

DOCKETED

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Description:	Annual compliance Report
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CGS19-L-001

February 27, 2019

Dr. Anwar Ali
Compliance Project Manager
Siting, Transmission, & Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS 2000
Sacramento, California 95814

Reference: Colusa Generating Station

**Subject: Colusa Generating Station (06-AFC-9)
Condition of Certification COM-7 (BIO-2; HAZ-1; Noise-8; Soil and Water 2, 7, 8, 9;
TLSN-3; VIS-1, 3; Waste-5 – Annual Operating Report**

Dear Mr. Ali:

Please find the attached, pursuant to Colusa Generating Station (CGS) Conditions of Certification COM-7. This is the Annual Compliance Report for CGS and represents the operational period of January 1, 2018 through December 31, 2018. Within this report you will find the following information;

1. Attachment A: an updated compliance matrix showing the status of all Conditions of Certification (with exception to fully satisfied conditions as they do not need to be included after they have been reported as completed);
2. Attachment B: a summary of the current project operating status with explanations of any significant changes to facility operations during the reporting year;
3. Attachment C: documents required by specific conditions to be submitted along with the Annual Compliance Report.
4. Attachment D: a cumulative listing of all post-certification changes approved by the California Energy Commission or cleared by the CPM;
5. Attachment E: an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. Attachment F: a listing of filings submitted to, or permits issued by, other governmental agencies during the year;

7. Attachment G: a projection of project compliance activities scheduled during the next year;
8. Attachment H: a listing of the year's additions to the on-site compliance files;
9. Attachment I: an evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date;
10. Attachment J: a listing of complaints, notices of violations, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters.

Should you have any questions or comments please do not hesitate to contact me.

Sincerely,

Charles Price, Manager
Environmental Management Energy Supply.
Colusa Generating Station

Enclosure

cc: Tim Wisdom, PG&E (electronic)

Attachment A

Compliance Matrix

COLUSA GENERATING STATION COMPLIANCE MATRIX BASED ON CEC FINAL DECISION

Color code key:	Construction Item	Commissioning Item	Operations Item	Submitted to CEC or Agency	Approved by CEC/No Longer Applicable
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Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
AQ-01	COMM	All facility operating staff shall be advised of and familiar with these permit conditions.	Provide CPM and APCO with signed records of facility operating staff indicating review of permit conditions and maintain training and records documenting this training at the site.	30 days prior to first fire	PG&E	On file in Environmental Managers Office		Ongoing with New Hires	
AQ-02	CONS	Right of entry shall be provided at all times.	Project Owner shall make site available to reps of the District, ARB and CEC for inspection, etc.	As required	PG&E			Ongoing	
AQ-03	OPS	In the case of shutdown or restart of air pollution control equipment for necessary scheduled maintenance, notify CPM and APCO of such shutdown 24 hours prior.	Notify the CPM and APCO 24 hours in advance of planned shutdowns for maintenance.	As required	PG&E			Ongoing	
AQ-04	OPS	If any upset or breakdown occurs with permitted equipment that causes excess emissions of air contaminants, the APCO shall be notified with 24 hours or by 9:00am by the following work day.	In addition to phone call, also submit a written statement of full disclosure to the APCO within 72 hours, including date, time, duration, estimated emissions, cause and remedy.	As required	PG&E			Ongoing	
AQ-05	OPS	Fugitive emissions, including dust and odors, shall be controlled at all times such that a nuisance is not created at any point beyond the facility's property lines.	Project Owner shall document any complaints received from the public in the Quarterly Operation Reports (QORs) required by AQ-22 and make site available to APCO, ARB, and CEC representatives.	Quarterly after COD	PG&E			Ongoing	
AQ-07.2	COMM	A source test protocol will be submitted to the APCD for approval.	Submit source test protocol to the APCD for approval by the APCO.	45 days prior to conducting annual source tests	PG&E	Submitted to CEC, EPA, CCAPCD 09/08/10; 9/14/2011		Annual Requirement	
AQ-07.3	COMM	Notify the CPM and District 10 days prior to actual source test.	Notify the CPM and APCD prior to any compliance source test.	10 days prior to conducting any compliance source test	PG&E			Annual Requirement	
AQ-08	COMM	CONDITION MODIFIED BY CEC ORDER 7-15-09: Stack gas testing shall be required on an annual basis for NOx, VOC, and CO on the HRSG stacks. The HRSG stacks shall also be tested for SOx and PM10 emissions during the first year and in subsequent years if requested by APCO. The natural gas water bath heater shall be tested for NOx, SOx, VOC, CO, and PM10 during the first year and thereafter only as requested by APCO.	The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing.	Within 60 days of testing	PG&E			Annual Requirement	
AQ-09	COMM	Annual testing of the HRSG stacks shall include quantification of formaldehyde and NH3 emissions for compliance with permit limits. Verify by continuous recording the ammonia injection rate to the system. The ammonia source test shall be conducted over the expected operating rate of the turbine as set forth in the Condition.	Provide results and field data collected during source tests to CPM and APCD. Submit proposed ammonia injection/emission rate correlation to the APCD and CPM for approval with the ammonia source test report.	Within 60 days of testing	PG&E			Annual Requirement	

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AQ-10	OPS	CONDITION MODIFIED BY CEC ORDER 7-15-09: The gas turbines, duct burners, and natural gas water heater shall be fired exclusively on pipeline quality natural gas.	Submit information on the quality and type of fuel used for the gas turbines, duct burners, and natural gas water bath heater to the CPM/APCO in the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-11	OPS	The average annual sulfur content in the natural gas shall be less than or equal to 0.3 grains per 100 SCF. Conduct monthly testing at the site using approved methods to determine sulfur content. Natural gas testing info from Burney will also be reviewed and provided to the APCD.	Compile the required data on the sulfur content of the natural gas and submit to the CPM and APCO in the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-13a	OPS	All applicable federal standards and test procedures of Subpart KKKK shall be met.	Provide copies of all correspondence with EPA regarding compliance with Subpart KKKK to the APCD and CEC.	Quarterly after COD	PG&E			Ongoing	
AQ-14	OPS	CTGs shall meet a VOC limit of 2.0 ppmvd w/ duct burner firing and 1.38 ppmvd w/o duct firing at 15% O2 averaged over 1 hour. Maximum hourly steady state VOC emission limits for each CTG are 7.2 pounds with duct firing and 3.4 pounds w/o duct firing	Submit to the CPM and APCO CTG source test emissions data demonstrating compliance with this condition as required by condition AQ-8 and provide operating data that establishes ongoing compliance as part of AQ-22.	Within 60 days of testing	PG&E			Ongoing	
AQ-15	OPS	The CTGs shall meet a NOx limit of 2.0 ppmvd @15% O2 averaged over one hour <u>except during commissioning</u> . Maximum hourly steady state NOx emission limits for each CTG are 20.7 pounds with duct firing and 15.3 pounds without duct firing.	Submit to the CPM and APCO CTG continuous emissions data demonstrating compliance with this condition as part of the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-16	OPS	The CTGs shall meet a CO limit of 3.0 ppmvd @15% O2 over a three-hour rolling average <u>except during commissioning</u> . Maximum hourly steady state CO emission limits for each CTG are 18.9 pounds with duct firing and 14.0 pounds without duct firing.	Submit to the CPM and APCO CTG continuous emissions data demonstrating compliance with this condition as part of the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-18	OPS	Ammonia slip shall be limited to 5.0 pmvd @15% O2 over one hour. Formaldehyde emissions will be limited to 0.917 lbs per MMscf of natural gas. Maximum hourly steady state NH3 emission limits for each CTG are 19.2 pounds with duct firing and 14.2 pounds without duct firing.	Submit to the CPM and APCO CTG source test emissions data demonstrating compliance with this condition a part of the QOR. Provide to the CPM and APCO for approval a calculation method to determine the ammonia slip emissions, using source test data, based on the NOx concentration and the ammonia injection rate; this calculation shall be revised for approval as necessary after each source test performed under AQ-9.	Within 60 days of testing	PG&E			Annual Requirement	
AQ-19a	OPS	CEMS shall be installed to sample, analyze, and record NOx, CO, and O2 concentration in the exhaust gas of both HRSG stacks.	Make the site available for inspection by the APCD, ARB, and CEC to verify CEMS is properly installed and operational.	As required	PG&E			Ongoing	
AQ-19b	OPS	CEMS will generate reports of emissions data in accordance with permit requirements and will send alarm signals to the plant DCS control room when emissions levels approach or exceed pre-selected limits.	Submit emissions data generated by the CEMS to the CPM and APCO as part of the QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-19c	OPS	RATA tests will be conducted annually to verify performance of the CEMS.	Provide RATA test results along with annual source test report as required under AQ-8.	Annually	PG&E			Ongoing	
AQ-22	OPS	Quarterly reports of CEMS and process data, <u>including startup info</u> , shall be submitted to the District within 30 days after the end of each quarter.	Provide information as part of QORs. (Format will be determined by the District and may include both electronic spreadsheet and hard copy files.)	Quarterly after COD	PG&E			Ongoing	

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AQ-25	OPS	CONDITION MODIFIED BY CEC ORDER 7-15-09: The total emissions from the CTGs and HRSGs shall not exceed those established in the Condition for hourly and daily operations (<u>see emission limits set forth in table in condition</u>).	Submit CTG and HRSG emissions data to CEC CPM and APCO demonstrating compliance with the condition as part of QORs.	Quarterly after COD	PG&E			Ongoing	
AQ-26	OPS	CONDITION MODIFIED BY CEC ORDER 7-15-09: The total emissions from the Colusa Power Plant shall not exceed the quarterly and annual combustion emission limits established in the Condition [all numbers have been revised from original Final Decision]	Submit to the CPM and APCO the plant emissions data demonstrating compliance with this condition.	Quarterly after COD	PG&E			Ongoing	
AQ-29	OPS	Total facility emissions of Hazardous Air Pollutants shall not exceed 10 tons/year for any single pollutant except ammonia, formaldehyde, and propylene.		Annually	PG&E			Ongoing	
AQ-SC6	OPS	Submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. Project Owner shall submit to the CPM any modification to any permit proposed by the District of EPA and any revised permit issued by the District of EPA.	Submit any proposed air permit modification to the CPM.	Within 5 working days of its submittal	PG&E			Ongoing	
AQ-SC9	OPS	Submit to the CPM Quarterly Operation Reports following the end of each calendar quarter and containing the info required by Condition AQ-19.	Submit QORs to the CPM and APCO no later than 30 days following the end of each calendar quarter.	Quarterly after COD	PG&E			Ongoing	
AQ-SC11	OPS	NEW CONDITION PER CEC ORDER 7-15-09: The wet surface air cooler spray water shall be tested for total dissolved solids and that data shall be used to determine and report the particulate matter emissions from the wet surface air cooler. The wet surface air cooler spray water shall be tested at least once annually during the anticipated summer operation peak period (July through September).	The project owner shall provide the water quality test results and the wet surface air cooler particulate (PM10/PM2.5) emissions estimates to the CPM as part of the fourth quarter's quarterly operational report (AQ-SC9).	At least once annually during summer peak period				Ongoing	
BIO-07	OPS	Incorporate biological mitigation measures into the BRMIMP and permanent or unexpected permanent closure plans.	Address all biological resource related issues associated with facility closure and provide final measures in a biological resources element of the final closure plan.	12 months prior to start of closure activities	PG&E			Ongoing	
COM-01	OPS	Unrestricted Access		Ongoing	PG&E			Ongoing access provided during construction	
COM-02	OPS	Compliance Record--The files are to contain copies of all "as-built" drawings, all documents submitted as verification for conditions, and all other project-related documents.		Ongoing	PG&E			Ongoing	
COM-05	OPS	Compliance Matrix	Submit a compliance matrix with each MCR and also in ACR	Include in MCR and in ACR	PG&E			Ongoing	
COM-07	OPS	Annual Compliance Report	Submit to CPM on an annual basis	Annually	PG&E			Ongoing	
COM-09	OPS	Annual Energy Facility Compliance Fee	Submit annual compliance fee to CEC	During life of project	PG&E			Ongoing	

