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.

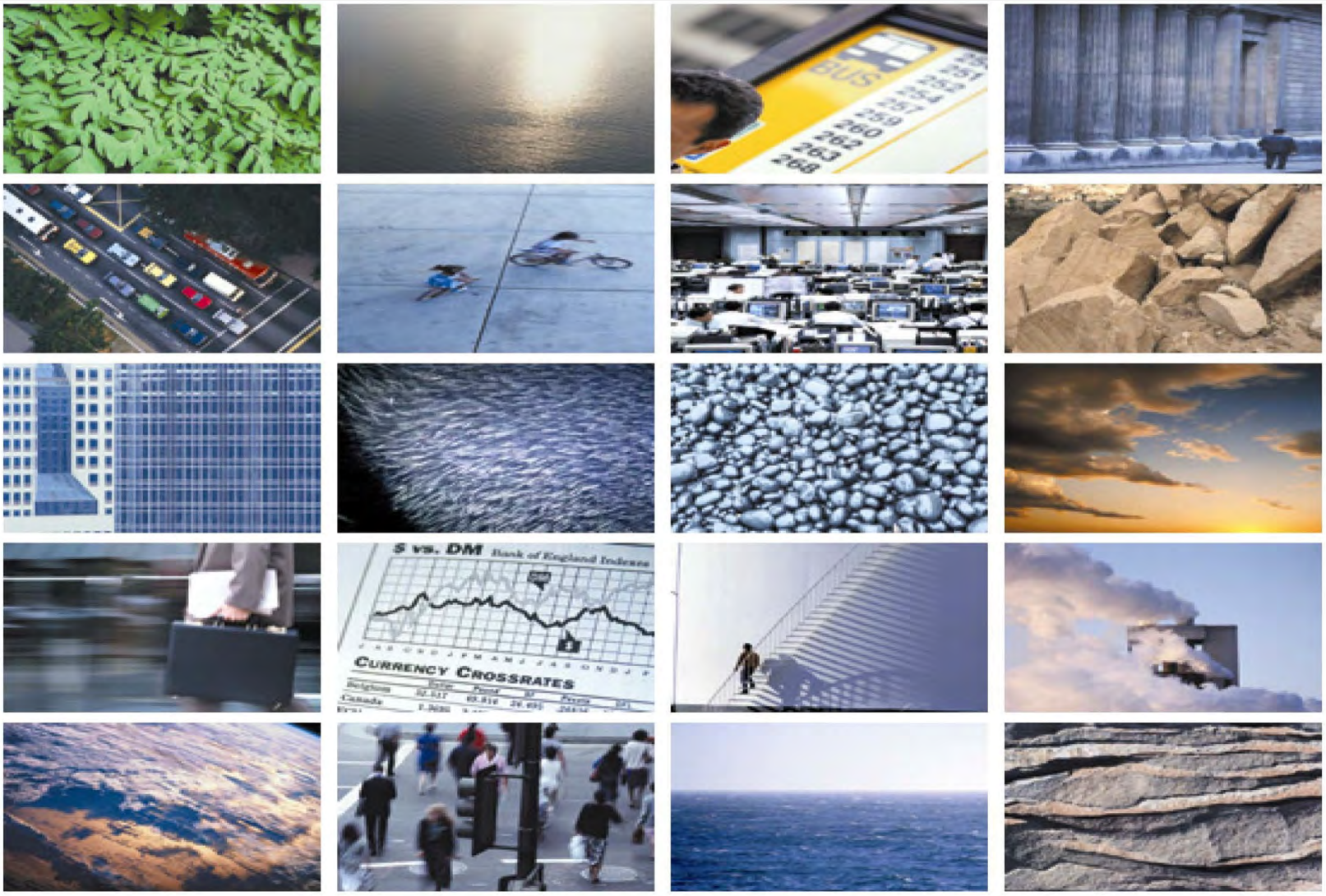
This Alternative Capacity Infeasibility Demonstration revises the original version submitted on November 6, 2020. This version was prepared to document and explain in greater detail why development of alternative capacity by April 11, 2021 is infeasible for the Sludge Recycle Holding (SRH) Pond, an unlined 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

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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 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.

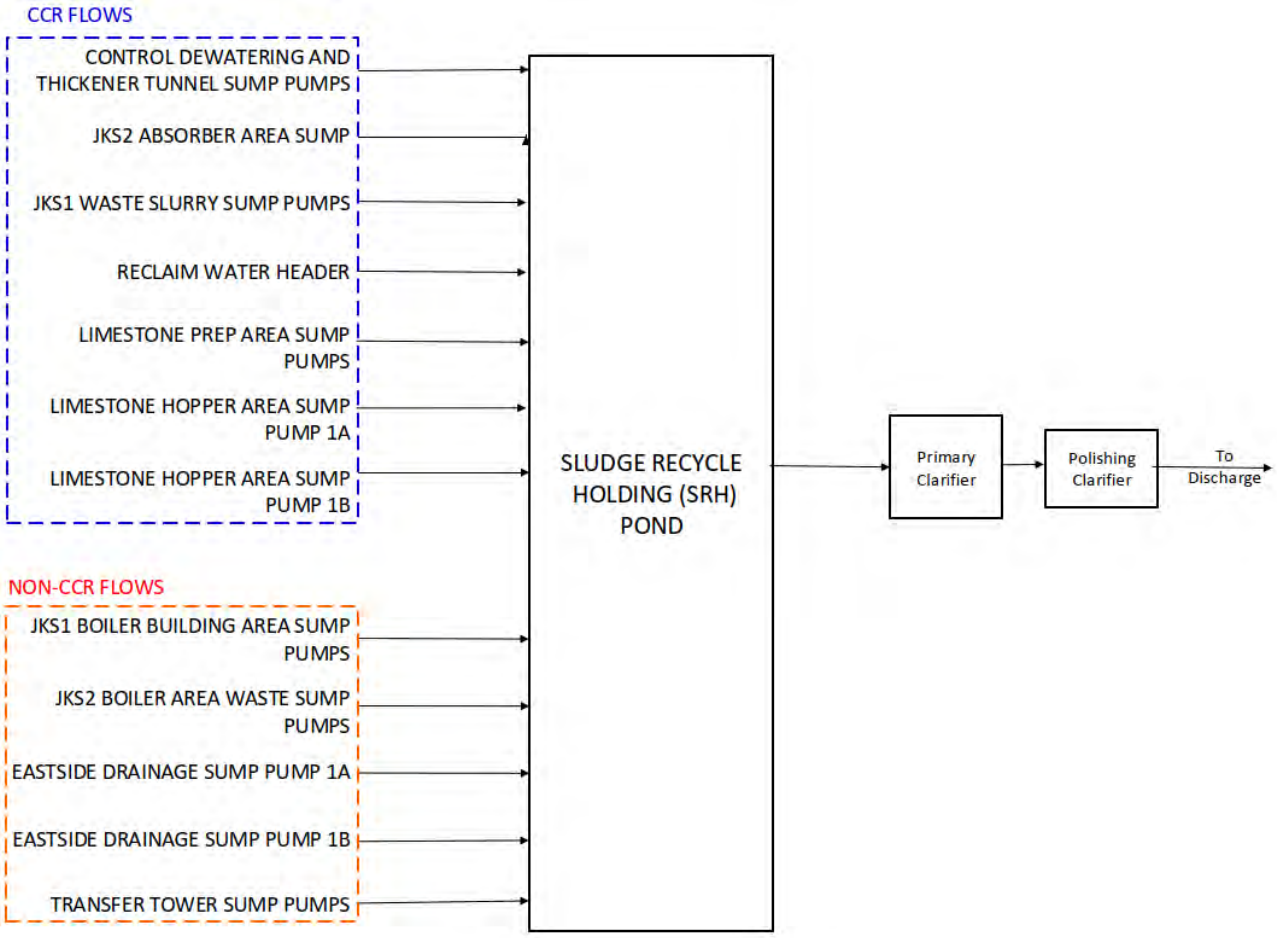
The overall flow to the SRH Pond averages between 100 and 700 gpm, but is highly variable with potential flowrates as high as 6,000 gpm. The solids content in these flows also varies dependent on plant operating conditions and maintenance activities. Some non-CCR flows, such as stormwater runoff, are 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

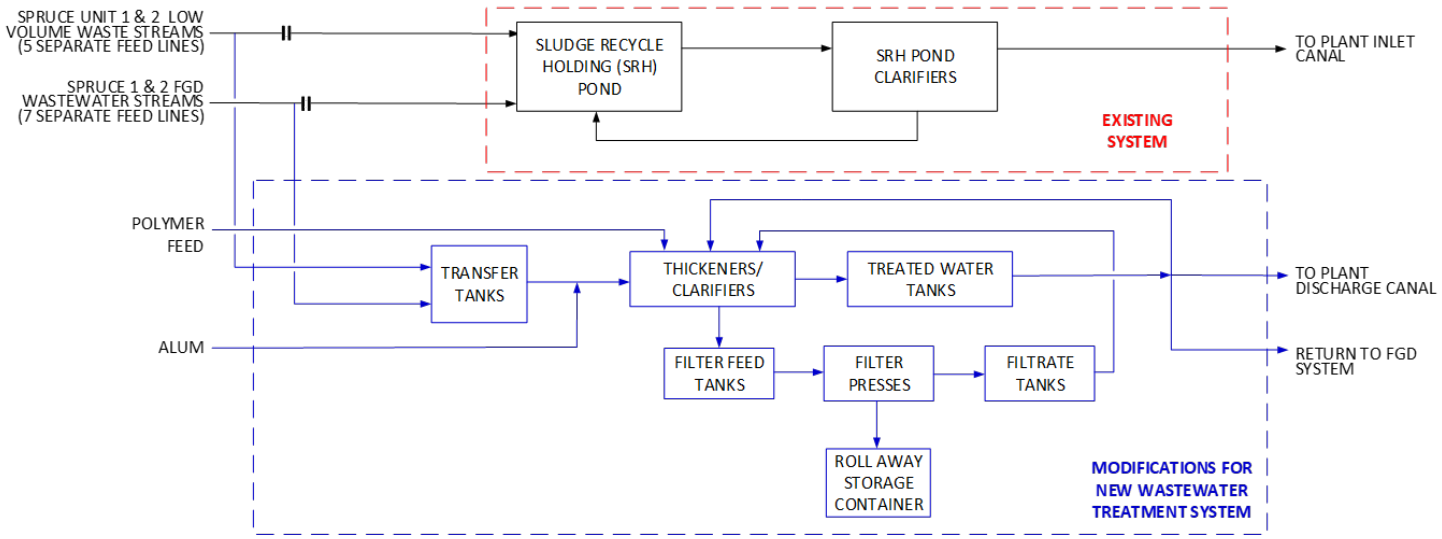
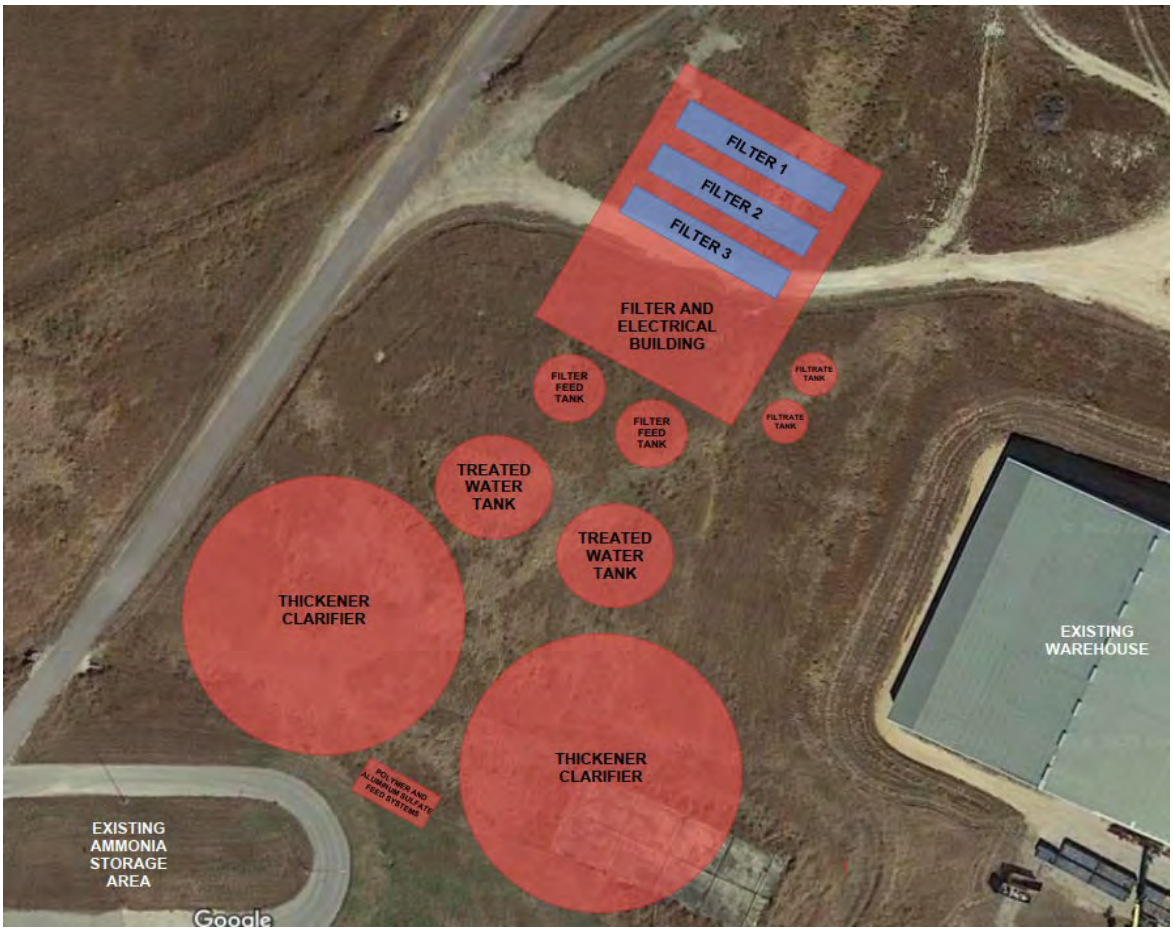


Exhibit 3.4 – Wastewater Treatment Facility Conceptual Layout



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.

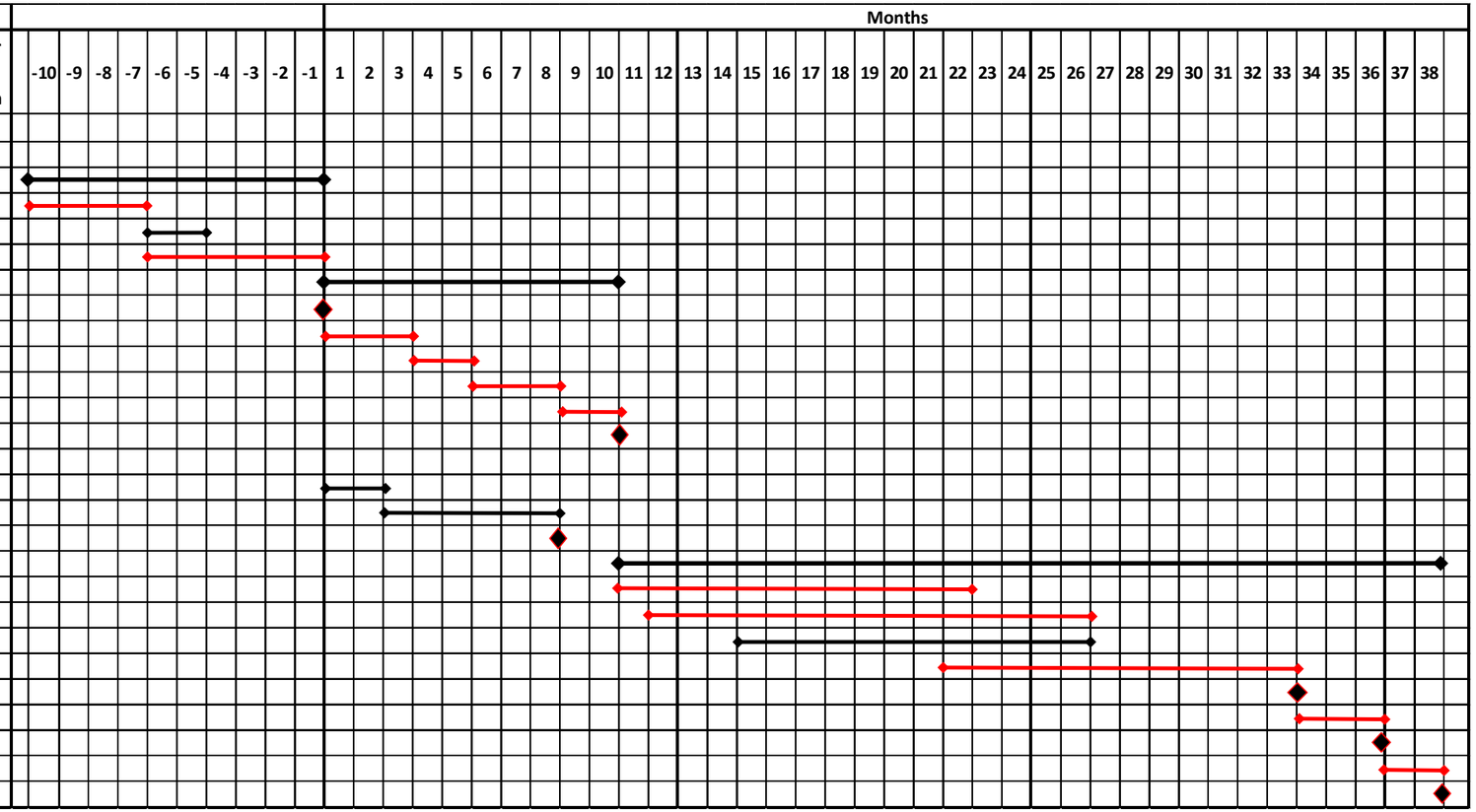
The contactors scope includes detailed design, procurement, construction and start-up of the WWTF. Procurement includes engineered equipment such as the filter presses, clarifier/thickeners, agitators and pumps. It also includes shop fabricated components such as: tanks, piping spools, structural steel, 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

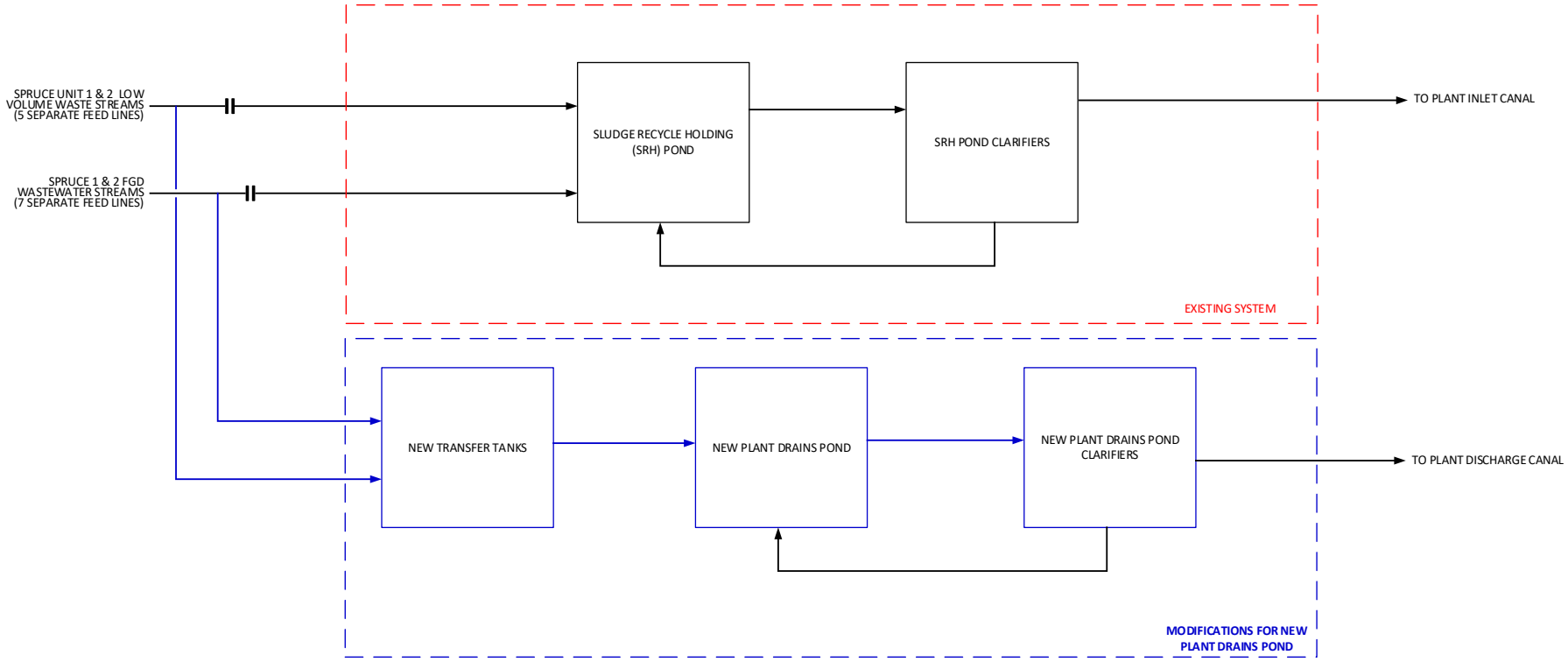
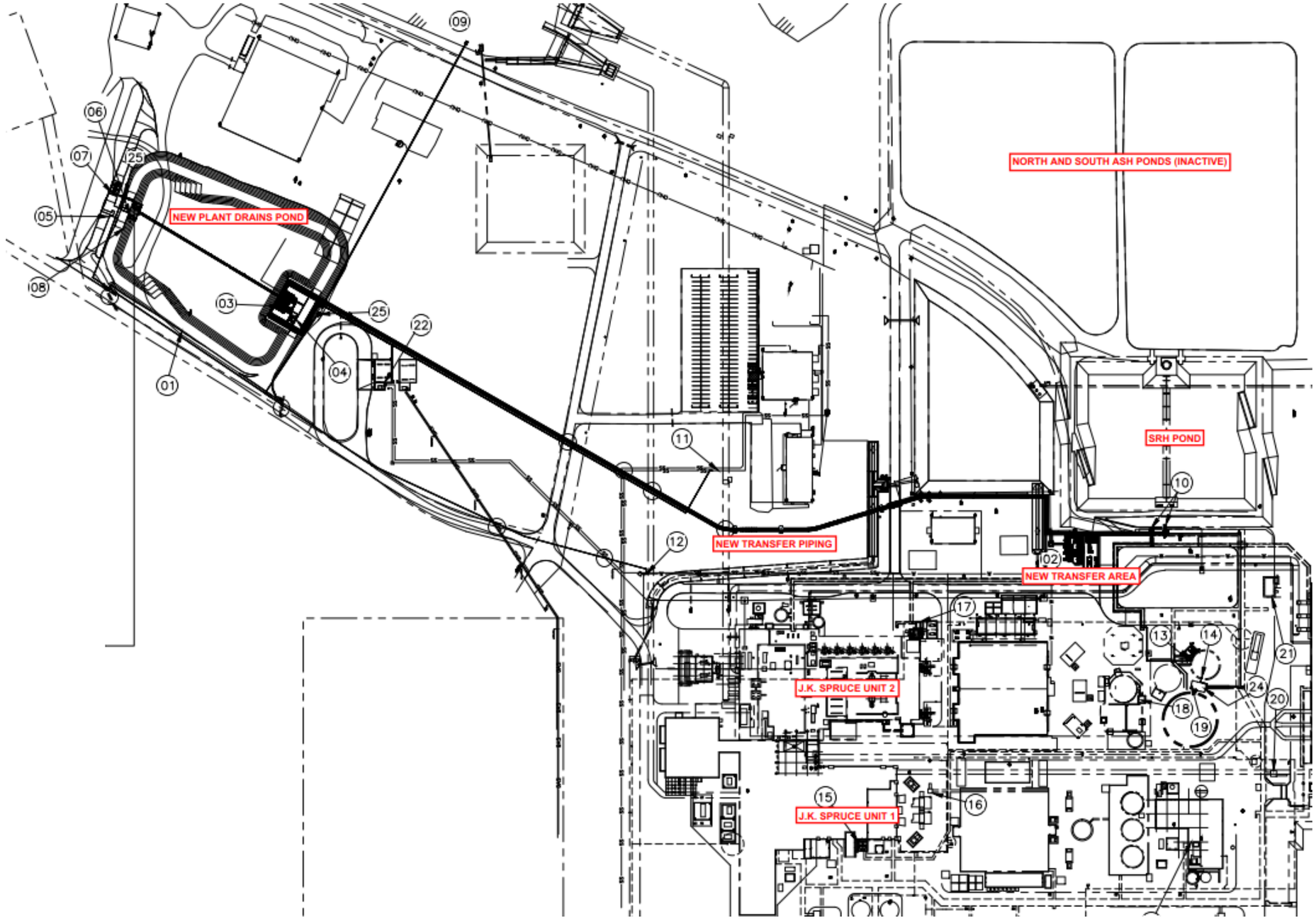


