J	0.00133 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000350 U	0.0000770 J	0.0000920 J	0.000350 U	0.000124 J	0.0000940 J	0.0000800 J	0.000108 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0322	0.0874	0.0790	0.0958 JX	0.0718	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.000199 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.09 ± 0.376	0.104 ± 0.122	0.618 ± 0.247	0.197 ± 0.145	0.328 ± 0.195	0.0847 ± 0.186	4.83 ± 0.763	0.682 ± 0.309	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.312 ± 0.688	1.09 ± 1.37	2.32 ± 1.45	-1.26 ± 1.37	-0.799 ± 0.928	1.57 ± 0.786	0.762 ± 0.706	0.963 ± 0.954	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-52 Downgradient												
	Sample Date	12/7/16	2/21/17	3/28/17	5/2/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.66	2.11	1.63	1.51	1.33	1.43	1.46	1.71 X	1.95	1.54	1.46 X	1.65	2.05
Calcium	mg/L	169	181	189	--	145	140	162	168	175	153 D	195 DX	171 D	174 J
Chloride	mg/L	331 D	377 D	323 DX	320	326 D	343 D	417 D	355	360 D	326	336	320	433
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	0.720	0.710	0.831	0.808	0.908
Sulfate	mg/L	277 D	318 D	299 DX	290	287 D	292 D	171 D	289	278 D	292	268	288 D	315
pH - Field Collected	SU	7.01	6.47	6.91	6.94	6.87	5.87	6.81	6.63	6.79	6.76	6.91	6.00	6.83
Total dissolved solids	mg/L	1290	1380	1100	1250	1280	1250	1250	1220	1240	1210	1170	1270	1470
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000565 J	0.000398 J	0.000425 J	0.000427 J	0.000392 J	0.000412 J	0.000448 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0646	0.0583	0.0519	0.0483	0.0527	0.0558	0.0565	0.0616	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000153 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000525 U	0.000525 U	0.000525 U	0.000841 J	0.000860 J	0.00123 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00188 J	0.00233	0.00112 J	0.00119 J	0.00211	0.00183 J	0.00159 J	0.00189 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000292 J	0.000152 U	0.000152 U	0.000163 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0471	0.000476 U	--	0.0616	0.0605	0.0827	0.0588	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.000234	0.0000263 U	0.0000263 U	0.0000263 U	0.0000810 J	0.0000263 U	0.0000263 UX	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.00128 J	0.00115 J	0.00102 J	0.000911 J	0.000865 J	0.000843 J	0.000914 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.71 ± 0.465	0.608 ± 0.289	0.296 ± 0.169	0 ± 0.150	0.435 ± 0.241	0.449 ± 0.196	0.194 ± 0.194	0.704 ± 0.319	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.65 ± 1.12	0.744 ± 0.833	0.0645 ± 0.649	0.53 ± 1.10	0.928 ± 0.784	1.16 ± 0.867	0.716 ± 0.767	1.54 ± 1.22	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-53 Downgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/2/17	6/21/17	7/26/17	8/30/17	10/11/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.50	1.38	1.55	1.54	1.47	1.45	1.36	1.45	1.60	1.61	1.42	1.36	1.43
Calcium	mg/L	134	105	156	NR	94.1	97.0	99.0	113	113	111 D	116	123 D	114 J
Chloride	mg/L	383 D	336 D	315 D	322	335 D	329 X	341	313	361	350	354	342	381
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	0.392 J	0.265 J	0.270 J	0.352 J	0.428
Sulfate	mg/L	283 D	267 D	238 D	241	236 D	234 X	227	214	249	236	224	213	244
pH - Field Collected	SU	6.80	6.63	6.54	6.56	6.67	6.69	6.62	6.50	6.67	6.65	6.60	5.60	6.67
Total dissolved solids	mg/L	1390	1250	1160	1180	1150	1220	1150	1140	1160	1140	1150	1250	1160
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000284 J	0.000266 J	0.000274 J	0.000276 J	0.000246 U	0.000246 U	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0692	0.0633	0.0633	0.0623	0.0597	0.0638	0.0541	0.0617	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000701 J	0.000525 U	0.000525 U	0.000525 U	0.000557 J	0.000906 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000356 J	0.000140 J	0.000135 J	0.000165 J	0.000137 J	0.000150 J	0.000163 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0279	0.0816	0.000476 U	NR	0.0931	0.104	0.125	0.109	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000780 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000470 JX	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000290 J	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.306 ± 0.261	0.909 ± 0.363	0.117 ± 0.211 U	0.519 ± 0.221	0.558 ± 0.232	0.385 ± 0.244	2.76 ± 0.582	0.451 ± 0.270	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.09 ± 1.24	2.33 ± 1.13	1.81 ± 1.61	0.906 ± 1.02	-0.0622 ± 0.583	1.9 ± 1.24	1.44 ± 0.713	0.919 ± 0.853	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-54 Downgradient												
	Sample Date	12/8/16	2/23/17	3/28/17	5/2/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.24	1.16	1.35	1.26	1.14	1.26	1.16	1.28	1.26	1.30	1.38	1.50	1.23
Calcium	mg/L	114	106	160	--	103	102	95.8	113	111	98.2 D	117	117 D	118 J
Chloride	mg/L	345 D	350 D	353 D	344	355 D	354 D	339 D	328	382	356	385	368	380
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	0.742	0.643	0.711	0.773	0.861
Sulfate	mg/L	308 D	312 D	315 D	312	304 D	305 D	298 D	287	309	283	309	341 D	443
pH - Field Collected	SU	6.98	6.78	6.92	6.89	6.88	6.91	6.79	6.69	6.86	6.85	6.75	5.60	6.76
Total dissolved solids	mg/L	1370	1430	1310	1310	1410	1320	1360	1500	1230	1240	1470	1470	1570
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000369 J	0.000898 J	0.000351 J	0.000354 J	0.000484 J	0.000324 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0631	0.0564	0.0611	0.0537	0.0543	0.0593	0.0471	0.0558	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000162 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000657 J	0.00186 J	0.000525 U	0.000525 U	0.000693 J	0.000765 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000420 J	0.000212 J	0.00199 J	0.000253 J	0.000260 J	0.000532 J	0.000334 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	0.742	0.643	0.711	0.773	0.861
Lead	mg/L	0.000758 U	0.000152 U	0.000862 J	0.000152 U	0.000152 U	0.000241 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0452	0.00238 U	--	0.0595	0.0599	0.0712	0.0608	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000620 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000447 J	0.000367 J	0.000377 J	0.000342 J	0.000352 J	0.000260 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.88 ± 0.339	0.878 ± 0.358	0.546 ± 0.213	0.217 ± 0.217	0.433 ± 0.249	0.313 ± 0.254	0.926 ± 0.324	0.42 ± 0.205	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.12 ± 1.11	1.94 ± 1.01	0.429 ± 0.781	0.574 ± 1.41	0.451 ± 0.660	0.766 ± 1.29	1.48 ± 0.968	1.17 ± 0.827	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

APPENDIX F SITE HYDROGEOLOGY AND CROSS-SECTIONS

EXCERPTS FROM LOCATION RESTRICTIONS DEMONSTRATION DATED OCTOBER 2018

2.1 SITE DESCRIPTION

CPS Energy owns and operates the Calaveras Power Station located southeast of San Antonio in Bexar County, Texas. Within this power station, there are two coal-fired plants (J.T. Deely Power Plant and J.K. Spruce Power Plant) that generate CCR that are subject to the CCR Rule. A General Site Location Map is provided as **Figure 1**.

CPS Energy has identified five onsite CCR Units:

1. Fly Ash Landfill (FAL);
2. Evaporation Pond (EP);
3. Sludge Recycle Holding (SRH) Pond;
4. North Bottom Ash Pond (BAP); and
5. South BAP.

For the purposes of this document, the FAL and EP are termed the Northern CCR Units and the SRH Pond and BAPs are termed the Southern CCR Units. The CCR Unit locations are shown in **Figure 2**.

2.2 SITE-WIDE GEOLOGY

According to the Bureau of Economic Geology (BEG) *Geologic Atlas of Texas San Antonio Sheet*, the geology in the area of Calaveras Power Station consists of the Carizzo Sand and the Wilcox Group. According to the United States Geological Survey (USGS), the Carizzo Sand consists of medium- to coarse-grained sandstone, with finer grained material towards the top of the formation and the Wilcox Group consists mostly of mudstone, with various amounts of sandstone, lignite, and ironstone concretions. Information presented in Section 2.2 and the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017).

2.2.1 Northern CCR Units

The stratigraphic sequence is generally characterized by approximately 8 feet to 32 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by a clayey/silty to well-sorted sand (groundwater-bearing unit) approximately 5 to over 25 feet thick, underlain by grey to brown, high plasticity clay (lower confining unit). The ground water bearing unit is at its greatest observed thickness near the southwest corner of the EP, and thins towards the northwest (northwest of the FAL). The lower confining unit, generally observed at a depth between approximately 471 feet to 478 feet above mean sea level (msl) was not observed at monitor wells JKS-47 and JKS-60 (drilled to depths of 462 feet and 466 feet above msl, respectively). This possibly suggests the presence of erosional channels or gradational changes in lithology between JKS-45 and JKS-47, and JKS-46 and JKS-60. Interbedded sands and clays were observed within both the unconsolidated material and ground water

bearing unit in monitor wells JKS-57, JKS-58, and JKS-61 through JKS-64. A high plasticity clay interval was observed above the groundwater-bearing unit at monitor well JKS-45, but appears to be discontinuous as it was not encountered during the installation of any other monitor wells in the vicinity of the Northern CCR Units. A CCR Well Network Location Map is provided as **Figure 3**.

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-45, JKS-58, JKS-62, and JKS-64. The laboratory Unified Soil Classification System (USCS) results classify the high plasticity clay unit (above the groundwater-bearing unit) and the lower confining unit as fat clay (CH). Sandy lean clay (CL) and clayey sand (SC) USCS results from JKS-58 and JKS-62, respectively, suggest that the contact between the groundwater bearing unit and lower confining unit is gradational in some areas. The laboratory USCS results classify the groundwater-bearing unit from a silty sand (SM) at JKS-45 to a clayey sand (SC) at JKS-64. Hydraulic conductivities from cohesive samples collected from the lower confining unit were reported on the order of 10^{-7} to 10^{-8} centimeters per second (cm/sec), which is within the range of values for clay.

2.2.2 Southern CCR Units

The stratigraphic sequence is generally characterized by approximately 6 feet to 18 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by clayey/silty sand to moderately-sorted sand (groundwater-bearing unit) approximately 9.5 to 21.5 feet thick, underlain by bedrock (sandstone). Discontinuous silts and interbedded clay material were observed within the groundwater-bearing unit in monitor wells JKS-48, JKS-49, and JKS-51 through JKS-55. A CCR Well Network Location Map is provided as **Figure 3**.

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-48, JKS-53, and JKS-54. The laboratory USCS results classify the groundwater-bearing unit from a silty clayey sand (SC-SM) at JKS-54 to a clayey sand (SC) at JKS-48 and JKS-53. Hydraulic conductivities from cohesive samples collected from the lower confining unit were reported on the order of 10^{-6} to 10^{-8} (cm/sec).

2.3 SITE-WIDE HYDROGEOLOGY

Based on water level measurements and stratigraphic information collected during the advancement of the soil borings, ERM has provided an interpretation of the confining nature of the underlying stratigraphy. Information presented in the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017).

2.3.1 Northern CCR Units

Groundwater in the vicinity of the Northern CCR Units appears to flow towards Lake Calaveras (southeast to east).

The groundwater-bearing unit in the vicinity of the Northern CCR Units appears to exhibit unconfined conditions based on the potentiometric surface of groundwater in relation to the first encountered water during drilling and the lack of continuous confining units (i.e., clay, sandy clay, or silty clay). The potentiometric surface is within approximately three feet of the first water encountered during drilling, and no continuous confining units are observed. The minimal change in elevation and the stratigraphic information indicates that a significant, laterally continuous confining layer is not present above the groundwater-bearing unit in the northern area. However, a laterally continuous lower confining unit was observed in multiple borings below the groundwater bearing unit.

2.3.2 Southern CCR Units

Groundwater in the vicinity of the Southern CCR Units appears to flow radially toward the lake and adjacent channel and away from a groundwater high represented by the water level elevation measured in JKS-49.

The groundwater-bearing unit in the vicinity of the Southern CCR Units appears to exhibit semi-confined conditions with confining units (i.e., clay, sandy clay, or silty clay) present in all the wells except JKS-49 and JKS-56. The potentiometric surface is within approximately 4 feet to 11 feet of where water was first encountered during drilling for all wells except JKS-56, indicative of groundwater under hydraulic head pressure with semi-confined conditions. JKS-56 appears to demonstrate unconfined conditions, due to the approximately 0.5 foot difference between the first encountered water during drilling and the potentiometric surface. There is a bedrock unit underlying the groundwater-bearing unit in the southern area.

3.1 PLACEMENT ABOVE THE UPPERMOST AQUIFER

The CCR Rule defines an aquifer as "a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells or springs". The CCR Rule also defines uppermost aquifer as "the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season".

ERM obtained site-specific information from engineering assessments and site investigations to evaluate whether the bases of the CCR Units are located more than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer. Information reviewed included:

- *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report, Calaveras Power Station* (ERM, January 2018); and
- *Groundwater Monitoring System, CPS Energy Calaveras Power Station* (ERM, October 2017)

The results of this evaluation are presented below for the individual CCR Units at the Calaveras Power Station.

3.1.1 Fly Ash Landfill (FAL)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the FAL ranges from 514 to 503 feet above msl. The first groundwater beneath the FAL was encountered during well drilling at approximately 483 feet above msl, and static water levels range from 478 to 489 feet above msl based on current and historical water level data. A stratigraphic cross section (Section A-A') depicting the pertinent elevations is provided as **Figure 4**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of fat clay, which typically has a hydraulic conductivity in the 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the FAL is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.2 *Evaporation Pond (EP)*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the EP ranges from 497 to 500 feet above msl. The first groundwater beneath the EP was encountered during well drilling at approximately 486 feet above msl, and static water levels range from 479 to 484 feet above msl based on current and historical water level data. A stratigraphic cross section (Section C-C') depicting the pertinent elevations is provided as **Figure 5**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of interbedded sandy clay, which typically has a hydraulic conductivity in the 10^{-7} to 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the EP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.3 *Sludge Recycle Holding (SRH) Pond*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the SRH Pond is 492 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 487 feet above msl based on available water level data, the first groundwater beneath the SRH Pond was encountered during well drilling at approximately 476 feet above msl. A stratigraphic cross section (Section D-D') depicting the pertinent elevations is provided as **Figure 6**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the SRH Pond is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer. Note that the first groundwater encountered in JKS-51 is perched water and not in hydraulic connection with the deeper, laterally continuous aquifer.

3.1.4 *North Bottom Ash Pond (BAP)*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the North BAP was encountered during well drilling ranging from 480 feet above msl in the south and 483.5 feet above msl in the north. A stratigraphic cross section (Section F-F') depicting the pertinent elevations is provided as **Figure 7**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, although portions of the North BAP are unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer, the base of the

northern portion of the North BAP is less than 5 feet above the uppermost aquifer.

3.1.5 South Bottom Ash Pond (BAP)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Stratigraphic cross sections (Section D-D' and Section F-F') depicting the pertinent elevations are provided as **Figure 6** and **Figure 7**, respectively. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the South BAP was encountered during well drilling at approximately 476 feet above msl. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the South BAP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

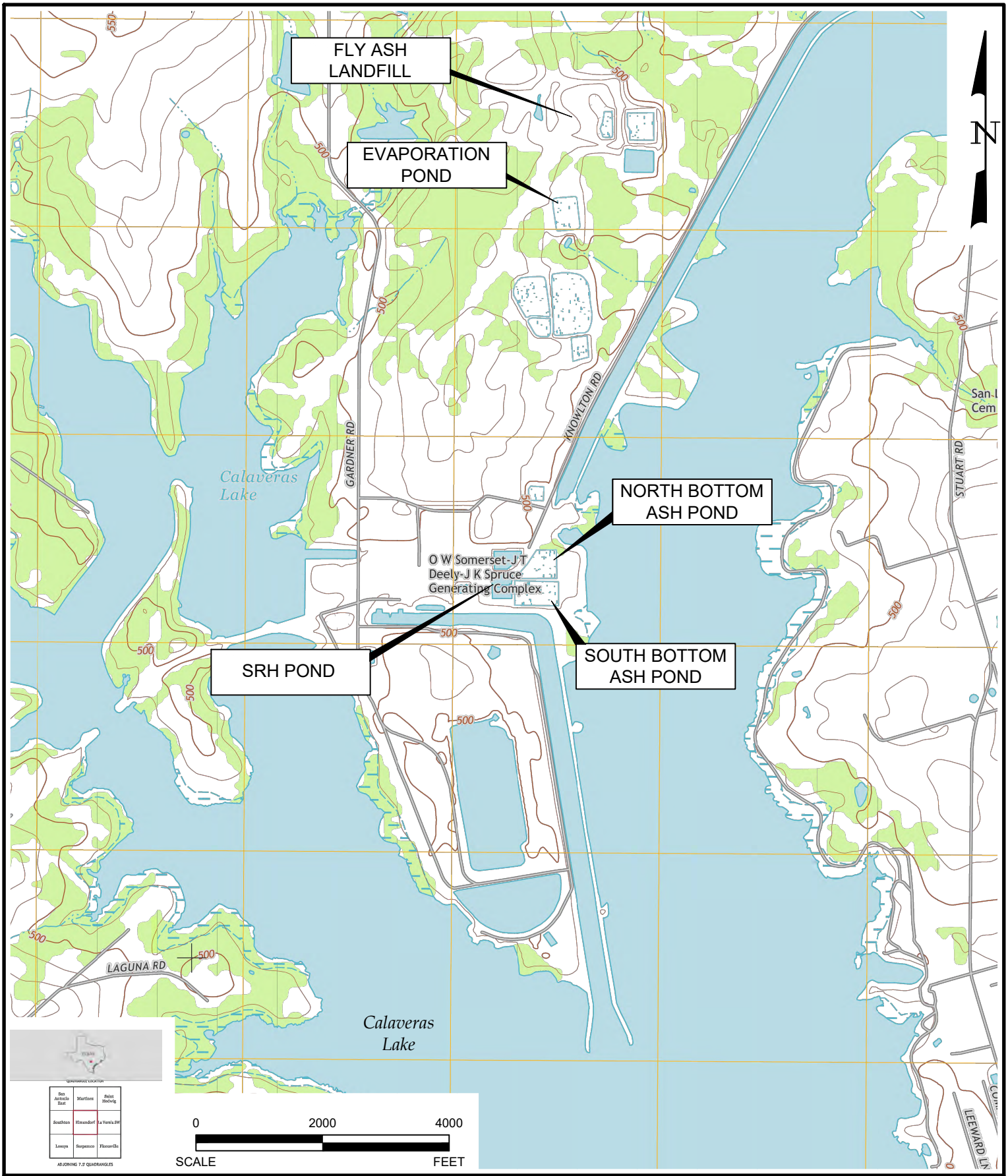
Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	7/25/2016	SCALE:	AS SHOWN	REVISION:	1
W.O.NO.:	K:\GIS\CPS\Calaveras\MXD\0337367_CPSCalaveras_SiteLoc.mxd				

FIGURE 1
GENERAL SITE LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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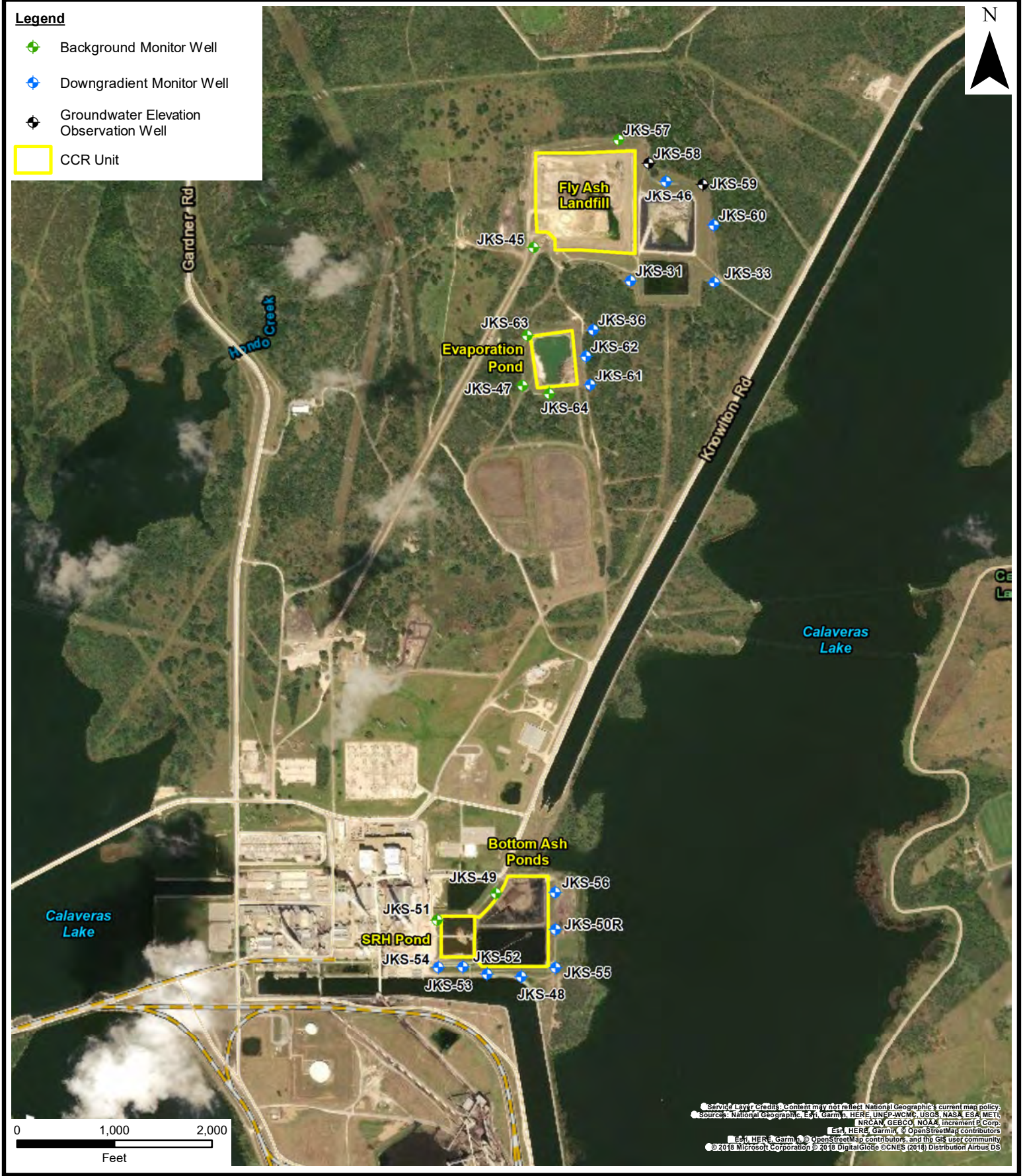
FIGURE 2
CCR UNIT LOCATIONS

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393



Environmental Resources Management

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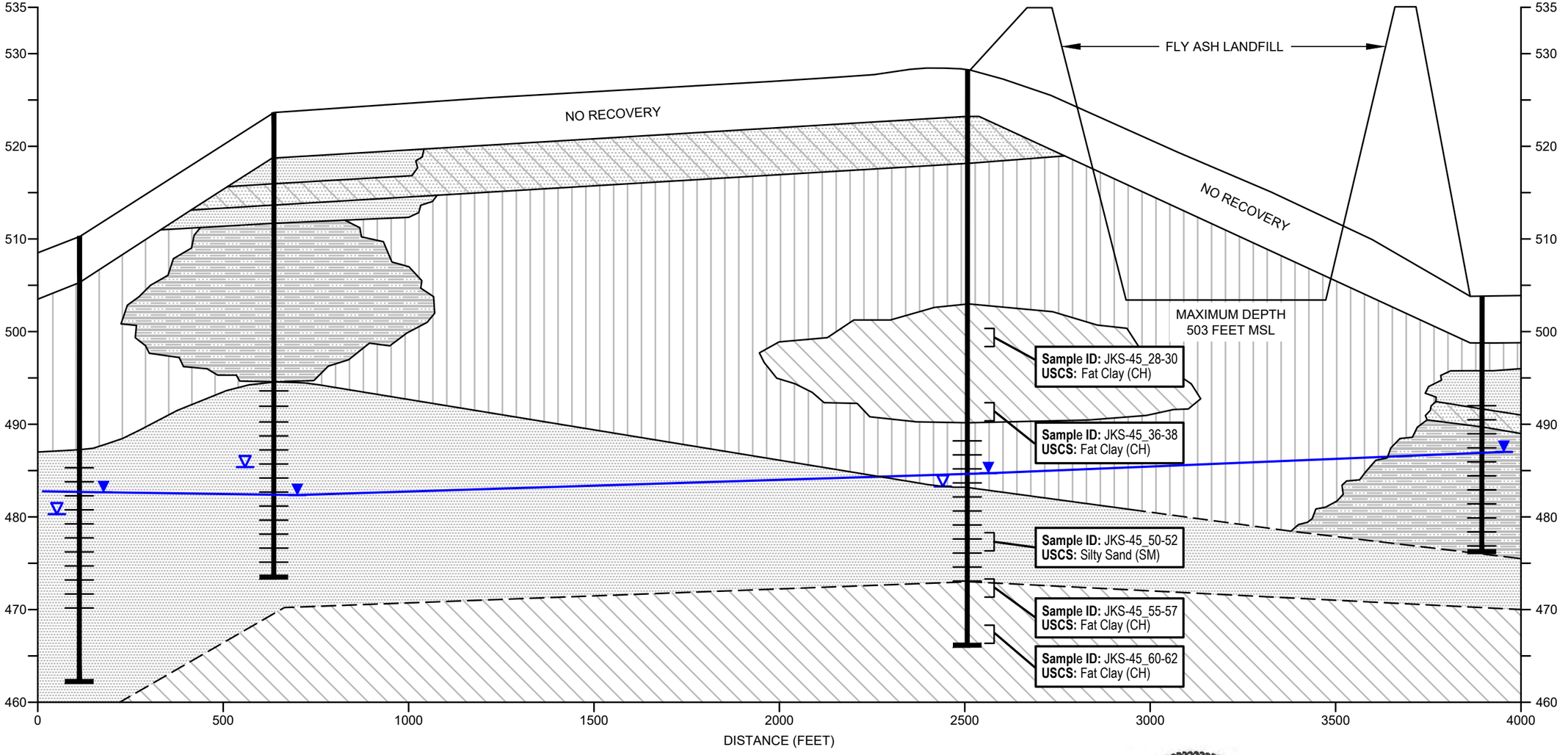
W.O.NO.:	P:\Projects\0366643 CPS Energy Calaveras CCR Well Network.WZ\GIS\MXD\HydroInv\0337367_CPSCalv_WellsLocs2.mxd				

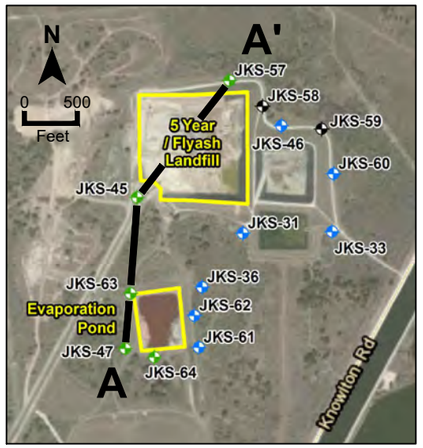
FIGURE 3
CCR WELL NETWORK LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

A SOUTHWEST — JKS-47 — JKS-63 — JKS-45 — JKS-57 — NORTHEAST A'





LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
12/13/2017

10'
VERTICAL
0
300'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 4
Stratigraphic Cross Section A-A'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.:
DATE: 9/17/2018	SCALE: AS SHOWN	REV.:

W.O.NO.: T:\DWG\AutoCAD\dwg\0337367\0337367_xsecs.dwg, 9/17/2018 12:14:56 PM

ERM-Southwest, Inc. TX PE Firm No. 2393

C SOUTHWEST — JKS-63 — JKS-61 — NORTHEAST C'

EVAPORATION POND

NO RECOVERY

500 FEET MSL

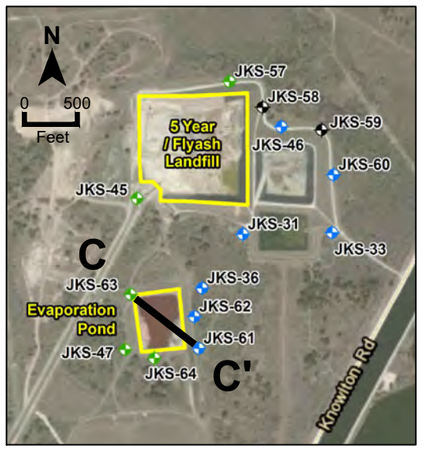
497 FEET MSL

ELEVATION (FEET, MSL)

525 520 515 510 505 500 495 490 485 480 475 470 465

0 100 200 300 400 500 600 700 800 900 1000

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

10' VERTICAL
0 100' HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 5
Stratigraphic Cross Section C-C'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.:
DATE: 9/17/2018	SCALE: AS SHOWN	REV.:

W.O.NO.: T:\DWG\AutoCAD\dwg\0337367\0337367_xsecs.dwg, 9/17/2018 12:14:57 PM

ERM

D

NORTHWEST

JKS-51

SRH POND

MAXIMUM DEPTH 492 FEET MSL

SOUTH BOTTOM ASH POND

MAXIMUM DEPTH 489 FEET MSL

JKS-48

NO RECOVERY

D'

SOUTHEAST

ELEVATION (FEET, MSL)

495
490
485
480
475
470
465

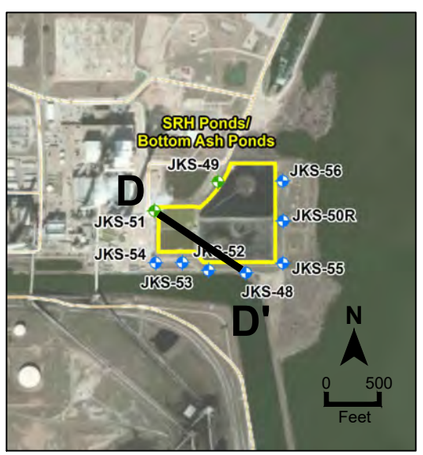
Sample ID: JKS-48_10-12.5
USCS: Clayey Sand (SC)

Sample ID: JKS-48_15-16.5
USCS: Sandy Lean Clay (CL)

Sample ID: JKS-48_19-20
USCS: Clayey Sand (SC)

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, SILT, AND CLAY
- BEDROCK (SANDSTONE)

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

VERTICAL 5'
HORIZONTAL 0 100'

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 6
Stratigraphic Cross Section D-D'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.: WZ
DATE: 9/17/2018	SCALE: AS SHOWN	REV.: 1

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ERM-Southwest, Inc. TX PE Firm No. 2393

F

SOUTH

JKS-55

JKS-50R

JKS-56

F'

NORTH

SOUTH BOTTOM ASH POND

NORTH BOTTOM ASH POND

NO RECOVERY

NO RECOVERY

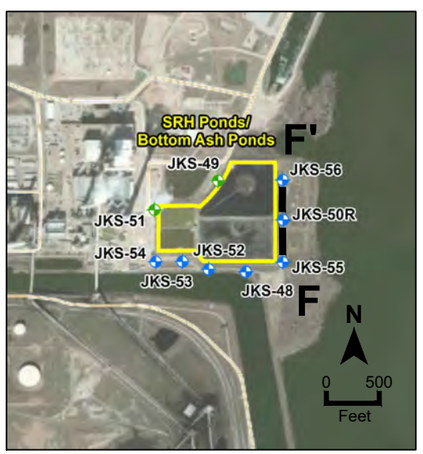
MAXIMUM DEPTH 488 FEET MSL

ELEVATION (FEET, MSL)

495
490
485
480
475
470
465

0
100
200
300
400
500
600
700

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, AND CLAY
- BEDROCK (SANDSTONE)
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/8/2018

5'
VERTICAL
0
100'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 7
Stratigraphic Cross Section F-F'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: EFC	CHKD.: WZ
DATE: 9/17/2018	SCALE: AS SHOWN	REV.: 1

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ERM

APPENDIX G STRUCTURAL STABILITY AND SAFETY FACTOR ASSESSMENTS

Environmental Resources Management

CityCentre Four
840 W. Sam Houston Pkwy N.
Suite 600
Houston, Texas 77024
(281) 600-1000
(281) 600-1001 (Fax)

October 17, 2016

Mr. Michael Malone
CPS Energy
145 Navarro, Mail Drop 100406
San Antonio, Texas 78296

Project No. 0352436

Subject: Structural Stability and Safety Factor Assessments
Calaveras Power Station
San Antonio, Texas

Dear Mr. Malone:

Environmental Resources Management Southwest, Inc. (ERM) is pleased to provide this review of structural stability and safety factor assessments performed at the Calaveras Power Station, to assist CPS Energy in complying with Title 40, Code of Federal Regulations, Part 257 (40 CFR §257), Subpart D Coal Combustion Residual (CCR) Rules.

The Calaveras Power Station has five CCR surface impoundments: the North and South Sludge Recycle Holding (SRH) Ponds, the North and South Bottom Ash Ponds (BAPs), and the Evaporation Pond (EP). All ponds were constructed as diked impoundments. The SRH Ponds were constructed as a single impoundment with a divider wall that separates the impoundment into the North and South Ponds. A gate present in the divider wall is closed during normal operating procedures, but can be opened. The North and South BAPs share a common embankment that separates the ponds, and are immediately east of the SRH Pond. Only one BAP is typically in operation at one time. These four ponds are located east of the main Plant site. The EP is approximately a mile north of the main plant, and receives boiler chemical cleaning wastes. While this material is not considered CCR under the regulation, the EP was originally constructed as a fly ash landfill in 1990, and then converted to a fly ash impoundment in 1996. It currently contains solids that are six inches to two feet below the top of the impoundment.

40 CFR §257.73(d) requires that facilities conduct initial and periodic structural stability assessments for CCR surface impoundments to document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. Table 1 provides a summary of the requirements within the regulation, and the relevant information for each surface impoundment.

Factors of safety were calculated by Raba Kistner Consultants, Inc. (RKCI) in May 2014. These assessments were provided in a report entitled "*Geotechnical Engineering Study for Ash Pond Berms – Spruce/Deely Generation Units, San Antonio, Texas.*" ERM reviewed the information in these reports to evaluate whether factors of safety met the limits set forth in 40 CFR §257.73(e). All but one embankment evaluated by RKCI met the safety factor limits. The single non-complying safety factor was for the exterior slope of the northwestern berm on the North BAP, identified as cross-section or Embankment G. The steady-state safety factor for Embankment G was calculated at 1.2, and 1.4 on a reanalysis using a deeper failure surface. The minimum required safety factor for steady-state conditions is 1.5.

The RKCI report indicated that slopes used in the calculation for Embankment G were based on design drawings and field observations, not actual surveys. CPS Energy therefore engaged the services of a land surveyor (Pape-Dawson Engineers, Inc.) to collect measurements in two locations along Embankment G. The results of this survey, and the original RKCI soil data, were provided to HTS, Inc. Consultants (HTS), a geotechnical consulting firm in Houston, Texas. HTS recalculated the steady-state factor of safety utilizing the actual survey data. The calculated safety factors for both slopes were greater than 4. The letter report from HTS is included in Attachment 1.

Based on our evaluation of the available information for the impoundments, the structural stability and safety factor assessments meet the requirements of 40 CFR §257.73(d) and (e).

Sincerely,

Environmental Resources Management

Chris Cunningham, P.E.

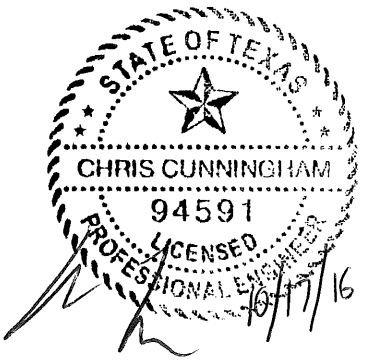

Table 1
Attachment 1

TABLE 1
Summary of Impoundment Requirements

Regulatory Citation	Requirement	Sludge Recycle Holding Ponds	Bottom Ash Ponds	Evaporation Pond
(d)(1)(i)	Stable foundations and abutments	Based on calculated factors of safety, foundations and abutments are stable.	Based on calculated factors of safety, foundations and abutments are stable.	Based on calculated factors of safety, foundations and abutments are stable.
(d)(1)(ii)	Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown	Slopes are vegetated with a continuous, maintained grass cover and inspected regularly for evidence of erosion.	Slopes are vegetated with a continuous, maintained grass cover and inspected regularly for evidence of erosion.	Slopes are vegetated with a continuous, maintained grass cover and inspected regularly for evidence of erosion.
(d)(1)(iii)	Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit	Based on geotechnical analysis and current slope conditions, it is likely that the dikes were mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit. Construction records documenting this are not available.	Based on geotechnical analysis and current slope conditions, it is likely that the dikes were mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit. Construction records documenting this are not available.	Based on geotechnical analysis and current slope conditions, it is likely that the dikes were mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit. Construction records documenting this are not available.
(d)(1)(iv)	Vegetated slopes of dikes and surrounding areas not to exceed a height of six inches above the slope of the dike	Grass on slopes is regularly mowed to maintain height below six inches.	Grass on slopes is regularly mowed to maintain height below six inches.	Grass on slopes is regularly mowed to maintain height below six inches.
(d)(1)(v)(A)	All spillways must be either: (1) Of non-erodible construction and designed to carry sustained flows; or (2) Earth- or grass-lined and designed to carry short-term, infrequent flows at nonerosive velocities where sustained flows are not expected.	Overflow spillways are concrete-lined. Regular discharge is via pumps through steel piping.	Ponds discharge via steel piping for regular and overflow discharges.	Not applicable. There are no outfalls for the pond.
(d)(1)(v)(B)	Spillways must adequately manage flow during and following the peak discharge from the required design storm flow.	Inflow during a storm is limited to direct precipitation. Sufficient headboard is maintained to capture design storm flow without requiring discharge.	Inflow during a storm is limited to direct precipitation. Sufficient headboard is maintained to capture design storm flow without requiring discharge.	Inflow during a storm is limited to direct precipitation. Sufficient headboard is maintained to capture design storm flow without requiring discharge.
(d)(1)(vi)	Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit must maintain structural integrity	Not applicable. There are no hydraulic structures underlying the pond.	Steel pipes acting as outfalls are regularly inspected to verify no erosion or damage.	Not applicable. There are no hydraulic structures underlying the pond.
(d)(1)(vii)	Maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.	Toe of embankments are at or above pool elevation of Calaveras Lake, which is maintained artificially. Therefore, no rapid drawdown or low pool conditions are likely.	Toe of embankments are at or above pool elevation of Calaveras Lake, which is maintained artificially. Therefore, no rapid drawdown or low pool conditions are likely.	Toe of embankments are at or above pool elevation of Calaveras Lake, which is maintained artificially. Therefore, no rapid drawdown or low pool conditions are likely.

HTS, Inc. Consultants
416 Pickering Street, Houston, TX 77091
www.htshouston.com

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July 20, 2016

ERM, Inc.
840 W. Sam Houston Parkway N.
Suite 600
Houston, Texas 77024

Attn: Mr. Chris Cunningham P.E.

Re: Letter Report
Steady State Slope Stability Analysis
Ash Pond Berms - Spruce/Deely Generation Units
San Antonio, Texas

HTS Project No.: 16-S-303

Dear Mr. Cunningham:

This letter provides results of the slope stability analyses performed on the 2 sections provided by ERM, Inc. The original geotechnical investigation (report dated May 7, 2014) was performed by Raba Kistner Consultants (RKC). HTS was requested to perform steady state slope stability analyses on 2 sections that were modified due to low factors of safety (below 1.5) against a slope stability failure.

Slope stability analyses were performed using the soil parameters provided on page 11 of RKC report and the subsoil profile defined by Geotechnical Boring No. 7 which is located near section G as presented in RKC report, Figures A-1 and C-1b. The 2 section configurations used in our slope stability analyses are prcsented in Appendix A.

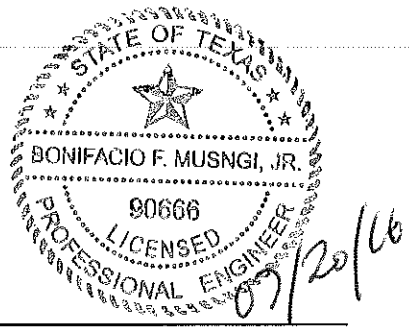
Slope stability analyses were performed in order to determine the factors of safety of the side slopes of the section configurations against a slope stability failure. The long term (steady state) shear strengths of the cohesive soils are based on the shear strength parameters from consolidated undrained triaxial tests performed and presented on the table on page 11 of RKC report. The cohesion and angle of friction for sands were assumed to be zero and 28°, respectively, for a conservative approach. The water gradient was also considered to be close to the ground surface for a conservative analysis. The results of these analyses are shown below and in Appendix B.

SECTION	FACTOR OF SAFETY (LONG TERM CONDITION)
Section Along CSA	4.06
Section Along CSB	4.08

The results of the stability analyses using the shear strength parameters as discussed above suggest that the slopes of the section configurations provided by ERM will be stable in the long term condition.

Should you have any questions or require additional information pertaining to this letter, please do not hesitate to contact us at your convenience.

Sincerely,
HTS, Inc. Consultants



Bonifacio F. Musngi Jr., P.E.
Senior Engineer

HTS, Inc. Consultants
F-3478

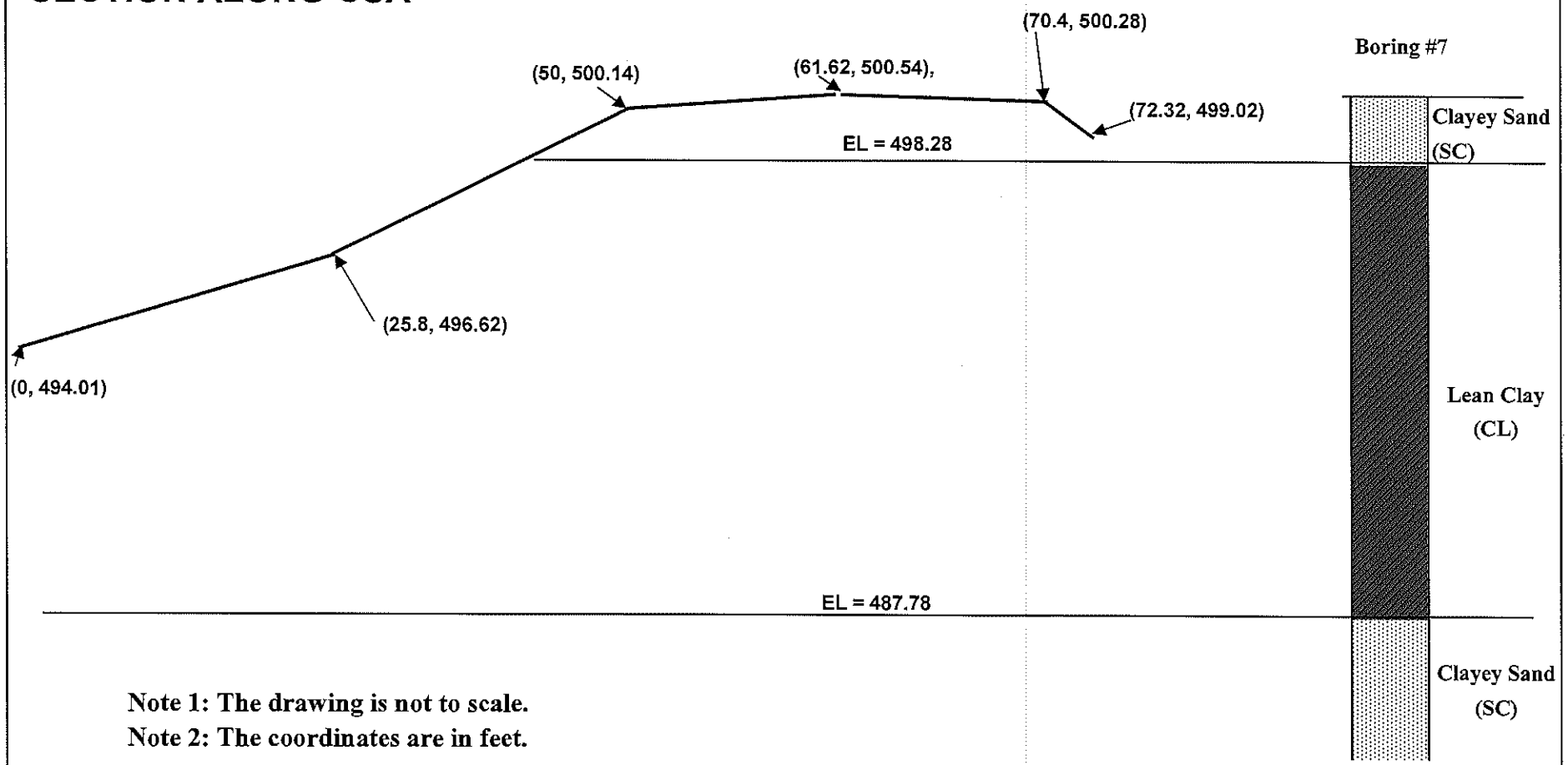
Attachments: **Appendix A – Slope Section Configurations**
Appendix B – Slope Stability Analyses Results

BFM/ba/cg

h:word/2016/300-349/16-303

APPENDIX A

SECTION ALONG CSA

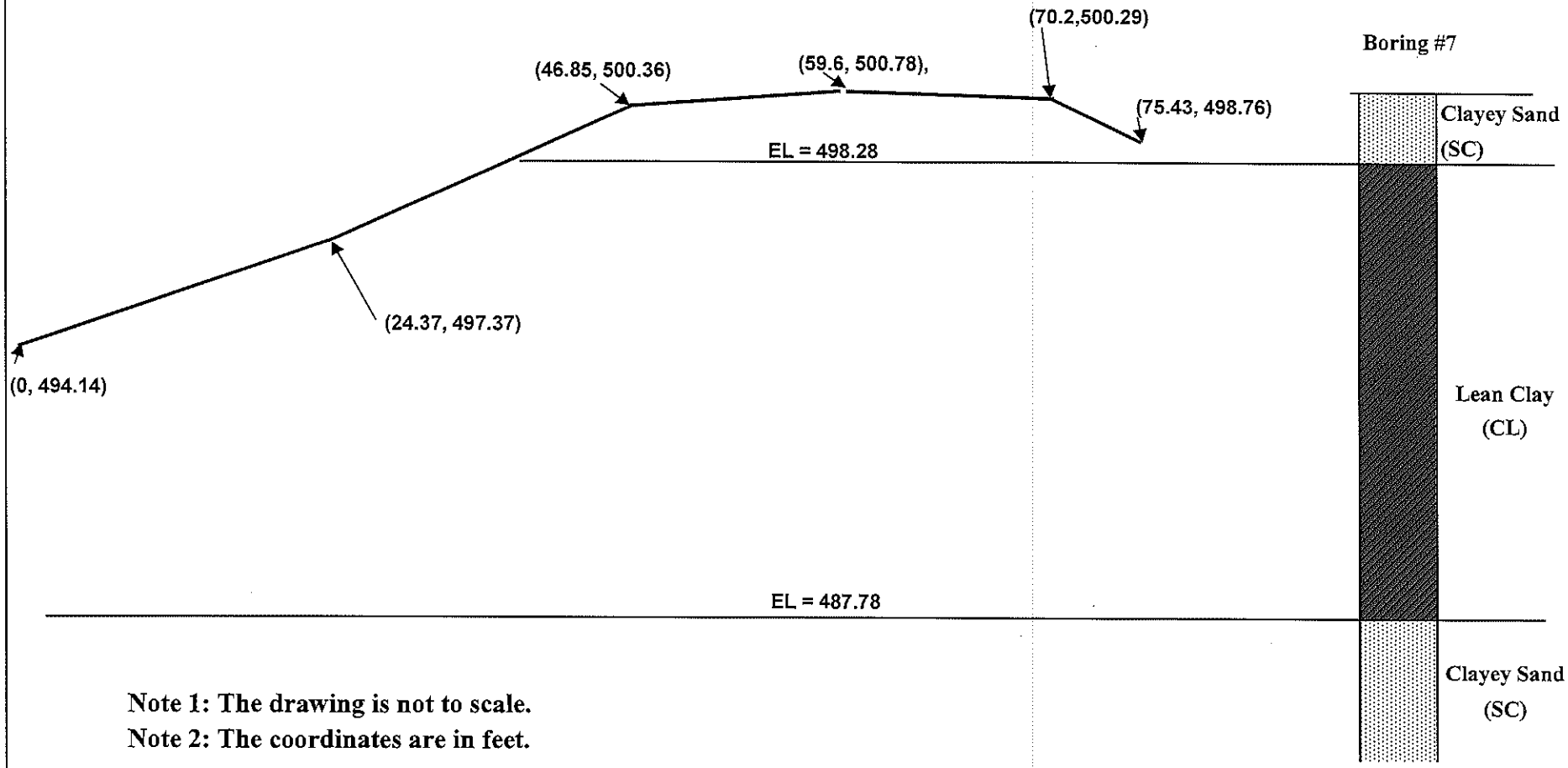


Note 1: The drawing is not to scale.
Note 2: The coordinates are in feet.

HTS, INC. Consultants

Typical Section Configuration for Slope Stability Analyses - Section Along CSA		
Steady State Slope Stability Analysis Ash Pond Berms - Spruce/Deely Generation Units San Antonio, Texas		
Date: 7/18/16	HTS Proj No.: 16-S-303	Plate 1

SECTION ALONG CSB



Note 1: The drawing is not to scale.
Note 2: The coordinates are in feet.

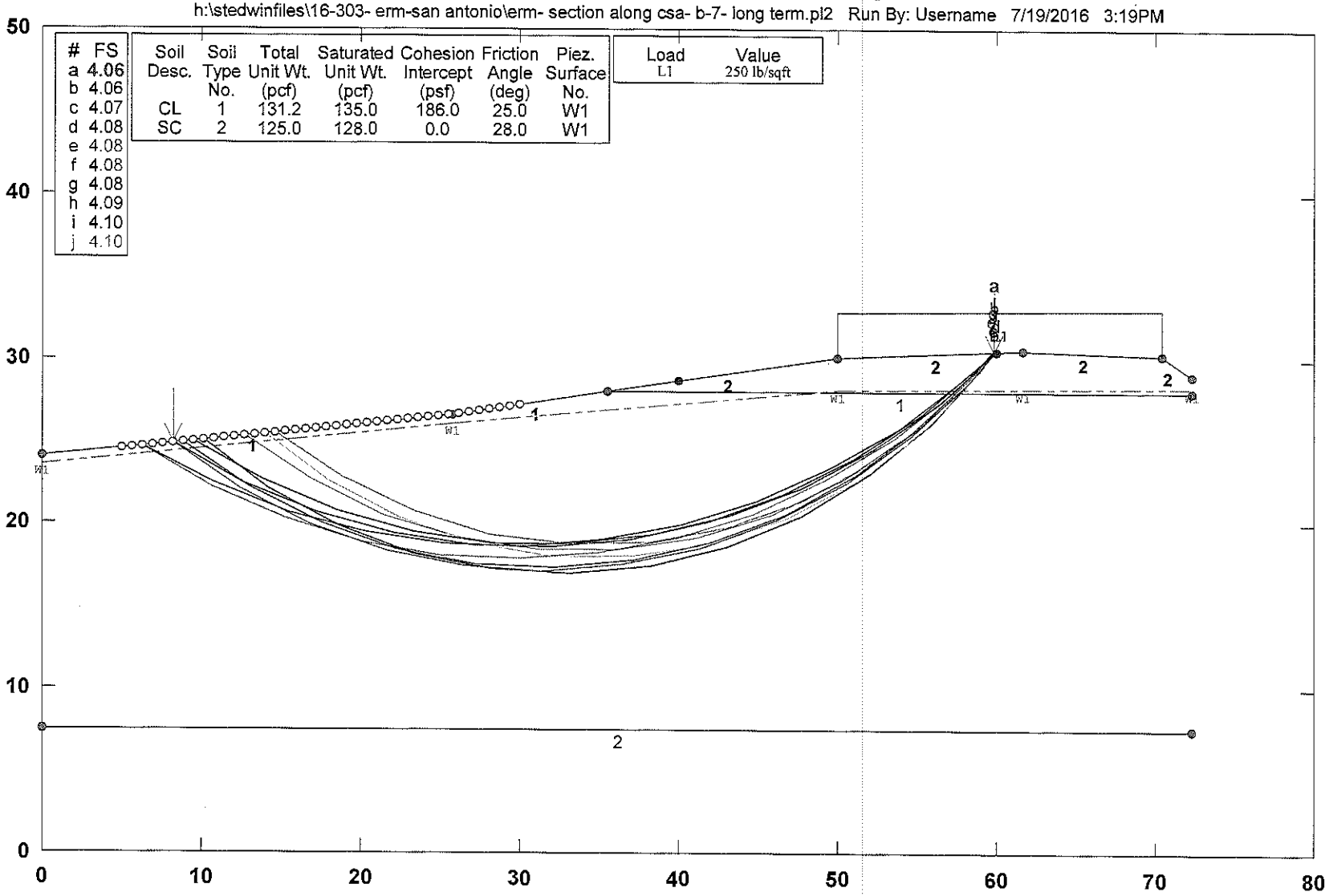
HTS, INC. Consultants

Typical Section Configuration for Slope Stability Analyses - Section Along CSB		
Steady State Slope Stability Analysis Ash Pond Berms - Spruce/Deely Generation Units San Antonio, Texas		
Date: 7/18/16	HTS Proj No.: 16-S-303	Plate 2

APPENDIX B

Ash Pond Berms - Spruce/Deely, B-7 Long Term, CSA

h:\stedwinfiles\16-303- erm-san antonio\erm- section along csa- b-7- long term.pl2 Run By: Username 7/19/2016 3:19PM



#	FS
a	4.06
b	4.06
c	4.07
d	4.08
e	4.08
f	4.08
g	4.08
h	4.09
i	4.10
j	4.10

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
CL	1	131.2	135.0	186.0	25.0	W1
SC	2	125.0	128.0	0.0	28.0	W1

Load	Value
L1	250 lb/sqft

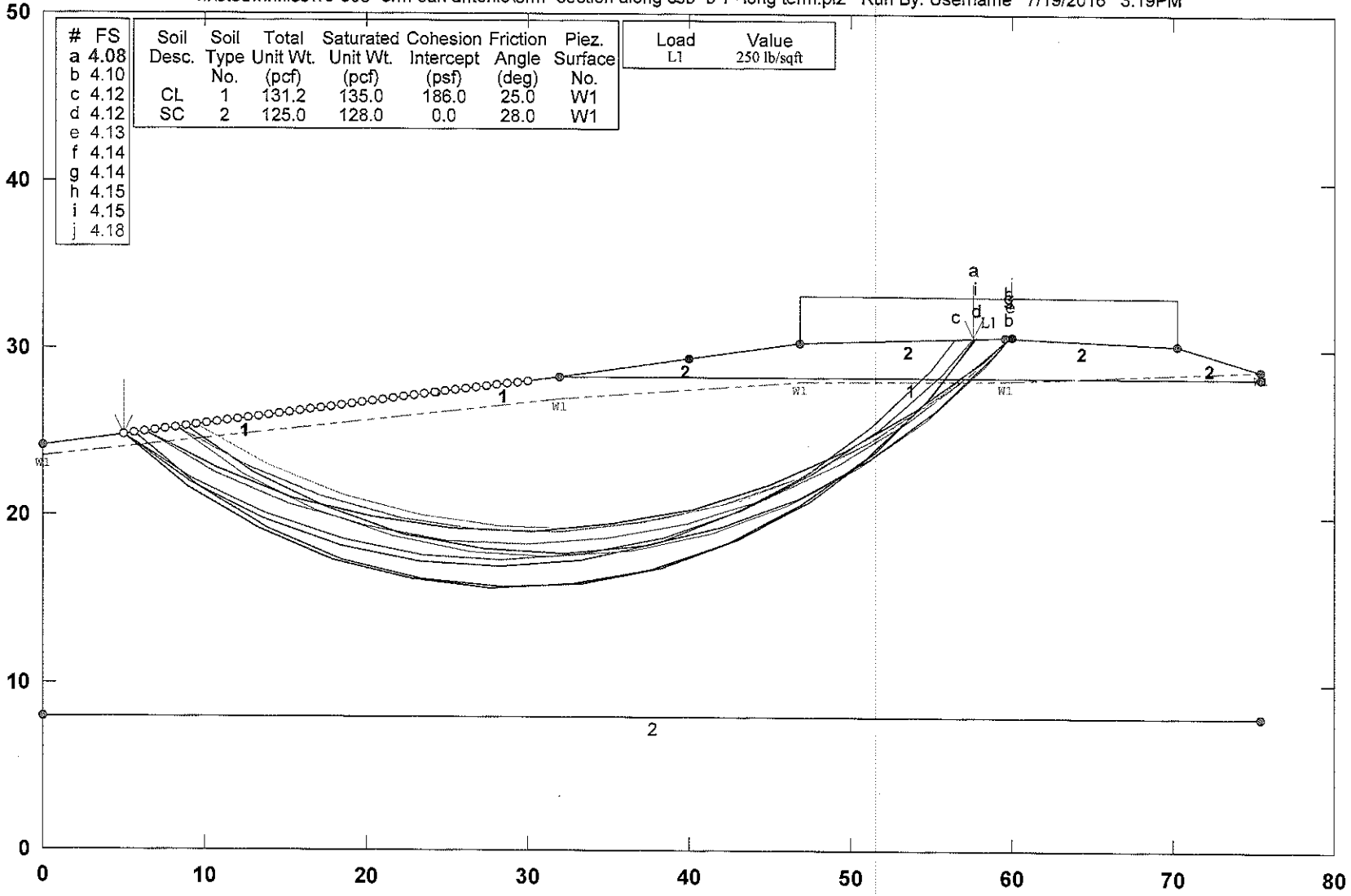
STABL6H FSmin=4.06

Safety Factors Are Calculated By The Modified Bishop Method

HTS, INC. Consultants

Ash Pond Berms - Spruce/Deely, B-7 Long Term, CSB

h:\stedwinfiles\16-303- erm-san antonio\erm- section along csb- b-7- long term.pl2 Run By: Username 7/19/2016 3:19PM



#	FS
a	4.08
b	4.10
c	4.12
d	4.12
e	4.13
f	4.14
g	4.14
h	4.15
i	4.15
j	4.18

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
CL	1	131.2	135.0	186.0	25.0	W1
SC	2	125.0	128.0	0.0	28.0	W1

Load	Value
L1	250 lb/sqft

STABL6H FSmin=4.08

Safety Factors Are Calculated By The Modified Bishop Method

HTS, INC. Consultants

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Myanmar
The Netherlands
New Zealand
Norway
Panama
Peru
Poland
Portugal
Puerto Rico
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Capitol Tower
206 East 9th Street, Suite 1700
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F: 512 597 8368

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Attachment 9-2

November 30, 2020

Mr. Andrew Wheeler
Administrator
US EPA

Dear Mr. Wheeler:

On August 28, 2020, the EPA finalized revisions to the CCR Rule that would require unlined CCR surface impoundments to cease receipt of waste as soon as technically feasible, but no later than April 11, 2021, unless the owner/operator can demonstrate that CCR and/or non-CCR wastestreams must continue to be managed in that CCR surface impoundment based on a lack of alternative capacity.

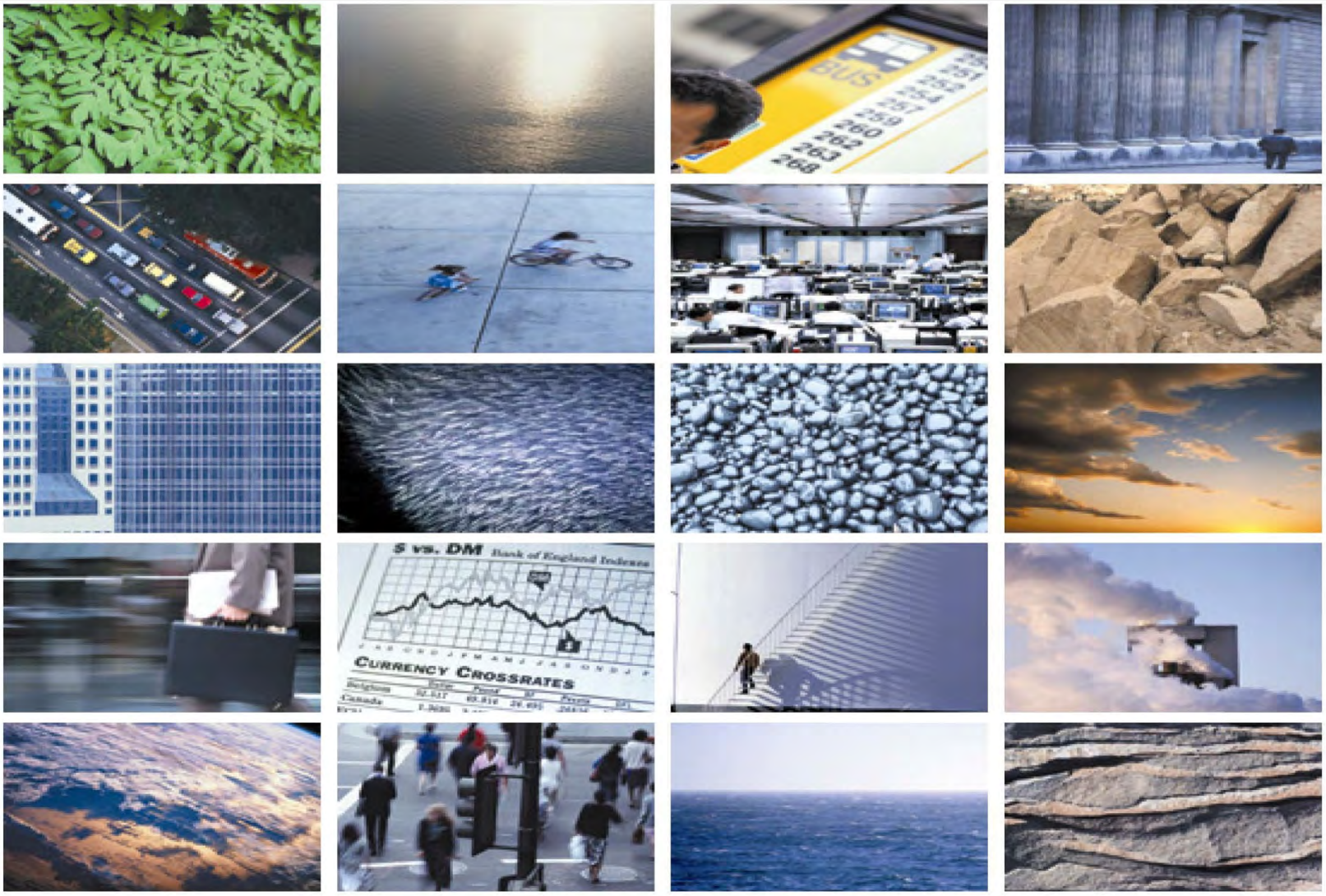
This Alternative Capacity Infeasibility Demonstration revises the original version submitted on November 6, 2020. This version was prepared to document and explain in greater detail why development of alternative capacity by April 11, 2021 is infeasible for the Sludge Recycle Holding (SRH) Pond, an unlined CCR surface impoundment, at the CPS Energy Calaveras Power Station located in Bexar County, Texas.

Please call me at (210) 353-3625 with any questions.

Sincerely,

Michael M. Malone, P.E., LEED Green Associate, R.E.M.
CPS Energy Senior Manager
Environmental Management

cc: Kirsten Hillyer
Frank Behan
Richard Huggins



Alternative Capacity Infeasibility Demonstration

Sludge Recycle Holding (SRH) Pond
CPS Energy Calaveras Power Station
Bexar County, Texas

30 November 2020

Project No.: 0503422

Signature Page

30 November 2020

Alternative Capacity Infeasibility Demonstration

Sludge Recycle Holding (SRH) Pond
CPS Energy Calaveras Power Station
Bexar County, Texas

Charles Johnson, P.E.
Senior Consultant

Walter Zverina
Project Manager

Jeffery L. Bauguss, P.E.
Partner

Environmental Resources Management Southwest, Inc.
Capitol Tower
206 East 9th Street, Suite 1700
Austin, Texas 78701

CONTENTS

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List of Exhibits

List of Appendices

1. INTRODUCTION

Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) Subpart D (a.k.a. the Coal Combustion Residual (CCR) Rule) was published in the Federal Register in April 2015 and became effective in October 2015. Under the CCR Rule, CPS Energy operates active surface impoundments and a landfill primarily for temporary storage and historically for disposal of fly ash and bottom ash.

On August 28, 2020, the Environmental Protection Agency (EPA) finalized revisions to the CCR Rule that would require unlined CCR surface impoundments to cease receipt of waste as soon as technically feasible, but no later than April 11, 2021, unless the owner/operator can demonstrate that CCR and/or non-CCR wastestreams must continue to be managed in that CCR surface impoundment based on a lack of alternative capacity. On behalf of CPS Energy, this Alternative Capacity Infeasibility Demonstration (Demonstration) was prepared to document, under the finalized 40 CFR §257.103(f), that development of alternative capacity by April 11, 2021 is infeasible for the Sludge Recycle Holding (SRH) Pond, an unlined CCR surface impoundment, at the CPS Energy Calaveras Power Station located in Bexar County, Texas.

1.1 Demonstration Purpose and Objectives

This Demonstration was prepared in accordance with requirements in finalized 40 CFR §257.103(f) to demonstrate that CCR and/or non-CCR flows must continue to be managed in the SRH Pond because it is infeasible to complete measures necessary to provide alternative disposal capacity on-site or off-site by April 11, 2021. CPS Energy therefore requests to keep operating the SRH Pond until September 1, 2023, which is the anticipated fastest technically feasible time in which development of alternative capacity can be completed.

1.2 Organization of the Demonstration

This Demonstration is organized into the following sections:

- Facility Description and Unit Description
- Work Plan - 40 CFR §257.103(f)(1)(iv)(A) and 40 CFR §257.103(f)(1)(i)-(ii)
- Compliance with Subpart D - 40 CFR §257.103(f)(1)(iv)(B) and 40 CFR §257.103(f)(1)(iii)

2. FACILITY DESCRIPTION AND UNIT DESCRIPTION

CPS Energy owns and operates the Calaveras Power Station located at 12940 U.S. Highway 181 South in San Antonio, Texas. A Facility Location Map is provided as Figure 2.1. The Calaveras Power Station consists of three power plants of which two plants (J.T. Deely and J.K. Spruce) are subject to regulation under the CCR Rule. Specifically, CPS Energy operates three CCR units at the Power Station: Evaporation Pond, Fly Ash Landfill, and the SRH Pond. Although the J.T. Deely Power Plant ceased operation at the end of December 2018 and sluiced bottom ash is no longer being received at the Bottom Ash Ponds (BAPs), the BAPs will continue to be monitored until the units have undergone closure. A CCR Unit Location Map is provided as Figure 2.2.

Groundwater in the vicinity of all the CCR units at the Calaveras Power Station has been monitored since December 2016. No statistically significant increase (SSI) of Appendix III constituents above background levels has been determined for any of the CCR units, and therefore, CPS Energy is currently in, and will continue with, a detection monitoring program.

The SRH Pond is a 3-acre surface impoundment divided into two (2) cells, each with a storage capacity of approximately 2,000,000 gallons. The SRH Pond contains a liner system, but the liner design does not meet the specific liner requirements of the CCR Rule (40 CFR §257.72), and is therefore considered unlined. The SRH Pond receives CCR and non-CCR flows from various sources within the J.K. Spruce Plant and all flows are co-mingled in the SRH Pond. Wastewater discharged from the SRH Pond is treated in the SRH Pond clarifier to reduce the total suspended solids (TSS) or it is recycled back to the J.K. Spruce Flue Gas Desulfurization (FGD) system. CCR and non-CCR solids are retained in the SRH Pond until they are dewatered and removed.

The primary operational functions of the SRH Pond include:

- Holding the various streams until they can be treated and discharged;
- Equalizing the flow to the SRH Pond clarifier;
- Removing the larger solids by settlement in the pond; and
- Providing a mechanism for the settled solids to be dewatered for beneficial use or landfill disposal.

Cessation of CCR and non-CCR flows to the SRH Pond requires alternative capacity that will, at a minimum, fulfill these primary operational functions, or the power plants designs must be modified to eliminate these flows.

3. WORK PLAN

In accordance with 40 CFR §257.103(f)(1)(iv)(A) and 40 CFR §257.103(f)(1)(i)-(ii), this section provides:

1. A narrative that no alternative disposal capacity is available on-site or off-site,
2. A narrative that it is technically infeasible to obtain alternative capacity prior to April 11, 2021,
3. A narrative regarding the selected option and justification for the selected alternative capacity,
4. A detailed schedule and narrative discussion of the fastest technically feasible time to complete the development of the selected alternative capacity, and
5. A narrative discussion of the progress made to date to obtain alternative capacity.

3.1 Alternative Capacity On-Site

The cessation of CCR and non-CCR flows to the SRH Pond requires alternative capacity that, at a minimum, will replace primary operational functions, or the power plants designs must be modified to eliminate these flows. Multiple alternatives were evaluated to obtain alternative capacity on-site including:

1. Constructing a new wastewater treatment facility (WWTF);
2. Retrofitting an existing surface impoundment;
3. Converting the FGD system to dry handling; and
4. Constructing a new CCR surface impoundment.

A summary of the four evaluated alternatives is provided below. Importantly, and as detailed in the description of each, all alternatives require several years to complete and do not provide for alternative capacity at this time, but CPS Energy is actively working towards construction of its selected alternative (Alternative 4). Details of each evaluated alternative are provided in Section 3.4 of this Demonstration.

- Alternative 1 – Construction of a new WWTF is a significantly more complex alternative that requires long-lead vendor-engineered equipment and more extensive system infrastructure. Because the overall expected duration for the design and installation of a new WWTF is longer (48 months) than other alternatives, Alternative 1 was not selected.
- Alternative 2 – Retrofit of an existing surface impoundment to receive the SRH Pond flow is a less complex alternative. However, of the twelve (12) surface impoundments (both CCR and non-CCR surface impoundments) at the Calaveras Power Station, none are lined in accordance with the CCR Rule. In addition, Alternative 2 was not selected for the following reasons:
    - Excluding the SRH Pond, there are nine other active surface impoundments at the Calaveras Power Station. Six of these nine surface impoundments are needed for stormwater management and release to Calaveras Lake as permitted discharges. These six surface impoundments also do not have sufficient capacity to receive wastestreams in addition to their designed stormwater capacity. Since these six surface impoundments are unavailable for added capacity, these surface impoundments are not available for retrofit as alternative capacity.
    - As for the three active surface impoundments not associated with stormwater management, the footprint of two are not large enough to handle the wastestreams managed in the SRH Pond and one (Evaporation Pond) is being closed as an unlined CCR surface impoundment. Therefore, these three surface impoundments are also not available for retrofit as alternative capacity.
    - The two inactive surface impoundments, the North and South Bottom Ash Ponds, have ceased receiving flow and will be clean closed. The schedule for release of these surface impoundments for re-development following closure is unknown and these surface

impoundments will not be available for retrofit until all closure activities are complete. In addition, the location of the North Bottom Ash Pond does not meet the minimum requirements of 40 CFR §257.60 (Placement Above the Uppermost Aquifer).

- Alternative 3 – Conversion of the FGD system to dry handling eliminates eight (8) of the thirteen (13) flows that discharge to the SRH Pond and approximately 50% of the flow. Additional modifications or additions to the plant are required to address the remaining five (5) flows from the boilers and various plant sumps. Even after conversion to dry handling of FGD waste, a new WWTF or CCR surface impoundment would also be required to cease CCR and non-CCR flows to the SRH Pond. Reduction in the number of flows associated with converting the FGD system to dry handling will have nominal effect on the expected schedule for these other alternatives. The overall expected duration for conversion of the FGD system to dry handling, zero liquid discharge (ZLD) operation, is 48 months. Because this alternative does not in itself address the cessation of flow to the SRH Pond, and it has a longer overall expected duration to design and implement than other alternatives, Alternative 3 was not selected.
- Alternative 4 – The selected alternative, designing and constructing a new lined surface impoundment, is the least complex alternative and it can be implemented in the shortest expected duration. Although an overall expected duration for design and construction is 44 months, since CPS Energy has already begun the planning process, the remaining duration from issue of the RFP in December 2020 through start-up and initial operation is only 33 months. This schedule allows for cessation of CCR and non-CCR flow to the SRH Pond by September 1, 2023. Constructing a new lined surface impoundment also retains the primary operational functionality of the existing SRH Pond and requires minimal modifications to the existing power plants.

3.2 Alternative Capacity Off-site

Obtaining off-site management and disposal capacity as an alternative to manage flows to the SRH Pond would include transportation of either all flows currently managed by the SRH Pond or isolating only CCR flows for transportation and disposal to an off-site facility. The only off-site wastewater treatment facility in the vicinity (approximately 20 miles away) of the Calaveras Power Station is the San Antonio Water Service (SAWS) Steven M. Clouse Water Recycling Center (Clouse WRC). No industrial wastewater treatment facilities exist in San Antonio and the surrounding area capable of treating the wastewaters currently managed by the EP (see reasons listed below). Other wastewater treatment facilities in San Antonio and the surrounding area are municipal systems owned by SAWS, the San Antonio River Authority, surrounding municipalities, or private companies and these facilities are subject to the same limitations as the SAWS Clouse WRC considered in this Demonstration. A list of the facilities considered was obtained from EPA's Facility Registry Service and is provided in Exhibit 3.1.