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COM-10	OPS	Reporting of Complaints, Notices and Citations	Report to the CPM all notices, complaints, and citations within 10 days of receipt.	As required	PG&E			Ongoing	
COM-11	OPS	Planned Facility Closure	Submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure	12 months prior to start of closure activities	PG&E				
COM-13	OPS	Unplanned Permanent Facility Closure	The on-site contingency plan required for unplanned temporary closure shall also cover unplanned permanent facility closure. All of the requirements specified for unplanned temporary closure shall also apply to unplanned permanent closure.	Within 90 days of permanent closure	PG&E	9/29/2010	CGS10-L-0111	Approved via email 10/15/10	
COM-14	CONS	Post-Certification Changes to the Decision		As required	PG&E			Amendments are discussed in MCR	
CUL-04	CONS	Prepare the Cultural Resources Report (CRR) in ARMR format. Include all information specified in Condition.	Submit CRR within 90 days after completion of ground disturbance (including landscaping).	Within 90 days after completion of landscaping	PG&E	7/28/2011	CGS11-L-0026	Approved 4/9/13	
GEN-01c	OPS	Once the certificate of occupancy has been issued, inform the CPM of any construction, addition, alterations, moving, demolition, repair, or maintenance to be performed on any portions of the completed facility for the purpose of complying with the above stated codes.	Submit required info to the CPM.	At least 30 days prior to such work	PG&E				
GEN-08	CONS	Obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The Project Owner shall request the CBO to inspect the completed structure and review the submitted documents. The Project Owner shall retain one set of approved engineering plans, specifications, and calculations at the project site or other accessible location during the operation of the project.	Submit to the CBO a written notice that the completed work is ready for inspection and a signed statement that the work conforms to the final approved plans.	Within 15 days of completion of any work	PG&E/CBO				
HAZ-01	OPS	Do not use any hazardous material in any quantity or strength not listed in Appendix C unless approved in advance by the CEC CPM.	Report to the CPM a list of hazardous materials and storage quantities contained at the facility	Include in Annual Compliance Report	PG&E			Ongoing	
NOISE-02	OPS	Throughout the construction and operation of the project, document, investigate, evaluate, and attempt to resolve all project-related noise complaints. Noise Complaint Resolution process will be used.	File a Noise Complaint Resolution Form with the City and the CPM documenting resolution of the complaint.	Within 5 days of receiving a noise complaint	PG&E				
NOISE-08	OPS	In the event legitimate noise complaints are made by owners or occupants at the two residences locate at ML1, ML2, or RC1 during operation of the CGS, the Project Owner shall offer to pay for the following noise attenuating upgrades (see list in Condition).	Upgrades shall be installed (unless impossible due to circumstances beyond Project Owner's control) within six months of the receipt of the compliance. Provide documentation certifying the items listed in the Condition.	As required	PG&E			Ongoing	

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
PAL-06	OPS	Through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during project construction .	Maintain in compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. Maintain these files for a period of three years after completion and approval of the CPM-approved Paleontological Resources Report.	As required					
SOIL & WATER-04b	OPS	Notify the CEC of any violations of the agreement requirements, limits or amounts.	Provide copies of any NOV's from the GCID. Fully explain corrective actions in next MCR.	Within 10 days of NOV	PG&E			Ongoing	
SOIL & WATER-07b	OPS	Submit any required monitoring information to the CPM in the annual compliance report.	Submit requested information.	Include in ACR	PG&E			Ongoing	
SOIL & WATER-07c	OPS	Submit copies of an NOV's to the CPM.	Submit requested info to CPM.	Within 10 days of receipt of NOV; explain correction actions in ACR	PG&E			Ongoing	
SOIL & WATER-08b	OPS	Prepare an annual water use summary which includes the monthly range and monthly average of daily raw water usage in gpd and total water used by the project on a monthly and annual basis in acre-feet. Potable water use on the site shall be recorded on a monthly basis. (See additional details for annual water use summary in Condition)	Submit requested info to CPM.	Annually	PG&E			Ongoing	
SOIL & WATER-09c	OPS	Monitor the waste water system following the general standards adopted in the SWRCB's onsite wastewater treatment system regs or the procedures outlined in the CPM-approved O&M manual. Provide testing results.	Provide requested into to CPM.	Include in ACR	PG&E			Ongoing	
TLSN-03	OPS	Take reasonable steps to resolve any complaints of interference with radio or TV signals from operation of the proposed lines.	Provide reports of line-related complaints along with related mitigation measures in the annual report for the first five year.	Include in ACR	PG&E			Ongoing	
VIS-01b	OPS	Notify the CPM that the surface treatment of all listed structures and buildings has been completed and is ready for inspection and submit electronic color photographs taken from the same KOPs	Set up an inspection appointment.	Within 90 days of start of commercial ops	PG&E	3/24/2011	CGS11-L-0014	4/11/2011	
VIS-02b	COMM	Notify the CPM that the lighting has been completed and is ready for inspection.	Set up an inspection appointment.	Prior to start of commercial operation	Gemma	9/19/2011	CGS11-L-0036	Approved 9/29/2011	
VIS-02c	OPS	Notify the CPM of any complaints re: lighting.	Submit a complaint resolution form to the CPM record each lighting complaint and document resolution of that complaint.	Within 48 hours after receiving a complaint	PG&E			Ongoing	

Cond. #	Sort Code	Description of Project Owner's Responsibilities	Verification/Action/Submittal Required by Project Owner	Timeframe	Lead Respons. Party	Date sent to CEC, CBO or agency	Log Number	Status	Comments
VIS-03	CONS	Provide landscaping that reduces the visibility of the power plant structures and complies with local policies and ordinances. Trees shall be strategically placed along the southern, eastern, and northern facility boundaries as appropriate and of sufficient density and height to screen the plant structures to the greatest feasible extent within the shortest feasible time.	Prepare and submit a landscaping plan (see Condition for details on info to include in plan) to the CPM for review and approval and to the County for review and comment. Notify the CPM and County within 7 days after completing installation of landscaping. Report on landscape maintenance activities in ACR.	At least 90 days prior to installation of landscaping -	PG&E			Submitted 8/25/2010 Approved 9/14/2010 Ongoing for Annual Report	
WASTE-04	CONS	Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the Project Owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.	Notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.	As required	PG&E			Ongoing	
WASTE-05b	OPS	Prepare an Operations Waste Management Plan for all wastes generated during construction of the facility.	Submit plan to the CPM for review and approval. See Final Decision WASTE-5 for plan requirements.	Provide training sign-in sheets in first MCR Report in Annual Report	PG&E	9/23/2010	CGS10-L-0109	Approved on 10/18/10	

Appendix A
Site Photo



Photo 1, photo of great horned-owl nest with 3-eggs as observed in ACC, 2/22/18.

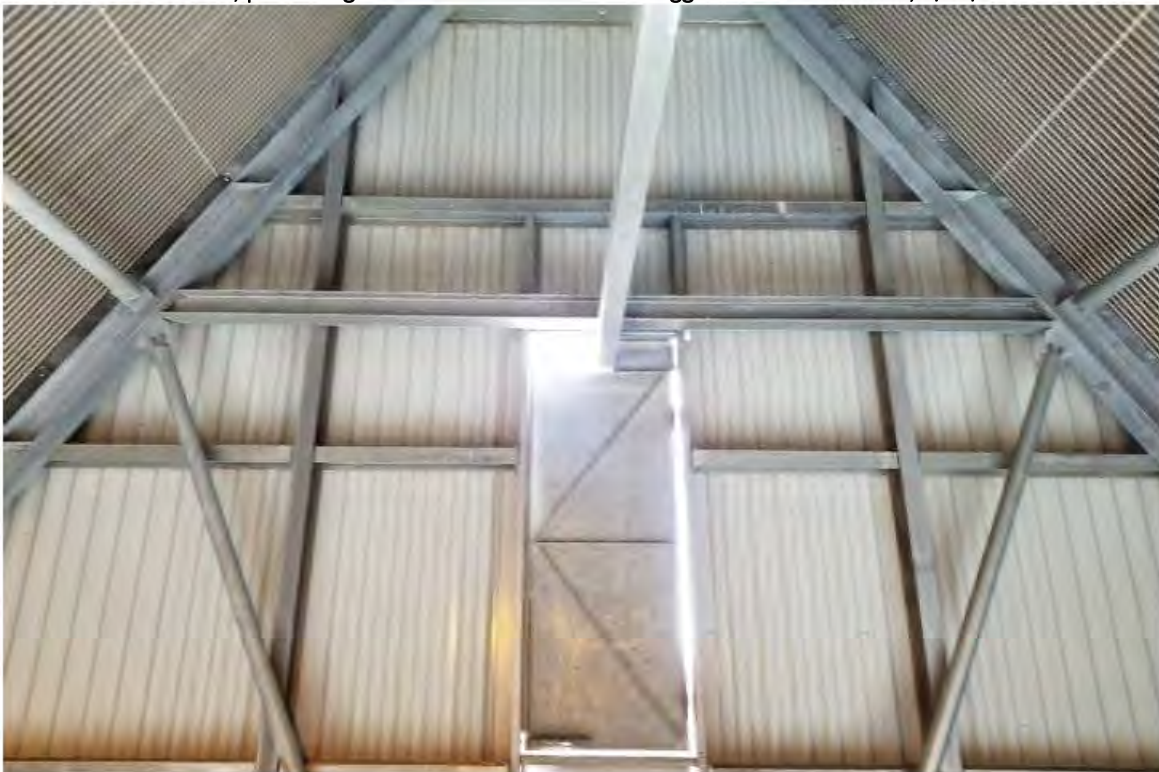


Photo 2, Panel left off access door to street #5 in ACC, 2/22/18.



Photo 3, of headless barn owl observed in northwest corner of CGS site, 2/22/18.



Photo 4, of juvenile pigeons as observed by CGS staff in combustion turbine enclosure, 3/8/18.



Photo 5, of gopher snake as observed in erosion area on east side of switchyard, 3/26/18.



Photo 6, of barn owl pellet observed under barn owl boxes along southern site perimeter, 3/26/18.

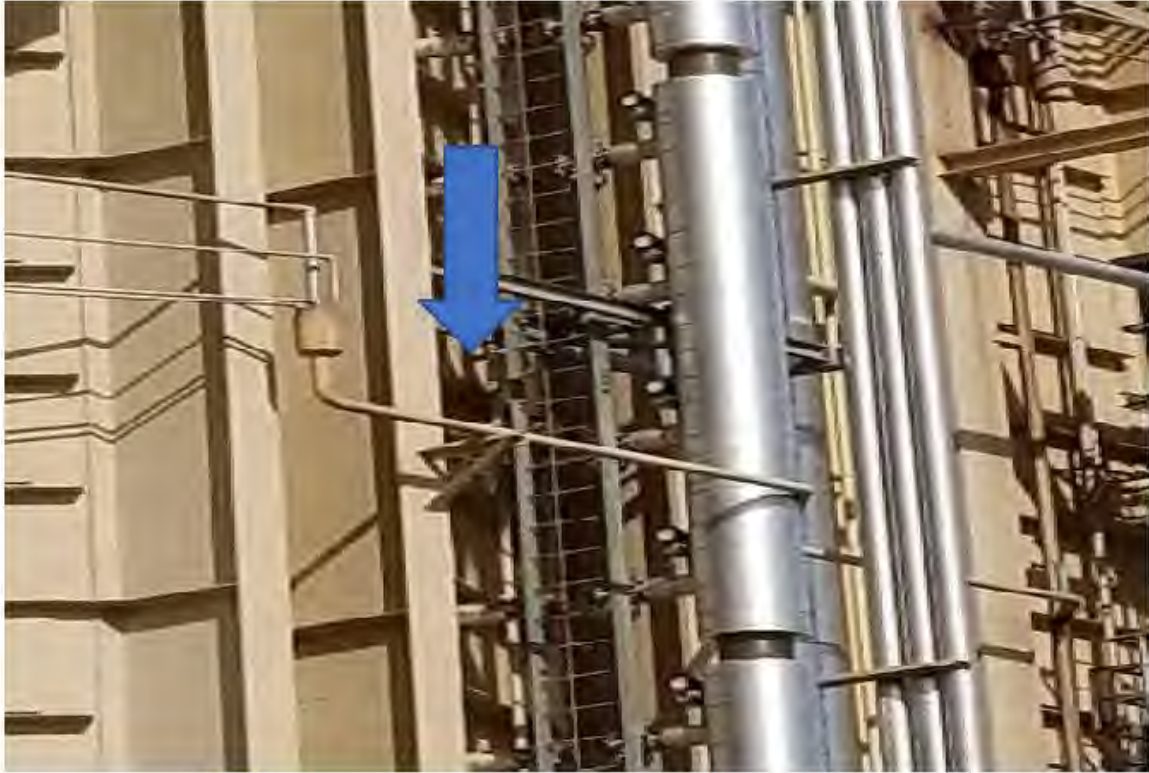


Photo 7, of common raven with nest material on the east side of HRSG 1, 4/3/18.



Photo 8, first 3 rattlesnakes of the year as observed along the outside of the southern perimeter fencing, 4/3/18.



Photo 9, of waterline vault work to facilitate addition of self-cleaning screens at canal pumps, 4/10/18.



Photo 10, of 12 dead *Myotis* sp. bats and 1 red bat collected from under ACC, 4/13/18.



Photo 11, of DB safely capturing a large adult rattlesnake on the bank of the CGS detention basin, 4/27/18.



Photo 12, BM capturing a king snake prior to mowing area, 5/2/18.



Photo 13, of Sierra Weed Control backfilling erosion area with sand slurry, 5/3/18.



Photo 14, of bird nest area on ladder rack with exclusion tape in place, 5/3/18.



Photo 15, of juvenile European starling prior to drop off at Wildlife Care, 5/3/18.



Photo 16, of juvenile rattlesnake #21 as observed on inside of perimeter fencing west side, 5/4/18.



Photo 17, of juvenile rattlesnake #22 as observed under orange traffic cone on north slope of switchyard, 5/4/18.



Photo 18, of juvenile rattlesnakes #24 and #25 as observed under board placed by DB to attract basking snakes, on western side of switchyard, 5/8/18.



Photo 19, of juvenile rattlesnake #28 as observed within the CGS water treatment building, 5/9/18.



Photo 20, 2 juvenile western kingbirds blown out of nest during high wind event, 5/11/18.



Photo 21, of juvenile European starling observed outside of water treatment building, 5/11/18.