Exhibit 3.9 – Overall Site Plan – Plant Drains Pond and Transfer System



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

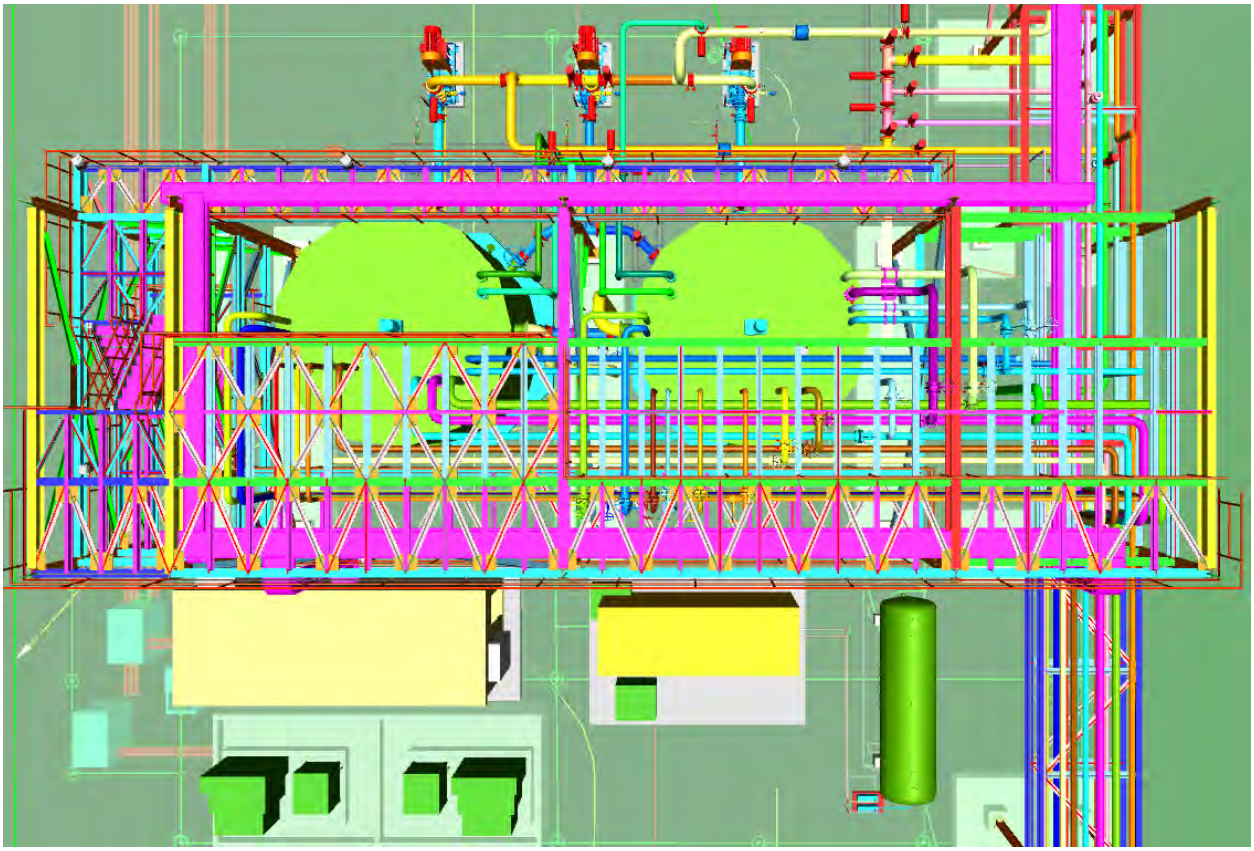
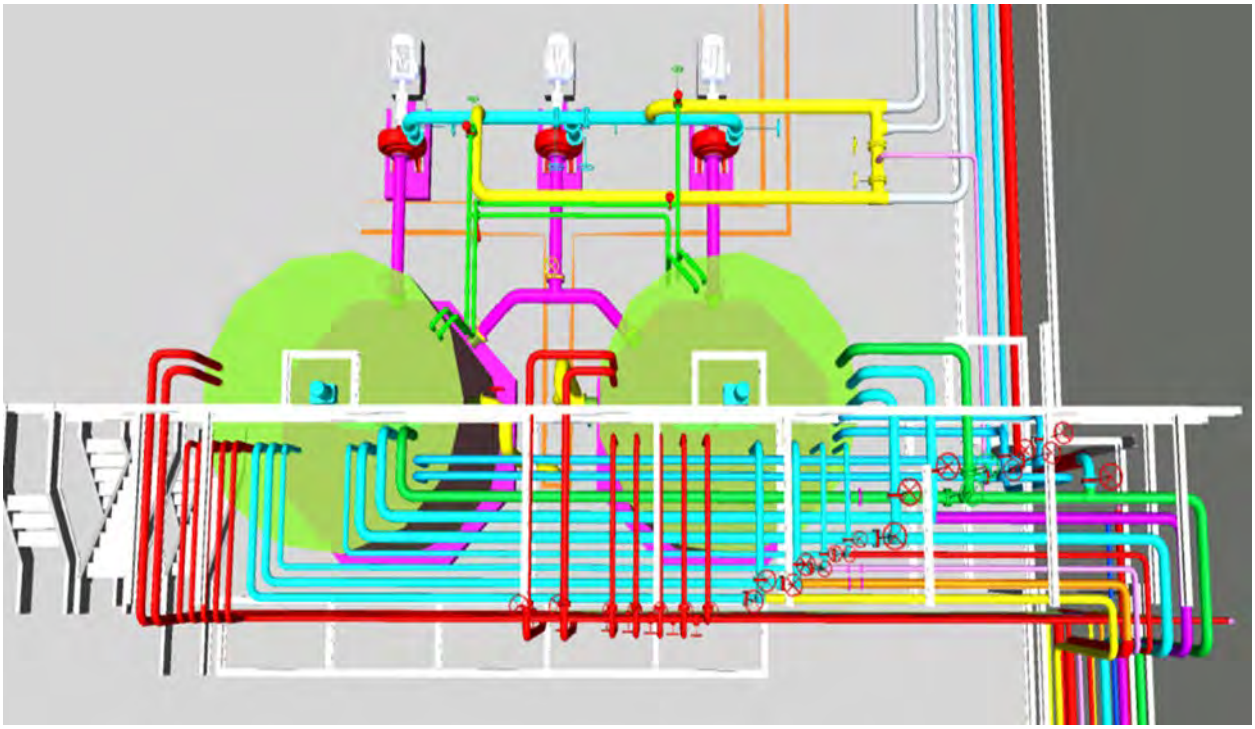


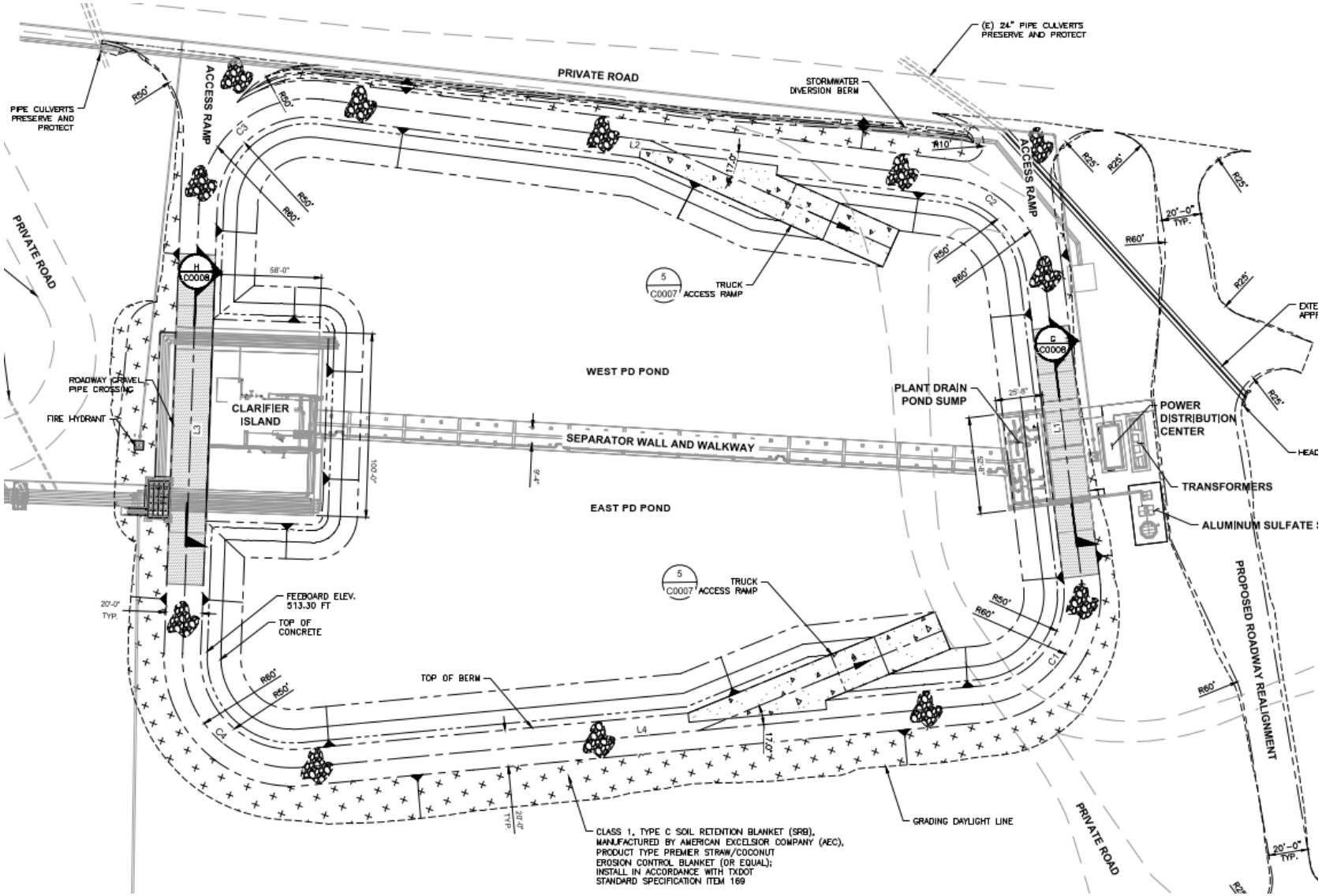
Exhibit 3.10 (continued) – Plant Drains Pond Transfer Area Arrangement



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

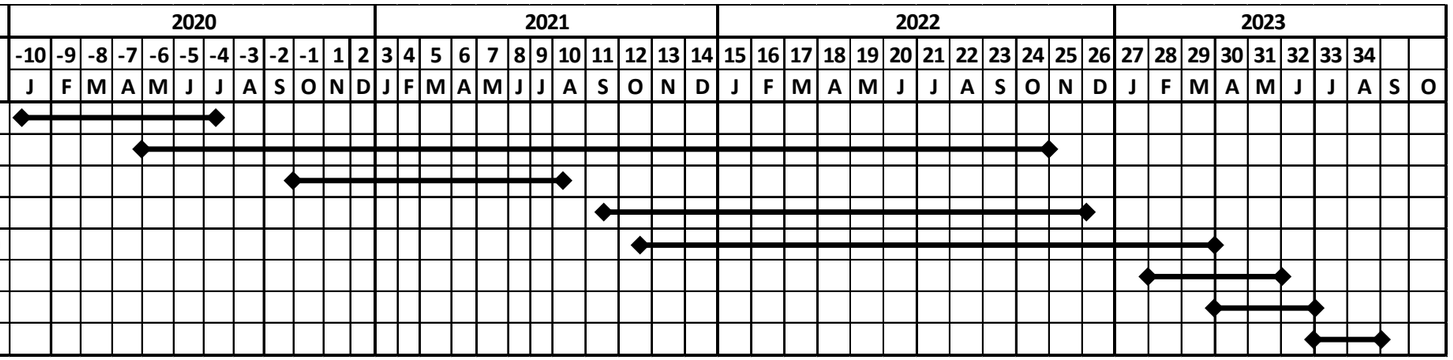


Exhibit 3.15 – Plant Drains Pond System Detailed Schedule

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

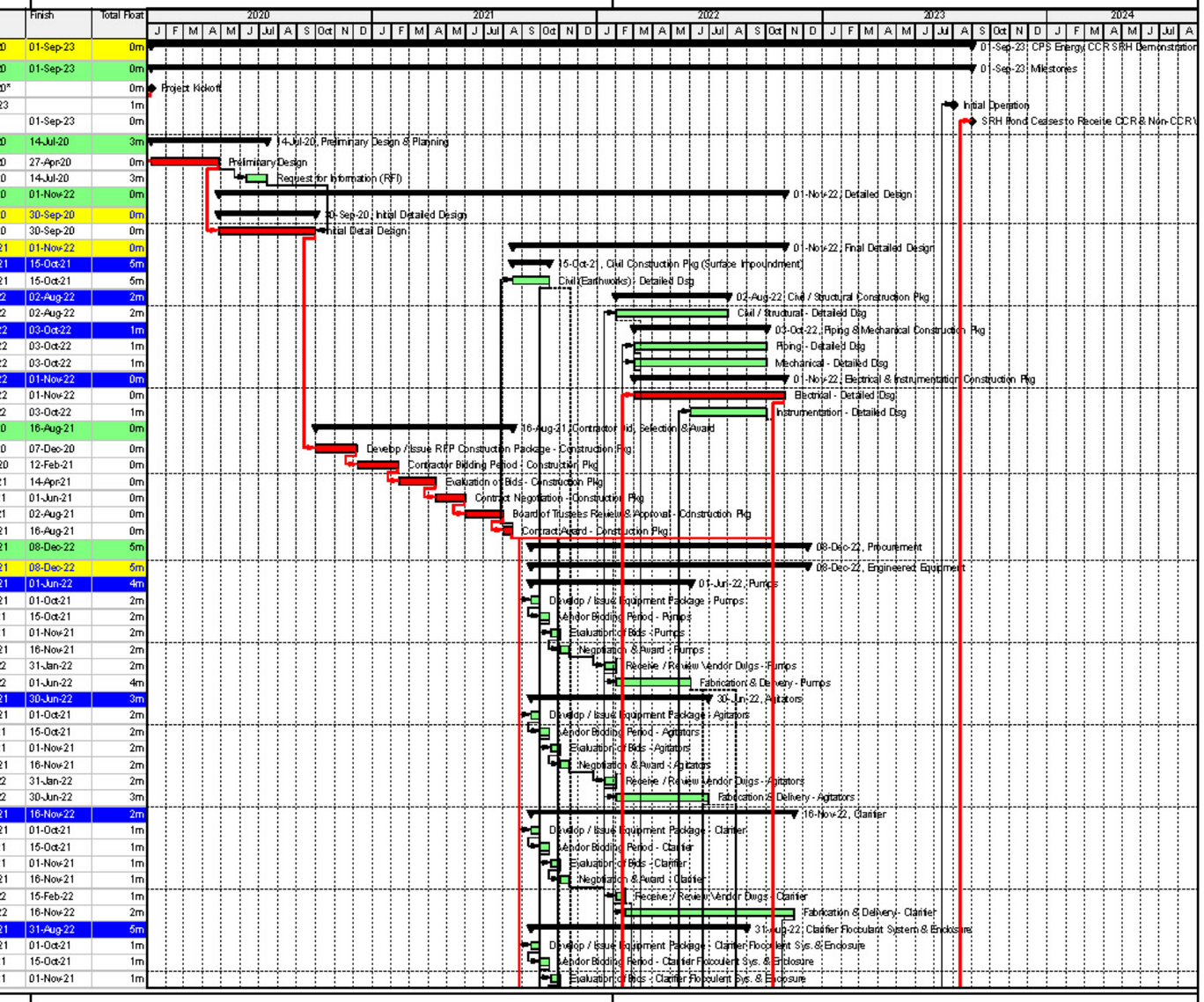


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Exhibit 3.15 – Plant Drains Pond System Detailed Schedule (continued)

CPS Energy CCR SRH Demonstration_Rev0

Activity ID	Activity Name	Duration	Start	Finish	Total Float
A1940	Negotiation & Award - Clarifier Flocculant Sys. & Enclosure	1m	01-Nov-21	16-Nov-21	1m
A1950	Receive / Review Vendor Dwgs - Clarifier Flocculent 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

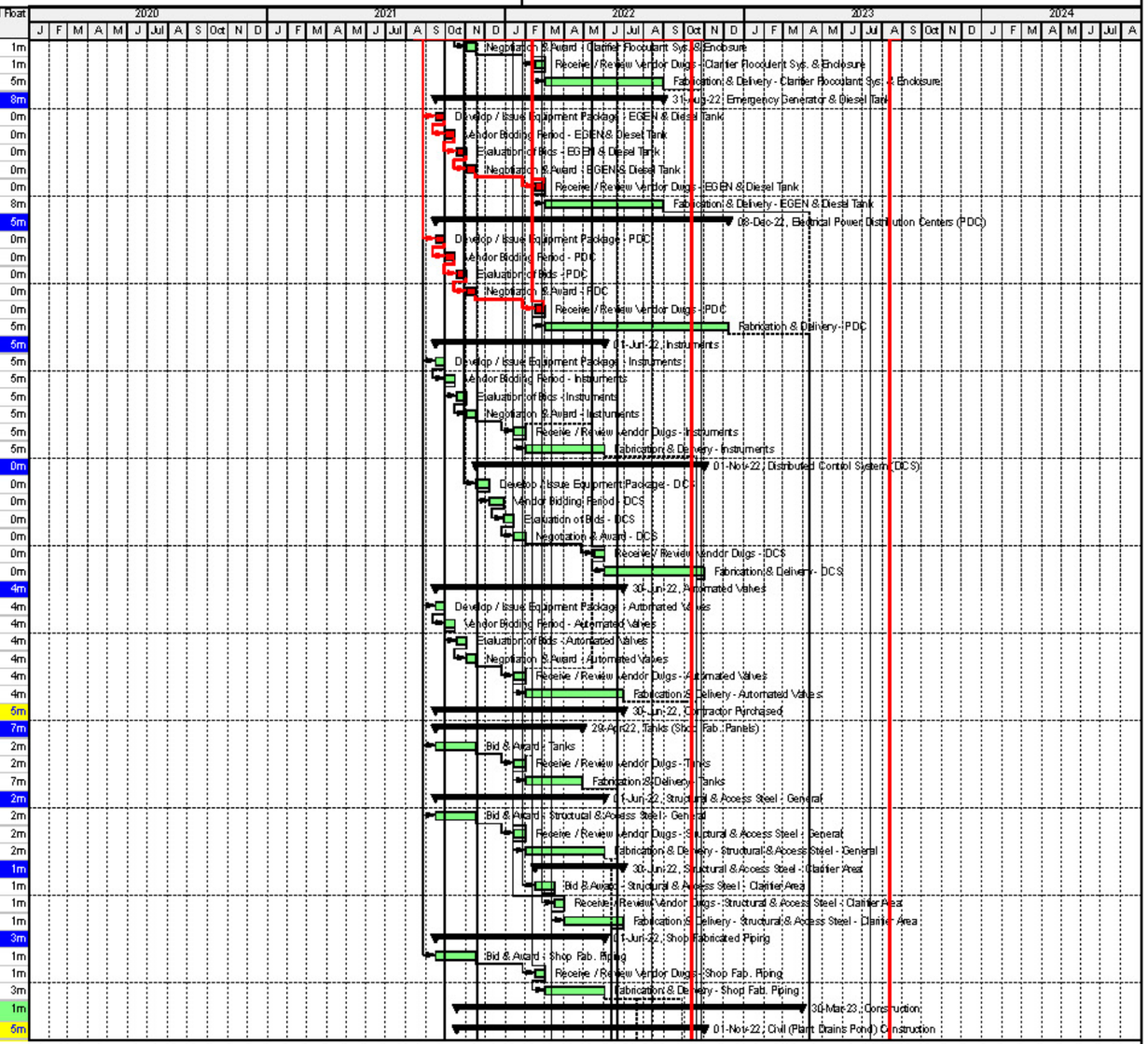

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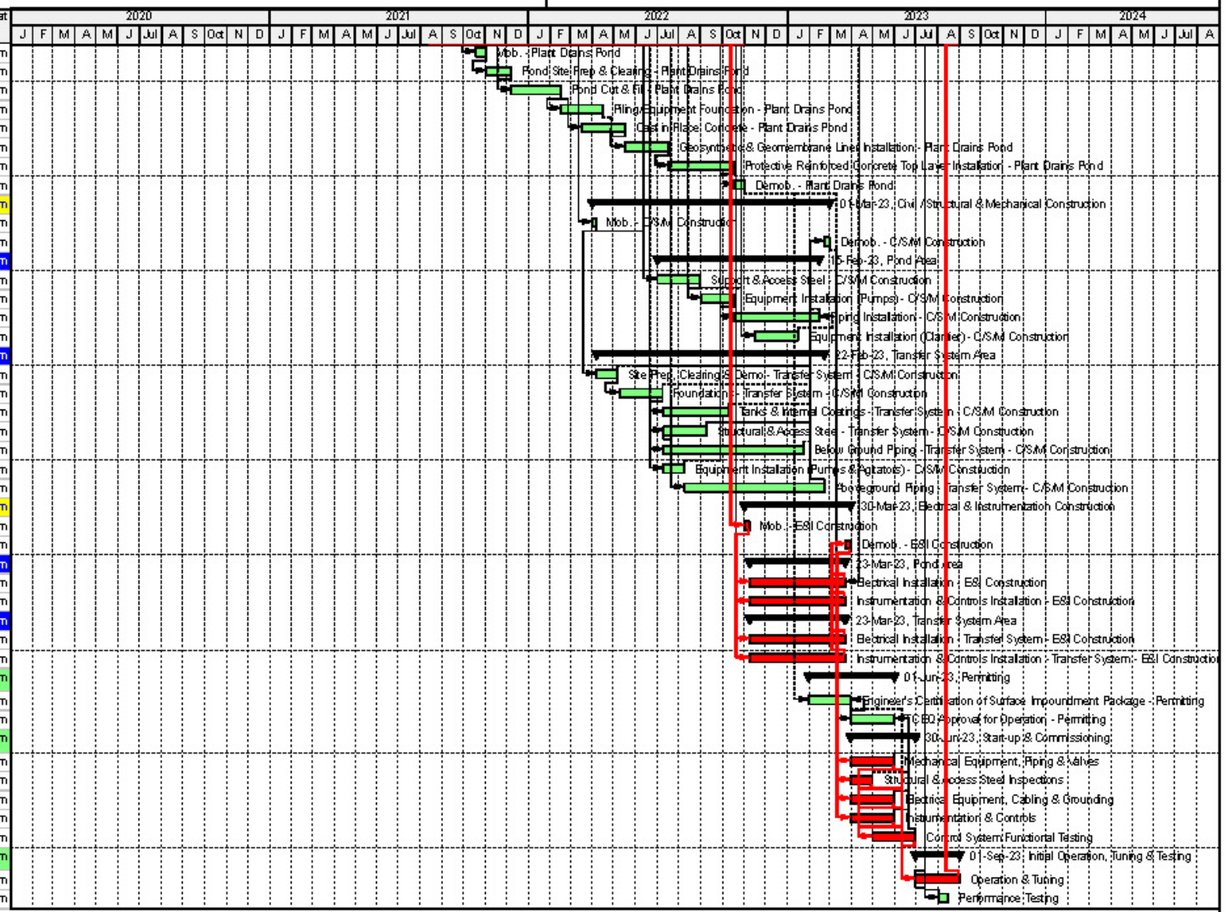
Exhibit 3.15 – Plant Drains Pond System Detailed Schedule (continued)