Exhibit 3.1 – Off-Site Treatment Facilities

Facility Name	Street	City	EPA FRS ID
BFI TESSMAN ROAD LANDFILL	7000 I-10 EAST	SAN ANTONIO	110060901653
BFI WASTE TESSMAN ROAD LANDFILL	7790 TESSMAN ROAD	SAN ANTONIO	110002371781
BRIDGEWOOD WWTP	SW CORNER DOMINION SUBDIVISION ADJACENT LEON CRK	SAN ANTONIO	110014436627
CIBOLO CREEK MUNICIPAL AUTHORITY WWTP	12423 AUTHORITY LANE	SCHERTZ	110000504990
CITY OF CASTROVILLE WWTF	818 ALSACE AVE	CASTROVILLE	110027991957
CITY OF HONDO WASTE WATER PLANT	1400 FEET EAST OF THE INTERSECTION OF FM 462 AND 3	HONDO	110070356320
CITY OF LA COSTE WWTP	11331 CR 584	LA COSTE	110009773959
CITY OF LA VERNIA WWTP	2000' E. FMR 775, APPROX 400' E SE INTEX RV ST AND	LA VERNIA	110009779784
CITY OF LYTLE WWTP	2300F SE FMR 3175 IH-35	LYTLE	110006687228
CITY OF NIXON	HIGHWAY 80 NORTH & US HWY 87	NIXON	110009778213
CITY OF SAN ANTONIO	SALADO CREEK WWTP	SAN ANTONIO	110014389704
CITY OF SCHERTZ WWFT	6700FT SW INTERSECTION OF	BEXAR COUNTY	110024412410
CITY OF SEGUIN GERONIMO CREEK WWTP	450 SEITZ RD	SEGUIN	110034285299
CITY OF SMILEY WWTP	APPROX 4200' NW OF INTERX FMR 108	SMILEY	110009746490
CITY OF STOCKDALE WWTP	OLD FLORESVILLE ROAD, CR #401	STOCKDALE	110009746301
COVEL GARDENS LANDFILL AND RECYCLING	8611 COVEL RD	SAN ANTONIO	110070377738
DISPOSAL PROPERTIES	4303 PROFIT DRIVE	SAN ANTONIO	110000464818
DOS RIOS WATER RECYCLING CENTER	3495 VALLEY RD	SAN ANTONIO	110000501840
DOS RIOS WATER RECYCLING CENTER	3495 VALLEY RD	SAN ANTONIO	110014434727
FIRST RESPONDERS ACADEMY WWTP	15775 IH 35 S	ATASCOSA	110063878184
GERONIMO CREEK WWTP	450 SEITZ RD	SEGUIN	110000501430
GONZALES WARM SPRINGS WWTF	1000' S OF THE INTX OF FM 1586 AND FM 2019	GONZALES COUNTY	110009780317
HIGHWAY 181 SOUTH WWTP	14542 CASSIANO RD	SAN ANTONIO	110020063474
HONDO WWTP	1400' E OF INTERX OF FM 462	HONDO	110039914554
LEON CREEK WATER RECYCLING CENTER	1104 MAUERMANN RD	SAN ANTONIO	110031272655
LIQUID ENVIRONMENTAL SOLUTIONS OF TEXAS	10360 W US HIGHWAY 90	SAN ANTONIO	110038485975
MARION WWTP	1400' W OF FM 465 & 1800' S OF	MARION	110009745927
MARTINEZ II CREEK WWTF	1280 FM 1516 S	SAN ANTONIO	110034410812
MARTINEZ III WWTF	.35MI S LOOP 1604, IH-10 AND LP 1604	SAN ANTONIO	110010921413
MEDINA COUNTY WCID 2 WWTF	414 CR 512	MEDINA COUNTY	110009777544
MEDIO CREEK WATER RECYC. CTR.	2231 HUNT LANE	SAN ANTONIO	110064605146
MITCHELL LAKE WWTF	10762 PLEASANTON RD	SAN ANTONIO	110006823376
NELSON GARDENS	8339 COVEL RD	SAN ANTONIO	110033180607
ODO J RIEDL	12423 AUTHORITY LANE	SCHERTZ	110070365759
PAPER RETRIEVER OF TEXAS	7510 GRISSOM RD	SAN ANTONIO	110070673293
POST OAK MUNICIPAL SOLID WASTE LANDFILL	7787 FM RD 1150	SEGUIN	110070708905
POTRANCO RANCH SUBDIVISON WWTP	APPROX 3.54 MI W OF ST HWY 211	MEDINA COUNTY	110063881009
QUAIL RUN WWTP	500' SSE OF PINE VALLEY DR	WILSON COUNTY	110024412474
SALADO CREEK WWTP	13496 BLUE WING ROAD	SAN ANTONIO	110039694195
SALATRILLO CREEK WWTF	9638 SCHAEFER RD	CONVERSE	110070356078
SALATRILLO CREEK WWTP	9638 SCHAEFER ROAD	CONVERSE	110001123640
SAN ANTONIO WATER SYSTEM	LESLIE ROAD	SAN ANTONIO	110002151536
SANTA CLARA CREEK	3930 LINNE RD	SEGUIN	110064854867
SAWS MEDIO CREEK WATER RECYCLING CENTER	2231 HUNT LN	SAN ANTONIO	110070365451
SOMERSET WWTP	4300F SE CITY HALL,3500F S	SOMERSET	110006683589
SOUTH CENTRAL WATER CO WWTF	500FT NE N LAKE HOUSTON PKWY	HOUSTON	110022417133
SOUTH REGIONAL WATER RECLAMATION PLANT	7424 TRAINER HALE RD	CITY OF SCHERTZ	110064779306
STANDARD INDUSTRIES	8189 NELSON RD	SAN ANTONIO	110020479828
UPPER MARTINEZ CREEK WWTF	ON 8203 BINZ-EMGELMAN SAN ANTONIO TX 78219	SAN ANTONIO	110070360659
WALNUT BRANCH WWTP	101 EAST KLEIN	SEGUIN	110000501449
WALNUT BRANCH WWTP	EAST KLEIN ST & S. AUSTIN ST	SEGUIN	110039946994
WOMAN HOLLERING TREATMENT PLANT	8705 GREAVES LN	SCHERTZ	110064781179

Transportation and disposal of wastewater off-site as an alternative is infeasible for the following reasons:

- Management of FGD flows off-site would be subject to EPA Categorical Industrial User pretreatment standards [40 CFR 423.17] and San Antonio industrial user local limits prior to being transported off-site and introduced to a publicly owned treatment works (POTW.) This alternative would also require CPS Energy to obtain an Industrial Waste Permit from SAWS. Pretreatment of FGD flows would

include, at a minimum, sedimentation to remove TSS, including either use of a surface impoundment or large tankage similar to what would be needed for an on-site WWTF. Additional treatment may also be needed to remove dissolved metals (e.g., arsenic, mercury and selenium) to below applicable Categorical and Local standards, and the wastewater will reduce the available hydraulic capacity of the POTW for other more compatible wastestreams. The requirement to pretreat FGD flows removes any benefit of management off-site. Evaluation of options to construct a surface impoundment and WWTF is provided in more detail in Section 3.4 of this Demonstration.

- Management of wastewater off-site would require intermediate on-site containment to accept the much higher instantaneous flows which can be as high as 6,340 gallons per minute (gpm) for all flows, or 3,800 gpm for CCR flows. This would require a surface impoundment or large tankage similar to what would be needed for an on-site WWTF. As mentioned above, an evaluation of options to construct a surface impoundment and WWTF is provided in more detail in Section 3.4 of this Demonstration.
- Management of wastewater off-site would also require transportation of wastewater by tanker truck. The average daily flow to the SRH Pond is approximately 670 gpm. Even if CCR flows could be isolated from non-CCR flows to the SRH Pond, average daily CCR wastewater flows alone are 440 gpm. As an example of what it would require to transport this wastewater off-site, 440 gpm equates to one trip for a 4,000-gallon tank truck every 9 minutes or 160 trips per day; a logistically infeasible trip frequency and volume. Also, the resulting truck traffic would substantially increase 1) the risk of a traffic accident, 2) the risk of a spill or release to the environment, and 3) fuel consumption and carbon emissions. Further, it is unlikely the POTW has sufficient transportation infrastructure or staffing to accommodate the additional tanker truck traffic.
- Assuming a conceptual cost estimate of $2,000 per tanker truck for transport and disposal of CCR flows, the conceptual monthly cost would total over $9 million (an infeasible cost).

3.3 Role of SRH Pond in Continued Plant Operations

The J.K. Spruce Plant has a generation capacity of 1,410 MW and comprises approximately 18.3% of the CPS Energy's generation portfolio. The J.K. Spruce Plant is an essential part of the baseload capacity within the CPS Energy fleet, particularly during peak demand periods. During the Summer of 2019, the Electric Reliability Council of Texas (ERCOT) reported that they were forced to rely on demand response reserves to maintain reliability with the grid. Although reserve margins are expected to grow in coming years, the Capacity Demand and Reserves (CDR) report indicates a continuation limited reserve margin in the near term.

The SRH Pond receives all the FGD system wastewater and various process discharge streams. It also receives low volume waste (LVW) streams that include area runoff, boiler quench water and washdown water collected in plant sumps. The FGD system must be in operation for the J.K. Spruce Plant to comply with regulatory permits and air emission limits for sulfur dioxide. Wastewater must be discharged from the FGD system on a regular basis when the plant is in service. In addition, other FGD system streams are also periodically discharged to the SRH Pond during system upset conditions and to support operations and maintenance activities.

Operation of the J.K. Spruce Plant is dependent on the continued operation of the SRH Pond until alternative capacity is available. If CCR and non-CCR flows to the SRH Pond must cease on or prior to April 11, 2021 without alternative capacity available, the J.K. Spruce Plant will not be able to continue operation.

3.4 Narrative Discussing the Approach Selected to Obtain Alternative Capacity for CCR and/or Non-CCR Wastestreams

The existing SRH Pond contains a liner system, but the liner design does not meet the specific liner requirements of the CCR Rule, and is therefore considered unlined. The SRH Pond receives CCR and non-CCR flows from the operation of two coal-fired generating units with a combined capacity of more than 1,300 megawatts. Thirteen (13) flow streams discharge to the SRH Pond including CCR flows from the FGD system and non-CCR flows from the boiler and various plant sumps. All flows are co-mingled in the SRH Pond before they are treated to reduce the TSS and discharged to the plant intake canal through a permitted outfall. A process flow diagram of the SRH Pond is shown in Exhibit 3.2.

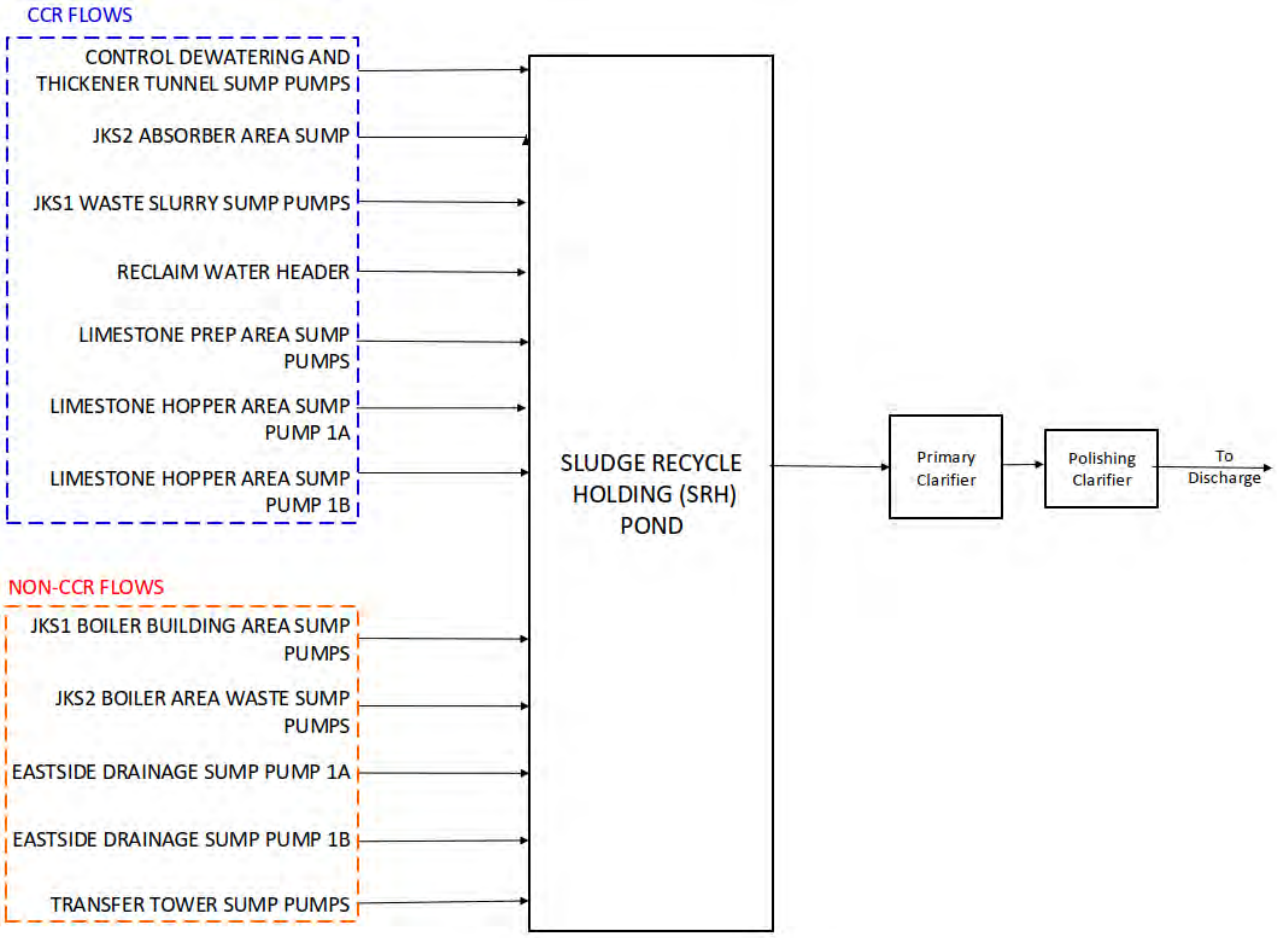
The overall flow to the SRH Pond averages between 100 and 700 gpm, but is highly variable with potential flowrates as high as 6,000 gpm. The solids content in these flows also varies dependent on plant operating conditions and maintenance activities. Some non-CCR flows, such as stormwater runoff, are independent of the plant operating status and can increase significantly in a short period of time. During typical operating conditions, the flow to the SRH Pond ranges between 200,000 and 1,000,000 gallons per day (gpd).

The primary operational functions of the SRH Pond include:

- Holding the various streams until they can be treated and discharged;
- Equalizing the flow to the SRH Pond clarifier;
- Removing the larger solids by settlement in the pond; and
- Providing a mechanism for the settled solids to be dewatered for beneficial use or landfill disposal.

The cessation of CCR and non-CCR flows to the SRH Pond requires alternative capacity that, at a minimum, will replace primary operational functions, or the power plants designs must be modified to eliminate these flows.

Exhibit 3.2 – Process Flow Diagram of Current Flows to the SRH Pond



Multiple alternatives evaluated by CPS Energy for providing alternative capacity for these flows included the following:

1. Constructing a new WWTF;
2. Retrofitting an existing surface impoundment;
3. Converting the FGD system to dry handling; and
4. Constructing a new CCR surface impoundment.

3.4.1 Alternative 1 – Constructing a New Wastewater Treatment Facility

A new WWTF requires significant storage capacity and the capability to remove and dewater suspended solids in the wastewater. The unit operations involve primary and secondary dewatering to produce solids that can be landfilled and a discharge stream that is low in TSS. The dewatering equipment includes thickeners/clarifiers for the primary dewatering followed by filter presses or belt presses for secondary dewatering. A process flow diagram of the conceptual WWTF design is shown in Exhibit 3.3.

Due the large amount of storage capacity and the equipment layout, a large area is required for the WWTF. The closest available location is approximately 3,000 feet to north of the SRH Pond. A conceptual layout of the WWTF is shown in Exhibit 3.4. To re-direct the SRH Pond flows to the WWTF, a transfer system is also required. The transfer system for the WWTF is similar to the design for the

selected alternative, a new surface impoundment (Alternative 4). A detailed description of the conceptual transfer system is included below. To maintain high reliability, the WWTF includes two redundant trains. This design philosophy is consistent with the existing plant and included in the other alternatives that were evaluated.

The transfer system would supply one of the two thickener/clarifiers in the WWTF. Aluminum sulfate and polymer will be added to promote solids settling in the thickener/clarifier to meet the permitted TSS discharge limits. The thickener/clarifier overflow is collected in one of two treated water tanks and either returned to FGD system for make-up, returned to the thickener/clarifier for additional treatment or discharged.

The thickener/clarifier underflow has a solids concentration of approximately 30 wt% and will be stored in one of two agitated lined filter feed tanks. High pressure filter feed pumps will transfer the filter feed slurry to one of three filter presses or belt presses for secondary dewatering. Filter press and belt press technology is commonly used for solids that are difficult to dewater. The solids in the streams to the WWTF consists of coal fines and FGD solids that cannot be dewatered by the FGD system drum filters. Filter press units operate on a batch basis with a typical cycle time of three hours.

Exhibit 3.3 – Wastewater Treatment Facility Process Flow Diagram

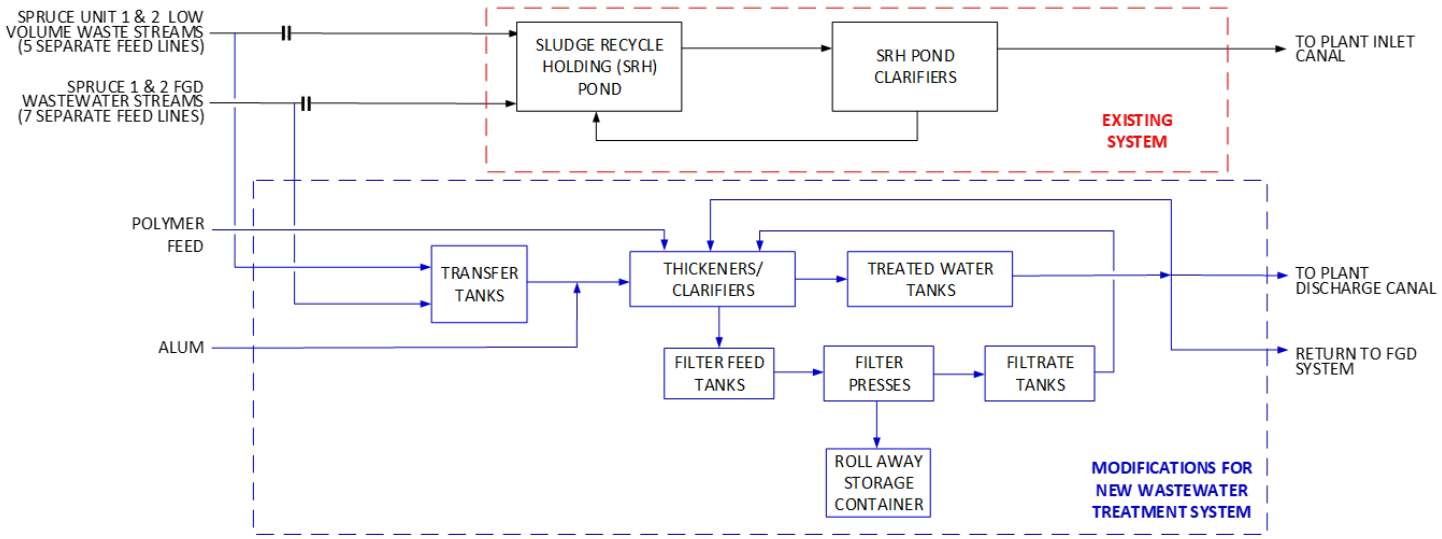
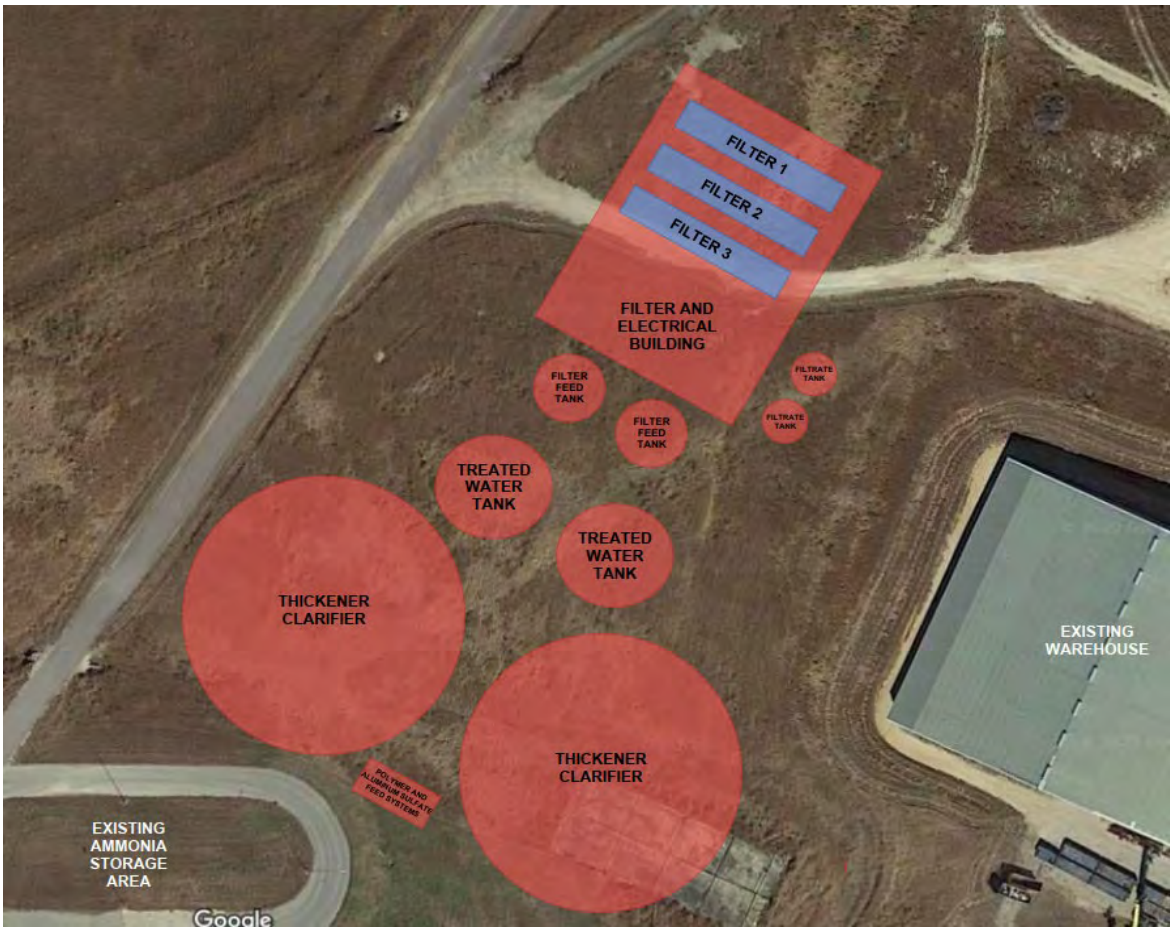


Exhibit 3.4 – Wastewater Treatment Facility Conceptual Layout



The filter press units will be located in the filter building and elevated above roll away bins. Dewatered solids will discharge directly into the bins and when the bin is full, the solids will be hauled to a landfill for disposal or supplied for beneficial use. The filtrate will be collected in one of two filtrate tanks and returned to the thickener/clarifiers.

The filter building will contain an electrical room, Digital Control System (DCS) interface, polymer feed skids, and an operator control room. The plant wide DCS will be expanded to control and monitor transfer system and WWTF operation. In addition to electrical power, the WWTF will require service water, fire water, and potable water from the main plant systems.

The overall expected duration for planning and conceptual design, contractor selection, detailed design, procurement, and construction of the WWTF is 48 months. A level 1 schedule is shown in Exhibit 3.5. Major project activities include:

- Planning and conceptual design;
- Contractor bid, selection and award;
- Detailed design, procurement and construction;
- Start-up and commissioning; and
- Initial operation.

A period of 10 months is included for the preliminary design phase. Key deliverables in this phase include a refinement of scope and schedule, collection of information required for development of detailed design, calculations and analysis and development of drawings and specifications. During this time, a request for information (RFI) package will be developed and used to qualify contractors to bid the project. A request for proposal (RFP) package will be developed during this design phase to bid the work and select the contractor that will execute the project.

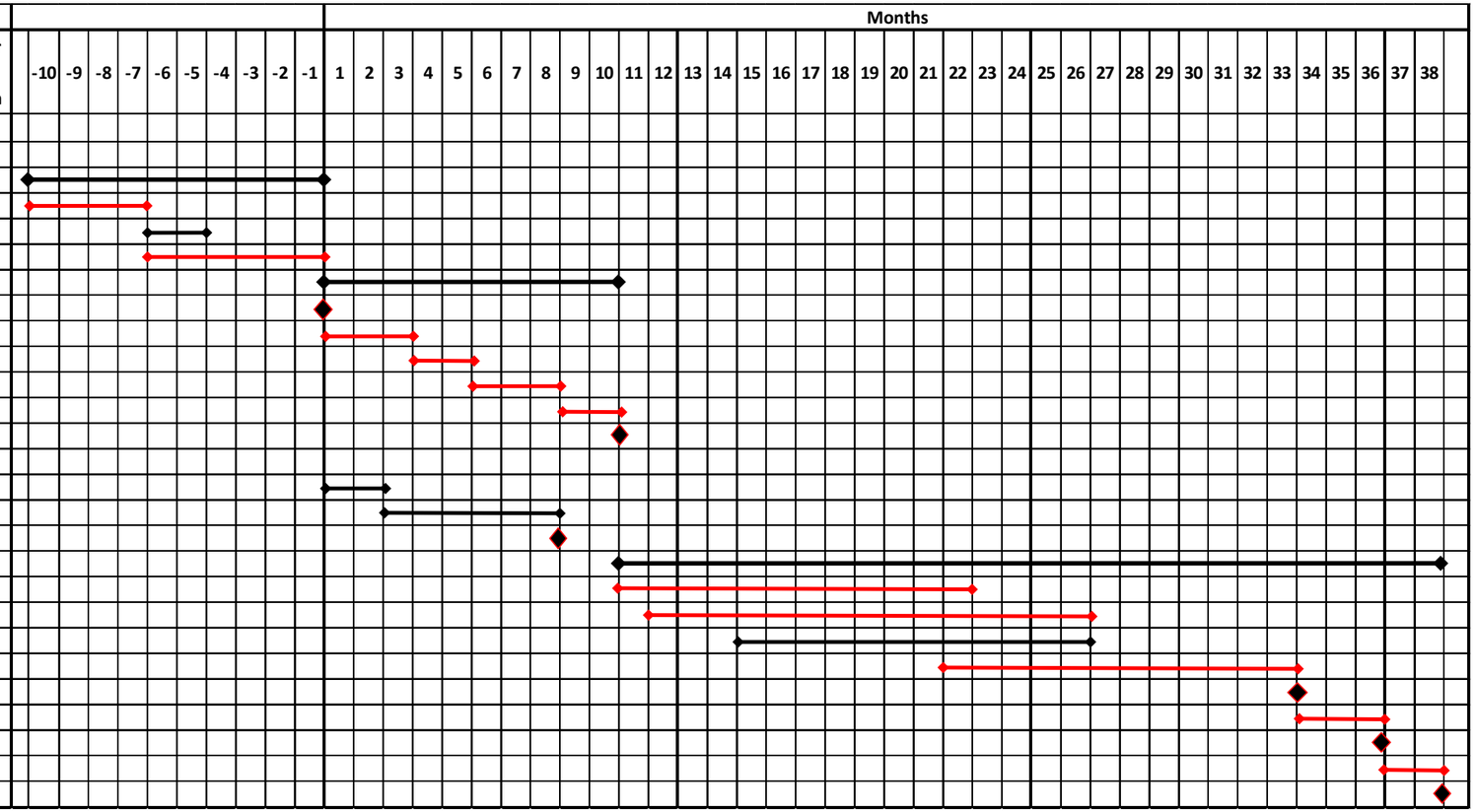
The contactors scope includes detailed design, procurement, construction and start-up of the WWTF. Procurement includes engineered equipment such as the filter presses, clarifier/thickeners, agitators and pumps. It also includes shop fabricated components such as: tanks, piping spools, structural steel, building components, equipment skids and the power distribution centers (PDCs). The filter presses are expected to have a manufacturing duration of 10 months after receipt of order (ARO). Other long lead engineered equipment includes the electrical PDC and clarifier/thickener rake and drive mechanism. These are specialty vendor engineered components that typically require 8 to 9 months to manufacture. A total duration of 15 months was estimated for the engineered procurements, including time for the contractor to place the orders.

The overall duration for detailed design, procurement, construction, start-up, and initial operation is estimated to be 28 months. Construction activities such as site preparation and foundations can begin in parallel with the long lead procurement items. The critical path is linked to delivery of the long lead engineered equipment, specifically the filter press units, PDC and clarifier/thickener drive & rake mechanism. The filter building foundations and structural steel framing can be partially erected prior to delivery of the filter press units, but the completion of the building, piping electrical and control systems must be performed after the filter press units are set in place. This segment of the schedule is estimated to be 12 months. Other Balance of Plant (BOP) scope includes tie-in to the electrical distribution and DCS system. Electrical feeds from the main plant electrical distribution system will be run to both the Transfer Area and the WWTF.

Following the completion of construction, the system will undergo start-up and commissioning. This project phase will require 3 months and involves mechanical operation of all rotating equipment, instrument loop checks, meggering motors, adjustment of electrical system settings, hydrostatic testing and various other tasks to prepare the WWTF for operation. At the conclusion of the start-up and commission phase, the system will be ready for initial operation. A period of 2 months is estimated for initial operation, during which the process controls loops will be tuned and setpoints adjusted. The operation of the equipment will be assessed to confirm that it is operating as designed and meeting performance. At the completion of initial operation period, the flow to SRH Pond will cease and be redirected to the new Plant Drains Pond.

Exhibit 3.5 – Schedule for New Wastewater Treatment Facility

Activity Description	Duration months	MS After Project Initiation
	months	months
Project Kickoff	MS	0
Conceptual Design and Planning	**10**	
Preliminary Design	4	
Request for Information (RFI)	2	
Request for Proposal (RFP) Project Specification	4	
Contractor Bid, Selection, Board Approval and Award	**10**	
Issue Request for Proposal (RFP)	MS	10
Bidding Period	3	
Evaluate Proposals	2	
Board of Trustees Review and Approval	3	
Final Contract Negotiations	2	
Award Contract	MS	20
Permitting	8	
Permit Preparation	2	
Permit Review	6	
Permit Approval	MS	18
Design, Procurement, Construction and Intial Operation	**28**	
Detailed Design	14	
Procure & Manufacture (Filter Press, PDC…)	15	
Construction - Civil, Steel, Tanks, Undergrounds	12	
Construction - Long Lead Equipment, Bld, Electrical	12	
Construction Complete	MS	43
Start-up and Commissioning	3	
Initial Operation	MS	46
Initial Operation Peirod and Tuning	**2**	
SRH Pond Ceases to Receive CCR and Non-CCR Steams	MS	48



Notes:

1. Critical path activities are shown in red.

3.4.2 Alternative 2 – Retrofitting an Existing Surface Impoundment

All the existing surface impoundments at the Calaveras Power Station have a liner system; however, none of these systems meet the specific liner requirements in the CCR Rule (40 CFR §257.72) and are therefore classified as unlined. All surface impoundments (including CCR and non-CCR surface impoundments) at the Calaveras Power Station are listed in Exhibit 3.6. A Surface Impoundment Location Map is provided as Figure 3.1.

Exhibit 3.6 – Calaveras Power Station Surface Impoundments

Name	Description	Storage Capacity (MM gallons)	Liner	Status
Pond #1	Diked Oil Storage Area	0.2	Unlined	Active
Pond #2	Coal Pile Runoff Pond	32.6	Unlined	Active
Pond #3	North Bottom Ash Pond	20.5	Unlined	Inactive
Pond #4	South Bottom Ash Pond	22.5	Unlined	Inactive
Pond #5	Stormwater (Southwest Runoff Pond 3)	1.7	Unlined	Active
Pond #6	Stormwater (CRP Runoff Pond 1)	5.9	Unlined	Active
Pond #7	SRH Pond	4.0	Unlined	Active
Pond #8	Stormwater (CRP Runoff Pond 2)	2.7	Unlined	Active
Pond #9	Stormwater Runoff (Fly Ash) Pond	9.7	Unlined	Active
Pond #10	Evaporation Pond	5.1	Unlined	Active
Pond #11	Clarifier Sludge Recycling Pond	0.8	Unlined	Active
Pond #12	Stormwater (Coal conveyor area temporary holding pond)	1.1	Unlined	Active

In addition, Alternative 2 was not selected for the following reasons:

- Excluding the SRH Pond, there are nine other active surface impoundments (including CCR and non-CCR surface impoundments) at the Calaveras Power Station. Six of these nine surface impoundments are needed for stormwater management and release to Calaveras Lake as permitted discharges. These six surface impoundments also do not have sufficient capacity to receive wastestreams in addition to their designed stormwater capacity. Since these six surface impoundments are unavailable for added capacity, these surface impoundments are not available for retrofit as alternative capacity.

- As for the three active surface impoundments not associated with stormwater management, the footprint of two are not large enough to handle the wastestreams managed in the SRH Pond and one (Evaporation Pond) is being closed as an unlined CCR surface impoundment. Therefore, these three surface impoundments are also not available for retrofit as alternative capacity.

- The two inactive surface impoundments, the North and South Bottom Ash Ponds, have ceased receiving flow and will be clean closed. The schedule for release of these surface impoundments for re-development following closure is unknown and these surface impoundments will not be available for retrofit until all closure activities are complete. In addition, the location of the North Bottom Ash

Pond does not meet the minimum requirements of 40 CFR §257.60 (Placement Above the Uppermost Aquifer).

3.4.3 Alternative 3 – Converting the FGD System to Dry Handling

The FGD system wastewater purge and process flows comprise eight (8) of the thirteen (13) flows that discharge to the SRH Pond and average 50% of the flow. The remaining five (5) flows are comprised of the boilers quench water, wash down water, and stormwater runoff from various plant sumps. A summary of the instantaneous and average flowrates of the flows to the SRH Pond is shown in Exhibit 3.7.

Exhibit 3.7 – Flowrates to the SRH Pond

Item	Flow Description	Instantaneous Flowrate (gpm)	Average Flowrate (gpd)
Boiler and Plant Sumps			
1	Transfer Tower Sump	250	19,000
2	Eastside Drainage Sump	400	8,600
3	Eastside Drainage Sump	400	8,600
4	Unit 1 Boiler Building Area Sump	200	40,000
5	Unit 2 Boiler Area Waste Sump	1,300	253,000
	Subtotal Boiler and Plant	**2,550**	**330,000**
FGD System			
1	Limestone Hopper Area Sump	400	5,800
2	Limestone Hopper Area Sump	400	5,800
3	Limestone Prep Area Sump	200	35,000
4	FGD system Reclaim Water	600	144,000
5	Unit 2 Absorber Area Sump	650	68,000
6	Unit 1 Absorber Waste Slurry Sump	625	259,000
7	Thickener Tunnel Sump	400	29,000
8	Control/Dewatering Building Sump	750	86,000
	Subtotal FGD System	**4,025**	**633,000**
TOTAL		**6,575**	**963,000**

Conversion of the FGD system to dry handling will reduce the number streams that discharge to SRH Pond; but does not address these other plant flows. Additional modifications or alternative capacity is required to address balance of the flows to the SRH Pond. Installation of a WWTF, retrofit of an existing surface impoundment, or a new lined surface impoundment would also be required to cease the CCR and non-CCR flows to the SRH Pond. Conversion of the FGD system to dry handling will reduce the number

of flows and average flow to the SRH Pond, but it does not address all the flows and is therefore a partial step toward ceasing flow to the SRH Pond.

In the longer term and to comply with the Effluent Limitations Guidelines (ELGs) as defined in 40 CFR Part 423 of the Federal Register, the FGD system is expected to be converted to zero liquid discharge (ZLD) operation in the future. The conversion scope includes the addition of FGD system wastewater evaporation ponds and decant/dewatering basins. The overall expected duration of the ZLD conversion project is 48 months with an anticipated completion of December 31, 2028, the compliance date under the Voluntary Incentive Program (VIP) of the ELG Rule finalized on October 13, 2020.

3.4.4 Alternative 4 – Constructing a New CCR Surface Impoundment

The selected alternative, designing and constructing a new lined surface impoundment, similar in design to the existing SRH Pond, is the least complex alternative and it can be implemented in the shortest duration. Although an overall expected duration for design and construction is 44 months, since CPS Energy has already begun the planning process, the remaining duration from issue of the RFP in December 2020 through start-up and initial operation is only 33 months.

For this alternative, the flows that currently discharge to the SRH Pond will be transferred to a new 3-acre surface impoundment, the Plant Drains Pond. The nonhazardous wastewater will be received by the Pond, treated to reduce the TSS and then recycled to the FGD system or discharged through a permitted outfall. A process flow diagram of this alternative is shown in Exhibit 3.8.

The Plant Drains Pond will be located approximately 3,000 feet to the north of the SRH Pond and within the boundaries of the Calaveras Power Station as shown in Exhibit 3.9. This location was selected based on geotechnical and hydrogeological information and it is the closest available area for the surface impoundment. Due to the distance from the SRH Pond to the new Plant Drains Pond, a Transfer System is required.

Temporary storage tanks were evaluated for the period while the new surface impoundment is being planned and constructed. The SRH Pond has a hydraulic retention capacity of 2,000,000 gallons. Temporary tanks are available in a range of capacities from 21,000 gallon frac tanks to modular tanks of 1,000,000 gallons and larger. The maximum height of a modular tanks is about 12 feet and therefore they require a large flat graded area. For example, a typical modular tank with a capacity of 380,000 gallons is 73 feet in diameter by 10 feet tall. Modular tanks may be constructed with a bolted steel frame and geosynthetic membrane liner. To replace the hydraulic capacity of the SRH Pond, 100 frac tanks or five modular tanks (380,000 gallons each) would be required. The number and size of the temporary tanks that could be located near the SRH Pond is limited. Locating temporary tanks remotely is not feasible due the 13 different streams discharging to the SRH Pond and the hydraulics of these pumping systems.

Due to their small capacity, frac tanks would quickly fill with solids and are not a viable option. The geosynthetic membrane used for the modular tanks is susceptible to mechanical damage. Equipment used to remove the solid, such as an excavator, would likely rupture the membrane liner. Damage to the temporary tank liner during solids removal presents the environmental risk of uncontrolled wastewater discharge. The wastewater streams contain 0 to 50% solids with average flowrates ranging from 0 to 700 gpm. Under typical operating conditions, a 380,000 gallon modular tank would be full of solids in 1 to 2 months. Solids removed from the tank would need to be placed in a new containment/processing area for decanting, drying and then loading in trucks for transport to the landfill. This new infrastructure would also have to be designed and installed prior to operation of any temporary tanks.

Due to the limited area available for installation, requirements for dewatering the solids for landfill and challenges and risk associated with solids removal, temporary storage tanks are technically not a feasible option.

Exhibit 3.8 – Process Flow Diagram of New CCR Surface Impoundment - Plant Drains Pond

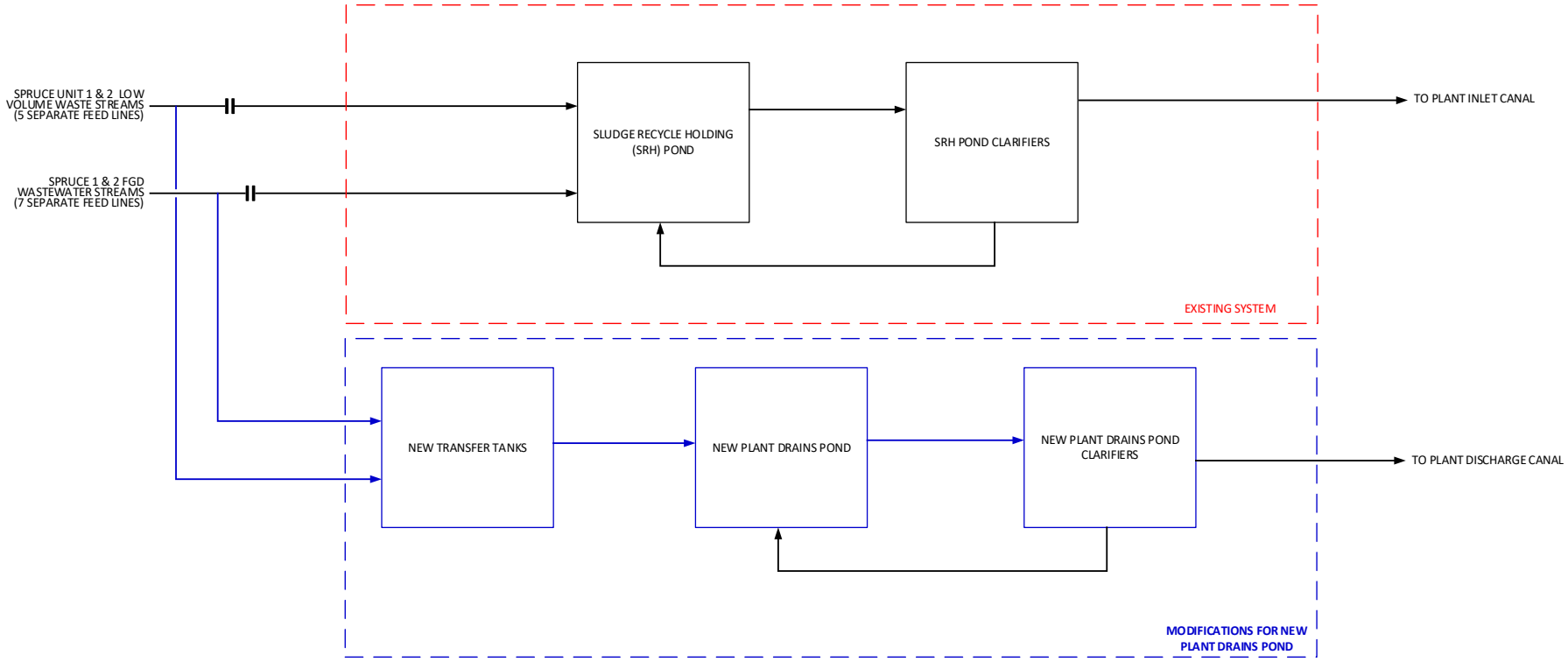
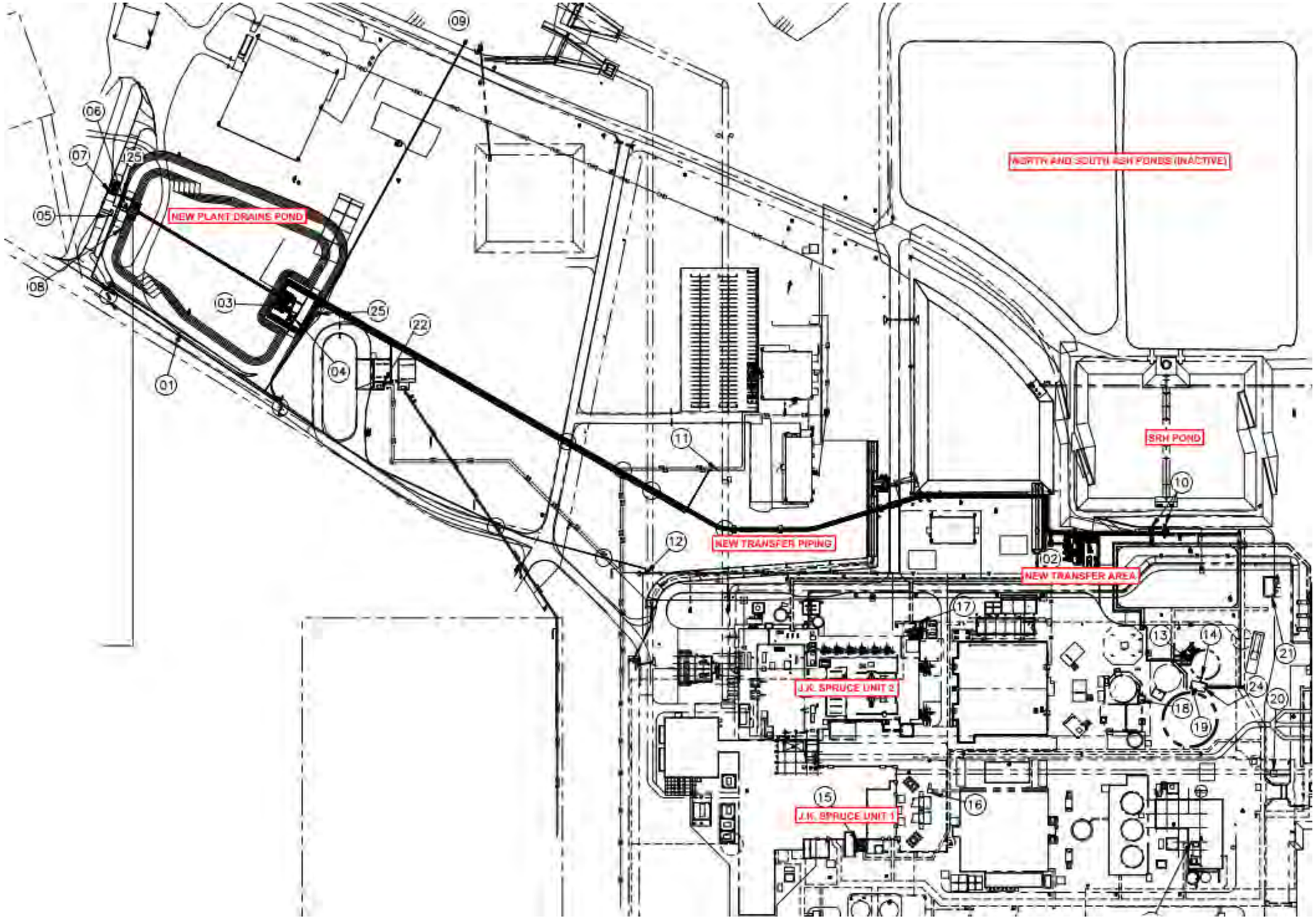


Exhibit 3.9 – Overall Site Plan – Plant Drains Pond and Transfer System



The Transfer System design includes:

- Two 100% capacity Transfer Tanks;
- Three 50% capacity Transfer Pumps;
- Four transfer lines; and
- One area runoff collection sump with two sump pumps.

An arrangement of the Transfer Area is shown in Exhibit 3.10.

Exhibit 3.10 – Plant Drains Pond Transfer Area Arrangement

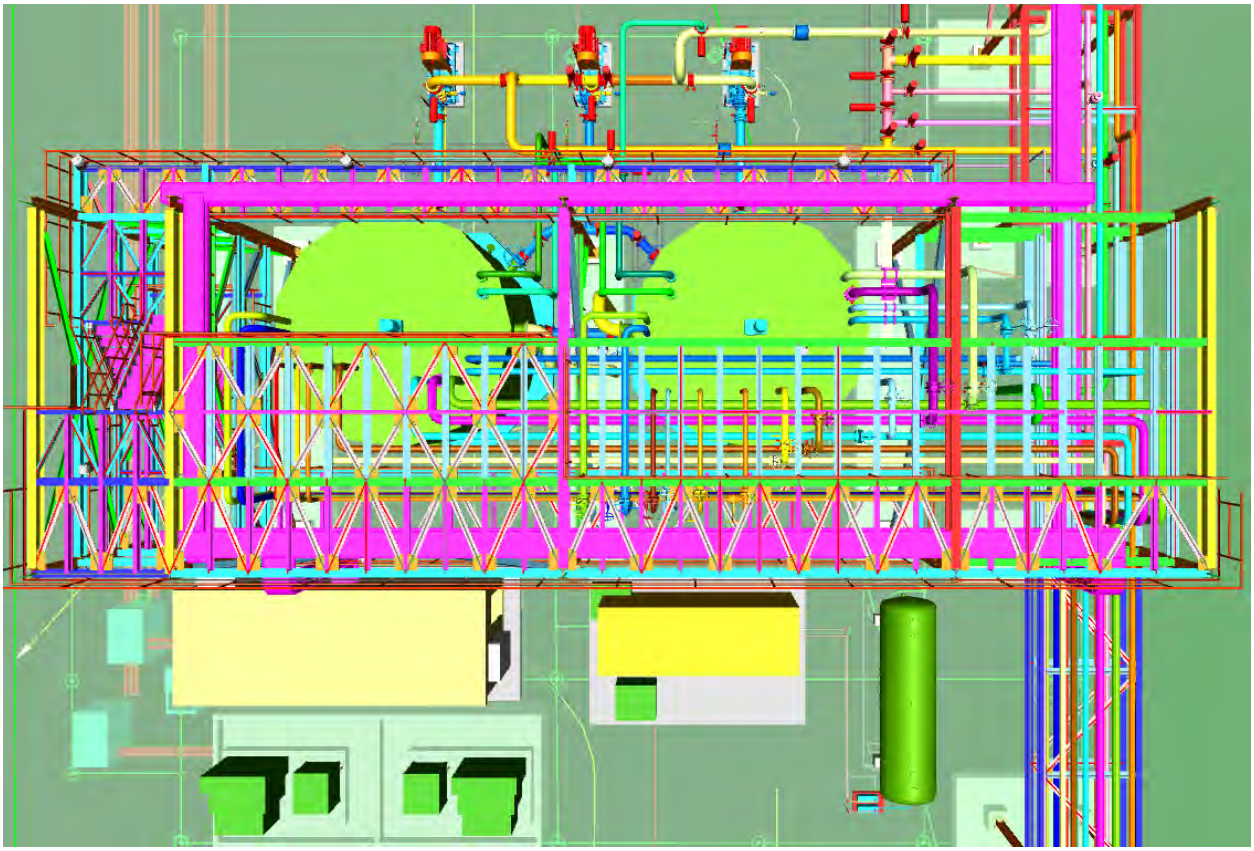
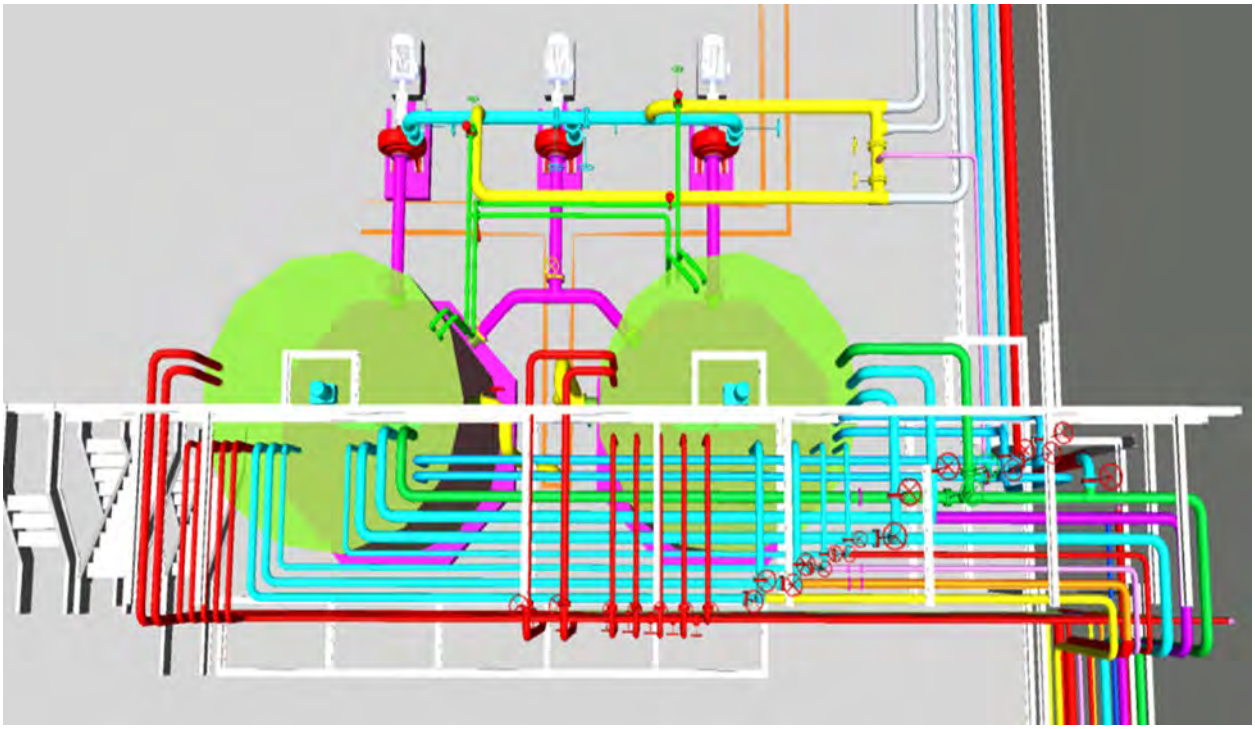


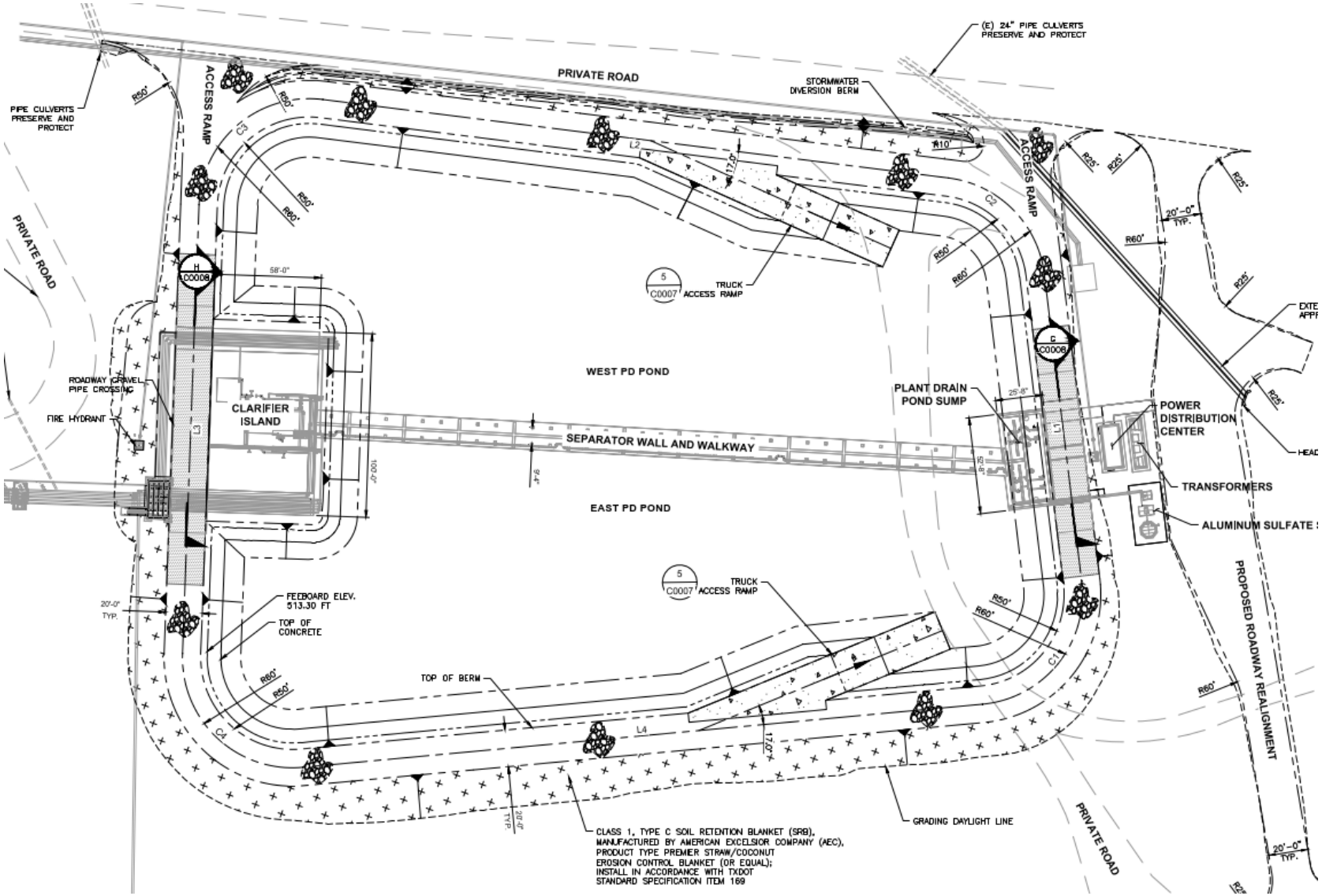
Exhibit 3.10 (continued) – Plant Drains Pond Transfer Area Arrangement



The Transfer Pumps will be designed with variable frequency drives to accommodate the wide flow range. Four dual wall lines, one larger diameter and two mid-sized diameter, and one smaller diameter will transfer wastewater to the Plant Drains Pond. An area sump will collect fluid drained from the transfer lines, washdown and area runoff and return it to the Transfer Tanks.

The Plant Drains Pond will retain key operational features of the existing SRH pond including a separator wall, sump to collect supernatant, and a clarifier to reduce the TSS in the water prior to discharge through a permitted outfall. A preliminary site plan drawing of the Plant Drains Pond is shown in Exhibit 3.11.

Exhibit 3.11– Plant Drains Pond Site Plan



The Plant Drains Pond will be constructed as a single surface impoundment with an east and west cell. A manually operated gate in the separator wall will be closed during normal operation, but can be opened. One cell can be isolated, drained and the solids removed while the other cell is in operation. The overall storage capacity of the Plant Drains Pond is approximately 14 acre-feet, 7 acre-feet per cell.

The Plant Drains Pond design will comply with the criteria as stated in the CCR Rule (40 CFR § 257.72) and will include a composite liner. The upper component will consist of a 60-mil thick high density polyethene (HDPE) geomembrane liner. The lower component will consist of a geosynthetic clay liner (GCL) with a hydraulic conductivity that meets the standards required for CCR compliance. The HDPE geomembrane will be installed in direct and uniform contact with the lower GCL liner. In addition to the composite liner, the pond design will include the following layers:

- Re-enforced concrete (exposed protective layer)
- Compacted fill (protective layer)
- Non-woven geotextile (protective layer)
- HDPE geomembrane liner (upper liner component)
- Geosynthetic clay liner (lower liner component)
- Non-woven geotextile (cushion layer)
- Prepared subgrade (scarified, proof-rolled, and compacted)

The reinforced concrete top layer will cover the bottom of the pond and extend approximately 3 feet up the sidewalls. It will be designed to protect the geomembrane liner during removal of solids from the pond. The concrete layer will include the access ramps in each cell the pond. Above the concrete layer, the geomembrane liner will be covered with soil cement or similar aggregate material to protect this area from potential damage. Pond embankments will have a 3.5:1 slope and a width of 20 feet at the crown. The crown will have a radius of not less than 50 feet to facilitate vehicle access for operation, maintenance and the removal of solids. Exterior embankments of the pond will be hydroseeded.

Two (2) new lamella plate clarifiers will be installed to reduce the TSS in the Plant Drains Pond discharge stream. The clarifiers will be designed to operate in parallel or series dependent. A coagulant and polymer will be added to the clarifier feed stream to promote solids settling and meet the TSS effluent limitations for this discharge.

3.4.5 Summary of Alternatives Evaluated and Selected Alternative

A summary of the four evaluated alternatives is provided below. A summary of the overall expected project durations for CCR and non-CCR flows to the SRH Pond for each evaluated alternative is shown in Exhibit 3.12.

Exhibit 3.12 – Overall Expected Project Durations

Alternative	Description	Overall Expected Project Duration (months)
1	Constructing a Wastewater Treatment Facility	48
2	Retrofitting an Existing Surface Impoundment	-
3	Converting the FGD System Dry Handling	48
4	Constructing a new CCR Surface Impoundment	44

- Alternative 1 – Construction of a new WWTF is a significantly more complex alternative that requires long-lead vendor-engineered equipment and more extensive system infrastructure. Because the overall expected duration for the design and installation of a new WWTF is longer (48 months) than other alternatives, Alternative 1 was not selected.
- Alternative 2 – Retrofit of an existing surface impoundment to receive the SRH Pond flow is a less complex alternative. However, of the twelve (12) surface impoundments (both CCR and non-CCR surface impoundments) at the Calaveras Power Station, none are lined in accordance with the CCR Rule. In addition, Alternative 2 was not selected for the following reasons:
  - Excluding the SRH Pond, there are nine other active surface impoundments (including CCR and non-CCR surface impoundments) at the Calaveras Power Station. Six of these nine surface impoundments are needed for stormwater management and release to Calaveras Lake as permitted discharges. These six surface impoundments also do not have sufficient capacity to receive wastestreams in addition to their designed stormwater capacity. Since these six surface impoundments are unavailable for added capacity, these surface impoundments are not available for retrofit as alternative capacity.
  - As for the three active surface impoundments not associated with stormwater management, the footprint of two are not large enough to handle the wastestreams managed in the SRH Pond and one (Evaporation Pond) is being closed as an unlined CCR surface impoundment. Therefore, these three surface impoundments are also not available for retrofit as alternative capacity.
  - The two inactive surface impoundments, the North and South Bottom Ash Ponds, have ceased receiving flow and will be clean closed. The schedule for release of these surface impoundments for re-development following closure is unknown and these surface impoundments will not be available for retrofit until all closure activities are complete. In addition, the location of the North Bottom Ash Pond does not meet the minimum requirements of 40 CFR §257.60 (Placement Above the Uppermost Aquifer).
- Alternative 3 – Conversion of the FGD system to dry handling eliminates eight (8) of the thirteen (13) flows that discharge to the SRH Pond and approximately 50% of the flow. Additional modifications or additions to the plant are required to address the remaining five (5) flows from the boilers and various plant sumps. Even with the conversion to dry handling of FGD waste, a new WWTF or CCR surface impoundment would also be required to cease CCR and non-CCR flows to the SRH Pond. Reduction in the number of flows associated with converting the FGD system to dry handling will have nominal effect on the expected schedule for these alternatives. The overall expected duration for conversion of the FGD system to dry handling, zero liquid discharge (ZLD) operation, is 48 months. Because this alternative does not in itself address the cessation of flow to the SRH Pond, and it has a longer overall expected duration to design and implement than other alternatives, Alternative 3 was not selected.
- Alternative 4 – The selected alternative, designing and constructing a new lined surface impoundment, is the least complex alternative and it can be implemented in the shortest expected duration. Although an overall expected duration for design and construction is 44 months, since CPS Energy has already begun the planning process, the remaining duration from issue of the RFP in December 2020 through start-up and initial operation is only 33 months. This schedule allows for cessation of CCR and non-CCR flow to the SRH Pond by September 1, 2023. Constructing a new lined surface impoundment also retains the primary operational functionality of the existing SRH Pond and requires minimal modifications to the existing power plants.

3.5 Detailed Schedule of the Fastest Feasible Time to Complete Measures Necessary for Alternative Capacity

As indicated above, since CPS Energy has already begun the planning process, the remaining duration from issue of the RFP in December 2020 through start-up and initial operation is only 33 months. The remaining major project activities and their expected durations are summarized in Exhibit 3.13. CPS Energy is currently in Phase 1 identified in Exhibit 3.13.

Exhibit 3.13 – Expected Durations for Remaining Project Activities

Phase	Remaining Major Project Activities	Expected Durations (months)
1	Contractor Bid, Selection and Award	9
2A	Procurement and Manufacture of Engineered Equipment	14
2B	Final Detailed Design	14
2C	Construction	17
3	Start-up and Commissioning	3
4	Initial Operation and Tuning	2
	Total Project Duration from Issue of RFP	**33**

Note: Phase 2 consists of simultaneous tasks associated with Procurement, Detailed Design, and Construction.

Phase 1. Contractor Bid, Selection and Award

In the bidding phase, potential contractors will be issued a RFP in December 2020 for the procurement and construction project. The bid, selection and award phase includes the following tasks:

- Contractor Bid Period – 8 weeks
  A duration of 8 weeks is planned for the bidders to prepare their proposals. A bidder meeting will be scheduled shortly following issue of the Request for Proposal. The meeting may be held at the site during which the bidders can walkdown the project area and present their questions. The bidders may also formally submit questions throughout the bid cycle.
  The project scope includes vendor engineered procurements, shop fabricated components, construction, start-up and commissioning. During the bid period, bidders will obtain vendor proposals for the major engineered equipment. Engineered equipment from nine separate vendors has been identified in the Work Plan. The construction scope includes civil earthworks, structural, mechanical, electrical, instrumentations and control system modifications. This broad scope may require some bidders to engage subcontractors or partners to execute this work. This type of arrangement typically requires a longer period of time for the bidders to prepare a response due to these formalized agreements.
- Bid Evaluation and Management Review – 8 weeks
  Proposals received by the submittal date will be evaluated. The initial review involves an assessment to confirm the proposals are complete and meet the minimum requirements of the RFP. Proposals submitted will then be evaluated versus the specifications and preliminary design documents. This involves a detailed assessment of the proposed equipment, material quantities,

staffing and schedule. Included is a review of the proposed means and methods and any alternates that may improve the design or reduce cost. Other criteria such as experience performing similar work, safety record and proposed project staffing are also evaluated. The duration of the initial evaluation of the bids is 4 - 6 weeks and is dependent on the quality of the proposals. During this process, bidders may be requested to provide additional information or clarify their offering.

The preliminary evaluation and a preliminary ranking of the bidders will be issued to CPS Energy management for review. A period of 2 to 4 weeks is planned for management review and approval to move forward with a recommendation to the Board of Trustees. The overall evaluation period from receipt of proposals to recommendation to the Board is 8 weeks.

- Contract Negotiation – 6 to 8 weeks

  Prior to CPS Energy Board of Trustees approval, the negotiations with the recommended bidder(s) will be initiated. During this period, the bidders will be requested to address any clarifications and exceptions, respond to any outstanding questions and finalize the project terms and conditions. Negotiations require legal review and management approval. A project of this size typically requires multiple meetings over a period of 6 to 8 weeks to address all technical and commercial items.

- CPS Energy Board Review and Approval – 8 weeks

  At the end of the negotiation period, the recommendation will be presented to the CPS Energy Board of Trustees. CPS Energy is governed by a Board comprised of citizens representing each quadrant of the city and the San Antonio mayor. The Board meets monthly and the agenda is set 1 month prior to each meeting. As a result, a minimum of 2 months is required for Board review and approval.

- Contract Award – 2 to 4 weeks

  Following Board approval, CPS Energy Procurement will enter into a formal contract agreement with the selected vendor. A period of 2 to 4 weeks is planned for this procurement process.

Phase 2A. Engineered Equipment Procurement and Manufacture

The contactor's scope includes procurement of all vendor engineered equipment and shop fabricated components. Vendor engineered equipment includes, but is not limited to, pumps, mixers, clarifiers and the emergency diesel generator. It also includes shop fabricated engineered components such as the power distribution centers (PDC) and clarifier polymer addition system. Contractor shop fabricated components include structural and support steel, rubber lined carbon steel pipe, and knockdown panels for field erected tanks. The overall duration of procurement and manufacture is 14 months. The schedule for the primary items is as follows:

- Vendor Engineered Equipment

  To support the accelerated project schedule, some engineered equipment will be procured immediately following contractor award. Vendor supplied information, such as foundation loads, connection details, circuit diagrams and electrical loads, is required to complete the detailed design. Engineered equipment that is long lead, such as the clarifier and PDC, will also be prioritized for early procurement.

  This phase consists of a period of 2 months for vendor bidding, bid evaluation, and contract negotiation and award for each piece of engineered equipment prior to beginning vendor engineering and manufacturing. The schedule durations for vendor engineering, manufacture and delivery in the schedule are based on preliminary quotes and discussions during the initial design phase. The overall procurement and manufacturing duration is approximately 14 months. The PDC and emergency generator have long lead times and are on the critical path in the schedule. Final

vendor design of the PDC is dependent on design information provided by other equipment vendors, such as pumps and agitators.

The following is a summary of the primary vendor engineered equipment procurements with the critical path and early procurement items noted:

1. Pumps - Horizontal & Submergible Slurry Pumps - early procurement
2. Agitators/Mixers - early procurement
3. Clarifier – Lamella - early procurement
4. Clarifier Flocculant System and Enclosure - early procurement
5. Electrical Power Distribution Center – critical path, final release dependent on receipt of information from early procurement equipment vendors
6. Emergency Diesel Generator – critical path, early procurement
7. Distributed Control System Expansion
8. Automated Valves – isolation and control
9. Instruments – flow, pressure and temperature

- Fabricated Components

The contractor will procure shop fabricated components that will be field erected. Two months have been allocated for contractor bidding, bid evaluations, and contract award. The field erected tanks are also early procurements to support final detail design of the foundations. The tank vendor develops the detailed design of these tanks and supplies shop fabricated panels to the field where they are assembled. Following construction, the tanks will be lined with a vinyl ester flake glass organic liner. Other shop fabricated components include structural and access steel and rubber lined piping spools. Structural and access steel in the clarifier area will be released later following the receipt of vendor information for the clarifier.

1. Tanks – large field erected knockdown tanks - early procurement
2. Tanks -small shop fabricated tanks
3. Structural and Access Steel – general
4. Structural and Access Steel – clarifier area
5. Shop Fabricated Piping Spools

Phase 2B. Final Detailed Design

Completion of the final detailed design is dependent on the receipt of final information from the engineered equipment vendors. Preliminary information from the suppliers was used for development of the initial design. More detailed information for the equipment and components is required to develop the Issue for Construction (IFC) packages released to the contractor.

Three or more IFC packages will be issued to the construction contractor in stages as follows:

1. Civil Earthworks – pond design
2. Structural & Mechanical
3. Electrical, Instrumentation and Controls

The civil earthworks design will be substantially complete at contact award and the IFC package will be issued first. The structural and mechanical will follow after receipt of equipment vendor information. The

structural and mechanical IFC package may be issued by area based on the schedule for receipt of equipment vendor information. Electrical, instrumentation and controls is the final IFC package to be issued and may also be issued by area dependent on the schedule for receipt of equipment vendor information. The overall duration for final detailed design is 14 months; however, multiple IFC packages issued to the contractor to allow construction to proceed with the shortest feasible schedule.

Phase 2C. Construction

Civil construction of the Plant Drains Pond is expected to require 12 months. The site for the Plant Drains Pond is clear and relatively free of obstructions. An existing private gravel roadway to the north will require relocation and various culverts will need to be extended or added to divert stormwater runoff. The pond design includes a reinforced concrete protective layer, access ramps, division wall, sump and clarifier island. Deep foundations are required at the clarifier island. These additional pond features extend the duration for the civil construction; however, this work can be initiated early in construction and the Plant Drains Pond is not on the critical path.

Following the civil work, the mechanical, structural and controls/electrical work in the pond area will commence. Equipment in the pond area includes clarifiers, pumps, polymer skid & enclosure and the PDC. After equipment is set, support and access steel will be installed followed by the piping and electrical and control cables and components. The clarifiers and PDC's are both long lead components located in this area.

Construction in the Transfer Area is expected to require 12 months. Work in this area may start following site preparation in the Plant Drains Pond area. Construction in the Transfer Area will require demolition and relocation of existing overhead utilities and buried electrical conduit. Tie-in to the existing process lines and utilities will require coordination with plant operations. This activity can be done in parallel with construction of the Plant Drains Pond and installation of the associated equipment in the pond area. Predecessors for this activity include procurement and manufacture of equipment and completion of final detailed design. Long lead procurements in this area are the PDC and emergency diesel generator. These items have an expected manufacturing duration of 8 to 9 months, which will be completed in parallel with the transfer area site prep, demolition and existing process tie-ins. A duration of 3 to 4 months is planned for installation of the PDC, transformers, generator, and electrical and controls cabling.

Piping will be routed from the transfer area to the new Plant Drains Pond. Most of the pipe will be buried and with an overland route that crosses 2 secondary plant roadways, 2 stormwater ditches, and the plant circulation water lines. The plant circulating water lines are critical infrastructure and will require additional provisions to address this risk. The durations for installation of the below ground piping is based on these features.

The Balance of Plant (BOP) scope includes tie-in to the main plant electrical distribution and distributed controls systems (DCS). New redundant electric feeds will supply the Plant Drains Pond and Transfer Area. New buried duct bank will be installed to each of these areas.

Other tie-ins with the main plant are potable water, service water, instrument air and fire protection water. As with the process tie-ins, this work must be planned and coordinated with plant operations and may be work that must be performed during a plant outage. These activities will occur in parallel with the construction in the transfer area after all Issue for Construction Packages are completed.