Photo 22, of adult kingsnake as observed in irrigation valve box, 5/16/18.



Photo 23, of juvenile rattlesnake #42 observed within CGS facility under steam turbine 5/25/18.



Photo 24, of juvenile American kestrel prior to capture as observed at base of ACC, 5/26/18.



Photo 25, of 4 juvenile American kestrels prior to dropping them off at Wildlife Care Association, 5/26/18.



Photo 26, of adult American kestrel attacking a juvenile great-horned owl on top of the ACC structure, 5/26/18.



Photo 27, of dead cotton-tail rabbit as observed in a culvert during general wildlife and rattlesnake surveys, 5/26/18.



Photo 28, of western toad as observed in pit fall trap at CGS back gate, prior to safe release, 5/29/18.



Photo 29, of juvenile rattlesnake #44 as observed inside of CGS facility in southwest corner, 5/30/18.



Photo 30, of adult rattlesnake #47 as observed coiled adjacent to CGS detention basin outfall, prior to capture and safe release off site, 5/30/18.



Photo 31, of adult rattlesnake #53 as observed under a board placed along the outside southern CGS perimeter fencing, 6/4/18.

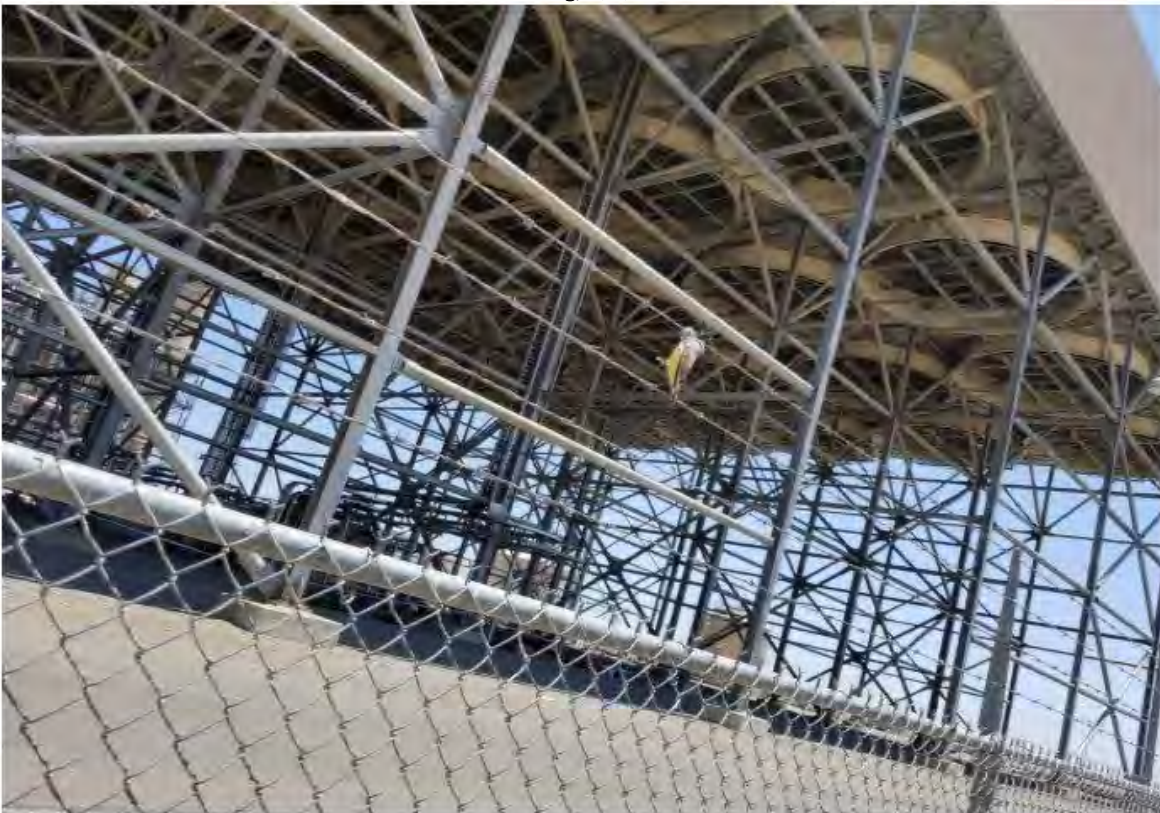


Photo 32, of live western kingbird as observed stuck on western perimeter fence, 6/8/18.



Photo 33, of western kingbird after string removal and just prior to safe release by CGS CM, 6/8/18.



Photo 34, adult rattlesnake #55 during capture in erosion area on east slope of CGS switchyard, 6/8/18.



Photo 35, of adult rattlesnake #58 as observed inside CGS western perimeter fence, 6/12/18.



Photo 36, of fiber core roll placed at bottom of back gate to help keep snakes out, 6/14/18.



Photo 37, of gopher snake as observed in snake u-turn at back gate prior to capture and safe release off site, 6/19/18.



Photo 38, of juvenile rattlesnake #59 as observed in snake pit trap at CGS back gate, 6/19/18.



Photo 39, of dead Brewer's blackbird as observed in CGS warehouse, 6/19/18.



Photo 40, of adult kingsnake as observed within irrigation valve box just east of CGS perimeter fencing, 6/25/18.



Photo 41, of barn owl as observed perched on western perimeter fence, 6/29/18.



Photo 42, of juvenile barn owl skull as observed under western most owl box, 7/2/18.



Photo 43, of snake awareness training given to CGS staff by Adaptation Environmental Services, 7/6/18.



Photo 44, of hands on snake training with a gopher snake provided by Adaptation Environmental Services, 7/6/18.

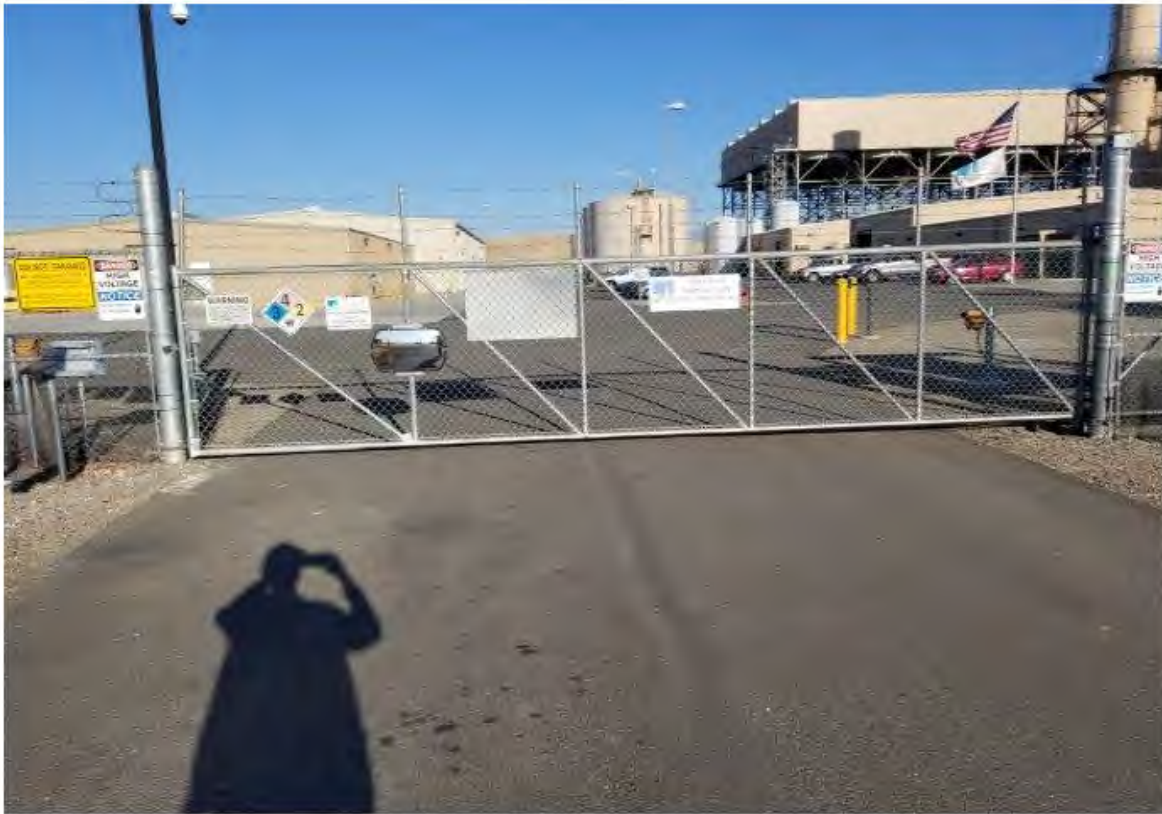


Photo 45, of CGS main gate, photo taken to aid in design of a snake proof gate, 7/9/18.



Photo 46, 5 dead Myotis sp. bats observed under ACC during general biology surveys, 7/9/18.



Photo 47, of European starling nest as observed inside ZLD enclosure, 7/10/18.



Photo 48, of 27 dead Myotis sp. bats observed and collected during general wildlife and rattlesnake surveys, 7/13/18.



Photo 49, of 2 dead big brown bats observed and collected during general wildlife and rattlesnake surveys, 7/13/18.



Photo 50, of barn owl head as observed along western perimeter fencing, 7/13/18.



Photo 51, of live *Myotis* sp. bat observed in maintenance warehouse, photo taken prior to safe release off site, 7/16/18.

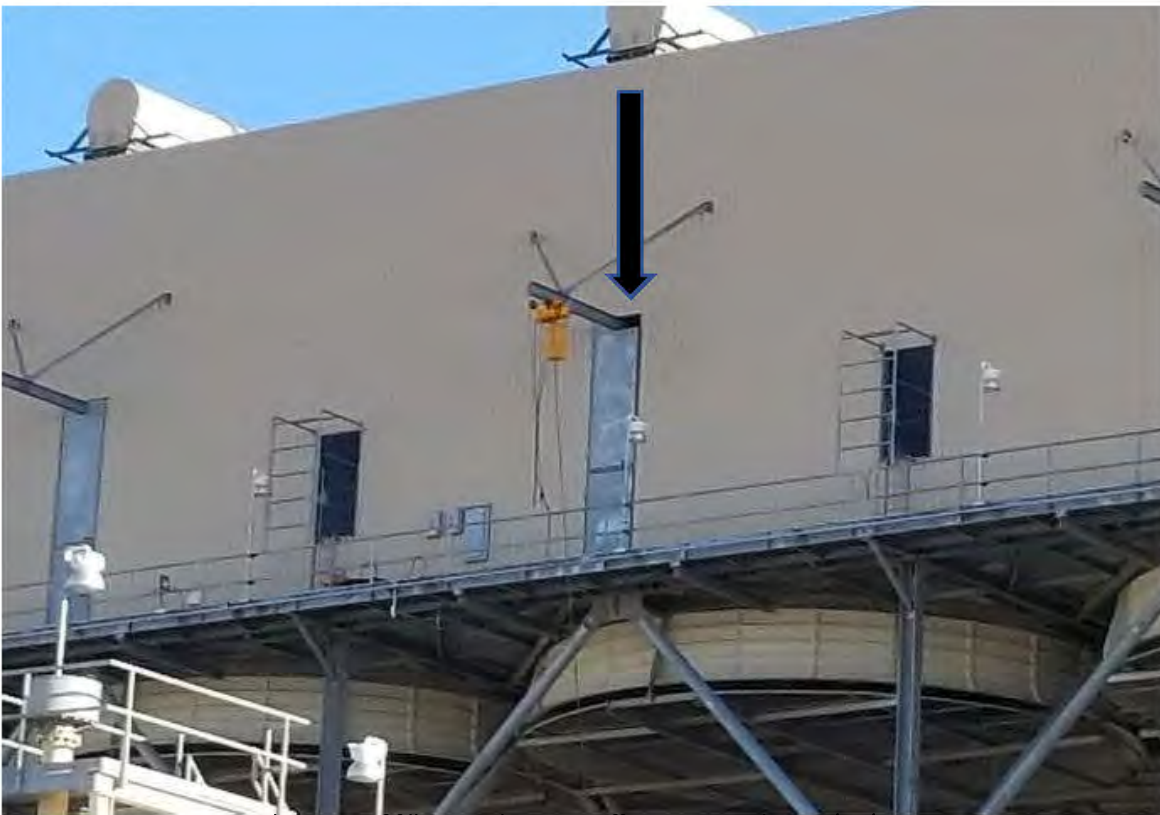


Photo 52, of filler panel missing off ACC access door, 7/16/18.



Photo 53, of live *Myotis* sp. bat observed under ACC structure prior to safe release off site, 7/20/18.



Photo 54, of adult rattlesnake #64 captured as it was attempting to get into CGS facility back gate, 7/23/18.



Photo 55, of adult rattlesnake #65 prior to capture in rip-rap at outfall into detention basin, 7/23/18.



Photo 56, of adult rattlesnake #67 observed inside of u-turn at back gate, reported to CM by CGS staff, 7/24/18.



Photo 57, of disking for wildfire protection southern portion of CGS site, 8/7/18.



Photo 58, adult rattlesnake #68 as observed under a pallet in the southwest corner of the CGS facility, 8/7/18.



Photo 59, of vegetation clearing on edges of CGS detention basin for wildfire protection, 8/8/18.