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

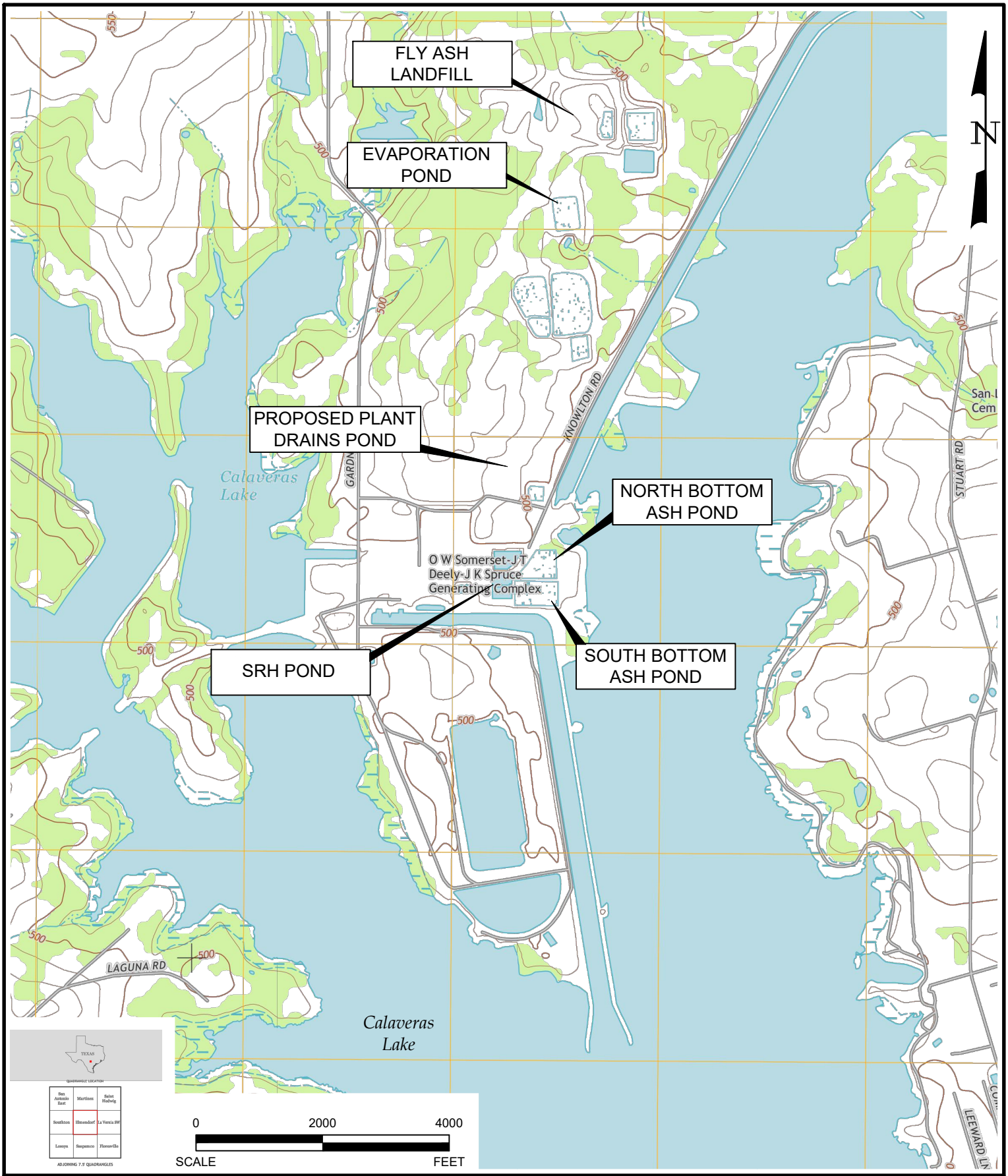
Environmental Resources Management

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\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

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

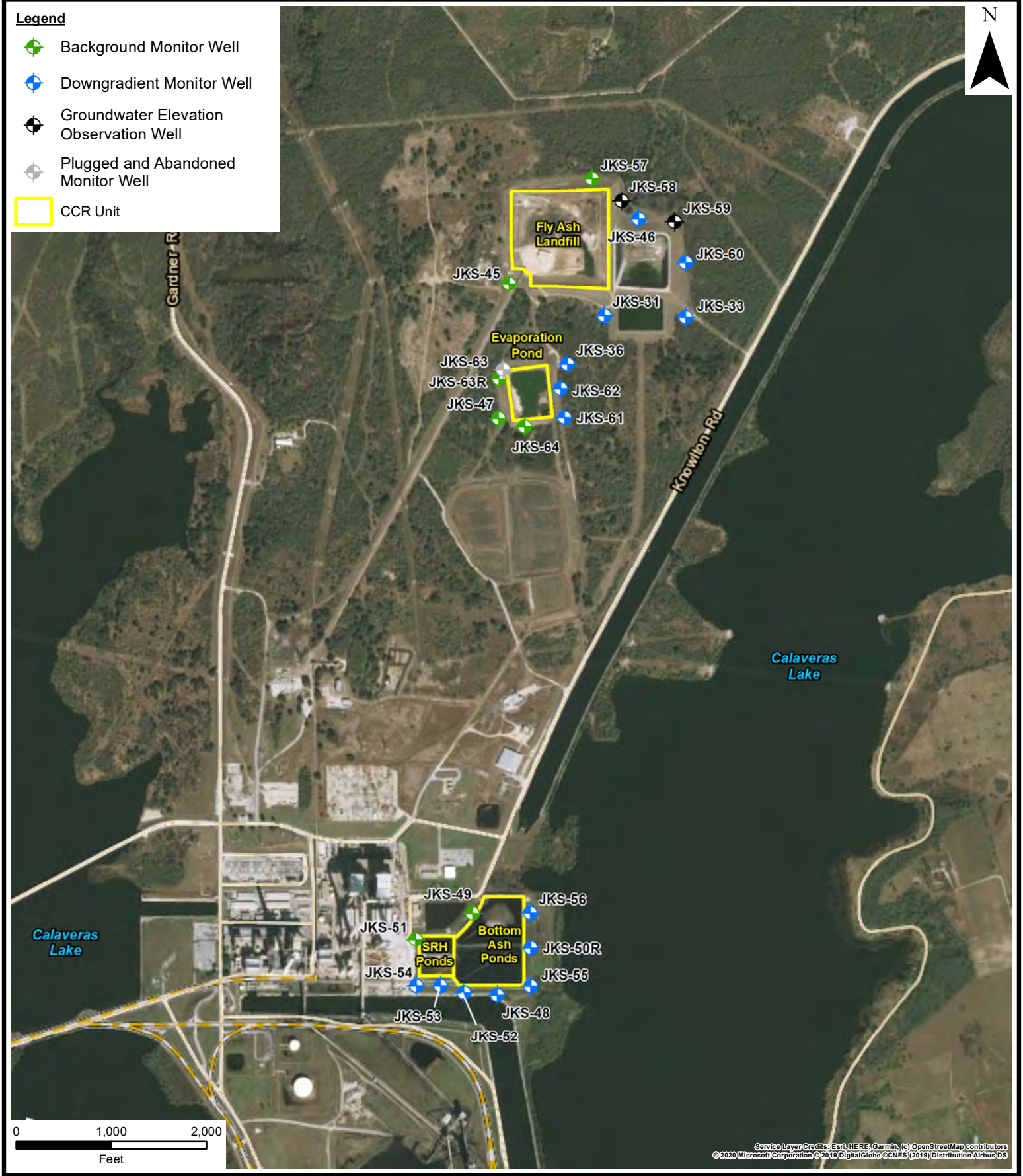
CERTIFICATION

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

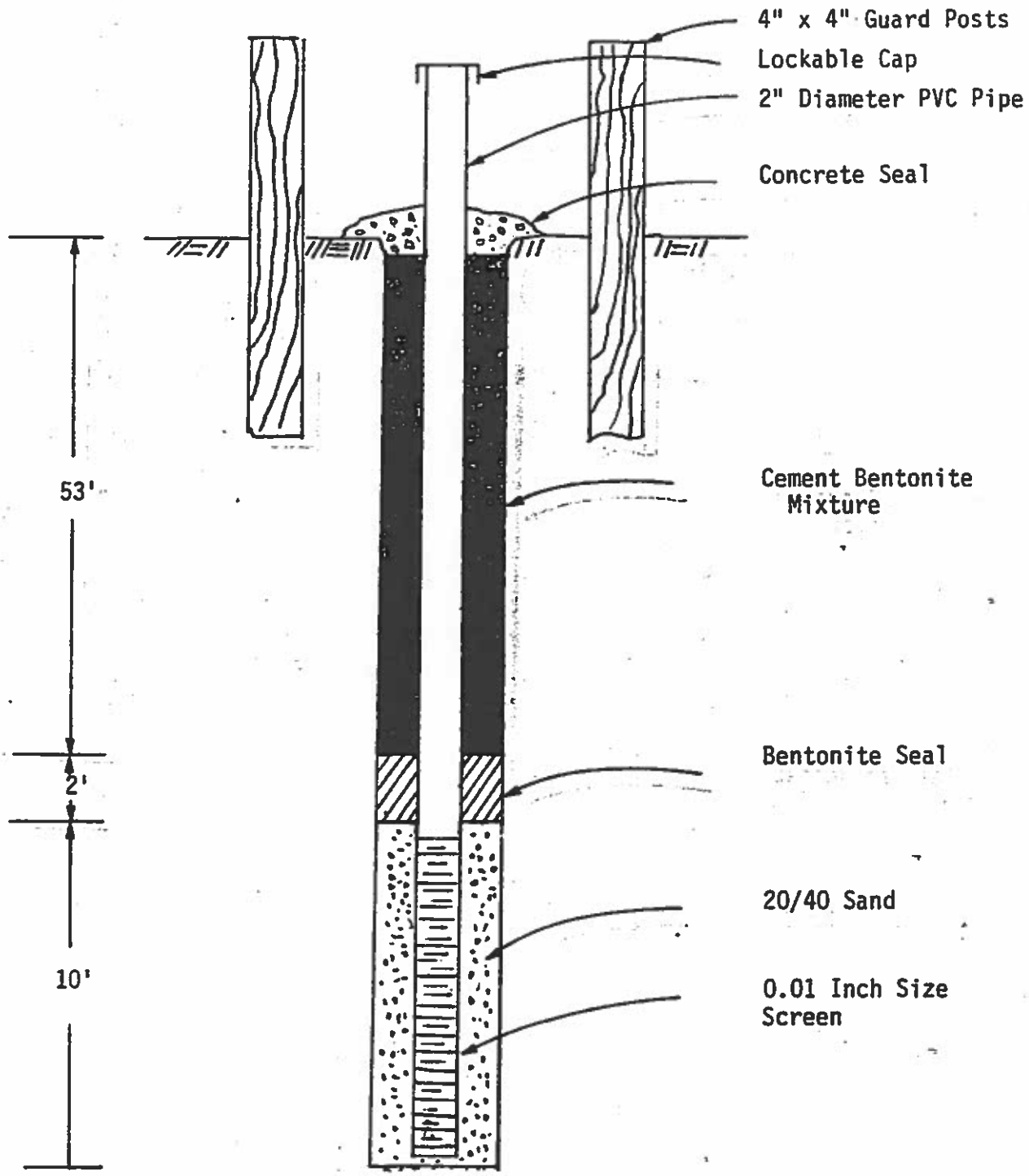
\\ushoufs01\Data\Houston\Projects\0503422 CPS Energy Calaveras 2019 CCR Tasks.WZ\GIS_CAD\MXD\2019gwmon\fig1_0503422_CPSCalv_WellLocs.mxd

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

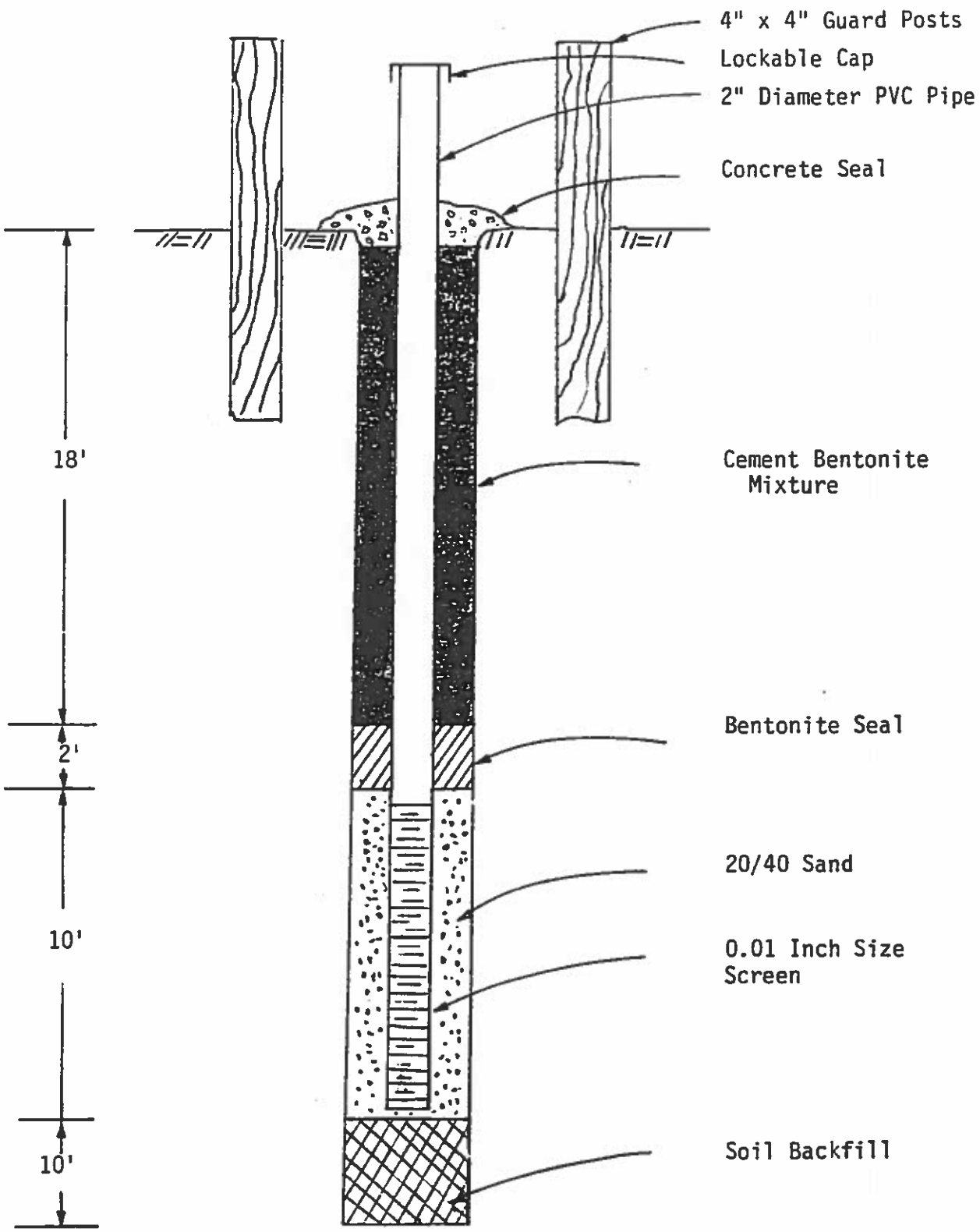


PROJECT NAME

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

Monitor Well No. B-31

PROJECT NO.	DATE
312-75036	7-9-87

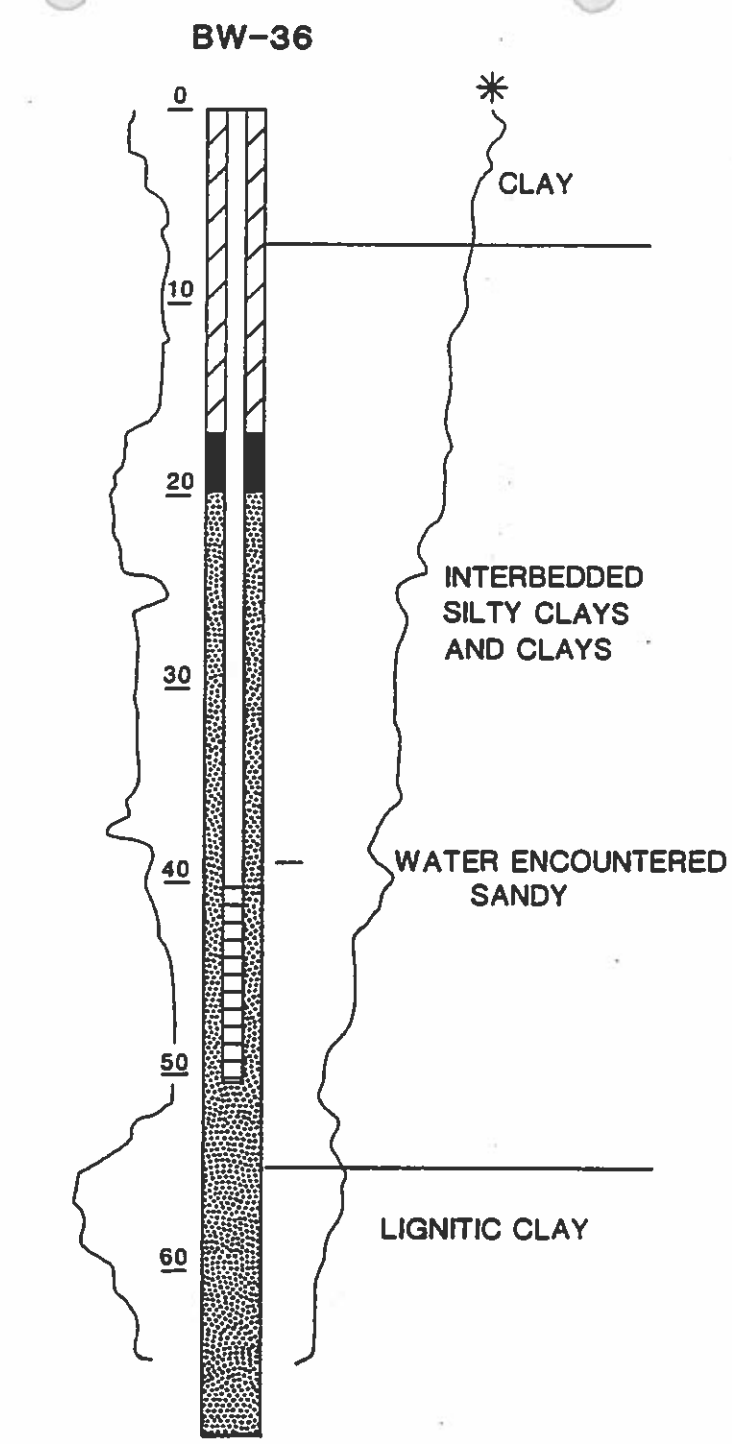


PROJECT NAME

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	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; 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. At 36.5' bgs: Yellow and orange silt stringers to 37.5' bgs.
490						38-43	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
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Austin, TX 78711
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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			0	No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
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).
500	10			90		9.5-20	At 9.25' bgs: Clay lens (2" thick). 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

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

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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	
						7.5-12.5	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		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			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.
						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) 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

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-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. _____ (_____)

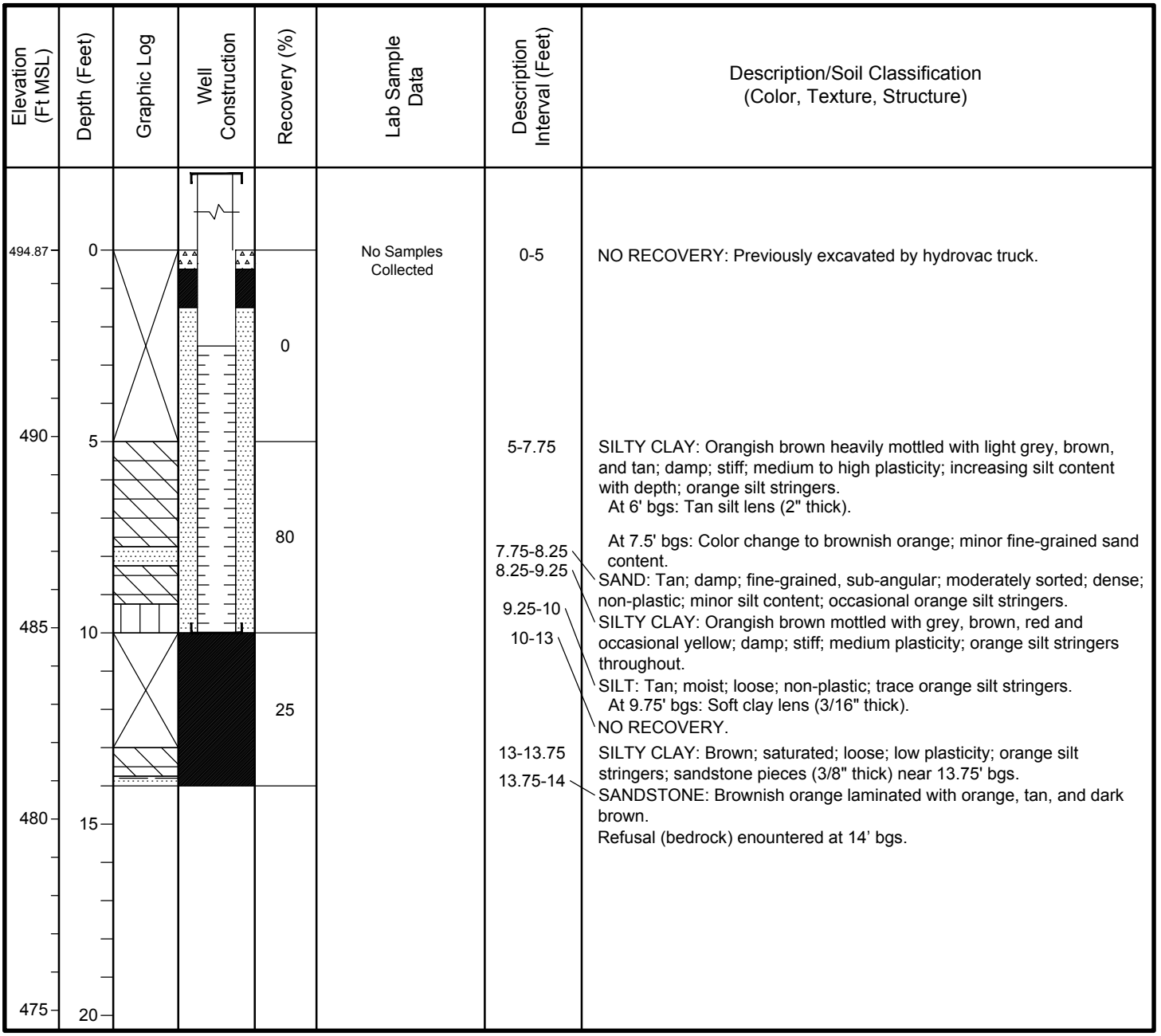
Drilling Company Strata Core Services, LLC Driller Joseph Ray

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.



Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
No Samples Collected	0-5	NO RECOVERY: Previously excavated by hydrovac truck.
	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.
	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.
	13.75-14	SANDSTONE: Brownish orange laminated with orange, tan, and dark brown. Refusal (bedrock) enountered at 14' bgs.

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

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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.
							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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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.
							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						

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.

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)
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; non-plastic; 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.

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

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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-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						

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
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						
				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

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	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

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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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(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

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-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.
						25.9-26	CLAY-SHALE: Shaley clay; tan; wet; dense; non-plastic.
465							Boring terminated at 26' bgs.
	30						
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 '

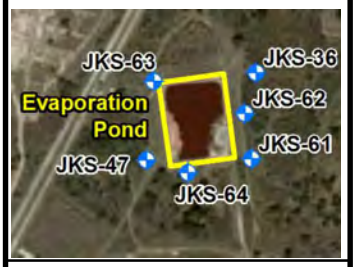
Top of Casing Elevation 505.51 ' Stickup 2.99 '

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
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 '

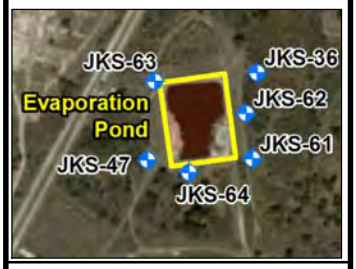
Top of Casing Elevation 509.84 ' Stickup 3.13 '

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

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-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 '

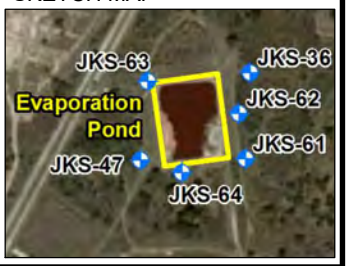
Top of Casing Elevation 526.86 ' Stickup 3.31 '

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

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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-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 '

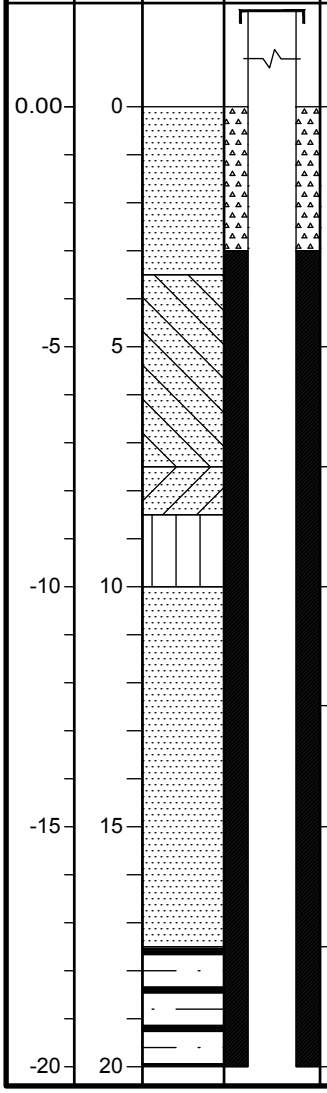
Depth to Water: 1. Ft. 36.00 (SB Installation) 2. Ft. 0.00 ( )

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)	Recovery (%)	Lab Sample Data	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0.00	0		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.
		100		3.5-7.5	SAND□ CLA□: 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	CLA□E□ 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.
		100		17.5-24	INTERBEDDED CLA□ 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				

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)
-20	20			100	No Samples Collected		
				100		24-50	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. SAND: Light brownish grey; damp; medium dense to loose; fine grained; sub-angular; poorly sorted; minor yellow silt stringers; no odor.
-25	25			60			At 25' bgs: Trace red silty clay content; medium plasticity.
				100			At 27.5' bgs: No clay content.
-30	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	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.
-40	40						

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				No Samples Collected		At 40' bgs: Abundant orange silt stringers.
				80			
				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**

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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) 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 '

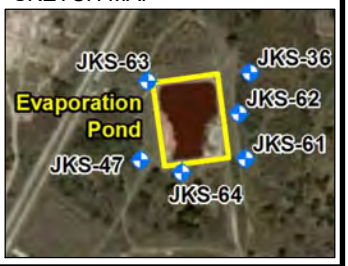
Top of Casing Elevation 507.84 ' Stickup 3.46 '

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

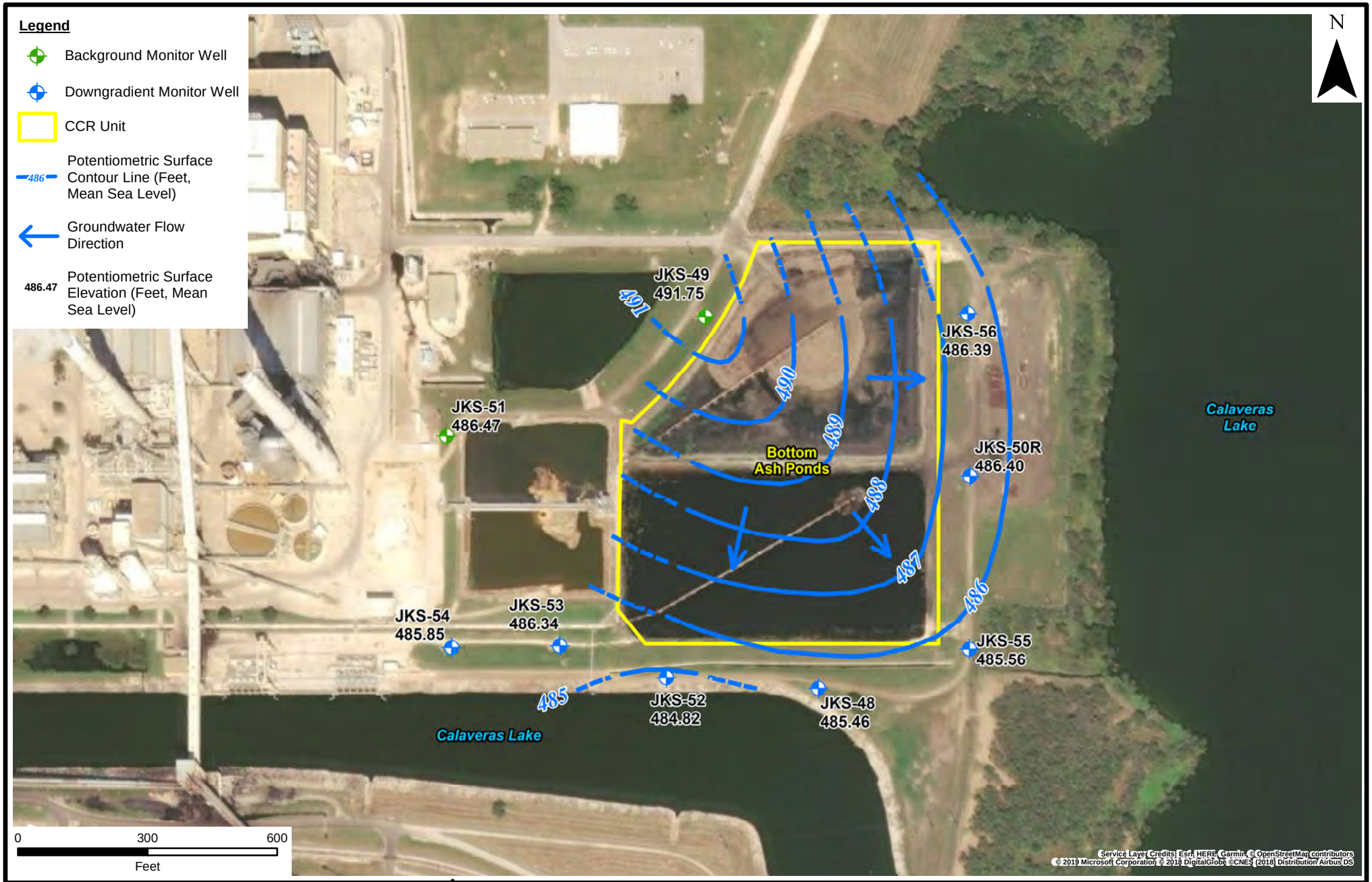
ERM

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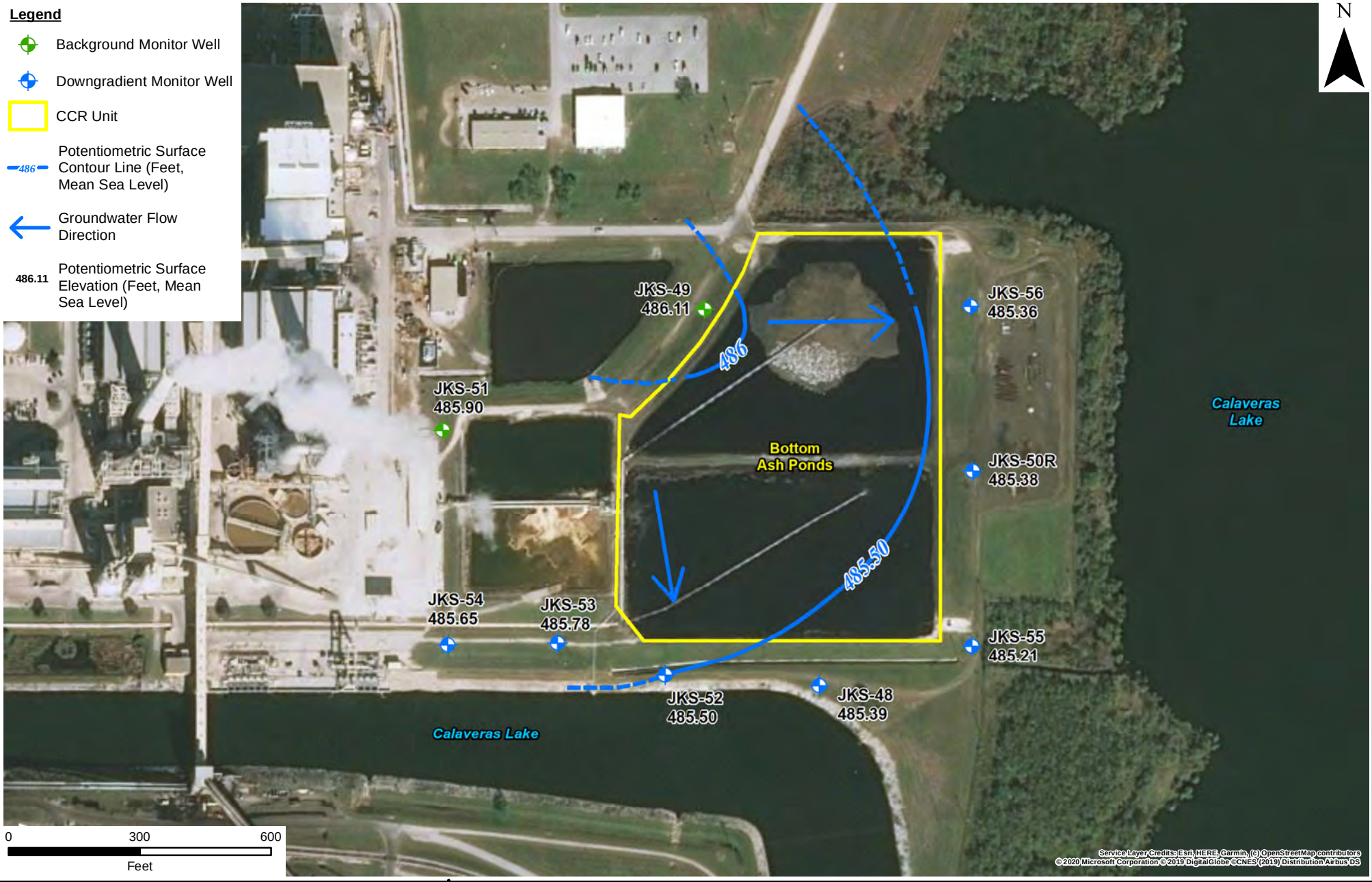
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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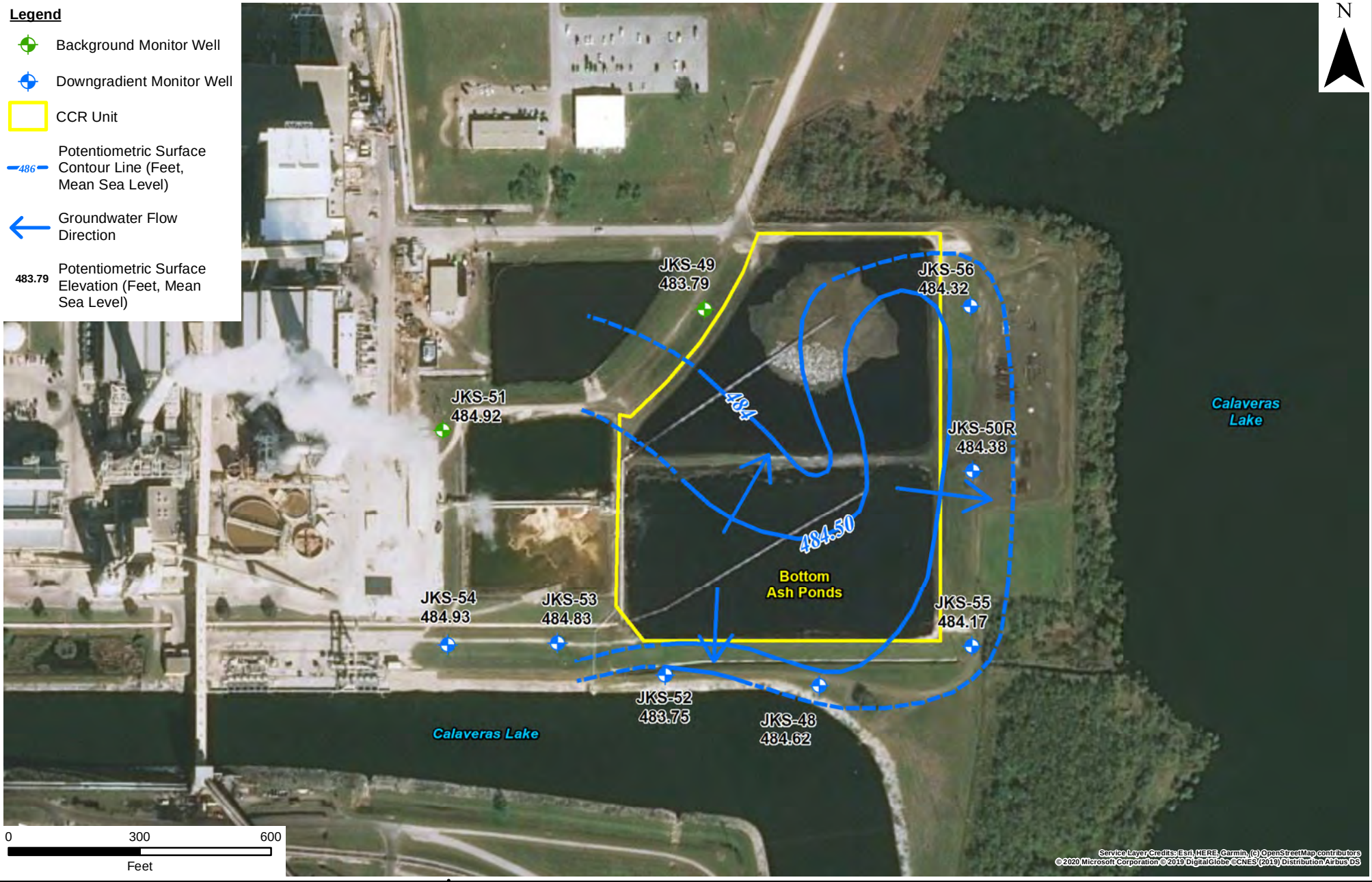
POTENTIOMETRIC SURFACE MAP - APRIL 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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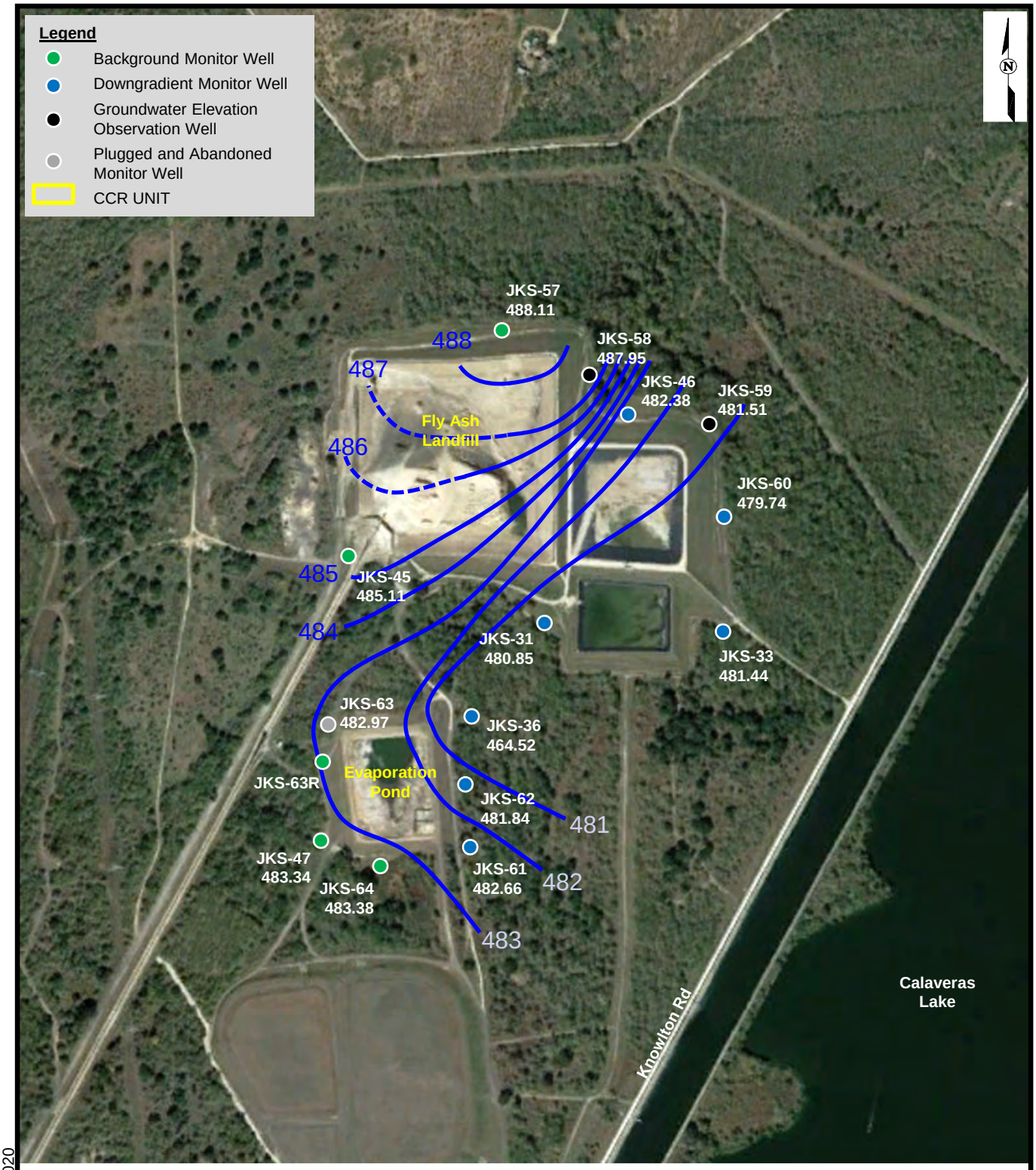
POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Bottom Ash Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