Phase 3. Start-up and Commissioning

Following completion of construction, the project will enter the start-up and commissioning phase. This phase is a total of 3 months and involves pre-operational testing and checkout of components, subsystems and systems. Checkout encompasses all mechanical, electrical, instrumentation and control components followed by functional testing of the system. This activity is performed in series beginning with component checks, followed by component operation, subsystem function checks and finally overall system checkout. Construction Completion Turnover (CCT) packages will be developed for each system/subsystem. The CCT package assists in the orderly transfer from construction to start-up and then to initial operation. The following is a summary of primary start-up and commissioning tasks:

- Mechanical Equipment, Piping and Valves – There are 19 component items associated with the mechanical equipment and valve checkout. Key items include: tank and vessel inspections, equipment lubrication, alignment, torque settings and clearance adjustments, piping system and insulation checks, pipe support and expansion joint checks, hydrostatic testing, line flushing, equipment run-in, vibration check and automated valve operation.
- Structural and Access Steel - There are 5 component items associated with the structural and access steel. Key items include bolted connection inspection, stairs, ladders and access inspection, bolted connection torque record and structural completion certification
- Electrical Equipment, Cabling and Grounding – There are 36 component items associated with the electrical distribution system and equipment checkout. Key items include: motor megger testing, motor run-in, equipment insulation test record verification, transformer insulation and voltage testing, switchgear control settings, relay settings and testing, cable testing (Hipot), ground grid integrity, heat tracing energization, area lighting and HVAC, diesel generator check and transfer, uninterruptable power system check, current and potential transformer test records, circuit breaker and motor control center (MCC) testing.
- Instrumentation and Controls - There are 12 component items associated with the instrument and controls system component checkout. Key items include: control valve calibration and limits, instrument calibration, loop checks, device functional testing, digital loop tests, instrument air header flush and pressure adjustments.
- Control System Functional Testing - Follow check out and acceptance of the system components, functional testing will be performed to verify the system control logic is performing as designed. Functional checks involve operation of the system on water to verify sequences for start-up, shut down, transfer between trains and operation over the full range of low, average and high flow conditions. Functional checks also include abnormal shutdown, pump trip and component trip/failure. Functional checks are performed from a temporary / start-up human machine interface (HMI) console prior to integration with the plant distributed control system (DCS).

Prior to initial operation of the Plant Drains Pond, the Engineer of Record will submit construction test records, sealed design information and a certification of the design to the Texas Commission on Environmental Quality (TCEQ). TCEQ approval of the final construction is required prior to discharging wastewater into the new surface impoundment. This is a parallel activity to be executed along with final construction. It is not on the critical path in the baseline schedule, but could become a critical path activity if permit approval is delayed.

Phase 4. Initial Operation, Tuning and Testing

A period of 2 months is planned for initial operation, tuning and testing of the system. During this period the system will receive and treat the SRH Pond wastestreams. Primary activities during this period are tuning the process control loops and setpoint adjustment. Control setting adjustments may include flush durations, valve speed, level setpoints, process variables controlling equipment start/stop functions, clarifier coagulant and flocculant dosage rates, instrument air pressure settings for pneumatic operators, final adjustment of electrical settings and pump variable speed response rate. The process tuning period is typically 4 – 6 weeks following initial operation. This provides enough operating time to complete shakedown of the system and address any remaining items. Equipment vendors may be engaged during this period to address component issues or support final tuning.

Contractual performance testing of the clarifier will be performed during this period. These tests are to verify that the clarifier performance meets guarantee and the total suspended solids discharged from the Plant Drains Pond is within the target range. Performance tests will be performed over several days followed by analysis of the samples. Two weeks are planned for performance testing. At the completion of initial operation period, flows to SRH Pond will cease and be redirected to the Plant Drains Pond system.

3.6 Narrative Discussion of the Schedule and Visual Timeline Representation

Prior to 2018, as part a comprehensive effort to address both the CCR Rule and ELGs, a technical study was performed to evaluate options and support planning to comply with both rules. Following this initial study, a topographic survey and geotechnical/ hydrogeological investigation of the recommended area for the Plant Drains Pond was performed. A conceptual design for the Plant Drains Pond was developed in 2018 with anticipated closure of the SRH Pond by end of 2023. EPA should note CPS Energy did not have a CCR closure trigger under the original CCR Rule as published in 2015.

Development of the initial detailed design for the Plant Drains Pond System was initiated in January of 2020. These preliminary design documents will be included in the RFP. A summary timeline representation of the primary activities and milestone dates from issuance of RFP is shown in Exhibit 3.14. A detailed project schedule is provided as Exhibit 3.15. Following the project critical path, the SRH Pond will cease receiving CCR and non-CCR flows on September 1, 2023.

The schedule includes parallel activities that may not be on the baseline schedule critical path. Parallel activities during construction include civil construction of the Plant Drains Pond and completion of the IFC design documents. Installation of equipment, piping and electrical and controls in the Pond Area will occur in parallel with site preparation, clearing, demolition and equipment installation for the Transfer Area. These activities will be completed prior to completion of the balance of plant construction. Based on the expected construction sequence and procurement schedule, the electrical and controls will be the last subsystems to be completed. During this period, the application to discharge to the Plant Drains Pond will be submitted to TCEQ for review and approval. Following completion of construction, the system will undergo start-up and commissioning. A 2-month initial operation period will follow which includes a 30 day availability run to demonstrate the reliability of the system prior to the cessation of CCR and non-CCR wastestream flows to the SRH Pond.

Exhibit 3.14 – Plant Drains Pond System Summary Timeline

Activity Description	Duration (months)	Start	Finish
Preliminary Design and Planning	6	Jan 2020	Jul 2020
Detailed Design	29	Apr 2020	Nov 2022
Contractor Bid, Selection and Award	10	Oct 2020	Aug 2021
Procurement	14	Sep 2021	Dec 2022
Construction	17	Oct 2021	Mar 2020
Permitting	4	Jan 2023	Jun 2023
Start-Up and Commisioning	3	Mar 2023	Jun 2023
Initial Operation and Tuning	2	Jun 2023	Aug 2023

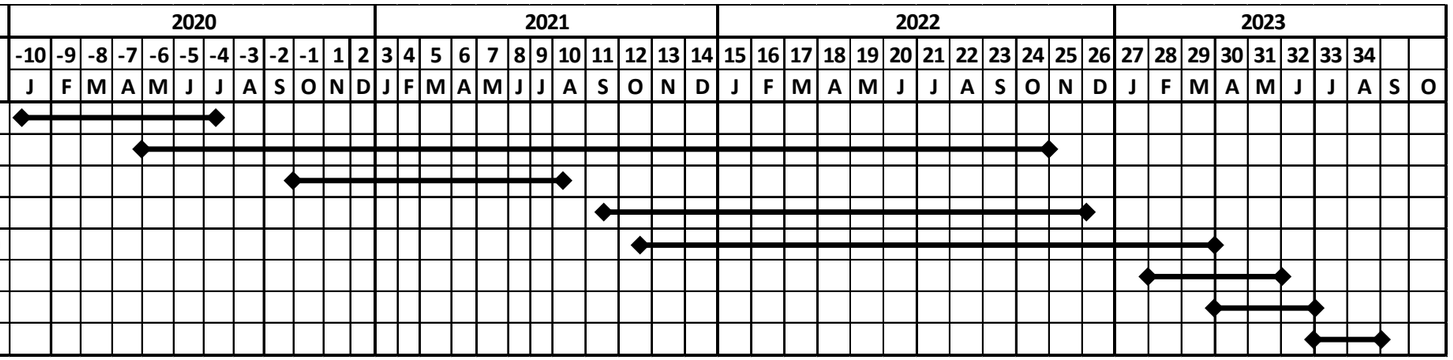
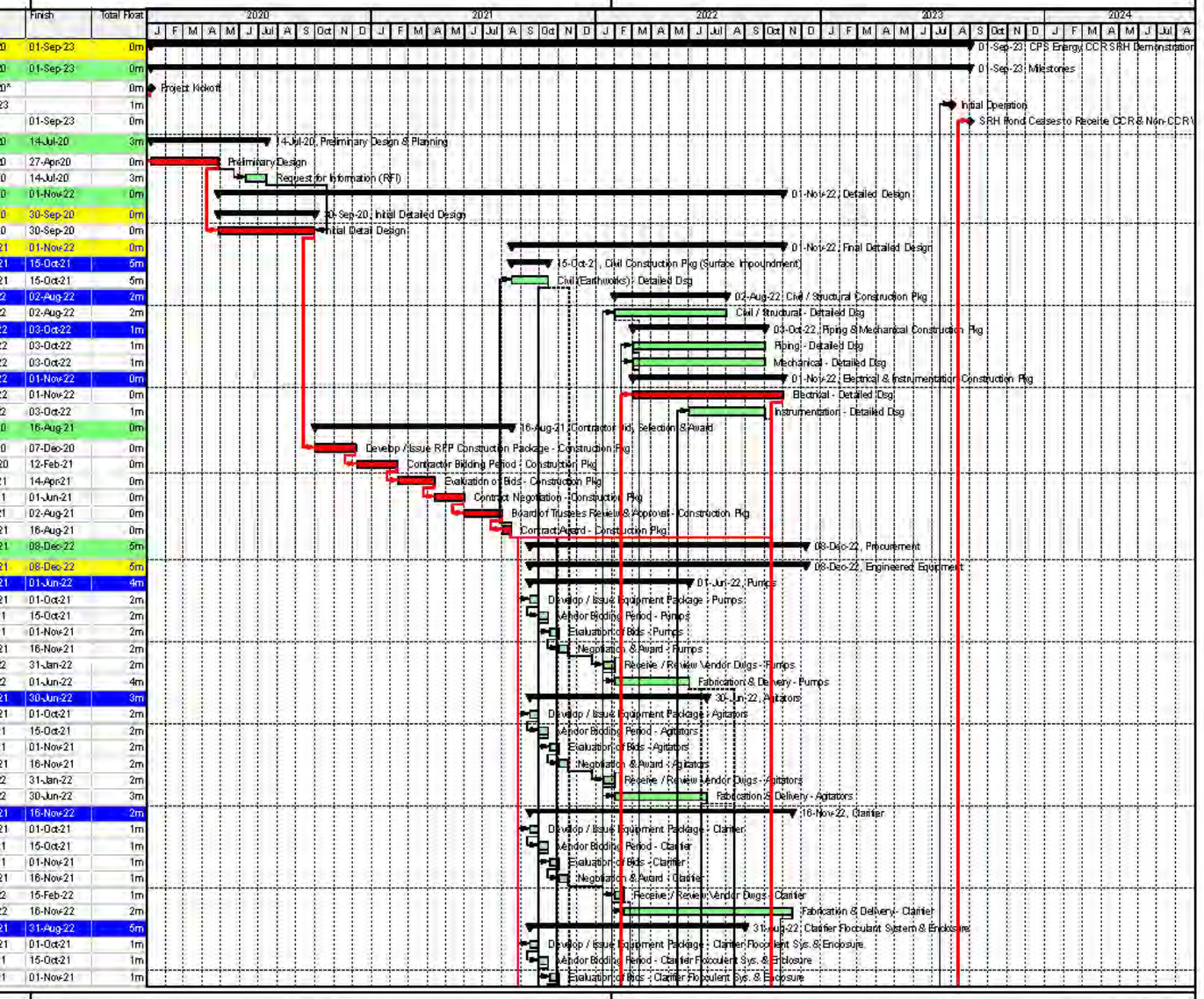


Exhibit 3.15 – Plant Drains Pond System Detailed Schedule

CPS Energy CCR SRH Demonstration_Rev0

Activity ID	Activity Name	Duration	Start	Finish	Total Float
CPS Energy CCR SRH Demonstration_Rev0		42m	09-Jan-20	01-Sep-23	0m
Milestones		42m	09-Jan-20	01-Sep-23	0m
A1000	Project Kickoff	0m	09-Jan-20*		0m
A1010	Initial Operation	0m	02-Aug-23		1m
A2370	SRH Pond Ceases to Receive CCR & Non-CCR Waste Streams	0m		01-Sep-23	0m
Preliminary Design & Planning		6m	09-Jan-20	14-Jul-20	3m
A1020	Preliminary Design	4m	09-Jan-20	27-Apr-20	0m
A1030	Request for Information (RFI)	1m	11-Jun-20	14-Jul-20	3m
Detailed Design		29m	27-Apr-20	01-Nov-22	0m
Initial Detailed Design		5m	27-Apr-20	30-Sep-20	0m
A1040	Initial Detail Design	5m	27-Apr-20	30-Sep-20	0m
Final Detailed Design		14m	17-Aug-21	01-Nov-22	0m
Civil Construction Pkg (Surface Impoundment)		2m	17-Aug-21	15-Oct-21	5m
A1200	Civil (Earthworks) - Detailed Dsg	2m	17-Aug-21	15-Oct-21	5m
Civil / Structural Construction Pkg		6m	31-Jan-22	02-Aug-22	2m
A1220	Civil / Structural - Detailed Dsg	6m	31-Jan-22	02-Aug-22	2m
Piping & Mechanical Construction Pkg		7m	02-Mar-22	03-Oct-22	1m
A1230	Piping - Detailed Dsg	7m	02-Mar-22	03-Oct-22	1m
A1240	Mechanical - Detailed Dsg	7m	02-Mar-22	03-Oct-22	1m
Electrical & Instrumentation Construction Pkg		8m	02-Mar-22	01-Nov-22	0m
A1250	Electrical - Detailed Dsg	8m	02-Mar-22	01-Nov-22	0m
A1260	Instrumentation - Detailed Dsg	4m	01-Jun-22	03-Oct-22	1m
Contractor Bid, Selection & Award		10m	01-Oct-20	16-Aug-21	0m
A1050	Develop / Issue RFP Construction Package - Construction Pkg	2m	01-Oct-20	07-Dec-20	0m
A1060	Contractor Bidding Period - Construction Pkg	2m	08-Dec-20	12-Feb-21	0m
A1070	Evaluation of Bids - Construction Pkg	2m	15-Feb-21	14-Apr-21	0m
A1100	Contract Negotiation - Construction Pkg	2m	15-Apr-21	01-Jun-21	0m
A1080	Board of Trustees Review & Approval - Construction Pkg	2m	01-Jun-21	02-Aug-21	0m
A1090	Contract Award - Construction Pkg	1m	02-Aug-21	16-Aug-21	0m
Procurement		14m	16-Sep-21	08-Dec-22	5m
Engineered Equipment		14m	16-Sep-21	08-Dec-22	5m
Pumps		8m	16-Sep-21	01-Jun-22	4m
A1270	Develop / Issue Equipment Package - Pumps	1m	16-Sep-21	01-Oct-21	2m
A1280	Vendor Bidding Period - Pumps	1m	01-Oct-21	15-Oct-21	2m
A1290	Evaluation of Bids - Pumps	1m	18-Oct-21	01-Nov-21	2m
A1300	Negotiation & Award - Pumps	1m	01-Nov-21	16-Nov-21	2m
A1310	Receive / Review Vendor Dwgs - Pumps	1m	14-Jan-22	31-Jan-22	2m
A1800	Fabrication & Delivery - Pumps	4m	31-Jan-22	01-Jun-22	4m
Agitators		9m	16-Sep-21	30-Jun-22	3m
A1320	Develop / Issue Equipment Package - Agitators	1m	16-Sep-21	01-Oct-21	2m
A1330	Vendor Bidding Period - Agitators	1m	01-Oct-21	15-Oct-21	2m
A1340	Evaluation of Bids - Agitators	1m	18-Oct-21	01-Nov-21	2m
A1350	Negotiation & Award - Agitators	1m	01-Nov-21	16-Nov-21	2m
A1360	Receive / Review Vendor Dwgs - Agitators	1m	14-Jan-22	31-Jan-22	2m
A1810	Fabrication & Delivery - Agitators	5m	31-Jan-22	30-Jun-22	3m
Clarifier		14m	16-Sep-21	16-Nov-22	2m
A1370	Develop / Issue Equipment Package - Clarifier	1m	16-Sep-21	01-Oct-21	1m
A1380	Vendor Bidding Period - Clarifier	1m	01-Oct-21	15-Oct-21	1m
A1390	Evaluation of Bids - Clarifier	1m	18-Oct-21	01-Nov-21	1m
A1400	Negotiation & Award - Clarifier	1m	01-Nov-21	16-Nov-21	1m
A1410	Receive / Review Vendor Dwgs - Clarifier	1m	31-Jan-22	15-Feb-22	1m
A1820	Fabrication & Delivery - Clarifier	9m	15-Feb-22	16-Nov-22	2m
Clarifier Flocculant System & Enclosure		11m	16-Sep-21	31-Aug-22	5m
A1910	Develop / Issue Equipment Package - Clarifier Flocculent Sys. & Enclosure	1m	16-Sep-21	01-Oct-21	1m
A1920	Vendor Bidding Period - Clarifier Flocculent Sys. & Enclosure	1m	01-Oct-21	15-Oct-21	1m
A1930	Evaluation of Bids - Clarifier Flocculent Sys. & Enclosure	1m	18-Oct-21	01-Nov-21	1m



Actual Work · Remaining Work · Critical Remaining Work · Milestone · Summary

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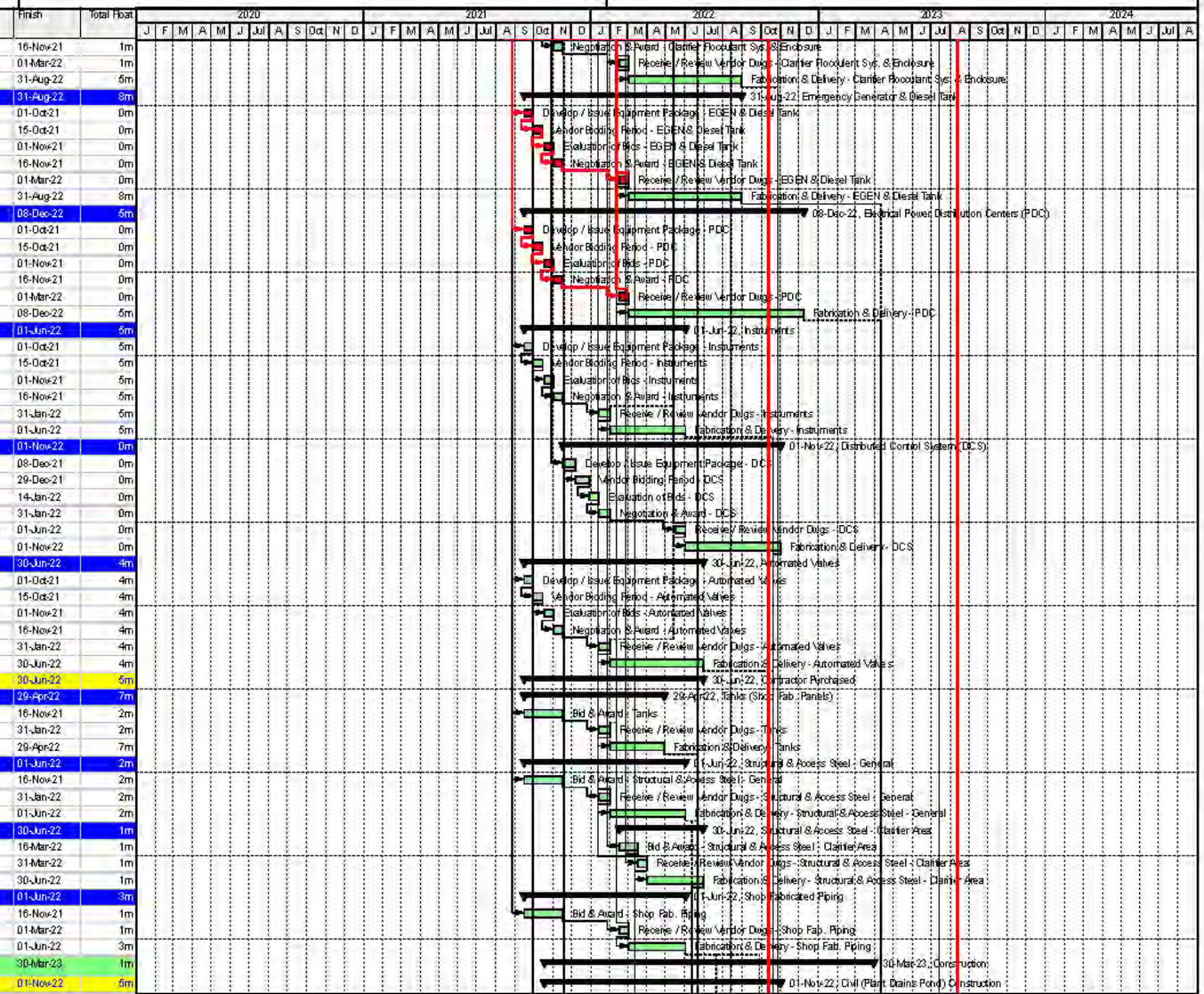
AECOM

Exhibit 3.15 – Plant Drains Pond System Detailed Schedule (continued)

CPS Energy CCR SRH Demonstration_Rev0

Activity ID	Activity Name	Duration	Start	Finish	Total Float
A1940	Negotiation & Award - Clarifier Flocculant Sys. & Enclosure	1m	01-Nov-21	16-Nov-21	1m
A1950	Receive / Review Vendor Dwgs - Clarifier Flocculant Sys. & Enclosure	1m	15-Feb-22	01-Mar-22	1m
A1960	Fabrication & Delivery - Clarifier Flocculant Sys. & Enclosure	6m	02-Mar-22	31-Aug-22	5m
Emergency Generator & Diesel Tank		11m	16-Sep-21	31-Aug-22	8m
A1420	Develop / Issue Equipment Package - EGEN & Diesel Tank	1m	16-Sep-21	01-Oct-21	0m
A1430	Vendor Bidding Period - EGEN & Diesel Tank	1m	01-Oct-21	15-Oct-21	0m
A1440	Evaluation of Bids - EGEN & Diesel Tank	1m	18-Oct-21	01-Nov-21	0m
A1450	Negotiation & Award - EGEN & Diesel Tank	1m	01-Nov-21	16-Nov-21	0m
A1460	Receive / Review Vendor Dwgs - EGEN & Diesel Tank	1m	15-Feb-22	01-Mar-22	0m
A1830	Fabrication & Delivery - EGEN & Diesel Tank	6m	02-Mar-22	31-Aug-22	8m
Electrical Power Distribution Centers (PDC)		14m	16-Sep-21	08-Dec-22	5m
A1470	Develop / Issue Equipment Package - PDC	1m	16-Sep-21	01-Oct-21	0m
A1480	Vendor Bidding Period - PDC	1m	01-Oct-21	15-Oct-21	0m
A1490	Evaluation of Bids - PDC	1m	18-Oct-21	01-Nov-21	0m
A1500	Negotiation & Award - PDC	1m	01-Nov-21	16-Nov-21	0m
A1510	Receive / Review Vendor Dwgs - PDC	1m	15-Feb-22	01-Mar-22	0m
A1840	Fabrication & Delivery - PDC	9m	02-Mar-22	08-Dec-22	5m
Instruments		8m	16-Sep-21	01-Jun-22	5m
A1970	Develop / Issue Equipment Package - Instruments	1m	16-Sep-21	01-Oct-21	5m
A1980	Vendor Bidding Period - Instruments	1m	01-Oct-21	15-Oct-21	5m
A1990	Evaluation of Bids - Instruments	1m	18-Oct-21	01-Nov-21	5m
A2000	Negotiation & Award - Instruments	1m	01-Nov-21	16-Nov-21	5m
A2010	Receive / Review Vendor Dwgs - Instruments	1m	14-Jan-22	31-Jan-22	5m
A2020	Fabrication & Delivery - Instruments	4m	31-Jan-22	01-Jun-22	5m
Distributed Control System (DCS)		11m	16-Nov-21	01-Nov-22	0m
A2260	Develop / Issue Equipment Package - DCS	1m	16-Nov-21	08-Dec-21	0m
A2270	Vendor Bidding Period - DCS	1m	08-Dec-21	29-Dec-21	0m
A2280	Evaluation of Bids - DCS	1m	30-Dec-21	14-Jan-22	0m
A2290	Negotiation & Award - DCS	1m	14-Jan-22	31-Jan-22	0m
A2300	Receive / Review Vendor Dwgs - DCS	1m	16-May-22	01-Jun-22	0m
A2310	Fabrication & Delivery - DCS	5m	01-Jun-22	01-Nov-22	0m
Automated Valves		9m	16-Sep-21	30-Jun-22	4m
A2030	Develop / Issue Equipment Package - Automated Valves	1m	16-Sep-21	01-Oct-21	4m
A2040	Vendor Bidding Period - Automated Valves	1m	01-Oct-21	15-Oct-21	4m
A2050	Evaluation of Bids - Automated Valves	1m	18-Oct-21	01-Nov-21	4m
A2060	Negotiation & Award - Automated Valves	1m	01-Nov-21	16-Nov-21	4m
A2070	Receive / Review Vendor Dwgs - Automated Valves	1m	14-Jan-22	31-Jan-22	4m
A2080	Fabrication & Delivery - Automated Valves	5m	31-Jan-22	30-Jun-22	4m
Contractor Purchased		9m	16-Sep-21	30-Jun-22	5m
Tanks (Shop Fab, Panels)		7m	16-Sep-21	29-Apr-22	7m
A2090	Bid & Award - Tanks	2m	16-Sep-21	16-Nov-21	2m
A2100	Receive / Review Vendor Dwgs - Tanks	1m	14-Jan-22	31-Jan-22	2m
A2110	Fabrication & Delivery - Tanks	3m	31-Jan-22	29-Apr-22	7m
Structural & Access Steel - General		8m	16-Sep-21	01-Jun-22	2m
A2120	Bid & Award - Structural & Access Steel - General	2m	16-Sep-21	16-Nov-21	2m
A2130	Receive / Review Vendor Dwgs - Structural & Access Steel - General	1m	14-Jan-22	31-Jan-22	2m
A2140	Fabrication & Delivery - Structural & Access Steel - General	4m	31-Jan-22	01-Jun-22	2m
Structural & Access Steel - Clarifier Area		5m	15-Feb-22	30-Jun-22	1m
A2150	Bid & Award - Structural & Access Steel - Clarifier Area	1m	15-Feb-22	16-Mar-22	1m
A2160	Receive / Review Vendor Dwgs - Structural & Access Steel - Clarifier Area	1m	16-Mar-22	31-Mar-22	1m
A2170	Fabrication & Delivery - Structural & Access Steel - Clarifier Area	3m	31-Mar-22	30-Jun-22	1m
Shop Fabricated Piping		8m	16-Sep-21	01-Jun-22	3m
A2180	Bid & Award - Shop Fab. Piping	2m	16-Sep-21	16-Nov-21	1m
A2190	Receive / Review Vendor Dwgs - Shop Fab. Piping	1m	15-Feb-22	01-Mar-22	1m
A2200	Fabrication & Delivery - Shop Fab. Piping	3m	02-Mar-22	01-Jun-22	3m
Construction		16m	18-Oct-21	30-Mar-23	1m
Civil (Plant Drains Pond) Construction		12m	18-Oct-21	01-Nov-22	5m



Actual Work · Remaining Work · Critical Remaining Work · Milestone · Summary

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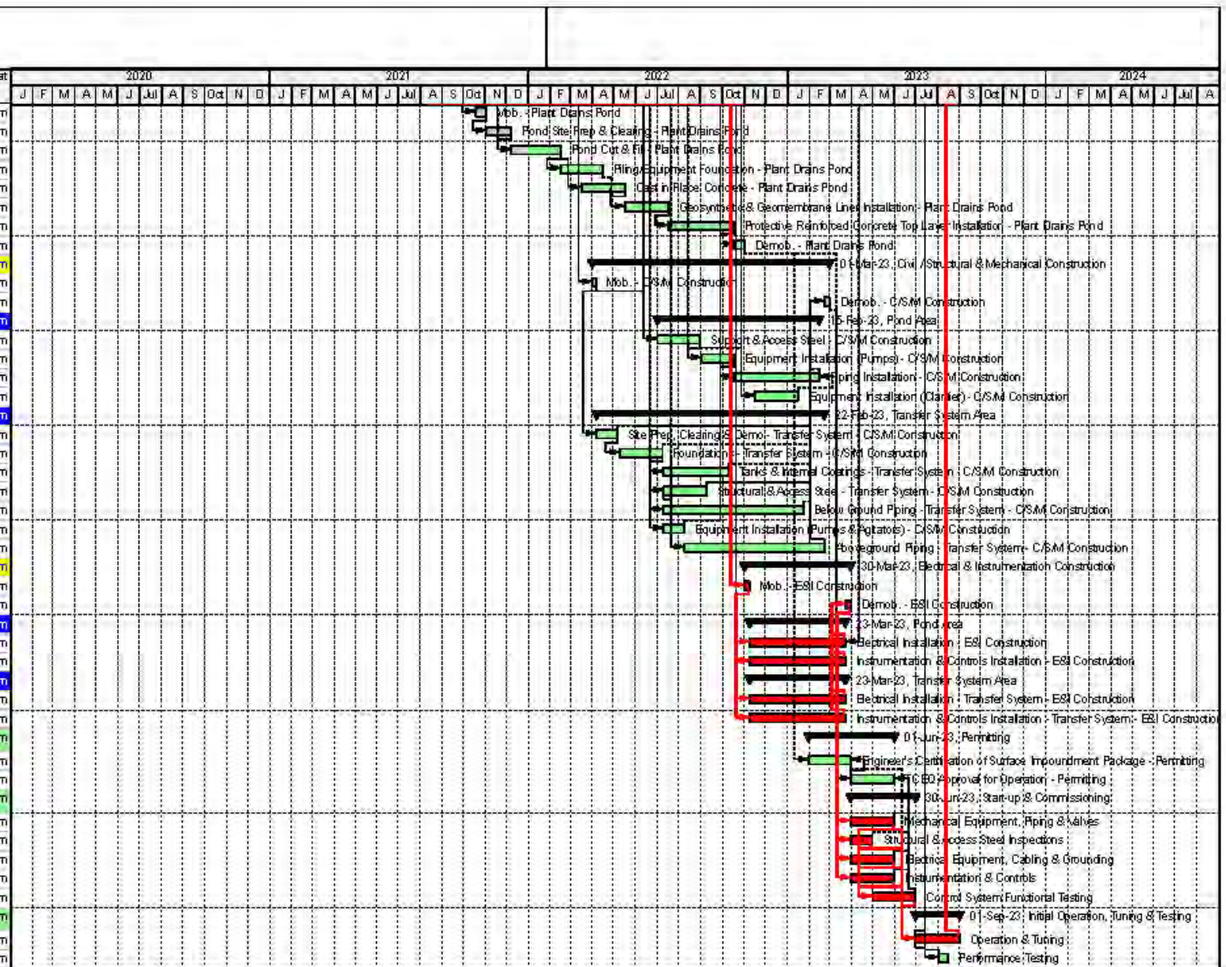
Exhibit 3.15 – Plant Drains Pond System Detailed Schedule (continued)

CPS Energy CCR SRH Demonstration_Rev0

Activity ID	Activity Name	Duration	Start	Finish	Total Float
A1520	Mob. - Plant Drains Pond	1m	18-Oct-21	01-Nov-21	5m
A1530	Pond Site Prep & Clearing - Plant Drains Pond	1m	01-Nov-21	08-Dec-21	5m
A1540	Pond Cut & Fill - Plant Drains Pond	2m	08-Dec-21	15-Feb-22	5m
A1550	Piling/Equipment Foundation - Plant Drains Pond	2m	15-Feb-22	15-Apr-22	6m
A2220	Cast in Place Concrete - Plant Drains Pond	2m	16-Mar-22	16-May-22	5m
A1560	Geosynthetic & Geomembrane Liner Installation - Plant Drains Pond	2m	16-May-22	18-Jul-22	5m
A1570	Protective Reinforced Concrete Top Layer Installation - Plant Drains Pond	3m	18-Jul-22	18-Oct-22	5m
A1580	Demob. - Plant Drains Pond	1m	18-Oct-22	01-Nov-22	5m
Civil / Structural & Mechanical Construction		10m	31-Mar-22	01-Mar-23	1m
A1590	Mob. - C/S/M Construction	0m	31-Mar-22	07-Apr-22	1m
A1600	Demob. - C/S/M Construction	0m	22-Feb-23	01-Mar-23	1m
Pond Area		7m	01-Jul-22	15-Feb-23	1m
A1630	Support & Access Steel - C/S/M Construction	2m	01-Jul-22	31-Aug-22	1m
A1640	Equipment Installation (Pumps) - C/S/M Construction	2m	01-Sep-22	18-Oct-22	1m
A1650	Piping Installation - C/S/M Construction	4m	18-Oct-22	15-Feb-23	1m
A2210	Equipment Installation (Clarifier) - C/S/M Construction	2m	16-Nov-22	16-Jan-23	2m
Transfer System Area		10m	07-Apr-22	22-Feb-23	1m
A1670	Site Prep, Clearing & Demo - Transfer System - C/S/M Construction	1m	07-Apr-22	06-May-22	1m
A1680	Foundations - Transfer System - C/S/M Construction	2m	09-May-22	08-Jul-22	1m
A1690	Tanks & Internal Coatings - Transfer System - C/S/M Construction	3m	11-Jul-22	10-Oct-22	5m
A1700	Structural & Access Steel - Transfer System - C/S/M Construction	2m	11-Jul-22	08-Sep-22	1m
A1720	Below Ground Piping - Transfer System - C/S/M Construction	6m	11-Jul-22	23-Jan-23	2m
A2230	Equipment Installation (Pumps & Agitators) - C/S/M Construction	1m	11-Jul-22	09-Aug-22	4m
A1710	Aboveground Piping - Transfer System - C/S/M Construction	6m	09-Aug-22	22-Feb-23	1m
Electrical & Instrumentation Construction		4m	02-Nov-22	30-Mar-23	0m
A1610	Mob. - E&I Construction	0m	02-Nov-22	08-Nov-22	0m
A1620	Demob. - E&I Construction	0m	24-Mar-23	30-Mar-23	0m
Pond Area		4m	09-Nov-22	23-Mar-23	0m
A1660	Electrical Installation - E&I Construction	4m	09-Nov-22	23-Mar-23	0m
A1740	Instrumentation & Controls Installation - E&I Construction	4m	09-Nov-22	23-Mar-23	0m
Transfer System Area		4m	09-Nov-22	23-Mar-23	0m
A1850	Electrical Installation - Transfer System - E&I Construction	4m	09-Nov-22	23-Mar-23	0m
A1860	Instrumentation & Controls Installation - Transfer System - E&I Construction	4m	09-Nov-22	23-Mar-23	0m
Permitting		4m	31-Jan-23	01-Jun-23	3m
A1750	Engineer's Certification of Surface Impoundment Package - Permitting	2m	31-Jan-23	31-Mar-23	3m
A1760	TCEQ Approval for Operation - Permitting	2m	31-Mar-23	01-Jun-23	3m
Start-up & Commissioning		3m	31-Mar-23	30-Jun-23	0m
A1770	Mechanical Equipment, Piping & Valves	2m	31-Mar-23	31-May-23	0m
A2320	Structural & Access Steel Inspections	1m	31-Mar-23	01-May-23	0m
A2330	Electrical Equipment, Cabling & Grounding	2m	31-Mar-23	31-May-23	0m
A2340	Instrumentation & Controls	2m	31-Mar-23	31-May-23	0m
A2350	Control System Functional Testing	2m	01-May-23	30-Jun-23	0m
Initial Operation, Tuning & Testing		2m	30-Jun-23	01-Sep-23	0m
A2250	Operation & Tuning	2m	30-Jun-23	01-Sep-23	0m
A2360	Performance Testing	1m	02-Aug-23	16-Aug-23	1m



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During construction of the new lined Plant Drains Pond and transfer system, the anticipated worker schedules will consist of 50-hour weeks. This will involve work 5 days per week, working approximately 10 hours per day. If weather or other delays are encountered, the worker schedule may be adjusted (increased) to address this lost time as it is critical systems are complete and operational by September 1, 2023 in order to comply with regulatory timelines.

3.7 Narrative Discussion of the Progress Made to Obtain Alternative Capacity for the CCR and/or Non-CCR Wastestreams

As part a comprehensive effort to address both the CCR Rule and ELGs, a technical study was performed to evaluate options and support planning to comply with both rules. Following this initial study, a topographic survey and geotechnical/ hydrogeological investigation of the recommended area for the Plant Drains Pond was performed. A conceptual design for the Plant Drains Pond was developed in 2018 with anticipated closure of the SRH Pond by end of 2023. EPA should note CPS Energy did not have a CCR closure trigger under the original CCR Rule as published in 2015. In response to the proposed revisions to the CCR Rule, detailed design of the Plant Drains Pond and Transfer System was initiated in January of 2020. A request for information (RFI) was submitted in June of 2020 requesting bidders to submit information regarding their qualifications and experience as well as budgetary costs and schedule to execute the work. In the initial design phase, drawings and specifications will be developed to define the scope and schedule for the project. This phase includes various field investigations, surveys and testing to collect information required for detailed design. The resulting design documents will be combined into a RFP package to be issued to the identified qualified bidders. This activity was initiated in October of 2020. This package will include the following design information:

- Description of Project
- Division of Responsibility
- General and Technical Specifications
- Process Descriptions, Preliminary Control Narrative and Mass Balances
- Navisworks 3D CAD Model
- Drawings:
  - General Arrangements and Site Plan
  - Demolition Drawings
  - Piping Drawings
  - Concrete and Structural Steel Drawings
  - Pond Drawings
  - Process Flow Diagrams (PFD)
  - Piping and Instrument Diagrams (P&IDs)
  - Electrical One-Lines
- Material Take-offs
  - Electrical and Instrumentation and Controls (I&C)
- Equipment Lists
- Electrical Load List

- Line List
- Input Output List
- Valve and Instrument Lists
- Investigational Reports and Surveys

4. COMPLIANCE WITH SUBPART D

As identified in 40 CFR §257.103(f)(1)(iv)(B), to demonstrate that the criteria in 40 CFR §257.103(f)(1)(iii) have been met, the owner or operator must submit all of the following, if applicable:

1. A certification signed by the owner of operator that the facility is in compliance with all of the requirements of this subpart (See Appendix A);
2. Visual representation of hydrogeologic information at and around the CCR unit(s) that supports the design, construction and installation of the groundwater monitoring system. This includes all of the following:
    i. Map(s) of groundwater monitoring well locations in relation to the CCR unit(s) (See Appendix B);
    ii. Well construction diagrams and drilling logs for all groundwater monitoring wells (See Appendix C); and
    iii. Maps that characterize the direction of groundwater flow accounting for seasonal variations (See Appendix D);
3. Constituent concentrations, summarized in table form, at each groundwater monitoring well monitored during each sampling event (See Appendix E);
4. A description of site hydrogeology including stratigraphic cross-sections (See Appendix F);
5. Any corrective measures assessment conducted as required at §257.96 (Not Applicable – no corrective measures assessment has been required);
6. Any progress reports on corrective action remedy selection and design and the report of final remedy selection require at §257.97(a) (Not Applicable – no corrective action remedy has been required);
7. The most recent structural stability assessment required at §257.73(d) (See Appendix G); and
8. The most recent safety factor assessment required at §257.73(e) (See Appendix G).

FIGURES

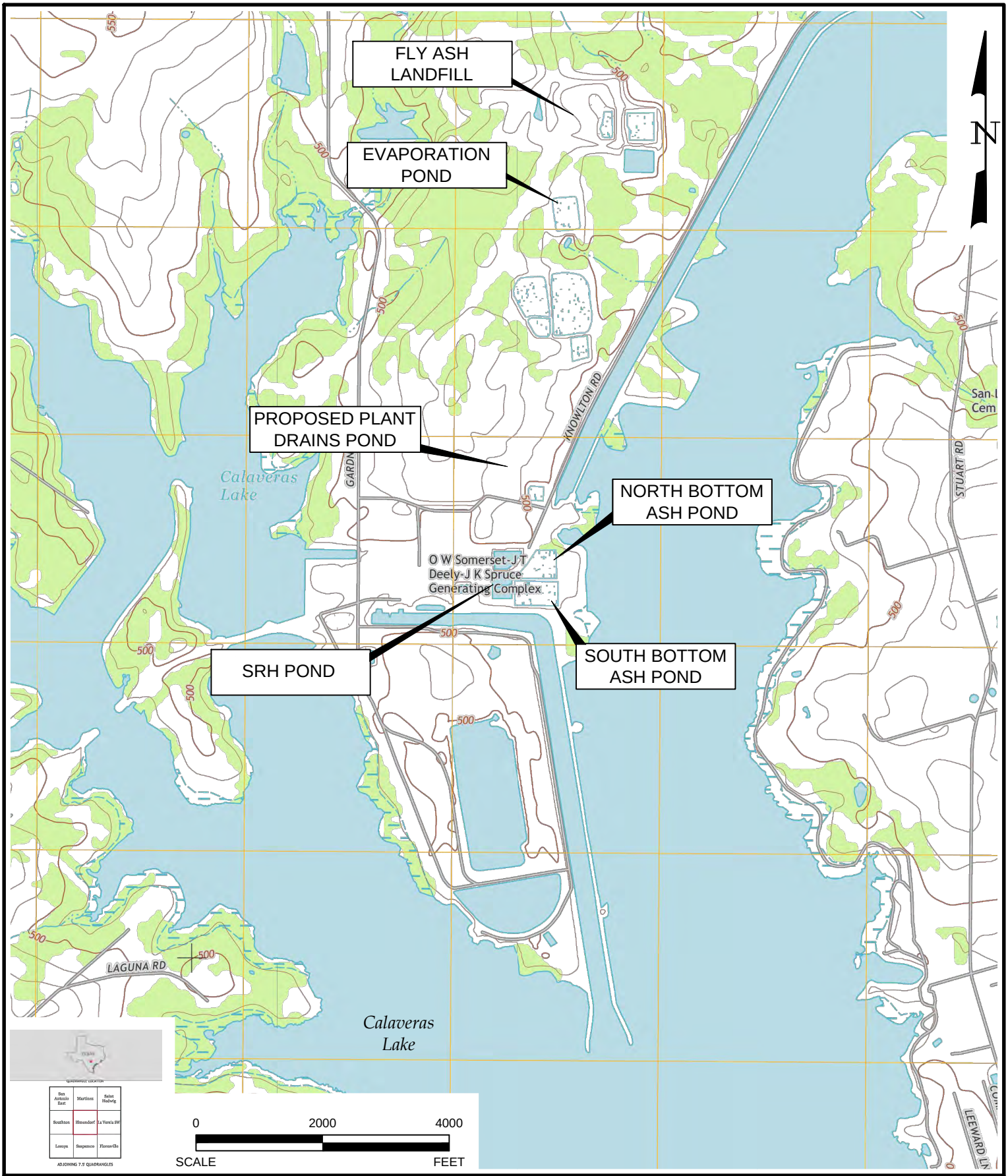
Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	7/25/2016	SCALE:	AS SHOWN	REVISION:	1
W.O.NO.:	K:\GIS\CPS\Calaveras\MXD\0337367_CPSCalaveras_SiteLoc.mxd				

FIGURE 2.1
FACILITY LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

DESIGN: CC	DRAWN: RLM	CHKD.: CC
DATE: 11/30/2020	SCALE: AS SHOWN	REV.:
W.O. NO.: T:\DWG\A toCAD\dwg\0337367\0337367 CCR nitLocs to o.dwg		

FIGURE 2.2
CCR UNIT LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

PLANT WORK AREA

A	GMS / ELECTRICAL / WELDING SHOP (WAREHOUSE # 1)
B	SEWAGE TREATMENT
C	THORPE WAREHOUSE
D	STORE ROOM (WAREHOUSE #2)
E	591 STORE ROOM (WAREHOUSE #3)
F	RAIL CAR MAINTENANCE
G	FUEL ISLAND
H	GENERATION OPERATION BUILDING
I	JK SPRUCE 1
J	JK SPRUCE 2
K	JK SPRUCE OFFICE
L	ENGINEERING SERVICE BUILDING
M	CONSTRUCTION OFFICE BUILDING
N	JT DEELY & OW SOMMERS OFFICE
O	OWS 1
P	OWS 2
Q	JTD 1
R	JTD 2
S	WAREHOUSE #4
T	WAREHOUSE #5
U	NEUTRALIZATION PIT
V	BAG HOUSE
W	COAL CAR UNLOADING BLDG. / DUMPER BLDG.
X	TRANSFER BLDG

LEGEND

SURFACE IMPOUNDMENTS

CALAVERAS LAKE

DISCHARGE CANAL #1

POND #1

COAL PILE RUNOFF BASIN

POND #2

POND #11

COAL PILE

POND #12

INTAKE CANAL

POND #5

POND #7

POND #6

POND #4

POND #3

345KV SWITCHYARD

138KV SWITCHYARD

T-1

T-2

PROPOSED PLANT DRAINS POND

POND #8

CLOSED LANDFILL AREA

POND #10

LANDFILL

POND #9

LANDFILL

DISCHARGE CANAL #2

CALAVERAS LAKE

SURFACE IMPOUNDMENTS

1	DIKED OIL STORAGE AREA (NOR UNIT 28)
2	COAL PILE RUNOFF POND (NOR UNIT 018)
3	NORTH BOTTOM ASH POND (NOR UNIT 5)
4	SOUTH BOTTOM ASH POND (NOR UNIT 6)
5	STORM WATER (SOUTHWEST RUNOFF POND 3)
6	STORM WATER (CRP RUNOFF POND 1)
7	SRH / FGD POND (DIVIDED TO NORTH AND SOUTH)
8	STORM WATER (CRP RUNOFF POND 2)
9	FLY ASH RUNOFF POND (NOR UNIT 27)
10	EVAPORATION POND (NOR UNIT 21)
11	CLARIFIER SLUDGE RECYCLING POND (NOR UNIT 25)
12	STORM WATER (COAL CONVEYOR AREA TEMP HOLDING POND) NOR UNIT 32

FIGURE 3.1
SURFACE IMPOUNDMENT LOCATION MAP
CPS Energy – Calaveras Power Station
San Antonio, Texas

APPENDIX A OWNER CERTIFICATION OF COMPLIANCE

ALTERNATIVE CAPACITY DEMONSTRATION CERTIFICATION
40 CFR §257.103(f)(1)(iv)(B)(1)

CPS Energy Calaveras Power Station
San Antonio, Texas

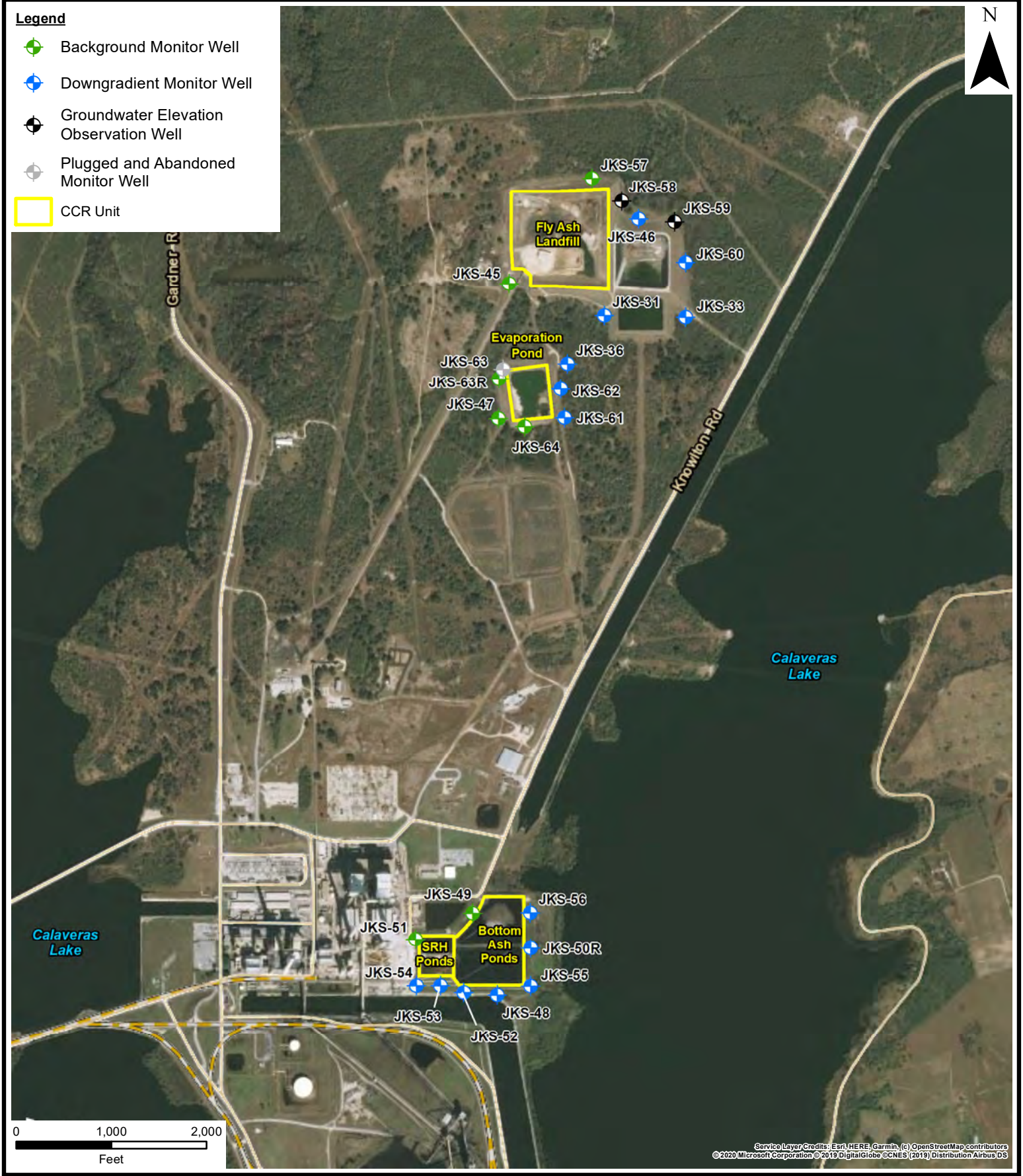
CERTIFICATION

As owner and operator of the Sludge Recycle Holding (SRH) Pond, I hereby certify that the Calaveras Power Station is in compliance with all the requirements of Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.

11/2/20

Benjamin L. Ethridge, P.E.
Senior VP Power Generation
CPS Energy

APPENDIX B GROUNDWATER MONITORING WELL LOCATIONS MAP



Environmental Resources Management

DESIGN:	WZ	DRAWN:	EFC	CHKD.:	WZ
DATE:	1/17/2020	SCALE:	AS SHOWN	REVISION:	0

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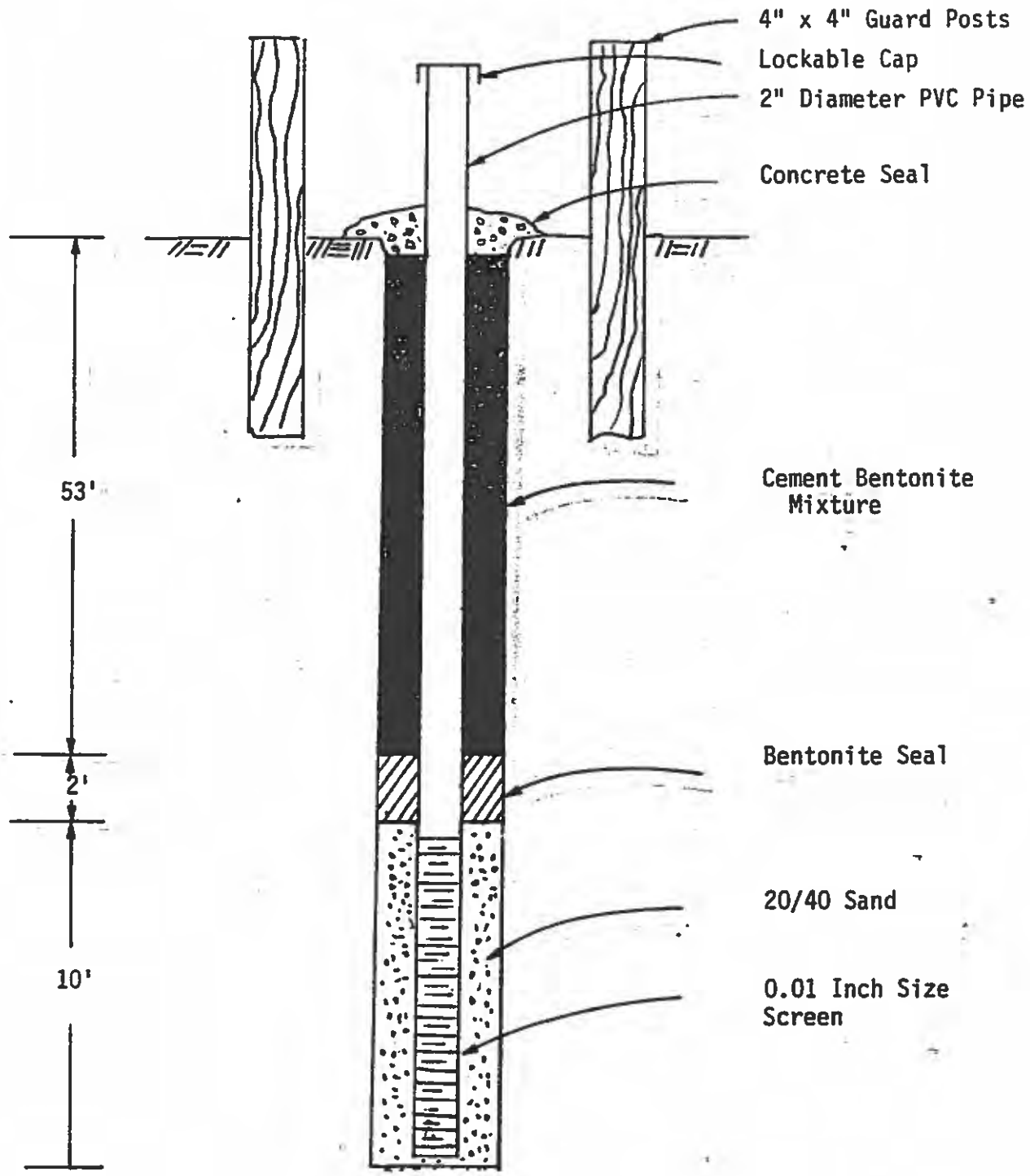
FIGURE 1
CCR WELL NETWORK LOCATION MAP
CPS Energy - Calaveras Power Station
San Antonio, Texas

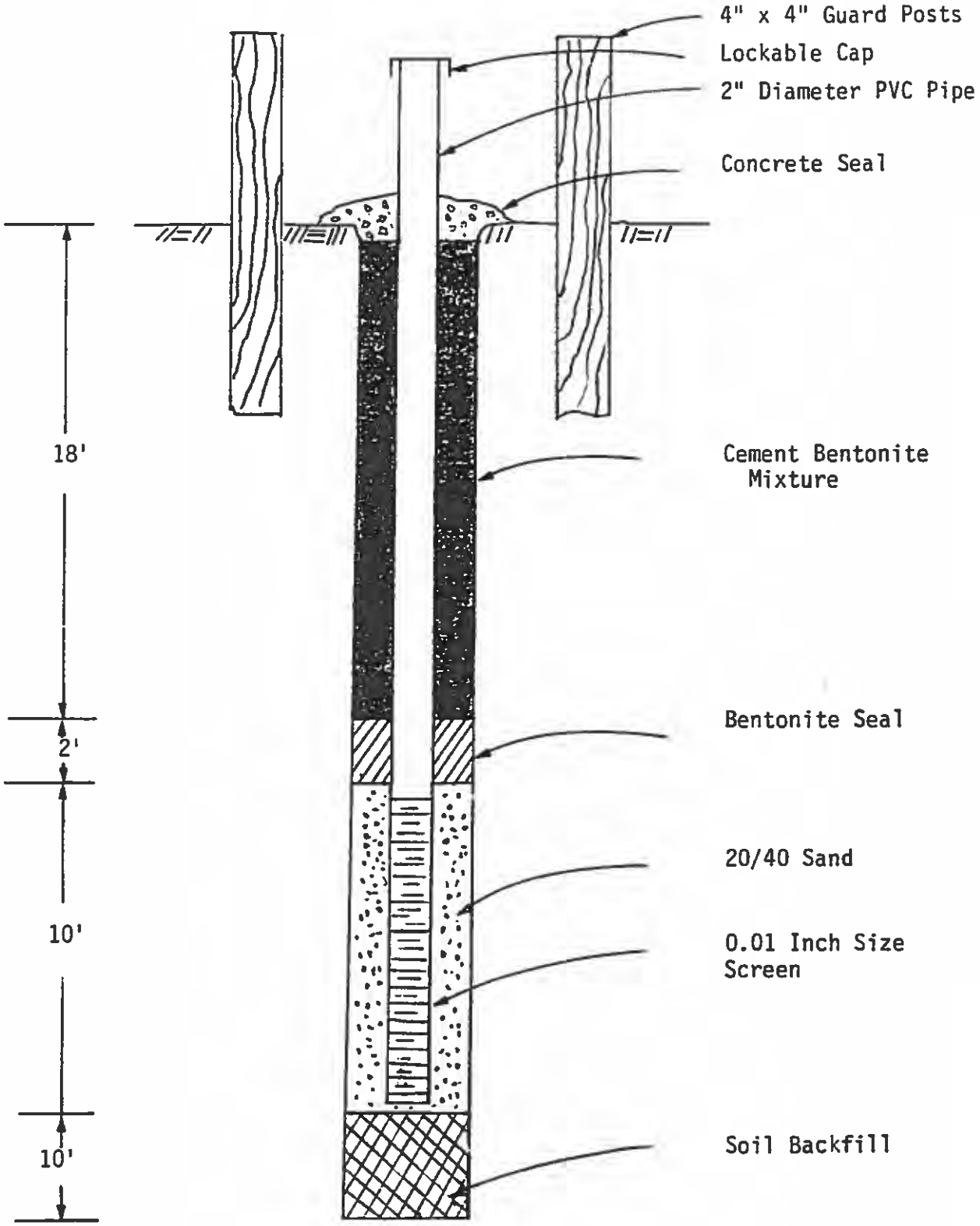
ERM

APPENDIX C WELL CONSTRUCTION DIAGRAMS AND DRILLING LOGS

Professional Service Industries



PROJECT NAME		
CALAVERAS PLANT - UNITS 5 AND 6 LANDFILL AREA EXPLORATION San Antonio, Texas	Monitor Well No. B-31	
	PROJECT NO. 312-75036	DATE 7-9-87

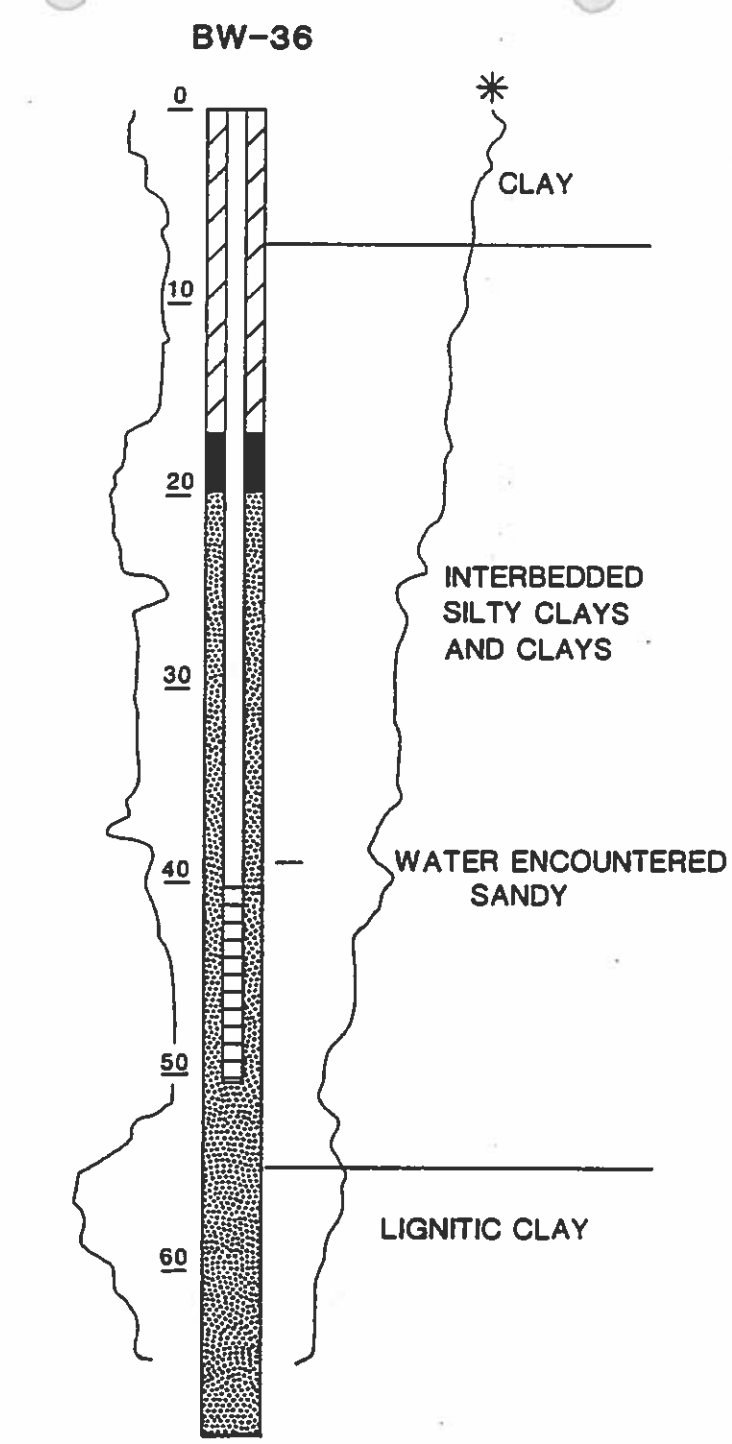


PROJECT NAME

CALAVERAS PLANT - UNITS 5 AND 6
LANDFILL AREA EXPLORATION
San Antonio, Texas

Monitor Well No. B-33

PROJECT NO	DATE
312-75036	7-9-87



*Calibration problem on resistivity curve

ESPEY, HUSTON & ASSOCIATES, INC.
Engineering & Environmental Consultants

FIGURE A-2
MONITORING WELL BW-36
GEOPHYSICAL/LITHOLOGIC LOGS

ERM Environmental Resources Management

JKS-45
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
528.31	0			0		0-5	NO RECOVERY: Previously excavated by hydrovac truck.
525	5			100		5-7	SILTY CLAY: Brown; dry to damp; medium stiff; medium plasticity; some white calcareous concretions present. At 5.5' bgs: Slight orange mottling. At 6' bgs: White silt lens.
520	10			50		7-10	CLAY: Grey; dry to damp; stiff; medium to high plasticity; minor silt content at depth; white calcareous concretions throughout. At 7.5' bgs: Orange mottling. At 9' bgs: Yellowish orange silt lens.
515	15			75		10-12.5	SILT: Alternating light grey and yellowish brown, stratified with orange, yellow, and red; damp; loose; non-plastic.
510	20					12.5-15	NO RECOVERY.
						15-22	SILT: Brownish light grey; damp; loose to medium dense; non-plastic; some yellow stringers. At 16' bgs: Alternating pinkish brown stratifications (2" thick). At 16.5' bgs: Orange band (2" thick). At 17.5' bgs: Orange band (1" thick). At 19' bgs: Light grey and pinkish brown laminations; minor clay content; occasional orange silt stringers.

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
505	20			75		22-25	CLAYEY SILT: Pinkish brown laminated with light grey; dry to damp; medium dense to dense; slight plasticity; trace yellow and orange silt stringers.
	25					25-34.5	SILTY CLAY: Dark reddish brown; dry to damp; medium stiff; low plasticity; fractures along planar surfaces.
				100			At 25.5' bgs: Light grey silt lens (2" thick).
500					JKS-45_28-30 **USCS:** Fat Clay (CH) **AL:** 61 / 22 / 39 **-200 Sieve:** 91.6		At 28' bgs: Light grey silt stringers; yellow silt stringers and minor gypsum crystals from 28' to 30' bgs. Non-cohesive grab sample collected from 28'-30' bgs.
	30						
				100			At 31.5' bgs: Dry; yellow silt stringers; abundant yellowish orange silt stringers to 32' bgs.
495							At 33.5' bgs: Trace gypsum crystals.
	35					34.5-35	SILT: Dark pinkish brown laminated with greyish brown; dry; dense; non-plastic; some clay content.
						35-36	SILTY CLAY: Very dark reddish brown; damp to moist; medium stiff; low plasticity; trace yellow silt; minor gypsum crystals; brownish black band (2" thick) at 35' bgs.
				100	JKS-45_36-38 **USCS:** Fat Clay (CH) **AL:** 67 / 24 / 43 **-200 Sieve:** 90.5	36-38	CLAY: Pinkish grey; dry; very stiff to hard; very high plasticity (fat). Non-cohesive grab sample collected from 36'-38' bgs.
490						38-43	At 36.5' bgs: Yellow and orange silt stringers to 37.5' bgs. SILT: Orangish brown; dry to damp; medium dense to dense; slight plasticity; slight clay content.
	40						

ERM Environmental Resources Management

JKS-45 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40						At 38.75' bgs: Brownish black band (1.5" thick). At 39.25' bgs: Yellow silt stringers. At 39.5' bgs: Color change to brownish grey; very dense; increased clay content. At 40' bgs: Yellow and orange silt stringers to 43' bgs; some compacted silt pieces to 43' bgs.
485				80		43-45	CLAYEY SILT: Dark reddish brown; damp; medium dense; slight plasticity; orange silt stringers throughout.
	45					45-55	At 44.5' bgs: Trace fine-grained sand content. SAND: Light grey to grey stratified with yellow, orange and red; wet to saturated; fine-grained to medium grained with depth; sub-rounded; well sorted; loose; non-plastic; minor clay lenses (1/16" to 1/8" thick).
480				50			At 48' bgs: Color change to orangish brown with orange laminations; no clay content.
	50				JKS-45_50-52 **USCS:** Silty Sand (SM) **AL:** Non-plastic **-200 Sieve:** 12.6		At 49.5' bgs: Intermixed red color to 50' bgs. At 50' bgs: Color change to pinkish brown. Non-cohesive grab sample collected from 50'-52' bgs.
475				50			
	55				JKS-45_55-57 **USCS:** Fat Clay (CH) **AL:** 75 / 28 / 47 **-200 Sieve:** 97	55-62	At 54.5' bgs: Brownish orange band (2" thick). CLAY: Dark grey; damp; stiff to very stiff; very high plasticity (fat); occasional light grey silt stringers; fractures along silt stringers. Non-cohesive sample collected from 55'-57' bgs.
470				100			
	60						

ERM Environmental Resources Management

JKS-45
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-45 Date Drilled 2016-04-04

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 62.00 ' Boring Diam. 8.25 "

N. Coord. 13667132.78' E. Coord. 2186615.40' Surface Elevation 528.31 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 40.00 ' Sump Length 0 '

Top of Casing Elevation 531.46 ' Stickup 3.15 '

Depth to Water: 1. Ft. btoc 47.19 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
465	60			100	JKS-45_60-62 **USCS:** Fat Clay (CH) **AL:** 75 / 26 / 49 **-200 Sieve:** 86.4 **k:** 1.82×10^{-8}		Cohesive sample (Shelby tube) collected from 60'-62' bgs. Boring terminated at 62' bgs.
460	65						
455	70						
450	75						
	80						

STATE OF TEXAS WELL REPORT for Tracking #424209

Owner:	**CPS Energy**	Owner Well #:	**JKS-45**
Address:	**PO Box 2906 San Antonio, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station San Antonio, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**528 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**62**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**38**	**56**	**Sand**	**20/40**

Annular Seal Data: **No Data**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**52**	**62**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	Ash
5	8	Lt brn sandy clay
8	14	lt gry sandy clay
14	20	Lt gray sand
20	40	Brn silty clay
40	45	Lt gray sand
45	55	yellow/org silty sand
55	62	Green/gray clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	40
2	Screen	New Plastic (PVC)	40 10	40	55

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-46
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-46 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13667810.11' E. Coord. 2187972.31' Surface Elevation 495.75 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 499.08 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 19.38 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
495.75	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
495				0			
	5					5-8	CLAYEY SAND: Reddish orange; damp to moist; fine-grained; sub-round; well-sorted; medium dense; slight to low plasticity; some silt content.
490				100			At 7.5' bgs: Dense grey clay lenses (1/2" thick).
						8-10	SANDY CLAY: Reddish orange; medium stiff; slight to low plasticity; minor silt content; dense grey clay lenses (1/2" thick); yellow and yellowish orange silt stringers. At 9.5' bgs: Increased silt content.
	10					10-11	CLAY: Grey; dry; stiff; medium plasticity; minor silt content; fractures along tan silt to fine-grained sand stringers.
485						11-15	SAND: Tan; damp; fine-grained; sub-round, well sorted; loose; non-plastic.
				75			At 13' bgs: Striated with pink and orange.
							At 14' bgs: Color change to reddish orange; some silt content; occasional clay lenses. At 14.75' bgs: Orange silt lens.
	15					15-19.5	SILT: Red with orange; damp to dry; loose; slight plasticity. At 15.5' bgs: Color change to grey. At 15.75' bgs: Color change to red. At 16' bgs: Color change to tan with yellow; fractures along planar surfaces. At 17' bgs: Moist. At 18.75' bgs: Color change to red and orange.
480				85			
	20					19.5-25	SAND: Tan; moist; fine-grained, coarsens with depth; sub-round; well sorted; loose; non-plastic; minor silt and trace clay; orange and yellow silt stringers.

ERM Environmental Resources Management

JKS-46
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-46 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13667810.11' E. Coord. 2187972.31' Surface Elevation 495.75 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 499.08 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 19.38 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
475	20			75	No Samples Collected		At 20' bgs: Color change to brownish tan with orange band (2" thick) at 20.25' bgs. At 21.5' bgs: Color change to tannish grey with yellowish orange band (2" thick). At 22.5' bgs: Color change to tan stratified with pinkish orange and orange.
470	25			100		25-30	CLAY: Dark greyish brown; damp to dry; very stiff; high to very high plasticity (fat); fractures along planar surfaces; Light grey and yellowish orange silt lenses throughout.
465	30						At 29.75' bgs: Dark grey silt lenses; some very small gypsum crystals. Boring terminated at 30' bgs.
460	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #424210

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-46**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**496 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**13**	**25**	**Sand**	**20/40**

Annular Seal Data: **No Data**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**26**	**30**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN SANDY CLAY
8	14	LT GRY CLAY
14	28	LT GRY SAND
28	30	BRN CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-47
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

N. Coord. 13665709.79' E. Coord. 2186503.87' Surface Elevation 510.28 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
510.28	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
510							
505	5			50		5-9.5	CLAYEY SILT: Pinkish brown with grey; damp to moist; loose; slight to low plasticity; occasional yellow and orange silt lenses. At 5.5' bgs: Clay lens (2" thick).
							At 9.25' bgs: Clay lens (2" thick).
500	10			90		9.5-20	SILT: Light grey; damp; medium dense; slight plasticity; minor clay content, decreases with depth; abundant yellow and orange silt stringers; fractures along planar surfaces. At 10' bgs: Striated with pinkish brown to 12' bgs. At 12.5' bgs: No clay content. At 13' bgs: Color change to tan; dry; yellow and orange silt stringers.
495	15			50			
	20						

ERM Environmental Resources Management

JKS-47
DRILLING LOG

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Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

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Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
490	20			75	No Samples Collected	20-23	At 20' bgs: Whitish tan striated with yellow; minor fine-grained sand content. SANDY SILT: Whitish tan; dry; loose; non-plastic; occasional yellow and orange silt stringers, occurrence increases with depth.
485	25			50		23-48	SAND: Whitish tan; dry to moist with depth; fine-grained; sub-round; well sorted; minor yellow and orange silt stringers; thin clay pinkish brown to brown clay laminations to 23.25' bgs. At 25' bgs: Color change to tannish brown; very moist.
480	30			100			At 30' bgs: Saturated; Orange band (1" thick) at 30.25' bgs.
475	35			50			At 34' bgs: Orange striations to 35' bgs. At 35' bgs: Trace orange silt stringers.
	40						

ERM Environmental Resources Management

JKS-47
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-47 Date Drilled 2016-04-05

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 48.00 ' Boring Diam. 8.25 "

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Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0 '

Top of Casing Elevation 513.63 ' Stickup 3.35 '

Depth to Water: 1. Ft. btoc 31.37 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	40				No Samples Collected		At 40' bgs: Clayey sand lens (2" thick). At 40.5' bgs: Occasional pinkish brown silt stringers to 41' bgs. At 14.5' bgs: Abundant yellowish orange silt stringers to 42.5' bgs.
				75			At 41.5' bgs: Orange and brown laminated silt stringers to 43' bgs.
465	45						At 44' bgs: Medium-grained; no silt content.
				100			At 46' bgs: Orangish brown silt layer (1/2" thick). At 46.5' bgs: Color change to greyish tan; fine to medium-grained with decreasing grain size with depth.
460	50						Boring terminated at 48' bgs.
455	55						
	60						

STATE OF TEXAS WELL REPORT for Tracking #424211

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-47**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 18' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**510 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**48**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**23**	**41**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**23**	**Bentonite 15 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **No Data**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**41**	**48**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN SANDY CLAY
8	14	LT GRAY SANDY CLAY
14	20	LT GRAY SAND
20	40	BRN SILTY CLAY
40	48	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	25
2	Screen	New Plastic (PVC)	40 10	25	40

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-48 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-48 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13659658.78' E. Coord. 2186490.78' Surface Elevation 493.71 ' Ft MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.50 ' Sump Length 0 '

Top of Casing Elevation 497.19 ' Stickup 3.48 '

Depth to Water: 1. Ft. btoc 11.28 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.71	0			0		0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			100		5-6	CLAYEY SILT: Orangish brown; damp; medium dense to dense; slight to low plasticity. At 5.5' bgs: Brown band (2" thick). At 5.75' bgs: Color change to brown; damp to dry; minor clay content; fractures along planar surfaces.
						6-6.5	SILTY CLAY: Orangish brown heavily mottled with grey and orange; damp; stiff; medium plasticity; occasional grey and orange silt stringers.
						6.5-7	SILT: Brownish tan with grey and orange; damp; medium dense; slight plasticity; trace clay.
						7-7.5	SILTY CLAY: Orangish brown heavily mottled with grey and orange; damp; stiff; medium plasticity; occasional grey and orange silt stringers.
						7.5-12.5	CLAYEY SILT: Brown; damp to moist; medium dense; low plasticity; light grey and orange silt stringers. At 9' bgs: Dense silty clay layer (2" thick). At 9.25' bgs: Dense silty clay layer (2" thick). Non-cohesive grab sample collected from 10'-12.5' bgs. At 10.5' bgs: Dense silty clay layer (2" thick).
485	10			75	JKS-48_10-12.5 **USCS:** Clayey Sand (SC) **AL:** 35 / 16 / 19 **-200 Sieve:** 44.6	12.5-15	SAND: Brownish grey; damp to moist; fine-grained; sub-angular; moderately sorted; loose; non-plastic; minor silt content. At 13.5' bgs: Dense clay lens (1" thick). At 14.5' bgs: Color change to dark brown.
480	15			80	JKS-48_15-16.5 **USCS:** Sandy Lean Clay (CL) **AL:** 48 / 19 / 29 **-200 Sieve:** 58.9	15-16.5	CLAY: Brownish orange heavily mottled with dark brown, orange, and orangish red; moist; stiff; high plasticity; trace silt content, increases with depth; orange silt stringers. Non-cohesive grab sample collected from 15'-16.5' bgs.
						16.5-19	CLAYEY SILTY SAND: Brownish tan; very moist; loose to medium dense; slight plasticity; decreasing clay content with depth; occasional orange silt stringers. At 16.5' bgs: Wet.
475	20				JKS-48_19-20 **USCS:** Clayey Sand (SC) **AL:** 26 / 16 / 10 **-200 Sieve:** 48.7	19-20	SAND: Orangish brown; very moist to wet; fine-grained; sub-angular; moderately sorted; loose; non-plastic; minor silt content, decreases with depth; laminated with light grey clay to 19.25' bgs. Non-cohesive grab sample collected from 19'-20' bgs.