Photo 60, of adult king snake as observed within irrigation valve box, 8/10/18.



Photo 61, of 128 Myotis sp. bats collected under ACC during general wildlife and rattlesnake surveys, 8/10/18.



Photo 62, of 5 big brown bats and 1 red bat collected under ACC during general wildlife and rattlesnake surveys, 8/10/18.



Photo 63, of great-horned owl carcass as observed under ACC during general wildlife and rattlesnake surveys, 8/15/18.



Photo 64, adult rattlesnake #72 observed by CGS personnel in gas yard, DB callout for capture, 8/16/18.



Photo 65, of great horned owl carcass and pigeon carcass as observed within ACC structure, 8/24/18.



Photo 66, of juvenile rattlesnake #73 as observed under board placed by DB along eastern CGS perimeter fence, 8/24/18.



Photo 67, of rattlesnake #76 as observed in maintenance warehouse, 9/5/18.



Photo 68, of live Myotis sp. bat as observed under ACC and prior to release in orchard, 9/5/18.



Photo 69, of live *Myotis* sp. bat as observed on southern perimeter fence and prior to release in orchard, 9/5/18.



Photo 70, of juvenile rattlesnake #83 as observed along southern perimeter fencing, 9/10/18.



Photo 71, of juvenile rattlesnake #84 as observed within CGS employee parking lot, 9/14/18.



Photo 72, of juvenile rattlesnake #85 as observed under snake board east side of switchyard, 9/14/18.

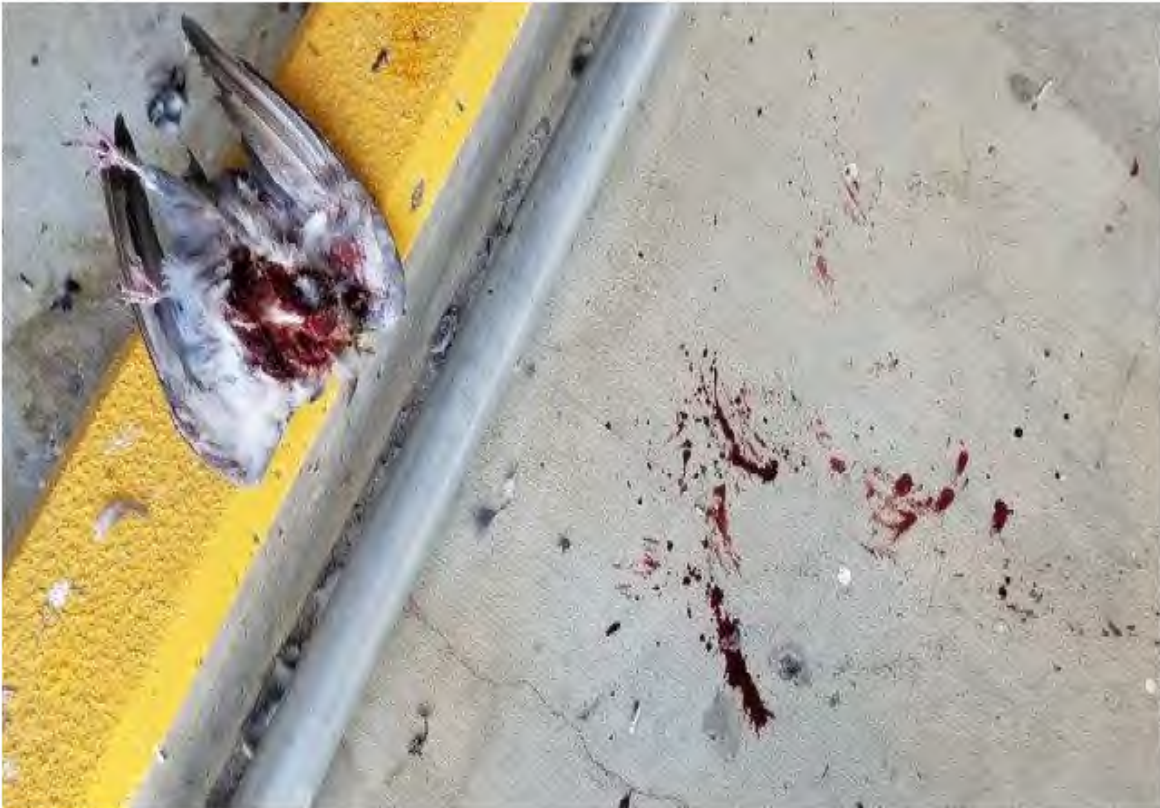


Photo 73, of pigeon carcass as observed under combustion turbine, appears to be great horned owl attack, 9/14/18.



Photo 74, of an adult rattlesnake #87 as observed within pit fall trap at front gate entrance, 9/17/18.



Photo 75, of a juvenile rattlesnake #88 captured and contained by CGS personnel, 9/21/18.



Photo 76, of juvenile rattlesnake #93 observed in sump for Accessory Module CT1, 9/24/18.



Photo 77, of juvenile rattlesnake #94 captured inside of northern most facility fencing, 9/24/18.



Photo 78, juvenile rattlesnake #95 as observed within the CGS switchyard, 9/25/18.



Photo 79, of western toad after release from pit fall trap at back gate, 10/1/18.



Photo 80, of 29 dead Myotis sp. bats observed under the ACC structure, 10/11/18.



Photo 81, of 2 dead Mexican free-tail bats observed under the ACC structure, 10/11/18.



Photo 82, of 2 dead big brown bats observed under the ACC structure, 10/11/18.



Photo 83, of dead red bat observed under the ACC structure, 10/11/18.



Photo 84, of a juvenile rattlesnake that avoided capture, observed under a connex box in northwest corner of CGS facility, 10/15/18.



Photo 85, of western toad after safe capture and prior to release, toad was reported to DB by CGS staff, 10-25-18.

Attachment B
Project Operating Status Summary

Per Com-7 Item 2, we are to provide: “A Summary of the current project operating status and an explanation of any significant changes to the facility operations during the year.”

This project, completed in the late spring 2018 but originally commissioned in 2014, can be summarized as follows:

Design and install upgraded trash screens on the Tehama-Colusa Canal raw water pumps. Prior to the completion of this project, suspended debris in the canal water would frequently build up on the original pump screens which would degrade the pump’s flow and plant staff would be required to travel the half mile from the Plant to the canal to manually clean the screen with a brush. The now-upgraded pump screen has an integrated-internal air nozzle which directs fine jets of air at the screen surface, dislodging debris and thereby improving pump efficiency.

There were no other significant changes to the facility and the plant is operating normally.

No requests for amendment were submitted during the 2018 Calendar Year.

Attachment C

Accompanying Documents

CEC 2018 Annual Compliance Report		
Reporting Conditions, per COM-7, Item 3		
Condition of Certification	Reporting	Comments
BIO-2	Designated Biologist Record Summaries	See attached documentation, Appendix 1
HAZ-1	List of chemicals onsite	See attached documentation, Appendix 2
Noise-8	Noise Complaints	See attached documentation, Appendix 3
SOIL & WATER-2	SWPPP Monitoring and Maintenance Activities	See attached documentation, Appendix 4
SOIL & WATER-7	GCID Monitoring Requirements / Violations	See attached documentation, Appendix 5
SOIL & WATER-8	Annual Water Use Summary	See attached documentation, Appendix 6
SOIL & WATER-9	Septic Tank	See attached documentation, Appendix 7
TLSN-3	Electro Magnetic Interference Complaints	See attached documentation, Appendix 8
VIS-1	Surface Treatment Report	See attached documentation, Appendix 9
VIS-3	Landscape Report	See attached documentation, Appendix 10
WASTE-5	Waste Management Plan	See attached documentation, Appendix 11

Appendix 1, BIO-2

Colusa Generating Station (06-AFC-09C), California Energy Commission Annual Compliance Report, Biology Section, 2018

PREPARED FOR: PG&E/Daryl Sattelberg/Colusa Generating Station, Compliance Manager
COPY TO: Jerry Salamy/Jacobs Project Manager
PREPARED BY: Rick Crowe/Jacobs
Colusa Generating Station CEC Designated Biologist
DATE: February 8, 2019
PROJECT NUMBER: 703233.01.BI

Introduction

This Colusa Generating Station (CGS) Biological Resources Annual Compliance Report, 2018 fulfills the California Energy Commission (CEC) requirement in the Verification for Condition of Certification (COC) BIO-2 Sub-section 8. "Designated Biologist Duties, BIO-2, Sub-section 8; The duties of the Designated Biologist are to maintain written records of the tasks specified above and those included in the Biological Resources Mitigation Implementation and Monitoring Plan, (BRMIMP). Summaries of these records shall be submitted in the annual compliance report.

The CGS was designed to avoid biological resources to the greatest extent feasible through development of mitigation and protection measures in consultation with the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), California Department of Fish and Game (CDFG), Central Valley Regional Water Quality Control Board (CVRWQCB), and the CEC. The CEC's COC for the project requires Pacific Gas and Electric Company (PG&E) to designate a biologist to supervise compliance of mitigation measures outlined in the CEC-approved BRMIMP during CGS construction and operation. Applicable COCs were successfully complied with during construction of the project and continue to be implemented during CGS's operation, including routine maintenance and outage events.

Project Location

The CGS site is located approximately 4 miles west of Interstate 5, 14 miles north of the farming community of Williams, and 72 miles north of Sacramento, adjacent to PG&E's Delevan Natural Gas Compressor Station on Delevan Road in Colusa County, California. The power plant site is located in the eastern half of Section 35, Township 18 North, Range 4 West, Mount Diablo Base and Meridian.

2018 Monitored Activities and Wildlife Interaction

PG&E has complied with the CEC's COC by directing the Designated Biologist (DB) to perform pre-disturbance surveys when necessary and on numerous occasions called on the Designated Biologist to capture and relocate wildlife, that was encountered onsite or that was in harm's way or that could harm facility employees.

All new employees and contract workers working at the CGS received the CEC-approved Worker Environmental Awareness Training (WEAP) via video, an illustrated pamphlet as well as lecture and daily tailgate training with CH2M Designated Biologist Rick Crowe (DB) or the PG&E CGS Compliance Manager Daryl Sattelberg (CGS CM). The DB remained on-call throughout the 2018 year.

2018 Executive Summary

Western diamondback rattlesnakes continued to be an issue during the 2018 compliance monitoring year. A total of 103 rattlesnake observations occurred; 23 of the rattlesnakes were observed and captured inside the CGS; 80 interactions occurred adjacent to the CGS perimeter fencing. All of the interactions occurred within the PG&E CGS parcel (+/- 100-acres). Similar, but on a much smaller scale than 2017, erosion pockets were observed early in the year along the northern, eastern and southern slopes of the switchyards. Within the erosion pockets were again concentrations (suspected dens) of rattlesnakes. As in 2017 all of the erosion areas were repaired by backfilling and or being pumped full of sand slurry. This backfilling again displaced many rattlesnakes which may have attributed to the higher than normal rattlesnake interactions in 2018 directly around and within the CGS site. To help prevent further denning and erosion of the switchyards slopes, the slopes were sprayed with a pre-emergent that will concentrate on the tall broadleaf vegetation, which should allow the shorter grasses more time to mature, helping to stabilize the slopes. The switchyard slopes will be monitored early in 2019 by the DB and the CGS CM to reduce un-checked erosion and to help eliminate rattlesnake denning habitat. All rattlesnakes that were captured in 2018 were released approximately 2-miles southwest of the CGS facility unharmed.

In 2018, bat fatalities were observed under the air-cooled condenser (ACC) structure and around the CGS site. The bat fatalities that were observed included 403 non-special-status bats (*Myotis* sp. and Mexican free-tailed bats), 15 big brown bats and 5 red bats (CDFW Species of Special Concern). This was an increase in bat fatalities from 2017 when 173 non-special-status bats (*Myotis* sp. and Mexican free-tailed bats), 3 big brown and 7 red bats (CDFW Species of Special Concern) were observed. There were less red bat fatalities in 2018 than there were in 2017. Not all of the 2018 bat fatalities can be attributed to the ACC unit as there was a general increase in bat carcasses and live bats observed throughout the facility. Additionally, some of the bat carcasses had talon marks, or were decapitated, which is indicative of owl predation. Also, numerous owl pellets were observed on the ground under the ACC unit. Examination of the owl pellets determined that they contained bat wings and bat skeletal remains. The marked increase in bat fatalities may be influenced by continued changes in farming practices around CGS. When CGS commenced operation, the adjacent farms were in rice production, and over the past several years the adjacent farms have been converted to walnut orchards. The DB will continue to monitor and report on site bat fatalities during 2019.

The monitoring and compliance efforts for the year 2018 are documented in chronological order below and within Appendix A, Site Photos; 1 through 86.

January 17th, the DB received an e-mail from the CGS CM stating the revised WEAP pamphlet that was submitted in April of 2017 to the CEC Compliance Manager Anwar Ali had been approved. The new WEAP pamphlet will be given to all new contractors and PG&E employees prior to commencing work at CGS.