EVAPORATION POND



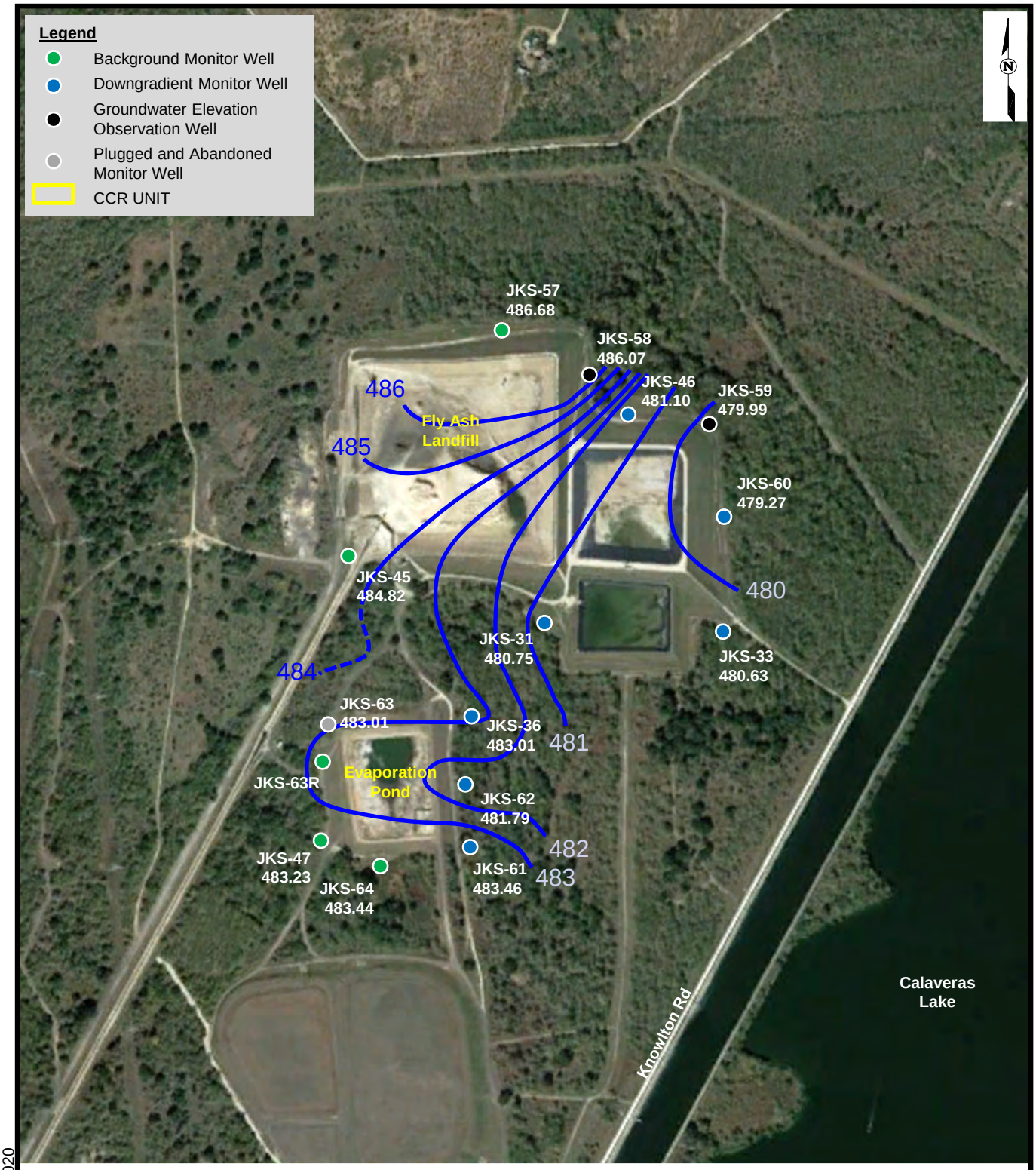
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – May 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



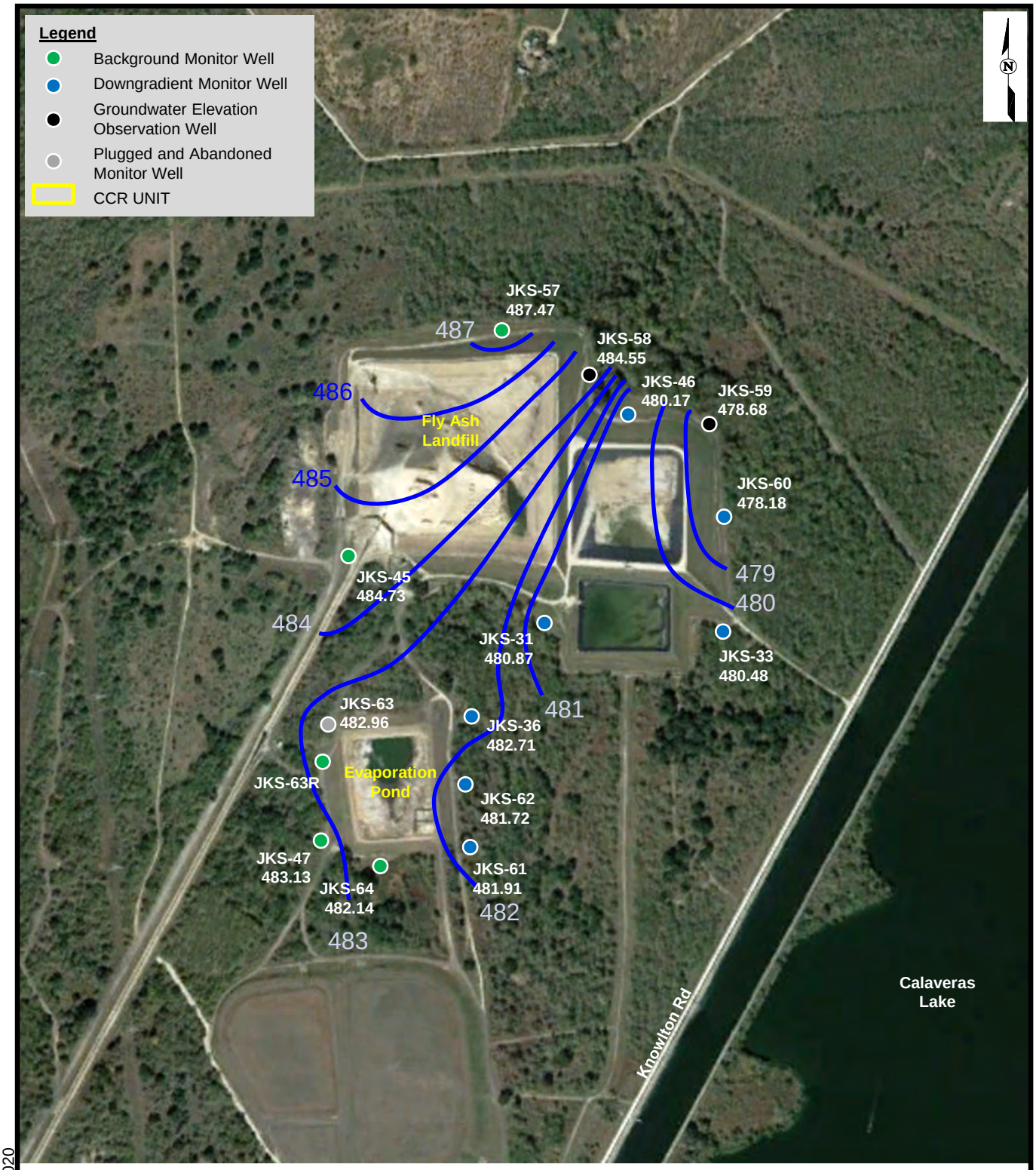
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – June 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



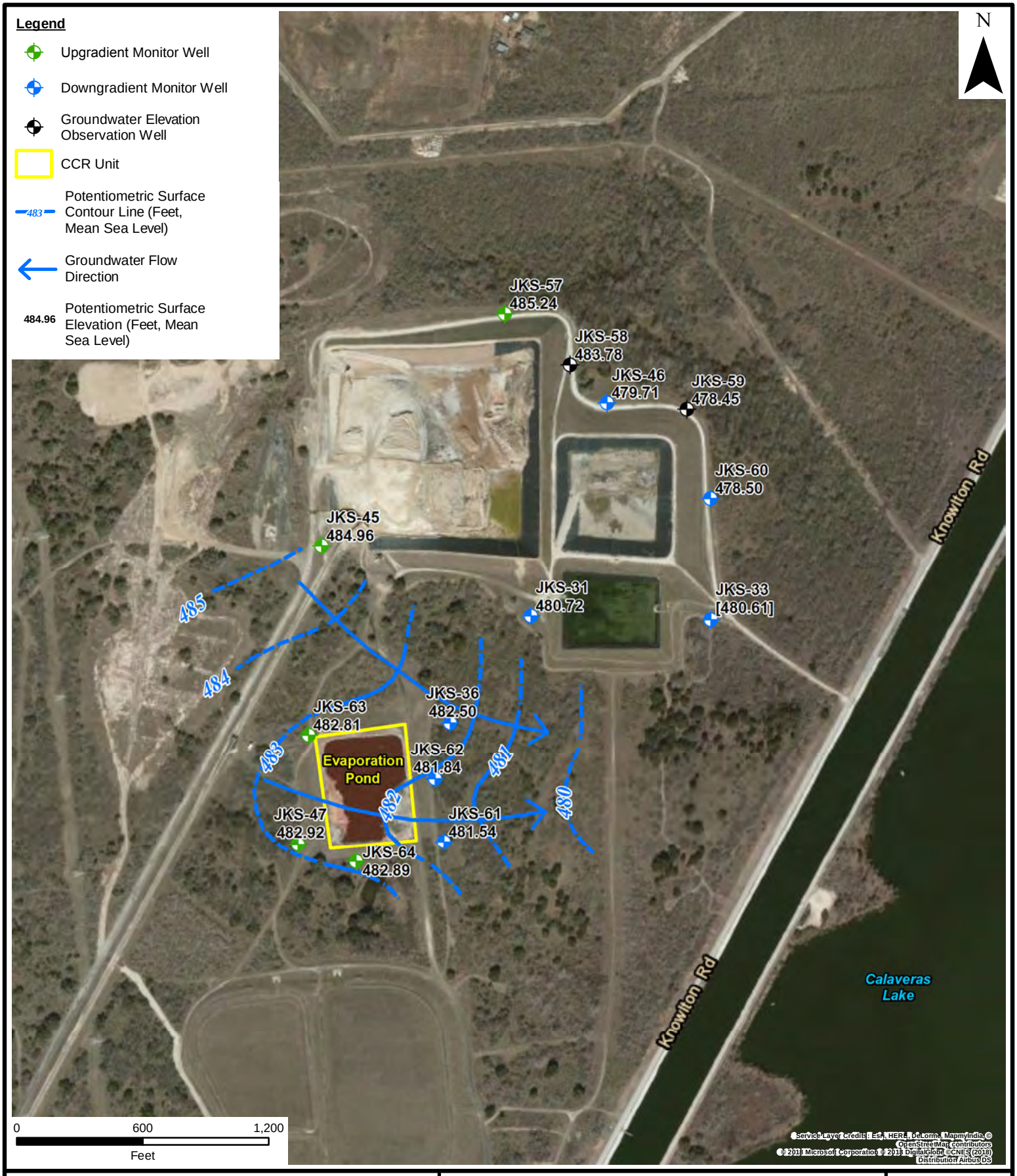
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – August 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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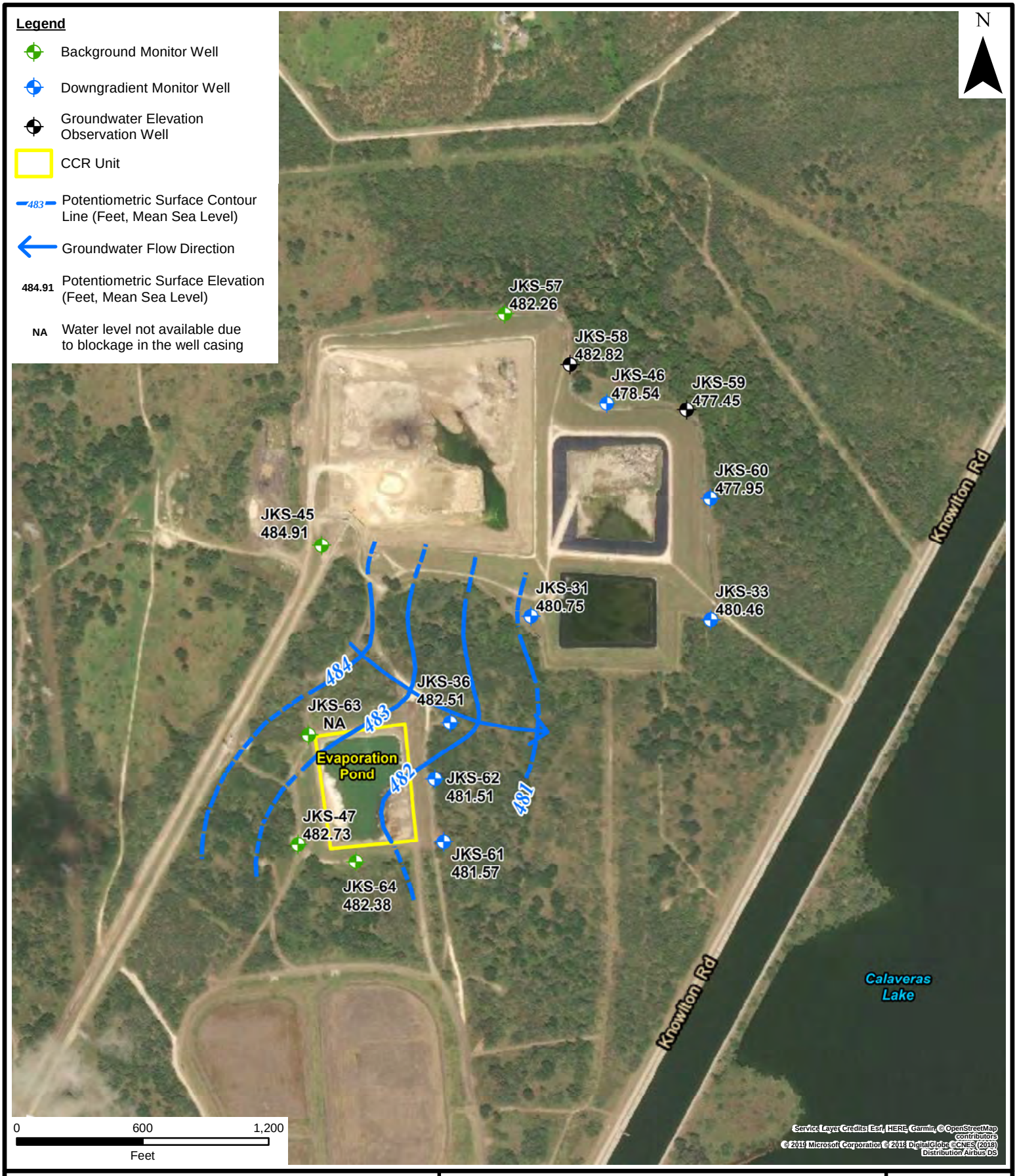
POTENTIOMETRIC SURFACE MAP - APRIL 2018
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

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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DATE:	10/13/2020	SCALE:	AS SHOWN	REVISION:	0

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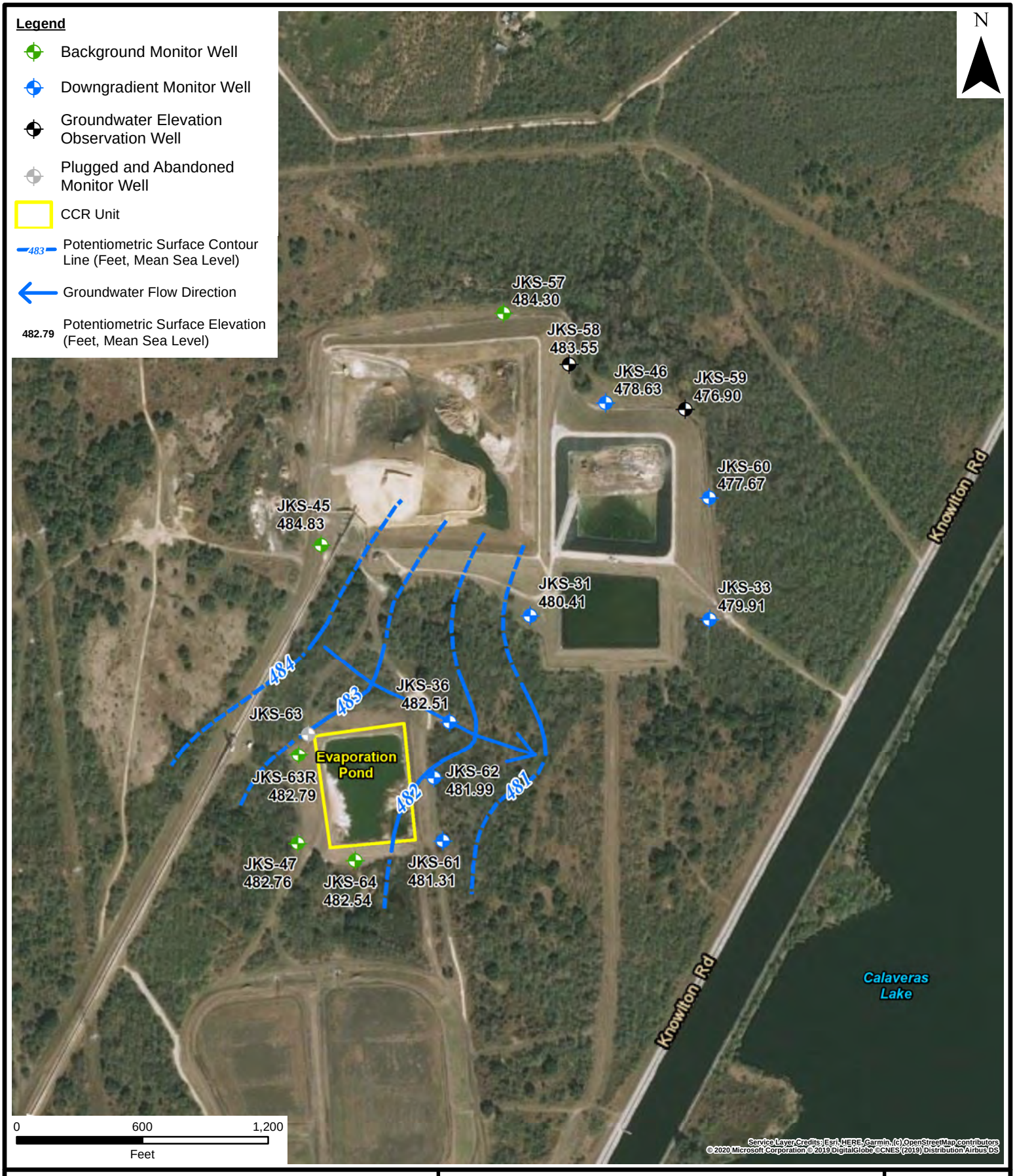
POTENTIOMETRIC SURFACE MAP - APRIL 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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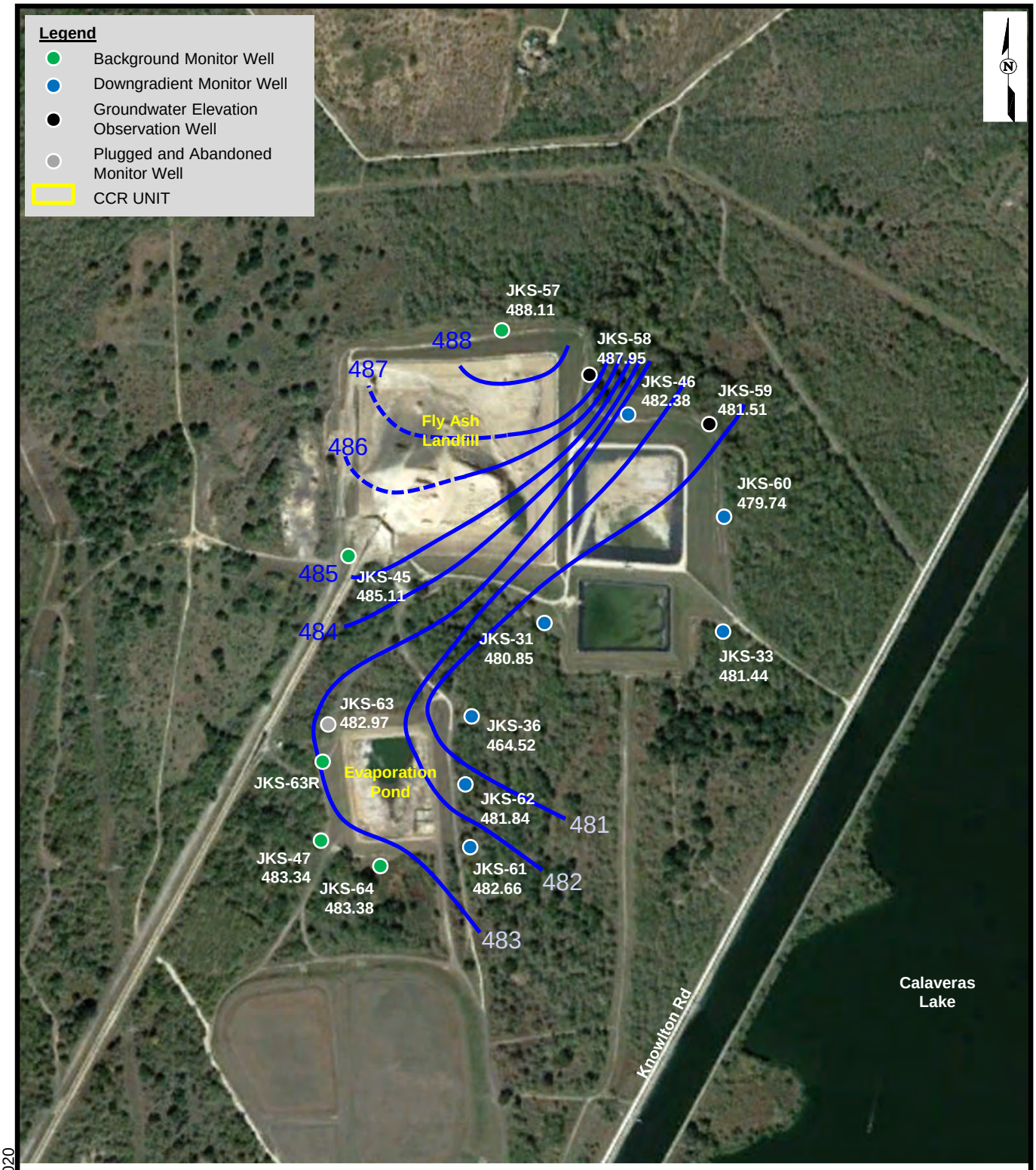
POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
Evaporation Pond CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM

FLY ASH LANDFILL



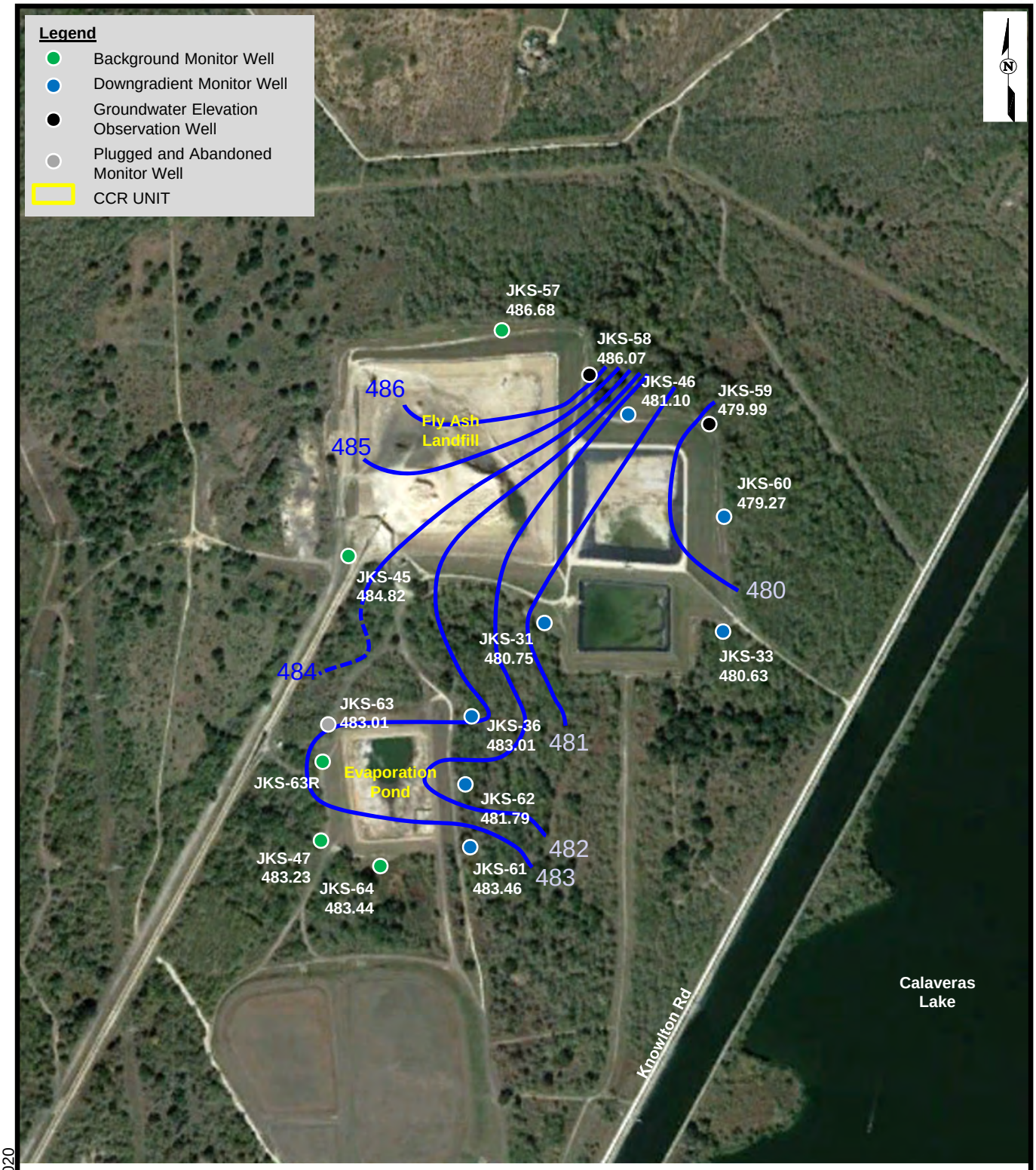
JKS-63 was abandoned and replaced in May 2019. Water levels were measured at this location until April 2018 and at JKS-63R after August 2019.
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – May 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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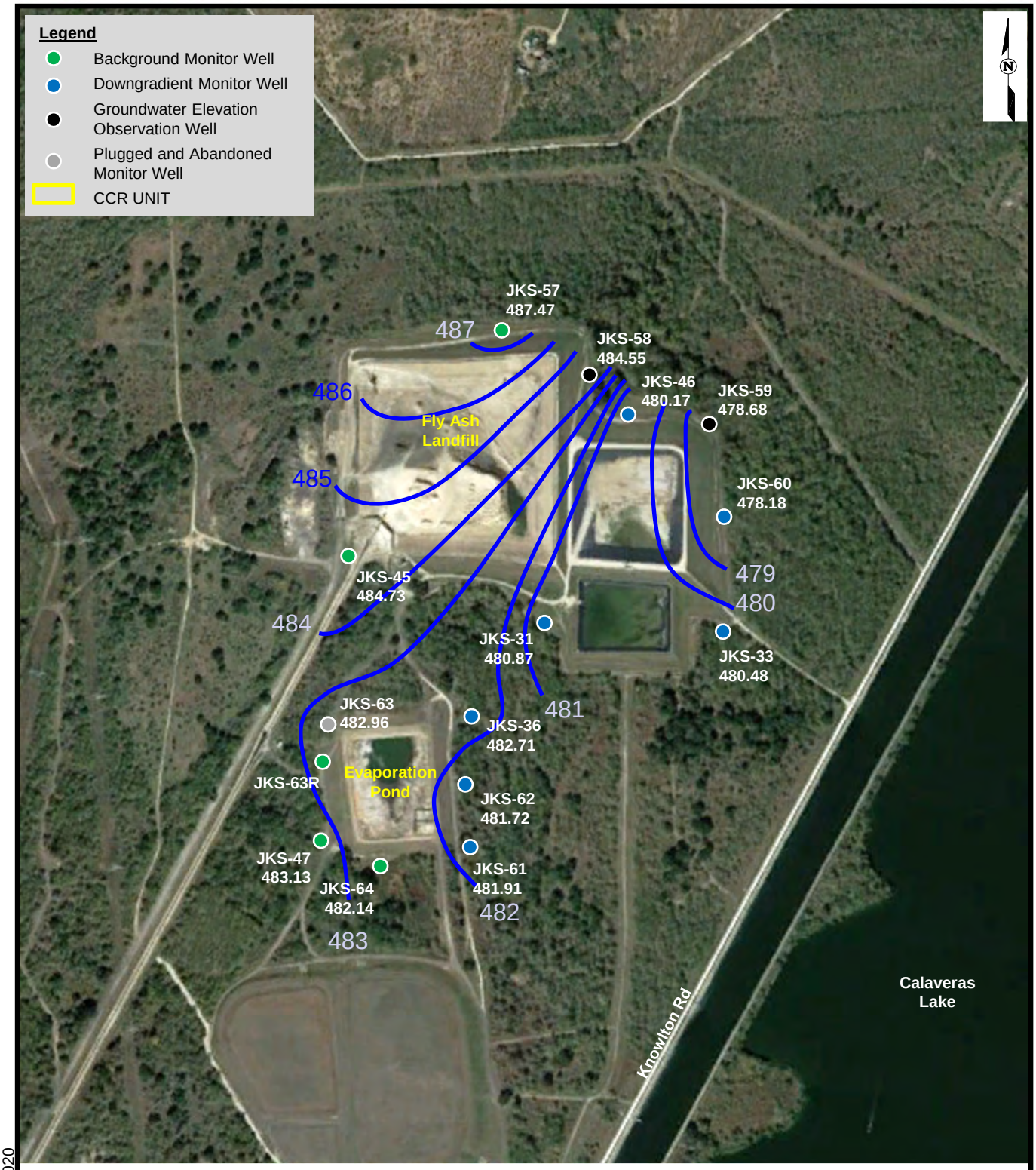
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

POTENTIOMETRIC SURFACE MAP – June 2017
Northern CCR Units
CPS Energy – Calaveras Power Station
San Antonio, Texas

Figure



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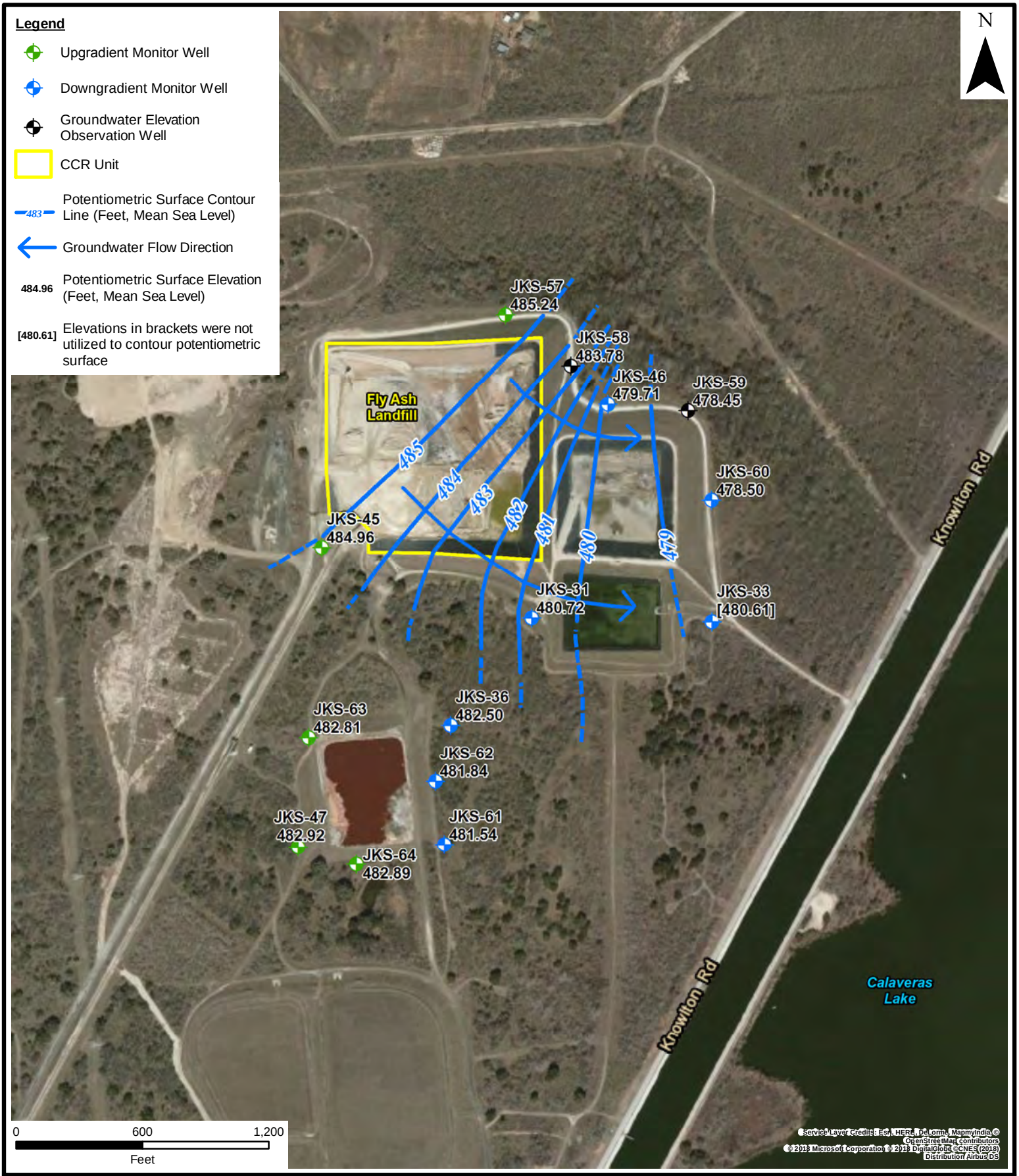
Potentiometric surface contour interval is 1 foot.

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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DATE:	1/10/2018	SCALE:	AS SHOWN	REVISION:	1

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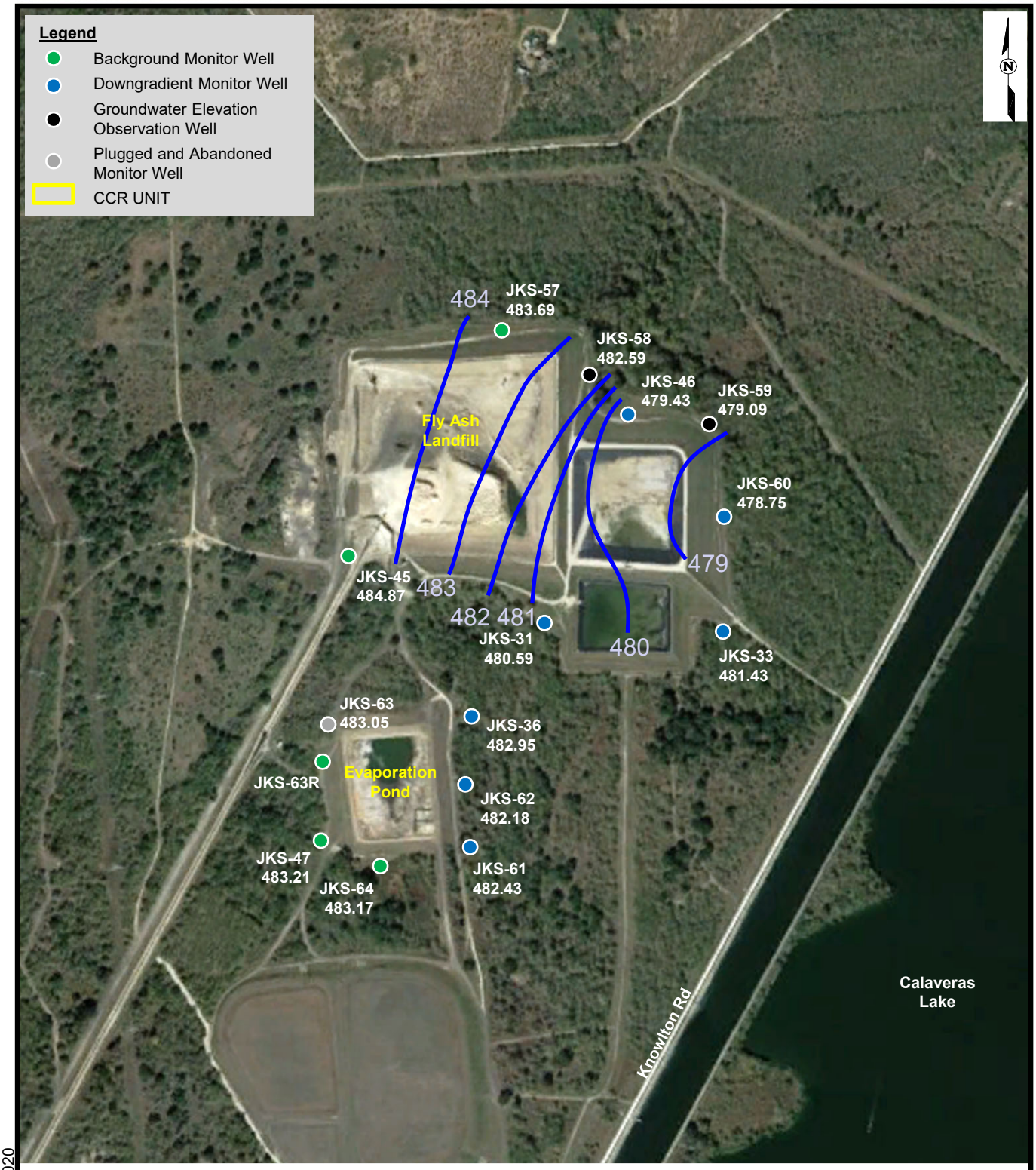
POTENTIOMETRIC SURFACE MAP - OCTOBER 2017
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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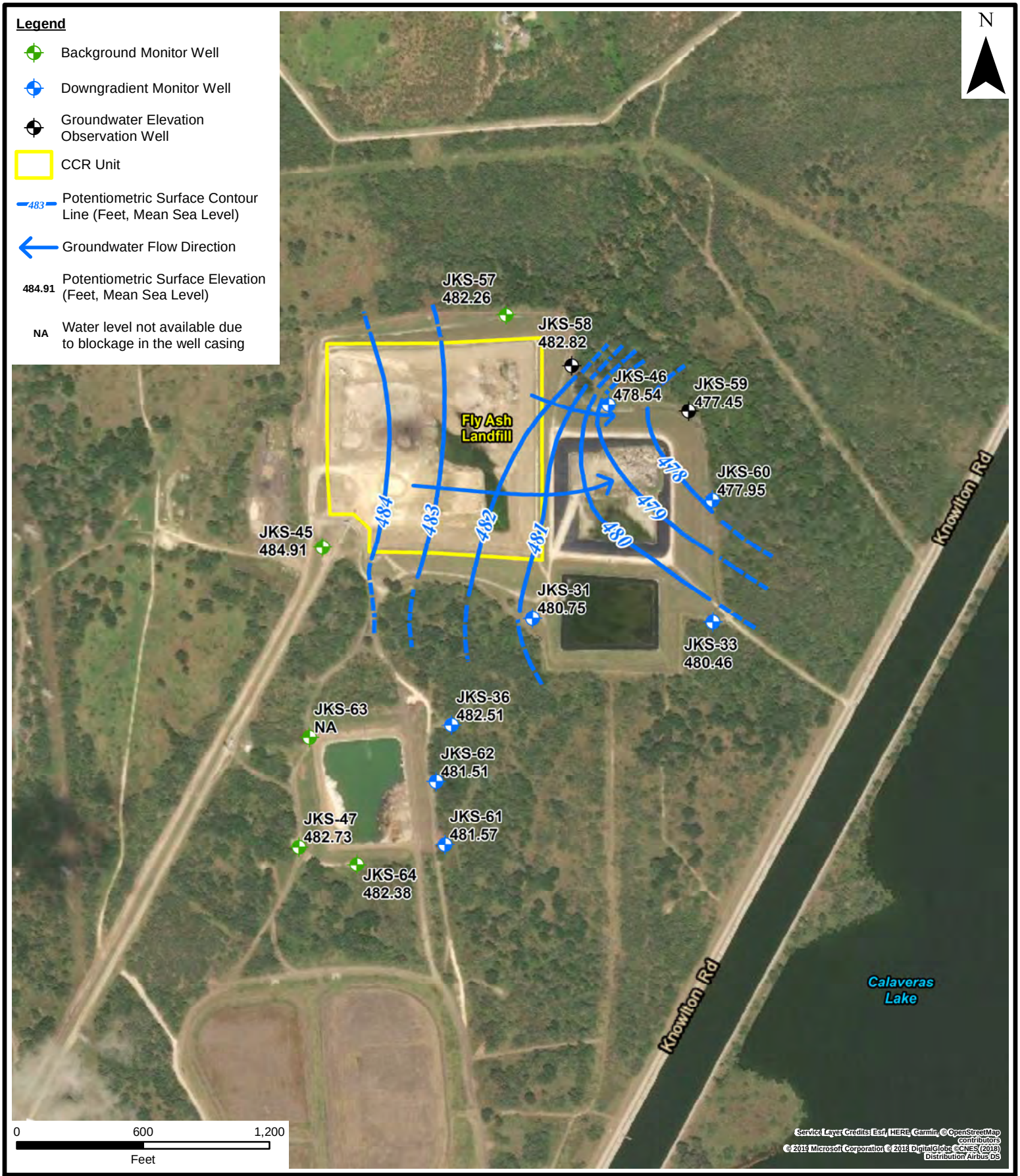
Potentiometric surface contour interval is 1 foot.

Source: Google Earth Pro, 2020

ERM

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

Figure



Environmental Resources Management

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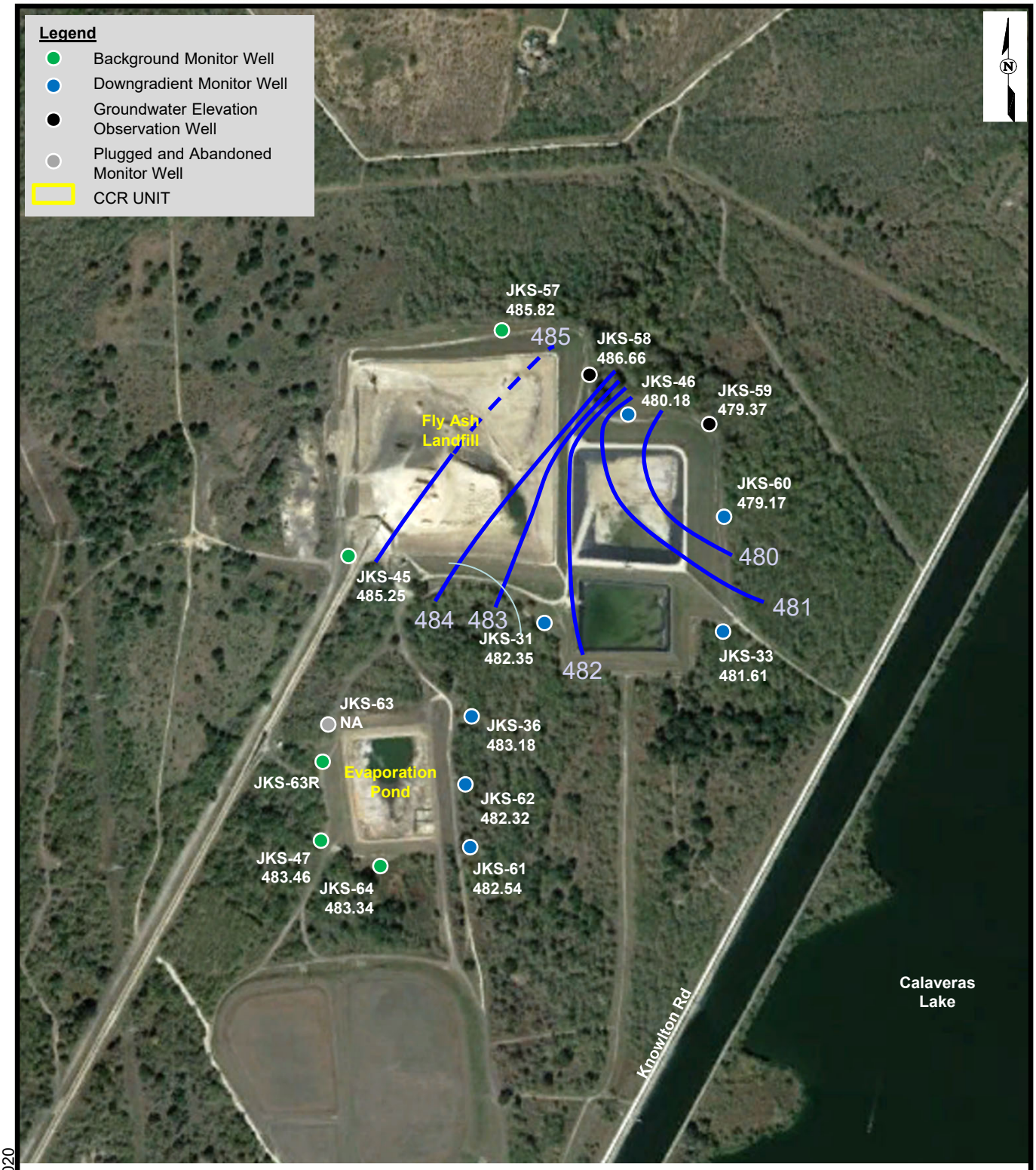
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
Fly Ash Landfill CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



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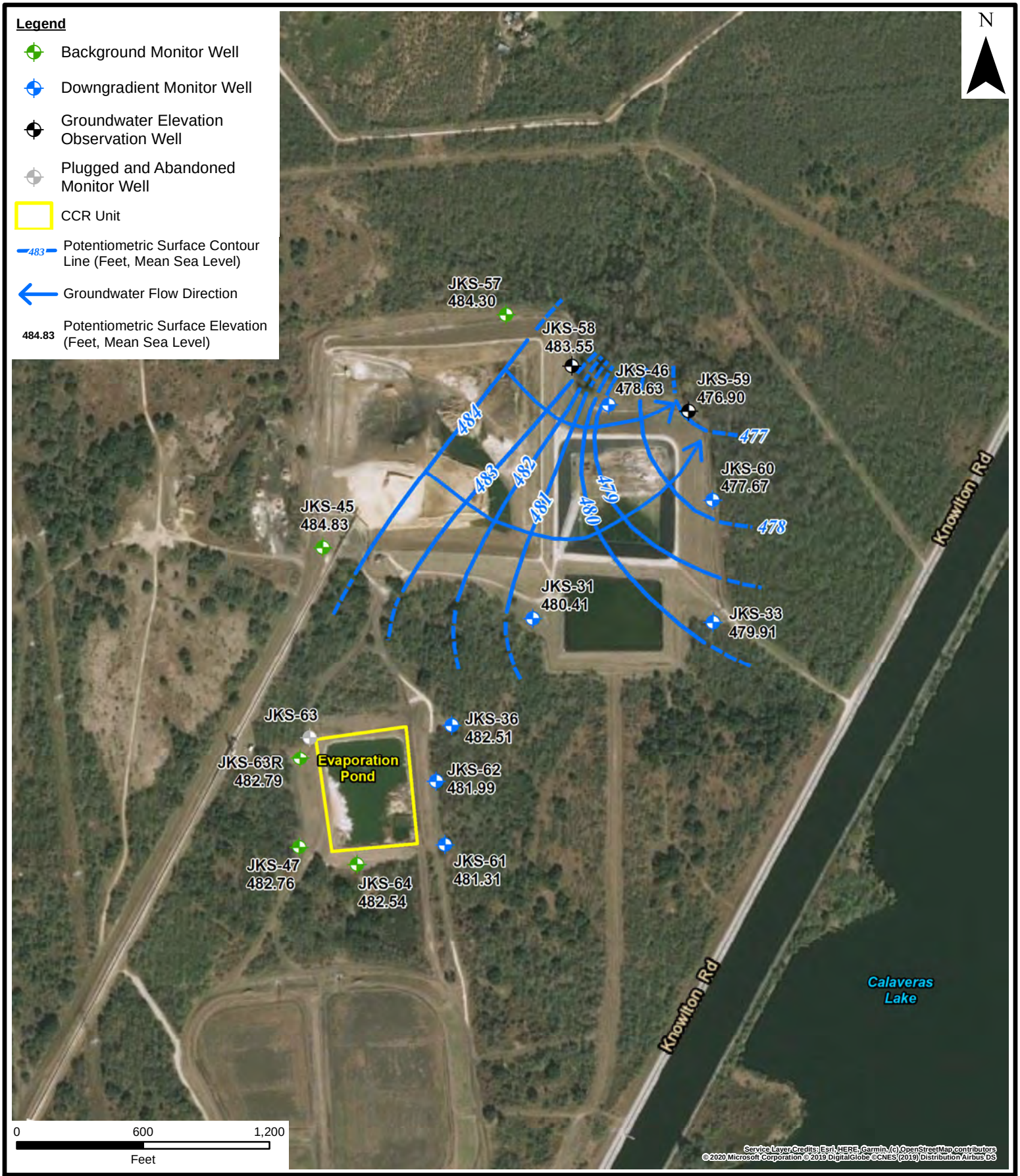
Potentiometric surface contour interval is 1 foot.