ERM Environmental Resources Management

JKS-48
DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-48 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 30.00 ' Boring Diam. 8.25 "

N. Coord. 13659658.78' E. Coord. 2186490.78' Surface Elevation 493.71 ' Ft MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.50 ' Sump Length 0 '

Top of Casing Elevation 497.19 ' Stickup 3.48 '

Depth to Water: 1. Ft. btoc 11.28 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-22.5	SILTY SAND: Orangish brown; saturated; fine to very-fine grained; sub-angular, poorly sorted; loose; non-plastic; minor clay content. At 20.25' bgs: Thin grey clay laminations.
				50		22.5-25	SAND: Tannish brown with grey; saturated; fine-grained; sub-angular; moderately sorted; loose; non-plastic; some silt content; orange silt stringers.
470							At 24.5' bgs: Orange silt lens to 24.75' bgs.
	25					25-27.5	INTERBEDDED SILTY SAND AND CLAY: Tannish grey; saturated; medium dense; laminated silty fine-grained sand with pinkish brown clay; clay laminations fracture along planar surfaces; yellow and orange silt stringers throughout.
				50		27.5-30	CLAYEY SILTY SAND: Tannish grey; saturated; loose; slight plasticity; orange 1/16" thick silt laminations throughout.
465							At 29.5' bgs: Pinkish brown (1/16" thick) clay laminations to 30' bgs.
	30						Refusal (bedrock) enountered at 30' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #424212

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-48**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**494 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**16.5**	**20.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**16.5**	**Bentonite 15 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**29.5**	**30**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**
112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	20	LT GRAY SAND
20	30	BRN SILTY CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	18.5
2	Screen	New Plastic (PVC)	40 10	18.5	28.5

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ERM Environmental Resources Management

JKS-49 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-49 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 19.00 ' Boring Diam. 8.25 "

N. Coord. 13660519.40' E. Coord. 2186229.15' Surface Elevation 495.17 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 498.63 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 9.32 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
495.17	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			50		5-6	SAND: Greyish tan; very moist; fine-grained; sub-angular; moderately sorted; loose; non-plastic; orange silt stringers.
						6-10	SILT: Greyish tan; very moist; loose; non-plastic; minor fine-grained sand; occasional yellow silt stringers.
485	10			100		10-15	At 9.5' bgs: Color change to light brown; wet; orange silt stringers. SAND: Light brown; wet; fine-grained; sub-angular; moderately sorted; loose to medium dense; non-plastic; minor silt content; abundant orange silt stringers. At 11.75' bgs: Orange silt lens (2" thick); trace silt stringers. At 12' bgs: Decreasing silt content.
480	15			100		15-16.5	At 14' bgs: Color change to greyish tan. SANDY SILT: Light brown; wet to saturated; loose; non-plastic; occasional orange silt stringers. At 16.5' bgs: Pinkish brown clay lens (3/16" thick).
						16.5-19	SILT: Brownish orange; wet to saturated; loose; non-plastic; minor fine-grained sand content. At 17.5' bgs: Color change to light brown. At 18.25' bgs: Color change to orange; pinkish brown clay lens (1/16" thick). At 18.5' bgs: Minor orange and red sandstone pieces, occurrence increases at depth.
475	20						Refusal (bedrock) enountered at 19' bgs.

STATE OF TEXAS WELL REPORT for Tracking #424213

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-49**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**495 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**19**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7**	**17**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**7**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**18**	**19**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	19	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	7
2	Screen	New Plastic (PVC)	40 10	7	17

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Environmental Resources Management

JKS-50 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-50 Date Drilled 2016-04-06

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 14.00 ' Boring Diam. 8.25 "

N. Coord. 13660122.87' E. Coord. 2186836.72' Surface Elevation 494.87 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 7.50 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 2.50 ' Sump Length 0 '

Top of Casing Elevation 498.20 ' Stickup 3.33 '

Depth to Water: 1. Ft. btoc 11.76 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.87	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			80		5-7.75	SILTY CLAY: Orangish brown heavily mottled with light grey, brown, and tan; damp; stiff; medium to high plasticity; increasing silt content with depth; orange silt stringers. At 6' bgs: Tan silt lens (2" thick).
						7.75-8.25	At 7.5' bgs: Color change to brownish orange; minor fine-grained sand content.
						8.25-9.25	SAND: Tan; damp; fine-grained, sub-angular; moderately sorted; dense; non-plastic; minor silt content; occasional orange silt stringers.
485	10			25		9.25-10	SILTY CLAY: Orangish brown mottled with grey, brown, red and occasional yellow; damp; stiff; medium plasticity; orange silt stringers throughout.
						10-13	SILT: Tan; moist; loose; non-plastic; trace orange silt stringers. At 9.75' bgs: Soft clay lens (3/16" thick). NO RECOVERY.
						13-13.75	SILTY CLAY: Brown; saturated; loose; low plasticity; orange silt stringers; sandstone pieces (3/8" thick) near 13.75' bgs.
480	15					13.75-14	SANDSTONE: Brownish orange laminated with orange, tan, and dark brown. Refusal (bedrock) enountered at 14' bgs.
475	20						

STATE OF TEXAS WELL REPORT for Tracking #424216

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-50**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**489 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**14**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**1.5**	**10**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0.5**	**1.5**	**Bentonite 1 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**10**	**14**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	15	LT GRAY SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	2.5
2	Screen	New Plastic (PVC)	40 10	2.5	10

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P.O. Box 12157
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ERM Environmental Resources Management

JKS-50R DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-50R Date Drilled 2016-10-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 22.50 ' Boring Diam. 8.25 "

N. Coord. 13660149.90' E. Coord. 186841.92' Surface Elevation 494.96 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 9.50 ' Sump Length 0 '

Top of Casing Elevation 498.48 ' Stickup 3.52 '

Depth to Water: 1. Ft. btoc 12.67 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.96	0				No Samples Collected	0-15	See boring log JKS-50 from 4/6/16.
				0			
490	5						
				0			
485	10						
				0			
480	15					15-17.5	CLAYEY SAND: Light brown; wet; loose; trace dark gray sandy clay content; very coarse gravel (2" diam.) present.
				50		17.5-22.5	CLAYEY SILTY SAND: Light brown; saturated; loose; light gray pieces of clay; few large (2" diam.) very coarse (2" diam.) angular rocks present.
475	20						

Environmental Resources Management

JKS-50R DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-50R Date Drilled 2016-10-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 22.50 ' Boring Diam. 8.25 "

N. Coord. 13660149.90' E. Coord. 186841.92' Surface Elevation 494.96 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 9.50 ' Sump Length 0 '

Top of Casing Elevation 498.48 ' Stickup 3.52 '

Depth to Water: 1. Ft. btoc 12.67 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20						
				50		22-22.5	CLAYEY SAND: Brownish gray; dry to damp; loose. Boring terminated at 22.5' bgs.
470	25						
465	30						
460	35						
455	40						

STATE OF TEXAS WELL REPORT for Tracking #443567

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-50R**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **10/7/2016** Drilling End Date: **10/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**19.5**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7.5**	**19.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**7.5**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	17.5	Clayey sand -light brown
17.5	19.5	Clayey silty sand - light brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	9.5
2	Screen	New Plastic (PVC)	40 10	9.5	19.5

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-51 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-51 Date Drilled 2016-04-07

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 29.50 ' Boring Diam. 8.25 "

N. Coord. 13660243.53' E. Coord. 2185630.39' Surface Elevation 494.04 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 496.92 ' Stickup 2.88 '

Depth to Water: 1. Ft. btoc 10.56 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
494.04	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490	5			60		5-6.5	SILTY CLAY: Light brown with occasional orange mottling; wet; soft; low plasticity; occasional gravel (1/16" thick).
						6.5-10	SAND: Light brown; very moist; fine-grained; sub-angular; moderately sorted; medium dense; slight plasticity; minor silt and clay content. At 7.5' bgs: Clay lenses (up to 3/4" thick) to 8.5' bgs. At 8.5' bgs: Occasional orange silt stringers to 9.5' bgs. At 9' bgs: Clay lamina (1/16" thick) to 10' bgs. At 9.5' bgs: Wet.
485	10			100		10-15	SILT: Light brown; wet; medium dense; low plasticity; laminated with grey clay (1/16" to 3/16" thick) throughout; minor fine-grained sand; orange silt stringers throughout. At 12.5' bgs: Sand lens (2" thick). At 13.5' bgs: Sand lens (2" thick); fractures in planar surfaces to 14.5' bgs. At 14' bgs: Occasional thin clay lamina to 15' bgs. At 14.5' bgs: Color change to light grey.
480	15			100		15-17.75	CLAY: Pinkish grey; moist; medium stiff; low to medium plasticity; laminated with orange and grey silt (up to 3/4" thick) throughout.
							CLAY: Grey; moist; medium stiff; low plasticity; trace silt content; abundant orange silt stringers.
						17.75-18.25	SILTY SAND: Light brown; wet to saturated; very fine to fine-grained; sub-angular; poorly sorted; loose; non-plastic.
						18.25-19.75	At 19.25' bgs: Pinkish grey clay lens (2" thick); thin red silt lens below clay; occasional orange silt stringers.
475	20					19.75-26.5	SAND: Light grey; wet; fine-grained; sub-angular; moderately sorted; loose; non-plastic; occasional orange silt stringers.

ERM Environmental Resources Management

JKS-51 DRILLING LOG

Proj. No. 0337367 Boring/Well ID JKS-51 Date Drilled 2016-04-07

Project Groundwater Investigation Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 29.50 ' Boring Diam. 8.25 "

N. Coord. 13660243.53' E. Coord. 2185630.39' Surface Elevation 494.04 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 7.00 ' Sump Length 0 '

Top of Casing Elevation 496.92 ' Stickup 2.88 '

Depth to Water: 1. Ft. btoc 10.56 (2016-05-31) 2. Ft. _____ (_____)

Drilling Company Strata Core Services, LLC Driller Joseph Ray

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100	No Samples Collected		At 21.25' bgs: Red silt lens (1/16" thick); abundant orange silt stringers.
	25			100			At 24' bgs: Minor silt and trace clay content.
465	30					26.5-27.75	At 26.25' bgs: Reddish orange silt lens (1/16" thick). SANDY SILT: Tannish light grey; wet; loose; slight plasticity; occasional yellow and orange silt stringers. At 27.5' bgs: Trace clay content.
						27.75-28	CLAY: Dark brown mottled with tannish brown; moist; stiff; very high plasticity (fat); brown silt stringers throughout.
						28-29.5	SAND: Tannish light grey; wet; fine-grained; sub-angular; moderately sorted; loose; non-plastic; trace silt, occurrence decreases with depth; abundant orange silt stringers. At 29.25' bgs: Color change to light brown; occasional orange silt stringers.
460	35						Refusal (bedrock) enountered at 29.5' bgs.
455	40						

STATE OF TEXAS WELL REPORT for Tracking #424218

Owner:	**CPS ENERGY**	Owner Well #:	**JKS-51**
Address:	**PO BOX 2906 SAN ANTONIO, TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station SAN ANTONIO, TX**	Latitude:	**29° 19' 01" N**
		Longitude:	**098° 18' 08" W**
Well County:	**Bexar**	Elevation:	**491 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/4/2016** Drilling End Date: **4/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**29.5**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**5**	**23**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**2**	**5**	**Bentonite 3 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**Bentonite**	**23**	**29.5**

	Strata Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **Joseph Ray** License Number: **58794**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	ASH
5	8	LT BRN CLAY
8	14	LT GRAY CLAY
14	20	LT GRAY SAND
20	24	BRN SITY CLAY

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	7
2	Screen	New Plastic (PVC)	40 10	7	22

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
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ERM Environmental Resources Management

JKS-52
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-52 Date Drilled 2016-09-01

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.50 ' Boring Diam. 8.25 "

N. Coord. 13659683.26' E. Coord. 2186139.05' Surface Elevation 493.56 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 19.00 ' Sump Length 0 '

Top of Casing Elevation 493.15 ' Stickup -0.41'

Depth to Water: 1. Ft. btoc 7.30 (2016-05-21) 2. Ft. ( )

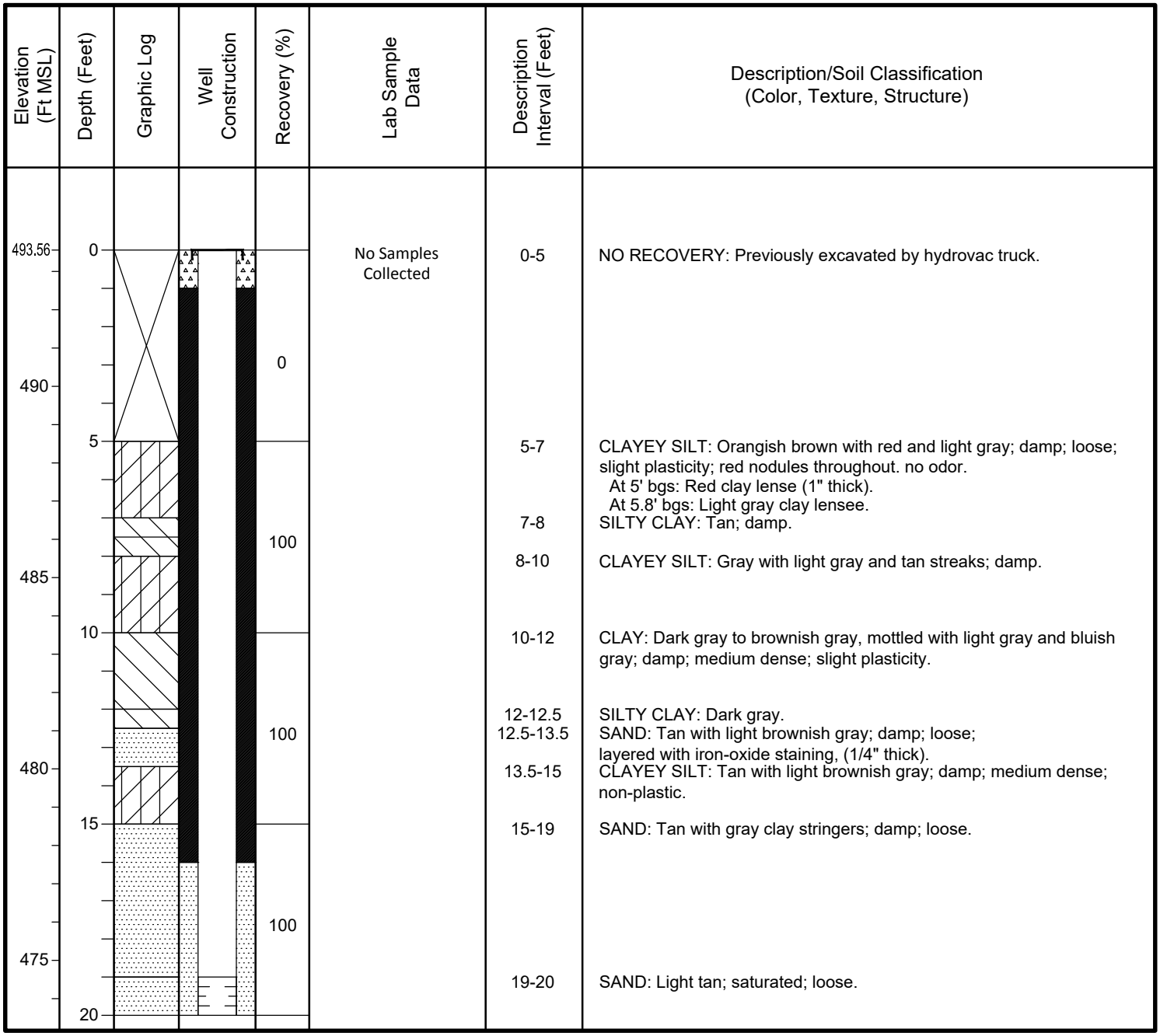
Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.



Elevation (Ft MSL)	Depth (Feet)	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.56	0		No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490		0			
	5			5-7	CLAYEY SILT: Orangish brown with red and light gray; damp; loose; slight plasticity; red nodules throughout. no odor. At 5' bgs: Red clay lense (1" thick). At 5.8' bgs: Light gray clay lensee.
		100		7-8	SILTY CLAY: Tan; damp.
485				8-10	CLAYEY SILT: Gray with light gray and tan streaks; damp.
	10			10-12	CLAY: Dark gray to brownish gray, mottled with light gray and bluish gray; damp; medium dense; slight plasticity.
		100		12-12.5	SILTY CLAY: Dark gray.
				12.5-13.5	SAND: Tan with light brownish gray; damp; loose; layered with iron-oxide staining, (1/4" thick).
480				13.5-15	CLAYEY SILT: Tan with light brownish gray; damp; medium dense; non-plastic.
	15			15-19	SAND: Tan with gray clay stringers; damp; loose.
		100			
475				19-20	SAND: Light tan; saturated; loose.
	20				

ERM Environmental Resources Management

JKS-52
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-52 Date Drilled 2016-09-01

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.50 ' Boring Diam. 8.25 "

N. Coord. 13659683.26' E. Coord. 2186139.05' Surface Elevation 493.56 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 19.00 ' Sump Length 0 '

Top of Casing Elevation 493.15 ' Stickup -0.41'

Depth to Water: 1. Ft. btoc 7.30 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-24	SAND: Light orange and tan; damp; medium dense; no odor.
				100			At 21' bgs: Color change to tan with gray striations.
							At 22' bgs: Color change to tan; damp; and loose; At 22.5' bgs: Two gray striations layered within iron-oxide staining.
470						24-25	CLAYEY SAND: Tan; saturated; medium dense.
	25					25-30	INTERBEDDED CLAY AND SAND: Gray and tan; damp; loose.
				100			At 27.5' bgs: Intermittent pinkish gray coloration of clay content to 30' bgs.
465							
	30					30-31	SAND: Gray; damp; loose.
				100		31-32.5	INTERBEDDED CLAY AND SAND: Orange with pinkish gray; damp; loose; medium plasticity.
460							Boring terminated at 32.5' bgs.
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443571

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-52**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/1/2016** Drilling End Date: **9/1/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**29**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**7.5**	**19.5**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**17**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	24	Sand - light orange and tan
24	29	Clayey sand - tan

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	19
2	Screen	New Plastic (PVC)	40 10	19	29

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-53
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-53 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13659757.34' E. Coord. 2185892.80' Surface Elevation 491.33 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 494.74 ' Stickup 3.41 '

Depth to Water: 1. Ft. btoc 8.50 (2016-05-21) 2. Ft. ( )

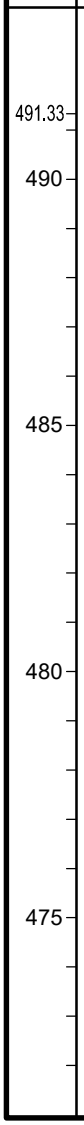
Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
						0-5	NO RECOVERY: Previously excavated by hydrovac truck.
				0			
						5-7.5	SANDY SILTY CLAY: Tan to reddish gray; wet; low plasticity; no odor.
							At 6' bgs: Pockets of orange colored sand.
				100		7.5-10	SANDY CLAY: Orangish brown and gray; moist; low plasticity.
							At 9' bgs: Pockets of orange colored sand.
					JKS-53_10-12.5 **USCS:** Clayey Sand (SC) **AL:** 30 / 14 / 16 **- #200:** 35.9 **k:** 5.34×10^{-6}	10-15	NO RECOVERY Cohesive sample (Shelby tube) collected from 10'-12' bgs.
				0			Cohesive sample (Shelby tube) collected from 12.5'-15' bgs.
					JKS-53_12.5-15 **USCS:** Clayey Sand (SC) **AL:** 29 / 15 / 14 **- #200:** 48.8 **k:** 4.13×10^{-8}		
						15-16	CLAYEY SAND: Tan; wet; loose; non-plastic; no odor.
						16-17.5	INTERBEDDED CLAY AND SAND: Orangish light brown sand interbedded with pinkish gray clay.
							At 16.5 - 17' bgs: Tan sand; damp.
				100		17.5-19.5	CLAYEY SAND: Light brown and tannish gray; saturated; loose; slight plasticity.
							At 18.5-19' bgs: Tan sand.
						19.5-20	INTERBEDDED CLAY AND SAND: Tan sand interbedded with pinkish gray clay; layered with iron-oxide staining; damp; loose.

ERM Environmental Resources Management

JKS-53
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-53 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13659757.34' E. Coord. 2185892.80' Surface Elevation 491.33 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 494.74 ' Stickup 3.41 '

Depth to Water: 1. Ft. btoc 8.50 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100	JKS-53_20-21 **USCS:** Clayey Sand (SC) **AL:** 27 / 14 / 13 **- #200:** 37.6	20-25	CLAYEY SAND: Gray with tannish orange staining; saturated; loose; non-plastic. Non-cohesive grab sample collected from 20'-21' bgs. At 22-22.5' bgs: Color change to orangish light brown; moist. At 22.5-25' bgs: Saturated.
465	25			100		25-27	SAND: Reddish brown mixed with light gray; damp; medium dense; non-plastic; dry and crumbly with depth. Boring terminated at 27' bgs.
460	30						
455	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443589

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-53**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/2/2016** Drilling End Date: **9/2/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**17**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**17**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-54
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-54 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 8.25 "

N. Coord. 13659753.34' E. Coord. 2185641.96' Surface Elevation 492.69 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.40 ' Stickup 3.71 '

Depth to Water: 1. Ft. btoc 10.79 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
492.69	0					0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-5.8	CLAYEY SILT: Orangish brown with red; damp; loose; non-plastic; no odor.
						5.8-7.2	At 5.8' bgs: White chalky material. CLAYEY SAND: Light brown to tan; damp.
485				100		7.2-8	INTERBEDDED CLAY AND SAND: Gray clay laminations (1" thick).
						8-11.5	CLAYEY SAND: Orangish brown; medium dense; non-plastic.
	10						At 10.8' bgs: Tan; saturated; and loose.
						11.5-12.5	INTERBEDDED CLAY AND SAND: Tan sand interbedded with light pinkish gray clay; damp; clay laminations are 1/4"-1/2" thick.
480				100	JKS-54_13-14 **USCS:** Silty Clayey Sand (SC-SM) **AL:** 22 / 15 / 7 **- #200:** 33.5	12.5-15	CLAYEY SAND: Tan; wet to saturated; loose; non-plastic. Non-cohseive grab sample collected from 13'-14' bgs. At 13.2-14.2' bgs: Saturated.
	15					15-27.5	At 14.9' bgs: Single thin (1" thick) clay layer. INTERBEDDED CLAY AND SAND: Tan fine grained sand and light pinkish gray clay; damp.
475				100			
	20						

ERM Environmental Resources Management

JKS-54
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-54 Date Drilled 2016-09-02

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 8.25 "

N. Coord. 13659753.34' E. Coord. 2185641.96' Surface Elevation 492.69 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.40 ' Stickup 3.71 '

Depth to Water: 1. Ft. btoc 10.79 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100			
	25			100			At 25-28' bgs: Iron-oxide stained layers between sand and clay; clay content has slight to low plasticity; clay layers are 1/2" thick.
465							Refusal encountered at 28' bgs.
460	30						
	35						
455	40						

STATE OF TEXAS WELL REPORT for Tracking #443590

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-54**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/2/2016** Drilling End Date: **9/2/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**22**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**10**	**22**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	22	Sand - light orange and tan

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	22

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-55
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-55 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13659749.76' E. Coord. 2186840.46' Surface Elevation 490.13 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 493.81 ' Stickup 3.68 '

Depth to Water: 1. Ft. btoc 8.36 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
490.13	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
				0			
485	5					5-11.5	NO RECOVERY: Moderately to highly cemented sand.
				0			
480	10						
						11.5-12.5	NO RECOVERY: Cuttings are saturated; clayey silt material.
				0		12.5-13.5	SANDY CLAY: Dark olive gray; damp; soft; non-plastic.
						13.5-18.5	CLAYEY SAND: Tannish gray with trace iron-oxide staining; damp; loose; non-plastic.
475	15						At 15' bgs: White chalky material (1" thick); wet.
							At 15.5-17.5' bgs: Clayey sand mixed with some gravel. At 16.5' bgs: White chalky layer (1/2" thick).
				100			At 17.5' bgs: White chalky layer (1/2" thick). At 17.5-18.5' bgs: Saturated; tan clayey sand with trace gravel.
						18.5-19.8	SAND: Gray; wet; fine grained.
	20					19.8-20	SAND: Gray; very dense; moderately to highly cemented.

ERM Environmental Resources Management

JKS-55
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-55 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13659749.76' E. Coord. 2186840.46' Surface Elevation 490.13 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 493.81 ' Stickup 3.68 '

Depth to Water: 1. Ft. btoc 8.36 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20					20-21	SANDY CLAY: Gray; damp; soft; slight plasticity.
						21-22.5	INTERBEDDED CLAY AND SAND: Fine grained tan sand interbedded with pinkish gray clay; damp.
				100		22.5-23.5	CLAYEY SAND: Tan; trace gravel; one large piece of sandstone (>1" thick).
						23.5-25	SAND: Pinkish gray; fine grained; damp; very thin layers of iron-oxide staining.
465	25						Boring terminated at 25' bgs.
460	30						
455	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443591

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-55**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/6/2016** Drilling End Date: **9/6/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**12**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**12**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-56
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-56 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13660382.47' E. Coord. 2186847.61' Surface Elevation 493.07 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 496.66 ' Stickup 3.59 '

Depth to Water: 1. Ft. btoc 11.20 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.07	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-5.5	SANDY CLAY: Reddish gray; damp; stiff; non-plastic.
						5.5-7	At 5.5' bgs: Gray sandstone piece (>1" thick). SAND: Light orangish brown; fine grained; damp; loose. At 6.25' bgs: Color changes to tannish gray with some orangish brown.
						7-7.5	SANDY CLAY: Orange; damp; stiff to very stiff; non-plastic.
485				100	0	7.5-9.5	CLAYEY SILT: Orangish tan; saturated; loose; non-plastic; mixed with some gravel and trace pockets of gray, fine grained sand.
	10					9.5-10	CLAYEY SILTY SAND: Orangish tan; saturated; loose; non-plastic.
						10-13	NO RECOVERY
480				15		13-22.5	CLAYEY SAND: Tan; fine grained; saturated; loose; non-plastic.
	15						At 15' bgs: Small pocket of gray, fine grained, loose sand (1" thick). At 16' bgs: Coarse, angular gravel layer (~1-2" thick)
475				50			
	20						

ERM Environmental Resources Management

JKS-56
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-56 Date Drilled 2016-09-06

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 25.00 ' Boring Diam. 8.25 "

N. Coord. 13660382.47' E. Coord. 2186847.61' Surface Elevation 493.07 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 496.66 ' Stickup 3.59 '

Depth to Water: 1. Ft. btoc 11.20 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20						At 20' bgs: Course, angular gravel layer (~1-2" thick)
470				50		22.5-24.9	SAND: Brownish gray; fine grained; saturated; trace clay content.
	25					24.9-25	SANDY CLAY: Reddish brown; saturated; very soft. Boring terminated at 25' bgs.
465	30						
460	35						
455	40						

STATE OF TEXAS WELL REPORT for Tracking #443592

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-56**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/6/2016** Drilling End Date: **9/6/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**8**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**8**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	10
2	Screen	New Plastic (PVC)	40 10	10	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-57
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-57 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 0.00 "

N. Coord. 13668235.72' E. Coord. 2187486.38' Surface Elevation 503.83 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 506.91 ' Stickup 3.08 '

Depth to Water: 1. Ft. btoc 20.07 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
503.83	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
500	5			0		5-8	CLAYEY SILT: Dark brown; damp; loose to medium dense; very slight plasticity; rootlets present.
495	10			100		8-12.2	CLAYEY SAND: Orangish brown with trace gray and iron-oxide staining; damp; loose to medium dense; slight plasticity; rootlets present.
							At 10' bgs: Color becomes grayish tan mottled with yellow iron-oxide staining.
490	15			100		12.2-14	SANDSTONE: Magenta red with orangish yellow and gray; damp; several pieces of reddish brown nodules (>1" thick) surrounded by yellow sandy clay.
						14-15	SANDY CLAY: Orangish yellow and gray; damp; slight plasticity; gray and orangish yellow striations of sandy clay; white crystalline structures with medium grained sand throughout.
485	20			100		15-25	INTERBEDDED CLAY AND SAND: Gray with yellow and iron-oxide staining; dry; soft; medium plasticity. At 15-16' bgs: Mostly sand and iron-oxide staining. At 16-17.5' bgs: Mostly gray clay. At 17.5-18.5' bgs: Mostly sand with some yellow and trace iron-oxide staining. At 18.5-20' bgs: Mostly sand with some iron-oxide staining.

ERM Environmental Resources Management

JKS-57
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-57 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.50 ' Boring Diam. 0.00 "

N. Coord. 13668235.72' E. Coord. 2187486.38' Surface Elevation 503.83 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 506.91 ' Stickup 3.08 '

Depth to Water: 1. Ft. btoc 20.07 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	20			100			At 20-21' bgs: Mostly sand with yellow and trace iron-oxide staining. At 21-21.5' bgs: 2" thick layer of reddish brown, hard-packed sand; 4" thick layer of tan, very fine grained, loose sand. At 21.5-25' bgs: Mostly dark gray clay; At 22.5' bgs: Reddish brown coloration; At 24-25' bgs: Color is brownish gray with redox stippling.
475	25			100		25-25.5 25.5-27 27-27.5	SAND: Gray; fine grained; dry; medium dense; low plasticity. At 25.5' bgs: Very thin (1/8" thick) brownish red coloration. INTERBEDDED CLAY AND SAND: Brownish gray clay interbedded with fine grained sand; dense; hard-packed. At 26.6' bgs: Thin, tan, dry, very fine grained, sand. SAND: Highly cemented; reddish brown nodules present. Refusal encountered at 27.5' bgs.
470	30						
465	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443593

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-57**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8.25**	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	**10**	**27**	**Sand**	**20/40**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**
112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	27	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	27

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Texas Department of Licensing and Regulation
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Austin, TX 78711
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ERM Environmental Resources Management

JKS-58
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-58 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13667994.99' E. Coord. 2187797.39' Surface Elevation 500.94 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 504.45 ' Stickup 3.51 '

Depth to Water: 1. Ft. btoc 21.09 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
500.94	0					0-5	NO RECOVERY: Previously excavated by hydrovac truck.
500				0			
	5					5-6	SAND: Brown; fine grained; moist; very loose.
495						6-7	CLAYEY SAND: Grayish brown with red; fine grained; damp; loose; non-plastic.
				100		7-10	SAND: Red, orange, and gray; damp medium grained; very loose to medium dense; slight gray, soft to medium dense, sandy clay; (clay content increases with depth).
	10					10-17	At 9.8' bgs: Color change to dark gray. At 10' bgs: Hard, sandstone, iron ore piece (>1" thick). SILTY CLAY: Gray with alternating yellow and orange layers; dry; dense; slight plasticity.
490				100			
							At 12.2' bgs: Brown sand seam (3" thick).
	15						
485							At 16-16.5' bgs: Brownish tan sandy clay. At 16.5-17' bgs: Gray clay has fractured texture.
				100		17-17.5	CLAY: Gray; damp; mixed with coarse grained sand.
						17.5-19.5	SAND: Tan; moist to wet. At 18-19.5' bgs: Color change to gray with black staining; no odor; white, crystalline, coarse grained structures present.
	20					19.5-20	CLAYEY SILTY SAND: Orangish brown; dry; gravel and some small sandstone pieces present.

ERM Environmental Resources Management

JKS-58 DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-58 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13667994.99' E. Coord. 2187797.39' Surface Elevation 500.94 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 504.45 ' Stickup 3.51 '

Depth to Water: 1. Ft. btoc 21.09 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
480	20					20-21	CLAY: Gray; dry; stiff; small, tan sandy clay pockets present.
						21-22.5	INTERBEDDED CLAY AND SAND: Gray and orangish tan; damp; clay is pinkish gray interbedded with thing orange sand layers.
				100		22.5-25.5	CLAY: Dark pinkish gray; dry; stiff; several very thin, light gray, silty sand layers.
							At 24.5-24.7' bgs: Tan, dry, silty clay.
475	25				JKS-58_26-27 **USCS:** Sandy Lean Clay (CL) **AL:** 38 / 18 / 20 **- #200:** 50.9	25.5-30	CLAYEY SAND: Tan; moist to saturated. At 25.5-27.5' bgs: No distinct layers. Non-cohesive grab sample collected from 26'-27' bgs. At 27.5' bgs: Thin saturated seam. At 27.5-30' bgs: Yellow and orange layering.
				100			
470	30				JKS-58_30-32.5 **USCS:** Fat Clay (CH) **AL:** 57 / 20 / 37 **- #200:** 89.1 **k:** 1.53×10^{-7}	30-32.5	NO RECOVERY: Cohesive sample (Shelby tune) collected from 30'-32' bgs.
							Boring terminated at 32.5' bgs.
465	35						
	40						

STATE OF TEXAS WELL REPORT for Tracking #443594

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-58**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**18**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**18**	**Bentonite 4 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	20
2	Screen	New Plastic (PVC)	40 10	20	30

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ERM Environmental Resources Management

JKS-59
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-59 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13667779.88' E. Coord. 2188352.07' Surface Elevation 493.53 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.45 ' Stickup 2.92 '

Depth to Water: 1. Ft. btoc 15.49 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
493.53	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
490				0			
	5					5-6.5	SILTY SAND: Brown; damp; loose.
						6.5-7	SAND: Tan; damp; loose.
				100		7-10	SILTY CLAY: Dark brown; damp; soft; slight plasticity.
485							At 9-10' bgs: Decreasing silt content; increasing stiffness; some iron-oxide stained nodules observed.
	10					10-11	CLAY: Dark brown; damp; medium stiff; low to medium plasticity.
						11-15	SILTY CLAY: Dark orangish brown to orangish brown; damp; soft; increasing silt content with depth; increasing gray streaks/fissures with depth.
				100			
480							
	15					15-15.5	CLAY: Dark brown to brown; damp; medium stiff to stiff; low plasticity.
						15.5-18	SILTY SAND: Tan; saturated; loose. At 16' bgs: Wet; crumbly; trace clay content.
				100			At 17.5' bgs: Saturated.
475						18-20	SANDY CLAY: Light bluish gray mottled with orange iron-oxide and black staining; moist; medium stiff; slight plasticity.
	20						

ERM Environmental Resources Management

JKS-59
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-59 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 27.00 ' Boring Diam. 8.25 "

N. Coord. 13667779.88' E. Coord. 2188352.07' Surface Elevation 493.53 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 12.00 ' Sump Length 0 '

Top of Casing Elevation 496.45 ' Stickup 2.92 '

Depth to Water: 1. Ft. btoc 15.49 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			100		20-20.5	CLAY: Brown to light brown; damp; medium stiff to stiff; low plasticity.
						20.5-21	
						21-22.5	SANDY CLAY: Light gray mottled with orangish iron-oxide staining; moist; medium stiff; slight plasticity.
							CLAY: Dark pinkish gray; moist; soft; layered with very thin orange/iron-oxide stained silty sand.
						22.5-22.8	
						22.8-25	SILT: Tan; saturated; very loose.
							CLAY: Dark pinkish gray; soft; layered with very thin orange/iron-oxide stained silty sand.
	25			100		25-26	SAND: Gray with orange staining; fine grained; saturated; loose.
465						26-27	CLAY: Gray; saturated; very soft; high plasticity.
	30						Boring terminated at 27' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443595

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-59**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**27**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**10**	**27**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**10**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	27	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	12
2	Screen	New Plastic (PVC)	40 10	12	27

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Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-60
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-60 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 26.00 ' Boring Diam. 8.25 "

N. Coord. 13667357.02 E. Coord. 2188465.44 Surface Elevation 492.68 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 495.70 ' Stickup 3.02 '

Depth to Water: 1. Ft. btoc 17.40 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
492.68	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated with hydrovac truck.
490				0			
	5					5-10	SAND: Grayish tan with orange and yellow; very fine grained; damp; loose; no odor. At 6' bgs: Color change to light pinkish orange.
485				100			At 7.5' bgs: Color change to light gray with trace orange and yellow.
	10					10-10.8	CLAY: Dark gray; moist; soft; slight plasticity.
						10.8-16	SAND: White with yellow; very fine grained; damp; loose.
							At 11.6-13' bgs: Color change to pale yellow.
480				100			At 13-16' bgs: Color change to light orangish yellow.
	15						At 15' bgs: Thin reddish orange stringer. At 15-16' bgs: Moist.
						16-23.5	SAND: Light orange; very fine grained; damp; very dense; unable to collect soil core, soil descriptions based on observation of auger cuttings.
475				0			At 18-23.5' bgs: Color change to pale yellow.
	20						

ERM Environmental Resources Management

JKS-60
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-60 Date Drilled 2016-09-07

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 26.00 ' Boring Diam. 8.25 "

N. Coord. 13667357.02 E. Coord. 2188465.44 Surface Elevation 492.68 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Sump Length 0 '

Top of Casing Elevation 495.70 ' Stickup 3.02 '

Depth to Water: 1. Ft. btoc 17.40 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
470	20			0			At 22' bgs: Moisture content increases to wet.
						23.5-25.7	SAND: Tan; fine grained; saturated; loose.
	25			100			At 25.5' bgs: Color change to white with brown; medium grained.
						25.7-25.9	SILTY SAND: Dark reddish staining; saturated.
465						25.9-26	CLAY-SHALE: Shaley clay; tan; wet; dense; non-plastic.
	30						Boring terminated at 26' bgs.
460							
	35						
455							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443596

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-60**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/7/2016** Drilling End Date: **9/7/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**8**	**25**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**8**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	25	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	10
2	Screen	New Plastic (PVC)	40 10	10	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-61
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-61 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 35.00 ' Boring Diam. 8.25 "

N. Coord. 13665721.04' E. Coord. 2187196.65' Surface Elevation 502.52 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.00 ' Sump Length 0 '

Top of Casing Elevation 505.51 ' Stickup 2.99 '

Depth to Water: 1. Ft. btoc 24.46 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
502.52	0				No Samples Collected	0-5	NO RECOVERY: Previously excavated with hydrovac truck.
500				0			
	5					5-5.2 5.2-10.5	SANDY SILT: Dark brown; damp; loose; contains rootlets. SAND: Light tannish orange; damp; fine grained; loose.
495				100			At 7.8' bgs: Thin (1/4"), dark gray, sandy clay layer. At 8.2' bgs: Thin (1/4"), dark gray, sandy clay layer.
	10					10.5-12.5	INTERBEDDED CLAY AND SAND: Light gray to white; very fine grained; very hard packed; very thin (1/10") pinkish gray clay stringers throughout. At 10.5' bgs: Pinkish gray clay layer (1" thick).
490				100		12.5-20	SAND: Light gray to white with trace yellow and orange colorations; dry; very fine grained; very hard packed. At 12.5-15' bgs: Sand is cemented.
	15						At 16.5-19' bgs: Three clay stringers (1/4" thick).
485				100			
	20						

ERM Environmental Resources Management

JKS-61
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-61 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 35.00 ' Boring Diam. 8.25 "

N. Coord. 13665721.04' E. Coord. 2187196.65' Surface Elevation 502.52 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 18.00 ' Sump Length 0 '

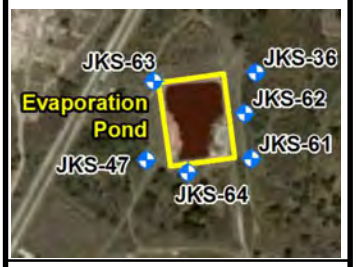
Top of Casing Elevation 505.51 ' Stickup 2.99 '

Depth to Water: 1. Ft. btoc 24.46 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-22.5	CLAYEY SAND: Gray with trace orange; damp; fine grained; loose; trace clay content present. At 21' bgs: Color change to tan with orange and gray; moisture content becomes wet. At 21.8' bgs: Thin pinkish gray clay seam (1/4" thick).
480				100		22.5-25	SAND: Gray with orange, tan, and yellow; fine grained; wet; loose.
	25					25-31.5	CLAYEY SAND: Gray; fine grained; wet to saturated; loose. At 25-25.8' bgs: Saturated.
475				100			At 27.5-28.5' bgs: Saturated.
	30						At 30-31' bgs: Saturated.
				100			At 31-32.5' bgs: Wet.
						31.5-32.5	SANDY CLAY: Pinkish gray; damp; medium dense; non-plastic to plastic; very thin sand stringers throughout (1/10" thick).
470						32.5-33	CLAYEY SILTY SAND: Gray; saturated; loose.
						33-35	SANDY CLAY: Pinkish gray; damp; medium dense; slightly plastic; very thin sand stringers throughout (1/10" thick).
	35						Boring terminated at 35' bgs.
465							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443597

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-61**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**33**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**15**	**33**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**15**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	33	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	18
2	Screen	New Plastic (PVC)	40 10	18	33

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
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Austin, TX 78711
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ERM Environmental Resources Management

JKS-62
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-62 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 37.00 ' Boring Diam. 8.25 "

N. Coord. 13666020.13' E. Coord. 2187153.88' Surface Elevation 506.71 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

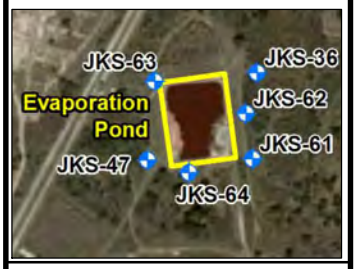
Top of Casing Elevation 509.84 ' Stickup 3.13 '

Depth to Water: 1. Ft. btoc 28.90 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
506.71	0			0		0-5	NO RECOVERY: Previously excavated with hydrovac truck.
505	5			100		5-6	SANDY SILT: Dark brown; damp; very loose; slight to low plasticity; trace rootlets.
						6-9	INTERBEDDED CLAY AND SAND: Light gray; dry; sand content fine grained, loose; clay content is pinkish gray with slight to low plasticity.
500	10			100		9-15	CLAYEY SAND: Light gray with yellowish orange and pale yellow; very fine grained; dry; trace clay content. At 10' bgs: Color change to light pinkish brown and yellowish orange; moisture content increases to damp; sand is loose; clay is soft and non-plastic. At 11' bgs: Color change to white/light gray and tan, clay is darker gray; moisture content decreases to dry; very dense; crumbles easily.
495	15			50		15-20	SAND: White; dry; dense but crumbles easily.
490	20						

ERM Environmental Resources Management

JKS-62
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-62 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 37.00 ' Boring Diam. 8.25 "

N. Coord. 13666020.13' E. Coord. 2187153.88' Surface Elevation 506.71 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Sump Length 0 '

Top of Casing Elevation 509.84 ' Stickup 3.13 '

Depth to Water: 1. Ft. btoc 28.90 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
485	20			50		20-25	SAND: Light gray to tannish gray; fine grained; dry to damp; loose. At 21.2' bgs: Moisture content increases to damp. At 21.4' bgs: Yellow and iron-oxide staining.
480	25			100		25-27.5	INTERBEDDED CLAY AND SAND: Gray; fine grained; wet; loose. At 25.5' bgs: Iron-oxide staining and thin (1/4" thick) pinkish gray clay layer. At 27.5' bgs: Iron-oxide staining and thin (1/4" thick) pinkish gray clay layer.
						27.5-29.5	CLAYEY SAND: Gray with iron-oxide staining; saturated; loose; trace clay content. At 29' bgs: Increased iron-oxide staining with clay layers.
475	30			0		29.5-30 30-30.5 30.5-31 31-31.5 31.5-35	INTERBEDDED CLAY AND SAND: Pinkish gray; damp; medium dense; slight plasticity. SAND: Gray; fine grained; damp. INTERBEDDED CLAY AND SAND: Orange, fine grained, moist sand; gray, low plasticity clay; loose to medium dense. CLAY: Brown; moist; loose to medium dense; non plastic. At 31.5 bgs: Thin reddish brown nodule layer (1/4" thick). CLAY: Brown; damp; soft; high plasticity; unable to collect soil core; descriptions based on observation of auger cuttings.
470	35			0	JKS-62_35-37 **USCS:** Clayey Sand (SC) **AL:** 38 / 17 / 21 **- #200:** 32.3 **k:** 6.63×10^{-7}	35-37	NO RECOVERY: Cohesive sample (Shelby tube) collected from 35'-37' bgs. Boring terminated at 35' bgs.
	40						

STATE OF TEXAS WELL REPORT for Tracking #443598

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-62**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**18**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**18**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	20
2	Screen	New Plastic (PVC)	40 10	20	30

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

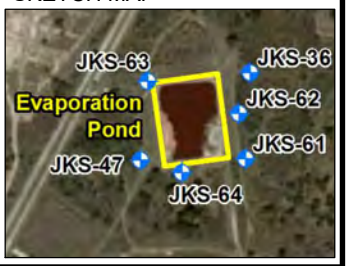
Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
523.55	0			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
520	5			100		5-5.5 5.5-6 6-7.8	SAND: Brown; fine-grained; moist; loose. CLAYEY SAND: Tan; moist; single piece of gray, non-plastic clay. SILTY SAND: Brown lense; fine grained; moist; loose; trace rootlets.
515	10			100		7.8-10.2	SANDY CLAY: Reddish brown to dark gray with red; dry to damp; very stiff; hard-packed; non-plastic.
510	15			75		10.2-12.2	CLAYEY SAND: Orange to pinkish orange; dry to damp; very dense; non-plastic.
505	20					12.2-18	INTERBEDDED CLAY AND SAND: Tan; very fine-grained; very dense/hard-packed; layered with thin gray sandy clay seams. At 15' bgs: Sand color changes to very light gray to white; pinkish gray sandy clay seams throughout; layered with pale yellow colorations.
						18-20	SAND: Gray to brownish orange; dry; very fine-grained; medium dense; crumbles easily.

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
500	20			80		20-30	INTERBEDDED CLAY AND SAND: Light gray; very fine-grained; dry to damp; dense/hard-packed; layered with thin pinkish gray clay seams and iron-oxide staining.
495	25			80		30-39	SAND: Gray; dry to saturated; fine-grained; very hard packed; crumbles easily.
490	30			80			At 32.5' bgs: Medium-grained.
485	35			80			At 38-39' bgs: Saturated.
	40					39-39.5 39.5-50	CLAYEY SAND: Dark reddish brown; wet; loose. SAND: Gray; wet; fine-grained; loose.

ERM Environmental Resources Management

JKS-63
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-63 Date Drilled 2016-09-08

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras Power Station - San Antonio Boring T.D. 50.00 ' Boring Diam. 8.25 "

N. Coord. 13666230.86' E. Coord. 2186553.38' Surface Elevation 523.55 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 20.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 30.00 ' Sump Length 0 '

Top of Casing Elevation 526.86 ' Stickup 3.31 '

Depth to Water: 1. Ft. btoc 44.70 (2016-05-21) 2. Ft. ( )

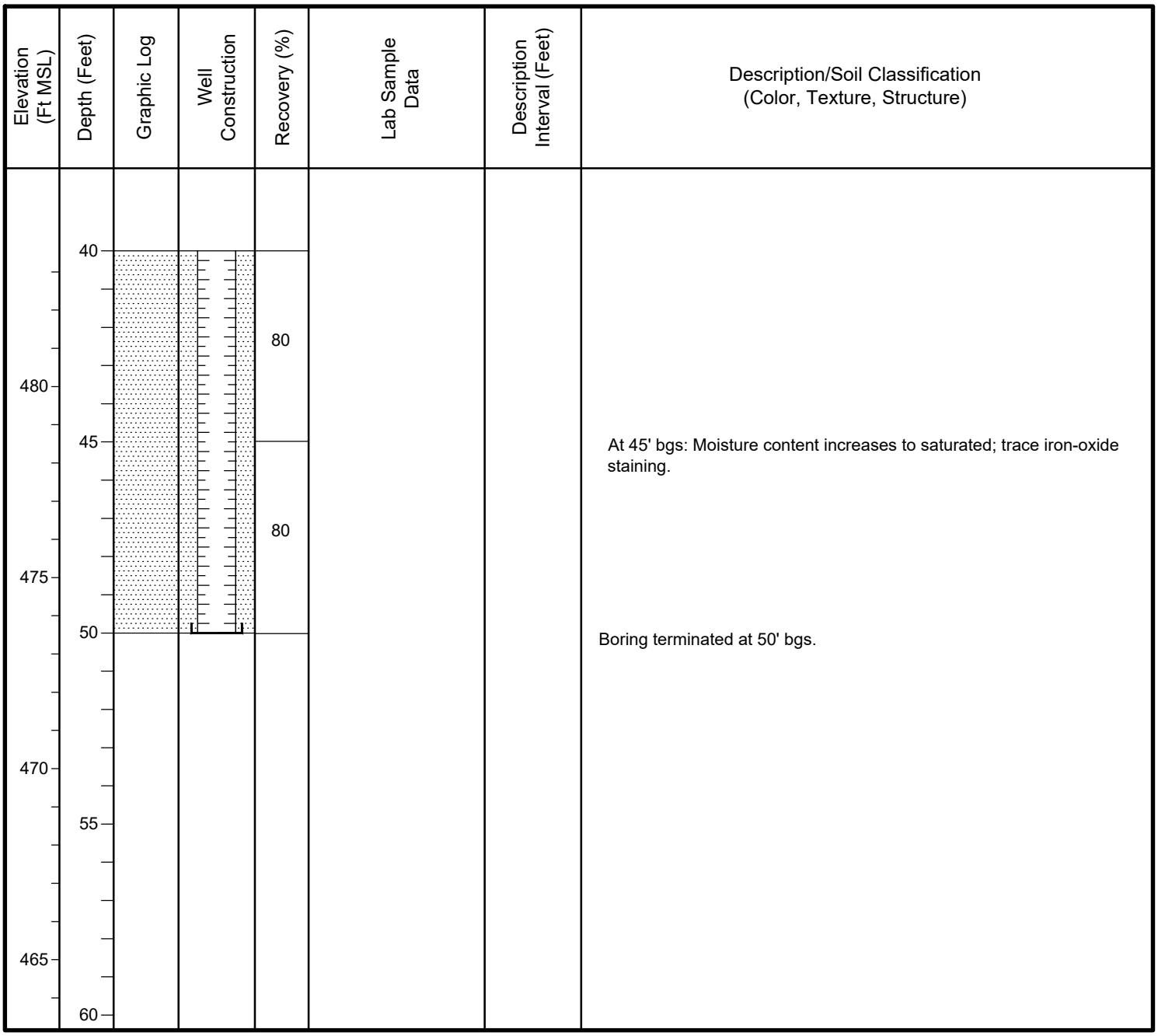
Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.



STATE OF TEXAS WELL REPORT for Tracking #443599

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-63**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Latitude:	**29° 18' 28.4" N**
		Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/8/2016** Drilling End Date: **9/8/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**50**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**28**	**50**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**28**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	50	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	30
2	Screen	New Plastic (PVC)	40 10	30	50

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Calaveras Power Station - Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.25 "

N. Coord. NA E. Coord. NA Surface Elevation 0.00 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

Top of Casing Elevation 0.00 ' Stickup 3.50 '

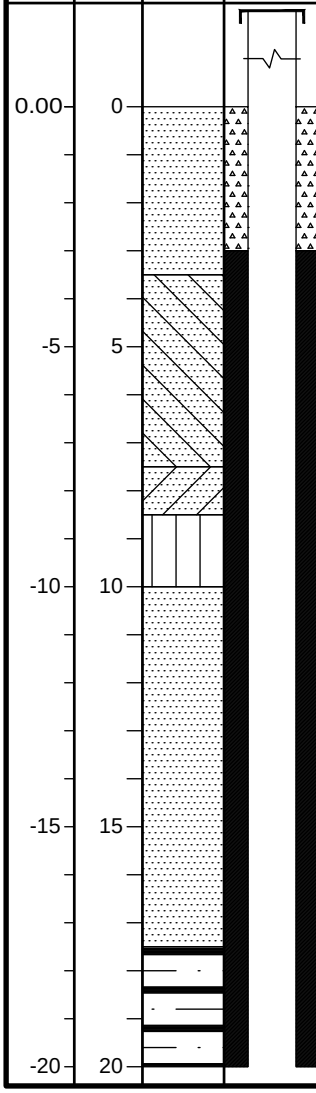
Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 0.00 ( )

Drilling Company Vortex Drilling Partners, LP Driller James Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0.00	0			100	No Samples Collected	0-3.5	SAND: Brown; dry to damp; very-fine grained; sub-angular; poorly sorted; loose; minor silt and trace clay content; no odor. Ground surface to 5 ft. bgs logged via post hole digger soil cuttings.
						3.5-7.5	SANDY CLAY: Brown with occasional red and black mottling; damp; medium stiff; low plasticity; trace silt content; no odor. At 4' bgs: Color change to reddish brown. At 5' bgs: Stiff; medium plasticity.
-5	5			100			At 6' bgs: Occasional thin, light brown, very-fine grained sand seams. At 6.5' bgs: Interbedded clay and sand seam (6" thick); dry; clay content dark brown, stiff; sand content very-fine grained, sub-angular; occasional light brown and yellow silt stringers.
				90		7.5-8.5	CLAYEY SAND: Reddish brown; damp; medium dense; non-plastic to slightly plastic; very-fine grained; sub-angular; minor yellow silt stringers; no odor.
						8.5-10	SILT: Light grey; dry; loose to medium dense; non-plastic; minor to occasional very-fine grained sand content, with increasing sand content with depth; minor yellow silt stringers; no odor.
-10	10			100		10-17.5	SAND: Light grey; dry; loose to medium dense; very-fine grained; sub-angular; poorly to moderately sorted; trace clay content; occasional yellow silt stringers; no odor. At 12.5' bgs: Medium dense.
				100			
-15	15			100			At 15' bgs: Medium dense to loose.
						17.5-24	INTERBEDDED CLAY AND SAND: Light grey (sand content) and light brown (clay content); dry to damp; clay content medium stiff, slight to low plasticity; sand content medium dense, very-fine grained, sub-angular; occasional yellow silt stringers; no odor. At 19' bgs: Decreasing clay content; sand content fine grained.
-20	20			100			

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Calaveras Power Station - Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.00 "

N. Coord. NA E. Coord. NA Surface Elevation 0.00 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

Top of Casing Elevation 0.00 ' Stickup 3.50 '

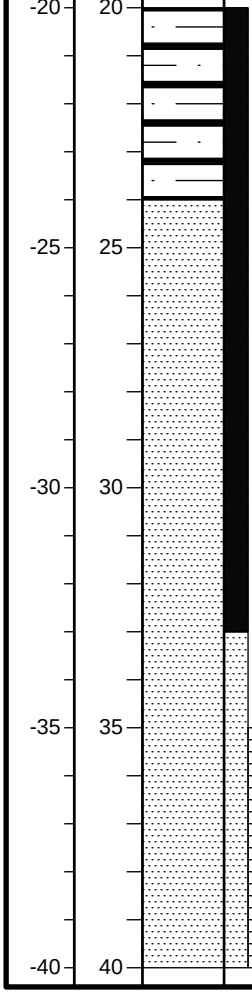
Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 0.00 ( )

Drilling Company Vortex Drilling Partners, LP Driller James Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES



Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
					No Samples Collected		
				100			At 22' bgs: Sand seam (3" thick); light grey; fine grained; no clay content. At 22.5' bgs: Increasing clay content; medium stiff to stiff.
				100		24-50	SAND: Light brownish grey; damp; medium dense to loose; fine grained; sub-angular; poorly sorted; minor yellow silt stringers; no odor. At 25' bgs: Trace red silty clay content; medium plasticity.
				60			
				100			At 27.5' bgs: No clay content.
				80			At 30' bgs: Minor clay content to 31' bgs.
				100			At 31.5' bgs: Moist. At 32' bgs: Occasional to abundant yellow and orange silt stringers. At 32.5' bgs: Very moist; minor to occasional yellow and orange silt stringers.
				80			At 35' bgs: Fine to very-fine grained; trace yellow and orange silt stringers. At 36' bgs: Wet.
				60			At 37.5' bgs: Saturated; fine grained; no clay content.

ERM Environmental Resources Management

JKS-63R DRILLING LOG

Proj. No. 0503422 Boring/Well ID JKS-63R Date Drilled 2019-05-02

Project Calaveras Power Station - Well Re-Install Owner CPS Energy

Location Calaveras Power Station Boring T.D. 24.00 ' Boring Diam. 8.00 "

N. Coord. NA E. Coord. NA Surface Elevation 0.00 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 35.00 ' Sump Length 0 '

Top of Casing Elevation 0.00 ' Stickup 3.50 '

Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 0.00 ( )

Drilling Company Vortex Drilling Partners, LP Driller James Neal

Drilling Method Hollow-Stem Auger Log By Nick Houtchens

SKETCH MAP

NOTES

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
-40	40			80	No Samples Collected		At 40' bgs: Abundant orange silt stringers.
				80			At 42.5' bgs: Fine to medium grained; occasional orange silt stringers.
-45	45			60			At 45' bgs: Fine grained;
				60			At 47.5' bgs: Trace orange silt stringers.
-50	50						Boring terminated at 50' bgs.
-55	55						
-60	60						

STATE OF TEXAS WELL REPORT for Tracking #511515

Owner:	**CPS Energy**	Owner Well #:	**JKS-63R**
Address:	**P.O. Box 2906** **San Antonio , TX 78299**	Grid #:	**68-46-5**
Well Location:	**Calaveras Power Station** **12940 US 181** **San Antonio, TX 78263**	Latitude:	**29° 19' 27.98" N**
		Longitude:	**098° 18' 56.77" W**
Well County:	**Bexar**	Elevation:	**516 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **5/2/2019** Drilling End Date: **5/2/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.25	**0**	**50**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
33	**50**	**Sand**	**12/20**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Concrete 1.16 Bags/Sacks**
2	**33**	**Bentonite 15.08 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **36 ft.** below land surface on **2019-05-02**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Vortex Drilling**

4412 Bluemel Road
San Antonio, TX 78240

Driller Name: **James E. Neal** License Number: **4868**

Apprentice Name: **Tony Elmendorf**

Comments: **No Data**

Report Amended on 7/12/2019 by Request #28256

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**3.5**	**Sand**
3.5	**7.5**	**Sandy Clay**
7.5	**8.5**	**Clayey Sand**
8.5	**10**	**Silt**
10	**17.5**	**Sand**
17.5	**24**	**Interbedded Clay and Sand**
24	**50**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Top Cap (Locking)**	**New Plastic (PVC)**	**40**		
2	**Bottom Cap**	**New Plastic (PVC)**	**40**		
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**35**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**35**	**50**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

ERM Environmental Resources Management

JKS-64
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-64 Date Drilled 2016-09-09

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13665627.14' E. Coord. 2186778.76' Surface Elevation 504.38 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

Top of Casing Elevation 507.84 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 25.06 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP

NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
504.38	0			0		0-5	NO RECOVERY: Previously excavated with hydrovac truck.
500	5			100		5-6.5	SILTY SAND: Brown; moist; loose.
						6.5-8	INTERBEDDED CLAY AND SAND: Pinkish gray and orange; fine grained, orange sand; pinkish gray clay layered with iron-oxide staining; damp; non-plastic.
495	10			100		8-13	SAND: Light gray and pale yellow; dry; very fine-grained; dense; very hard-packed; trace clay content; layered appearance.
490	15			100		13-22.5	INTERBEDDED CLAY AND SAND: Light gray and pale yellow, fine-grained sand; dark gray, slightly plastic, medium stiff clay.
485	20						At 17' bgs: Thickness of clay layers increases (1-2" thick); low plasticity.

ERM Environmental Resources Management

JKS-64
DRILLING LOG

Proj. No. 0366643 Boring/Well ID JKS-64 Date Drilled 2016-09-09

Project Ground Water Investigation - Phase II Owner CPS Energy

Location Calaveras power Station - San Antonio Boring T.D. 32.00 ' Boring Diam. 8.25 "

N. Coord. 13665627.14' E. Coord. 2186778.76' Surface Elevation 504.38 ' Ft. MSL Datum

Screen: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Slot Size 0.01 "

Casing: Type Sch. 40 PVC Diam. 2.00 " Length 15.00 ' Sump Length 0 '

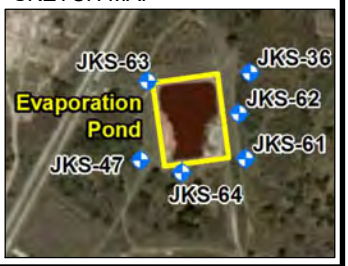
Top of Casing Elevation 507.84 ' Stickup 3.46 '

Depth to Water: 1. Ft. btoc 25.06 (2016-05-21) 2. Ft. ( )

Drilling Company Strata Core Services, LLC Driller Ryan Spaust

Drilling Method Hollow-Stem Auger Log By Andrew Henry

SKETCH MAP



NOTES

Coordinates in Texas South Central State Plane 4204. Elevations in NAVD88 computed using Geoid03.

Elevation (Ft MSL)	Depth (Feet)	Graphic Log	Well Construction	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20				JKS-64_20-30 **USCS:** Clayey Sand (SC) **AL:** 29 / 14 / 15 **- #200:** 30.1		At 20' bgs: Saturated; clay color changes to pinkish gray. Non-cohesive grab sample collected from 20'-30' bgs.
				100		22.5-25	SAND: Gray with bluish gray and orange; fine-grained; loose.
480							At 23.8' bgs: Bluish gray, low plasticity clay (1/2" thick); sand color changes to greenish blue.
	25					25-30	INTERBEDDED CLAY AND SAND: Tannish gray; wet to saturated; fine-grained; wet to saturated; loose; clay layers are pinkish gray with iron-oxide staining.
				100			At 26.8' bgs: Wet. At 27.5' bgs: Saturated. At 28.3' bgs: Wet.
475							
	30					30-32	At 30' bgs: Gray clay; dense/stiff; low plasticirty; 1" thick. NO RECOVERY: Geotechnical sample collected, but not analyzed.
							Boring terminated at 32' bgs.
470							
	35						
465							
	40						

STATE OF TEXAS WELL REPORT for Tracking #443600

Owner:	**Calaveras Power Station**	Owner Well #:	**JKS-64**
Address:	**12940 US 181 San Antonio, TX 78223**	Grid #:	**68-46-5**
		Latitude:	**29° 18' 28.4" N**
Well Location:	**12940 US 181 San Antonio, TX 78223**	Longitude:	**098° 19' 01.91" W**
Well County:	**Bexar**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **9/9/2016** Drilling End Date: **9/9/2016**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.25**	**0**	**30**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**12**	**30**	**Sand**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**2**	**Cement 1 Bags/Sacks**
	2	**12**	**Bentonite 2 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

	Strata Depth (ft.)	Water Type
Water Quality:	**No Data**	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Strata Core Services, LLC**

112 S. Norwood Drive
Hurst, TX 76053

Driller Name: **William Fields** License Number: **56033**

Apprentice Name: **Ryan Spaust**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	7	Clayey silt - orangish brown
7	15	Clayey silty - gray to brown
15	19	Sand - tan with gray
19	23	Sand - light orange and tan
23	30	Sand - reddish brown

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 10	15	30

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

APPENDIX D GROUNDWATER FLOW DIRECTION MAPS

All monitoring wells associated with the CCR units were gauged for water levels during the eight background monitoring events between December 2016 and October 2017 and were gauged semi-annually in 2018 and 2019. Potentiometric surface maps that are representative of groundwater water level conditions during these periods are provided in Appendix D. Note: Water levels were also gauged semi-annually in 2020 and these potentiometric surface maps will be provided in the 2020 Annual Groundwater Monitoring and Corrective Action Reports for the CCR units.