February 22nd, the DB was on site to conduct a compliance spot check. The DB checked under the ACC unit and observed several dead pigeons (*Columba livia*) and Eurasian collared-dove (*Streptopelia decaocto*) carcasses, the doves and pigeons appeared to have flown into the ACC fans. Also, the DB entered the ACC and observed an active great-horned owl (*Bubo virginianus*) nest (in the northwest corner) with 3-eggs (Photo 1). The DB notified CGS management of the great-horned owl nest and all CGS staff were told that if work needed to be performed in the nest area the DB will have to monitor the nest area. Additionally, the DB observed that an access panel next to the Street #5 door had not been reinstalled (Photo 2). The DB alerted the CGS staff about the panel. The DB also observed a headless barn owl (*Tyto alba*) carcass in the northwest corner of the CGS laydown area (Photo 3). It cannot be confirmed but typically great-horned owls decapitate their prey as well as removing wings and legs prior

to bringing the prey item to the nest. The DB inspected the areas around the CGS switchyard and noticed that the erosion was approximately 1/10 of what had been observed in 2017.

March 8th, the DB was contacted by CGS staff regarding 2 juvenile pigeons observed in the Combustion Turbine (CT) enclosure (Photo 4). The DB instructed CGS staff to not disturb the pigeons and to alert other staff to their presence. The area was easily accessed by the adult pigeons and it was in an area that did not impact CGS operation, so the juvenile pigeons were left in place.

March 26th, the DB conducted a site visit to inspect the perimeter snake fencing and pit fall trap buckets installed at the gates. The CGS snake fencing handled the winter very well, very little breaching of the snake fencing integrity was observed. While inspecting the fencing, the DB observed an adult gopher snake (*Pituophis catenifer*) in a large erosion area along the eastern portion of the switchyard slopes (Photo 5), the gopher snake was not disturbed. The DB also inspected the area around the 2-barn owl boxes located along the southern portion of the site and observed barn owl pellets under each owl box (Photo 6). The DB also observed that the ACC access panel had been reinstalled. The CGS Maintenance Supervisor (MS) asked the DB to begin focused rattlesnake surveys beginning the first week in April.

April 3rd, the DB conducted focused rattlesnake surveys inside and outside of the facility and made general wildlife observations of the facility. No rattlesnakes were observed within the facility. The DB did observe 3-dead bat carcasses under the ACC that were to be de-graded for identification. Also, a pair of ravens (*Corvus corax*) were observed building a nest on the east side of HRSG 1 (Photo 7). Given the location of the nest it is unexpected that the ravens will be disturbed by ongoing plant operations. During the perimeter survey, 3 juvenile western diamondback rattlesnakes (rattlesnakes) were observed along the outside of the southern perimeter fencing (Photo 8). The 3-rattlesnakes (#'s 1, 2 and 3 for the year) were safely captured and released off site.

April 10th, the DB was requested to be on site by the CGS MS to monitor the opening and potential entry into several utility vaults along the water line access road. The CGS MS believed there was a high potential for rattlesnakes to be inside of the vaults. The DB also performed a pre-disturbance survey for the cement pad for the canal pump self-cleaning screen project, no wildlife was observed. Several underground utility vaults were inspected, all of them had sign of rodents and 1 vault contained a rattlesnake rattle (Photo 9).

April 13th, the DB was on site to conduct focused rattlesnake and general wildlife surveys. The DB searched the site (inside and outside) for rattlesnakes and none were observed. While conducting general wildlife surveys, 13 dead bat carcasses were observed under the ACC. The bat carcasses consisted of 12 *Myotis* sp. bats (*Myotis* sp.) and 1 red bat (*Lasiurus borealis*). All of the carcasses appeared to be older and dried out (Photo 10). The bat carcasses were collected for identification and then disposed of.

April 17th, the DB received a call-out from the CGS MS concerning the observation of a large rattlesnake (#4 for the year) at the Tehama-Colusa Canal water intake pumps. Prior to heading to the site, the DB received a follow-up call from the CGS MS stating that the rattlesnake had been observed heading into the canal and out of the work space.

April 20th, the DB conducted a focused rattlesnake and general wildlife survey. The DB surveyed the facility for rattlesnakes, with no snakes observed inside the facility. The survey of the areas adjacent to CGS identified rattlesnake (#5 for the year) near a drain invert just outside the perimeter fencing near the northwest corner of the site. The rattlesnake was safely captured and released off site. No other biological resources were observed during the site survey.

April 23rd, the DB was on site for a meeting to discuss several switchyard projects PG&E was entertaining in the switchyard. The projects are outside of the scope of the CEC license and Designated Biologist's role. The DB was invited to the meeting to discuss the rattlesnake situation, emphasizing the need to install snake fencing and the use of small cobble rip-rap on these projects. The DB explained effort that

has been made by PG&E and the CGS staff to eliminate snake habitat in the area and that large rip-rap cobble has been determined to be a source of rattlesnake habitat on/near the site.

April 24th, the DB received a call from the Delevan Compressor Station concerning the observation of a juvenile rattlesnake on the compressor station property. The DB traveled to the compressor station and safely captured the juvenile rattlesnake. While releasing the snake, the DB observed rattlesnake (#6 a juvenile) outside of the southern perimeter fence of the CGS facility. This rattlesnake was safely captured. As the DB was preparing to release these rattlesnakes, another large adult rattlesnake (#7) was captured in a culvert at the Tehama-Colusa Canal. All 3 rattlesnakes were safely released off site.

April 27th, the DB was on site to conduct focused rattlesnake and general wildlife surveys. The DB did not observe any rattlesnakes within the facility. The DB did however observe 7 rattlesnakes around the outside perimeter of the site, 3 dead juveniles and 4 live adults, Two dead snakes were observed along the western perimeter fence, one dead snake was observed at the front gate, one live snake was observed in the northwest corner of the switchyard, one live snake was observed along the western switchyard fence, one live snake was observed in the rock rip rap at the detention pond (Photo 11), and 1 live snake was observed in the culvert at the Tehama Colusa Canal (#8 through #14). All live rattlesnakes were safely captured and relocated, and the dead rattlesnakes were disposed of. The DB searched the project site and no other biological resources were observed.

April 30th, the DB was on site to conduct a pre-mowing survey for the fire break mowing that takes place every spring. The DB walked meandering transects along the southern and eastern portions of the site, no nesting birds or mammals were observed. While walking the transects the DB observed a large adult rattlesnake (#15) along the southern portion of the CGS site. The rattlesnake was safely captured and released off site.

May 1st, the DB was on site to give snake handling training to the Biological Monitor (BM) CH2M Biologist Steve Long. The BM also completed the PG&E site specific safety training and accompanied the DB and the CM on the focused rattlesnake surveys inside and outside of the facility. During the rattlesnake survey, 2 juvenile rattlesnakes were observed, rattlesnake (#16) was observed within the perimeter snake fence u-turn at the rear gate and the second rattlesnake (#17) observed in a small erosion area on the north slope of the switchyard. Both rattlesnakes were safely captured and released off site. Later in the evening the DB received an e-mail from the CGS MS concerning a bird nest that had been observed in the ladder storage area. The DB instructed the CGS MS to place avoidance flagging around the nest area and to alert the other CGS employees of the nest location.

May 2nd, the BM was on site to monitor mowing and sand slurry backfilling at the switchyard erosion sites. While monitoring the mowing, the BM safely captured and relocated a large California kingsnake (*Lampropeltis californiae*) that was observed during the pre-mowing clearance survey (Photo 12). The BM also safely captured and relocated a rattlesnake (#18) that was observed in a large erosion area on the eastern slope of the switchyard.

May 3rd, the DB was on site to monitor mowing and backfilling operations (Photo 13). While monitoring the mowing and backfilling operations, the DB observed and captured 2 rattlesnakes. The first rattlesnake (#19) was safely captured on the north slope of the switchyard and the second rattlesnake (#20) was safely captured along the water pipeline access road. Both rattlesnakes were released off site. The DB also surveyed the bird nest previously reported in the ladder storage area. The DB observed that the bird nest was marked with exclusion tape, and the DB photographed the nest area (Photo 14). While photographing the nest area the DB observed a female Brewer's blackbird (*Euphagus cyanocephalus*) coming and going from the nest. A CGS employee observed and captured a juvenile European starling (*Sturnus vulgaris*) that was on the ground. There was no sign of the starling's parents, so it was taken to Wildlife Care in Sacramento for later release (Photo 15).

May 4th, the DB was back on site to monitor mowing and backfilling operations and to survey for rattlesnakes inside and outside of the facility. The DB observed two rattlesnakes inside the facility. The first rattlesnake (#21) was observed on the west side of the facility (Photo 16) and the second rattlesnake (#22) was observed under an orange traffic cone located on the north slope of the switchyard (Photo 17). Both rattlesnakes were safely released off site.

May 7th, the DB received a call from a CGS employee concerning the observation of a Botta's pocket gopher (*Thomomys bottae*) that was observed in the pit-fall trap at the front gate. The employee stated that the pocket gopher was removed from the pit-fall trap and safely released.

May 8th, the DB was on site to monitor mowing for fire suppression. During the monitoring, 4 rattlesnakes were observed. The first snake (#23) was observed on the east slope of the switchyard. The 2nd and 3rd rattlesnakes (#24 and 25) were observed along the western edge of the switchyard under a board, which had been placed around the outside of the perimeter fence to aid the DB in finding rattlesnakes by providing a hiding place (Photo 18). The 4th rattlesnake (#26) was captured in the culvert at the Tehama-Colusa canal intake area. All 4 rattlesnakes were safely released off site. While conducting the surveys, the DB placed 4 additional wooden boards around the perimeter fencing as the boards have proven to ease the location and capture of rattlesnakes by providing cover.

May 9th, the DB monitored fire-abatement mowing. During the monitoring, a rattlesnake (#27) was observed in the water treatment building coiled by a trash can (Photo 19). Later that morning a mower operator reported a rattlesnake (#28) along the outside of the western most perimeter fencing. Rattlesnake (#29) was reported to the DB by the mower operator when the rattlesnake was accidentally killed during mowing. Rattlesnake (#30) was reported to the DB by the gate guard, the snake was observed going under the guard shack. Rattlesnake (#31) was observed in a culvert at the Tehama-Colusa canal intake area. All 4 live rattlesnakes were safely captured and released offsite and the dead rattlesnake was disposed of. Also, while conducting pre-mowing surveys, the DB captured a large gopher snake and a green racer (*Coluber constrictor*) which were both safely released off site away from the mower.

May 11th, the DB was on site to conduct focused rattlesnake surveys and general wildlife surveys. The search inside CGS for rattlesnakes was negative. Six dead juvenile birds were observed on the ground throughout the site (Photo 20). The DB believes the juvenile birds were blown out of their nests by a high wind event (wind gusts to 40 mph). The DB disposed of the bird carcasses. The survey outside the facility for rattlesnakes resulted in 2 dead rattlesnakes (#32 and #33) being observed along the southern perimeter fencing and a live rattlesnake (#34) safely captured and relocated from the bank of the CGS detention basin. Later in the day, the DB received a call from the CGS CM concerning the observation of a juvenile bird that was observed on the ground between the water treatment building and maintenance building. The CM provided the DB with a photo (Photo 21) of the juvenile bird and it was determined to be a European starling that was ready to fledge. The DB had recently taken a juvenile starling to Wild Life Care in Sacramento and was instructed by the Veterinarian on site to not bring anymore European starlings as there are an invasive, non-native species. The Veterinarian stated that they typically put down invasive species instead of releasing them. The DB informed the CGS CM of the statement made by the Veterinarian and asked the CGS CM to keep an eye on the juvenile starling. Later in the day the CGS CM informed the DB that the juvenile starling was gone from the water treatment building area.

May 15th, the DB was on site to monitor mowing of the detention basin banks when the DB observed a rattlesnake (#35) in the pit-fall trap at the CGS back gate. The DB also observed a rattlesnake (#36) on the bank of the detention pond prior to mowing that area. Both rattlesnakes were safely captured and released off site. No other wildlife was observed.

May 16th, the DB was on site to monitor the end of the fire suppression mowing when the DB observed a California kingsnake in an irrigation valve box on the eastern side of the site (Photo 22). The kingsnake

was left in place since it was outside the CGS fencing and since it may help reduce the rattlesnake population. Also, a rattlesnake (#37) was observed along the outside southern perimeter fencing. The rattlesnake was safely captured and released off site. No other wildlife was observed.

May 18th, the DB was on site to conduct focused rattlesnake surveys and general wildlife surveys. Search of inside and outside of the CGS facility for rattlesnakes was negative. During the general wildlife surveys, the DB and CM did observe 3 wild pigs (*Sus scrota*) in the mud of the detention basin. The DB surveyed under the ACC for bat carcasses, but none were observed.

May 19th, the DB received a call-out for a juvenile rattlesnake (#38) that was observed in a combustion turbine lube oil sump. The DB traveled to the site and captured and relocated the juvenile rattlesnake.

May 23rd, the DB received a call from the CGS CM informing him that a rattlesnake (#39) had been accidentally run over by a contractor along the Tehama-Colusa Canal. The CM disposed of the dead rattlesnake carcass.

May 24th, the DB received a call from the CGS Control Room operator reporting the observation and capture of a juvenile rattlesnake (#40) that was observed in the water treatment area. The operator told the DB that the snake was in a plastic bucket locked in the metal snake cabinet in the CGS CM's office. The DB stated that he would be on site early the next day to release the rattlesnake.