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



Environmental Resources Management

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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
DATE:	1/31/2018	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

ERM

Environmental Resources Management

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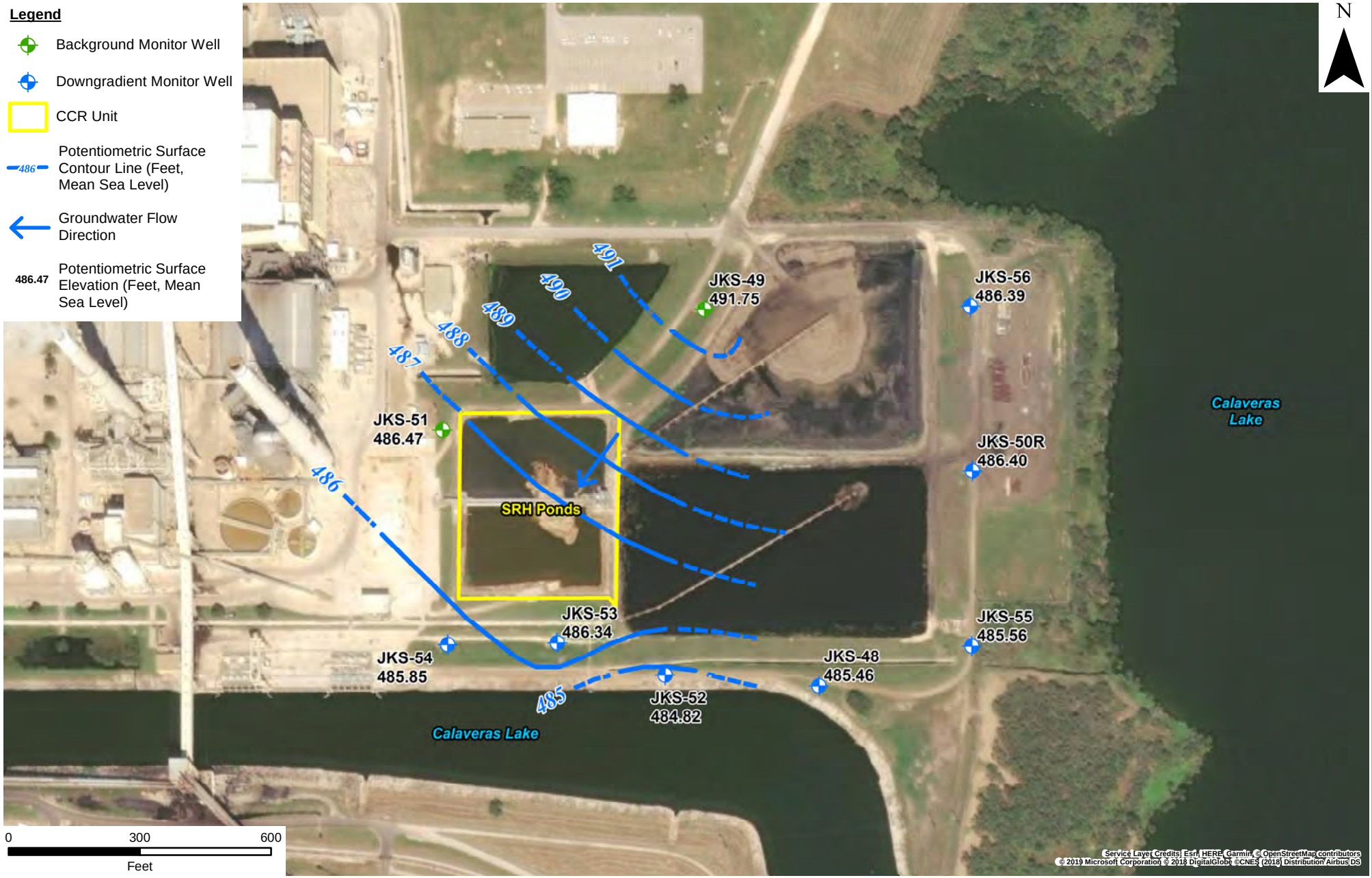
POTENTIOMETRIC SURFACE MAP - APRIL 2018
SRH Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

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

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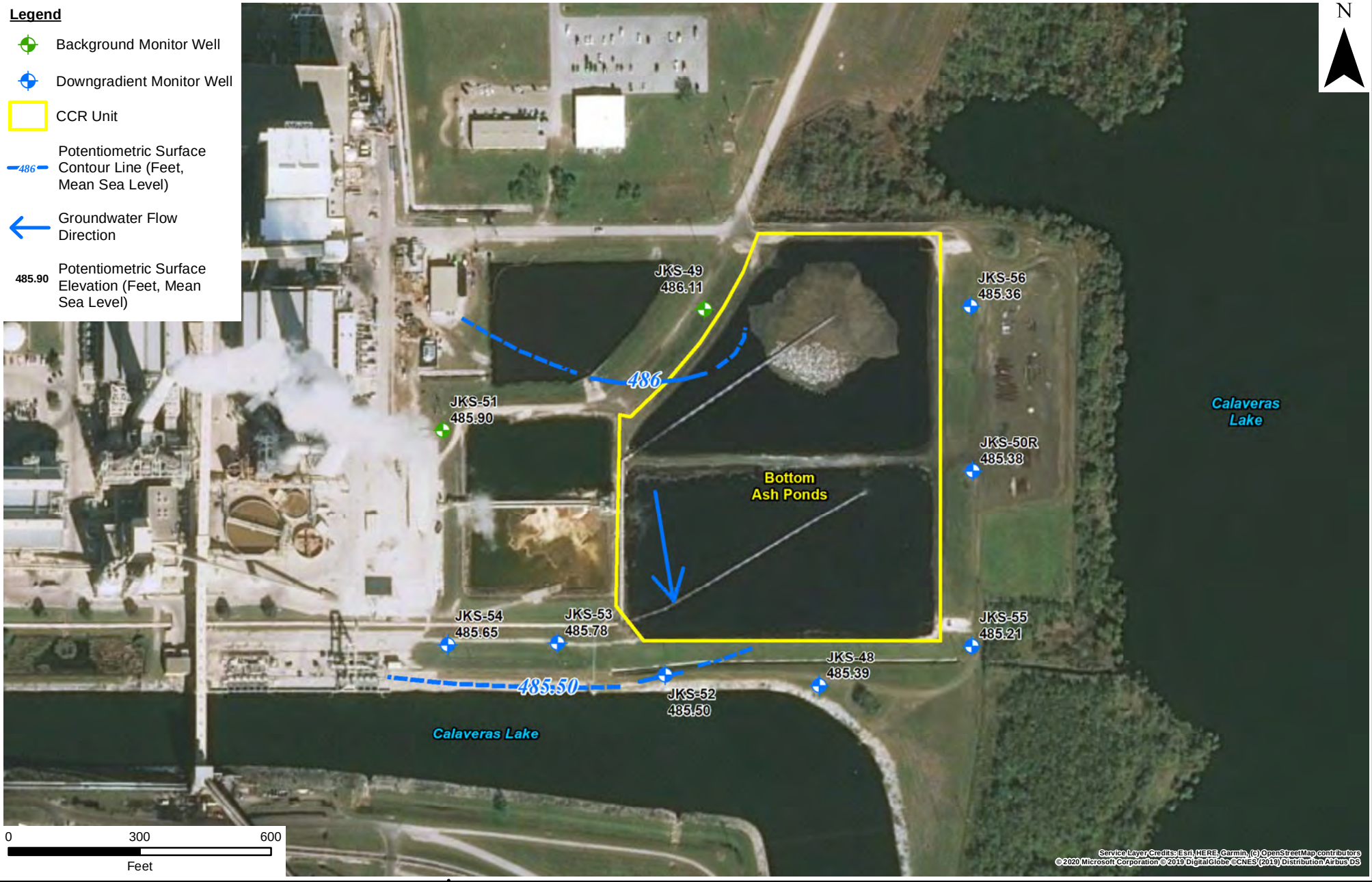
POTENTIOMETRIC SURFACE MAP - OCTOBER 2018
SRH Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	1/13/2020	SCALE:	AS SHOWN	REVISION:	1

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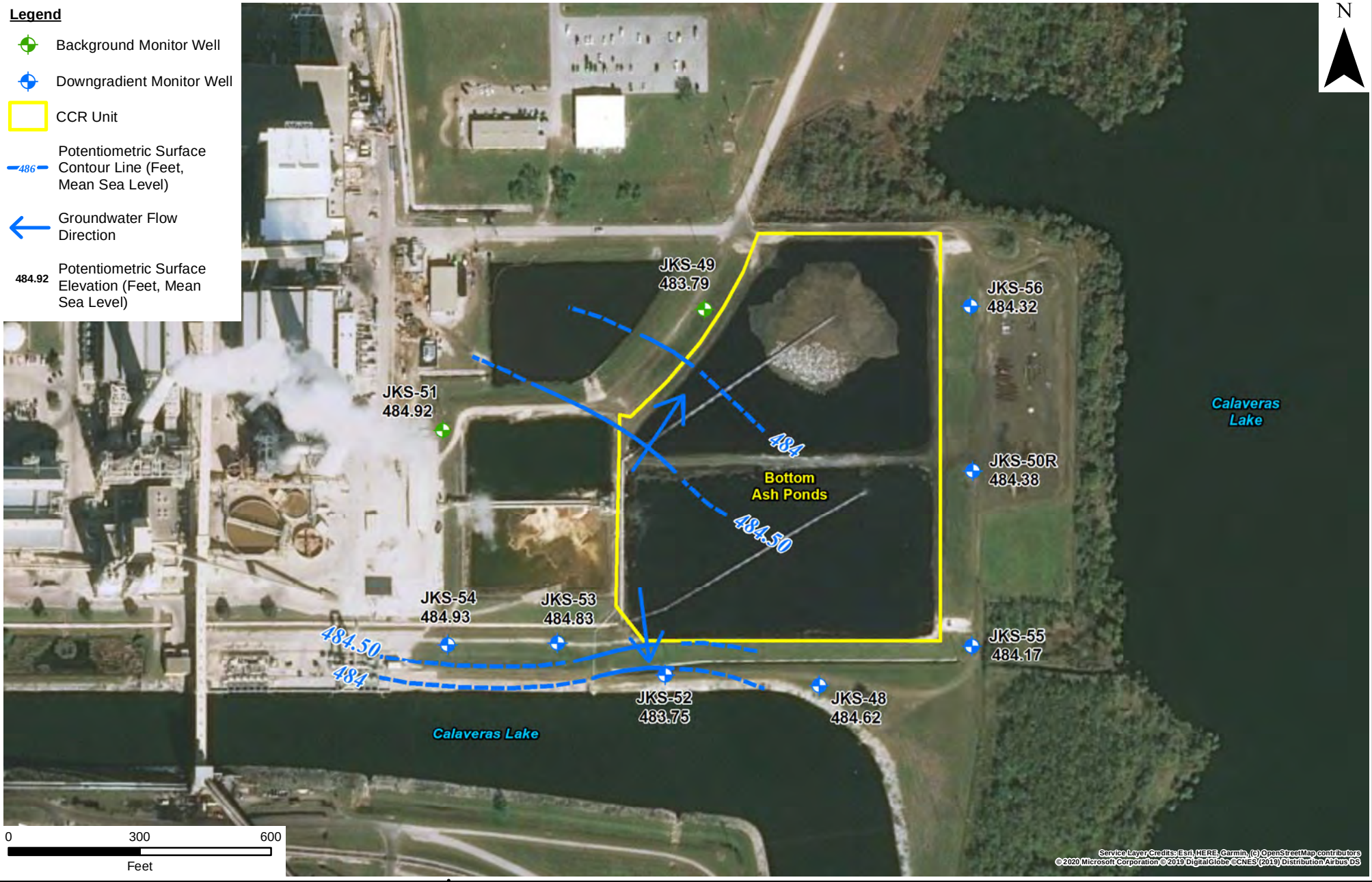
POTENTIOMETRIC SURFACE MAP - APRIL 2019
SRH Ponds CCR Unit
CPS Energy - Calaveras Power Station
San Antonio, Texas

ERM



Environmental Resources Management

DESIGN:	NH	DRAWN:	EFC	CHKD.:	WZ
DATE:	1/13/2020	SCALE:	AS SHOWN	REVISION:	1

\\ushoufs01\Data\Houston\Projects\0503422 CPS Energy Calaveras 2019 CCR Tasks.WZ\GIS_CAD\MXD\2019gwmon\fig2B_0503422_CPSCalv_SRHPonds_oct2019pmap.mxd

POTENTIOMETRIC SURFACE MAP - OCTOBER 2019
SRH Ponds 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.
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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
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.
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.
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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-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.
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H: Bias in sample result likely to be high.
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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.

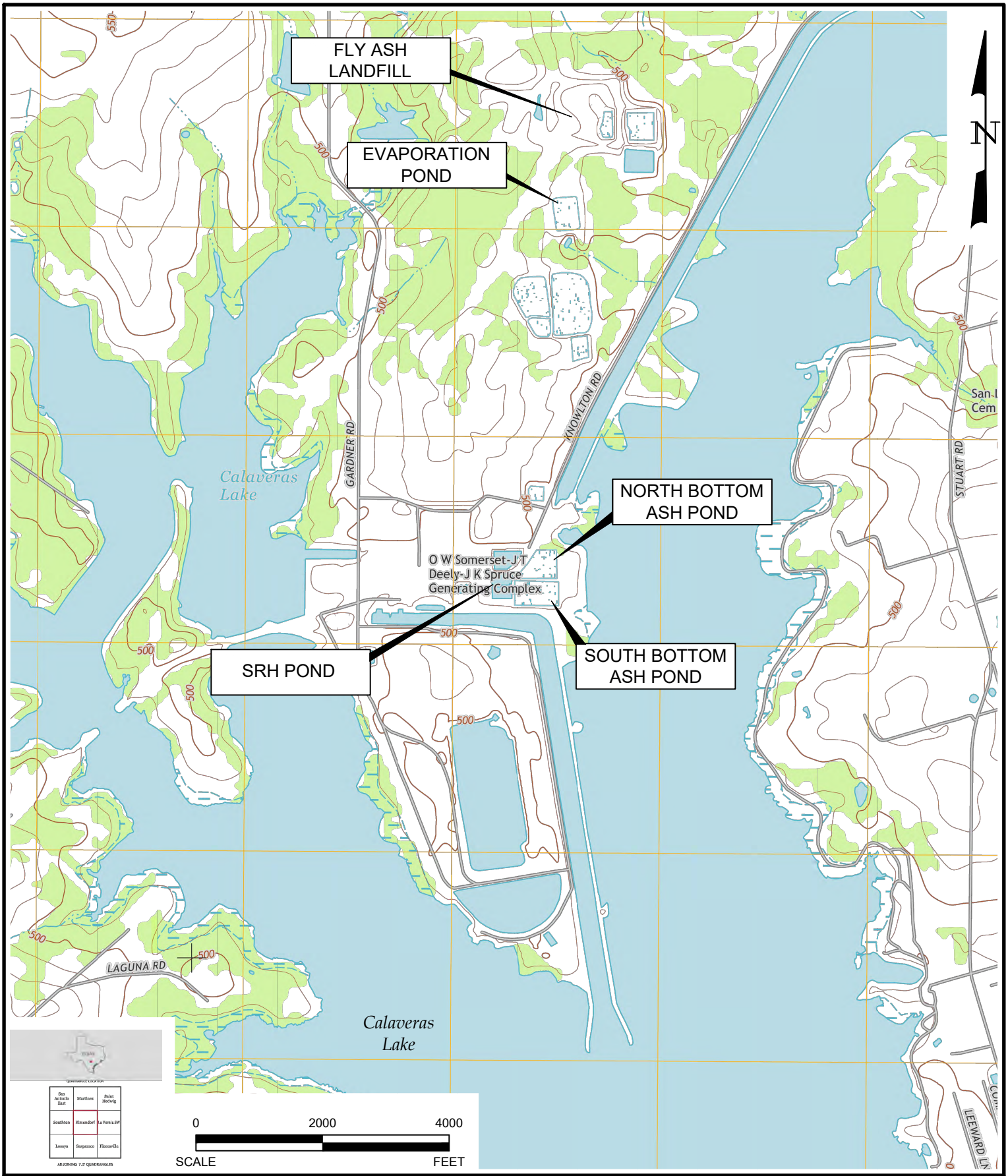
Environmental Resources Management

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

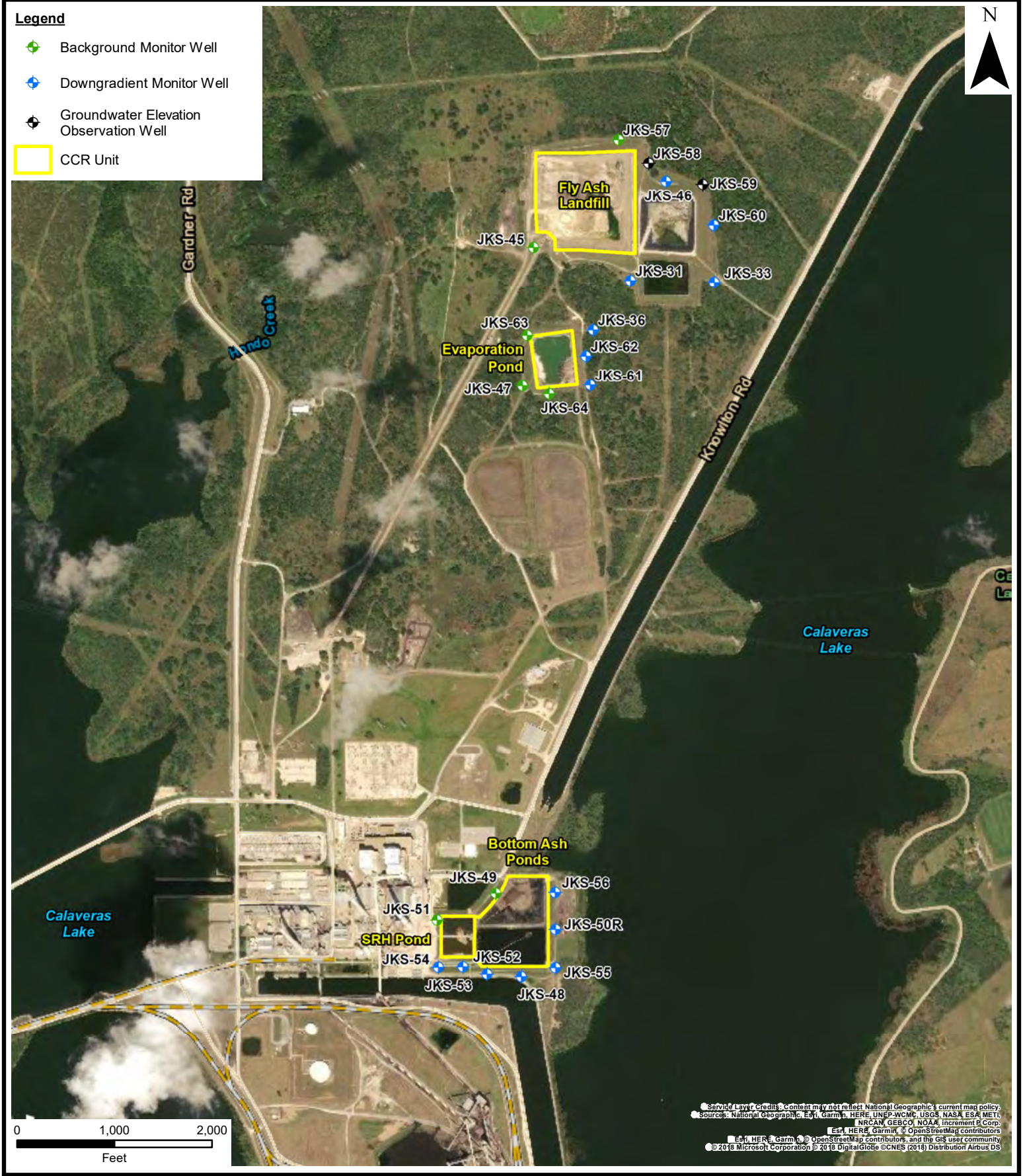
DESIGN: CC	DRAWN: RLM	CHKD.: CC
DATE: 9/19/2018	SCALE: AS SHOWN	REV.:
W.O. NO.: T:\DWG\AutoCAD\dwg\0337367\0337367_CCRUnitLocs_topo.dwg		