Based on the water levels at these CCR units, the following wells were selected as background wells because they were consistently upgradient and/or an evaluation of historical data indicated they were representative of background groundwater conditions as presented in the Written Demonstration – Responses to Potential Statistically Significant Increases dated 27 April 2020:

- Bottom Ash Ponds – Wells JKS-49 and JKS-51
- Evaporation Pond – Wells JKS-63/63R, JKS-47, and JKS-64
- Fly Ash Landfill – Wells JKS-57 and JKS-45
- SRH Pond – Wells JKS-49 and JKS-51

BOTTOM ASH PONDS

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – MARCH 2017
Southern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure

Environmental Resources Management

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DATE:	1/31/2018	SCALE:	AS SHOWN	REVISION:	1

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

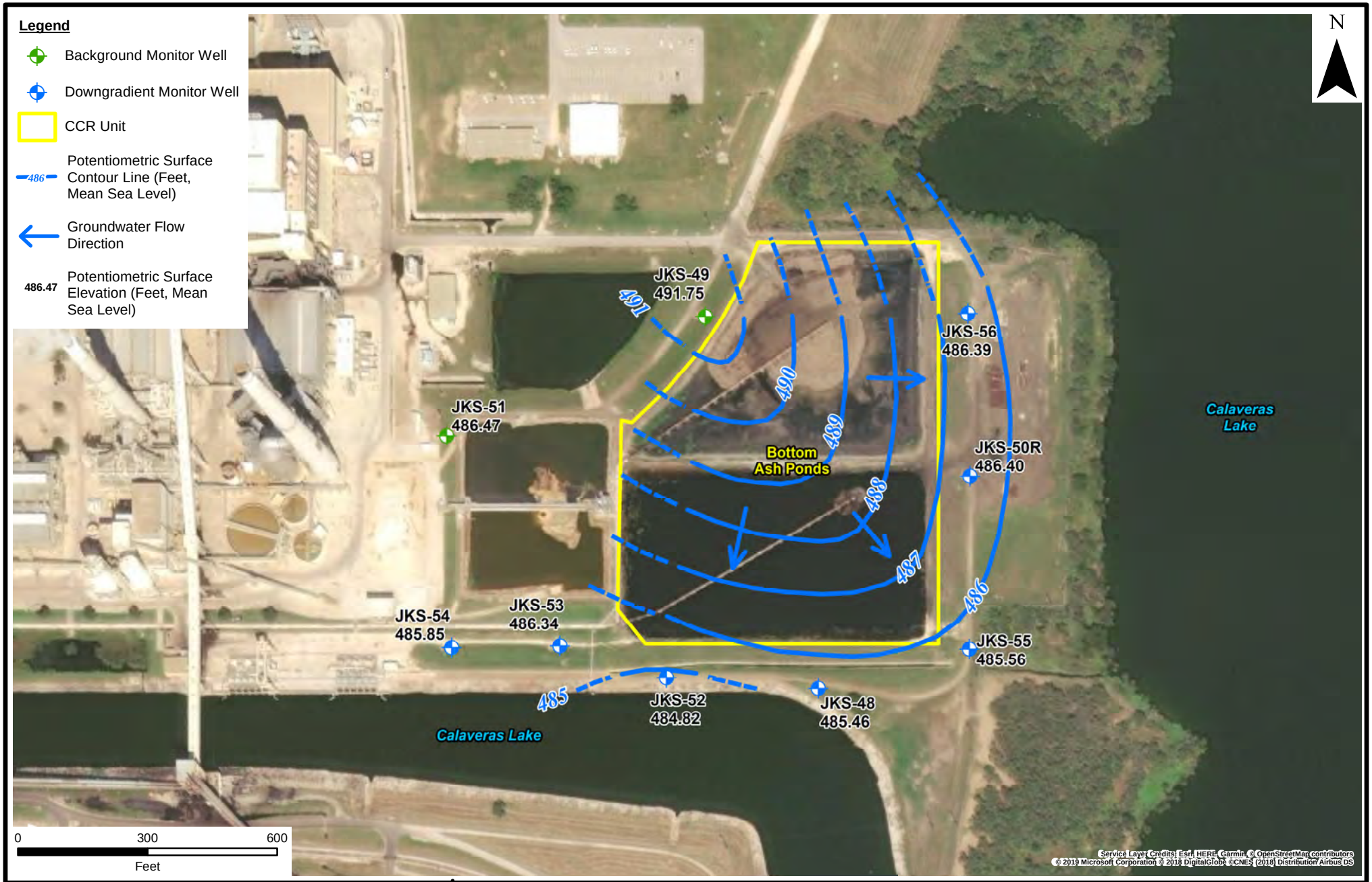
ERM

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – April 2018
Bottoms Ash Ponds CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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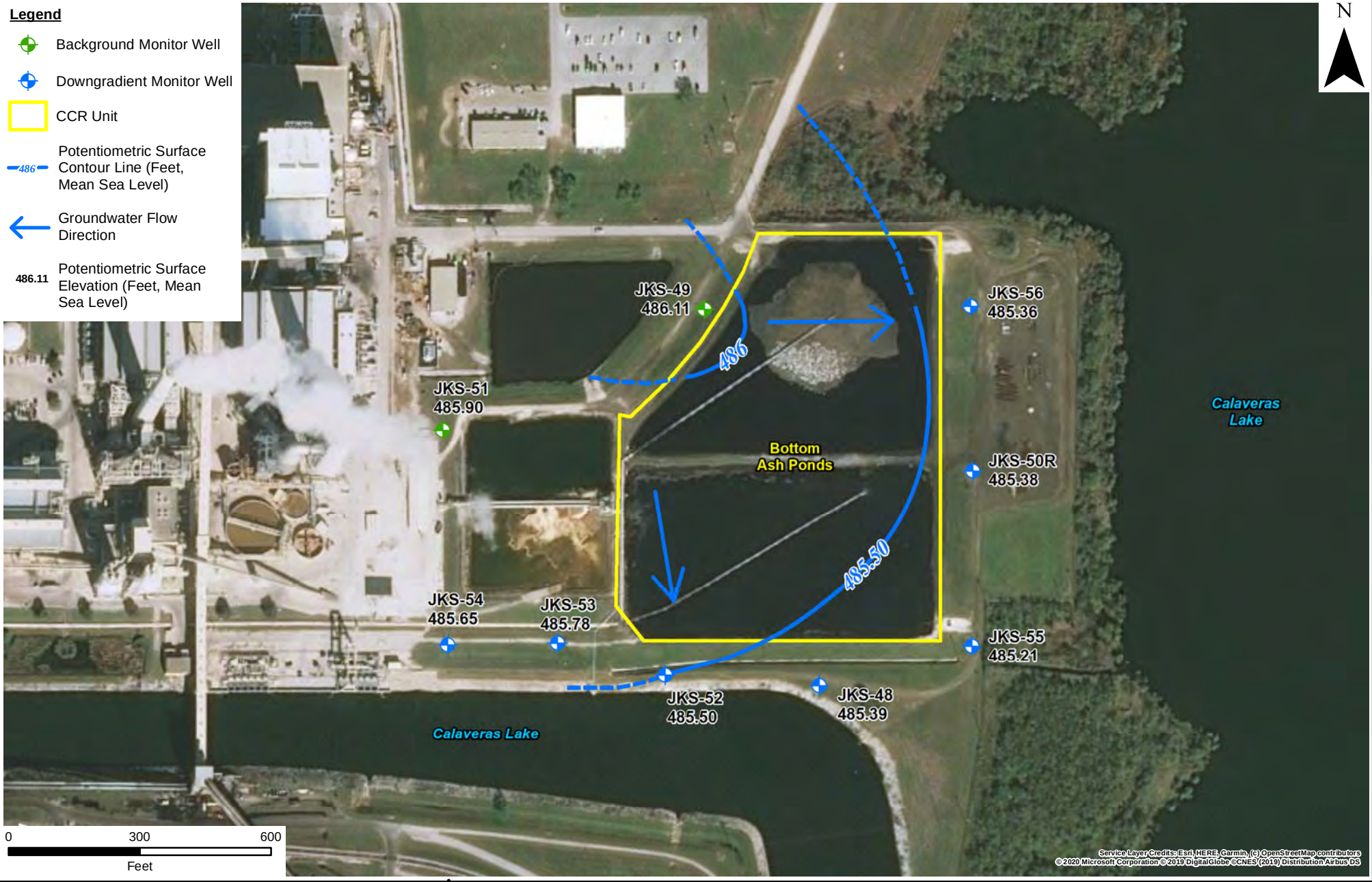
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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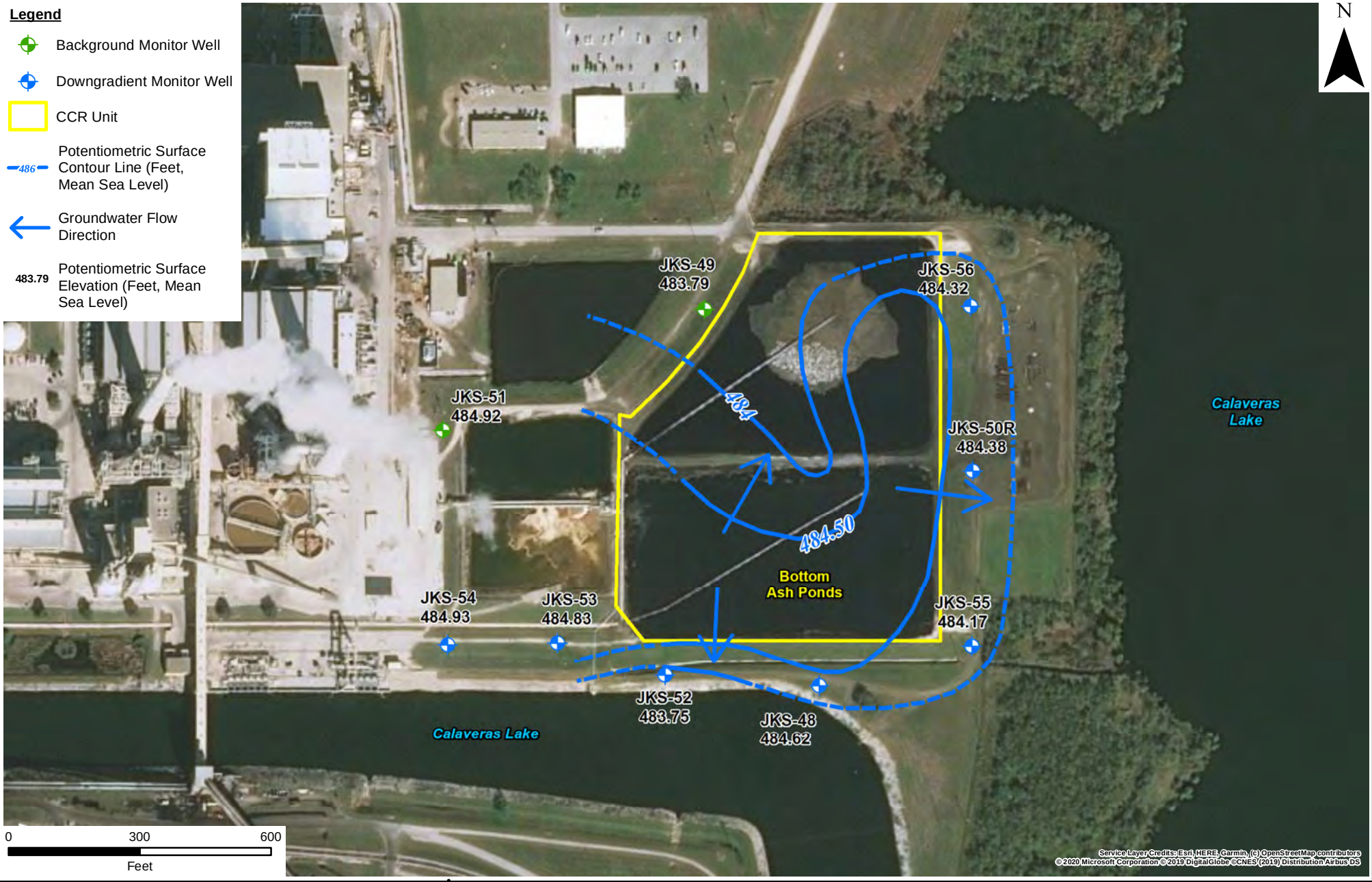
POTENTIOMETRIC SURFACE MAP - APRIL 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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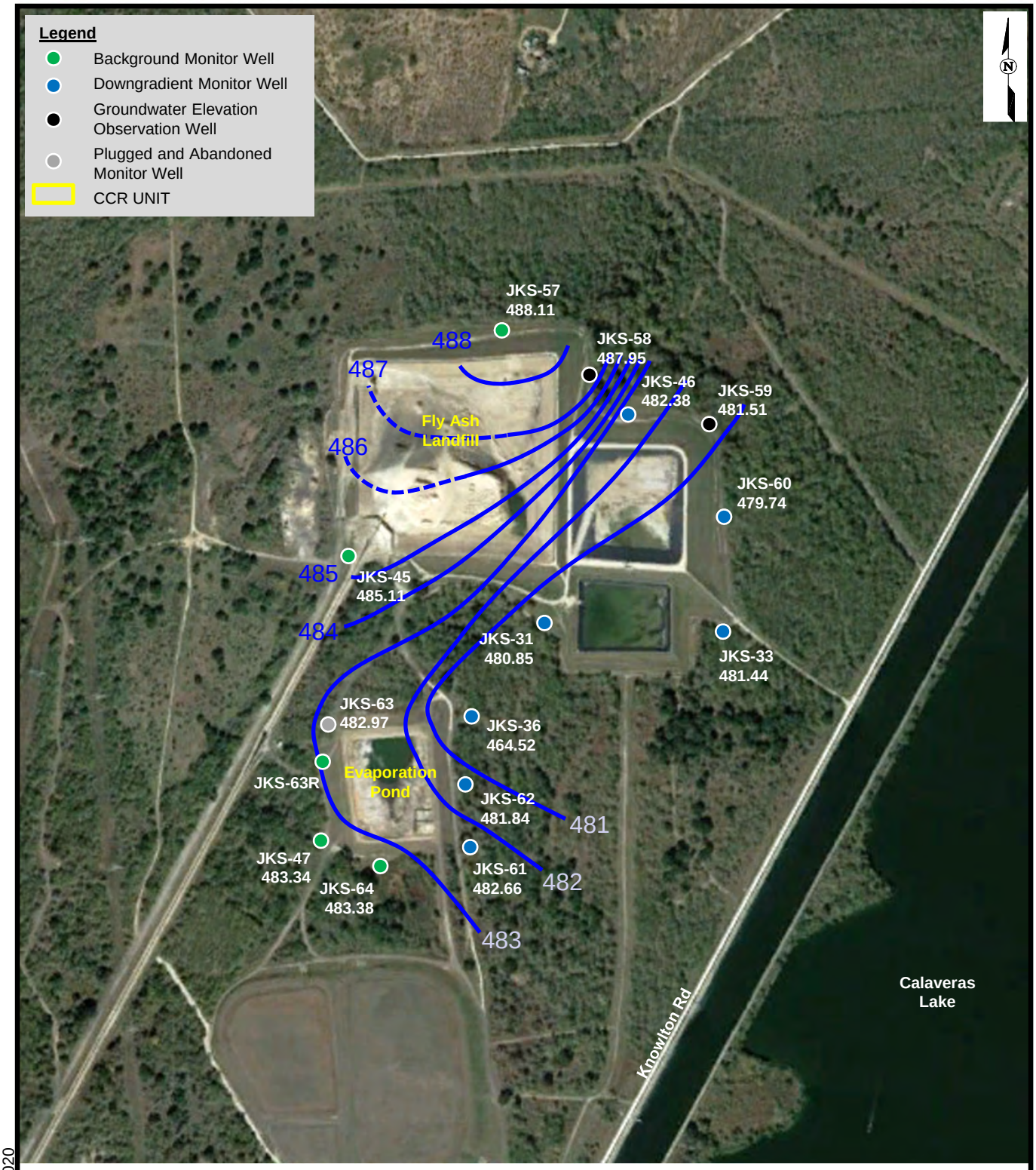
POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

EVAPORATION POND



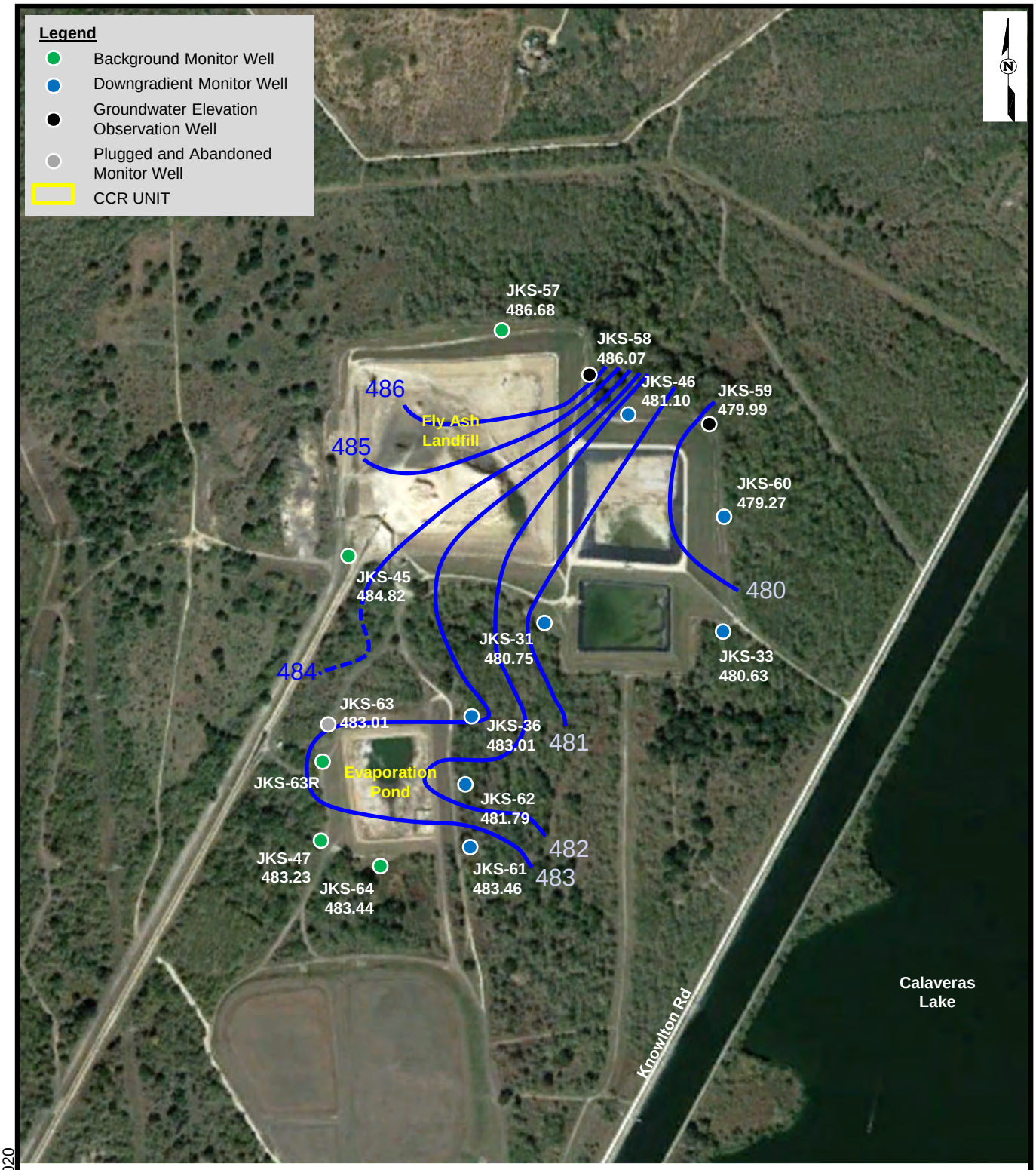
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – May 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



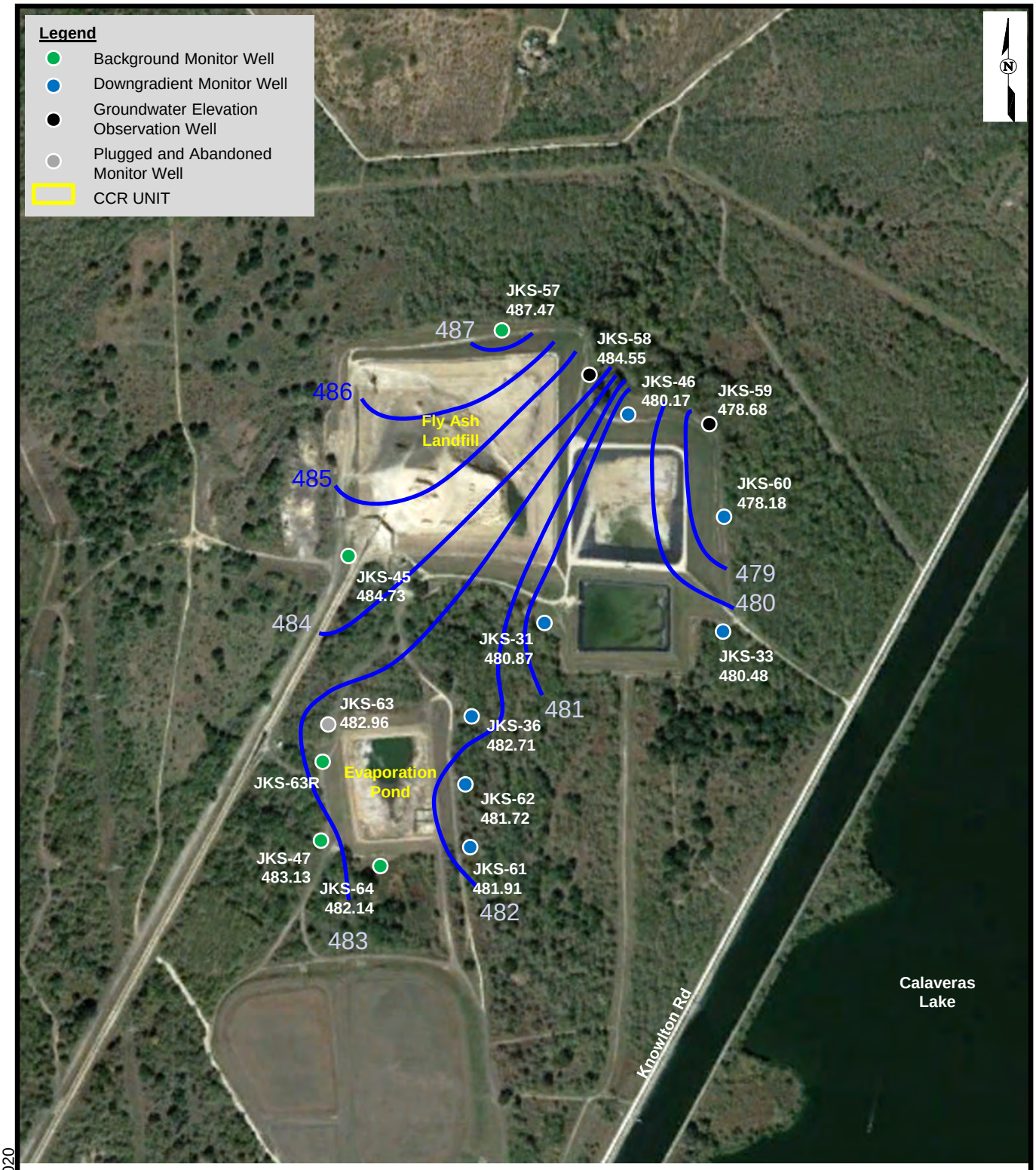
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – June 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



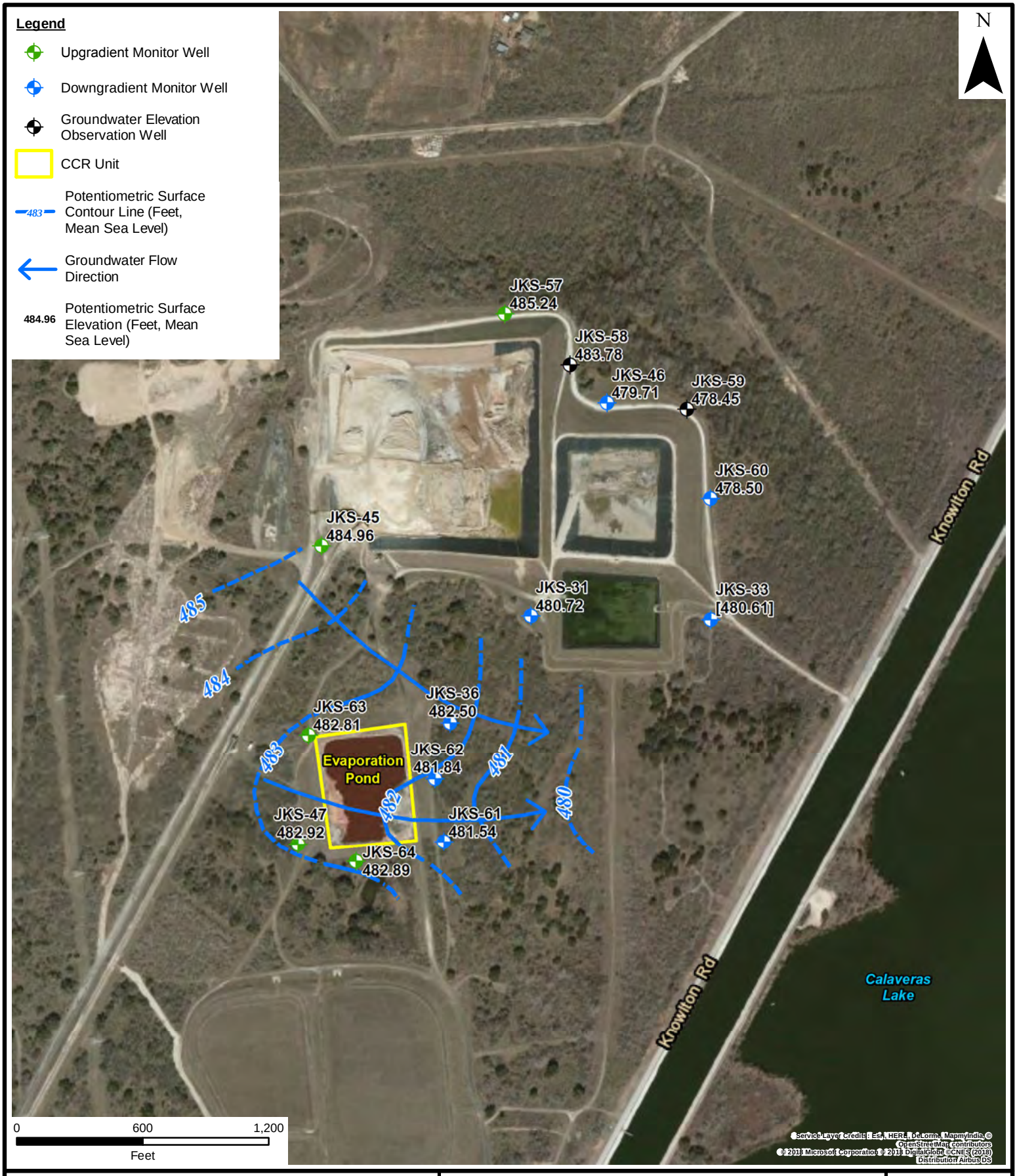
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – August 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Environmental Resources Management

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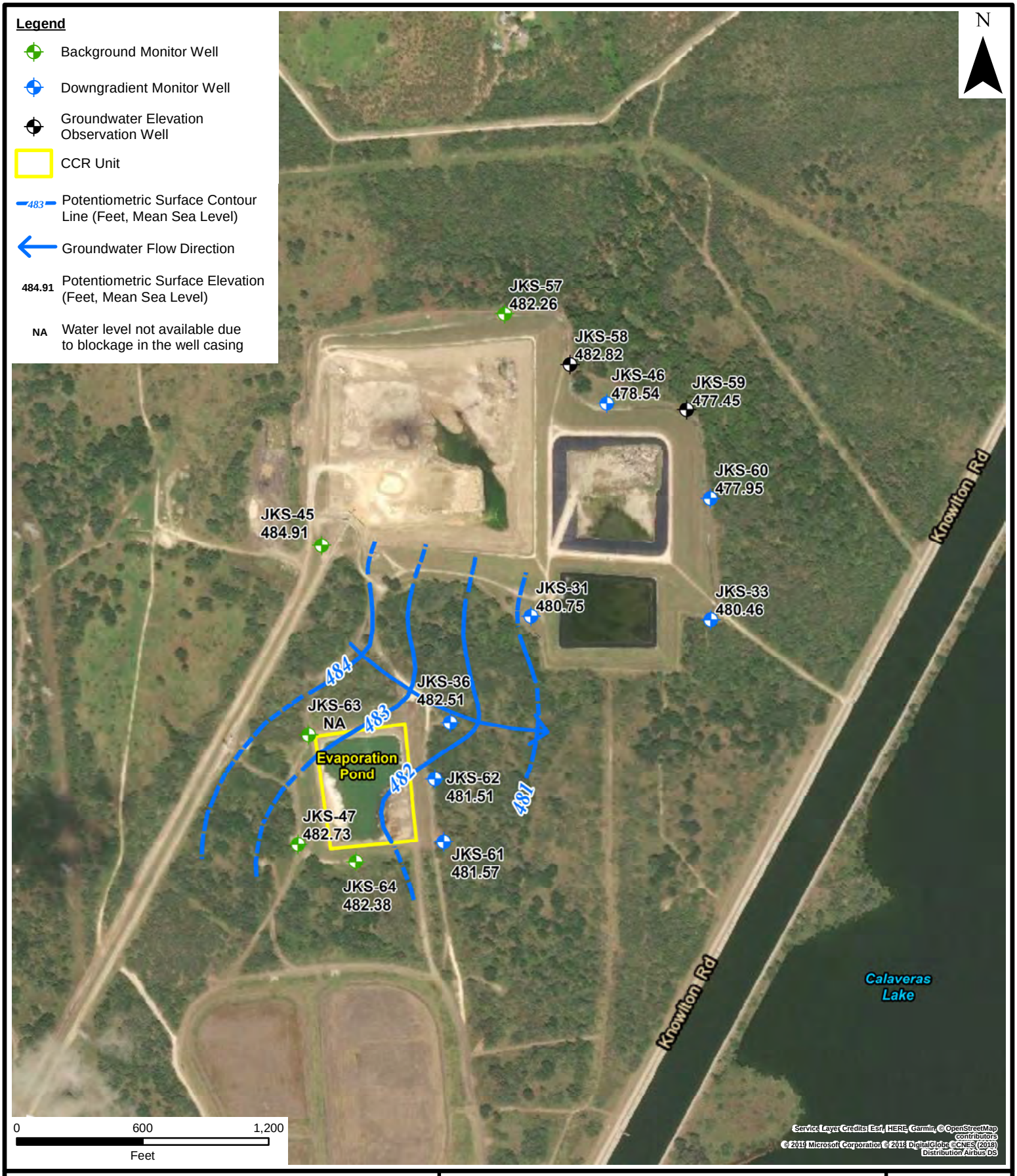
POTENTIOMETRIC SURFACE MAP - APRIL 2018
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

Environmental Resources Management

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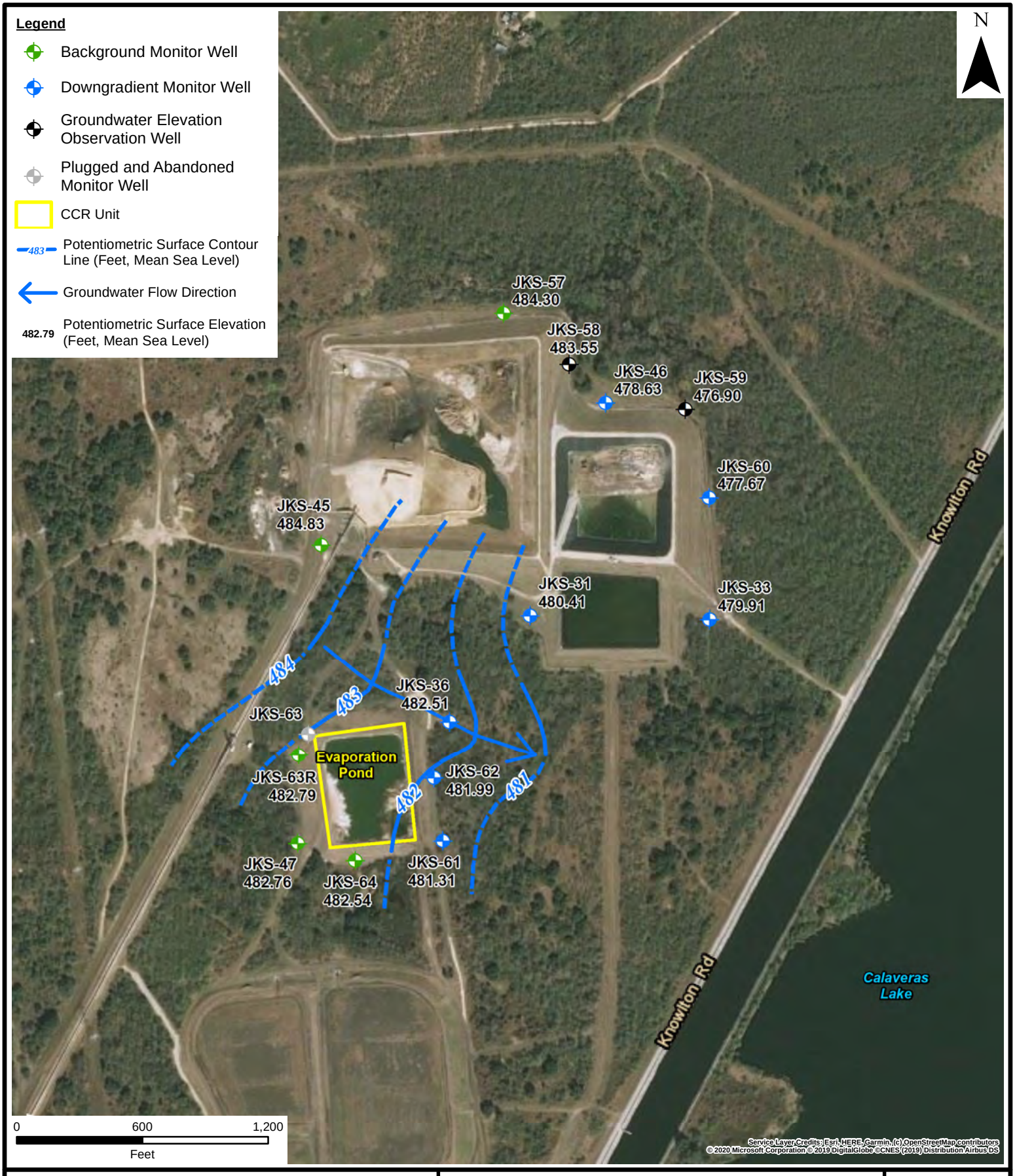
POTENTIOMETRIC SURFACE MAP - APRIL 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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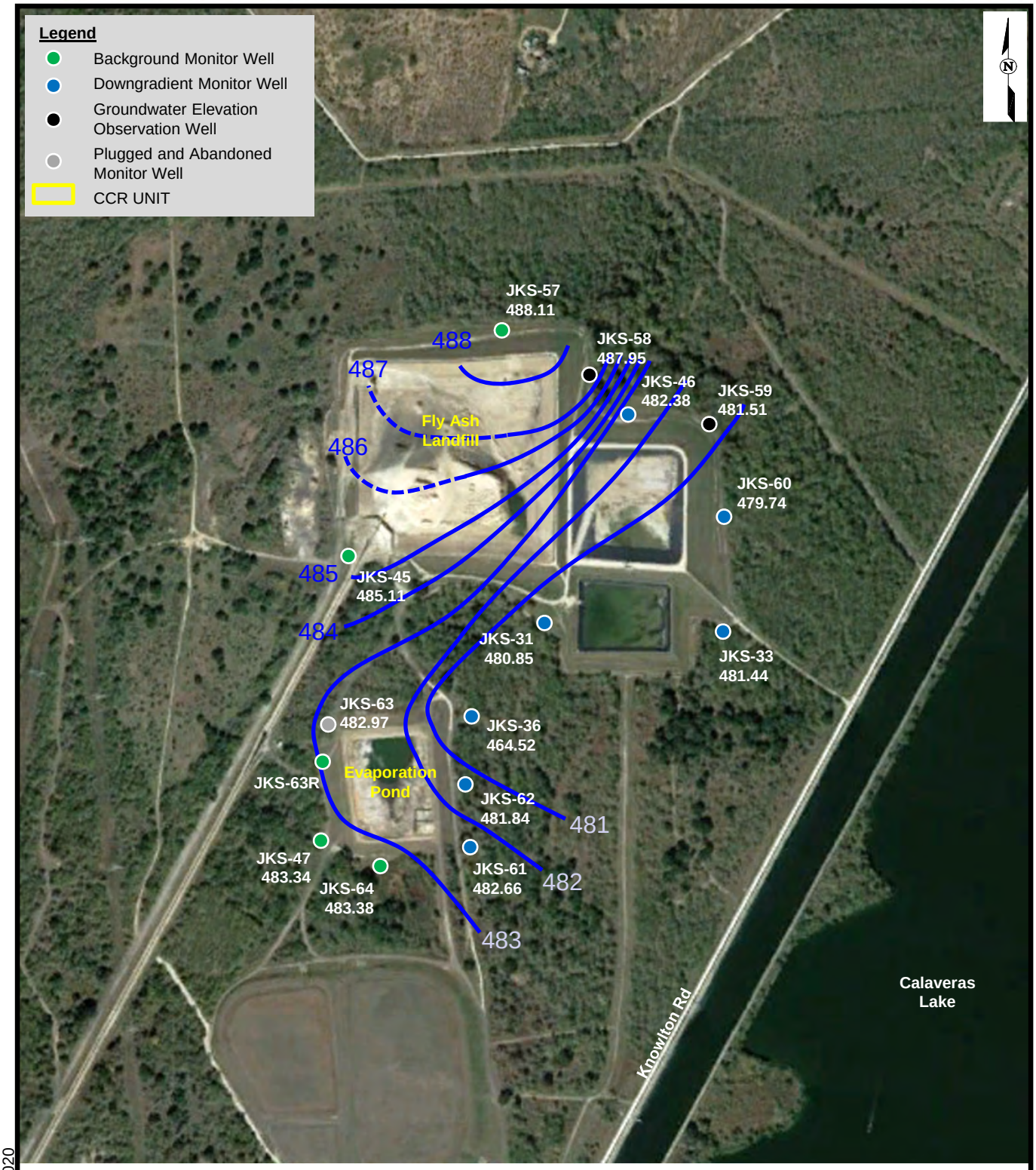
POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

FLY ASH LANDFILL



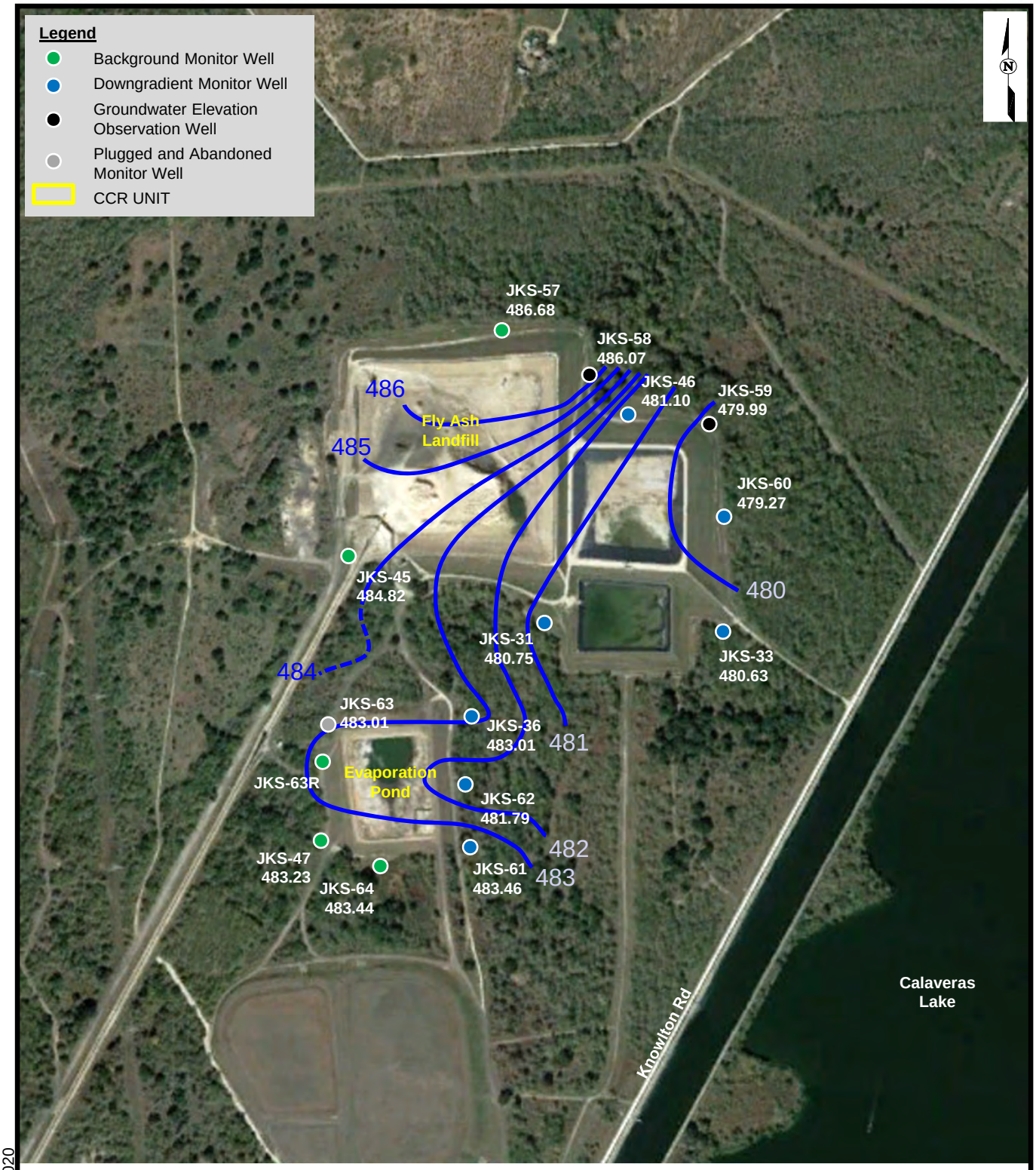
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – May 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



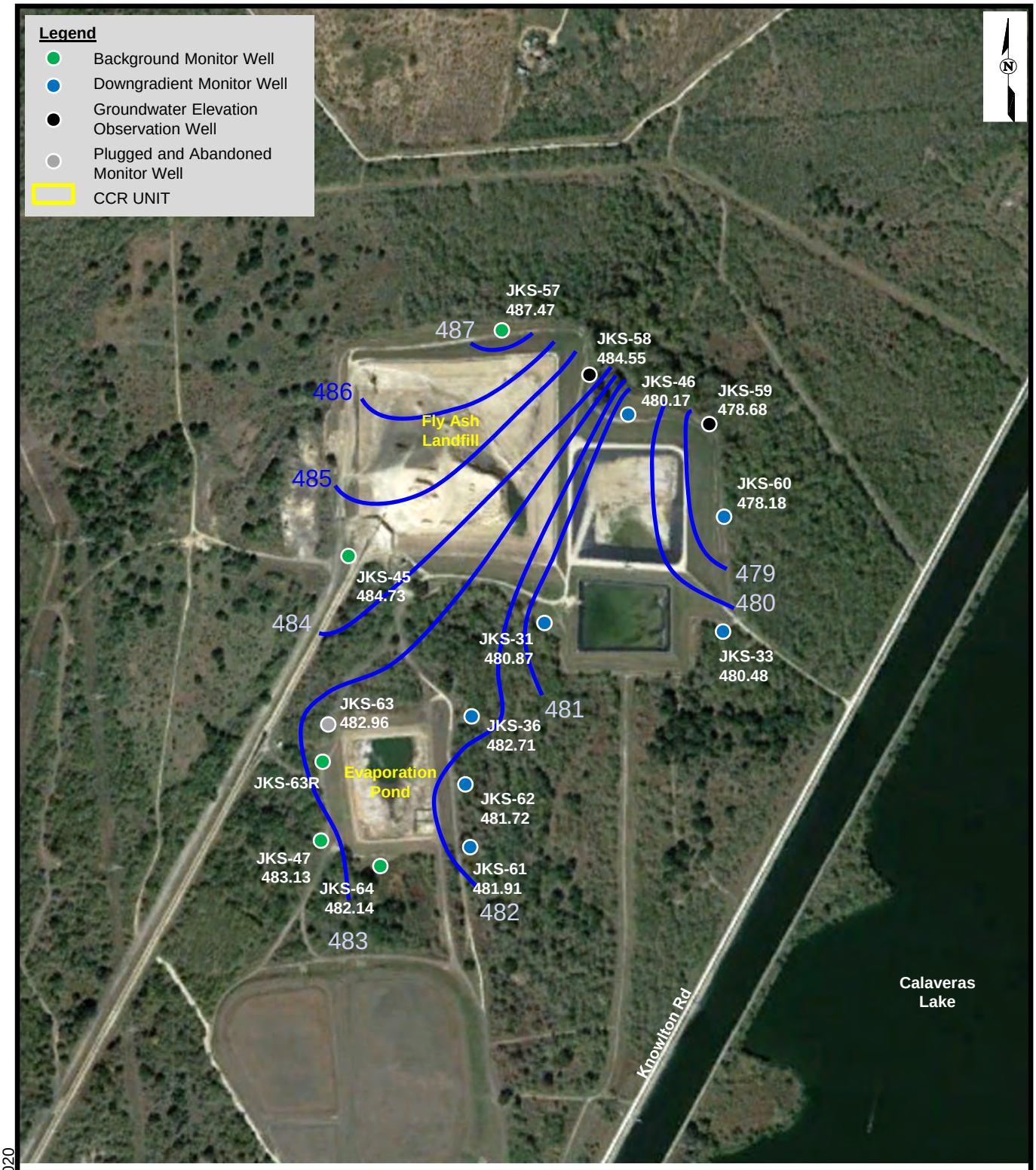
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – June 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



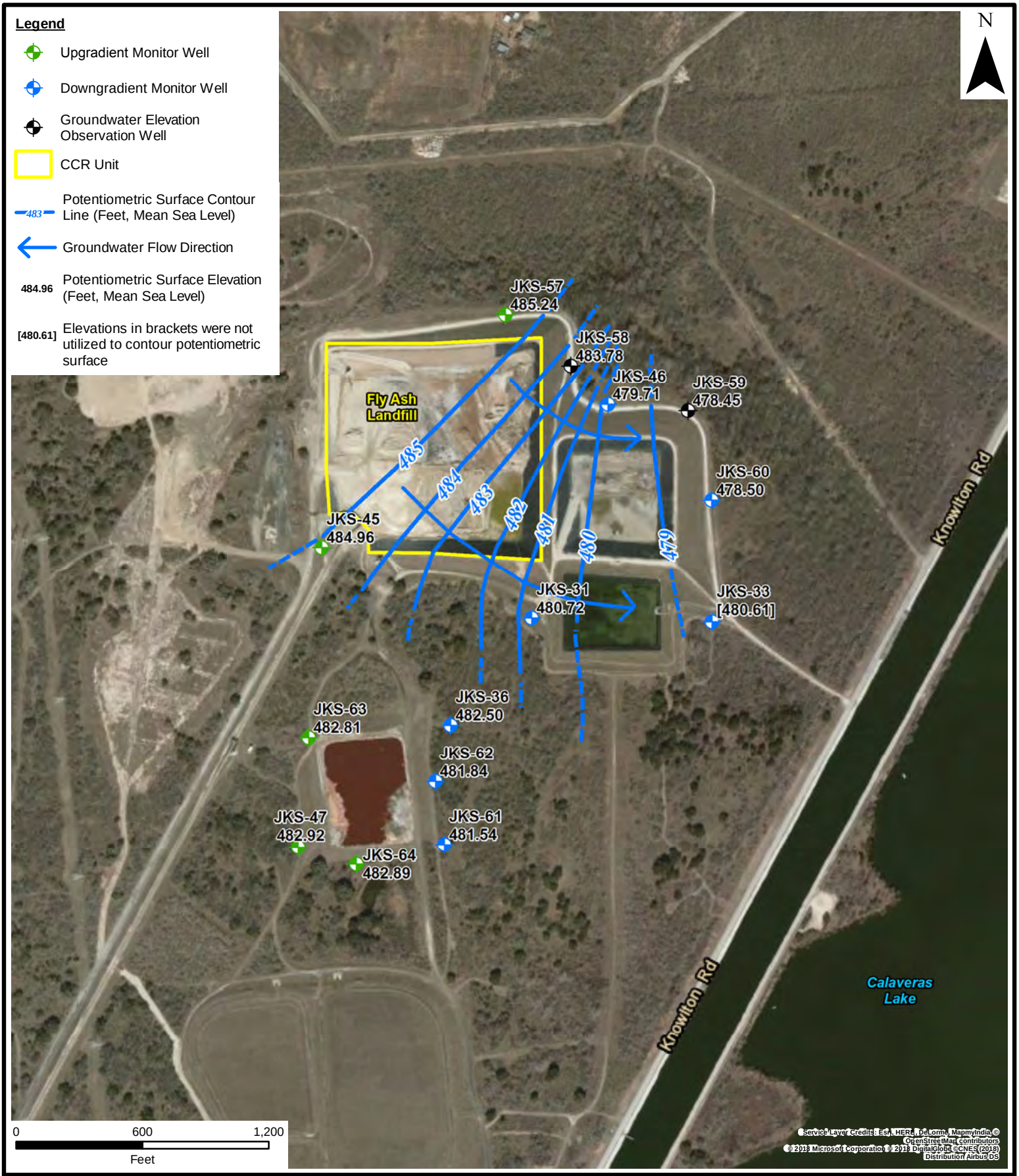
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – August 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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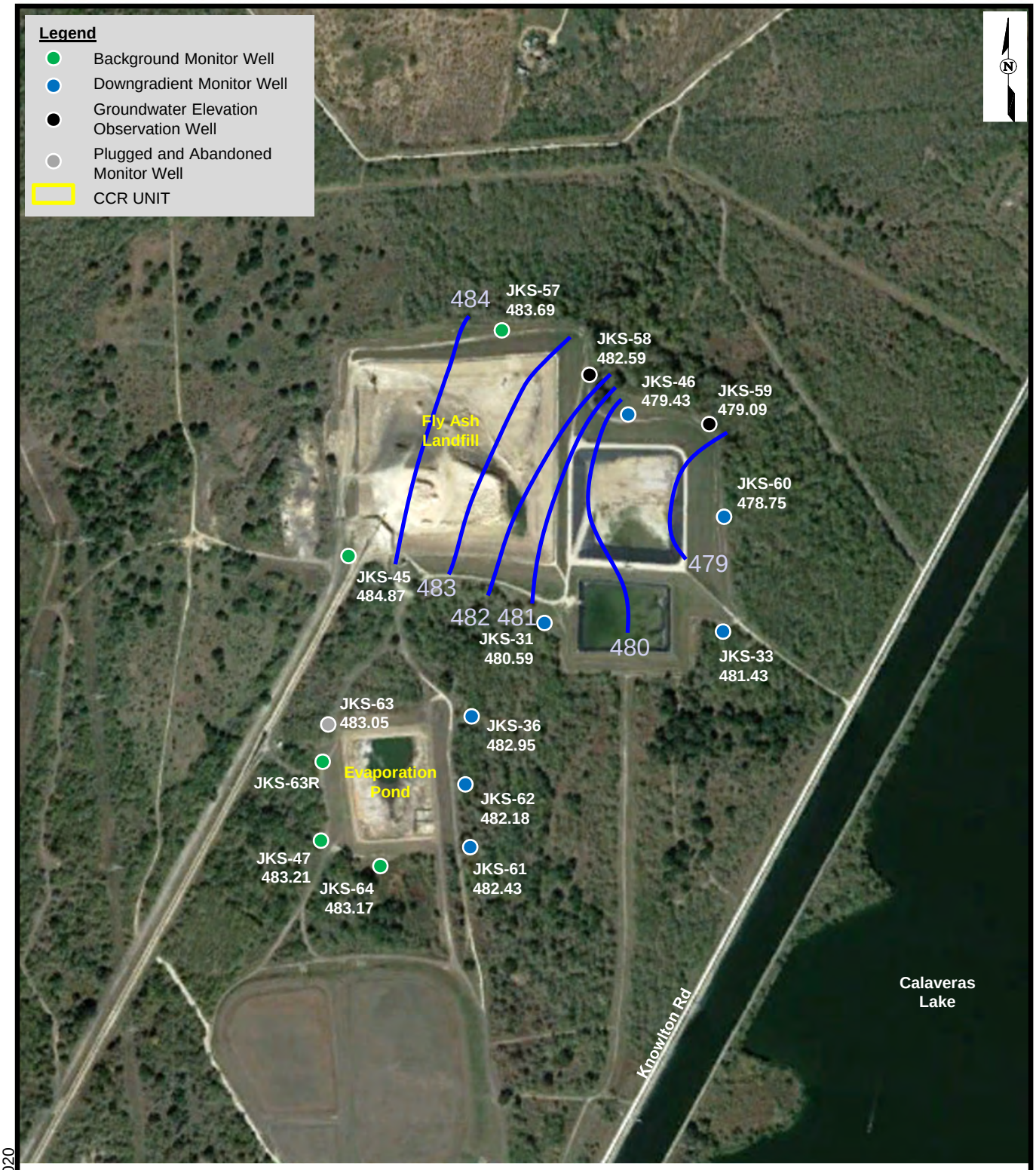
POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



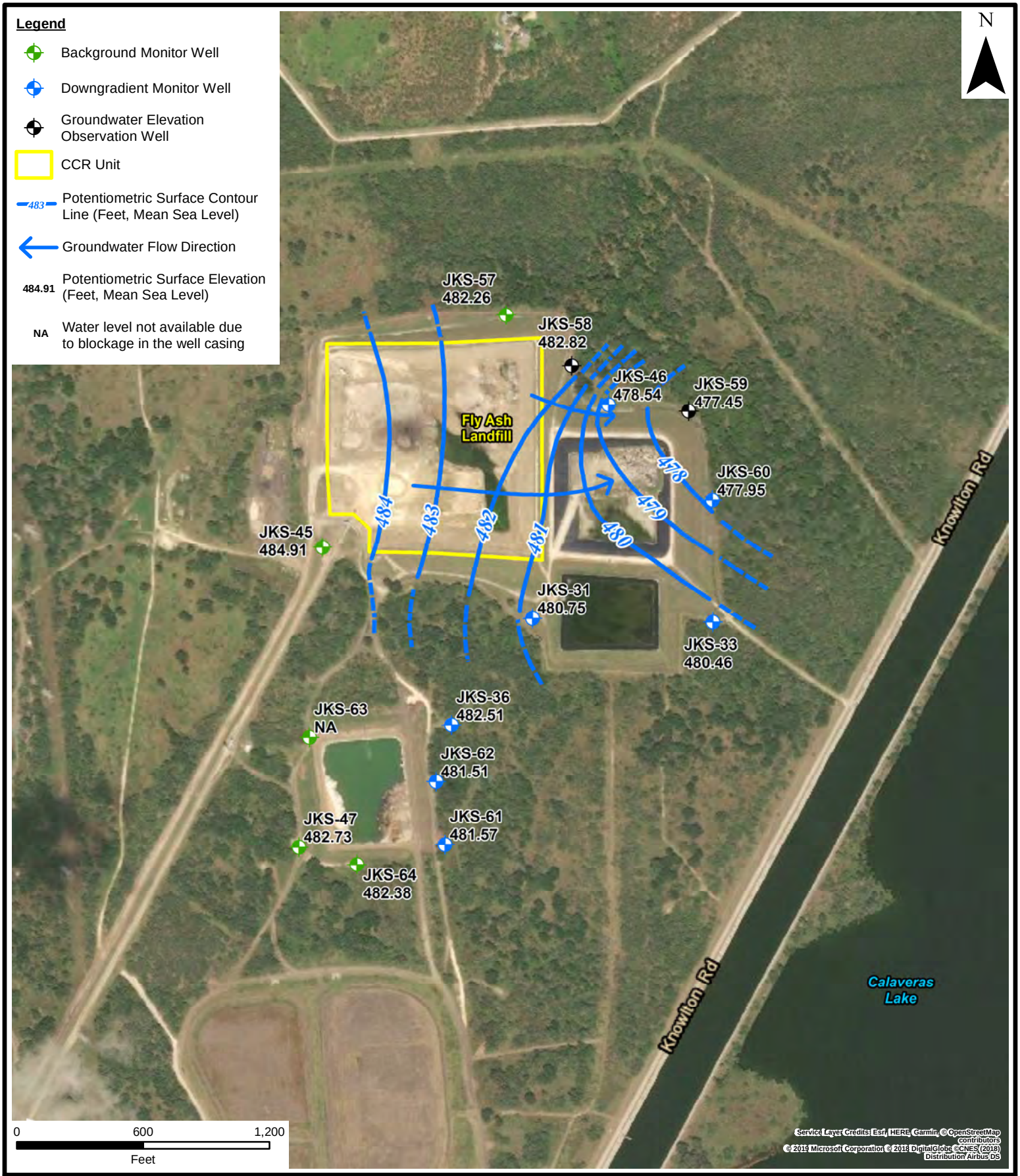
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – April 2018
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



Environmental Resources Management

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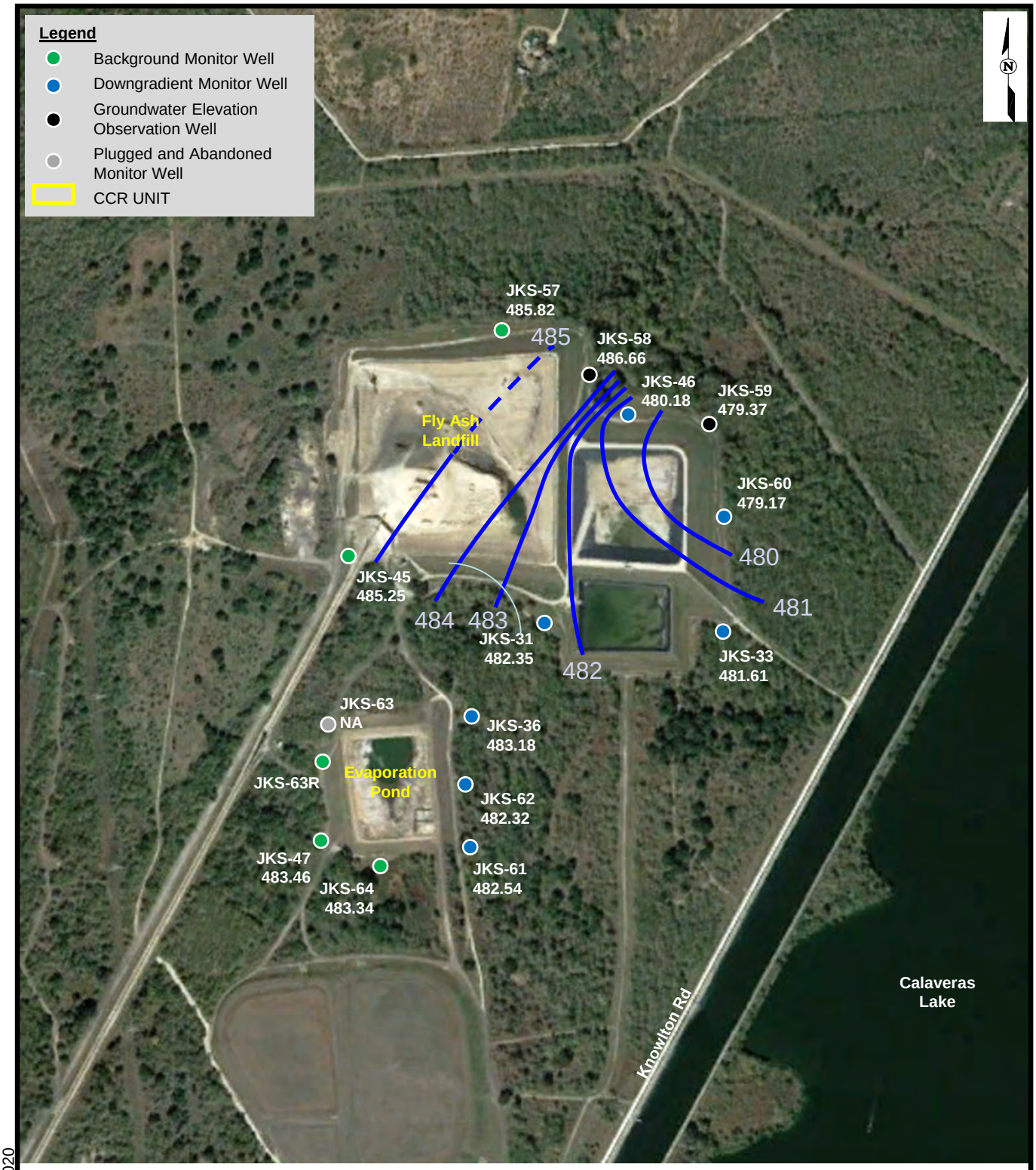
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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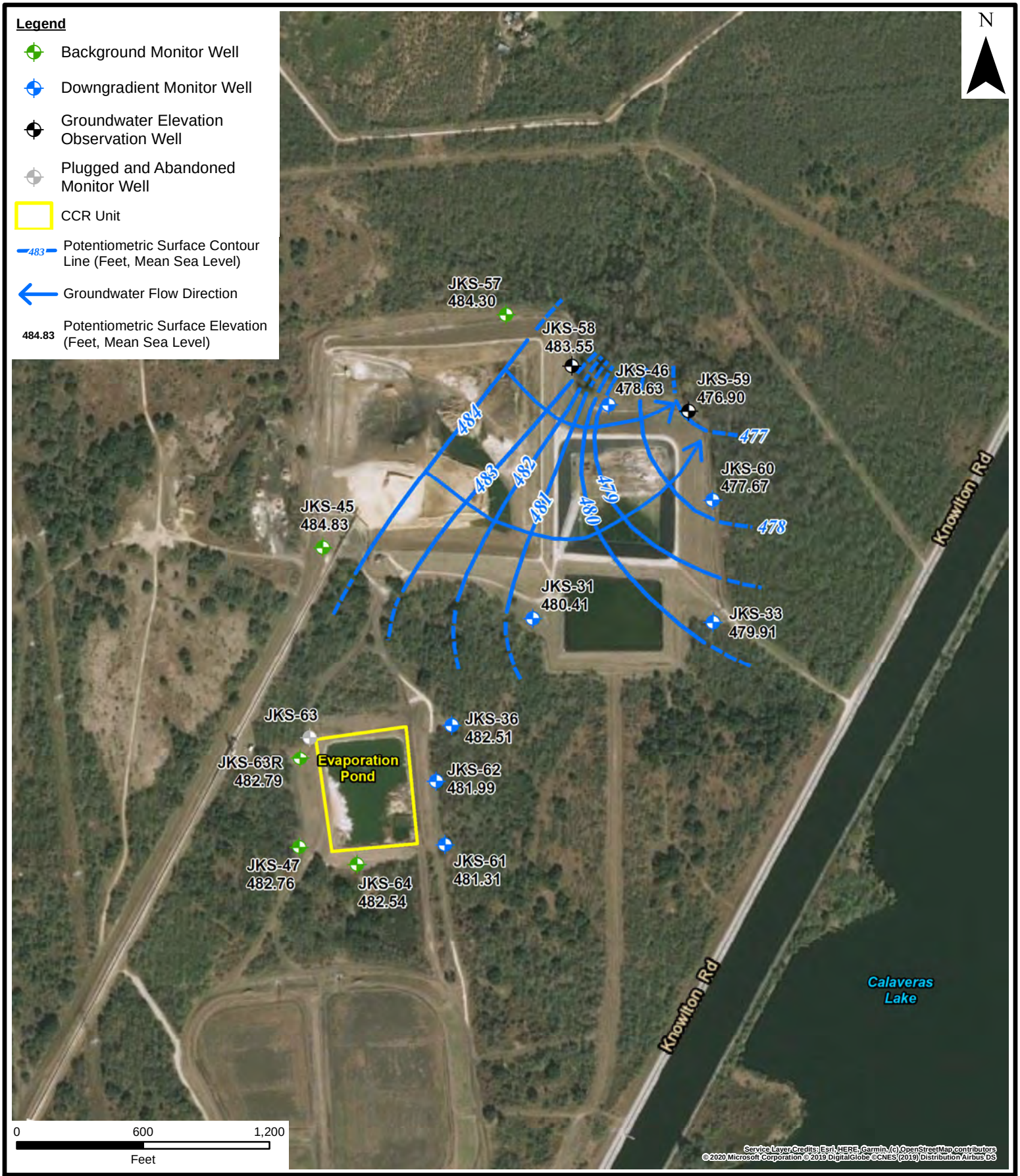
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – April 2019
Fly Ash Landfill CCR Unit
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

SRH POND

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – MARCH 2017
Southern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure

Environmental Resources Management

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POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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Environmental Resources Management

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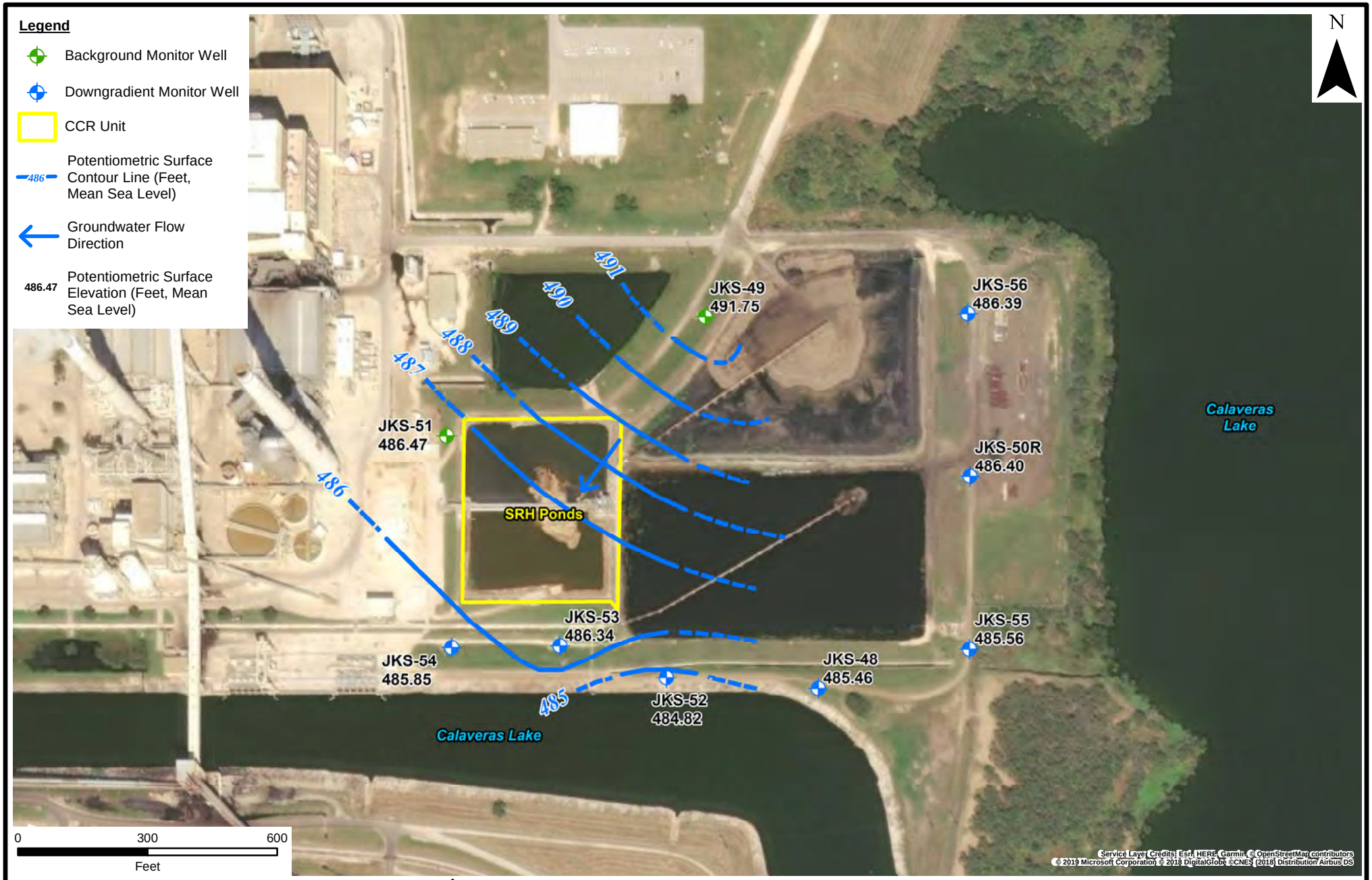
POTENTIOMETRIC SURFACE MAP - APRIL 2018
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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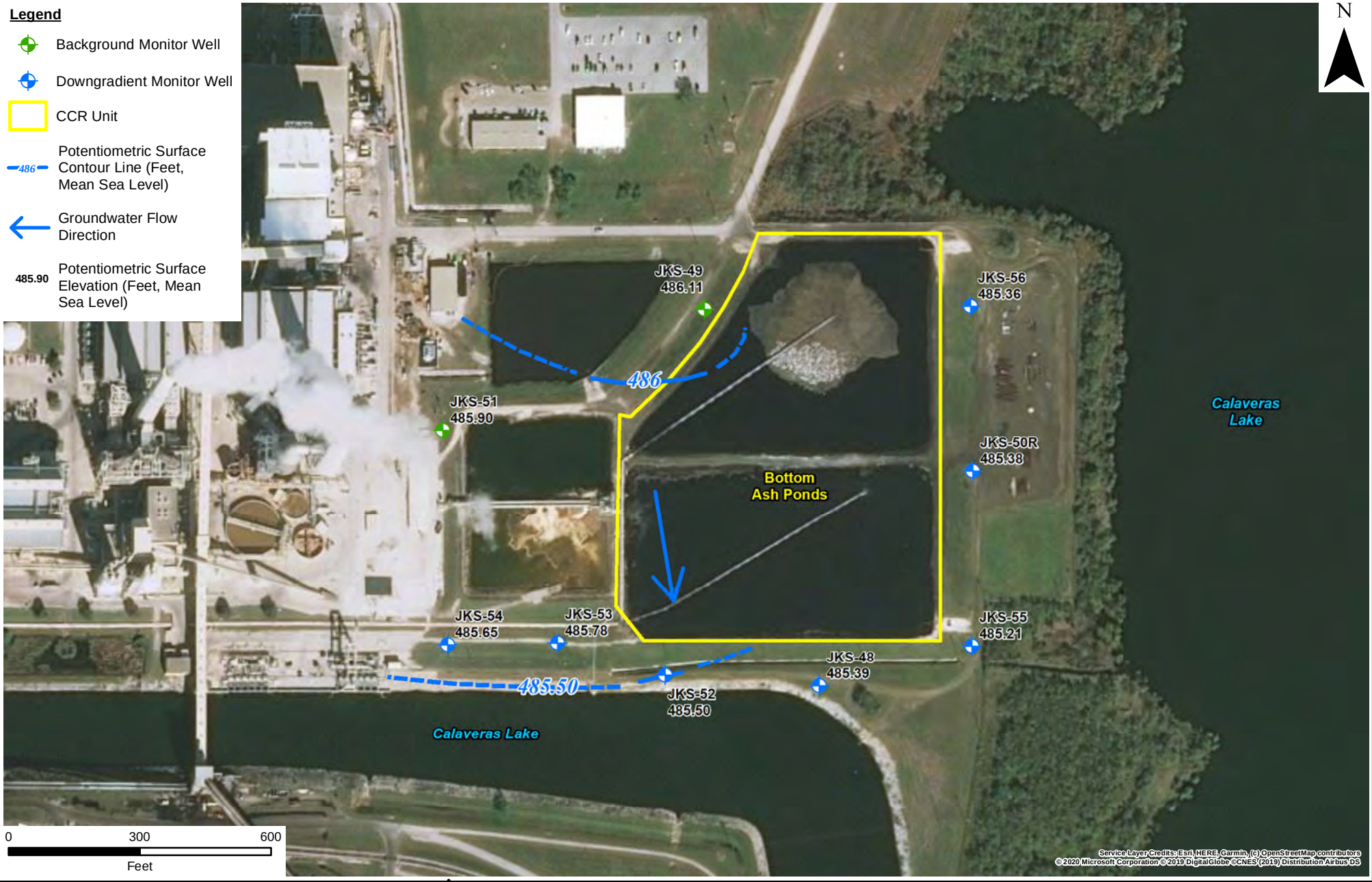
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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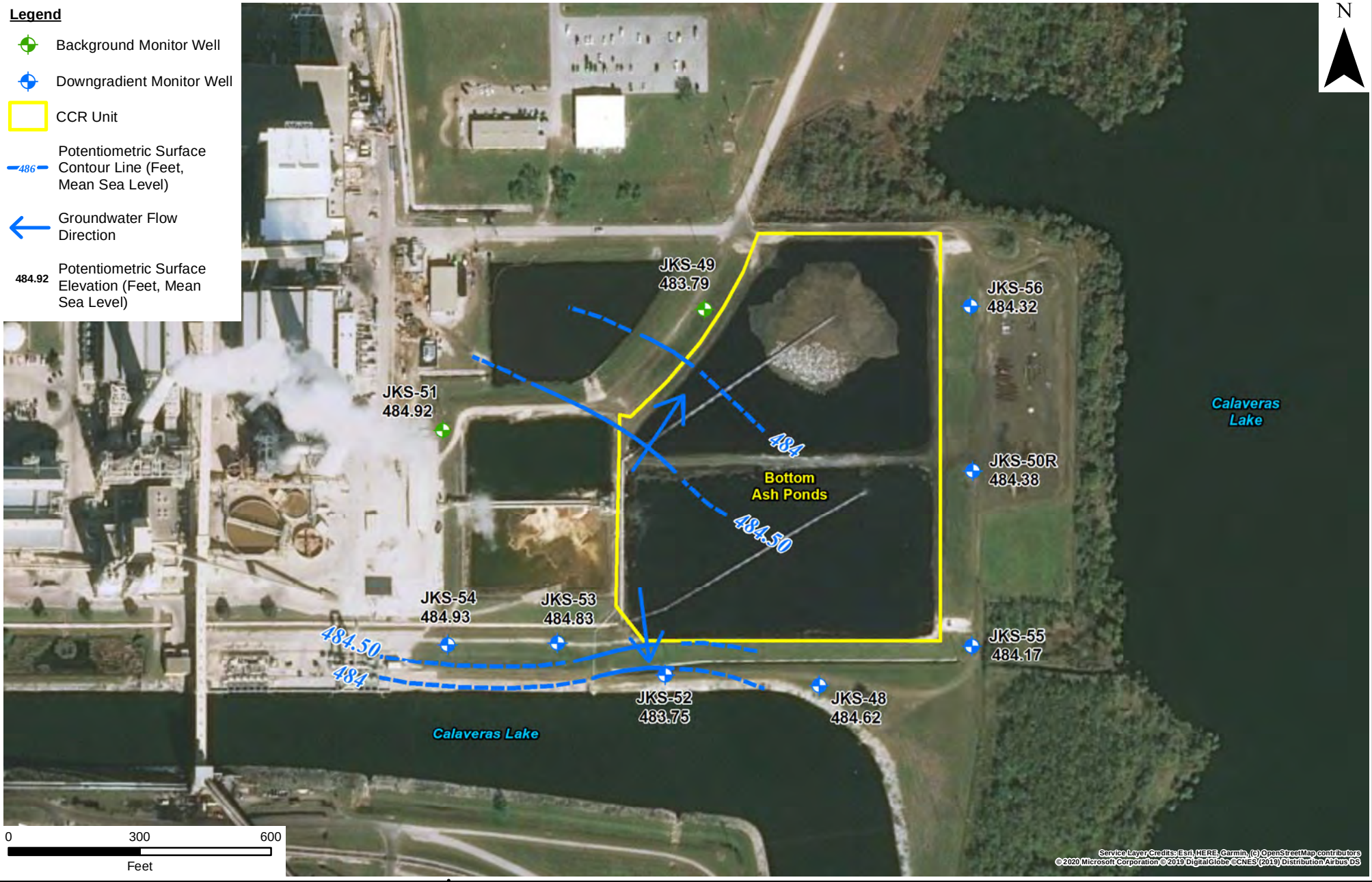
POTENTIOMETRIC SURFACE MAP - APRIL 2019
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
SRH Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