May 25th, the DB was on site to conduct focused rattlesnake and general wildlife surveys and to release the rattlesnake that was captured the previous day. While surveying outside of the facility, the DB observed a dead rattlesnake (#41) along the southern perimeter fencing. During the surveys of the inside of the CGS site the DB observed a rattlesnake (#42) under the steam turbine (Photo 23). The live rattlesnake was safely released off site and the dead snake carcass was disposed of.

May 26th, the DB received a call from the CGS MS concerning the observation of a juvenile American kestrel (*Falco sparverius*) observed on the ground below the ACC (Photo 24). The DB traveled to the site and safely captured the juvenile American kestrel. While surveying for rattlesnakes inside the facility, the DB observed 3 more juvenile kestrels with one on the ground by the fire water pump building and 2 others on the ground under the ACC. The DB placed all 4 juvenile kestrels in a box (Photo 25) for transport to Wildlife Care Association. The DB entered the ACC and observed an adult American kestrel repeatedly attacking an adult great-horned owl (Photo 26). It appeared that the great-horned owl had found the kestrel nest and the adult kestrel was defending the nest territory, possibly resulting in the 4 juvenile kestrels abandoning the nest. No rattlesnakes were observed during the inside of the facility survey, however, a dead cotton-tail rabbit (*Sylvia audubonii*) was observed at the entrance to a culvert near the administration building (Photo 27). The DB surveyed under the ACC and did not observe any biological resources.

May 29th, the DB was on site to monitor the entry into the water line vaults due to the potential for rattlesnakes use of the vaults. A rattlesnake (#43) was observed and captured inside water line vault #1. The rattlesnake was safely captured and released off site. No other rattlesnakes were observed within the remaining vaults. A live western toad (*Bufo boreas*) was observed within the pitfall trap at the CGS back gate (Photo 28). The toad was safely captured and released off site.

May 30th, the DB was on site to monitor the installation of electrical conductors at the pump screens located at the Tehama-Colusa Canal. In addition, the DB conducted rattlesnake surveys inside and outside of the CGS. While conducting the inside snake surveys, a rattlesnake (#44) was observed in the southwestern corner of the CGS (Photo 29). Two dead juvenile rattlesnakes (#45 and #46) were observed along the western outside perimeter fencing. A rattlesnake (#47) was observed adjacent to the CGS detention pond outfall pipe (Photo 30). The live rattlesnakes were safely captured and released off-site, and the rattlesnake carcasses were disposed of.

May 31st, the DB was on site to continue the monitoring of the wire pull for the self-cleaning screens at the Tehama-Colusa Canal and to safely release rattlesnake (#48) that was observed on-site and captured during the night. While monitoring the wire-pull the DB observed a large gravid female rattlesnake (#49) along the water-line access road. Both rattlesnakes were safely captured and released off site. No other snakes were observed.

June 1st, the DB continued to monitor the wire pull for the self-cleaning screens at the Tehama-Colusa Canal and to conduct rattlesnake surveys inside and outside of the CGS. While conducting the surveys, no rattlesnakes were observed inside CGS. During the outside survey the DB observed a rattlesnake (#50) under an orange traffic cone on the waterline access road. Another rattlesnake (#51), a large gravid female, was captured on the east slope of the switchyard. Both rattlesnakes were safely relocated off site.

June 2nd, the DB received a call regarding a juvenile rattlesnake (#52) observed in the switchyard. The DB arrived on site and safely relocated the rattlesnake off site. While at CGS, the DB searched for additional rattlesnakes on and offsite, but none were observed.

June 4th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes or other wildlife were observed inside the facility. The survey outside the facility identified a rattlesnake (#53) observed under a board along the southern perimeter fencing (Photo 31) and another rattlesnake (#54) on the eastern slope of the switchyard. Both rattlesnakes were safely captured and released off site.

June 8th, the DB conducted rattlesnake and general wildlife surveys. The survey inside the facility was negative for rattlesnakes and other wildlife. The survey outside of the facility identified a western kingbird (*Tyrannus verticalis*) caught in the western perimeter fencing (Photo 32). The DB and CM safely released the kingbird unharmed (Photo 33). The survey outside of the facility identified a rattlesnake (#55) on the eastern slope of the switchyard (Photo 34) and another rattlesnake (#56) under the switchyard outfall on the north slope of the switchyard. Both rattlesnakes were safely captured and released off site.

June 11th, the DB conducted rattlesnake and general wildlife surveys. The survey inside of the facility was negative for rattlesnakes and other wildlife. The outside of the facility survey identified a rattlesnake (#57) in a culvert near the CGS detention pond. The rattlesnake was safely captured and released off site.

June 12th, the DB received a call from the CGS CM concerning the observation of a large adult rattlesnake (#58) inside the facility on the western portion of the site (Photo 35). The CGS CM captured the rattlesnake and it was placed in a locked metal cabinet until the DB was on site to safely release it.

June 13th, the DB was on site to release rattlesnake (#58) captured the previous day. The DB surveyed inside and outside the facility and no wildlife were observed. The rattlesnake caught the previous day was safely released off site by the DB.

June 14th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake survey on the inside and outside of the facility was negative. The DB placed 4 more snake basking boards around the facility perimeter to provide cover for rattlesnakes and facilitate their capture. The DB also placed a fiber core rope along the bottom of the back gate to help keep rattlesnakes from entering under the gate (Photo 36). A search under the ACC for wildlife was negative.

June 19th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake survey on the inside of the facility was negative. The outside survey identified a large adult gopher snake in one of the u-turn structures at the back gate (Photo 37). A rattlesnake (#59) was observed within a pit-fall trap also at the back gate (Photo 38). Both snakes were safely captured and released off site. The DB observed a dead Brewer's blackbird in the CGS warehouse (Photo 39). The DB could not determine what killed the blackbird. The blackbird carcass was disposed of.

June 21st, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake and general wildlife surveys on the inside and outside were negative. The general wildlife survey included the DB checking on the 2 barn owl boxes that are along the southern perimeter of the facility. The DB observed fresh barn owl pellets and feathers at the base of the southwest owl box and movement was detected inside the box.

June 25th, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake survey on the inside and outside were negative. The general wildlife surveys identified 3 green racers scattered around the outside of the facility and 1 California king snake observed within the irrigation valve box on the eastern edge of the facility (Photo 40).

June 29th, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake survey on the inside was negative. Outside the facility the DB observed a rattlesnake (#60) on the eastern slope of the switchyard. The rattlesnake was safely captured and released off site. The general wildlife surveys identified a barn owl perched along the western perimeter fencing (Photo 41).

July 2nd, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake survey on the inside was negative. The outside survey identified a rattlesnake (#61) under the outfall pipe of the CGS detention pond. The rattlesnake was safely captured and relocated off site. The general wildlife surveys identified a juvenile barn owl skull (Photo 42) on the ground at the base of the barn owl box pole. The DB inspected the owl box, but no owls were observed. No other wildlife was observed onsite.

July 6th, the DB was on site to conduct rattlesnake surveys and general wildlife surveys and to attend a rattlesnake awareness class provided by Adaptation Environmental Services of Colorado. The snake awareness training class's focus was to increase CGS employee's confidence in capturing snakes. The class also taught the CGS employees about the natural life cycle of rattlesnakes and other snakes that are present at the facility (Photos 43 and 44). This training did not authorize CGS employees to handle rattlesnakes but was provided to help CGS employees be more aware of snakes and their habits. The DB surveyed the facility. The survey inside the facility was negative. During the survey outside the facility the DB observed a rattlesnake (#62) at the Tehama-Colusa Canal water intake pumps just outside of a culvert near the pumps. The snake was safely captures and relocated.

July 9th, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake survey on the inside of the facility was negative. The survey outside the facility identified a rattlesnake (#63) under the outfall pipe on the eastern slope of the switchyard. The rattlesnake was safely captured and relocated off site. During the general wildlife survey, the DB photographed the front/main gate for use in design of a snake proof front gate (Photo 45). The DB also observed 5 fresh *Myotis* sp. bats carcasses under the ACC (Photo 46). The carcasses were collected for identification and then disposed of.

July 10th, the DB received a call and photograph of a bird nest observed while maintaining the water treatment equipment (Photo 47). The CM reported that the eggs were cold to the touch and that no adult birds were observed in the immediate area. The DB requested the CM monitor the nest area for the next couple of days to help determine if the nest was viable and being used.

July 11th, the DB received a follow-up call from the CGS CM stating that the eggs in the nest observed near the water treatment equipment were gone, with no sign of egg fragments. The DB assumed that a predator found the nest and removed the eggs.

July 13th, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake surveys inside and outside the facility were negative. The general wildlife survey identified 27 *Myotis* sp. bat carcasses (Photo 48) and 2 big brown bat (*Eptesicus fuscus*) carcasses (Photo 49) under the ACC, all carcasses were collected for identification and then disposed of. The DB also observed the head of a dead barn owl (Photo 50) along the western perimeter fencing with no the owl body located.

July 16th, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake survey inside and outside the facility were negative. The general wildlife survey identified a live *Myotis* sp. bat in the maintenance warehouse (Photo 51), which was safely captured and released off site. No other wildlife was observed onsite. The DB did observe a missing filler panel on an ACC access door (Photo 52). The DB alerted the CGS CM and the panel was replaced. The DB believes that the missing access panels allow birds and bats to access the inside of the ACC, which results in trapping them inside the ACC.

July 20th, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake surveys were negative. The general wildlife survey identified 26 *Myotis* sp. bat carcasses and 1 big brown bat carcass under the ACC. All bat carcasses were collected for identification and then disposed of. The DB also observed a live *Myotis* sp. bat (Photo 53), which was safely captured and released the bat off site.

July 23rd, the DB conducted rattlesnake surveys and general wildlife surveys. The rattlesnake survey inside the facility was negative. The DB observed 3 rattlesnakes outside the facility. The first rattlesnake (#64) attempting to get through the CGS back gate (Photo 54), while the second rattlesnake (#65) was observed in the rocks above the storm water outfall to the detention basin (Photo 55), and the third rattlesnake (#66) was observed along the southern perimeter fence. The third rattlesnake was dead with injuries to its head and tail. The live rattlesnakes were safely captured and relocated. The dead rattlesnake was disposed of. The wildlife survey did not identify any wildlife.

July 24th, the DB received a call regarding a large rattlesnake (#67) that was observed within the snake u-turn at the back gate (Photo 56). The DB traveled to the site and safely captured and relocated the snake.

July 26th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake surveys were negative. The general wildlife survey identified 16 *Myotis* sp. bats and 1 big brown bat carcasses under the ACC. The DB also observed a California king snake that had become trapped in the mesh that covers straw waddles installed at the detention pond. The king snake was freed from the mesh and was safely released off site. The DB also observed a racer (snake) outside the water treatment building. The racer was safely captured and released off site.

July 30th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake surveys were negative. The general wildlife surveys did not identify any wildlife.

August 2nd, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake surveys were negative. The general wildlife surveys identified 19 *Myotis* sp. bat carcasses and a dead house finch (*Haemorhous mexicanus*), under the ACC. The bat carcasses were collected for identification and disposal.

August 7th, the DB monitored tractor disking of a fire break to create a defensible fire space around the facility (Photo 57) during this high fire risk summer. The DB conducted a meandering transect survey prior to disking to identify the presents of nesting birds or other wildlife. No nests or wildlife were observed during the disking. The DB did observe a rattlesnake (#68) under a pallet in the southwest corner of the facility (Photo 58) it was safely captured and released off site.

August 8th, the DB continued monitoring the tractor disking for wildfire protection (Photo 59). The DB observed, captured and safely released off site a rattlesnake (#69) observed along the edge of the detention basin. A dead rattlesnake (#70) was observed along the southern perimeter fence. The dead snake carcass was disposed of. No other wildlife was observed or disturbed.

August 10th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake surveys were negative. The general wildlife survey identified a California kingsnake in an irrigation valve box along the eastern edge of the facility (Photo 60). During the wildlife survey the DB observed, collected and disposed of 128 *Myotis* sp. bats carcasses (Photo 61), 5 Big brown bats carcasses (Photo 62) and 1 red bat carcass (*Lasiurus borealis*). All carcasses were observed under the ACC and collected for

identification and disposal. The DB verified that the ACC access doors were all closed, filler panels were in place, and that the ACC internal lights off. No reason for the spike in bat fatalities was discovered.

August 15th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake survey inside the facility was negative. The rattlesnake survey outside the facility identified a rattlesnake (#71) under the detention pond outfall. The snake was safely captured and released off site. The wildlife survey identified a great-horned owl carcass under the ACC that appeared to have been struck by the ACC fan blades (Photo 63). No other wildlife was observed during this site visit.

August 16th, the DB received a call at night concerning the observation of a large rattlesnake (#72) inside the CGS facility natural gas yard (Photo 64). The DB traveled to the site and safely captured and released the rattlesnake off site.

August 20th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake surveys inside and outside the facility were negative. The wildlife survey under the ACC identified 59 *Myotis* sp. bat carcasses, 1 Mexican free-tail bat carcass (*Tadarida brasiliensis*) and 2 red bat carcasses. All carcasses were collected for identification and disposal.