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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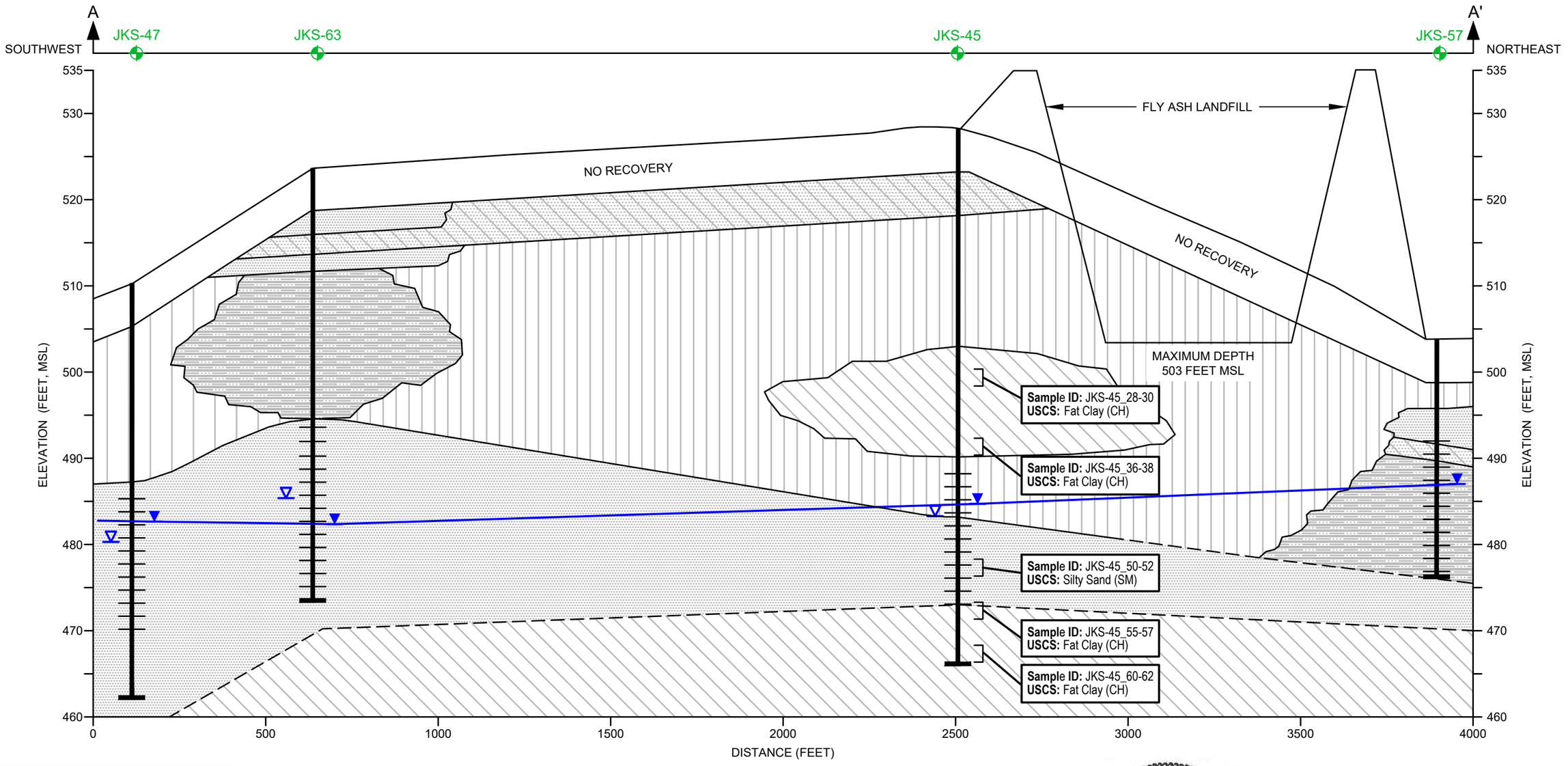
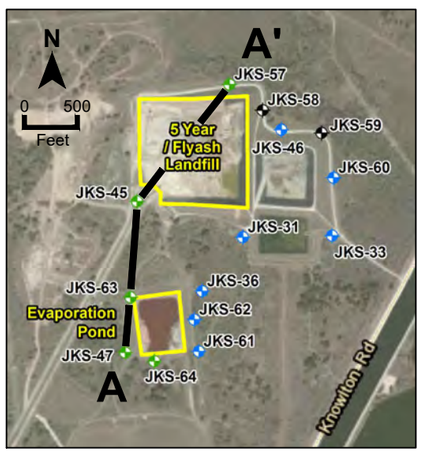
FIGURE 3
CCR WELL NETWORK LOCATION MAP

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.:

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

C SOUTHWEST — JKS-63 — JKS-61 — NORTHEAST C'

EVAPORATION POND

NO RECOVERY

500 FEET MSL

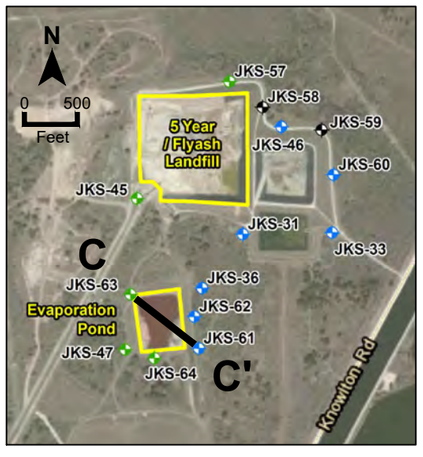
497 FEET MSL

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.:

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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

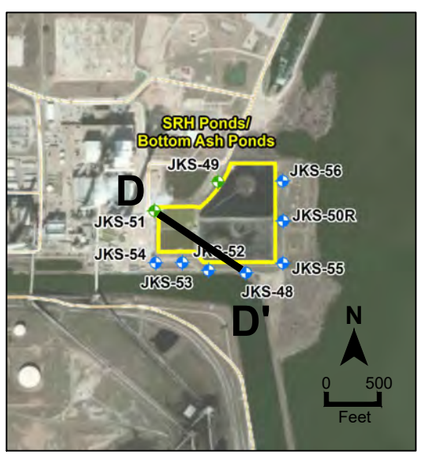
Sample ID: JKS-48_10-12.5
USCS: Clayey Sand (SC)

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
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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

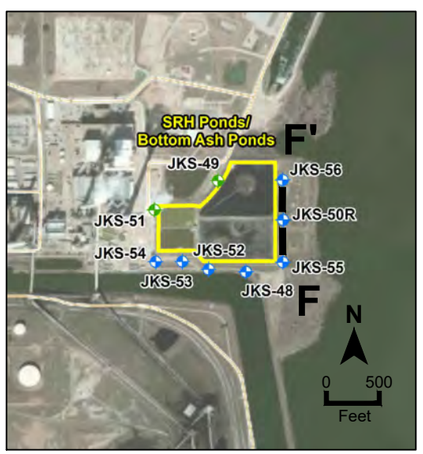
MAXIMUM DEPTH 488 FEET MSL

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.

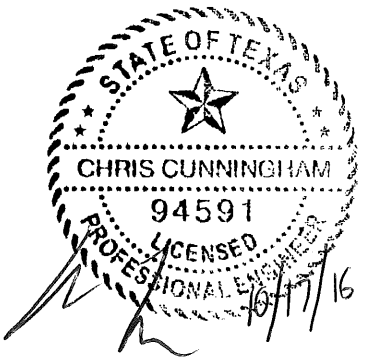


Table 1
Attachment 1

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

Phone 713-692-8373
Fax 713-692-8502
Toll Free 1-800-692-TEST

Excellence in Engineering, Consulting, Testing and Inspection

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.

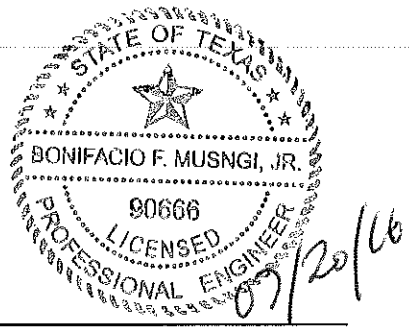
Slope stability analyses were performed in order to determine the factors of safety of the side slopes of the section configurations against a slope stability failure. The long term (steady state) shear strengths of the cohesive soils are based on the shear strength parameters from consolidated undrained 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

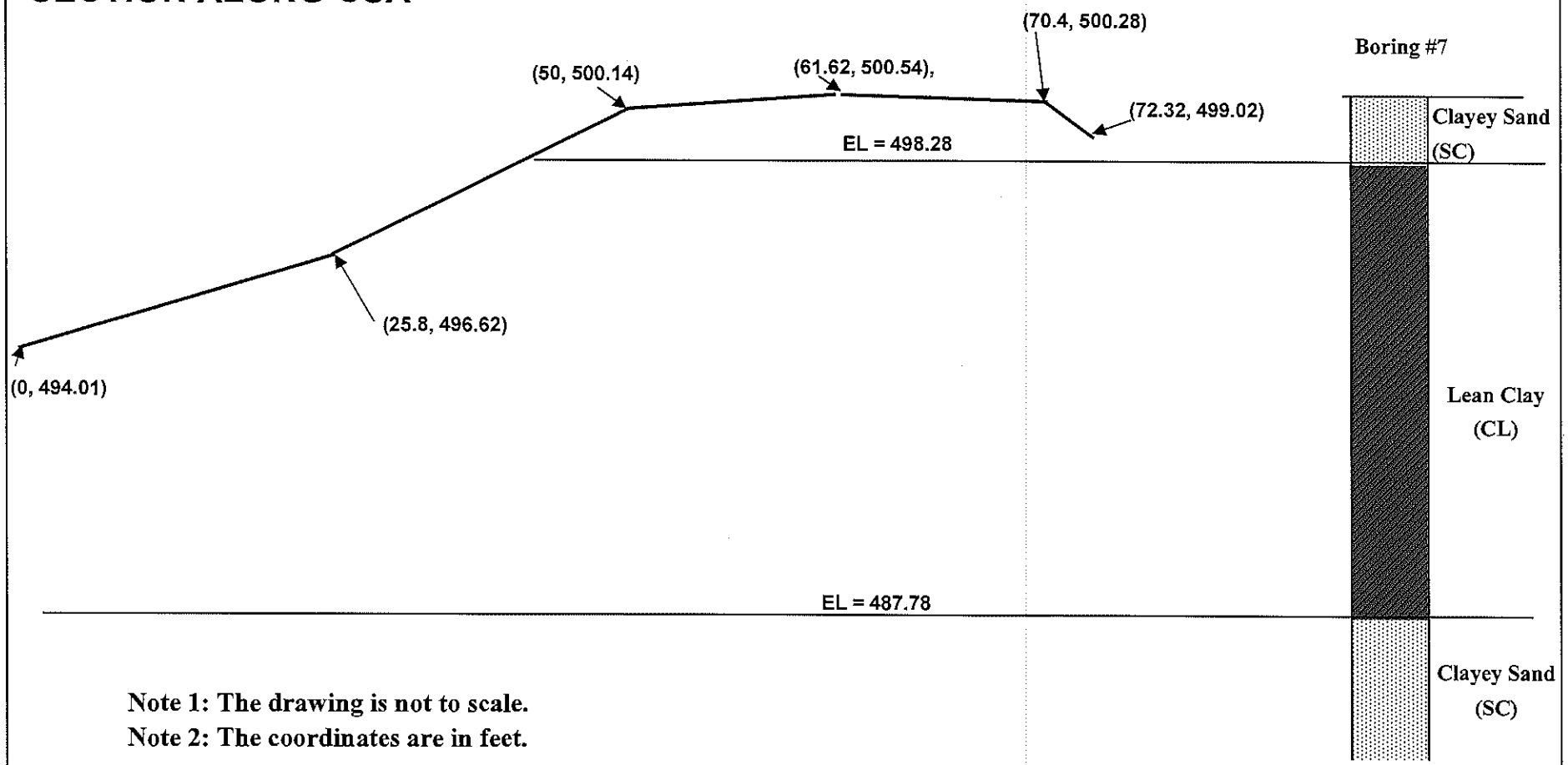
Attachments: **Appendix A – Slope Section Configurations**
Appendix B – Slope Stability Analyses Results

BFM/ba/cg

h:word/2016/300-349/16-303

APPENDIX A

SECTION ALONG CSA

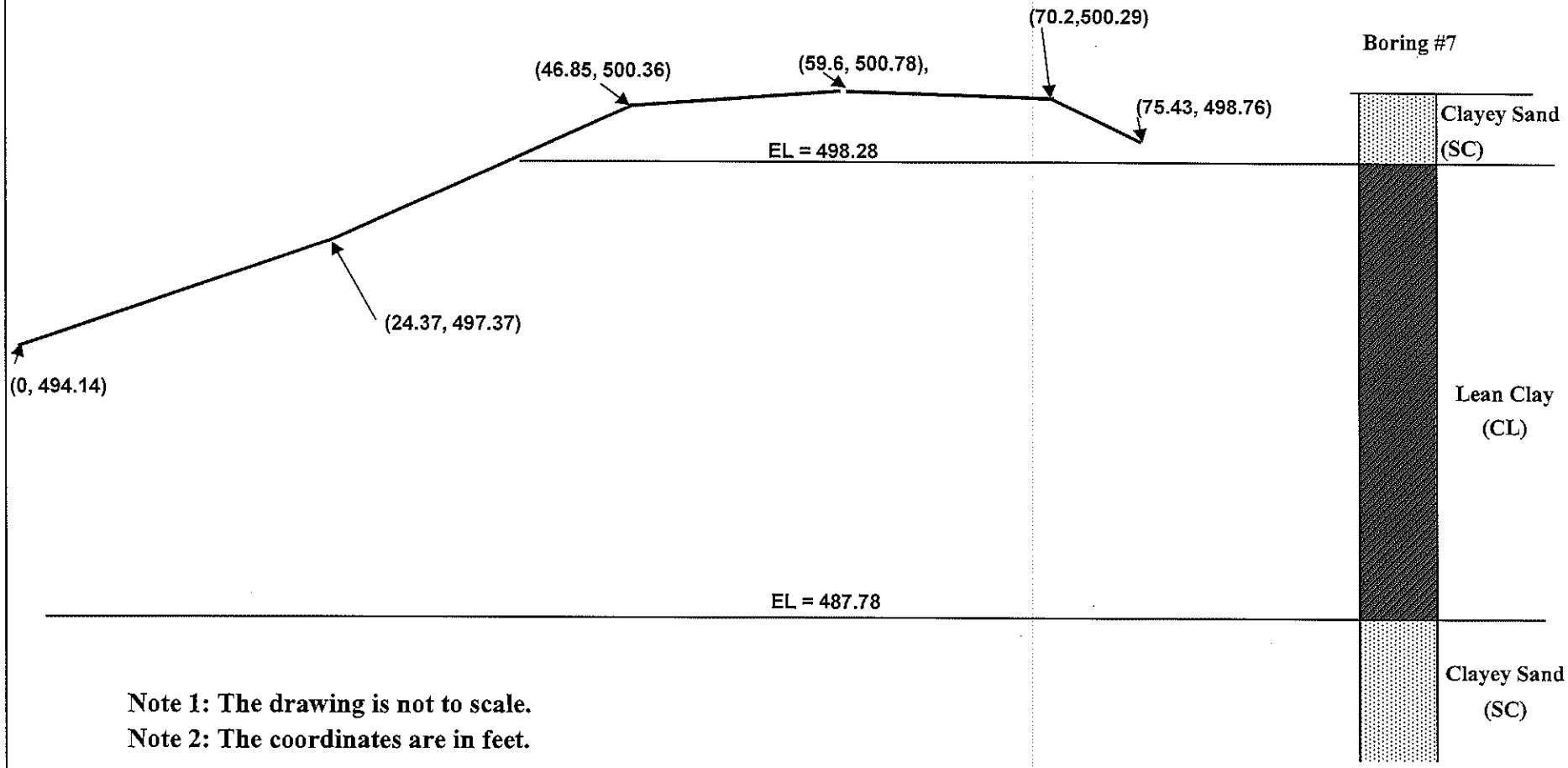


Note 1: The drawing is not to scale.
Note 2: The coordinates are in feet.

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.

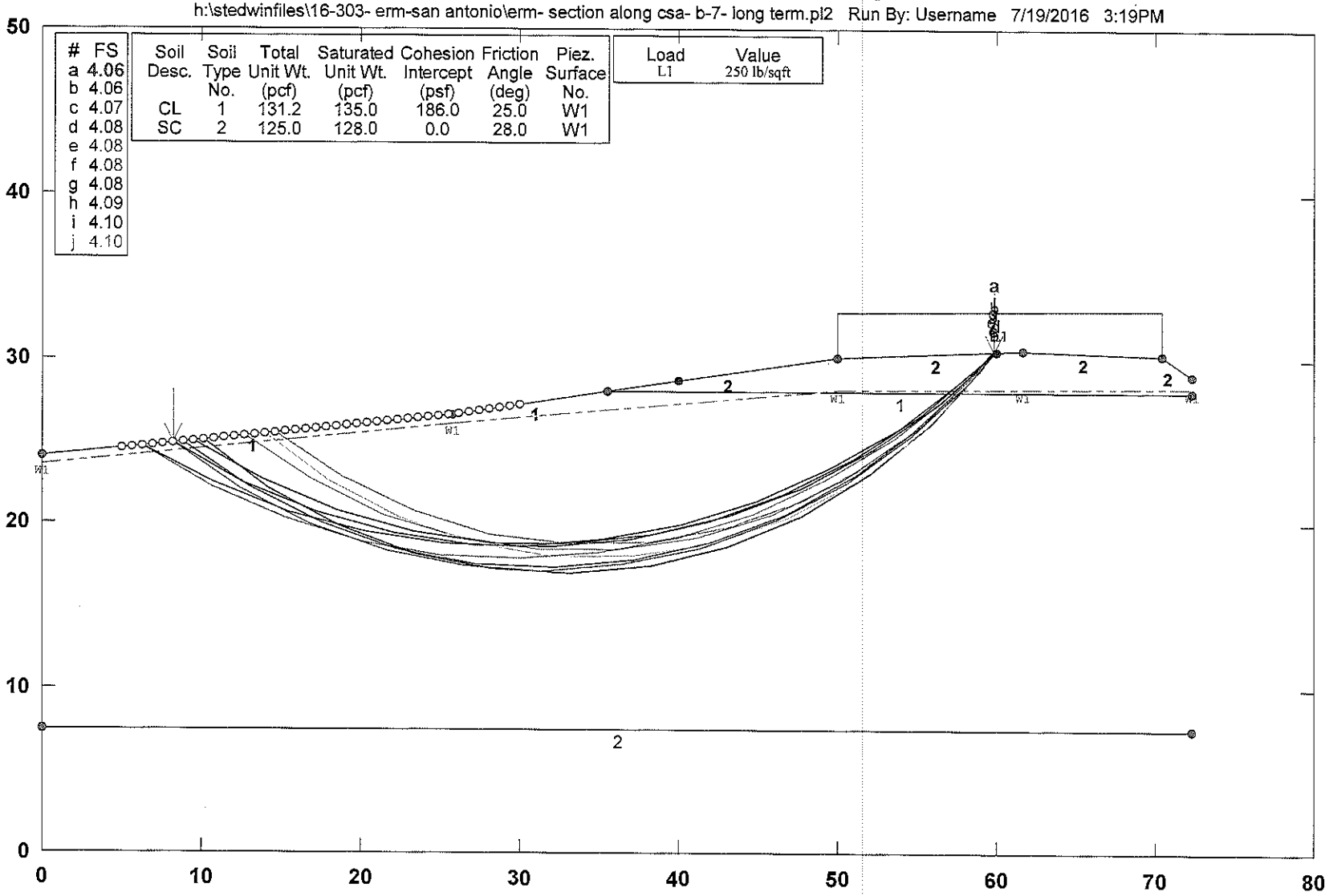
HTS, INC. Consultants

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

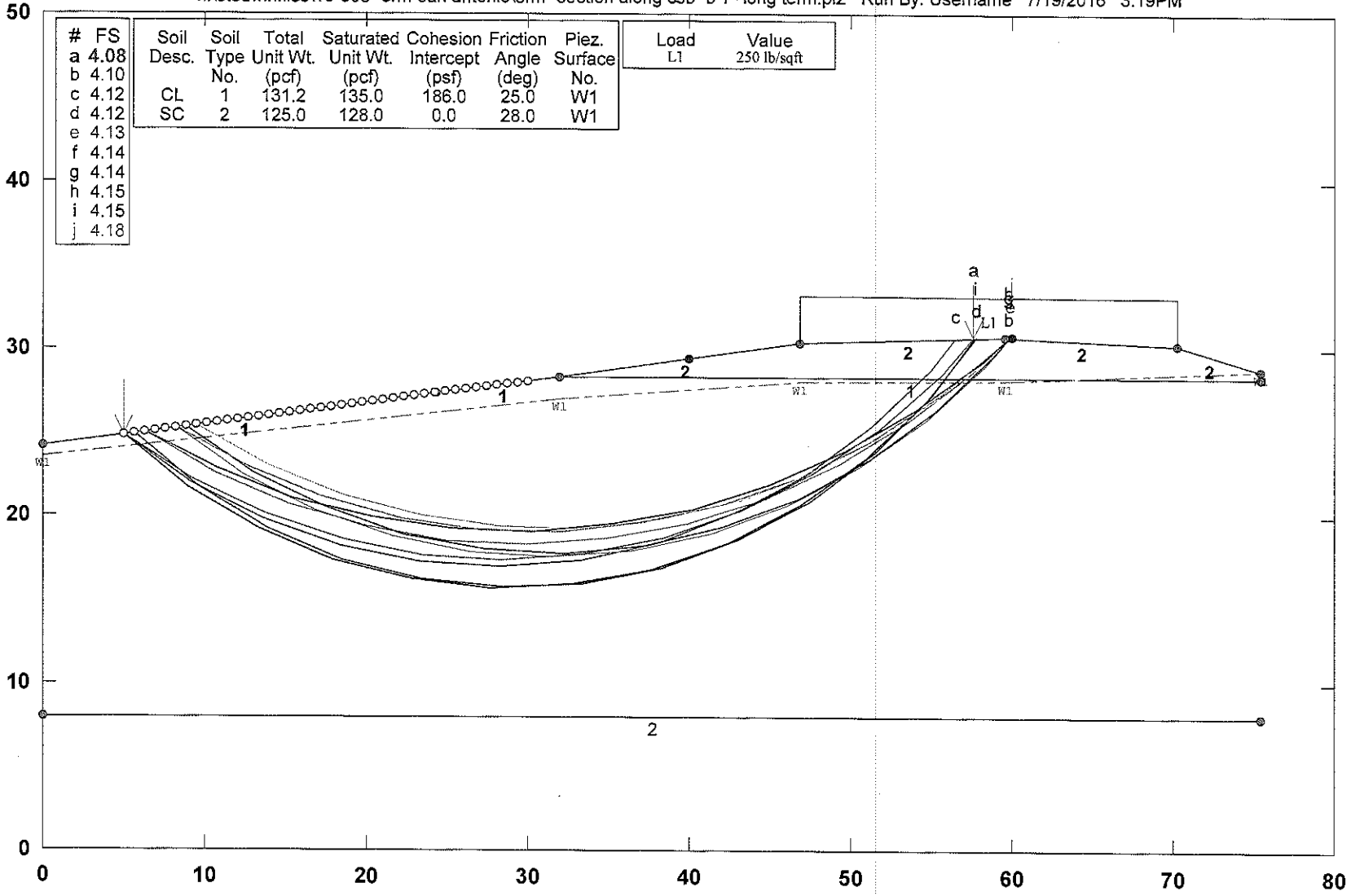
STABL6H FSmin=4.06

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

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ERM's Austin Office
Capitol Tower
206 East 9th Street, Suite 1700
Austin, Texas 78701

T: 512 459 4700
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