APPENDIX E CONSTITUENT CONCENTRATIONS SUMMARY TABLES

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-49 Upgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.24	3.28	3.28	3.03 X	3.04 J	2.76	2.85	2.87	2.71	2.70	2.05	2.58	2.47
Calcium	mg/L	130	146	173	113	127	120	145	147	135	117 D	154 D	127 D	114 J
Chloride	mg/L	295 D	383 D	372 D	326	414 D	448 D	459 D	424	446 D	408	449	429	452
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	0.697	0.719	0.749	0.793	0.894
Sulfate	mg/L	211 D	232 D	234 D	194	218 D	227	265 D	219 X	237	237	240	205	217
pH - Field Collected	SU	7.19	7.12	7.12	7.02	7.06	6.16	7.05	6.89	7.12	7.12	7.31	6.43	7.15
Total dissolved solids	mg/L	1250	1240	1190	1100	1450	1440	1490	1730	1310	1210	1290	1380	1240
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00173 J	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000676 J	0.000729 J	0.00123 U	0.00123 U	0.000544 J	0.000538 J	0.000478 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0607	0.0575	0.0503	0.0554	0.0783	0.0721	0.0788	0.0735	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000859 J	0.000572 J	0.00262 U	0.00262 U	0.000963 J	0.000997 J	0.00113 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00102 J	0.00109 J	0.00124 J	0.00155 J	0.00133 J	0.00153 J	0.00155 J	0.00146 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000155 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0137 J	0.0341	0.0295	0.0427	0.0252	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000690 J	0.0000263 U	0.0000490 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00779 J	0.00846	0.00875	0.0106	0.00908 J	0.00938	0.0107	0.0111	NR	NR	NR	NR	NR
Selenium	mg/L	0.00992 J	0.00597	0.00479	0.00521 J	0.00370 J	0.00235	0.00188 J	0.00141 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.198 ± 0.197	0.615 ± 0.272	0.747 ± 0.323	0.195 ± 0.167	0.294 ± 0.192	0.241 ± 0.193	0.159 ± 0.191	0.746 ± 0.274	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.1 ± 0.907	-1.37 ± 1.37	0.854 ± 0.724	1.08 ± 1.72	2.23 ± 0.949	0.658 ± 0.636	0.812 ± 0.604	1.43 ± 0.898	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-51 Upgradient												
	Sample Date	12/8/16	2/22/17	3/28/17	5/3/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.512	0.517	0.473	0.565	0.512	0.525	0.453	0.509	0.465	0.347	0.489	0.648	0.627
Calcium	mg/L	267	292	322	266	261 X	232	236	256	246	149 D	328	336 D	334 J
Chloride	mg/L	403 D	331 D	414 D	447	424 D	455 D	384 D	375	395 D	301	559	574 D	555
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	0.305 J	0.291 J	0.329 J	0.405 J	0.470
Sulfate	mg/L	293 D	330 D	348 D	359	342 D	330 D	314 D	302	354 D	260	428	405 D	439
pH - Field Collected	SU	6.59	6.51	6.48	6.56	6.40	5.48	6.38	6.20	6.44	6.70	6.66	5.73	6.43
Total dissolved solids	mg/L	1650	1650	1490	1980	1530	1580	1390	1650	1320	916	1890	2150	2010
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000953 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000412 J	0.000390 J	0.00123 U	0.000392 J	0.000344 J	0.000395 J	0.000418 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0655	0.0563	0.0517	0.0512	0.0534	0.0520	0.0520	0.0564	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000212 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000941 J	0.000525 U	0.00262 U	0.000657 J	0.000874 J	0.00113 J	0.00133 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000350 U	0.0000770 J	0.0000920 J	0.000350 U	0.000124 J	0.0000940 J	0.0000800 J	0.000108 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0322	0.0874	0.0790	0.0958 JX	0.0718	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.000199 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.09 ± 0.376	0.104 ± 0.122	0.618 ± 0.247	0.197 ± 0.145	0.328 ± 0.195	0.0847 ± 0.186	4.83 ± 0.763	0.682 ± 0.309	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.312 ± 0.688	1.09 ± 1.37	2.32 ± 1.45	-1.26 ± 1.37	-0.799 ± 0.928	1.57 ± 0.786	0.762 ± 0.706	0.963 ± 0.954	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-48 Downgradient												
	Sample Date	12/7/16	2/22/17	3/30/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	2.21	2.14	--	2.08	2.13	2.15 X	2.02	2.23	2.03	2.13	2.22	2.27	2.36
Calcium	mg/L	130	139	125	NR	111	136 X	134	147	143	128 D	166 D	135 D	130 J
Chloride	mg/L	395 D	408 D	435 D	427	440 D	465 D	166 D	427	433 D	438	467	446	485
Fluoride	mg/L	1.43	1.21 JH	1.62	1.41 JH	1.07	1.62	0.0960 U	1.22	1.35	1.31	1.46	1.25	0.051 JH
Sulfate	mg/L	239 D	251 D	266 D	259	253 D	244	140 D	257	282 D	266	271	213	206
pH - Field Collected	SU	7.06	6.92	6.86	6.99	6.88	5.92	6.90	6.74	6.91	6.92	7.06	6.12	6.89
Total dissolved solids	mg/L	1400	1270	1440	1490	1540	1380 J	850	1470	1400	1410	1420	1520	1400
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	--	0.000240 U	0.00120 U	0.00129 J	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000538 J	--	0.000424 J	0.00123 U	0.000452 J	0.000459 J	0.000475 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0717	0.0699	--	0.0659	0.0686	0.0769	0.0725	0.0761	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	--	0.000131 U	0.000654 U	0.000233 J	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	--	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000608 J	--	0.000525 U	0.00262 U	0.000525 U	0.000863 J	0.00130 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00111 J	0.000844 J	--	0.000920 J	0.000987 J	0.00137 J	0.000917 J	0.00106 J	NR	NR	NR	NR	NR
Fluoride	mg/L	1.43	1.21 JH	1.62	1.41	1.07	1.62	0.0960 U	1.22	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	--	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000203 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	NR	0.0536	0.0501	0.0700	0.0551	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000310 JX	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000422 J	--	0.000263 J	0.00128 U	0.000344 J	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	--	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	--	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.139 ± 0.250	0.251 ± 0.149	0.0232 ± 0.136	0.357 ± 0.174	0.46 ± 0.235	0.544 ± 0.259	0.562 ± 0.283	0.26 ± 0.241	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.847 ± 1.14	0.317 ± 1.15	1.1 ± 0.737	-0.109 ± 1.35	0.284 ± 0.662	0.273 ± 0.867	0.459 ± 0.649	0.772 ± 0.931	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-50R Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	4.70	5.18	5.87	5.92	4.87	4.38	4.18	4.54	3.52	5.17	5.85	6.93	5.52
Calcium	mg/L	126	134	189	120	125	108	130	132	127	116 D	159 D	135 D	126 J
Chloride	mg/L	47.7 X	49.0 J	63.9	81.3	111	123	141 D	100	170	87.9	70.0	60.3	102
Fluoride	mg/L	0.316	0.331 JH	0.447 JH	0.528	0.387 JH	0.390 JH	0.0960 U	0.427 JH	0.335 J	0.392 J	0.319 J	0.380 J	0.510
Sulfate	mg/L	137 X	146	156	160	146	148	195 D	144	131	141	168	172	194
pH - Field Collected	SU	6.83	6.77	NR	6.80	6.63	5.69	6.62	6.43	6.67	6.61	6.80	5.85	6.65
Total dissolved solids	mg/L	737	808	789	902	914	856	992	947	883	688	842	899	918
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.00111 J	0.000735 J	0.00123 U	0.00123 U	0.000520 J	0.000545 J	0.000596 J	NR	NR	NR	NR	NR
Barium	mg/L	0.133	0.128	0.113	0.117	0.125	0.117	0.123	0.118	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000147 J	0.000187 J	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000174 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000189 J	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.00251 J	0.00169 J	0.00262 U	0.00262 U	0.000788 J	0.000759 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00305 J	0.00345	0.00251	0.00215 J	0.00191 J	0.00216	0.00233	0.00285	NR	NR	NR	NR	NR
Fluoride	mg/L	0.316	0.331 JH	0.447 JH	0.528	0.387 JH	0.390 JH	0.0960 U	0.427 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000796 J	0.000988 J	0.000627 J	0.000758 U	0.000758 U	0.000178 J	0.000152 U	0.000168 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.000476 U	0.00209 J	0.000476 U	0.00621 J	0.000476 U	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00150 J	0.00153 J	0.00125 J	0.00128 U	0.00128 U	0.00102 J	0.00104 J	0.00108 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000514 J	0.000454 U	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.102 ± 0.173	0.479 ± 0.216	-0.0714 ± 0.168	0.197 ± 0.183 U	0.245 ± 0.204	0.408 ± 0.226	0 ± 0.176	0.815 ± 0.292	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.99 ± 1.31	-0.428 ± 1.24	0.665 ± 1.14	0.00273 ± 1.33 U	0.783 ± 0.638	1.08 ± 0.832	0.0172 ± 1.12	1.5 ± 0.842	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-52 Downgradient												
	Sample Date	12/7/16	2/21/17	3/28/17	5/2/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.66	2.11	1.63	1.51	1.33	1.43	1.46	1.71 X	1.95	1.54	1.46 X	1.65	2.05
Calcium	mg/L	169	181	189	--	145	140	162	168	175	153 D	195 DX	171 D	174 J
Chloride	mg/L	331 D	377 D	323 DX	320	326 D	343 D	417 D	355	360 D	326	336	320	433
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	0.720	0.710	0.831	0.808	0.908
Sulfate	mg/L	277 D	318 D	299 DX	290	287 D	292 D	171 D	289	278 D	292	268	288 D	315
pH - Field Collected	SU	7.01	6.47	6.91	6.94	6.87	5.87	6.81	6.63	6.79	6.76	6.91	6.00	6.83
Total dissolved solids	mg/L	1290	1380	1100	1250	1280	1250	1250	1220	1240	1210	1170	1270	1470
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000565 J	0.000398 J	0.000425 J	0.000427 J	0.000392 J	0.000412 J	0.000448 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0646	0.0583	0.0519	0.0483	0.0527	0.0558	0.0565	0.0616	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000153 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000525 U	0.000525 U	0.000525 U	0.000841 J	0.000860 J	0.00123 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00188 J	0.00233	0.00112 J	0.00119 J	0.00211	0.00183 J	0.00159 J	0.00189 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000292 J	0.000152 U	0.000152 U	0.000163 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0471	0.000476 U	--	0.0616	0.0605	0.0827	0.0588	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.000234	0.0000263 U	0.0000263 U	0.0000263 U	0.0000810 J	0.0000263 U	0.0000263 UX	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.00128 J	0.00115 J	0.00102 J	0.000911 J	0.000865 J	0.000843 J	0.000914 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.71 ± 0.465	0.608 ± 0.289	0.296 ± 0.169	0 ± 0.150	0.435 ± 0.241	0.449 ± 0.196	0.194 ± 0.194	0.704 ± 0.319	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.65 ± 1.12	0.744 ± 0.833	0.0645 ± 0.649	0.53 ± 1.10	0.928 ± 0.784	1.16 ± 0.867	0.716 ± 0.767	1.54 ± 1.22	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-55 Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.716	0.716	0.785	0.710	0.787	0.651	0.687	0.759	0.645	0.611	0.740	0.771	0.779
Calcium	mg/L	143	153	181	133	133	118	136	146	134	119 D	165 D	145 D	137 J
Chloride	mg/L	384 DX	50.5	403 D	388	395 D	400 D	168 D	386	387 D	429	438	432	452
Fluoride	mg/L	0.857	0.352 JH	0.746 JH	0.891	1.14	1.08 JH	0.0960 U	0.864	0.791	0.820	0.822	0.832	1.01
Sulfate	mg/L	164 X	147	172	173	164	166	139 D	157	168	155	168	159	177
pH - Field Collected	SU	6.85	6.80	6.81	6.82	6.72	5.77	6.72	6.53	6.75	6.70	6.90	5.96	6.81
Total dissolved solids	mg/L	1430	1380	1290	1310	1500	1270	826	1470	1300	1190	1420	1370	1350
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000650 J	0.000520 J	0.00123 U	0.00123 U	0.000507 J	0.000582 J	0.000599 J	NR	NR	NR	NR	NR
Barium	mg/L	0.103	0.0876	0.0823	0.0758	0.0828	0.0780	0.0801	0.0816	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000134 J	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000625 J	0.000525 U	0.00262 U	0.00262 U	0.000525 U	0.000797 J	0.000903 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00702 J	0.00516	0.00579	0.00750 J	0.00642 J	0.00562	0.00565	0.00565	NR	NR	NR	NR	NR
Fluoride	mg/L	0.857	0.352 JH	0.746 JH	0.891	1.14	1.08 JH	0.0960 U	0.864	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0136 J	0.0425	0.0354	0.0495	0.0338	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 UX	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00130 J	0.00123 J	0.00108 J	0.00128 U	0.00128 U	0.000804 J	0.000898 J	0.000837 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.694 ± 0.358	0.721 ± 0.320	0.745 ± 0.258	0.576 ± 0.261	0.305 ± 0.190	0.0212 ± 0.171	0.327 ± 0.233	0.588 ± 0.314	NR	NR	NR	NR	NR
Radium-228	pCi/L	3.76 ± 1.33	1.87 ± 1.01	-0.0356 ± 1.09	1.01 ± 1.02	0.591 ± 0.843	0.532 ± 0.795	0.234 ± 0.821	1.24 ± 0.848	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Bottom Ash Ponds

		JKS-56 Downgradient												
	Sample Date	12/7/16	2/22/17	3/30/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.97	4.13	--	4.60	3.98	3.60	3.60 X	3.48	3.95	3.95	3.85	4.47	3.55
Calcium	mg/L	137	143	127	124	136	116	137	146	126	121 D	150 D	131 D	103 J
Chloride	mg/L	131	95.7	96.3	95.6	114	126	146 D	150	121	108 JL	81.0	81.2	101
Fluoride	mg/L	0.344	0.354 JH	0.333	0.564	0.407 JH	0.401 JH	0.0960 U	0.448 JH	0.37 J	0.428 J	0.372 J	0.452 J	0.552
Sulfate	mg/L	193	190	188	183	186	194	201 D	200	193	192	193	194	138
pH - Field Collected	SU	6.73	6.63	6.56	6.71	6.56	5.63	6.57	6.38	6.64	6.55	6.76	5.84	6.72
Total dissolved solids	mg/L	1100	969	1020	997	1060	1060	986	1240	992	976	918	968	904
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	--	0.00120 U	0.00120 U	0.000240 U	0.00104 J	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00527 J	0.00425	--	0.00350 J	0.00435 J	0.00373	0.00517	0.00451	NR	NR	NR	NR	NR
Barium	mg/L	0.126	0.0974	--	0.0890	0.0921	0.0897	0.103	0.0909	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	--	0.000654 U	0.000654 U	0.000131 U	0.000136 J	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	--	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000654 J	--	0.00276 J	0.00262 U	0.000525 U	0.00498	0.00141 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00560 J	0.00564	--	0.00641 J	0.00687 J	0.00668	0.00771	0.00746	NR	NR	NR	NR	NR
Fluoride	mg/L	0.344	0.354 JH	0.333	0.564	0.407 JH	0.401 JH	0.0960 U	0.448 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	--	0.000758 U	0.000758 U	0.000152 U	0.000211 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.000476 U	0.000476 U	0.00156 J	0.000476 U	0.00598 J	0.000476 U	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000700 J	0.0000263 UX	0.0000263 U	0.0000263 UX	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00360 J	0.00190 J	--	0.00168 J	0.00152 J	0.00156 J	0.00160 J	0.00155 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	--	0.00227 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	--	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.23 ± 0.430	0.254 ± 0.175	0.372 ± 0.215	0.138 ± 0.166	0.273 ± 0.253	0.177 ± 0.213	0.441 ± 0.225	0.397 ± 0.252	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.949 ± 1.38	3.07 ± 1.28	1.09 ± 0.897	1.97 ± 1.35	1.27 ± 0.994	1.16 ± 0.862	1.45 ± 0.895	3.36 ± 1.42	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-47 Upgradient												
	Sample Date	12/8/16	2/28/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.824	0.838	0.696	0.817	0.804	0.828 JH	0.760	1.02	0.844	0.806	0.590	1.05	0.800
Calcium	mg/L	54.0	62.1	168	26.2	71.1	62.7 JH	66.7	36.1	53.5	83.2 D	128	36.5	43.1
Chloride	mg/L	107	150	232 D	193	168	148 JH	210 D	68.5	151	186	279	53.9 X	107
Fluoride	mg/L	0.0360 U	0.0360 U	0.315	0.382 JH	0.213 JH	0.360 U	0.0960 U	0.0360 U	0.0360 U	0.0998 J	0.0985 J	0.154 JH	0.163
Sulfate	mg/L	213 D	267 D	369 D	299	266 D	248 JH	284 D	171	236	262	347	210 X	257
pH - Field Collected	SU	5.82	5.83	5.75	6.00	5.75	5.85	5.90	5.93	5.91	5.72	5.92	4.58	5.87
Total dissolved solids	mg/L	811	922	1170	1060	979	806 JH	904	677	787	727	1240	665	772
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000294 J	0.00120 U	0.000275 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00442 J	0.00130 J	0.00136 J	0.00123 U	0.00185 J	0.00105 J	0.00124 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0475	0.0132	0.0180	0.0118 J	0.0154	0.00981	0.0104	0.00785	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000813 J	0.000255 J	0.000131 U	0.000654 U	0.000352 J	0.000131 U	0.000172 J	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000637 J	0.000977 J	0.000797 J	0.000735 J	0.000611 J	0.000814 J	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.234	0.00430	0.000988 J	0.00262 U	0.00262 J	0.000855 J	0.00130 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00915 J	0.00102 J	0.00153 J	0.00113 J	0.00227	0.000976 J	0.00107 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.0360 U	0.315	0.382 JH	0.213 JH	0.360 U	0.0960 U	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.00586 J	0.000950 J	0.000448 J	0.000758 U	0.00157 J	0.000202 J	0.000449 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0615	0.0478	0.00238 U	0.0207	0.0720	0.0644	0.0799	0.0521	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000600 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.0317	0.00126 J	0.00173 J	0.00128 J	0.000788 J	0.000581 J	0.000653 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0493	0.0697	0.0518	0.0564	0.0613	0.0577	0.0525	0.0854	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.2 ± 0.342	0.578 ± 0.275	0.630 ± 0.237	0.538 ± 0.192	0.729 ± 0.278	0.304 ± 0.233	1.06 ± 0.361	0.246 ± 0.180	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.66 ± 1.15	1.34 ± 1.05	1.27 ± 0.960 U	2.17 ± 1.01	0.664 ± 0.929	0.771 ± 1.48	1.65 ± 1.05	0.463 ± 0.886	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-63 / JKS-63R Upgradient (A)												
	Sample Date	12/8/16	2/22/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	8/20/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.800	0.866	NR	0.981	(1)	1.33 JH	1.23	1.06	1.13	(2)	2.03	1.03	0.950
Calcium	mg/L	783	914	713	1060	(1)	835	174	872	836	(2)	221	953 D	952
Chloride	mg/L	1230 D	1160 D	1220 D	1340	(1)	1960 JHD	1890 D	1420	1670	(2)	2360 D	2240	2530
Fluoride	mg/L	0.0573 J	0.320	0.297	0.364 JH	(1)	0.0971 JH	0.182 JH	0.0360 U	0.0360 U	(2)	0.206 J	0.352 JH	0.018 U
Sulfate	mg/L	0.0460 U	1860 D	1890 D	1860	(1)	1970 D	1920 D	1820	2110	(2)	1810 D	1750 D	1810
pH - Field Collected	SU	5.61	5.35	5.60	5.85	(1)	5.88	5.82	5.63	5.64	(2)	--	4.76	5.83
Total dissolved solids	mg/L	5750	4760	4870	5560	(1)	6410	5000	5080	5220	(2)	6660	5200	7240
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000459 J	0.000695 J	0.00120 U	(1)	0.000240 U	0.000424 J	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00332 J	0.00294	0.00128 J	0.00123 U	(1)	0.000893 J	0.000992 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0626	0.0540	0.0336	0.0316	(1)	0.0294	0.0258	0.0222	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000930 J	0.000442 J	0.000654 U	(1)	0.000196 J	0.000223 J	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00339 J	0.00405	0.00394	0.00316 J	(1)	0.00282	0.00263	0.00285	NR	NR	NR	NR	NR
Chromium	mg/L	1.49	0.735	0.371	0.114	(1)	0.0742	0.0584	0.0130	NR	NR	NR	NR	NR
Cobalt	mg/L	0.0802	0.0762	0.0546	0.0331	(1)	0.0137	0.0119	0.0119	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0573 J	0.320	0.297	0.364 JH	(1)	0.0971 JH	0.182 JH	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.00441 J	0.00599	0.00108 J	0.000758 U	(1)	0.000238 J	0.000551 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.116	0.00238 U	0.654	(1)	0.946	1.15	0.791	NR	NR	NR	NR	NR
Mercury	mg/L	0.000236	0.000237	0.000206	0.0000400 J	(1)	0.000260	0.000441	0.000376	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.186	0.00789	0.00966	0.00419 J	(1)	0.00281	0.00180 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0188	0.0210	0.0257	0.0188	(1)	0.0288	0.0318	0.0244	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	(1)	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.42 ± 0.573	2.76 ± 0.476	5.79 ± 0.790	4.57 ± 0.577	(1)	6.7 ± 0.744	7.36 ± 0.874	5.04 ± 0.711	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.44 ± 1.44	4.13 ± 1.21	2.04 ± 1.61 U	3.41 ± 0.968	(1)	10.9 ± 2.31	1.79 ± 1.27	6.77 ± 1.48	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-64 Upgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.839	0.837	1.14	0.962	0.816	0.904 JH	0.835	0.901	0.837	0.805	0.804	0.747	0.711
Calcium	mg/L	24.0	24.0	31.4	23.8	20.6	21.7 JH	21.6	25.2	23.6	24.4	23.0	24.4	20.3
Chloride	mg/L	12.7	12.4	11.8	11.0	11.4	11.5	11.5	9.63	14.2	15.5	16.6	17.7	18.2
Fluoride	mg/L	0.0360 U	0.294 JH	0.332	0.188	0.231 JH	0.157 JH	0.224 JH	0.0360 U	0.0360 U	0.106 J	0.121 J	0.176 JH	0.143
Sulfate	mg/L	171	182	184	174	172	170 JH	172	164	189	196	193	192 X	209
pH - Field Collected	SU	6.46	5.50	6.30	6.33	6.21	6.09	6.20	6.21	6.13	5.97	6.14	4.82	5.86
Total dissolved solids	mg/L	594	585	611	581	572	555 JH	463	576	549	525	551	588	569
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000911 J	0.000730 J	0.000556 J	0.00123 U	0.000476 J	0.000490 J	0.000519 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.00768	0.00451	0.00392 J	0.00410 J	0.00320 J	0.00324 J	0.00275 BJ	0.000484 U	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.000525 U	0.000905 J	0.000525 U	0.00262 U	0.000867 J	0.000637 J	0.000961 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000998 J	0.000952 J	0.000851 J	0.000859 J	0.000745 J	0.000856 J	0.000889 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.294 JH	0.332	0.188	0.231 JH	0.157 JH	0.224 JH	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000186 J	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0173 J	0.0146 J	0.00238 U	0.0152 J	0.0173 J	0.0181 J	0.0252	0.0208	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 UX	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000540 J	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000398 J	0.000317 J	0.000255 U	0.00128 U	0.000265 J	0.000255 U	0.000273 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.000512 J	0.000550 J	0.000495 J	0.00227 U	0.000468 J	0.000468 J	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.981 ± 0.400	1.16 ± 0.408	0.530 ± 0.284	0.231 ± 0.174	0.258 ± 0.175	0.286 ± 0.247	1.05 ± 0.361	0.531 ± 0.276	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.429 ± 1.56	2.07 ± 1.22	-0.102 ± 1.07 U	0.408 ± 0.764	0.699 ± 0.761	2.49 ± 1.54	0.26 ± 0.639	1 ± 0.834	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-36 Downgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/22/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.308	0.671	0.748	0.731	0.581	0.625 JH	0.663	0.637	0.625	0.686	0.663	0.632	0.459
Calcium	mg/L	69.7	165	147	282	247	255 JHX	241	289	281	311 D	315 D	265 D	175
Chloride	mg/L	14.5	199 D	37.0	355	364 D	379 JHD	319 D	328	347 X	313	285	274	63.3
Fluoride	mg/L	0.0360 U	0.439 JH	0.330	1.53	1.26	1.37 JH	1.30	1.32	1.95 X	1.47	1.45	1.41	1.18
Sulfate	mg/L	49.2	409 D	271 D	726	731 D	775 JHD	707 D	741	816 X	946	697	756 D	189
pH - Field Collected	SU	6.71	4.96	6.98	4.04	3.72	3.80	5.20	3.24	3.48	3.61	3.71	3.66	3.42
Total dissolved solids	mg/L	368	1010	591	1610	1820	1700 JH	1220	1770	1650	1630	1520	1600	1790
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.00123 J	0.00120 U	0.000240 U	0.00121 J	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000588 J	0.00134 J	0.00324 J	0.00276	0.00369	0.00341	0.00372	NR	NR	NR	NR	NR
Barium	mg/L	0.0988	0.0967	0.139	0.0270	0.0187	0.0207	0.0372	0.0225	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.00198 J	0.000131 U	0.0259	0.0226	0.0261	0.0212	0.0259	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00257 J	0.00510	0.000548 J	0.0118	0.0102	0.0117	0.0101	0.0113	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.00608	0.0409	0.0100 J	0.00968	0.0156	0.00792	0.0132	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000579 J	0.0871	0.00751	0.220	0.186	0.216	0.195	0.215	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.439 JH	0.330	1.53	1.26	1.37 JH	1.30	1.32	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000164 J	0.000220 J	0.000261 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0123 J	0.119	0.00238 U	0.326	0.340	0.371	0.372	0.379	NR	NR	NR	NR	NR
Mercury	mg/L	0.000834	0.000289	0.00143	0.00240	0.00244	0.00160	0.00113	0.00226	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00397 J	0.00261	0.0686	0.00183 J	0.000704 J	0.000791 J	0.00151 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0334	0.0448	0.0313	0.0673	0.0616	0.0697	0.0633	0.0663	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000487 J	0.000332 U	0.00166 U	0.000876 J	0.00114 J	0.000889 J	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.0888 ± 0.151	1.12 ± 0.342	0.453 ± 0.276	4.85 ± 0.656	4.02 ± 0.608	4.32 ± 0.667	6.28 ± 0.845	3.6 ± 0.600	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.14 ± 1.02	2.17 ± 0.979	0.166 ± 0.861 U	4.28 ± 1.19	3.44 ± 1.04	3.95 ± 1.79	2.63 ± 0.928	3.3 ± 1.33	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-61 Downgradient												
	Sample Date	12/7/16	2/23/17	3/29/17	5/3/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/31/18	4/10/19	10/22/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.07	1.29	1.15	1.18	0.960	1.01 JH	0.994	0.997	1.09	3.25	2.72	2.90	1.82
Calcium	mg/L	134	95.9	155	113	115	107 JH	105	135	171	197 D	176	168 D	154
Chloride	mg/L	198	158	162	168	193	190 JH	218 D	210	285	213	253	248	312
Fluoride	mg/L	0.393	0.503	0.522	0.643 JH	0.459 JH	0.479 JH	0.0960 U	0.0360 U	0.406 J	0.430 J	0.403 J	0.480 J	0.494
Sulfate	mg/L	401 D	377 JD	382 D	388	408 D	390 JHD	385 D	401	562	548	619	548 D	604
pH - Field Collected	SU	6.72	6.51	6.48	6.68	6.53	6.55	7.40	6.27	6.42	6.38	6.52	5.61	6.27
Total dissolved solids	mg/L	1400	1180	1190	1260	1430	1290 JH	1170	1280	1620	514	1650	1790	1870
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000768 J	0.000709 J	0.00123 U	0.000563 J	0.000622 J	0.000569 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0364	0.0186	0.0173	0.0178 J	0.0148	0.0167	0.0153	0.0162	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000911 J	0.000525 U	0.00262 U	0.000525 U	0.000604 J	0.000808 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000719 J	0.000725 J	0.000769 J	0.000779 J	0.000805 J	0.000765 J	0.000855 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.393	0.503	0.522	0.643 JH	0.459 JH	0.479 JH	0.0960 U	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0158 J	0.00238 U	0.0120 J	0.0342	0.0336	0.0443	0.0335	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00165 J	0.00129 J	0.000984 J	0.00128 U	0.000776 J	0.000742 J	0.000712 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00123 J	0.00123 J	0.00227 U	0.00185 J	0.00154 J	0.00172 J	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.15 ± 0.429	0.723 ± 0.306	0.256 ± 0.237 U	0.237 ± 0.193	0.398 ± 0.239	0.511 ± 0.223	0.821 ± 0.324	0.485 ± 0.212	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.79 ± 1.44	0.358 ± 1.06	0.761 ± 0.688 U	-0.064 ± 0.607	2.03 ± 0.997	0.491 ± 0.813	0.247 ± 0.710	1.64 ± 1.08	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Evaporation Pond

		JKS-62 Downgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/4/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/10/19	10/23/19	4/29/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.549	0.481	0.597	0.601	0.501	0.485 JH	0.485	0.549	0.522	0.559	0.612	0.528	0.484
Calcium	mg/L	155	152	220	156	150	134 JH	150	158	160	161 D	205 D	151 D	122
Chloride	mg/L	257 D	279 DX	279 D	278	291 D	260 JHD	281 D	241	312	279	336	276	284
Fluoride	mg/L	0.246	0.362 JH	0.418	0.388	0.366 JH	0.342 JH	0.233 JH	0.0360 U	0.353 J	0.309 J	0.356 J	0.380 J	0.331
Sulfate	mg/L	190	187	193	188	184	181 JH	188 D	175	200	183	191	183	190
pH - Field Collected	SU	6.79	6.67	6.63	6.71	6.68	6.82	7.51	6.52	6.72	6.58	6.29	5.43	6.54
Total dissolved solids	mg/L	1120	1170	1140	1100	1080	976 JH	1080	1080	1110	956	1190	1160	1100
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000684 J	0.000293 J	0.000246 U	0.00123 U	0.000254 J	0.000246 U	0.000246 U	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0825	0.0786	0.0813	0.0747	0.0734	0.0737	0.0708	0.0793	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00186 J	0.00109 J	0.000525 U	0.00262 U	0.000551 J	0.000691 J	0.00107 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00110 J	0.000198 J	0.000744 J	0.000350 U	0.000278 J	0.000211 J	0.0000699 U	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.246	0.362 JH	0.418	0.388	0.366 JH	0.342 JH	0.233 JH	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000588 J	0.000152 U	0.000152 U	0.000758 U	0.000154 J	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0129 J	0.00238 U	0.00134 J	0.0353	0.0305	0.0457	0.0263	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000540 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000414 J	0.000259 J	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.222	0.192	0.196	0.195	0.185	0.181	0.191	0.208	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.485 ± 0.229	0.402 ± 0.220	0.665 ± 0.321	0.0997 ± 0.153	0.425 ± 0.233	0.399 ± 0.220	2.02 ± 0.489	0.669 ± 0.279	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.15 ± 1.38	1.53 ± 1.28 U	0.305 ± 1.10 U	-0.138 ± 0.656	0.66 ± 0.760	1.07 ± 0.949	0.673 ± 0.821	0.371 ± 0.631	NR	NR	NR	NR	NR

NOTES:

(A) JKS-63 plugged and abandoned and replaced with JKS-63R on 5/2/19. Sample events 1 through 10 collected from JKS-63 and thereafter from JKS-63R.

(1) Sample not collected due to the well going dry during sampling activities.

(2) Sample not collected due to blockage in the well casing.

mg/L: Milligrams per Liter.

SU: Standard Units.

pCi/L: Picocuries per Liter.

-- : Laboratory did not analyze sample for indicated constituent.

B: Target analyte or common lab contaminant was identified in the method blank.

D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.

J: Analyte detected above method (sample) detection limit but below method quantitation limit.

H: Bias in sample result likely to be high.

NR: Analysis of this constituent not required for detection monitoring.

U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).

X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-45 Upgradient												
	Sample Date	12/6/16	2/23/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.65	1.51	2.27	1.11	2.03	1.91	2.02	2.21	2.28	3.24	2.78	2.98	3.01
Calcium	mg/L	144	122	184	105	101	103	120	130	128	161 D	195	161 D	141 J
Chloride	mg/L	196	187	181 J	160	152	0.803	345 JHD	24.8	118	137	167	144	113
Fluoride	mg/L	0.0360 U	0.207	0.334	0.337 JH	0.174 J	0.274 JH	0.0960 U	0.131 JH	0.0360 U	0.0360 U	0.0621 UJ	0.101 J	0.100
Sulfate	mg/L	623 D	639 D	661	613 X	602 D	2.95 JH	770 JHD	120	662 D	707	874	698	619
pH - Field Collected	SU	5.41	5.17	3.98	5.62	5.13	5.66	5.82	5.60	5.59	5.70	5.03	5.59	5.85
Total dissolved solids	mg/L	1270	1300	1330	1350	1270	1250	1680 JH	1100	1190	741	1350	1320	1590
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000310 J	0.000400 J	0.00120 U	0.00120 U	0.000240 U	0.000348 J	0.000490 J	NR	NR	NR	NR	NR
Arsenic	mg/L	0.000534 J	0.00216	0.00595	0.00123 U	0.00123 U	0.000346 J	0.00283	0.000618 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0185	0.0436	0.103	0.0128 J	0.0176 J	0.0114	0.0480	0.0142	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00261 U	0.000383 J	0.000921 J	0.000654 U	0.000654 U	0.000149 J	0.000408 J	0.000229 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000147 U	0.000147 U	0.000189 J	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00743	0.0152	0.0320	0.00403 J	0.00262 U	0.00313 J	0.0135	0.00272 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00506	0.00465	0.00828	0.00346 J	0.00351 J	0.00277	0.00376	0.00358	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.207	0.334	0.337 JH	0.174 J	0.274 JH	0.0960 U	0.131 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000571 J	0.00419	0.0117	0.000758 U	0.000758 U	0.000479 J	0.00482	0.000968 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.0329	0.0601	0.00238 U	0.0600	0.0639	0.0694	0.0935	0.0781	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000320 JX	0.0000263 U	0.0000263 U	0.0000300 J	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00105 J	0.00245	0.00372	0.00128 U	0.00128 U	0.000255 U	0.00115 J	0.000271 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.0147	0.0144	0.0174	0.0121	0.0123	0.00990	0.0136	0.0118	NR	NR	NR	NR	NR
Thallium	mg/L	0.000332 U	0.000332 U	0.000460 J	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	4.78 ± 0.890	4.29 ± 0.612	7.63 ± 0.795	3.29 ± 0.485	4.24 ± 0.671	4.34 ± 0.607	3.65 ± 0.553	5.07 ± 0.718	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.92 ± 1.19	4.59 ± 1.34	2.27 ± 1.19	1.42 ± 0.908	2.84 ± 1.15	1.83 ± 0.868	1.86 ± 0.827	1.66 ± 0.847	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-57 Upgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.19	3.24	3.17	2.67	3.09	3.08	2.98	3.48	4.49	2.81	3.23	4.14	5.97
Calcium	mg/L	349	362	413	--	290	327	337	393	409	401 D	477 D	479 D	622 J
Chloride	mg/L	70.6	76.2	89.6	130	158	311 D	12.5 JH	185	534 D	3770	119	841	3460
Fluoride	mg/L	3.62	3.32	2.84	2.27	3.42	3.43	0.0960 U	3.28	4.29	2.31	3.03	2.72	4.17
Sulfate	mg/L	2780 D	1980 DX	2090	2470 D	3080	3410 D	450 JH	3610	4260 D	5000	3570	4240	6510
pH - Field Collected	SU	6.73	6.08	5.13	6.63	6.37	6.72	6.60	6.70	6.63	6.35	6.20	6.19	6.49
Total dissolved solids	mg/L	4770	3780	3320	4060	5800	5920	850 JH	5850	7390	9750	6000	6700	15100
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00138 J	0.000630 J	0.000654 J	0.000561 J	0.00123 U	0.000480 J	0.000519 J	0.000486 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0311	0.0211	0.0208	0.0174	0.0164 J	0.0149	0.0128	0.0145	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000161 J	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000687 J	0.000525 U	0.000525 U	0.00262 U	0.000739 J	0.000816 J	0.00104 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000520 J	0.00232	0.000297 J	0.000449 J	0.000407 J	0.000748 J	0.000195 J	0.000322 J	NR	NR	NR	NR	NR
Fluoride	mg/L	3.62	3.32	2.84	2.27	3.42	3.43	0.0960 U	3.28	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000256 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.545	0.287 X	0.00238 U	--	0.533	0.649	0.671	0.733	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000300 J	0.0000263 U	0.0000580 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000385 J	0.000278 J	0.000255 U	0.00128 U	0.000329 J	0.000283 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00237 J	0.000664 J	0.000594 J	0.000561 J	0.00227 U	0.000612 J	0.000858 J	0.000697 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.592 ± 0.325	0.322 ± 0.157	0.519 ± 0.219	0.356 ± 0.176	0.273 ± 0.273	0.338 ± 0.221	0.255 ± 0.176	0.0986 ± 0.153	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.15 ± 0.895	2.31 ± 1.03	0.794 ± 0.818	2.86 ± 1.27	0.903 ± 0.843	0.786 ± 0.900	1.9 ± 0.894	1.73 ± 1.00	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
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J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-31 Downgradient												
	Sample Date	12/8/16	2/21/17	3/29/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.446	0.580	0.642	0.499	0.573	0.510	0.494	0.553	0.485	0.514	0.557	0.483	0.429
Calcium	mg/L	188	384 X	317	--	216	171	230	228	187	208 D	295 D	200 D	171 J
Chloride	mg/L	223 D	477 D	303 D	317	285 D	0.280 UDXF	0.347 U	288	253 D	256	322	267	272
Fluoride	mg/L	0.801	0.186 J	0.548	0.865	0.661	0.979 JHXF	0.0960 U	0.735 JH	0.839	0.694	0.791 U	0.784	1.00
Sulfate	mg/L	697 D	1130 D	768 D	875	782 D	1.17 JHDXF	0.160 JH	803	771 D	774	852	819	877
pH - Field Collected	SU	3.94	4.04	6.34	4.29	3.84	5.14	3.99	3.98	3.74	3.07	3.56	2.62	3.70
Total dissolved solids	mg/L	1470	2290	2430	1850	1730	1500	25.0 U	1890	1420	1390	1660	1620	1890
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000295 J	0.000301 J	0.00120 U	0.000527 J	0.000240 U	0.000559 J	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00151 J	0.0110	0.00834	0.00501	0.00363 J	0.00134 J	0.00556	0.00279	NR	NR	NR	NR	NR
Barium	mg/L	0.0167 J	0.0141	0.0198	0.0136	0.0127 J	0.0229	0.0129	0.0122	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00793 J	0.00851	0.00885	0.00814	0.00865 J	0.00593	0.00827	0.00857	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.0200 J	0.000663 J	0.000596 J	0.000525 U	0.00262 U	0.000890 J	0.000849 J	0.000760 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000440 J	0.0399	0.0623	0.0227	0.0173	0.0113	0.0302	0.0192	NR	NR	NR	NR	NR
Fluoride	mg/L	0.801	0.186 J	0.548	0.865	0.661	0.979 JHXF	0.0960 U	0.735 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000415 J	0.000223 J	0.000344 J	0.000758 U	0.000348 J	0.00233	0.000580 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.533	0.510	0.00238 U	--	0.572	0.484	0.615	0.590	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000360 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00163 J	0.00175 J	0.00125 J	0.00227 U	0.00162 J	0.00177 J	0.00155 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	2.46 ± 0.574	2.60 ± 0.473	1.44 ± 0.425	1.40 ± 0.338	1.40 ± 0.403	1.28 ± 0.341	1.36 ± 0.399	1.01 ± 0.323	NR	NR	NR	NR	NR
Radium-228	pCi/L	7.35 ± 1.59	8.16 ± 2.15	5.33 ± 1.47	5.85 ± 1.79	4.63 ± 1.23	4.44 ± 1.37	3.58 ± 1.22	4.96 ± 1.43	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-33 Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/26/17	8/29/17	10/10/17	4/5/18	10/30/18	4/10/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.940	1.02	1.05	0.987	1.09	1.01	1.03	1.11	0.990	0.791	1.13	1.18	1.18
Calcium	mg/L	564	600	553	--	563	558	567	531	552	385 D	631	553 D	573 J
Chloride	mg/L	735 D	679 D	731 D	690	692 D	693 D	125 JH	666	786	758	806	773 JLKD	756
Fluoride	mg/L	1.86	1.08	1.77	1.36	1.81	1.34	0.480 U	1.69	1.85	1.21	1.23	1.24 JLK	1.68
Sulfate	mg/L	1850 D	1670 D	1780 D	1710	1690 D	1710 D	3170 D	1640	1810	1740	1640	1690 JLKD	1620
pH - Field Collected	SU	6.51	5.90	4.91	6.52	6.15	5.71	6.49	6.49	6.33	6.26	5.98	5.18	6.30
Total dissolved solids	mg/L	4000	3990	4310	4410	3750	4070	3580	4320	3970	3320	2650 JLK	4040 JLK	4370
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.00120 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000246 U	0.00123 U	0.000257 J	0.00123 U	0.000279 J	0.000316 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0326	0.0318	0.0297	0.0268	0.0279	0.0274	0.0263	0.0264	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000709 J	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000734 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000611 J	0.00262 U	0.000525 U	0.00262 U	0.000525 U	0.00113 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000690 J	0.000433 J	0.000487 J	0.000435 J	0.000512 J	0.000731 J	0.000902 J	0.000554 J	NR	NR	NR	NR	NR
Fluoride	mg/L	1.86	1.08	1.77	1.36	1.81	1.34	0.480 U	1.69	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000758 U	0.000152 U	0.000758 U	0.000152 U	0.000157 J	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	--	0.194	0.181	0.255	0.176	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000720 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.00128 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0314	0.0356	0.0389	0.0368	0.0451	0.0495	0.0546	0.0342	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.00166 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	2.04 ± 0.439	1.14 ± 0.328	2.36 ± 0.522	1.81 ± 0.365	1.73 ± 0.428	1.55 ± 0.422	1.37 ± 0.394	2.23 ± 0.491	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.95 ± 1.16	3.52 ± 1.07	4.69 ± 1.33	3.24 ± 1.26	1.73 ± 0.902	4.11 ± 1.19	1.98 ± 1.01	2.99 ± 1.26	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-46 Downgradient												
	Sample Date	12/6/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.902	0.837	0.645	0.799	0.920	0.801	0.788	1.01	0.828	0.702	0.997	1.01	0.864
Calcium	mg/L	120	132	145	115	126	117	137	145	140	126 D	212 D	172 D	143 J
Chloride	mg/L	11.6	11.8	12.2	10.5	12.6	11.8	327 JHD	11.7	11.6	11.6	13.2	13.0	17.9
Fluoride	mg/L	1.51	1.38	1.03	1.59	2.25	2.34	0.460 JH	1.83	2.16	1.68	2.52	2.22	1.61 J
Sulfate	mg/L	700 D	692 D	608 D	677	0.0460 U	780 D	288 JHD	800	864 D	855	1030	1020	1180
pH - Field Collected	SU	3.60	3.55	2.10	3.57	2.96	3.54	3.21	3.20	3.15	3.00	2.85	2.62	3.10
Total dissolved solids	mg/L	1160	1040	926	1030	1270	1180	1170 JH	1390	1300	1220	1550	1500	1970
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00190 J	0.00227	0.00144 J	0.00196 J	0.00277 J	0.00253	0.00295	0.00290	NR	NR	NR	NR	NR
Barium	mg/L	0.0429	0.0356	0.0308	0.0307	0.0364	0.0317	0.0323	0.0331	NR	NR	NR	NR	NR
Beryllium	mg/L	0.00381 J	0.00362	0.00340	0.00399 J	0.00459 J	0.00415	0.00462	0.00479	NR	NR	NR	NR	NR
Cadmium	mg/L	0.00110 J	0.000988 J	0.00121 J	0.00120 J	0.00101 J	0.00133 J	0.00141 J	0.00136 J	NR	NR	NR	NR	NR
Chromium	mg/L	0.000942 J	0.00140 J	0.00104 J	0.00262 U	0.00262 U	0.00156 J	0.00191 J	0.00202 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.0303	0.0324	0.0329	0.0367	0.0387	0.0383	0.0412	0.0414	NR	NR	NR	NR	NR
Fluoride	mg/L	1.51	1.38	1.03	1.59	2.25	2.34	0.460 JH	1.83	NR	NR	NR	NR	NR
Lead	mg/L	0.0162	0.0134	0.0109	0.0144	0.0192	0.0201	0.0236	0.0257	NR	NR	NR	NR	NR
Lithium	mg/L	0.0646	0.000476 U	0.00238 U	0.0673	0.0749	0.0799	0.107	0.0863	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.000255 U	0.000255 U	0.000255 U	0.00128 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.0255	0.0266	0.0205	0.0247	0.0296	0.0257	0.0298	0.0283	NR	NR	NR	NR	NR
Thallium	mg/L	0.00293	0.00292	0.00235	0.00263 J	0.00314 J	0.00300	0.00335	0.00345	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.16 ± 0.701	1.69 ± 0.387	1.80 ± 0.448	1.2 0± 0.315	1.82 ± 0.420	1.40 ± 0.353	1.52 ± 0.375	1.99 ± 0.459	NR	NR	NR	NR	NR
Radium-228	pCi/L	4.98 ± 1.41	2.17 ± 1.48	2.96 ± 1.24	1.98 ± 0.957	4.39 ± 1.13	2.80 ± 1.05	2.28 ± 1.13	3.82 ± 1.15	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
Fly Ash Landfill

		JKS-60 Downgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/2/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/10/19	10/23/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	Apr 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.655	0.504	0.449	0.456	0.442	0.394	0.436	0.479	0.399	0.334	0.405	0.377	0.325
Calcium	mg/L	433	375	290	--	379	336	350	383	363	382 D	501 D	524 D	530 J
Chloride	mg/L	411 D	311 D	311 D	285	300 D	319 D	287 JHD	352	366 D	202	149 X	183	168
Fluoride	mg/L	0.0360 U	0.319	0.324	0.421	0.306	0.338 JH	0.0960 U	0.284 JH	0.22 J	0.239 J	0.187 UJ	0.231 J	0.188
Sulfate	mg/L	1480 D	999 D	1010 D	976 X	1020 D	818 D	760 JHDX	759	801 D	906	968	1320	1280
pH - Field Collected	SU	5.82	5.38	4.21	5.75	6.07	6.44	5.93	5.97	6.09	6.42	5.93	6.23	6.61
Total dissolved solids	mg/L	2790	2340	2020	2110	2510	2120	1450 JH	2300	1860	1910	2010	2820	3180
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000861 J	0.000592 J	0.000366 J	0.00123 U	0.000367 J	0.000381 J	0.000266 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0702	0.0491	0.0465	0.0450	0.0469	0.0454	0.0490	0.0503	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000774 J	0.000778 J	0.000786 J	0.000695 J	0.000734 U	0.000359 J	0.000608 J	0.000699 J	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000743 J	0.000525 U	0.000525 U	0.00262 U	0.000690 J	0.00204 J	0.00100 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.115	0.0542	0.0423	0.0389	0.0210	0.00896	0.0166	0.0183	NR	NR	NR	NR	NR
Fluoride	mg/L	0.0360 U	0.319	0.324	0.421	0.306	0.338 JH	0.0960 U	0.284 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000216 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	--	0.0305	0.0179 J	0.0635	0.0314	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000370 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000726 J	0.000622 J	0.000715 J	0.00148 J	0.00162 J	0.00124 J	0.00103 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.00168 J	0.00132 J	0.00981	0.0390	0.0244	0.00761	0.00745	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000425 J	0.000412 J	0.000403 J	0.00166 U	0.000332 U	0.000372 J	0.000387 J	NR	NR	NR	NR	NR
Radium-226	pCi/L	3.01 ± 0.578	2.29 ± 0.421	2.74 ± 0.572	1.71 ± 0.378	0.914 ± 0.341	1.57 ± 0.381	1.34 ± 0.378	4.61 ± 0.650	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.57 ± 1.15	2.62 ± 1.04	0.838 ± 0.826	0.269 ± 0.713	2.24 ± 1.02	0.701 ± 0.850	1.72 ± 0.940	2.48 ± 1.60	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
F: Relative percent difference exceeded laboratory control limits.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
K: Sample analyzed outside of recommended hold time.
L: Bias in sample result likely to be low.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-49 Upgradient												
	Sample Date	12/7/16	2/22/17	3/28/17	5/3/17	6/20/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	3.24	3.28	3.28	3.03 X	3.04 J	2.76	2.85	2.87	2.71	2.70	2.05	2.58	2.47
Calcium	mg/L	130	146	173	113	127	120	145	147	135	117 D	154 D	127 D	114 J
Chloride	mg/L	295 D	383 D	372 D	326	414 D	448 D	459 D	424	446 D	408	449	429	452
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	0.697	0.719	0.749	0.793	0.894
Sulfate	mg/L	211 D	232 D	234 D	194	218 D	227	265 D	219 X	237	237	240	205	217
pH - Field Collected	SU	7.19	7.12	7.12	7.02	7.06	6.16	7.05	6.89	7.12	7.12	7.31	6.43	7.15
Total dissolved solids	mg/L	1250	1240	1190	1100	1450	1440	1490	1730	1310	1210	1290	1380	1240
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00173 J	0.00120 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000676 J	0.000729 J	0.00123 U	0.00123 U	0.000544 J	0.000538 J	0.000478 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0607	0.0575	0.0503	0.0554	0.0783	0.0721	0.0788	0.0735	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000654 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000859 J	0.000572 J	0.00262 U	0.00262 U	0.000963 J	0.000997 J	0.00113 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00102 J	0.00109 J	0.00124 J	0.00155 J	0.00133 J	0.00153 J	0.00155 J	0.00146 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.715	0.643 JH	0.665 JH	0.809	0.627 JH	0.617 JH	0.525	0.712	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000758 U	0.000155 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0137 J	0.0341	0.0295	0.0427	0.0252	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000690 J	0.0000263 U	0.0000490 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00779 J	0.00846	0.00875	0.0106	0.00908 J	0.00938	0.0107	0.0111	NR	NR	NR	NR	NR
Selenium	mg/L	0.00992 J	0.00597	0.00479	0.00521 J	0.00370 J	0.00235	0.00188 J	0.00141 J	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.198 ± 0.197	0.615 ± 0.272	0.747 ± 0.323	0.195 ± 0.167	0.294 ± 0.192	0.241 ± 0.193	0.159 ± 0.191	0.746 ± 0.274	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.1 ± 0.907	-1.37 ± 1.37	0.854 ± 0.724	1.08 ± 1.72	2.23 ± 0.949	0.658 ± 0.636	0.812 ± 0.604	1.43 ± 0.898	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-51 Upgradient												
	Sample Date	12/8/16	2/22/17	3/28/17	5/3/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	0.512	0.517	0.473	0.565	0.512	0.525	0.453	0.509	0.465	0.347	0.489	0.648	0.627
Calcium	mg/L	267	292	322	266	261 X	232	236	256	246	149 D	328	336 D	334 J
Chloride	mg/L	403 D	331 D	414 D	447	424 D	455 D	384 D	375	395 D	301	559	574 D	555
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	0.305 J	0.291 J	0.329 J	0.405 J	0.470
Sulfate	mg/L	293 D	330 D	348 D	359	342 D	330 D	314 D	302	354 D	260	428	405 D	439
pH - Field Collected	SU	6.59	6.51	6.48	6.56	6.40	5.48	6.38	6.20	6.44	6.70	6.66	5.73	6.43
Total dissolved solids	mg/L	1650	1650	1490	1980	1530	1580	1390	1650	1320	916	1890	2150	2010
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.00120 U	0.000953 J	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000412 J	0.000390 J	0.00123 U	0.000392 J	0.000344 J	0.000395 J	0.000418 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0655	0.0563	0.0517	0.0512	0.0534	0.0520	0.0520	0.0564	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000654 U	0.000212 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000941 J	0.000525 U	0.00262 U	0.000657 J	0.000874 J	0.00113 J	0.00133 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000350 U	0.0000770 J	0.0000920 J	0.000350 U	0.000124 J	0.0000940 J	0.0000800 J	0.000108 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.247	0.341 JH	0.415 JH	0.534	0.354	0.391	0.0960 U	0.407 JH	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.000476 U	0.00238 U	0.0322	0.0874	0.0790	0.0958 JX	0.0718	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.000199 J	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000255 U	0.000255 U	0.00128 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.09 ± 0.376	0.104 ± 0.122	0.618 ± 0.247	0.197 ± 0.145	0.328 ± 0.195	0.0847 ± 0.186	4.83 ± 0.763	0.682 ± 0.309	NR	NR	NR	NR	NR
Radium-228	pCi/L	0.312 ± 0.688	1.09 ± 1.37	2.32 ± 1.45	-1.26 ± 1.37	-0.799 ± 0.928	1.57 ± 0.786	0.762 ± 0.706	0.963 ± 0.954	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-52 Downgradient												
	Sample Date	12/7/16	2/21/17	3/28/17	5/2/17	6/21/17	7/25/17	8/29/17	10/10/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.66	2.11	1.63	1.51	1.33	1.43	1.46	1.71 X	1.95	1.54	1.46 X	1.65	2.05
Calcium	mg/L	169	181	189	--	145	140	162	168	175	153 D	195 DX	171 D	174 J
Chloride	mg/L	331 D	377 D	323 DX	320	326 D	343 D	417 D	355	360 D	326	336	320	433
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	0.720	0.710	0.831	0.808	0.908
Sulfate	mg/L	277 D	318 D	299 DX	290	287 D	292 D	171 D	289	278 D	292	268	288 D	315
pH - Field Collected	SU	7.01	6.47	6.91	6.94	6.87	5.87	6.81	6.63	6.79	6.76	6.91	6.00	6.83
Total dissolved solids	mg/L	1290	1380	1100	1250	1280	1250	1250	1220	1240	1210	1170	1270	1470
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000565 J	0.000398 J	0.000425 J	0.000427 J	0.000392 J	0.000412 J	0.000448 J	NR	NR	NR	NR	NR
Barium	mg/L	0.0646	0.0583	0.0519	0.0483	0.0527	0.0558	0.0565	0.0616	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000153 J	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000525 U	0.000525 U	0.000525 U	0.000841 J	0.000860 J	0.00123 J	0.00108 J	NR	NR	NR	NR	NR
Cobalt	mg/L	0.00188 J	0.00233	0.00112 J	0.00119 J	0.00211	0.00183 J	0.00159 J	0.00189 J	NR	NR	NR	NR	NR
Fluoride	mg/L	0.796	0.665	0.718 JH	0.915 JH	0.705	0.996 JH	0.0960 U	0.740	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000292 J	0.000152 U	0.000152 U	0.000163 J	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0471	0.000476 U	--	0.0616	0.0605	0.0827	0.0588	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.000234	0.0000263 U	0.0000263 U	0.0000263 U	0.0000810 J	0.0000263 U	0.0000263 UX	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.00128 J	0.00115 J	0.00102 J	0.000911 J	0.000865 J	0.000843 J	0.000914 J	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	1.71 ± 0.465	0.608 ± 0.289	0.296 ± 0.169	0 ± 0.150	0.435 ± 0.241	0.449 ± 0.196	0.194 ± 0.194	0.704 ± 0.319	NR	NR	NR	NR	NR
Radium-228	pCi/L	2.65 ± 1.12	0.744 ± 0.833	0.0645 ± 0.649	0.53 ± 1.10	0.928 ± 0.784	1.16 ± 0.867	0.716 ± 0.767	1.54 ± 1.22	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-53 Downgradient												
	Sample Date	12/8/16	2/23/17	3/29/17	5/2/17	6/21/17	7/26/17	8/30/17	10/11/17	4/4/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.50	1.38	1.55	1.54	1.47	1.45	1.36	1.45	1.60	1.61	1.42	1.36	1.43
Calcium	mg/L	134	105	156	NR	94.1	97.0	99.0	113	113	111 D	116	123 D	114 J
Chloride	mg/L	383 D	336 D	315 D	322	335 D	329 X	341	313	361	350	354	342	381
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	0.392 J	0.265 J	0.270 J	0.352 J	0.428
Sulfate	mg/L	283 D	267 D	238 D	241	236 D	234 X	227	214	249	236	224	213	244
pH - Field Collected	SU	6.80	6.63	6.54	6.56	6.67	6.69	6.62	6.50	6.67	6.65	6.60	5.60	6.67
Total dissolved solids	mg/L	1390	1250	1160	1180	1150	1220	1150	1140	1160	1140	1150	1250	1160
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000284 J	0.000266 J	0.000274 J	0.000276 J	0.000246 U	0.000246 U	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0692	0.0633	0.0633	0.0623	0.0597	0.0638	0.0541	0.0617	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000701 J	0.000525 U	0.000525 U	0.000525 U	0.000557 J	0.000906 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000356 J	0.000140 J	0.000135 J	0.000165 J	0.000137 J	0.000150 J	0.000163 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.230	0.377	0.408	0.547 JH	0.339	0.385 J	0.412	0.0360 U	NR	NR	NR	NR	NR
Lead	mg/L	0.000758 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.0279	0.0816	0.000476 U	NR	0.0931	0.104	0.125	0.109	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000780 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000470 JX	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000290 J	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.306 ± 0.261	0.909 ± 0.363	0.117 ± 0.211 U	0.519 ± 0.221	0.558 ± 0.232	0.385 ± 0.244	2.76 ± 0.582	0.451 ± 0.270	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.09 ± 1.24	2.33 ± 1.13	1.81 ± 1.61	0.906 ± 1.02	-0.0622 ± 0.583	1.9 ± 1.24	1.44 ± 0.713	0.919 ± 0.853	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

TABLE 3
Groundwater Analytical Results Summary
CPS Energy - Calaveras Power Station
SRH Pond

		JKS-54 Downgradient												
	Sample Date	12/8/16	2/23/17	3/28/17	5/2/17	6/21/17	7/26/17	8/30/17	10/11/17	4/5/18	10/30/18	4/9/19	10/22/19	4/28/20
	Task	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Constituents	Unit	Dec 2016	Feb 2017	Mar 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Oct 2017	Apr 2018	Oct 2018	Apr 2019	Oct 2019	April 2020
Appendix III - Detection Monitoring														
Boron	mg/L	1.24	1.16	1.35	1.26	1.14	1.26	1.16	1.28	1.26	1.30	1.38	1.50	1.23
Calcium	mg/L	114	106	160	--	103	102	95.8	113	111	98.2 D	117	117 D	118 J
Chloride	mg/L	345 D	350 D	353 D	344	355 D	354 D	339 D	328	382	356	385	368	380
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	0.742	0.643	0.711	0.773	0.861
Sulfate	mg/L	308 D	312 D	315 D	312	304 D	305 D	298 D	287	309	283	309	341 D	443
pH - Field Collected	SU	6.98	6.78	6.92	6.89	6.88	6.91	6.79	6.69	6.86	6.85	6.75	5.60	6.76
Total dissolved solids	mg/L	1370	1430	1310	1310	1410	1320	1360	1500	1230	1240	1470	1470	1570
Appendix IV - Assessment Monitoring														
Antimony	mg/L	0.00120 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	0.000240 U	NR	NR	NR	NR	NR
Arsenic	mg/L	0.00123 U	0.000369 J	0.000898 J	0.000351 J	0.000354 J	0.000484 J	0.000324 J	0.000246 U	NR	NR	NR	NR	NR
Barium	mg/L	0.0631	0.0564	0.0611	0.0537	0.0543	0.0593	0.0471	0.0558	NR	NR	NR	NR	NR
Beryllium	mg/L	0.000654 U	0.000131 U	0.000131 U	0.000131 U	0.000162 J	0.000131 U	0.000131 U	0.000131 U	NR	NR	NR	NR	NR
Cadmium	mg/L	0.000734 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	0.000147 U	NR	NR	NR	NR	NR
Chromium	mg/L	0.00262 U	0.000657 J	0.00186 J	0.000525 U	0.000525 U	0.000693 J	0.000765 J	0.000525 U	NR	NR	NR	NR	NR
Cobalt	mg/L	0.000420 J	0.000212 J	0.00199 J	0.000253 J	0.000260 J	0.000532 J	0.000334 J	0.0000699 U	NR	NR	NR	NR	NR
Fluoride	mg/L	0.718	0.731	0.655 JH	0.850 JH	0.623	0.728	0.0960 U	0.661	0.742	0.643	0.711	0.773	0.861
Lead	mg/L	0.000758 U	0.000152 U	0.000862 J	0.000152 U	0.000152 U	0.000241 J	0.000152 U	0.000152 U	NR	NR	NR	NR	NR
Lithium	mg/L	0.000476 U	0.0452	0.00238 U	--	0.0595	0.0599	0.0712	0.0608	NR	NR	NR	NR	NR
Mercury	mg/L	0.0000263 U	0.0000620 J	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	0.0000263 U	NR	NR	NR	NR	NR
Molybdenum	mg/L	0.00128 U	0.000447 J	0.000367 J	0.000377 J	0.000342 J	0.000352 J	0.000260 J	0.000255 U	NR	NR	NR	NR	NR
Selenium	mg/L	0.00227 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	0.000454 U	NR	NR	NR	NR	NR
Thallium	mg/L	0.00166 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	0.000332 U	NR	NR	NR	NR	NR
Radium-226	pCi/L	0.88 ± 0.339	0.878 ± 0.358	0.546 ± 0.213	0.217 ± 0.217	0.433 ± 0.249	0.313 ± 0.254	0.926 ± 0.324	0.42 ± 0.205	NR	NR	NR	NR	NR
Radium-228	pCi/L	1.12 ± 1.11	1.94 ± 1.01	0.429 ± 0.781	0.574 ± 1.41	0.451 ± 0.660	0.766 ± 1.29	1.48 ± 0.968	1.17 ± 0.827	NR	NR	NR	NR	NR

NOTES:
mg/L: Milligrams per Liter.
SU: Standard Units.
pCi/L: Picocuries per Liter.
-- : Laboratory did not analyze sample for indicated constituent.
D: Sample diluted due to targets detected over highest point of calibration curve or due to matrix interference.
H: Bias in sample result likely to be high.
J: Analyte detected above method (sample) detection limit but below method quantitation limit.
NR: Analysis of this constituent not required for detection monitoring.
U: Analyte not detected at laboratory reporting limit (Sample Detection Limit).
X: Matrix Spike/Matrix Spike Duplicate recoveries were found to be outside of the laboratory control limits.

APPENDIX F SITE HYDROGEOLOGY AND CROSS-SECTIONS

EXCERPTS FROM LOCATION RESTRICTIONS DEMONSTRATION DATED OCTOBER 2018

2.1 SITE DESCRIPTION

CPS Energy owns and operates the Calaveras Power Station located southeast of San Antonio in Bexar County, Texas. Within this power station, there are two coal-fired plants (J.T. Deely Power Plant and J.K. Spruce Power Plant) that generate CCR that are subject to the CCR Rule. A General Site Location Map is provided as **Figure 1**.

CPS Energy has identified five onsite CCR Units:

1. Fly Ash Landfill (FAL);
2. Evaporation Pond (EP);
3. Sludge Recycle Holding (SRH) Pond;
4. North Bottom Ash Pond (BAP); and
5. South BAP.

For the purposes of this document, the FAL and EP are termed the Northern CCR Units and the SRH Pond and BAPs are termed the Southern CCR Units. The CCR Unit locations are shown in **Figure 2**.

2.2 SITE-WIDE GEOLOGY

According to the Bureau of Economic Geology (BEG) *Geologic Atlas of Texas San Antonio Sheet*, the geology in the area of Calaveras Power Station consists of the Carizzo Sand and the Wilcox Group. According to the United States Geological Survey (USGS), the Carizzo Sand consists of medium- to coarse-grained sandstone, with finer grained material towards the top of the formation and the Wilcox Group consists mostly of mudstone, with various amounts of sandstone, lignite, and ironstone concretions. Information presented in Section 2.2 and the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017).

2.2.1 Northern CCR Units

The stratigraphic sequence is generally characterized by approximately 8 feet to 32 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by a clayey/silty to well-sorted sand (groundwater-bearing unit) approximately 5 to over 25 feet thick, underlain by grey to brown, high plasticity clay (lower confining unit). The ground water bearing unit is at its greatest observed thickness near the southwest corner of the EP, and thins towards the northwest (northwest of the FAL). The lower confining unit, generally observed at a depth between approximately 471 feet to 478 feet above mean sea level (msl) was not observed at monitor wells JKS-47 and JKS-60 (drilled to depths of 462 feet and 466 feet above msl, respectively). This possibly suggests the presence of erosional channels or gradational changes in lithology between JKS-45 and JKS-47, and JKS-46 and JKS-60. Interbedded sands and clays were observed within both the unconsolidated material and ground water

bearing unit in monitor wells JKS-57, JKS-58, and JKS-61 through JKS-64. A high plasticity clay interval was observed above the groundwater-bearing unit at monitor well JKS-45, but appears to be discontinuous as it was not encountered during the installation of any other monitor wells in the vicinity of the Northern CCR Units. A CCR Well Network Location Map is provided as **Figure 3**.

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-45, JKS-58, JKS-62, and JKS-64. The laboratory Unified Soil Classification System (USCS) results classify the high plasticity clay unit (above the groundwater-bearing unit) and the lower confining unit as fat clay (CH). Sandy lean clay (CL) and clayey sand (SC) USCS results from JKS-58 and JKS-62, respectively, suggest that the contact between the groundwater bearing unit and lower confining unit is gradational in some areas. The laboratory USCS results classify the groundwater-bearing unit from a silty sand (SM) at JKS-45 to a clayey sand (SC) at JKS-64. Hydraulic conductivities from cohesive samples collected from the lower confining unit were reported on the order of 10^{-7} to 10^{-8} centimeters per second (cm/sec), which is within the range of values for clay.

2.2.2 Southern CCR Units

The stratigraphic sequence is generally characterized by approximately 6 feet to 18 feet of unconsolidated material (sands, silts, and low to medium plasticity clays), underlain by clayey/silty sand to moderately-sorted sand (groundwater-bearing unit) approximately 9.5 to 21.5 feet thick, underlain by bedrock (sandstone). Discontinuous silts and interbedded clay material were observed within the groundwater-bearing unit in monitor wells JKS-48, JKS-49, and JKS-51 through JKS-55. A CCR Well Network Location Map is provided as **Figure 3**.

Visual classifications of the geologic materials described above are consistent with results from the soil materials testing analysis conducted for samples collected at JKS-48, JKS-53, and JKS-54. The laboratory USCS results classify the groundwater-bearing unit from a silty clayey sand (SC-SM) at JKS-54 to a clayey sand (SC) at JKS-48 and JKS-53. Hydraulic conductivities from cohesive samples collected from the lower confining unit were reported on the order of 10^{-6} to 10^{-8} (cm/sec).

2.3 SITE-WIDE HYDROGEOLOGY

Based on water level measurements and stratigraphic information collected during the advancement of the soil borings, ERM has provided an interpretation of the confining nature of the underlying stratigraphy. Information presented in the following subsections was obtained from the *Groundwater Monitoring System* report (ERM, October 2017).

2.3.1 Northern CCR Units

Groundwater in the vicinity of the Northern CCR Units appears to flow towards Lake Calaveras (southeast to east).

The groundwater-bearing unit in the vicinity of the Northern CCR Units appears to exhibit unconfined conditions based on the potentiometric surface of groundwater in relation to the first encountered water during drilling and the lack of continuous confining units (i.e., clay, sandy clay, or silty clay). The potentiometric surface is within approximately three feet of the first water encountered during drilling, and no continuous confining units are observed. The minimal change in elevation and the stratigraphic information indicates that a significant, laterally continuous confining layer is not present above the groundwater-bearing unit in the northern area. However, a laterally continuous lower confining unit was observed in multiple borings below the groundwater bearing unit.

2.3.2 Southern CCR Units

Groundwater in the vicinity of the Southern CCR Units appears to flow radially toward the lake and adjacent channel and away from a groundwater high represented by the water level elevation measured in JKS-49.

The groundwater-bearing unit in the vicinity of the Southern CCR Units appears to exhibit semi-confined conditions with confining units (i.e., clay, sandy clay, or silty clay) present in all the wells except JKS-49 and JKS-56. The potentiometric surface is within approximately 4 feet to 11 feet of where water was first encountered during drilling for all wells except JKS-56, indicative of groundwater under hydraulic head pressure with semi-confined conditions. JKS-56 appears to demonstrate unconfined conditions, due to the approximately 0.5 foot difference between the first encountered water during drilling and the potentiometric surface. There is a bedrock unit underlying the groundwater-bearing unit in the southern area.

3.1 PLACEMENT ABOVE THE UPPERMOST AQUIFER

The CCR Rule defines an aquifer as "a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells or springs". The CCR Rule also defines uppermost aquifer as "the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season".

ERM obtained site-specific information from engineering assessments and site investigations to evaluate whether the bases of the CCR Units are located more than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer. Information reviewed included:

- *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report, Calaveras Power Station* (ERM, January 2018); and
- *Groundwater Monitoring System, CPS Energy Calaveras Power Station* (ERM, October 2017)

The results of this evaluation are presented below for the individual CCR Units at the Calaveras Power Station.

3.1.1 Fly Ash Landfill (FAL)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the FAL ranges from 514 to 503 feet above msl. The first groundwater beneath the FAL was encountered during well drilling at approximately 483 feet above msl, and static water levels range from 478 to 489 feet above msl based on current and historical water level data. A stratigraphic cross section (Section A-A') depicting the pertinent elevations is provided as **Figure 4**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of fat clay, which typically has a hydraulic conductivity in the 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the FAL is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.2 *Evaporation Pond (EP)*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the EP ranges from 497 to 500 feet above msl. The first groundwater beneath the EP was encountered during well drilling at approximately 486 feet above msl, and static water levels range from 479 to 484 feet above msl based on current and historical water level data. A stratigraphic cross section (Section C-C') depicting the pertinent elevations is provided as **Figure 5**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of interbedded sandy clay, which typically has a hydraulic conductivity in the 10^{-7} to 10^{-8} cm/sec range signifying a very low permeability unit. Based on the above information, the base of the EP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

3.1.3 *Sludge Recycle Holding (SRH) Pond*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the SRH Pond is 492 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 487 feet above msl based on available water level data, the first groundwater beneath the SRH Pond was encountered during well drilling at approximately 476 feet above msl. A stratigraphic cross section (Section D-D') depicting the pertinent elevations is provided as **Figure 6**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the SRH Pond is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer. Note that the first groundwater encountered in JKS-51 is perched water and not in hydraulic connection with the deeper, laterally continuous aquifer.

3.1.4 *North Bottom Ash Pond (BAP)*

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the North BAP was encountered during well drilling ranging from 480 feet above msl in the south and 483.5 feet above msl in the north. A stratigraphic cross section (Section F-F') depicting the pertinent elevations is provided as **Figure 7**. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, although portions of the North BAP are unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer, the base of the

northern portion of the North BAP is less than 5 feet above the uppermost aquifer.

3.1.5 South Bottom Ash Pond (BAP)

Based on the review of the *CCR Units – 2017 Annual Inspection and Fugitive Dust Control Report* and as-built drawings, the elevation of the base of the BAPs ranges from 488 to 489 feet above msl. Stratigraphic cross sections (Section D-D' and Section F-F') depicting the pertinent elevations are provided as **Figure 6** and **Figure 7**, respectively. Although groundwater is under artesian conditions and rises to an elevation between 485 and 486 feet above msl based on available water level data, the first groundwater beneath the South BAP was encountered during well drilling at approximately 476 feet above msl. Based on geotechnical analysis, the unit that overlies the first groundwater consists of clayey sand, which typically has a hydraulic conductivity in the 10^{-6} to 10^{-8} cm/sec range signifying a low permeability unit. Based on the above information, the base of the South BAP is greater than 5 feet above the uppermost aquifer and unlikely to be in intermittent, recurring, or sustained hydraulic connection with the uppermost aquifer.