August 24th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake survey inside the facility was negative. The wildlife survey identified a great-horned owl carcass inside the ACC (Photo 65) and approximately 15 to 20 bat carcasses within each ACC fan enclosure. The carcasses were left in place because the ACC was in operation. The rattlesnake survey outside the facility identified a rattlesnake (#73) under a board that had been placed along the eastern perimeter fencing (Photo 66) and another rattlesnake (#74) under another board placed along the western perimeter fencing. Both of the rattlesnakes were safely captured and relocated off site.

August 27th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake surveys were negative. The wildlife survey under the ACC identified 17 *Myotis* sp. bat carcasses, 1 Mexican free-tail bat carcass, and 2 big brown bat carcasses. All carcasses were collected for identification and disposal.

August 29th, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake and wildlife surveys were negative.

August 31st, the DB conducted rattlesnake and general wildlife surveys. The rattlesnake and wildlife surveys were negative.

September 5th, the DB conducted rattlesnake and general wildlife surveys. The on-site rattlesnake survey identified a dead rattlesnake (#76) in the maintenance shop behind the pipe threading machine (Photo 67). The outside rattlesnake survey identified a rattlesnake (#75) along the edge of the detention pond. The rattlesnake was safely captured and released off site. The wildlife survey identified a live *Myotis* sp. bat on the southern-most perimeter fence (Photo 69). A second live *Myotis* sp. bat was observed under the ACC (Photo 68). The DB captured both bats and safely released them off site. The general wildlife survey identified one dead big brown bat that was observed on the ground by the combustion turbine and a dead *Myotis* sp. bat on the floor in the CGS warehouse. Under the ACC, the DB observed 22 *Myotis* sp. bat carcasses and 1 big brown bat carcass. All bat carcasses were collected for identification and disposal.

September 10th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes were observed within the facility. Seven juvenile rattlesnakes were observed outside of the facility all within close proximity of the perimeter fencing. A live rattlesnake (#77) was observed adjacent to a snake board on the east side of the facility. Three dead (#78, #79, and #80) and one live (#81) rattlesnake were observed on the west side of the facility. One dead (#82) and one live (#83) rattlesnake were observed on the south side of the facility (Photo 70). The live rattlesnakes were safely captured and released off site and the dead rattlesnakes were collected for disposal. The general wildlife surveys identified a *Myotis* sp. bat carcass on the floor of the maintenance warehouse and a juvenile gopher snake on the

outside of the west side of the CGS facility. The gopher snake was left in place and the bat carcass was collected for disposal.

September 14th, the DB conducted rattlesnake and general wildlife surveys. A rattlesnake (#84) was observed within the employee parking lot (Photo 71). A rattlesnake (#85) was observed outside the facility in the northwestern corner near the drain invert (Photo 72). Both rattlesnakes were safely captured and relocated off site. The general wildlife surveys identified 17 *Myotis* sp. bat carcasses, 3 Mexican free-tail bat carcasses, and 1 Big brown bat carcass under the ACC structure. The carcasses were collected for identification and disposal. A dead pigeon was observed under the combustion turbine (Photo 73). The pigeon appeared to have been predated by a great-horned owl or other large raptor. The pigeon carcass was collected and disposed of. The DB received a call that evening from the control room regarding a juvenile rattlesnake (#86) observation inside the water treatment building. The control room staff indicated the rattlesnake had been contained until the DB could arrive onsite the following day.

September 15th, the DB was on site to release rattlesnake #86 that had been captured the previous evening. The rattlesnake was safely released off site. While on site the DB surveyed inside and outside of the facility for additional rattlesnakes, none were observed.

September 17th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes were observed onsite. A rattlesnake (#87) was observed within a pit-fall trap at the front gate (Photo 74). The rattlesnake was safely captured and released off site. The general wildlife survey identified a dead gopher snake on the ground between heat recovery steam generator 1 and 2. The gopher snake appeared to have been dropped by a raptor. The gopher snake carcass was collected for disposal.

September 21st, the DB conducted rattlesnake and general wildlife surveys. The CGS personnel alerted the DB to the capture of rattlesnake (#88) in the water treatment building (Photo 75) the snake was captured by placing a bucket over the snake. Four juvenile rattlesnakes were observed along the perimeter fences. The first rattlesnake (#89) was observed next to the eastern perimeter fence while, two rattlesnakes (#90 and #91) were observed next to the western perimeter fencing, and the fourth rattlesnake (#92) was observed next to the southern perimeter fencing. All rattlesnakes were safely captured and released off site. The general wildlife survey identified 12 *Myotis* sp. bat carcasses under the ACC and 1 *Myotis* sp. bat carcass on the maintenance shop floor. The carcasses were collected for identification and disposal.

September 24th, the DB conducted rattlesnake and general wildlife surveys. A rattlesnake (#93) was observed within a dry sump for the combustion turbine accessory module (Photo 76) and a second rattlesnake (#94) was observed inside the northern most perimeter fencing (Photo 77). Both snakes were safely captured and released off site. No wildlife other was observed onsite.

September 25th, the DB received a call regarding a rattlesnake (#95) observed by plant personnel during an inspection of the switchyard. The DB traveled to the site to capture and relocate the snake (Photo 78). The DB also surveyed for rattlesnakes inside and outside of the facility with negative results.

September 28th, the DB conducted rattlesnake and general wildlife surveys. A dead juvenile rattlesnake (#96) was observed along the western fence perimeter. The rattlesnake had talon marks on its body. The carcass was collected for disposal. The wildlife survey identified 5 *Myotis* sp. bats carcasses under the ACC. The carcasses were collected for identification and disposal.

October 1st, the DB received a call from the CGS control room regarding a juvenile rattlesnake (#97) observed under a roll-off bin when the bin was moved. The DB traveled to the site to safely collect and release the rattlesnake. The DB also surveyed for additional snakes and none were observed. The DB did observe a large western toad in a pit-fall trap at the back gate, which was captured and released to the detention pond (Photo 79).

October 4th, the DB conducted rattlesnake and general wildlife surveys. A juvenile rattlesnake (#98) was observed along the outside of the western perimeter fence. No other snakes were observed and rattlesnake (#98) was safely released off site. The general wildlife survey identified a Northern alligator lizard (*Elgaria coerulea*) along the inside of the southern perimeter fence, the alligator lizard was left in place. The DB identified 9 *Myotis* sp. bat carcasses under the ACC. The bat carcasses were collected for identification and disposal.

October 8th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes or other wildlife were observed.

October 11th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes were observed inside of the CGS facility. While surveying outside of the facility the DB observed a rattlesnake (#99), which was safely captured and relocated off site. The wildlife survey identified 29 *Myotis* sp. bat carcasses, 2 big brown bat carcasses, 2 Mexican free-tail bat carcasses, and 1 red bat carcasses (Photos 80 – 83). The bat carcasses were collected for identification and disposal.

October 15th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes were observed outside of the facility. A juvenile rattlesnake (#100) was observed under a connex box in the southwest corner of the facility (Photo 84). The juvenile rattlesnake evaded capture by going back under the connex box, no other rattlesnakes were observed.

October 17th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes were observed. Numerous attempts were made throughout the day to capture the juvenile rattlesnake that was observed on October 15th under the connex box. However, it had not been seen in the area again. No other wildlife was observed.

October 19th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes or other wildlife were observed.

October 22nd, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes or other wildlife were observed.

October 25th, the DB conducted rattlesnake and general wildlife surveys. No rattlesnakes were observed. A CGS employee contacted the DB while onsite to report a large western toad (Photo 85) at the wet surface air cooler unit. The DB captured and safely released the toad off site. No other wildlife was observed.

Later in the afternoon, the DB received a call from the CGS CM concerning a rattlesnake (#101) in a sump near combustion turbine 2. The CM stated that he had safely captured and safely secured the snake. The DB stated that he would return the following morning to release the rattlesnake off site.

October 26th, the DB was on site to conduct rattlesnake and general wildlife surveys and to safely release the rattlesnake caught the previous day (#101). No additional rattlesnakes were observed. The

wildlife survey under the ACC identified 11 Myotis sp. bat carcasses, 1 big brown bat carcass, and 1 red bat carcass. The bat carcasses were collected for identification and disposal.

October 31st, the DB conducted rattlesnake surveys. No rattlesnakes were observed inside of the facility. While surveying outside of the facility the DB observed a rattlesnake (#102) on the north slope of the switchyard. The snake was safely captured and relocated off site. The DB also removed all of the snake boards that had been placed around the outside of the facility and put the lids on the pit-fall traps at the gates in anticipation that most rattlesnakes hibernate during the winter. The pit-fall traps were covered to keep non-target species from becoming entrapped in the pits. The DB also conducted a wildlife survey, but no wildlife was observed.

November 12th, the BM (Steve Long) received a call regarding a rattlesnake (#103) in the control room. The snake had been secured by an employee and the BM traveled to the site to safely release the rattlesnake off site.

Conclusion

The Colusa Generating Station was in compliance with all biological mitigation and protection measures covered in the BRMIMP that are applicable to this operating facility during the year 2018.

Appendix 2, HAZ-1

Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
5711	Aqueous Ammonia with Monoethanolamine (5 - 12%)	BFW pH Adjustment and Corrosion Control (Ammonia / Amine Blend)	Cycle Chemical Feed Shelter (Boiler Feedwater/Condensate) (B1)	Tote	400 gal / 3,338 lb	gallons / pounds	1	400 gal / 3,338 lb	400 gal / 3,338 lb	300 gal / 2,504 lb	365	6,320
BL-153	Ammonium Hydroxide 10-19%	BFW pH Adjustment and Corrosion Control (Ammonia / Amine Blend)	Cycle Chemical Feed Shelter (Boiler Feedwater/Condensate) (B1)	Tote	400 gal / 3,338 lb	gallons / pounds	1	400 gal / 3,338 lb	400 gal / 3,338 lb	300 gal / 2,504 lb	365	3,338 lbs on site daily
BL-152	Aqueous Ammonia with Monoethanolamine (5 - 10%)	BFW pH Adjustment and Corrosion Control (Ammonia / Amine Blend)	Cycle Chemical Feed Shelter (Boiler Feedwater/Condensate) (B1)	Tote	400 gal / 3,338 lb	gallons / pounds	1	400 gal / 3,338 lb	400 gal / 3,338 lb	300 gal / 2,504 lb	365	3,338 lbs on site daily
ELIMINOX	Carbohydrazide (5 - 10%)	Oxygen Scavenger	Cycle Chemical Feed Shelter (Boiler Feedwater/Condensate) (B1)	Drum	55 gal	gallons	1	55 gal	55	41	365	490
BT-3400	Pre-blended Phosphate/Caustic (1.0 - 5.0%)	pH and Corrosion Control (HP & IP Phosphate Feed)	Cycle Chemical Feed Shelter (HRSG A&B) (B1)	Tote	110 gal	gallons	1	110 gal	110	83	365	979
CROSSTRANS 106 and 207	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-A Excitation Transformer (E9)	Transformer	521 gal	gallons	1	521 gal	521	391	365	3,165 lb onsite daily
CROSSTRANS 106 and 206	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-A GSU Transformer (E4)	Transformer	14,950 gal	gallons	1	14,950 gal	14,950	11,213	365	90,821 lb onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-A Isolation Transformer (E10)	Transformer	977 gal	gallons	1	977 gal	977	733	365	5,935 lb onsite daily
CROSSTRANS 106 and 207	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-B Excitation Transformer (E9)	Transformer	521 gal	gallons	1	521 gal	521	391	365	3,165 lb onsite daily
CROSSTRANS 106 and 207	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-B GSU Transformer (E5)	Transformer	14,950 gal	gallons	1	14,950 gal	14,950	11,213	365	90,821 lb onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Combustion Turbine-B Isolation Transformer (E10)	Transformer	977 gal	gallons	1	977 gal	977	733	365	5,935 lb onsite daily
CROSSTRANS 106 and 209	mineral oil	mineral oil	Electrical Equipment: Station Service Transformer (E7)	Transformer	6,510 gal	gallons	1	6,510 gal	6,510	4,883	365	39,548 lb onsite daily
CROSSTRANS 106 and 210	mineral oil	mineral oil	Electrical Equipment: Station Service Transformer (E7)	Transformer	6,510 gal	gallons	1	6,510 gal	6,510	4,883	365	39,548 lb onsite daily
CROSSTRANS 106 and 209	mineral oil	mineral oil	Electrical Equipment: Steam Turbine Excitation Transformer (E11)	Transformer	747 gal	gallons	1	747 gal	747	560	365	4,538 lb onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Steam Turbine GSU Transformer (E6)	Transformer	19,015 gal	gallons	1	19,015 gal	19,015	14,261	365	115,516 lb onsite daily