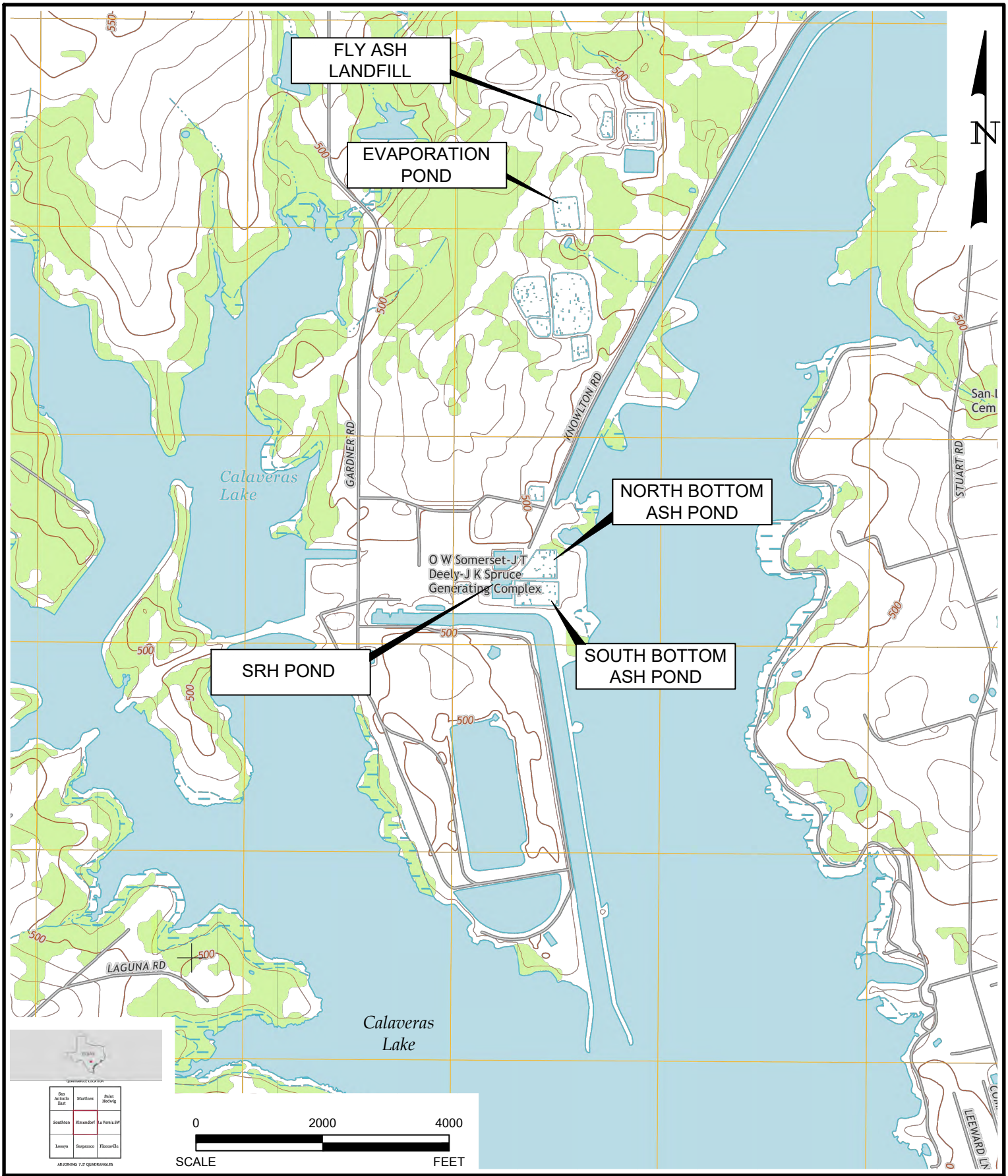
Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	7/25/2016	SCALE:	AS SHOWN	REVISION:	1
W.O.NO.:	K:\GIS\CPS\Calaveras\MXD\0337367_CPSCalaveras_SiteLoc.mxd				

FIGURE 1
GENERAL SITE LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

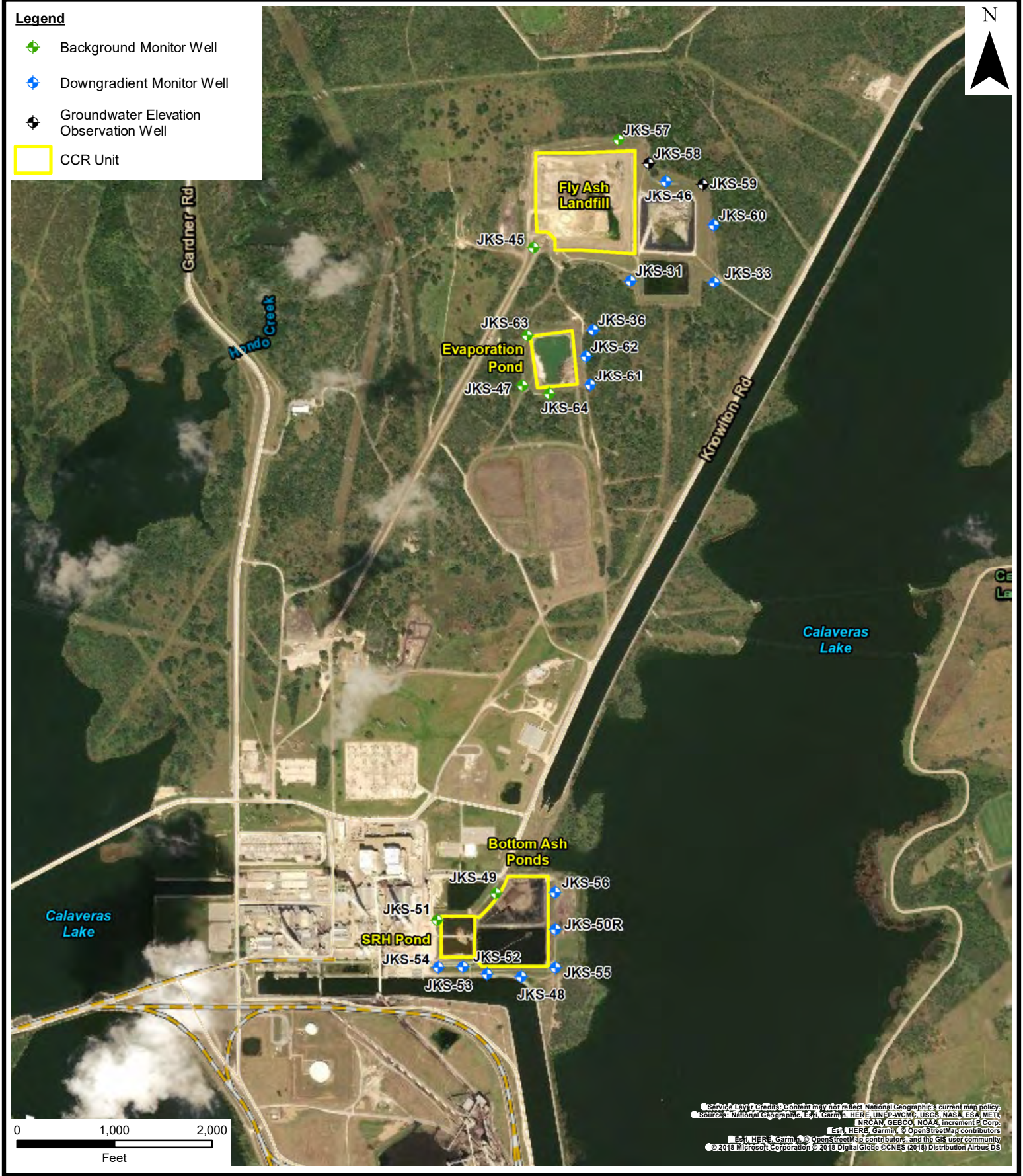
DESIGN: CC	DRAWN: RLM	CHKD.: CC
DATE: 9/19/2018	SCALE: AS SHOWN	REV.:
W.O. NO.: T:\DWG\AutoCAD\dwg\0337367\0337367_CCRUnitLocs_topo.dwg		

FIGURE 2
CCR UNIT LOCATIONS

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393



Environmental Resources Management

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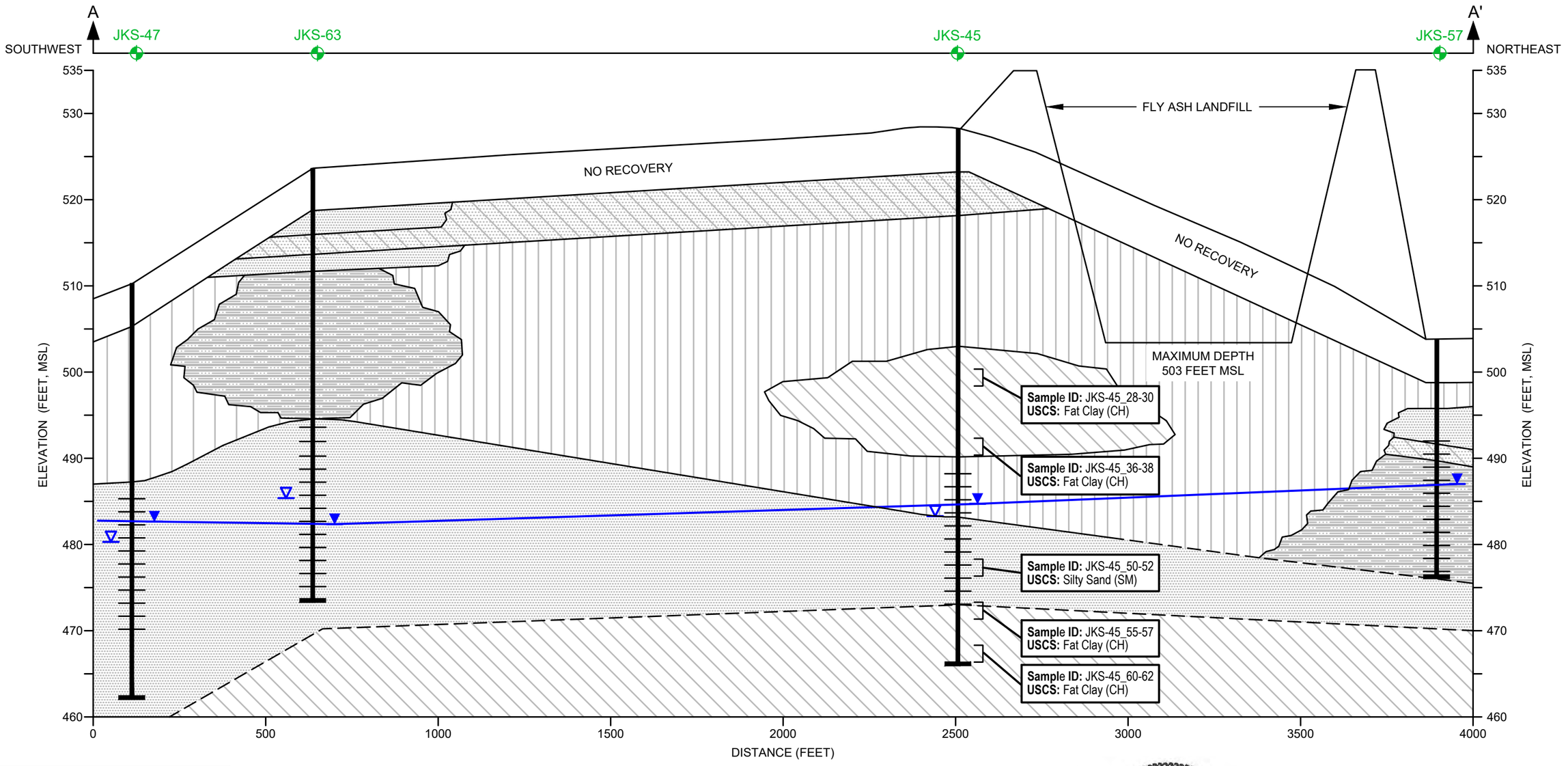
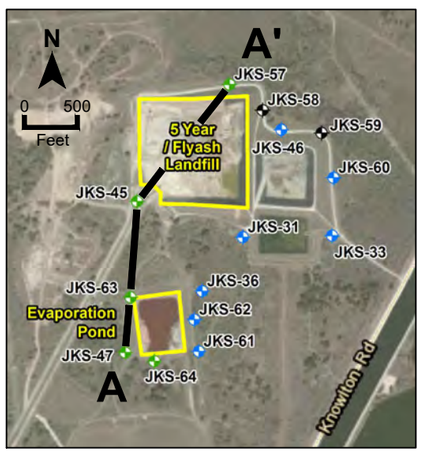
DATE:	9/19/2018	SCALE:	AS SHOWN	REVISION:	0
W.O.NO.:	P:\Projects\0366643 CPS Energy Calaveras CCR Well Network.WZ\GIS\MXD\HydroInv\0337367_CPSCalv_WellsLocs2.mxd				

FIGURE 3
CCR WELL NETWORK LOCATION MAP

CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM





LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
12/13/2017

10'
VERTICAL
0
300'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 4
Stratigraphic Cross Section A-A'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.:
DATE: 9/17/2018	SCALE: AS SHOWN	REV.:

W.O.NO.: T:\DWG\AutoCAD\dwg\0337367\0337367_xsecs.dwg, 9/17/2018 12:14:56 PM

ERM-Southwest, Inc. TX PE Firm No. 2393

C SOUTHWEST — JKS-63 — JKS-61 — NORTHEAST C'

EVAPORATION POND

NO RECOVERY

500 FEET MSL

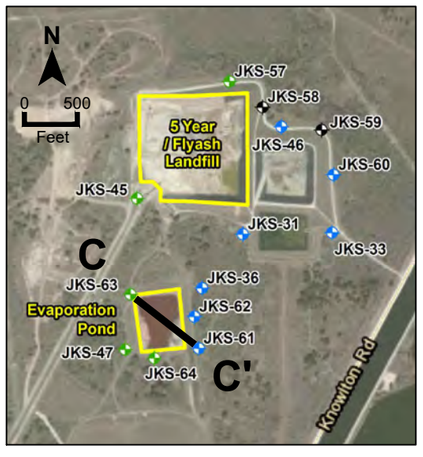
497 FEET MSL

ELEVATION (FEET, MSL)

525 520 515 510 505 500 495 490 485 480 475 470 465

0 100 200 300 400 500 600 700 800 900 1000

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- HIGH PLASTICITY CLAY
- INTERBEDDED SAND, AND CLAY
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

10' VERTICAL
0 100' HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 5
Stratigraphic Cross Section C-C'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.:
DATE: 9/17/2018	SCALE: AS SHOWN	REV.:

W.O.NO.: T:\DWG\AutoCAD\dwg\0337367\0337367_xsecs.dwg, 9/17/2018 12:14:57 PM

ERM

D

NORTHWEST

JKS-51

SRH POND

MAXIMUM DEPTH 492 FEET MSL

SOUTH BOTTOM ASH POND

MAXIMUM DEPTH 489 FEET MSL

JKS-48

NO RECOVERY

D'

SOUTHEAST

ELEVATION (FEET, MSL)

495
490
485
480
475
470
465

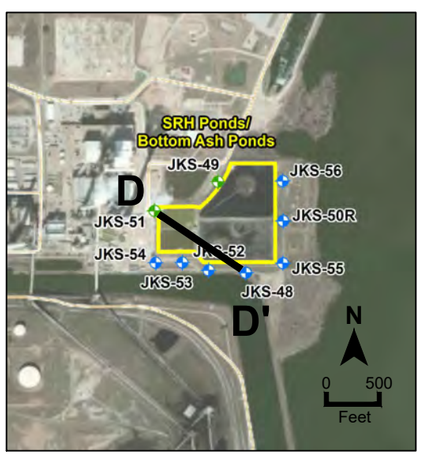
Sample ID: JKS-48_10-12.5
USCS: Clayey Sand (SC)

Sample ID: JKS-48_15-16.5
USCS: Sandy Lean Clay (CL)

Sample ID: JKS-48_19-20
USCS: Clayey Sand (SC)

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, SILT, AND CLAY
- BEDROCK (SANDSTONE)

- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION

SOIL TEST DATA KEY

Sample ID
USCS Soil Classification

- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL
- BACKGROUND MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST
10/13/2017

VERTICAL 5'
HORIZONTAL 0 100'

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 6
Stratigraphic Cross Section D-D'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: RLM	CHKD.: WZ
DATE: 9/17/2018	SCALE: AS SHOWN	REV.: 1

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ERM-Southwest, Inc. TX PE Firm No. 2393

F

SOUTH

JKS-55

JKS-50R

JKS-56

F'

NORTH

SOUTH BOTTOM ASH POND

NORTH BOTTOM ASH POND

NO RECOVERY

NO RECOVERY

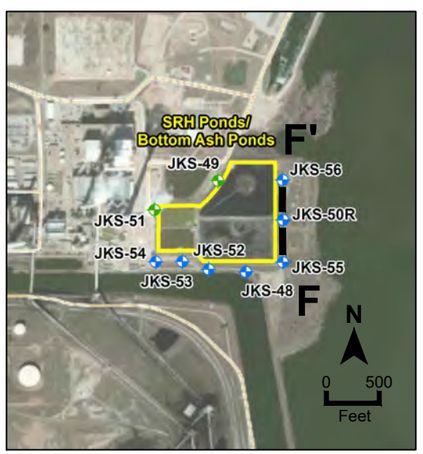
MAXIMUM DEPTH 488 FEET MSL

ELEVATION (FEET, MSL)

495
490
485
480
475
470
465

0
100
200
300
400
500
600
700

DISTANCE (FEET)



LEGEND

- SAND, SILTY SAND, AND/OR CLAYEY SAND
- SILT, SANDY SILT, AND/OR CLAYEY SILT
- LOW TO MEDIUM PLASTICITY CLAY, SANDY CLAY, AND/OR SILTY CLAY
- INTERBEDDED SAND, AND CLAY
- BEDROCK (SANDSTONE)
- POTENTIOMETRIC SURFACE (MEASURED DECEMBER 6, 2016)
- INITIAL GROUNDWATER LEVEL ENCOUNTERED DURING WELL INSTALLATION
- MONITOR WELL (SCREENED INTERVAL DASHED)
- DOWNGRADIENT MONITOR WELL

STATE OF TEXAS
MELISSA BOYSUN
GEOLOGY
No. 11387
LICENSED
PROFESSIONAL GEOSCIENTIST

10/8/2017

5'
VERTICAL
0
100'
HORIZONTAL

Notes:
1. Approximate ground surface elevation interpolated from surveyed elevations.
2. Aerial Source: ESRI.

Environmental Resources Management

Figure 7
Stratigraphic Cross Section F-F'
Groundwater Monitoring System
CPS Energy - Calaveras Power Station
San Antonio, Texas

DESIGN: NH	DRAWN: EFC	CHKD.: WZ
DATE: 9/17/2018	SCALE: AS SHOWN	REV.: 1

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ERM

APPENDIX G STRUCTURAL STABILITY AND SAFETY FACTOR ASSESSMENTS

Environmental Resources Management

CityCentre Four
840 W. Sam Houston Pkwy N.
Suite 600
Houston, Texas 77024
(281) 600-1000
(281) 600-1001 (Fax)

October 17, 2016

Mr. Michael Malone
CPS Energy
145 Navarro, Mail Drop 100406
San Antonio, Texas 78296

Project No. 0352436

Subject: Structural Stability and Safety Factor Assessments
Calaveras Power Station
San Antonio, Texas

Dear Mr. Malone:

Environmental Resources Management Southwest, Inc. (ERM) is pleased to provide this review of structural stability and safety factor assessments performed at the Calaveras Power Station, to assist CPS Energy in complying with Title 40, Code of Federal Regulations, Part 257 (40 CFR §257), Subpart D Coal Combustion Residual (CCR) Rules.

The Calaveras Power Station has five CCR surface impoundments: the North and South Sludge Recycle Holding (SRH) Ponds, the North and South Bottom Ash Ponds (BAPs), and the Evaporation Pond (EP). All ponds were constructed as diked impoundments. The SRH Ponds were constructed as a single impoundment with a divider wall that separates the impoundment into the North and South Ponds. A gate present in the divider wall is closed during normal operating procedures, but can be opened. The North and South BAPs share a common embankment that separates the ponds, and are immediately east of the SRH Pond. Only one BAP is typically in operation at one time. These four ponds are located east of the main Plant site. The EP is approximately a mile north of the main plant, and receives boiler chemical cleaning wastes. While this material is not considered CCR under the regulation, the EP was originally constructed as a fly ash landfill in 1990, and then converted to a fly ash impoundment in 1996. It currently contains solids that are six inches to two feet below the top of the impoundment.

40 CFR §257.73(d) requires that facilities conduct initial and periodic structural stability assessments for CCR surface impoundments to document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. Table 1 provides a summary of the requirements within the regulation, and the relevant information for each surface impoundment.

Factors of safety were calculated by Raba Kistner Consultants, Inc. (RKCI) in May 2014. These assessments were provided in a report entitled "*Geotechnical Engineering Study for Ash Pond Berms – Spruce/Deely Generation Units, San Antonio, Texas.*" ERM reviewed the information in these reports to evaluate whether factors of safety met the limits set forth in 40 CFR §257.73(e). All but one embankment evaluated by RKCI met the safety factor limits. The single non-complying safety factor was for the exterior slope of the northwestern berm on the North BAP, identified as cross-section or Embankment G. The steady-state safety factor for Embankment G was calculated at 1.2, and 1.4 on a reanalysis using a deeper failure surface. The minimum required safety factor for steady-state conditions is 1.5.

The RKCI report indicated that slopes used in the calculation for Embankment G were based on design drawings and field observations, not actual surveys. CPS Energy therefore engaged the services of a land surveyor (Pape-Dawson Engineers, Inc.) to collect measurements in two locations along Embankment G. The results of this survey, and the original RKCI soil data, were provided to HTS, Inc. Consultants (HTS), a geotechnical consulting firm in Houston, Texas. HTS recalculated the steady-state factor of safety utilizing the actual survey data. The calculated safety factors for both slopes were greater than 4. The letter report from HTS is included in Attachment 1.

Based on our evaluation of the available information for the impoundments, the structural stability and safety factor assessments meet the requirements of 40 CFR §257.73(d) and (e).

Sincerely,

Environmental Resources Management

Chris Cunningham, P.E.

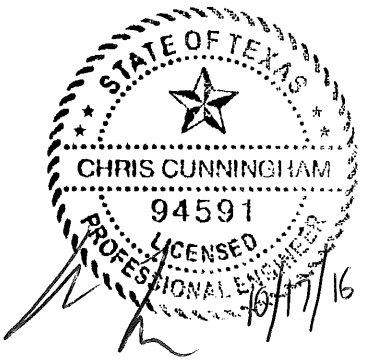

Table 1
Attachment 1

TABLE 1
Summary of Impoundment Requirements

Regulatory Citation	Requirement	Sludge Recycle Holding Ponds	Bottom Ash Ponds	Evaporation Pond
(d)(1)(i)	Stable foundations and abutments	Based on calculated factors of safety, foundations and abutments are stable.	Based on calculated factors of safety, foundations and abutments are stable.	Based on calculated factors of safety, foundations and abutments are stable.
(d)(1)(ii)	Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown	Slopes are vegetated with a continuous, maintained grass cover and inspected regularly for evidence of erosion.	Slopes are vegetated with a continuous, maintained grass cover and inspected regularly for evidence of erosion.	Slopes are vegetated with a continuous, maintained grass cover and inspected regularly for evidence of erosion.
(d)(1)(iii)	Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit	Based on geotechnical analysis and current slope conditions, it is likely that the dikes were mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit. Construction records documenting this are not available.	Based on geotechnical analysis and current slope conditions, it is likely that the dikes were mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit. Construction records documenting this are not available.	Based on geotechnical analysis and current slope conditions, it is likely that the dikes were mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit. Construction records documenting this are not available.
(d)(1)(iv)	Vegetated slopes of dikes and surrounding areas not to exceed a height of six inches above the slope of the dike	Grass on slopes is regularly mowed to maintain height below six inches.	Grass on slopes is regularly mowed to maintain height below six inches.	Grass on slopes is regularly mowed to maintain height below six inches.
(d)(1)(v)(A)	All spillways must be either: (1) Of non-erodible construction and designed to carry sustained flows; or (2) Earth- or grass-lined and designed to carry short-term, infrequent flows at nonerosive velocities where sustained flows are not expected.	Overflow spillways are concrete-lined. Regular discharge is via pumps through steel piping.	Ponds discharge via steel piping for regular and overflow discharges.	Not applicable. There are no outfalls for the pond.
(d)(1)(v)(B)	Spillways must adequately manage flow during and following the peak discharge from the required design storm flow.	Inflow during a storm is limited to direct precipitation. Sufficient headboard is maintained to capture design storm flow without requiring discharge.	Inflow during a storm is limited to direct precipitation. Sufficient headboard is maintained to capture design storm flow without requiring discharge.	Inflow during a storm is limited to direct precipitation. Sufficient headboard is maintained to capture design storm flow without requiring discharge.
(d)(1)(vi)	Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit must maintain structural integrity	Not applicable. There are no hydraulic structures underlying the pond.	Steel pipes acting as outfalls are regularly inspected to verify no erosion or damage.	Not applicable. There are no hydraulic structures underlying the pond.
(d)(1)(vii)	Maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.	Toe of embankments are at or above pool elevation of Calaveras Lake, which is maintained artificially. Therefore, no rapid drawdown or low pool conditions are likely.	Toe of embankments are at or above pool elevation of Calaveras Lake, which is maintained artificially. Therefore, no rapid drawdown or low pool conditions are likely.	Toe of embankments are at or above pool elevation of Calaveras Lake, which is maintained artificially. Therefore, no rapid drawdown or low pool conditions are likely.

HTS, Inc. Consultants
416 Pickering Street, Houston, TX 77091
www.htshouston.com

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Fax 713-692-8502
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July 20, 2016

ERM, Inc.
840 W. Sam Houston Parkway N.
Suite 600
Houston, Texas 77024

Attn: Mr. Chris Cunningham P.E.

Re: Letter Report
Steady State Slope Stability Analysis
Ash Pond Berms - Spruce/Deely Generation Units
San Antonio, Texas

HTS Project No.: 16-S-303

Dear Mr. Cunningham:

This letter provides results of the slope stability analyses performed on the 2 sections provided by ERM, Inc. The original geotechnical investigation (report dated May 7, 2014) was performed by Raba Kistner Consultants (RKC). HTS was requested to perform steady state slope stability analyses on 2 sections that were modified due to low factors of safety (below 1.5) against a slope stability failure.

Slope stability analyses were performed using the soil parameters provided on page 11 of RKC report and the subsoil profile defined by Geotechnical Boring No. 7 which is located near section G as presented in RKC report, Figures A-1 and C-1b. The 2 section configurations used in our slope stability analyses are prcsented in Appendix A.

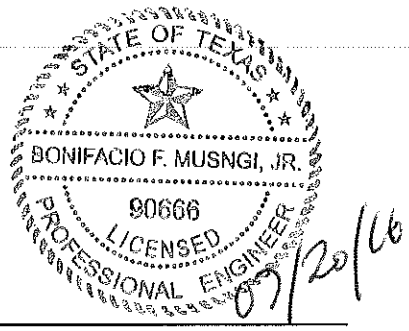
Slope stability analyses were performed in order to determine the factors of safety of the side slopes of the section configurations against a slope stability failure. The long term (steady state) shear strengths of the cohesive soils are based on the shear strength parameters from consolidated undrained triaxial tests performed and presented on the table on page 11 of RKC report. The cohesion and angle of friction for sands were assumed to be zero and 28°, respectively, for a conservative approach. The water gradient was also considered to be close to the ground surface for a conservative analysis. The results of these analyses are shown below and in Appendix B.

SECTION	FACTOR OF SAFETY (LONG TERM CONDITION)
Section Along CSA	4.06
Section Along CSB	4.08

The results of the stability analyses using the shear strength parameters as discussed above suggest that the slopes of the section configurations provided by ERM will be stable in the long term condition.

Should you have any questions or require additional information pertaining to this letter, please do not hesitate to contact us at your convenience.

Sincerely,
HTS, Inc. Consultants



Bonifacio F. Musngi Jr., P.E.
Senior Engineer

HTS, Inc. Consultants
F-3478

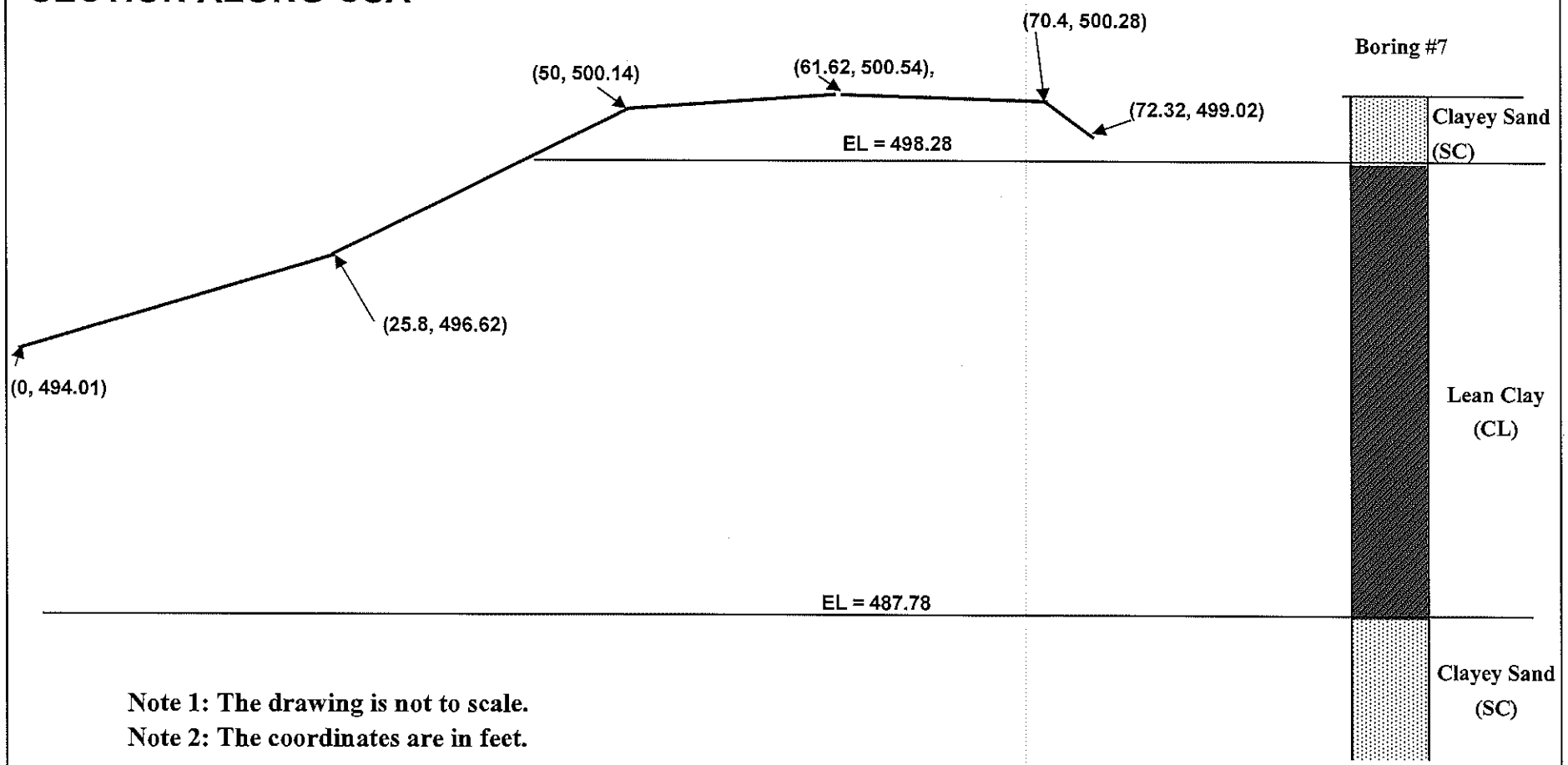
Attachments: **Appendix A – Slope Section Configurations**
Appendix B – Slope Stability Analyses Results

BFM/ba/cg

h:word/2016/300-349/16-303

APPENDIX A

SECTION ALONG CSA

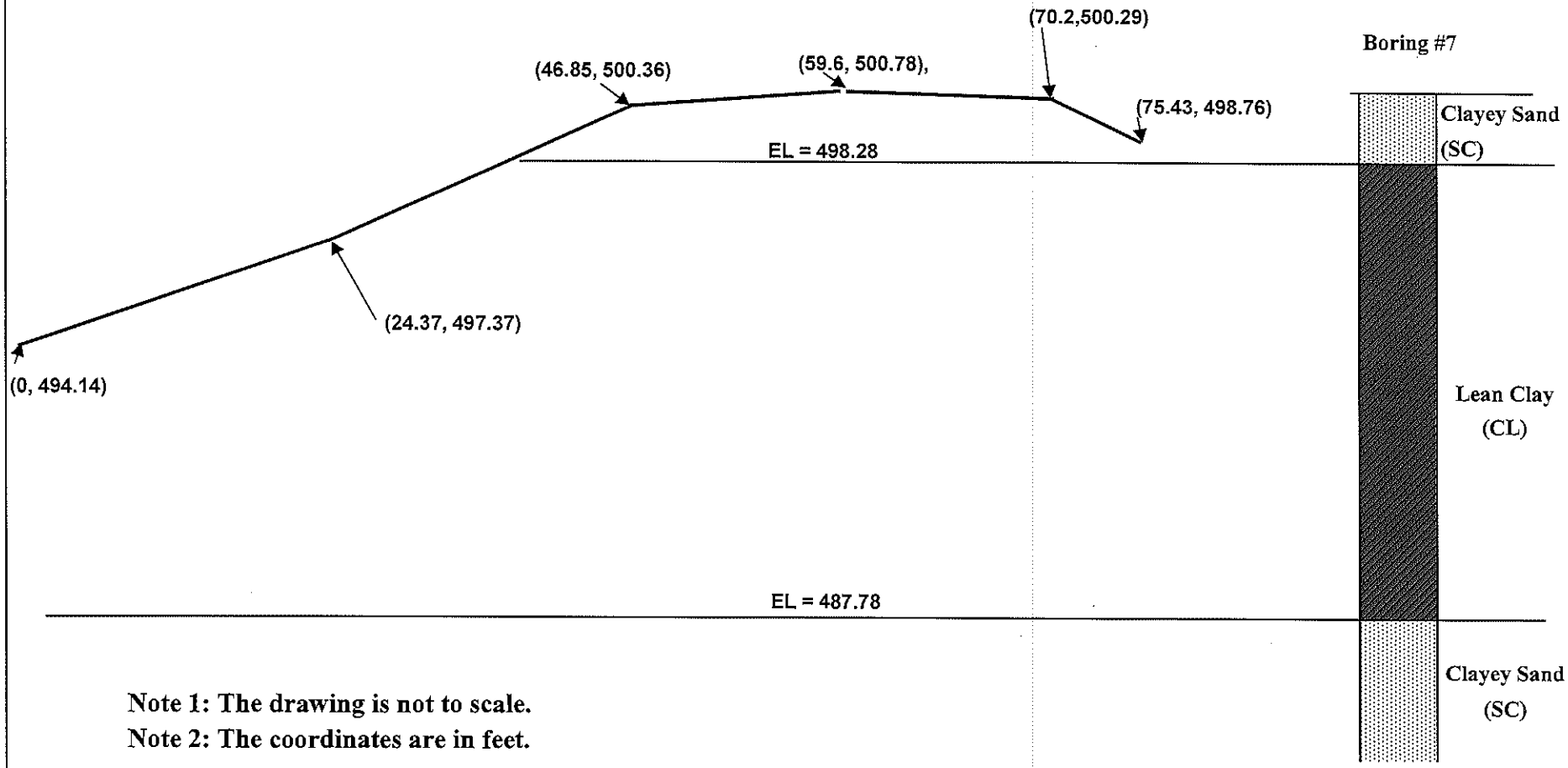


Note 1: The drawing is not to scale.
Note 2: The coordinates are in feet.

HTS, INC. Consultants

Typical Section Configuration for Slope Stability Analyses - Section Along CSA		
Steady State Slope Stability Analysis Ash Pond Berms - Spruce/Deely Generation Units San Antonio, Texas		
Date: 7/18/16	HTS Proj No.: 16-S-303	Plate 1

SECTION ALONG CSB



Note 1: The drawing is not to scale.
Note 2: The coordinates are in feet.

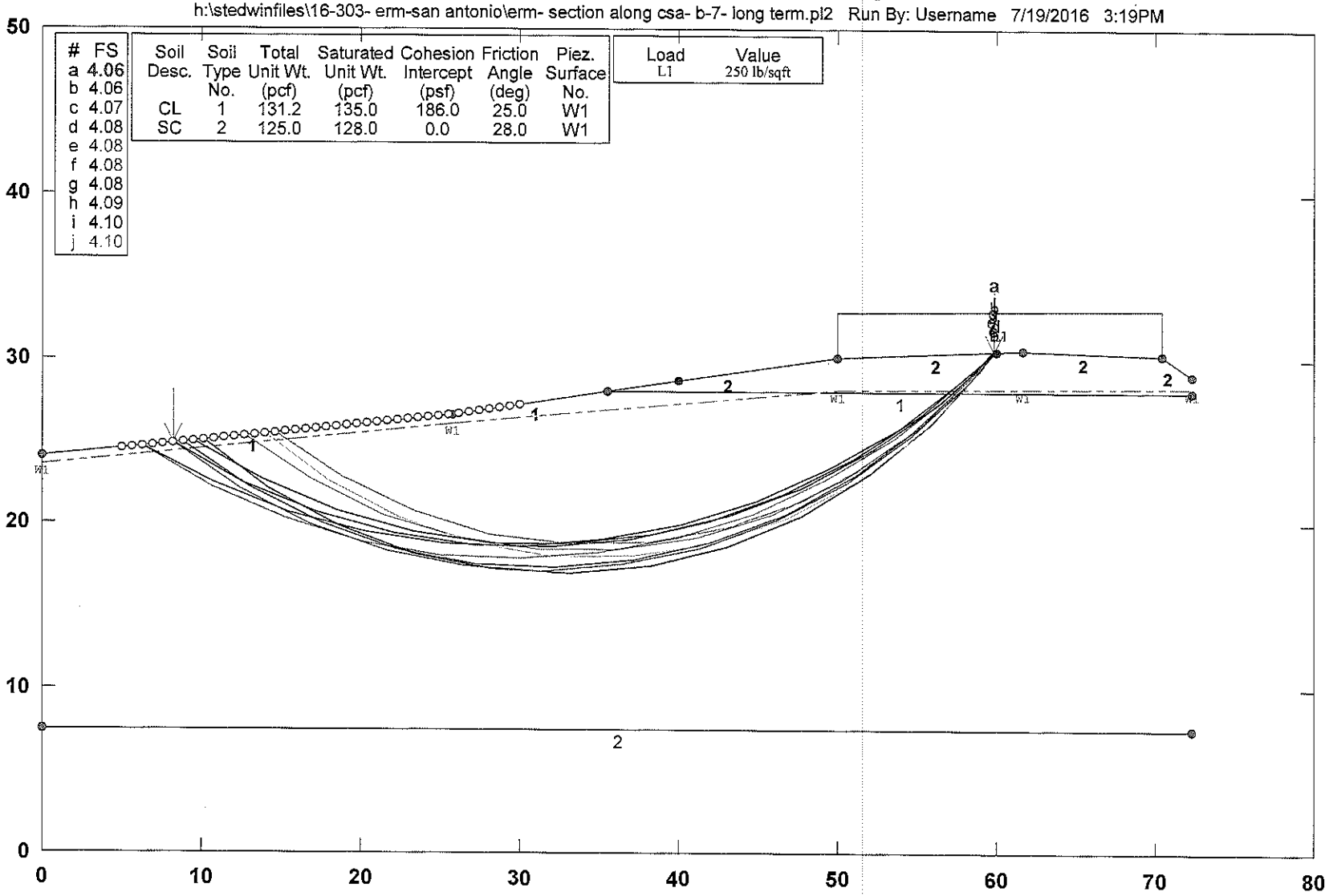
HTS, INC. Consultants

Typical Section Configuration for Slope Stability Analyses - Section Along CSB		
Steady State Slope Stability Analysis Ash Pond Berms - Spruce/Deely Generation Units San Antonio, Texas		
Date: 7/18/16	HTS Proj No.: 16-S-303	Plate 2

APPENDIX B

Ash Pond Berms - Spruce/Deely, B-7 Long Term, CSA

h:\stedwinfiles\16-303- erm-san antonio\erm- section along csa- b-7- long term.pl2 Run By: Username 7/19/2016 3:19PM



#	FS
a	4.06
b	4.06
c	4.07
d	4.08
e	4.08
f	4.08
g	4.08
h	4.09
i	4.10
j	4.10

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
CL	1	131.2	135.0	186.0	25.0	W1
SC	2	125.0	128.0	0.0	28.0	W1

Load	Value
L1	250 lb/sqft

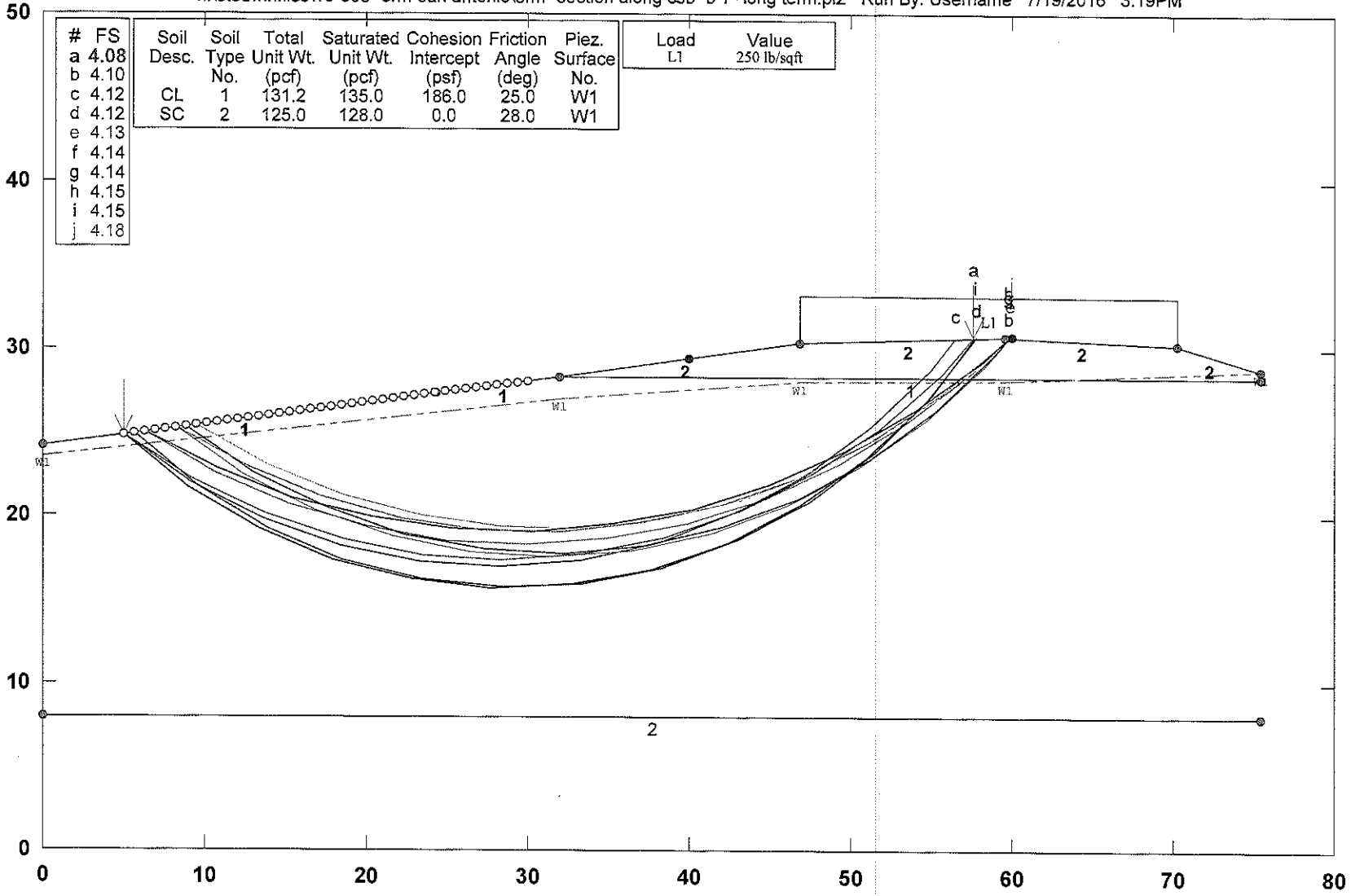
STABL6H FSmin=4.06

Safety Factors Are Calculated By The Modified Bishop Method

HTS, INC. Consultants

Ash Pond Berms - Spruce/Deely, B-7 Long Term, CSB

h:\stedwinfiles\16-303- erm-san antonio\erm- section along csb- b-7- long term.pl2 Run By: Username 7/19/2016 3:19PM



#	FS
a	4.08
b	4.10
c	4.12
d	4.12
e	4.13
f	4.14
g	4.14
h	4.15
i	4.15
j	4.18

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
CL	1	131.2	135.0	186.0	25.0	W1
SC	2	125.0	128.0	0.0	28.0	W1

Load	Value
L1	250 lb/sqft

STABL6H FSmin=4.08

Safety Factors Are Calculated By The Modified Bishop Method

HTS, INC. Consultants

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Kenya
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Mozambique
Myanmar
The Netherlands
New Zealand
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Peru
Poland
Portugal
Puerto Rico
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South Africa
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Spain
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UK
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ERM's Austin Office
Capitol Tower
206 East 9th Street, Suite 1700
Austin, Texas 78701

T: 512 459 4700
F: 512 597 8368

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Attachment 9-3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 11, 2022

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

Mr. Michael Malone
CPS Energy
Calaveras Power Station
500 McCullough Ave
Mail Drop RT0601
San Antonio, Texas 78296

Dear Mr. Malone:

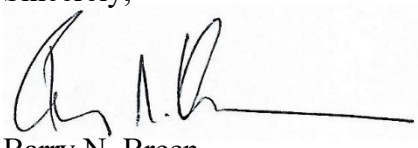
On November 30, 2020, the Environmental Protection Agency (EPA) received a demonstration from Calaveras Power Station requesting authorization to continue using the Evaporation Pond until May 26, 2022, and the Sludge Recycling Holding Pond until September 1, 2023, pursuant to the alternative closure provision 40 C.F.R. § 257.103(f)(1). EPA reviewed your demonstration to determine whether it included the required information, analyses and documentation specified under 40 C.F.R. § 257.103(f)(1), and we have determined that your demonstration is complete.

This letter merely communicates EPA's determination that your submitted demonstration contains sufficient information for EPA to evaluate the merits of your demonstration. EPA has not made any decision on whether to approve your request. The demonstration will undergo further review to make such a determination. After this review, EPA will publish its proposed decision for public comment in a docket on www.regulations.gov. After consideration of the comments, EPA will issue its final decision on the demonstration.

As a consequence of your submission of a complete demonstration, the deadline for the Coal Combustion Residuals units covered by the demonstration to cease receipt of waste is tolled until EPA issues a final decision on the demonstration. 40 C.F.R. § 257.103(f)(3)(ii).

EPA will notify you when a proposed decision on the demonstration is issued. If you have any questions, please contact Kirsten Hillyer at Hillyer.Kirsten@epa.gov.

Sincerely,



Barry N. Breen
Acting Assistant Administrator

Attachment 10 Hazard Potential Classification

October 15, 2021

Subject: Hazard Potential Classification Assessment for Existing CCR Surface Impoundments 5-Year Update

Calaveras Power Station
San Antonio, Texas

To File:

The purpose of this memorandum is to document the hazard potential classification of the existing Coal Combustion Residual (CCR) surface impoundments at the CPS Energy Calaveras Power Station and to comply with Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) [a.k.a the Coal Combustion Residual (CCR) Rule].

CPS Energy owns and operates the Calaveras Power Station, which is located in unincorporated Bexar County, Texas, approximately 13 miles southeast of San Antonio. Currently, CPS Energy operates the following two CCR surface impoundments at the Power Station:

- Sludge Recycle Holding (SRH) Pond (separated into the north pond and south pond by a concrete dividing wall)
- Evaporation Pond (EP)

CPS Energy formerly operated two CCR surface impoundments at the Power Station:

- North Bottom Ash Pond (BAP)
- South BAP

The J.T. Deely Power Plant, located at the Calaveras Power Station, ceased operation at the end of December 2018 and sluiced bottom ash has not been received at the BAPs since that time.

All the surface impoundments are constructed as elevated diked structures. The SRH Pond, located adjacent to the Power Plants, receives CCR and non-CCR flows from various sources within the J.K. Spruce Plant and all flows are co-mingled in the SRH Pond. The SRH Pond shares a common embankment with the North and South BAPs. The EP, located approximately a mile north of the Power Plants, receives non-CCR flows (industrial wastestreams) that are trucked to the EP from the J.K. Spruce Plant and from other CPS Energy power generation facilities. While these flows are not considered CCR, the EP was originally constructed as a fly ash landfill in 1990, and then converted to a fly ash impoundment in 1996. The North and South BAPs share a common embankment that separates the BAPs and are immediately east and share an embankment with the SRH Pond. The BAPs have been dewatered and are currently undergoing closure.

40 CFR §257.73 requires that the owner and or operator of an existing CCR impoundment conduct an initial and periodic hazard potential classification assessment. The initial assessment must be performed prior to October 17, 2016 and performed again every five years thereafter. A hazard potential assessmentsummary for each impoundment is described in the remainder of this document. The assessment summaries are based on reports prepared for the USEPA by CDM Smith in June 2014, field observations, and annual inspection reports prepared in 2015 through 2020.

The SRH Pond has an approximate storage capacity of 28 acre-feet, which results in the embankments not qualifying as a dam according to the US Army Corps of Engineers (USACE) Guidelines for Safety Inspections of Dams (1979) (ERll0-2-106). The recommended Hazard Ranking was determined to be "Significant Hazard" due to possible failure damaging the power plant infrastructure, operations and utilities. As pointed out in the CDM Smith report, "loss of human life is not anticipated".

The North and South BAPs have an approximate storage capacity of 72 and 84 acre-feet respectively, which results in the embankments being classified as "small" dams according to the USACE Guidelines for Safety Inspections of Dams. The recommended Hazard Ranking was determined to be "Significant Hazard" due to possible failure damaging the power plant infrastructure, operations and utilities. As pointed out in the CDM Smith report, "loss of human life is not anticipated". Since the BAPs have been dewatered; however, that classification is no longer applicable.

The EP Pond has an approximate storage capacity of 99 acre-feet, which results in the embankments being classified as a "small" dam according to the USACE Guidelines for Safety Inspections of Dams. The recommended Hazard Ranking was determined to be "Low Hazard" due to low economic and/or environmental losses. The EP is located approximately one mile north of the Power Plants, therefore damage to the power plant infrastructure, operations and utilities is not anticipated. As pointed out in the CDM Smith report, "loss of human life is not anticipated".

Based on the review of CDM Smith reports, field observations, and annual inspection reports prepared in 2015 through 2020, CPS Energy designates the SRH Pond as a "Significant Hazard" and the EP as a "Low Hazard" with respect to their hazard potential classifications. Since the BAPs have been dewatered, and are not being operated as a surface impoundment/dam, a hazard potential classification is not applicable.

Michael M. Malone, P.E.
Sr. Manager, Environmental Management

Attachment 11 Emergency Action Plan

Prepared For:

CPS Energy

Emergency Action Plan

Bottom Ash Ponds and SRH Pond
Calaveras Power Station
San Antonio, Texas

Revised May 2017

Jeffery E. Bauguss, P.E.
Partner-in-Charge

Chris Cunningham, P.E.
Certifying Engineer

Wally Zverina
Project Manager

Environmental Resources Management
840 West Sam Houston Parkway North, Suite 600
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1.0 INTRODUCTION

This Emergency Action Plan (EAP) has been prepared in accordance with the regulatory requirements of the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities, in particular the requirements of 40 CFR §257.73(a)(3), and has been certified by a Professional Engineer (Appendix A). This EAP establishes the notification procedures for implementing emergency actions to be taken prior to and/or following a failure (if one were to occur) of the Bottom Ash Ponds (BAPs) and/or the Sludge Recycle Holding (SRH) Pond at the Calaveras Power Station located in San Antonio, Texas.

The EAP will address the following elements in accordance with 40 CFR §257.73(a)(3)(i):

1. Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

2. Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

3. Provide contact information of emergency responders;

4. Include a map that delineates the downstream area that would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

5. Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

This EAP will be evaluated, at a minimum, every 5 years to verify that the information is accurate and updated. As necessary, this EAP must be updated and a revised EAP placed in the facility's operating record as required by 40 CFR §257.105(f)(6). In addition, this document must be uploaded to the established CCR website for this facility per the requirements in 40 CFR §257.107.

2.0 PROJECT DESCRIPTION

The Calaveras Power Station is located in Bexar County, Texas, southeast of San Antonio. The Power Station is located immediately adjacent to Calaveras Lake, but there are no towns in proximity to the Power Station as shown in Figure 1. This EAP covers potential emergencies at the following CCR units at the Power Station, specifically:

- North BAP - classified as significant hazard impoundment
- South BAP - classified as significant hazard impoundment
- SRH Pond - classified as significant hazard impoundment

2.1 BOTTOM ASH PONDS

The North and South BAPs contain sluiced CCR from the wet feed process at the J.T. Deely Plant. The BAPs were constructed by CPS Energy in 1977 as part of the original plant construction. The North BAP is approximately 6.1 acres in area, while the South BAP is approximately 6.8 acres. These BAPs are located east of the plants, adjacent to the SRH Pond.

The BAPs began receiving CCR before October 14, 2015 and currently receive CCR. Hence, in accordance with 40 CFR §257.53, the BAPs are classified as active existing CCR impoundments.

The BAPs share a common embankment that separates the ponds. The ponds are reportedly lined with clay, but the thickness and hydraulic conductivity of the clay are unknown. One 24-inch steel pipe in each pond allows water to be returned to the plant for reuse. Additionally, both ponds have two discharge points. The discharge points consist of an outlet structure with a horizontal 12-inch steel discharge pipe at an approximate elevation of 489 feet MSL (bottom drain used to empty the pond), and a vertical 12-inch steel overflow pipe at an approximate of elevation 499 feet MSL (normal operation level pool drain).

The outfall structure is in one corner of each pond (northeast for North BAP and southeast for South BAP) and is partially surrounded by steel sheet piling. The sheet piling and pond berms create an opening for water to reach the discharge pipes. This opening is typically protected by floating booms. Water from these outlets discharge to Calaveras Lake through a TPDES permitted outfall.

It is estimated that approximately 118 acre-feet is the maximum inventory of CCR to be on-site over the active life of the North and South BAPs. This estimate is based on a worst-case assumption of the BAPs being completely full of CCR up to the limits of the freeboard as allowed by the Inflow Flood Control Plan.

2.2 SRH POND

The SRH Pond contains CCR sludge from the air pollution control equipment from the plants. The SRH Pond includes a divider wall that can separate the pond into a north and south section. Each section is approximately 1.5 acres in area and is located east of the plants, adjacent to the BAPs.

The SRH Pond began receiving CCR before October 14, 2015 and is still in service. Hence, in accordance with 40 CFR §257.53, the SRH Pond is classified as an active existing CCR surface impoundment.

The interior slopes of the two sections of the SRH Pond are reportedly constructed with a 30-mil HDPE liner and a six-inch thick concrete slab. The SRH Pond is separated by a concrete divider wall with a sluice gate that allows the north and south sections to be isolated from each other. Water is pumped from the SRH Pond to clarifiers via two 18-inch steel pipes. Both sections have eight-foot-wide concrete overflow chutes that discharge to the South BAP. These overflow chutes are at an approximate elevation of 499.5 feet MSL.

It is estimated that approximately 7 acre-feet is the maximum inventory of CCR to be on-site at one time over the active life of each section of the SRH pond. This estimate is based on a worst-case assumption of the SRH Pond being completely full of CCR up to the limits of the freeboard as allowed by the Inflow Flood Control Plan.

3.0 EMERGENCY PROCEDURES

3.1 MONITORING

Monitoring is a proactive way to identify maintenance issues and serves as an early warning system for detection and prevention of Emergency Levels and Emergency Scenarios which are summarized in Sections 3.4 and 3.5.

Weekly visits to the BAPs and SRH Pond are made by qualified plant personnel. Inspection forms are filled out for each weekly inspection at each unit, and any required corrective actions are noted and scheduled. Corrective actions are inspected on subsequent weekly visits.

An annual visual engineering inspection of the BAPs and SRH Pond are conducted by a Professional Engineer. During this inspection, the Professional Engineer assesses structural stability indicators, indications of potential seepage through the embankment, vegetative conditions, and other items as necessary. If needed, the Professional Engineer also notes corrective actions to be taken.

3.2 DETECTION

Potential emergency levels, which are listed in Section 3.4, may be observed and reported by plant personnel during regular maintenance and/or inspections. Once notified, it is the Operations Shift Supervisor's responsibility to lead the response actions. If the Operations Shift Supervisor is not available to lead the response, then the next highest ranking on-site supervisor shall have that responsibility. Roles and responsibilities are further defined in Section 4.0 and notification procedures are outlined in the Notification Flowcharts provided in Appendix B.

3.3 EVALUATION

The Operations Shift Supervisor should be the first person notified of a potential problem at the BAPs or SRH Pond, and would be the first person on the scene. Upon arrival at the site, the Operations Shift Supervisor will assume responsibility for the condition, evaluate the potential emergency, determine the initial emergency level classification (Level 1, 2, or 3, as described in Section 3.4), and continue to evaluate the condition.

3.4 EMERGENCY LEVEL CLASSIFICATION

If any of the conditions described below in Sections 3.4.1, 3.4.2, or 3.4.3 are developing, appear imminent, or have occurred at either the BAPs or SRH Pond,

plant personnel shall implement the notification procedures immediately. Notification Flowcharts for the various levels are provided in Appendix B.

3.4.1 Level 1: Non-failure Emergency

Level 1 covers a non-failure scenario with no immediate threat to the integrity of the unit, such as the following:

- Water impounding behind either impoundment such that the water level from a precipitation event causes a rise in the level of 2 feet or more within 48 hours;
- Obstructions are present in any of the spillway structures;
- Sinkholes develop downstream with no water present;
- Structural damage to discharge structures;
- Visible and limited surficial slump of soils on face of embankment; depth of two feet or less; and/or
- Significant erosion on downstream face of the impoundment embankments.

3.4.2 Level 2: Potential Failure

Level 2 covers the scenario where a failure may occur, but corrective measures may prevent or mitigate failure, such as the following:

- Water is impounding behind either impoundment such that the water level is within 1 foot of the top of the crest of the impoundment;
- Seepage occurs through the embankment and/or foundation at observed flow rates that appear unusually high or not typical of base flow conditions;
- Unusual crack development in the embankment and/or foundation with minor seepage (wet spots on the surfaces) or controllable flow is observed;
- Water is observed in a sinkhole downstream but there is no visible turbidity in the water; and/or
- A previously unidentified seep or similar discharge is observed at the toe of the embankment with no significant turbidity.

3.4.3 Level 3: Imminent Failure (Emergency)

Level 3 covers the scenario where no time is available to attempt corrective measures and evacuation should be implemented immediately. Level 3 includes the following:

- Water level is at the top of the crest of the impoundment;
- Uncontrolled water flows through cracks in the intake tower, the embankment and/or the foundation, steadily increasing in size and volume;
- Water is observed in a sinkhole downstream where turbidity is noted in the water;
- A significant single or multiple slide/slumps are observed and are continuing to enlarge;
- Whirlpool is observed in the impounded water;
- A large slump or slide develops in the embankment, which threatens to release the impounded water;
- Embankment sections are displaced or separated; and/or
- A turbid or muddy discharge is observed at the toe of the embankment.

3.5 EMERGENCY SCENARIOS

Below are specific emergency scenarios for the BAPs and SRH Pond. Potential failure pathways described below for the BAPs and the SRH Pond are shown on Figures 2 and 3.

3.5.1 Bottom Ash Ponds

The BAPs are contained within elevated earthen and concrete berms. The ponds are entirely within the facility boundary, with no public access or property nearby. The maximum volume of water and CCR estimated to be on-site in any one pond is 118 acre-feet, or 5,140,000 cubic feet. The maximum height of the berms above the surrounding ground is approximately six feet.

A catastrophic failure mode creating the highest potential for damage would be shallow failure of one of the surrounding berms. While extremely unlikely given the calculated factor of safety, this would allow a sudden release of the contents in the direction of the berm failure. Even in the event of such a release, the

limited volume of water in the pond would not be capable of creating an instantaneous release of all water in the pond, but would likely result in a rapid slumping of the failed section of berm. This is anticipated to be slow enough to allow workers on or near the berm to escape to safety without being inundated.

A failure in any direction would result in water/CCR being discharged to a surrounding body of water:

- Release to the west - would be captured in the SRH Pond and a stormwater retention pond. Discharges to the SRH Pond would be equalized within the SRH Pond and the BAPs. Discharges to the retention pond would drain to Calaveras Lake.

- Release to the east - would be captured in Calaveras Lake. Discharges to the lake would be dissipated into the much larger volume of water present in the lake, with no noticeable impact on water elevations.

- Release to the south - would be captured in the adjacent BAP (if failure of the North BAP) or would be captured in the cooling water canal, part of Calaveras Lake (if failure of the South BAP). Discharges to the canal would be dissipated into the much larger volume of water present in the lake, with no noticeable impact on water elevations.

- Release to the north - would be captured in the adjacent BAP (if failure of the South BAP) or would be captured in Calaveras Lake (if failure of the North BAP). Discharges to the lake would be dissipated into the much larger volume of water present in the lake, with no noticeable impact on water elevations.

3.5.2 SRH Pond

The SRH Pond is contained within elevated earthen and concrete berms. The pond is entirely within the facility boundary, with no public access or property nearby. The maximum volume of water and CCR estimated to be on-site in any one pond is seven acre-feet, or 305,000 cubic feet. The maximum height of the berms above the surrounding ground is approximately six feet.

A catastrophic failure mode creating the highest potential for damage would be shallow failure of one of the surrounding berms. While extremely unlikely given the calculated factor of safety, this would allow a sudden release of the contents in the direction of the berm failure. Even in the event of such a release, the limited volume of water in the pond would not be capable of creating an instantaneous release of all water in the pond, but would likely result in a rapid

slumping of the failed section of berm. This is anticipated to be slow enough to allow workers on or near the berm to escape to safety without being inundated.

A failure in any direction would result in water/CCR being discharged to a surrounding body of water:

- Release to the west - presents the highest risk to property damage. All property to the west is privately owned by CPS Energy. The area of the plant to the west is much larger than the area of the SRH Pond and may lead to minor flooding of the plant in the immediate vicinity of the pond. Flooding is expected to be deeper in low-lying areas, but would drain south to Calaveras Lake. Discharges to the lake would be dissipated into the much larger volume of water present in the lake, with no noticeable impact on water elevations.

- Release to the east - would be captured in the BAPs. Discharges to the BAPs would be equalized within the SRH Pond and the BAPs. The BAPs have the capacity to contain the volume of the SRH Pond.

- Release to the south - would be captured in the cooling water canal, part of Calaveras Lake. Discharges to the canal would be dissipated into the much larger volume of water present in the lake, with no noticeable impact on water elevations.

- Release to the north – would be captured in a stormwater retention pond, but overfilling may be possible dependent upon the amount of freeboard in the retention pond at the time. Overtopping of the retention pond may lead to minor flooding of the facility in the immediate vicinity of the pond. Flooding is expected to be limited to low-lying areas, but would drain south to Calaveras Lake. Discharges to the lake would be dissipated into the much larger volume of water present in the lake, with no noticeable impact on water elevations.

4.0 GENERAL RESPONSIBILITIES

4.1 OPERATIONS SHIFT SUPERVISOR

Plant personnel will report unusual observations of the embankments, whether from intentional monitoring or casual observations to the Operations Shift Supervisor. The Operations Shift Supervisor shall coordinate emergency response action in the event of an emergency. The Operations Shift Supervisor shall take responsibility to make appropriate notifications, and to request assistance as specified in the Notification Flowcharts in Appendix B. The Operations Shift Supervisor may delegate responsibility as appropriate. If the Operations Shift Supervisor is not available or able to lead the response, then the next highest ranking on-site supervisor shall have that responsibility.

The Operations Shift Supervisor shall:

1. Assume responsibility for the condition, determine the initial Emergency Level classification (Level 1, 2, or 3), and continue to evaluate the condition;

2. Provide for surveillance of the BAPs and SRH Ponds;

3. Initiate and maintain contact with local emergency responders according to the Notification Flowcharts provided in Appendix B, as appropriate;

4. Document and maintain logs recording all activations of the EAP;

5. Initiate and direct corrective actions in consultation with an engineering/ geotechnical firm and/or Professional Engineers;

6. Supervise and coordinate plant personnel and contractors during the response activities; and

7. Terminate, when appropriate, emergency status at the BAPs or SRH Ponds.

4.2 EAP COORDINATOR

The EAP Coordinator shall:

1. Maintain the most recent version of the EAP on the publicly accessible internet CCR website and retain it for at least 5 years;

2. Maintain the EAP in the facility's operating record;

3. Review and update the EAP as necessary, and at a minimum of every five (5) years;

4. Make appropriate notifications as required;

5. Conduct an annual face-to-face meeting between plant personnel and local emergency responders;

6. Document and maintain logs recording all activations of the EAP;

7. Coordinate a follow-up evaluation of emergency response activities following any emergency at any impoundment; and

8. Serve as the EAP contact person.

5.0 UPDATING THE EAP

The EAP shall be reviewed and updated by the CPS Energy and all affected parties when significant changes to the facility occur, emergency contacts/reporting procedures change or a minimum of once every five (5) years. When updating the EAP, check all contact names and phone numbers for verification. If there are significant changes to the EAP, such as major modifications to the embankments, the EAP should be updated as soon as possible.

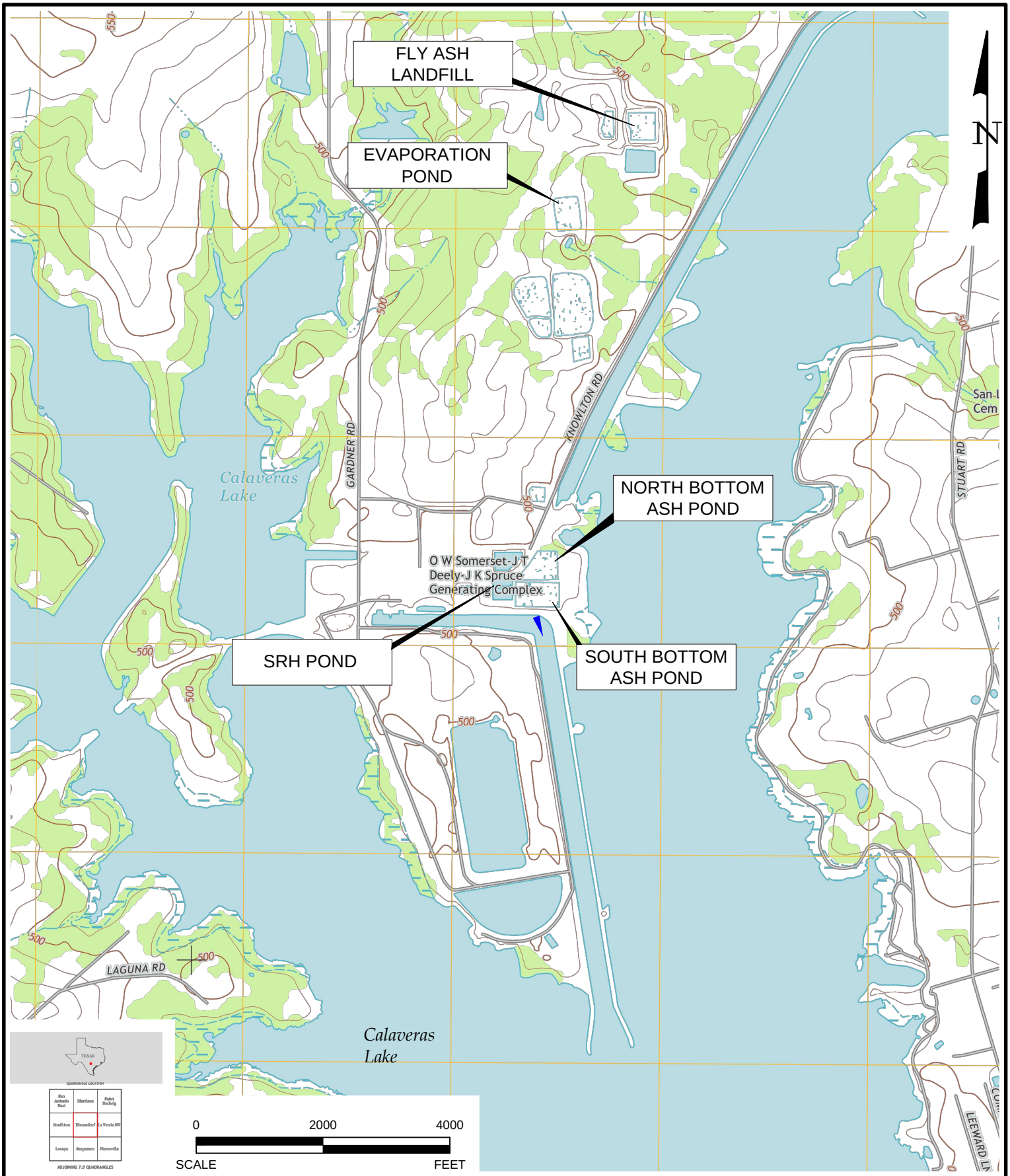
6.0 ANNUAL FACE-TO-FACE MEETING

An annual face-to-face meeting will be held with local emergency responders per 40 CFR §257.73 (a)(3)(i)(E). The meeting will cover:

- General information about the CCR impoundments;
- Roles and responsibilities the emergency responders would have in assisting the facility in an emergency; and
- Potential risks these CCR impoundments pose as well as preventative measures plant personnel are taking to avoid these potential issues.

The meeting will be held regardless of whether one of the emergency levels has occurred. If an incident defined by one of these emergency levels occurs, then the annual meeting date may be moved to discuss the incident soon after it occurs. Documentation of the annual face-to-face meeting shall be maintained in the facility's operating record.

Figures



Environmental Resources Management

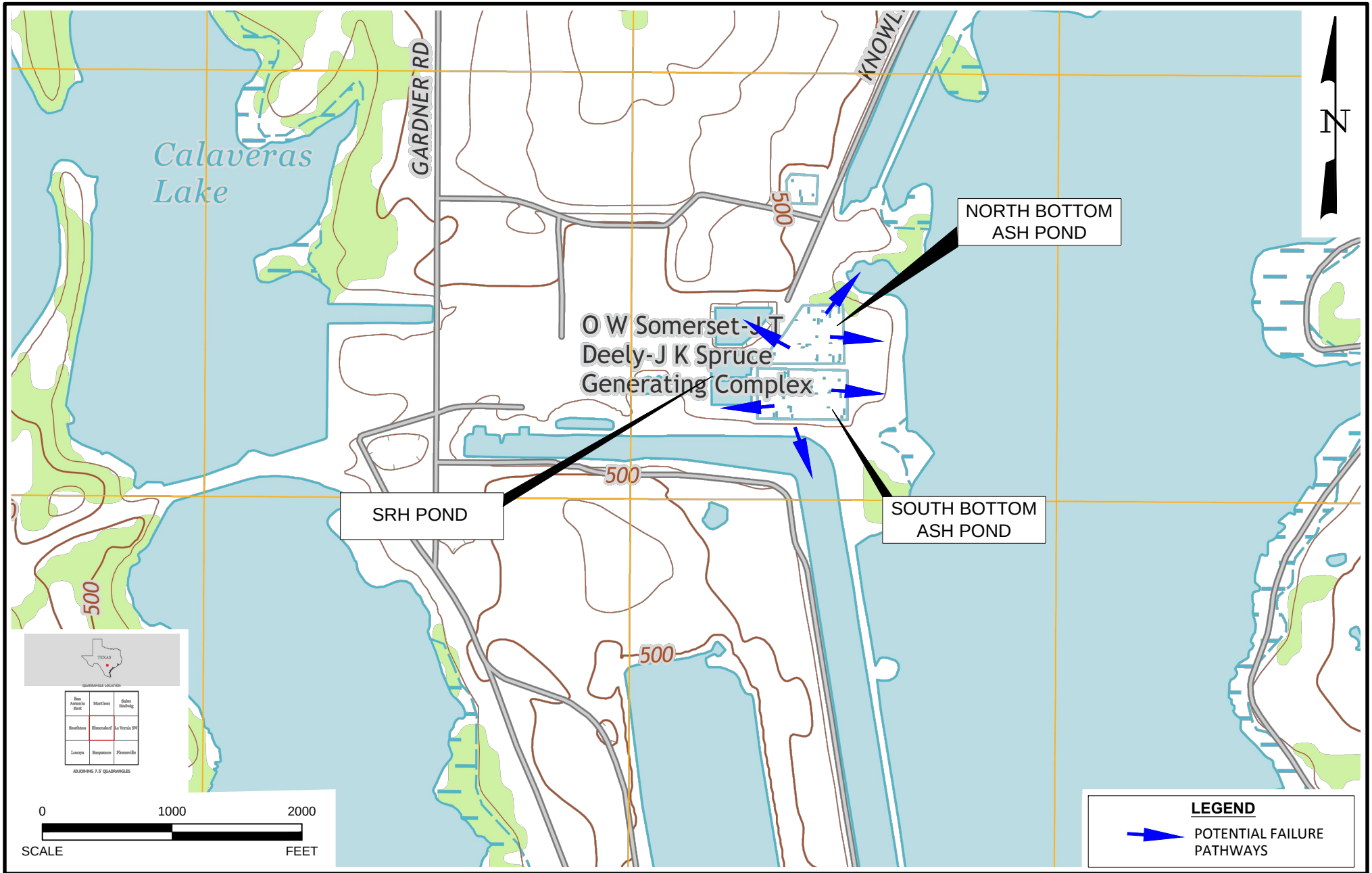
DESIGN: CC	DRAWN: RLM	CHKD.: CC
DATE: 4/20/2017	SCALE: AS SHOWN	REV.:
W.O. NO.:		

FIGURE 1
CCR UNIT LOCATIONS
Calaveras Power Station
CPS Energy
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

P:\Projects\0352436 CPS Energy Calaveras CCR Engineering.WZ\CAD\0352436A03 FIG1.dwg, 4/20/2017 11:30:16 AM



Environmental Resources Management

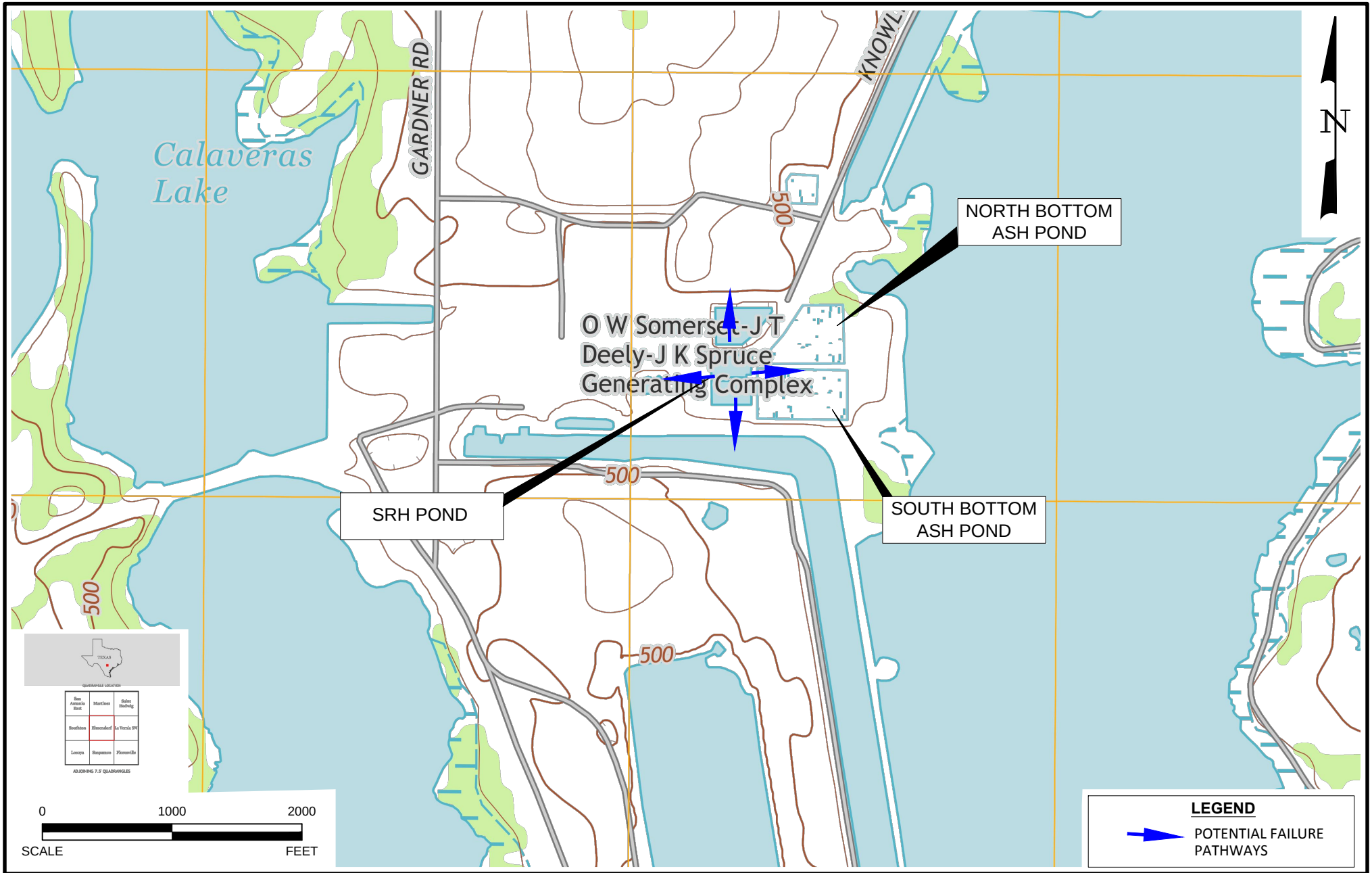
DESIGN: C.C	DRAWN: RLM	CHKD.: C.C
DATE: 4/20/2017	SCALE: AS SHOWN	REV.:
W.O. NO.:		

FIGURE 2
POTENTIAL FAILURE PATHWAYS - BOTTOM ASH PONDS
Calaveras Power Station
CPS Energy
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

P:\Projects\0352436 CPS Energy Calaveras CCR Engineering.WZ\CAD\0352436A01 FIG2.dwg, 4/20/2017 11:31:20 AM



Environmental Resources Management

DESIGN: C.C	DRAWN: RLM	CHKD.: C.C
DATE: 4/20/2017	SCALE: AS SHOWN	REV.:
W.O. NO.:		

FIGURE 3
POTENTIAL FAILURE PATHWAYS - SRH POND
Calaveras Power Station
CPS Energy
San Antonio, Texas

ERM

ERM-Southwest, Inc. TX PE Firm No. 2393

P:\Projects\0352436 CPS Energy Calaveras CCR Engineering.WZ\CAD\0352436A01 FIG3.dwg, 4/20/2017 11:27:46 AM

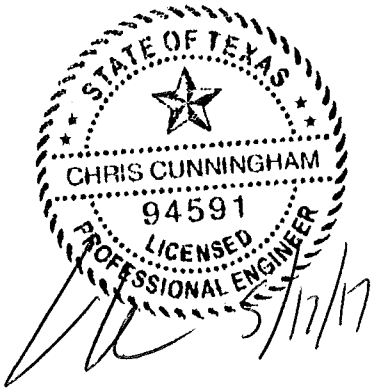
Appendix A
Professional Engineer Certification

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I, or an agent under my review, has prepared this Emergency Action Plan (EAP), and am familiar with the provisions of the final rule to regulate the disposal of coal combustion residuals (CCR). I attest that this EAP has been prepared in accordance with good engineering practices and meets the intent of 40 CFR §257.73. To the best of my knowledge, the information contained in this EAP is true, complete, and accurate.

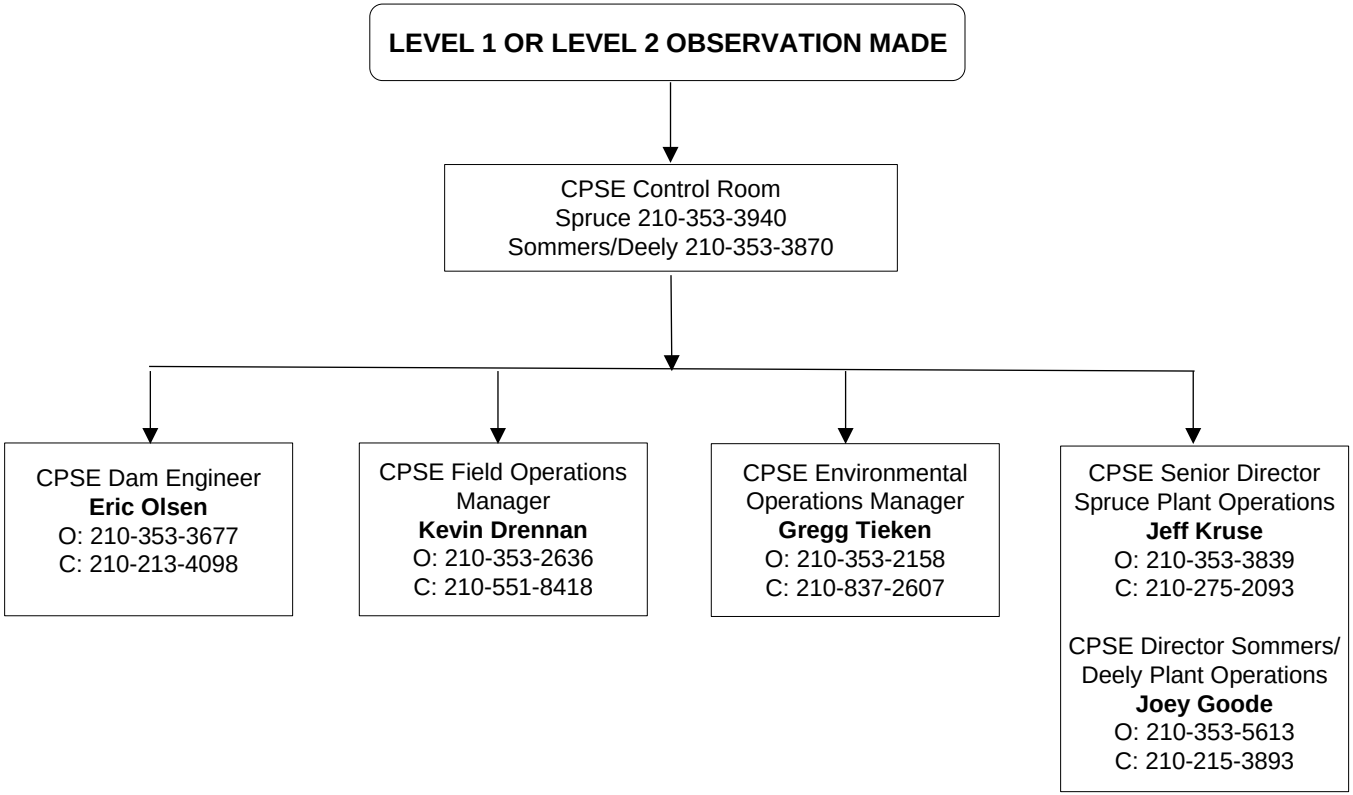
Chris Cunningham, P.E.
State of Texas License

Date: 5/17/17

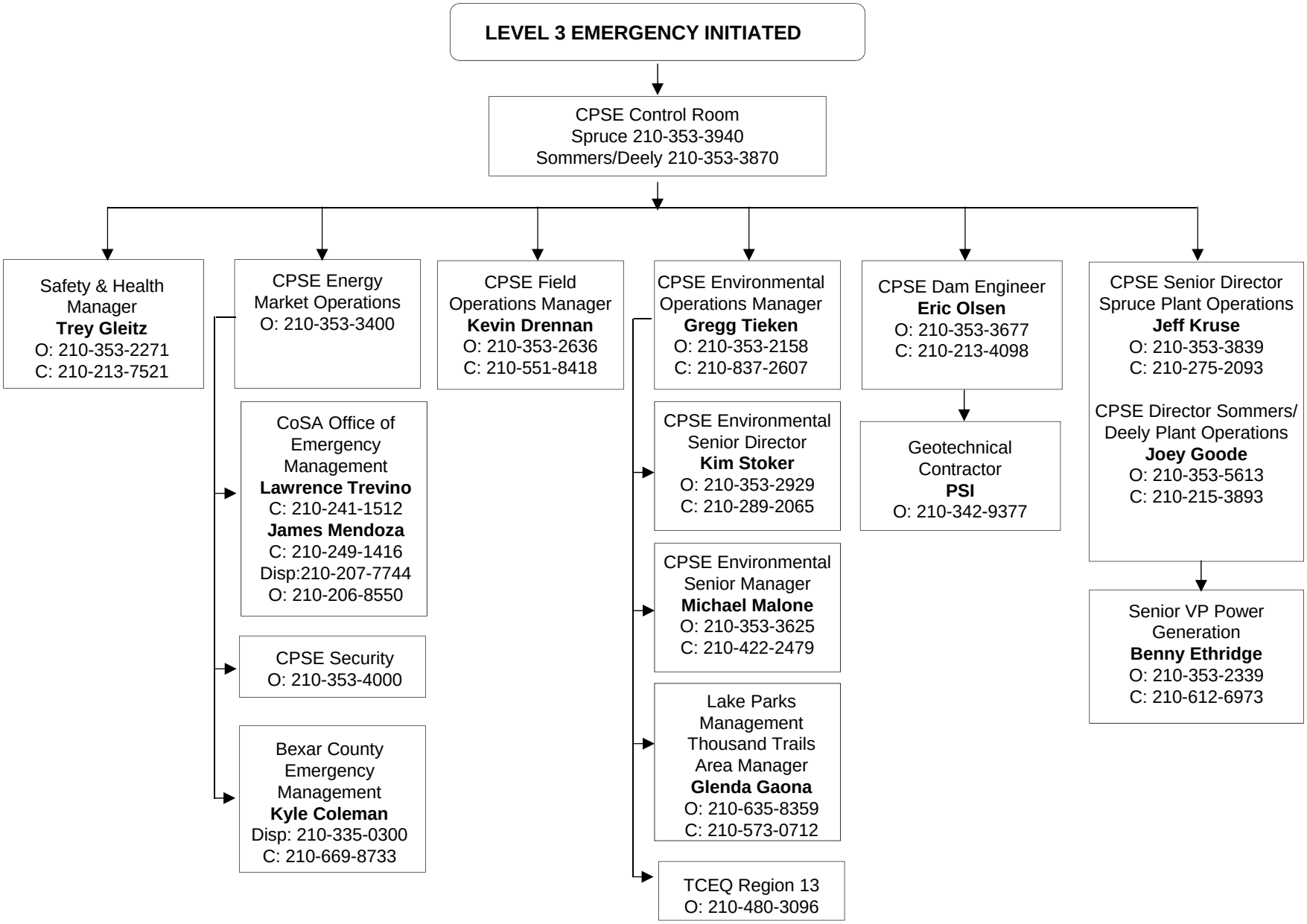


Appendix B
Notification Flowcharts

B-1 NOTIFICATION FLOWCHART



B-2 NOTIFICATION FLOWCHART



Attachment 12 Inflow Design Flood Control System Plan

Attachment 12-1

ERM

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27 October 2021

Mr. Michael Malone
CPS Energy
500 McCullough Avenue
San Antonio, Texas 78215

Project No: 0352436

Subject: Inflow Design Flood Control Plan – 5-Year Update
Calaveras Power Station
San Antonio, Texas

Dear Mr. Malone:

Environmental Resources Management Southwest, Inc. (ERM) is pleased to provide this Inflow Design Flood Control System Plan (IDFCSP) for the Calaveras Power Station to assist CPS Energy in complying with Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) [aka. the Coal Combustion Residual (CCR) Rule]. This IDFCSP is the 5-year update required under 40 CFR §257.82 Hydrologic and Hydraulic Capacity Requirements for CCR Surface Impoundments.

CPS Energy owns and operates the Calaveras Power Station, which is located in unincorporated Bexar County, Texas, approximately 13 miles southeast of San Antonio. Currently, CPS Energy operates the following two CCR surface impoundments at the Power Station:

- Sludge Recycle Holding (SRH) Pond (separated into the north pond and south pond by a concrete dividing wall); and
- Evaporation Pond (EP).

CPS Energy formerly operated two CCR surface impoundments at the Power Station:

- North Bottom Ash Pond (BAP); and
- South BAP.

The J.T. Deely Power Plant, located at the Calaveras Power Station, ceased operation at the end of December 2018 and sluiced bottom ash has not been received at the BAPs since that time.

All the surface impoundments are constructed as elevated diked structures. The SRH Pond, located adjacent to the Power Plants, receives CCR and non-CCR flows from various sources within the J.K. Spruce Plant and all flows are co-mingled in the SRH Pond. The SRH Pond shares a common embankment with the North and South BAPs. The EP, located approximately a mile north of the Power Plants, currently receives non-CCR flows (industrial wastestreams) that are trucked to the EP from the J.K. Spruce Plant and from other CPS Energy power

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Texas Board of Professional Geoscientist Firm 50036

generation facilities. While these flows are not considered CCR, the EP was originally constructed as a fly ash landfill in 1990, and then converted to a fly ash impoundment in 1996.

The North and South BAPs share a common embankment that separates the BAPs, and are immediately east and share an embankment with the SRH Pond. The BAPs have been dewatered and are currently undergoing closure.

40 CFR §257.82(a)(3) requires that CCR surface impoundments with a low hazard potential be designed for a 1-percent annual chance of exceedance flood (average return frequency of no less than once in 100 years) and that CCR surface impoundments with a significant hazard potential be designed for the 0.1-percent annual chance of exceedance flood (average return frequency of no less than once in 1,000 years). The EP is classified as a low hazard impoundment and the SRH Pond is classified as a significant hazard impoundment due to possible failure damaging the power plant infrastructure, operations and utilities. The BAPs were classified as significant hazard impoundments due to possible failure damaging the power plant infrastructure, operations and utilities; however, since the BAPs have been dewatered, that classification is not applicable.

Because the surface impoundments are elevated diked structures, the drainage area for the units is limited to the area that receives direct rainfall within the interior footprint of the units. Storm water that falls into a portion of the Power Station; however, is also pumped into the SRH Pond. The 100-year, 24-hour design storm rainfall for the area is approximately 11.4 inches, according to the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 11: Precipitation-Frequency Atlas of the United States and obtained from the Precipitation Frequency Data Server (PFDS). The estimated 1,000-year, 24-hour storm event for the area is approximately 19.3 inches.

The inflow design flood control system for any significant hazard impoundment includes maintaining a minimum 24-inch freeboard during dry weather. This is the standard operating condition for the SRH Pond. In the event of a major rain event, plant personnel will monitor water levels in the SRH Pond. If freeboard is reduced to 20 inches, storm water pumps feeding the SRH Pond from other portions of the Power Station will be shut down. This remaining freeboard will be sufficient to handle excess storm water from the 1,000-year storm rainfall. Note that the design rainfall for the 1,000-year, 24-hour storm is 19.3 inches. The above procedure presumes that a rainfall event is already partially complete by the time the freeboard reaches 19.3 inches (the total rainfall for a 1,000-year, 24-hour event), therefore the 20-inch freeboard threshold for pump shutdown is conservative.

Note 1: The SRH Pond had two concrete overflow spillways that discharged to the South BAP. Since the BAPs are undergoing closure, these spillways have been filled with road base/caliche as of the 2019 annual inspection.

The low hazard EP does not have alternative locations for discharge. It will be required to maintain a minimum 12-inch freeboard during dry weather, sufficient to handle excess storm water from the 100-year storm.

Based on our evaluation of the available information for these operating surface impoundments, this IDFCSP meets the requirements of 40 CFR §257.82(c).

Sincerely,

Environmental Resources Management Southwest, Inc.

Charles Johnson, P.E.

Attachment 12-2

AECOM

J.K. SPRUCE POWER PLANT -

PLANT DRAINS POND -

Initial Inflow Design Flood Control System Plan

June 2022
AECOM Project 60566130

Delivering a better world

Prepared for:

CPS Energy Calaveras Power Station
12940 U.S. Highway 181 South
San Antonio, Texas 78223

Prepared by:

AECOM
12640 Briarwick Drive, Suite 250
Austin, TX 78729
aecom.com

J.K. SPRUCE POWER PLANT
INITIAL INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN
TAC Title 30, Part 1, §352, Subchapter G, §352.821 and 40 CFR § 257.82
PLANT DRAINS POND (PDP)

Hydrologic and Hydraulic Capacity Criteria	Hydrologic and Hydraulic Capacity Documentation
30 TAC §352.821 Hydrologic and Hydraulic Capacity Requirements for Coal Combustion Residuals Surface Impoundments. *The commission adopts by reference 40 Code of Federal Regulations §257.82 (Hydrologic and hydraulic capacity requirements for CCR surface impoundments) as amended through the April 17, 2015, issue of the Federal Register (80 FR 21301).* ***40 CFR § 257.82 Hydrologic and hydraulic capacity requirements for CCR surface impoundments*** *(a) The owner or operator of an existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment must design, construct, operate, and maintain an inflow design flood control system as specified in paragraphs (a)(1) and (2) of this section.* *(1) The inflow design flood control system must adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in paragraph (a)(3) of this section.* *(2) The inflow design flood control system must adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood specified in paragraph (a)(3) of this section.* *(3) The inflow design flood is:* *(i) For a high hazard potential CCR surface impoundment, as determined under § 257.73(a)(2) or § 257.74(a)(2), the probable maximum flood;* *(ii) For a significant hazard potential CCR surface impoundment, as determined under § 257.73(a)(2) or § 257.74(a)(2), the 1,000-year flood;* *(iii) For a low hazard potential CCR surface impoundment, as determined under § 257.73(a)(2) or § 257.74(a)(2), the 100-year flood; or* *(iv) For an incised CCR surface impoundment, the 25-year flood.* *(b) Discharge from the CCR unit must be handled in accordance with the surface water requirements under §257.3-3.* *(c) Inflow design flood control system plan –* *(1) Content of the Plan. The owner or operator must prepare initial and periodic inflow design flood control system plans for the CCR unit according to the timeframes specified in paragraphs (c)(3) and (4) of this section. These plans must document how the inflow design flood control system has been designed and constructed to meet the requirements of this section. Each plan must be supported by appropriate engineering calculations. The owner or operator of the CCR unit has completed the inflow design flood control system plan when the plan has been placed in the facility's operating record as required by §257.105(g)(4).* *(2) Amendment of the Plan. The owner or operator of the CCR unit may amend the written inflow design flood control system plan at any time provided the revised plan is placed in the facility's operating record as required by §257.105(g)(4). The owner or operator must amend the written inflow design flood control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.* *(3) Timeframes for preparing the initial plan -* *(i) Existing CCR surface impoundments. The owner or operator must prepare the initial inflow design flood control system plan no later than October 17, 2016.* *(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner of operator must prepare the initial inflow design flood control system plan no later than the date of initial receipt of CCR in the CCR unit.* *(4) Frequency for revising the plan. The owner or operator must prepare periodic inflow design flood control system plans required by paragraph (c)(1)*	This Initial Inflow Design Flood Control System Plan (Plan) document has been prepared for the new Plant Drains Pond (PDP) at the J.K. Spruce Power Plant. CPS Energy is the operator of the J.K. Spruce Power Plant. This Plan has been prepared in accordance with the requirements prescribed in §257.82 of the Federal Register, Volume 80, Number 74, dated April 17, 2015 (U. S. Government, 2015) for hydrologic and hydraulic capacity requirements for existing and new Coal Combustion Residual (CCR) surface impoundments. Section §257.82 is reproduced in the column to the left for reference purposes. This document serves as the initial plan described in §257.82 (c). The PDP is a new CCR surface impoundment facility with two cells (identified as "west" and "east") with dikes on all sides. The site of the Pond is located on the east side of the existing landfill haul road and slopes from northwest to south east towards the cooling water canal. The maximum height of embankment, on the east embankment of the east cell, is approximately 15 feet. The inside crest elevation is 514.8 feet above mean sea level (amsl). The PDP only receives inflows from plant discharges and from direct precipitation. The maximum normal operating water surface elevation is set at 512.8 feet amsl, providing 2.0 feet of freeboard as available storage volume for the direct precipitation resulting from Inflow Design Flood (IDF). The elevation-area-capacity relationship information is provided in Table 1. Inflows to the PDP are pumped from the Plant. Wastewater in the PDP is pumped to the PD Pond Clarifiers and then flow by gravity to a distribution/sample box where it can be discharged through new internal Outfall 714 and onto the Station Discharge Canal #2 (Outfall 007) or returned to the PD Pond. In a separate certification dated (***TBD***), a qualified professional engineer certified that the Initial Hazard Potential Classification for the PDP has been conducted in accordance with the requirements of § 257.74(a)(2) and that the PDP has been categorized as a "Significant Hazard Potential CCR Surface Impoundment". Therefore, in accordance with § 257.82(a)(3)(ii), the inflow design flood is the 1,000-year flood. Figure 1, "Plant Drains Pond, Stormwater Diversion Schematic", depicts the drainage improvement to be made upgradient of the PDP site in order to route the 1,000-year flood around the Pond. There are two watersheds tributary to the Pond site, labelled as the "North Culvert Watershed" and "South Culvert Watershed", separated by the existing "North Inlet Channel" that directs flow from the North Culvert Watershed to the existing "North Culvert" under the haul road. The South Culvert Watershed drains south to the existing "South Culvert" under the haul road. The engineering calculations supporting the design of site improvements to route the 1,000-year flood around the new PDP are presented in Attachment 1, "Plant Drains Pond – Drainage Calculations". The improvements can be summarized as follows: North Culvert Watershed: 1. Increase capacity of the existing North Inlet Channel by widening the base and constructing a downstream berm. 2. Extend the North Inlet Channel by 200 feet to a new inlet for a new three-barrel, 24-inch CMP culvert under the haul road. 3. Construct a broad weir to spread channel flows that exceed the 10-year flood across the haul road and into a natural swale that will direct flows away from the PDP. 4. Remove existing North Culverts.

of this section every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first periodic plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. For purposes of this paragraph (c)(4), the owner or operator has completed an inflow design flood control system plan when the plan has been placed in the facility's operating record as required by §257.105(g)(4). *(5) The owner or operator must obtain a certification from a qualified engineer stating that the initial and periodic inflow design flood control system plans meet the requirements of this section.* *(d) The owner or operator of the CCR unit must comply with the record keeping requirements specified in §257.105(g), the notification requirements specified in §257.106(g), and the internet requirements specified in §257.107(g).*	South Culvert Watershed: 1. Construct a V-ditch parallel to, and on the west side of, the haul road to direct flows south, to the South Culvert, and to avoid localized ponding. 2. Leave as-is the existing South Culverts which have sufficient capacity to pass the peak runoff from the 1,000-year flood. 3. Construct a new two-barrel, 24-inch CMP culvert under the toe of the Clarifier complex on the south embankment of the PDP. 4. Grade the area between the two sets of culverts to direct surface flows towards the downgradient set. Haul Road: 1. The design of the PDP includes a one-foot-high Stormwater Diversion Berm, located between the haul road and the west embankment crest, which prevents incidental run-on into the Pond and collects and channels runoff from the haul road itself to the south and around the pond. Required Plan Contents 1. *"§ 257.82(a)(1) The inflow design flood control system must adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in paragraph (a)(3) of this section."* Runoff from upstream tributary basins is diverted around the surface impoundment by the enlarged North Inlet Channel, the new North Culverts, the Stormwater Diversion Berm along the west edge of the Pond, and the South Culvert system. There is no run-on inflow to the impoundment during the inflow design flood. 2. *"§ 257.82(a)(2) The inflow design flood control system must adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood specified in paragraph (a)(3) of this section."* The PDP is sized to contain the direct precipitation resulting from the 1,000-year, 24-hour precipitation event, estimated at 19.3 inches based on: "NOAA Atlas 14 Point Precipitation Frequency Estimates: TX." The tributary areas, including half the crest width of the perimeter berms are 1.95 and 1.96 acres for the west and east cells, respectively. The PDP freeboard depth is sufficient to manage the direct precipitation resulting from the inflow design flood without discharge. In addition, the central divider berm of the PDP is equipped with two shallow spillways (invert elevation of 514.3 feet amsl) to allow overflow of water from the more-full cell to the less-full cell during a major storm event. 3. *"§ 257.82(a)(3) The inflow design flood is: . . . (ii) For a significant hazard potential CCR surface impoundment, as determined under § 257.73(a)(2) or § 257.74(a)(2), the 1,000-year flood."* As identified in accordance with § 257.74(a)(2), the PDP has been categorized as a significant hazard potential CCR surface impoundment; therefore, the inflow design flood is the 1,000-year flood. 4. *"§ 257.82(b) Discharge from the CCR unit must be handled in accordance with the surface water requirements under §257.3-3."* The PDP provides hydraulic retention to buffer the flow to the PDP Clarifiers and allow the larger solids to settle. Wastewater flows by gravity within the Pond to the PDP Sump. Wastewater entering the sump is sent to the PDP Clarifiers for fine solids removal and final polishing. Clarified effluent flows by gravity to a distribution/sample box where it can be discharged through new internal Outfall 714 and onto the Station Discharge Canal #2 (Outfall 007) or returned to the PD Pond. Sampling and discharge at outfalls will be in accordance with the guidelines outlined within the TPDES permit. 5. *"§ 257.82(c)(1) Content of the Plan. The owner or operator must prepare initial and periodic inflow design flood control system plans for the CCR unit according to the timeframes specified in paragraphs (c)(3) and (4) of this section. These plans must document how the inflow design flood control system has been designed and constructed to meet the requirements of this section. Each plan must be supported*

	by appropriate engineering calculations. The owner or operator of the CCR unit has completed the inflow design flood control system plan when the plan has been placed in the facility's operating record as required by §257.105(g)(4)." This Plan describes how the system has been designed and constructed to meet the requirement to manage the designated inflow design flood. The engineering calculations supporting the design of site improvements to route the 1,000-year flood around the new PDP are presented in Attachment 1, "Plant Drains Pond – Drainage Calculations". This *Initial Inflow Design Flood Control Plan* serves as the initial plan prescribed herein. 6. *"§ 257.82(c)(2) Amendment of the Plan. The owner or operator of the CCR unit may amend the written inflow design flood control system plan at any time . . . whenever there is a change in conditions that would substantially affect the written plan in effect."* CPS Energy acknowledges this requirement. 7. *"§ 257.82(c)(3) Timeframes for preparing the initial plan - . . . (ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner of operator must prepare the initial inflow design flood control system plan no later than the date of initial receipt of CCR in the CCR unit."* The PDP is a new CCR impoundment at the J.K. Spruce Power Plant. The Initial Inflow Design Flood Control System Plan is included herein. CPS Energy acknowledges this requirement. 8. *"§ 257.82(c)(4) Frequency for revising the plan. The owner or operator must prepare periodic inflow design flood control system plans . . . every five years. . . the owner or operator has completed an inflow design flood control system plan when the plan has been placed in the facility's operating record as required by §257.105(g)(4)."* CPS Energy acknowledges this requirement. 9. *"§ 257.82(c)(5) The owner or operator must obtain a certification from a qualified engineer stating that the initial and periodic inflow design flood control system plans meet the requirements of this section."* Certification by a professional engineer is included as an attachment to this document. 10. *"§ 257.82(d) The owner or operator of the CCR unit must comply with the record keeping requirements specified in §257.105(g), the notification requirements specified in §257.106(g), and the internet requirements specified in §257.107(g)."* CPS Energy acknowledges this requirement.

Certification Statement 40 CFR § 257.82(c)(5) – Initial Inflow Design Flood Control System Plan for a New CCR Surface Impoundment

CCR Unit: CPS Energy; J.K. Spruce Power Plant; Plant Drains Pond

I, Alexander W. Gourlay, being a Registered Professional Engineer in good standing in the State of Texas, do hereby certify, to the best of my knowledge, information, and belief, that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the information contained in the initial inflow design flood control system plan dated ***TBD*** meets the requirements of 40 CFR § 257.82.

Alexander W. Gourlay, P.E.
Printed Name

Date

This document is released for the purpose of interim review under the authority of Alexander W. Gourlay, Texas PE No. 143733, on June 29, 2022. This document is not to be used for construction purposes.

FIGURE 1

PLANT DRAINS POND –

STORMWATER DIVERSION SCHEMATIC

Last saved by: SAMIEADELA(2022-06-28) Last Plotted: 2022-06-29
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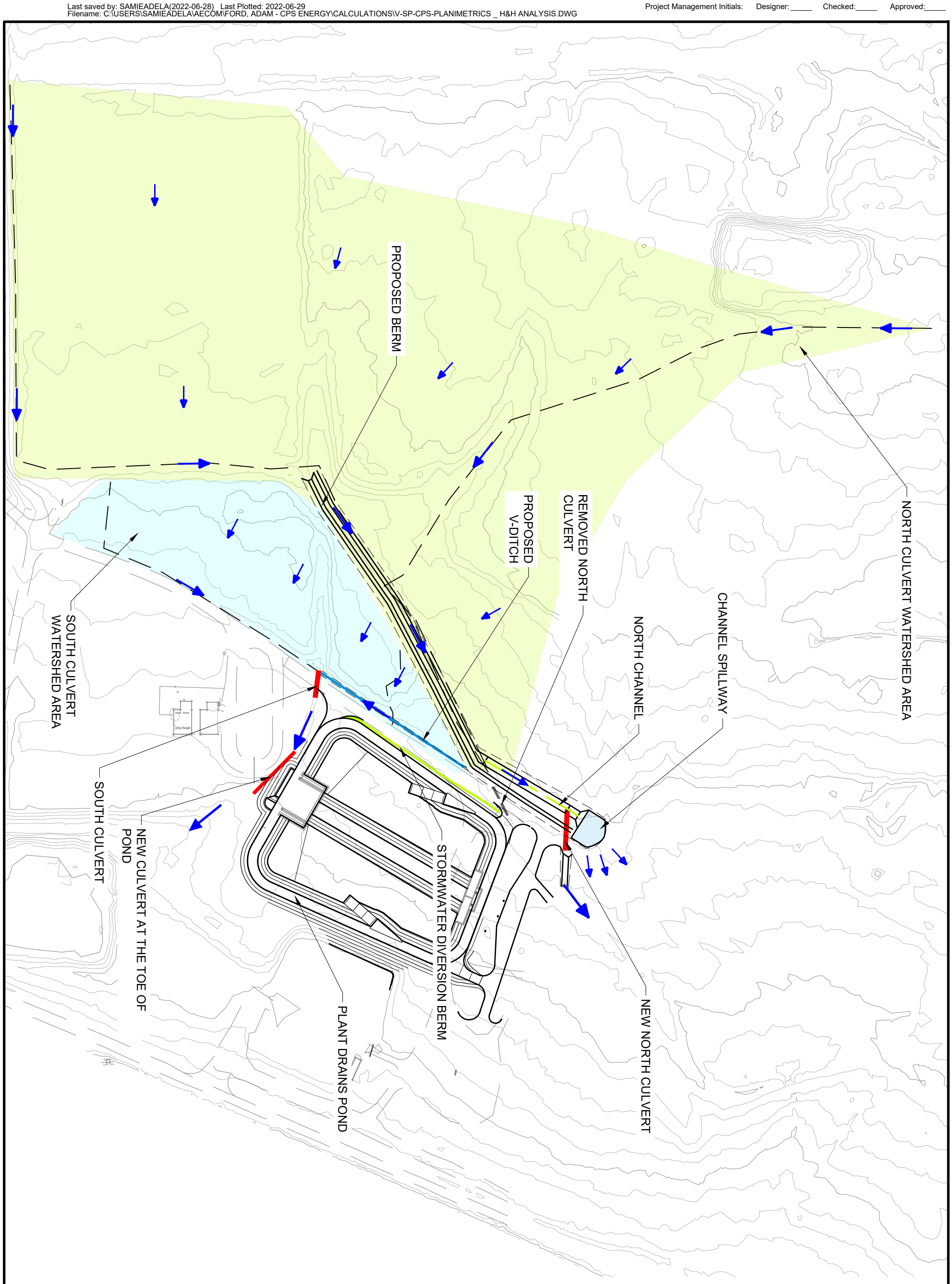
Project Management Initials: Designer:_____ Checked:_____ Approved:_____ ANSI B 1



Issue Status: SUBMITTAL

PLANT DRAINS POND
STORMWATER DIVERSION SCHEMATIC
J K SPRUCE POWER PLANT
AECOM PROJECT NO. 60566130 Date: 2022-06-24

AECOM

Figure: 1

TABLE 1

PLANT DRAINS POND –

ELEVATION-AREA-CAPACITY RELATIONSHIP

TABLE 1 -
ELEVATION-AREA-CAPACITY RELATIONSHIP
J.K. SPRUCE PLANT DRAINS POND

CPS Spruce Drains Pond Project
Pond Capacities for IFC 5/4/22

AECOM Project No. 60566130
Prepared by Alan Proctor 05/09/22
Checked by Sandy Gourlay 05/10/22

POND:	ELEV.	AREA (SF)	AREA (AC)	ELEVATION DIFFERENCE (FT.)	INTERVAL VOLUME (AC-FT.)	CUMULATIVE VOLUME (AC-FT.)	
WEST CELL	507.11	90	0.00	-	-	0.00	Bottom of pond at sump
	508.00	36161	0.83	0.9	0.37	0.37	
	509.00	47107	1.08	1.0	0.96	1.33	
	510.00	50932	1.17	1.0	1.13	2.45	
	511.00	54850	1.26	1.0	1.21	3.67	
	512.00	58941	1.35	1.0	1.31	4.97	
	512.80	61367	1.41	0.8	1.10	6.08	Max normal operating level
	513.00	62952	1.45	0.2	0.29	6.36	
	514.00	66981	1.54	1.0	1.49	7.85	
	514.30	68518	1.57	0.3	0.47	8.32	Spillway invert
	514.80	72968	1.68	0.5	0.81	9.13	Crest Inside Elevation
	515.00	84760	1.95	0.2	0.36	9.49	Crest road crown
EAST CELL	507.11	90	0.00	-	-	0.00	Bottom of pond at sump
	508.00	36087	0.83	0.9	0.37	0.37	
	509.00	47096	1.08	1.0	0.95	1.32	
	510.00	51024	1.17	1.0	1.13	2.45	
	511.00	55040	1.26	1.0	1.22	3.67	
	512.00	59226	1.36	1.0	1.31	4.98	
	512.80	61802	1.42	0.8	1.11	6.09	Max normal operating level
	513.00	63327	1.45	0.2	0.29	6.38	
	514.00	67441	1.55	1.0	1.50	7.88	
	514.30	68972	1.58	0.3	0.47	8.35	Spillway invert
	514.80	72968	1.68	0.5	0.81	9.16	Crest Inside Elevation
	515.00	85429	1.96	0.2	0.36	9.53	Crest road crown

ATTACHMENT A

AECOM, 2022. *Plant Drains Pond – Drainage Calculations*.

Prepared for: CPS Energy

AECOM Job No. 60566130, June 2022.

Project	Job No.
Spruce Plant Drains Project	60566130
Client	**Department/Discipline**
CPS Energy	Civil
Software Name	
FlowMaster, HY8	

Calculation Rev. No.	Originator Self Check (name and signature)	Reviewer/Checker (name and signature)	Independent Peer Reviewer (if used/required) (name & signature)	Approver (name & signature)
1	Alireza Samieadel	Todd Ringsmuth		Alexander Gourlay

Add rows as required

Calculation Objective:
Determine the dimensions for channels and culverts utilized to divert stormwater flows from the 1,000-year storm event around the Plant Drains Pond. The diversion system includes the following: North Channel, North Culverts, South Culverts, South Area Channel, and Pond Culverts. Peak flows will be estimate for each component of the diversion system and used to size the channels and culverts.

Calculation Methodology:
NOAA Precipitation data is utilized to develop precipitation depths and intensities. The Rational Method and TxDOT Hydraulics Manual are used to estimate peak flows. FlowMaster and HY8 computer programs were used to estimate channel and culvert capacities.

References / Inputs/ Field Data:
See calculations

Assumptions: (Include comments on need to revise calculations after more data is collected/confirmed and/or after assumptions have been verified.)
See calculations

Conclusions including confirmations to be obtained:
See calculations

This calculation is complete and ready for Discipline Review:

Alireza Samieadel		06/16/2022
Originator Name	**Signature**	**Date**

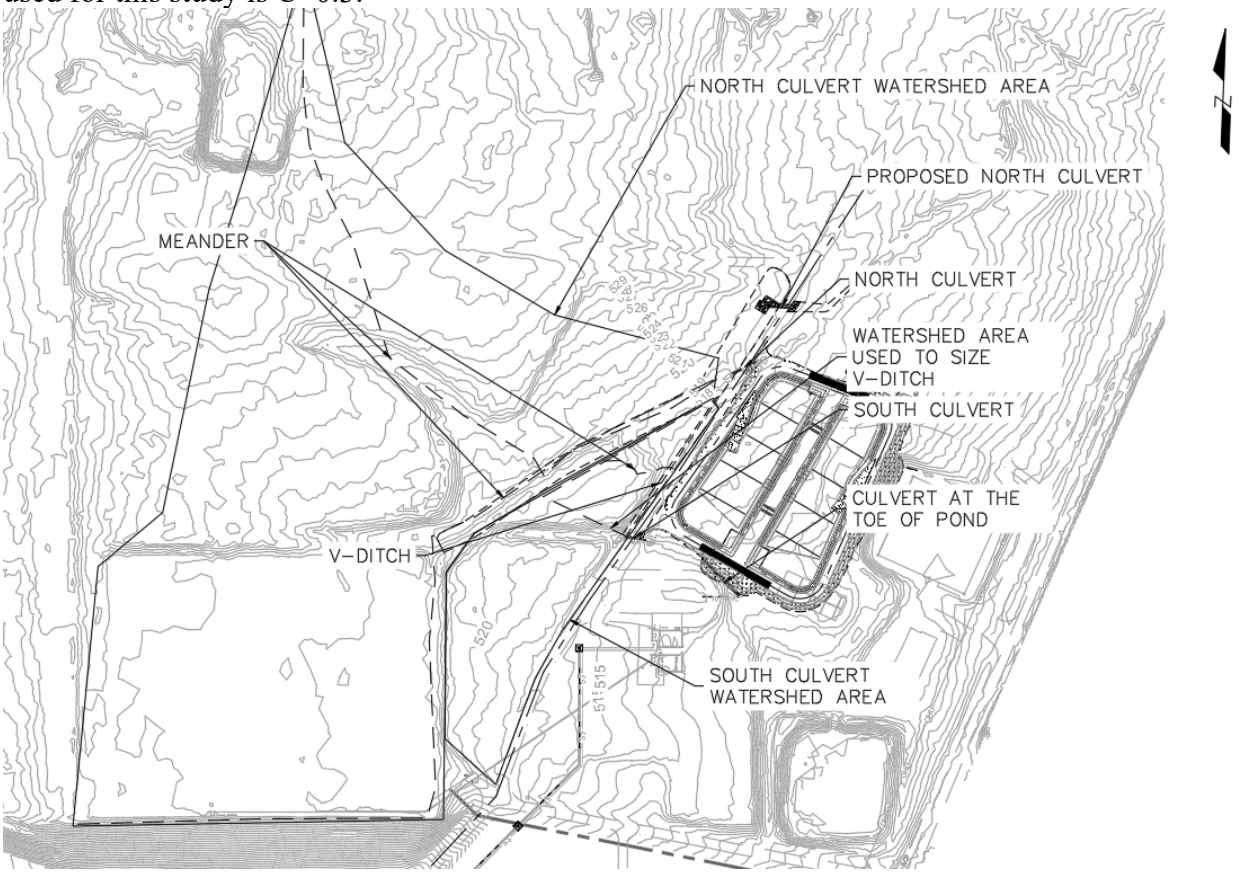
Background and Goal

The purpose of this calculation is to develop sizes for channels and culvert utilized to divert stormwater flows from the 1,000-year storm event around the proposed Plant Drains Pond. Stormwater currently drains from west to east and is managed by the existing North Channel, North Culvert, and South Culverts. With the construction of the proposed Plant Drains Pond, several improvements are required to divert the design stormwater flows around the pond. Those improvements will consist of the following:

- Modifying the North Channel to increase the channel capacity.
- Installing new North Culverts to convey flow in the North Channel under the existing road. The existing North Culverts will be blocked or removed.
- Constructing a new channel (v-ditch) along the roadway in the South Culvert area. The new channel is required to convey stormwater to the existing South Culverts.
- Constructing new culverts and channelization at the south edge of the Plant Drains Pond to convey stormwater from the existing South Culverts to the east.

Site characteristics

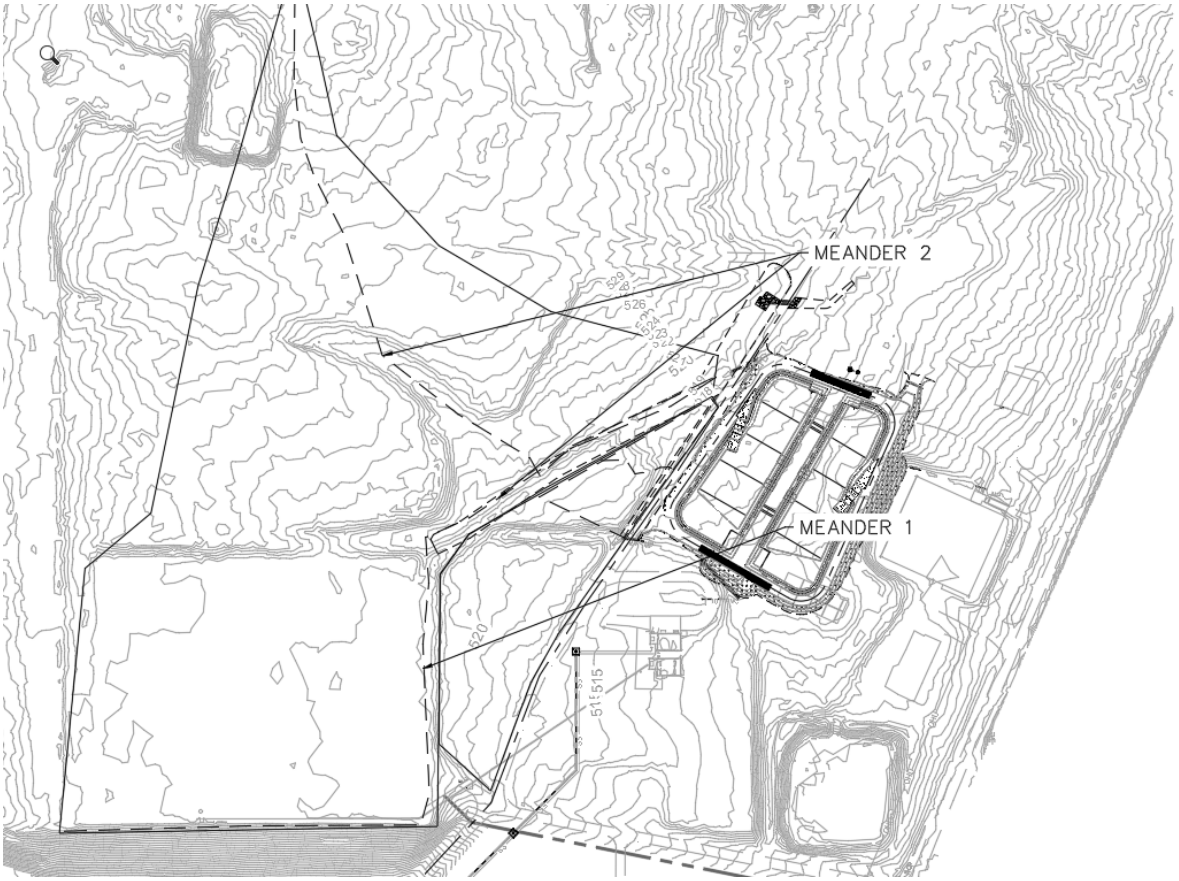
The area west of the pond consists of the North Culvert and South Culvert Watersheds with areas of 30.2 acres and 4.5 acres, respectively. The area tributary to the v-ditch within the South Culvert Watershed is 1.15 acres. The runoff coefficient is a weighted average of sandy soil (substation) with average slope (C=0.1-0.15) and cultivated land (C=0.2-0.5). The weighted average runoff coefficient used for this study is C=0.3.




NORTH CULVERT WATERSHED AREA
PROPOSED NORTH CULVERT
MEANDER
NORTH CULVERT
WATERSHED AREA
USED TO SIZE
V-DITCH
SOUTH CULVERT
CULVERT AT THE
TOE OF POND
V-DITCH
520
515
SOUTH CULVERT
WATERSHED AREA

1. North Culvert Watershed Peak Flow Estimation

1.1 Time of concentration



Using Kirpich Method, time of concentration can be calculated using the watershed information. Two meanders were evaluated, as shown below.

Meander 1	
Elevation Drop	From 524.85’ to 517.66
Length	2230 ft
Slope	0.0032 ft/ft

Meander 2	
Elevation Drop	From 542’ to 518’
Length	1856.6 ft
Slope	0.013 ft/ft

The Kirpich Method formula is as follows:

$$t_{ch} = KL^{0.770}S^{-0.385}$$

Equation 4-15.

Where:

t_{ch} = the time of concentration, in minutes

K = a units conversion coefficient, in which K = 0.0078 for traditional units and K = 0.0195 for SI units

L = the channel flow length, in feet or meters as dictated by K

S = the dimensionless main-channel slope

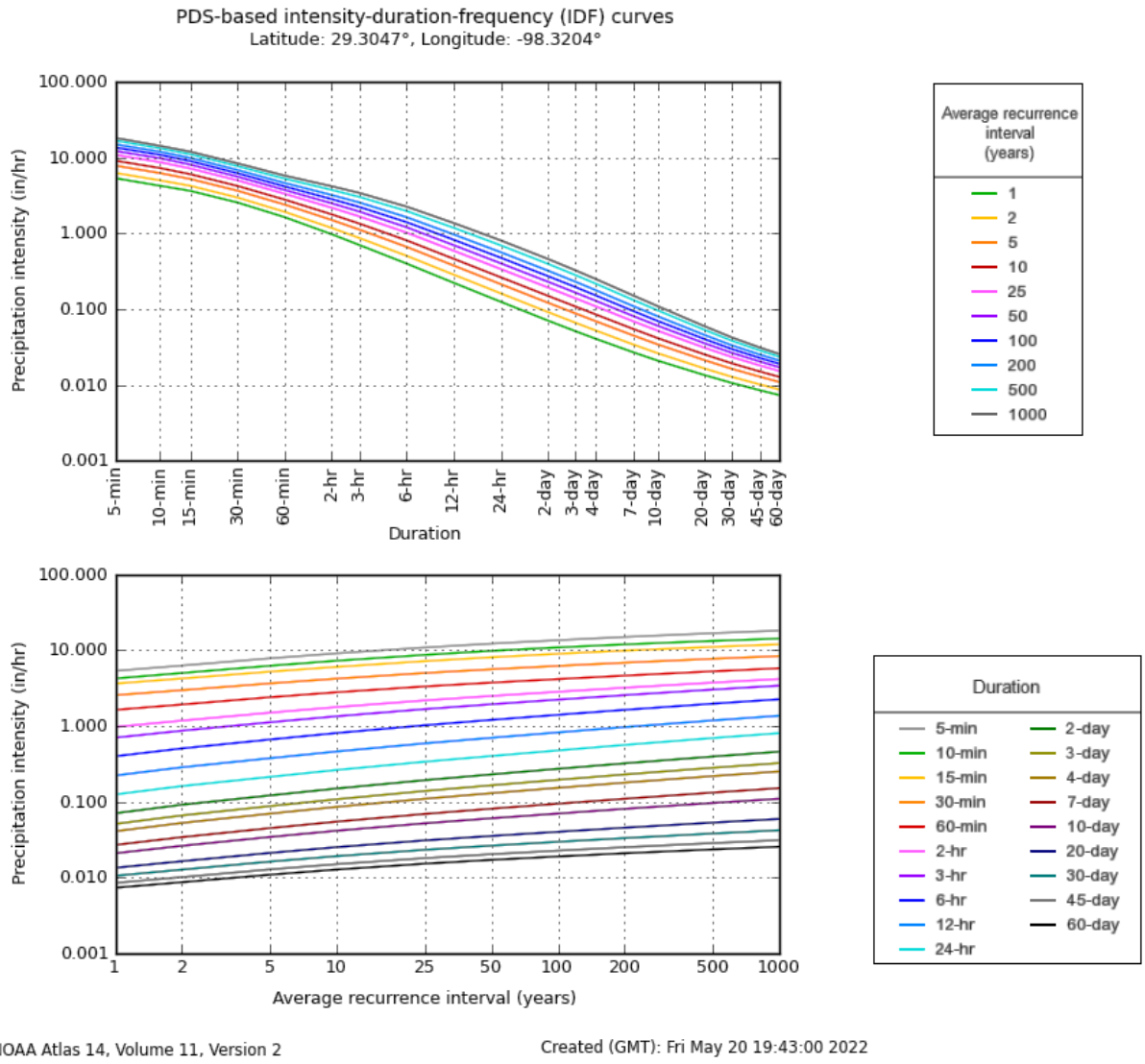
From Hydraulic Design Manual published by TxDOT 2019
http://onlinemanuals.txdot.gov/txdotmanuals/hyd/hyd.pdf

Results are as follow:

Meander	Tc (min)
1	26.97
2	14.08

1.2 Rainfall Intensity

Using data obtained from NOAA's national weather service (https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=tx) for the coordinates of the, the following figures are IDF Curves 9 (intensity-duration-frequency).



For the calculated time of concentration, the precipitation intensities were estimated for the 10-year and 1,000-year storm events. The data for the 10-year storm event will be used to evaluate alternate culvert capacities and sizing at the North Culvert.

1,000-year Precipitation Intensity

Meander	Tc (min)	Precipitation intensity (in/hr)
1	26.97	9.6
2	14.08	12.5

10-year Precipitation Intensity

Meander	Tc (min)	Precipitation intensity (in/hr)
1	26.97	3.8
2	14.08	5.3

1.3 Peak Flow Estimation

The Rational Method formula estimates the peak flowrate at a specific location in a watershed as a function of the drainage area, runoff coefficient, and mean rainfall intensity for a duration equal to the time of concentration. The Rational Method formula is:

$$Q = \frac{CIA}{Z}$$

Equation 4-20.

Where:

Q = maximum rate of runoff (cfs or m^3/sec.)

C = runoff coefficient

I = average rainfall intensity (in./hr. or mm/hr.)

A = drainage area (ac or ha)

Z = conversion factor, 1 for English, 360 for metric

From Hydraulic Design Manual published by TxDOT 2019
http://onlinemanuals.txdot.gov/txdotmanuals/hyd/hyd.pdf

In this report, units used are A(ac), i(in/hr) and Q(cfs).

The peak flowrates were estimated as follows:

1,000-year Peak Flow

Meander	Runoff Coefficient	Tc (min)	Precipitation intensity (in/hr)	Area (ac)	Peak Flow (cfs)
1	0.3	26.97	9.6	30.2	86
2	0.3	14.08	12.5	30.2	113

10-year Peak Flow

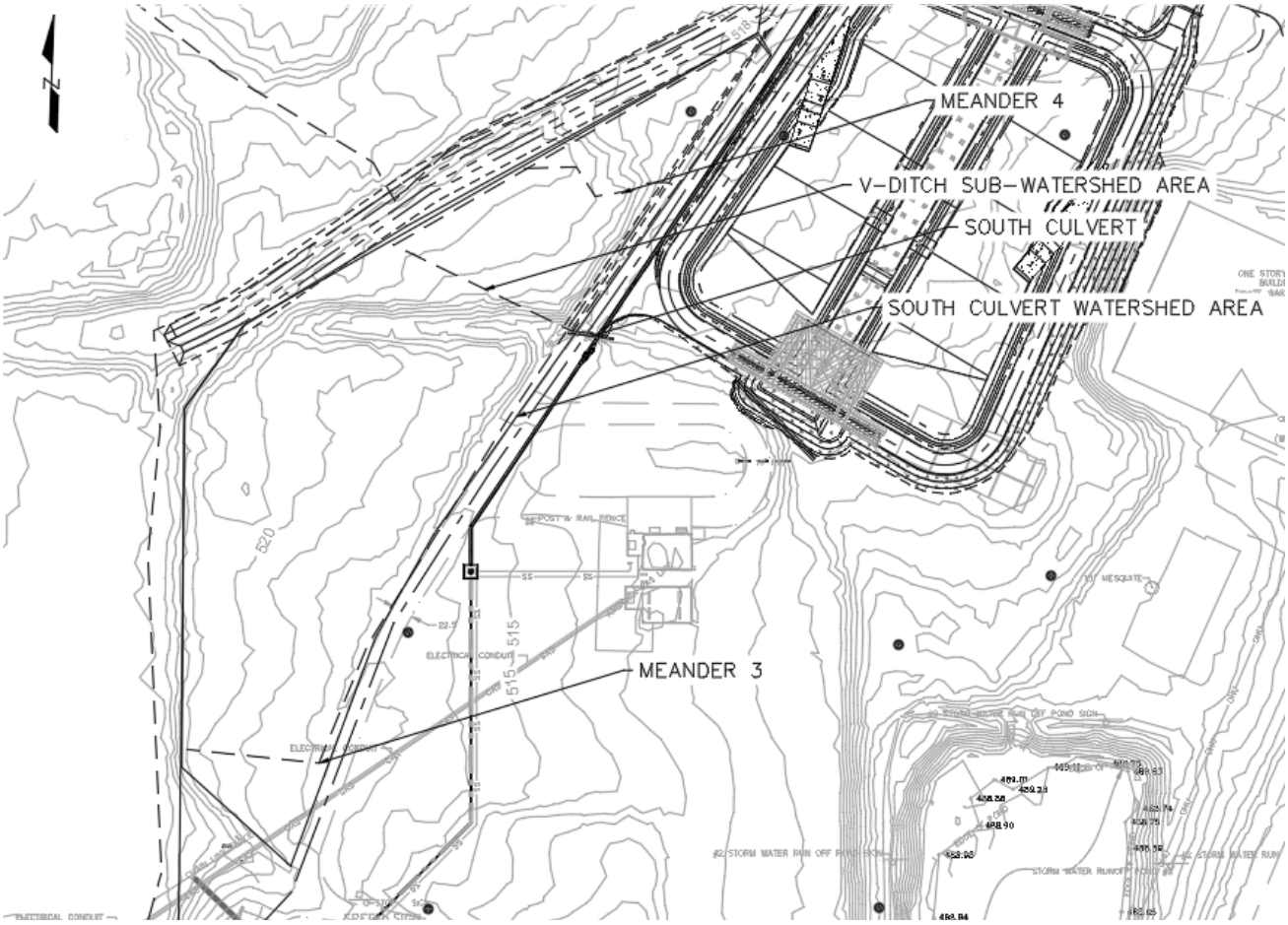
Meander	Runoff Coefficient	Tc (min)	Precipitation intensity (in/hr)	Area (ac)	Peak Flow (cfs)
1	0.3	26.97	3.8	30.2	34
2	0.3	14.08	5.3	30.2	48

For each storm event, the larger estimated peak flow will be used for design: 113 cfs for the 1,000-year storm event and 48 cfs for the 10-year storm event.

2. South Culvert Watershed Peak Flow Estimation

This calculation estimates peak flows for the South Culvert Watershed and the portion of that watershed that drains to the proposed v-ditch located on the west side of the road. The v-ditch will capture and convey stormwater from and area north of the South Culverts to prevent overtopping of the road.

2.1 Time of concentration



Using Kirpich Method, time of concentration can be calculated using the watershed information.

Meander 3 (South Culvert Watershed)	
Elevation Drop	From 517.7 to 514.5
Length	651
Slope	0.005 ft/ft
Time of Concentration based on Kirpich Method	8.8 min >> Use 10 min

Meander 4 (V-Ditch Sub-Watershed)	
Elevation Drop	From 522 to 515.6
Length	180
Slope	0.004 ft/ft
Time of Concentration based on Kirpich Method	3.6 min >> Use 10 min

The time of concentration is limited to no less than 10 minutes for this calculation because shorter times give unrealistic intensities. Many intensity-duration-frequency curves are constructed from curve-smoothing equations and not based on actual data collected at intervals shorter than 15 to 30 minutes. Making the curves shorter involves extrapolation, which is not reliable. Rainfall takes time to generate runoff within a defined basin. [https://wsdot.wa.gov/publications/manuals/fulltext/M23-03/Chapter2.pdf]

2.2 Rainfall Intensity

Rainfall intensity was estimated using the data and methodology presented in section 1.2. For the calculated time of concentration, a precipitation intensity of 11.6 in/hr was estimated for the 1,000-year storm event for a time of concentration of 10 minutes.

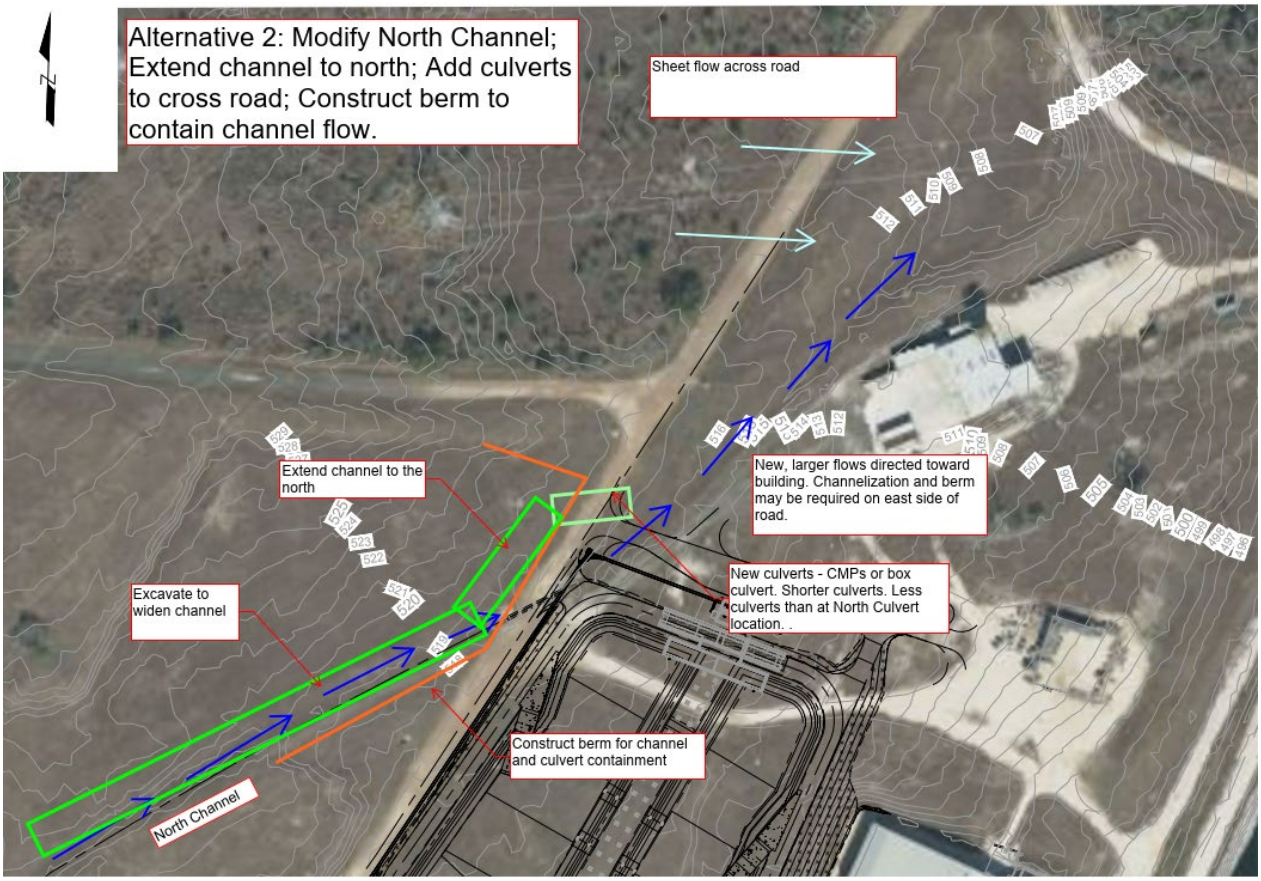
2.3 Peak Flow Estimation

The peak flow was estimated using the Rational Method formula, as discussed in Section 1.3. The estimated peak flows for the referenced watersheds are as follows:

- South Culvert Watershed peak flow is 15.7 cfs (Q=CIA=0.3x11.6x4.5=15.7 cfs)
- V-Ditch Watershed peak flow is 4.0 cfs (Q=CIA=0.3x11.6x1.15= 4.0 cfs)

3. North Culvert Watershed Channel and Culvert Sizing

The stormwater from the North Culvert Watershed is captured by the existing North Channel and conveyed to the existing North Culverts. With the construction of the Plant Drains Pond, the existing North Culverts with be removed or blocked and the culverts will be relocated north of the pond. The North Channel will be improved and extended to the new culvert location. The North Channel is designed to contain and convey the 1000-year peak flow to the new culverts. At the culvert location (end of channel on the west side of the road), the 10-year peak flow will pass through the culverts with no overtopping of the channel. For the 1,000-year storm event, flow above the 10-year peak flow will pass through a "spillway" to the north and cross over the road to the existing channel east of the road.



3.1 North Culvert Hydraulics Analysis

The design will consist of three 24-inch diameter corrugated metal pipe (CMP) culverts crossing from the North Channel to the east beneath the road. The inlet invert elevation will be 515.25 ft; outlet invert elevation will be 515.0 ft, and pipe length is 90 ft. The HY8 computer program was utilized to evaluate the hydraulics. The estimated headwater elevation for the 10-year peak flow is 518.99 ft, as shown on the following table.

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	515.25	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
5.00	5.00	516.02	0.655	0.770	2-M2c	0.689	0.444	0.444	0.272	3.208	1.678
10.00	10.00	516.36	0.948	1.109	2-M2c	1.017	0.636	0.636	0.408	3.881	2.146
15.00	15.00	516.64	1.188	1.388	2-M2c	1.322	0.783	0.783	0.516	4.385	2.465
20.00	20.00	516.89	1.409	1.644	2-M2c	1.717	0.915	0.915	0.608	4.757	2.713
25.00	25.00	517.14	1.620	1.893	2-M2c	2.000	1.028	1.028	0.690	5.124	2.919
30.00	30.00	517.41	1.831	2.155	7-M2c	2.000	1.126	1.126	0.764	5.487	3.096
35.00	35.00	517.75	2.049	2.497	7-M2c	2.000	1.222	1.222	0.833	5.803	3.251
40.00	40.00	518.19	2.280	2.935	7-M2c	2.000	1.311	1.311	0.898	6.107	3.390
45.00	45.00	518.68	2.532	3.427	7-M2c	2.000	1.392	1.392	0.958	6.428	3.516
48.00	48.00	518.99	2.694	3.743	7-M2c	2.000	1.437	1.437	0.993	6.621	3.587

Therefore, to contain the 10-year peak flow within the channel, the “spillway” elevation will be set at elevation 519.0 ft. The North Channel will be constructed with an invert elevation matching the culvert inlet invert elevation (515.25 ft) at the culvert location followed by a constant slope of 0.01 ft/ft towards the north and spillway point. The new channel segment will be excavated to have a 20 ft bottom width, 3.5:1 side slope on both sides, and constructed with a constant slope to match the existing channel bottom elevation. Downstream of the culverts, a channel will be excavated to convey flow from the new culverts into the existing channel east of the road.

The right bank of the channel will also be formed by an earthen berm. The crest elevation of that berm will be based on elevation of flow through the “spillway” using the 1,000-year peak flow. Based on the channel dimensions, the “spillway” will have a crest length of 46 ft. The “spillway” is analyzed as a broad-crested weir using FlowMaster. Assuming the culverts convey the 48 cfs (the 10-year peak flow) during the 1,000-year storm event, the resulting “spillway” flow of 65 cfs (113 cfs minus 48 cfs) results in a headwater elevation of 519.6 ft, as shown in the following figure.

Project Description		
Solve For	Headwater Elevation	
Input Data		
Discharge	65.00	cfs
Crest Elevation	519.00	ft
Tailwater Elevation	518.00	ft
Crest Surface Type	Gravel	
Crest Breadth	30.00	ft
Crest Length	46.0	ft
Results		
Headwater Elevation	519.64	ft
Headwater Height Above Crest	0.64	ft
Tailwater Height Above Crest	-1.00	ft
Weir Coefficient	2.74	ft^(1/2)/s
Submergence Factor	1.000	
Adjusted Weir Coefficient	2.74	ft^(1/2)/s
Flow Area	29.6	ft²
Velocity	2.20	ft/s
Wetted Perimeter	47.3	ft
Top Width	46.00	ft

To prevent overtopping of the channel during the 1,000-year storm event, the berm will be set at elevation 521.25 ft, which provides 1.65 feet of freeboard at the “spillway” location.

3.2 North Channel Hydraulics Analysis

The North Channel needs to have the capacity to contain and convey a 1,000-year peak flow. The existing channel slope was estimated to be 0.007 ft/ft using LiDAR topographic data. The existing channel bottom width varies. For design analysis, a bottom width of 8 ft was used. The design side slopes will be 3.5:1. The Manning’s Roughness Coefficient for the grass-lined channel is estimated to be 0.035. Utilizing FlowMaster, the flow depth was estimated to be 22.5 inches (1.9 ft), as shown on the figure below.

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.035
Channel Slope	0.007 ft/ft
Left Side Slope	3.500 H:V
Right Side Slope	3.500 H:V
Bottom Width	8.00 ft
Discharge	113.30 cfs

Results	
Normal Depth	22.5 in
Flow Area	27.3 ft²
Wetted Perimeter	21.7 ft
Hydraulic Radius	15.1 in
Top Width	21.13 ft
Critical Depth	17.7 in
Critical Slope	0.018 ft/ft
Velocity	4.15 ft/s
Velocity Head	0.27 ft
Specific Energy	2.14 ft
Froude Number	0.643
Flow Type	Subcritical

The channel should be designed to a depth of 3.0 ft, which provides 1.1 ft of freeboard. At existing channel locations, the design depth can be achieved by increasing the existing berm height. At new channel locations, the design depth can be achieved with a combination of excavation and berm construction. The berm must be constructed with a minimum elevation of 521.25 ft to contain the "spillway" overflow depth, which may result in channel depths greater than 3 ft in the northern portions of the North Channel.

4. South Culvert Watershed Channel and Culvert Sizing

The stormwater from the South Culvert Watershed is directed to the existing South Culverts. With the construction of the Plant Drains Pond, the area downstream of the South Culverts will be modified and require channelization of flows at the toe of the pond embankment and installation of culverts to convey stormwater east of the pond embankment. In addition, a v-ditch will be constructed west of the road to convey stormwater to the existing south culverts.

4.1 V-Ditch Channel Hydraulics Analysis:

The v-ditch channel on the west side of the road needs to have the capacity to contain and convey a 1,000-year peak flow. The existing channel slope was estimated to be 0.008 ft/ft using LiDAR topographic data. The design analysis evaluated a v-ditch (zero bottom width) and bottom widths of 2 and 4 ft. The design side slopes will be 3.5:1. The Manning's Roughness Coefficient for the grass-lined channel is estimated to be 0.035. Utilizing FlowMaster, the following flow depths were estimated:

Bottom Width (ft)	Normal Depth (inches)
0	9.3
2	6.6
4	5

The design will utilize a v-ditch (zero bottom width) and a depth of 2 ft, which provides over 1 ft of freeboard. The FlowMaster data file for the v-ditch hydraulic analysis is shown below.

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Roughness Coefficient	0.035	
Channel Slope	0.008	ft/ft
Left Side Slope	3.500	H:V
Right Side Slope	3.500	H:V
Bottom Width	0.00	ft
Discharge	4.00	cfs

Results		
Normal Depth	9.3	in
Flow Area	2.1	ft²
Wetted Perimeter	5.6	ft
Hydraulic Radius	4.5	in
Top Width	5.42	ft
Critical Depth	7.3	in
Critical Slope	0.028	ft/ft
Velocity	1.90	ft/s
Velocity Head	0.06	ft
Specific Energy	0.83	ft
Froude Number	0.539	
Flow Type	Subcritical	

GVF Input Data		
Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data		
Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Downstream Velocity	0.00	ft/s
Upstream Velocity	0.00	ft/s
Normal Depth	9.3	in
Critical Depth	7.3	in
Channel Slope	0.008	ft/ft
Critical Slope	0.028	ft/ft

4.2 South Culvert Hydraulic Analysis

The existing south culverts consist of one 24-inch and one 30-inch diameter CMP culverts. The 1,000-year peak flow is estimated to be 15.7 cfs (see Section 2.3). The details of the culverts are provided below.

Culvert Data Summary - Culvert 1

Barrel Shape: Circular
Barrel Diameter: 2.50 ft
Barrel Material: Corrugated Steel
Embedment: 0.00 in
Barrel Manning's n: 0.0150
Culvert Type: Straight
Inlet Configuration: Thin Edge Projecting
Inlet Depression: NONE

Culvert Data Summary - Culvert 2

Barrel Shape: Circular
Barrel Diameter: 2.00 ft
Barrel Material: Corrugated Steel
Embedment: 0.00 in
Barrel Manning's n: 0.0150
Culvert Type: Straight
Inlet Configuration: Thin Edge Projecting
Inlet Depression: NONE

Site Data

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 511.10 ft
Outlet Station: 50.00 ft
Outlet Elevation: 510.39 ft
Number of Barrels: 1

The intent of this analysis is to verify that no changes are required for the South Culverts. The estimated headwater elevation for the 1,000-year peak flow is 512.6 ft, as shown on the following table. This headwater elevation is below the top of the culverts. The existing culverts have sufficient capacity to convey the 1,000-year peak flow without overtopping the road.

Summary of Culvert Flows at Crossing: South Culvert

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 2 Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
511.10	0.00	0.00	0.00	0.00	0
511.52	1.60	0.75	0.85	0.00	5
511.71	3.20	1.50	1.69	0.00	6
511.86	4.80	2.24	2.55	0.00	5
511.98	6.40	2.98	3.41	0.00	4
512.10	8.00	3.73	4.25	0.00	4
512.20	9.60	4.45	5.14	0.00	4
512.30	11.20	5.16	6.03	0.00	3
512.39	12.80	5.87	6.93	0.00	3
512.48	14.40	6.57	7.83	0.00	3
512.56	**15.70**	**7.14**	**8.56**	**0.00**	**3**
514.54	48.64	20.01	28.63	0.00	Overtopping

4.3 South Culvert Downstream Channel Hydraulic Analysis

The channel between South Culvert and the new culvert at the toe of pond embankment was modeled using FlowMaster. The channel right bank will be formed by natural ground and left bank will be formed by the new pond embankment slope (looking downstream). The details of the channel configuration, input data, and model results are shown below.

Input Data	
Channel Slope	0.003 ft/ft
Discharge	15.70 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	513.41
0+34	513.66
0+50	513.41
0+99	512.00
0+99	511.98
1+00	512.00
1+08	512.80
1+10	512.89
1+15	514.30
1+25	514.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 513.41)	(1+25, 514.50)	0.035

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	9.1 in
Elevation Range	512.0 to 514.5 ft
Flow Area	12.9 ft²
Wetted Perimeter	33.9 ft
Hydraulic Radius	4.6 in
Top Width	33.88 ft
Normal Depth	9.1 in
Critical Depth	6.0 in
Critical Slope	0.028 ft/ft
Velocity	1.22 ft/s
Velocity Head	0.02 ft

CPS Channel Design.fm8
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FlowMaster [10.02.00.01]
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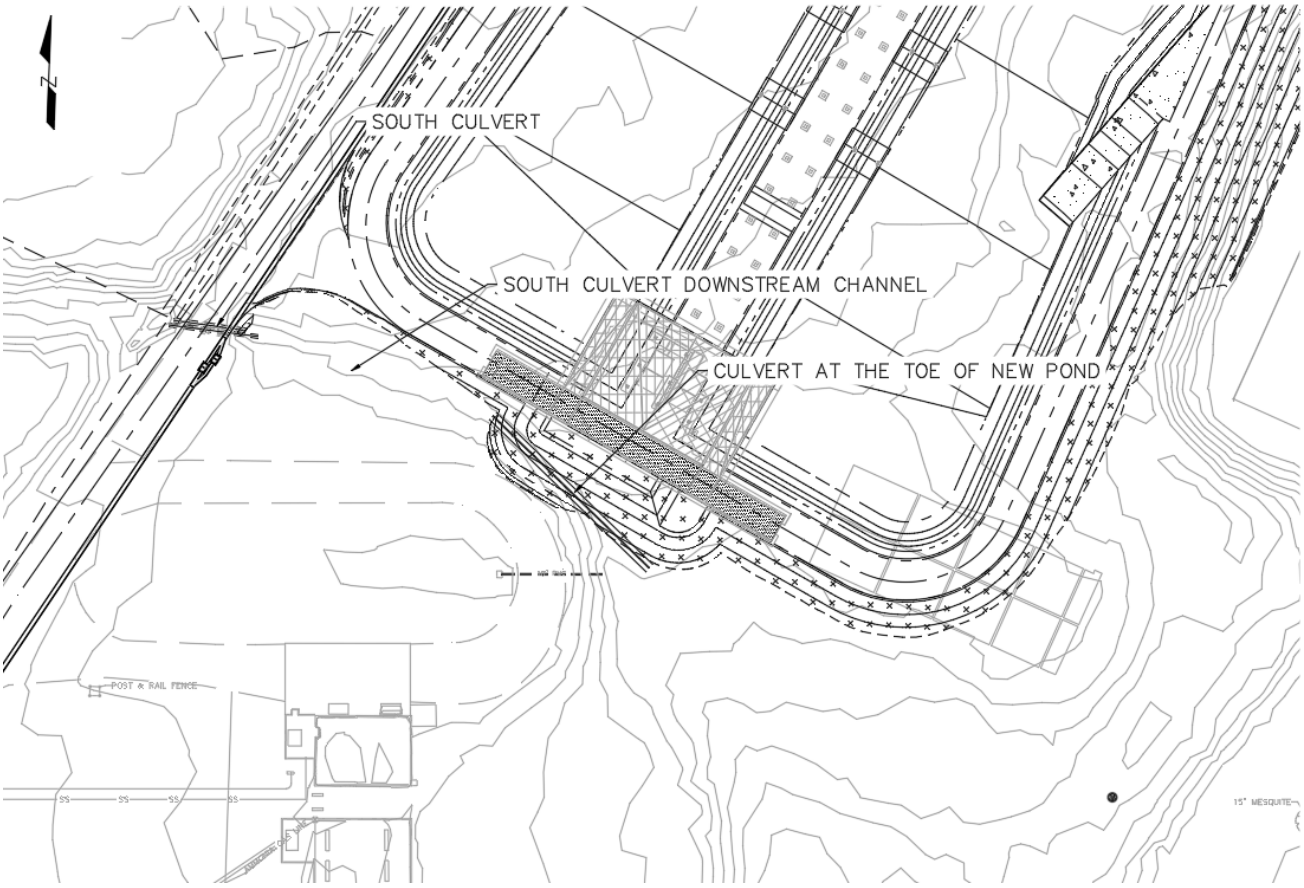
The results show an estimated water depth of 9.1 inches. The constructed pond embankment crest will be at elevation of 514.5 ft. The existing roadway to the south is at elevation 513.0 ft. The highest channel invert elevation is 510.4 ft (the same elevation as the outlet of the South Culverts). Therefore, the maximum water surface elevation in the channel during the 1,000-year storm event will be 511.15 ft, which results in approximately 3.2 ft of freeboard to the pond embankment crest.

4.4 Pond Culvert Hydraulic Analysis

The culverts to be installed at the toe of the pond embankment will consist of 2 24-inch CMPs to drain the stormwater from the South Culverts to the east of the pond (see figure below). The 1,000-year peak flow is estimated to be 15.7 cfs (see Section 2.3). The details of the culverts are provided below.



Site Data

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 510.00 ft

Outlet Station: 120.00 ft

Outlet Elevation: 509.00 ft

Number of Barrels: 2

Culvert Data Summary

Barrel Shape: Circular

Barrel Diameter: 2.00 ft

Barrel Material: Corrugated Steel

Embedment: 0.00 in

Barrel Manning's n: 0.0240

Culvert Type: Straight

Inlet Configuration: Thin Edge Projecting

Inlet Depression: NONE

The analysis shows that the headwater elevation for the new culverts is 511.67 ft, as shown on the following table. The headwater elevation is below the top of the culverts and below the pond embankment crest (elevation 514.5 ft), and below the adjacent roadway (elevation 513 ft).

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	510.00	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
1.60	1.60	510.49	0.442	0.488	2-M2c	0.361	0.302	0.302	0.223	2.683	0.665
3.20	3.20	510.70	0.638	0.700	2-M2c	0.506	0.435	0.435	0.336	3.174	0.853
4.80	4.80	510.87	0.794	0.867	2-M2c	0.624	0.534	0.534	0.425	3.558	0.984
6.40	6.40	511.01	0.923	1.011	2-M2c	0.731	0.622	0.622	0.502	3.838	1.085
8.00	8.00	511.14	1.043	1.141	2-M2c	0.823	0.697	0.697	0.570	4.103	1.169
9.60	9.60	511.26	1.155	1.262	2-M2c	0.914	0.765	0.765	0.633	4.340	1.242
11.20	11.20	511.38	1.264	1.375	2-M2c	0.998	0.833	0.833	0.690	4.520	1.306
12.80	12.80	511.48	1.369	1.484	2-M2c	1.083	0.896	0.896	0.745	4.698	1.364
14.40	14.40	511.59	1.471	1.589	2-M2c	1.166	0.953	0.953	0.795	4.875	1.416
15.70	15.70	511.67	1.553	1.673	2-M2c	1.234	0.997	0.997	0.835	5.017	1.455

****

Straight Culvert

Inlet Elevation (invert): 510.00 ft, Outlet Elevation (invert): 509.00 ft

Culvert Length: 120.00 ft, Culvert Slope: 0.0083

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