	Helium	Helium, Compressed	Gas Metering Station (G5)	Cylinders	250 cu ft	cubic feet	5	1250 cu ft	1,250	938	365	
	Methane	Methane Compressed	Gas Metering Station (G5)	Cylinders	59 cu ft	cubic feet	1	59 cu ft	59	44	365	
MSDS #778986	Turbine Oil	lube oil	Hazardous Materials Storage Area (M2)	Drum	55 gal	gallons	4	220 gal	220	165	365	1,205 lb onsite daily
Product #001A0383	Shell Omala Oil HD 221	gear box/ACC oil	Hazardous Materials Storage Area (M2)	Barrels	55 gal	gallons	2	110 gal	110	83	365	606 lb onsite daily
Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
	Hydrogen	Hydrogen	Hydrogen Storage Area (G1)	Tube	44,000 cu ft	cubic feet	1	44,000 cu ft	44,000	33,000	365	53,000
AlphaCELL 195GXL- FT3	Lead Acid Battery	Lead Acid Battery	Packaged Electrical Electronic Control Center (PEECC) (M7)	Electrical Equipment : Battery	100 lb	pounds	116	11,600 lb	11,600	11,600	365	11,600
	Acetylene Gas	Acetylene Gas	Plant Maintenance Area (G3)	Cylinders	143 cu ft	cubic feet	4	572 cu ft	572	429	365	
	Argon Gas	Argon Gas	Plant Maintenance Area (G3)	Cylinders	381 cu ft	cubic feet	2	762 cu ft	762	572	365	
	Oxygen Gas	Oxygen Gas	Plant Maintenance Area (G3)	Cylinders	250 cu ft	cubic feet	6	1500 cu ft	1,500	1,125	365	
	Propane Gas	Propane Gas	Plant Maintenance Area (G3)	Cylinders	20 lb	pounds	16	319 lb	320	240	365	
	Nitrogen Gas	Nitrogen Gas	Plant Maintenance Area (G3), Compressed Cylinder Storage Area (C3)	Cylinders	250 cu ft	cubic feet	48	12,000 cu ft	12,000	12,000	365	
CDID: Stationary SPg - IB	Lead-Antimony Battery	Lead-Antimony Battery	Power Distribution Center in center of site (M6)	Electrical Equipment : Battery	110 lb	pounds	60	6,600 lb	6,600	6,600	365	6,600
CDID: Stationary SPg - IB	Lead-Antimony Battery	Lead-Antimony Battery	Power Distribution Center in Water Treatment Building (M6)	Electrical Equipment : Battery	110 lb	pounds	20	2,200 lb	2,200	2,200	365	2,200
				Steam Turbine Lube Oil System (E3)								28,744 lb onsite daily
MSDS #778985	Turbine Oil	lube oil	Steam Turbine (E3)		5,250 gal	gallons	1	5,250 gal	5,250	3,938	365	
	Hydrogen	Hydrogen / Coolant	Steam Turbine Generator (G2)	Generator	15,439 cu ft	cubic feet	1	15,439 cu ft	15,439	11,579	365	
	Sulfur Hexafluoride	SF6	Sulfur Hexafluoride Breakers (G4)	Electrical Equipment : Breaker	205 lb	pounds	7	1,432 lb	1,432	1,074	365	1,074 lb onsite daily
C & D Technologies 3DJ-200	Flooded Lead-Calcium Battery	Flooded Lead-Calcium Battery	Switchyard Control House (M7)	Electrical Equipment : Battery	100 lb	pounds	60	6,000 lb	6,000	6,000	365	6,000
7469	Anti-foam	Foam Control (ZLD)	Water Treatment Building (High Efficiency RO and ZLD) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	4,200
FO-321	Anti-foam	Foam Control (ZLD)	Water Treatment Building (High Efficiency RO and ZLD) (Site Feature #15)	Tank	360	gallons	1	360	360	270	365	3013 lbs on site daily

Nalco 8131	Coagulant (5 - 20%)	Coagulant (UF and Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (B4)	Aboveground Tank	2,500 gal / 31,295 lb	gallons / pounds	1	2,500 gal / 31,295 lb	2,500 gal / 31,295 lb	1,875 gal / 23,471 lb	365	23,471 lb onsite daily
P-828L	Ferric Sulfate 30-60%	Coagulant (UF and Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (B4)	Aboveground Tank	2,500 gal / 31,295 lb	gallons / pounds	1	2,500 gal / 31,295 lb	2,500 gal / 31,295 lb	1,875 gal / 23,471 lb	365	23,471 lb onsite daily
Cat-Floc 8018 Plus	Flocculant (5 - 20%)	Flocculant (Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	480
7744	Flocculant (5 - 20%)	Flocculant (Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	480
P-817E	Flocculant (5 - 20%)	Flocculant (Lamella Clarifier)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	480
Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
PC-7408	Sodium Bisulfite (30 - 60%)	Water Treatment Feedwater Dechlorination (Sodium Bisulfite Feed)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	2,399
RL-124	Sodium Bisulfite (30 - 60%)	Water Treatment Feedwater Dechlorination (Sodium Bisulfite Feed)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tank	360 gal	gallons	1	360 gal	360	270	365	3,600
	Sulfuric Acid 98% (66 degree Baume 93%)	pH Adjustment (Sulfuric Acid for pH Adjustment)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	300 gal	gallons	2	600 gal	600	450	365	9,205
8735	Sodium Hydroxide	pH Adjustment (Caustic for pH Adjustment)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	2,399
BL-1304	Sodium Hydroxide 15-40%; Potassium Hydroxide 10-30%	pH Adjustment (Caustic for pH Adjustment)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tank	360 gal	gallons	1	360 gal	360	270	365	4543 lbs on site daily
PC-191T	Antiscalant	RO Scale Inhibition (Raw Water RO Antiscalant)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tote	400 gal	gallons	1	400 gal	400	300	365	1,200
RL-9008	Antiscalant 2-Phosphono-1,2,4 - butane tricarboxylic acid 5-10%	RO Scale Inhibition (Raw Water RO Antiscalant)	Water Treatment Building (Raw Water Pre-Treatment and RO) (Site Feature #15)	Tank	360 gal	gallons	1	360 gal	360	270	365	3431 lb on site daily
	Sodium Hypochlorite (10 - 12%)	Bacteria Control for UF (Sodium Hypo-chlorite Feed)	Water Treatment Building (Raw Water Pre-Treatment and RO) (B4)	Aboveground Tank	1000 gal	gallons	1	1,000 gal	1,000	750	365	6,259 lb onsite daily

PERMA-CARE® PC- 98	Sodium Hydroxide (5 - 15%)	High pH Cleaning (RO Cleaning Chemical)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	55-gal Metal or Plastic Drum .56	55 gal	gallons	4	220 gal	220	165	365	940
PERMA-CARE® PC- 40	Sodium Percarbonate (5 - 15%)	Surfactant for Cleaning (RO Cleaning Chemical)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	5-gal Pail	5 gal	gallons	2	9 gal / 100 lbs	10	8	365	42
8344	Citric Acid (5 - 15%)	Low pH Cleaning (UF Iron Cleaner)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	55-gal Plastic Drum .56	55 gal	gallons	4	220 gal	220	165	365	575
RL-2016	Citric Acid (10-30%)	Low pH Cleaning (UF Iron Cleaner)	Water Treatment Building (Reverse Osmosis and UF Cleaners) (Site Feature #15)	Drum	55 gal	gallons	4	220 gal	220	165	365	2006 lbs on site Daily
	Soda Ash	Ph control	Water Treatment Building (Site Feature #15)	Drum	500 lbs	lbs	2	1000 lbs	1,000	750	365	750
	Sodium Hypochlorite (10 - 12%)		Water Treatment Building (Site Feature #15)	Tote	300 gal	gallons	1	300 gal	300	225	365	600
RL-1500	Ethylene diamine tetraacetic acid, tetrasodium salt (10-30%)	High pH Cleaning (RO Cleaning Chemical)	Water Treatment Building (Site Feature #15)	Dum	55 gal	gallons	2	110 gal	110	83	365	
Trade Name	Chemical Name	Common Name / Chemical Purpose	Location	Storage Container Type	Capacity of Largest Container	Unit	Number of Items	Total Amount Stored	Maximum Daily Amount	Average Daily Amount	Days on Site	Estimated Pounds Per Year of Chemical
CL-2156	5-chloro-2methyl-4-isothiazolin-3-one 1.11%; 2-methyl-4-isothiazolin-3-one .39%; Magnesium Nitrate 1.61%; Magnesium Chloride .96%	Evaporative Cooling Water Biocide	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Tank	150 gal	gallon	1	150 gal	150	113	365	1286 lbs onsite daily
CL-497	Sodium Chlorosulfamate 7-13% Sodium bromosulfamate 7-13% Sodium Hydroxide 1-5% Sodium Sulfamate 1-6%	Evaporative Cooling Water Biocide	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Tank	360 gal	gallon	1	360 gal	360 gallon	200	365	2180 lbs onsite daily
3DTBR06	Bioreporter (1 - 10%)	Tracing Agent (Bioreporter)	Wet Surface Air Cooled Chemical Feed Shelter (B2)	5-gal Pail	5 gal	gallons	2	10 gal	10	8	365	330
Nalco 3DT161	Inhibitor (5 - 10%)	Evaporative Cooling Scale/Corrosion Inhibitor	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Tote	110 gal	gallons	1	110 gal	110	83	365	3,359
CL-1432	Potassium phosphate, tribasic 5- 10%; 1-Hydroxyethylidene-1,1- diphosphonic acid, tetrapotassium salt .5-1.0%; Tetrapotassium pyrophosphate 1-5%; Potassium	Evaporative Cooling Scale/Corrosion Inhibitor	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Tank	150 gal	gallons	1	150 gallons	150	113	365	1674 lbs onsite daily

CT-709	Tetrapotassium pyrophosphate 40 70%	Wet SAC Passivation	Wet Surface Air Cooled Chemical Feed Shelter (B2)	Drum	55 gal	gallons	1	55 gal	55	41	365	792 lbs onsite daily
CROSSTRANS 106 and 208	mineral oil	mineral oil	Electrical Equipment: Alternate Power Transformer (E12)	Transformer	550 gal	gallons	1	550 gal	550	550	365	550 lb onsite daily
MSDS #778984	Turbine Oil	lube oil	Combustion Turbine-A HRSG (G2)	boiler feedwater pump	141 gal	gallons	2	282 gal	282	212	365	2,045 lb onsite daily
MSDS #778984	Turbine Oil	lube oil	Combustion Turbine-B HRSG (G2)	boiler feedwater pump	141 gal	gallons	2	282 gal	282	212	365	2,045 lb onsite daily
	Sulfuric Acid 98% (66 degree Baume 93%)		Zero Liquid Discharge Area Site Feature #21)	Tote	325 gal	gallons	1	325 gal	325	244	365	4,986
	Aqueous Ammonia (19%)		Aqueous Ammonia Storage Tank (M5)	Tank	20,000 gal	gallons	1	20,000 gal	20,000	15,000	365	154,971
Shell Turbo Fluid DR 46	Trixyly Phosphate (60-100%)	Steam Turbine Hydraulic Oil	Steam Turbine (E14)	Tank	500 gal	gallons	1	500 gal	500	400	365	
DOWFROST* 30 Heat Transfer Fluid	Propylene Glycol (30%)	propylene glycol in the water bath heater	Water Bath Heater (Site Feature #85)	In water bath heater	16,662 gal	gallons	1	16,662 gal	16,662	12,497	365	
Carbon Dioxide	Carbon Dioxide, Gas (99%)		Near STG	compressed gas cylinder	436 cu ft	cu ft	72	31392 cu ft	31,392	23,544	365	
Gasoline	Gasoline	Gasoline	Hazardous Materials Storage Area (M2)	Drum	55 Gal	gallons	2	110 gallons	110	55	365	3000 gallons
Diesel	Diesel	Diesel	Hazardous Materials Storage Area (M2)	Drum	55 Gal	gallons	2	110 gallons	110	55	365	2200 gallons

Appendix 3, NOISE-8

Per Noise-8, the following is required: “In the first annual compliance report after the receipt of a complaint, the project owner shall include documentation certifying that:

- 1) the noise-attenuating upgrades were installed on the specified residence at the project owner’s expense;**
- 2) the noise attenuating upgrades were already a feature of the residence;**
- 3) installation was offered but refused by the owner; or 4) residential use by the complainant was ceased.**

There were no Noise Complaints made by the owners or occupants of any of the existing residences located at ML1, ML2, or RC1 during operation of the CGS in 2018. There have been no noise complaints to date from anyone.

Appendix 4, SOIL & WATER-2



2017-2018
ANNUAL REPORT
FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES

Reporting Period July 1, 2017 through June 30, 2018

Retain a copy of the completed Annual Report for your records.

Please remember that a Notice of Termination and new Notice of Intent are required whenever a facility operation is relocated or changes ownership.

If you have any questions, please contact your Regional Board Industrial Storm Water Permit Contact. The names, telephone numbers, and e-mail addresses of the Regional Board contacts, as well as the Regional Board office addresses, can be found at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/contact.shtml

General Information

A. Facility Information

WDID: 5S061022929

Business Name: Colusa Generating Station

Physical Address: 4780 Dirks Rd

City: Maxwell

Contact Person: steve rovall

State: CA

Phone: 530-934-9061

Zip: 95955

Email: sar8@pae.com

Standard Industrial Classification (SIC) Codes: 4911-Electric Services

B. Facility Owner Information

Business Name: Pacific Gas Electric Co

Mailing Address: PO Box 398

City: Maxwell

Contact Person: steve rovall

State: CA

Phone: 530-934-9061

Zip: 95955

Email: sar8@pge.com

C. Facility Billing Information

Business Name: Pacific Gas Electric Co

Mailing Address: PO Box 398

City: Maxwell

Contact Person: Ed Warner

State: CA

Phone: 530-934-9061

Zip: 95955

Email: e1w2@pge.com

Question Information

1. Has the Discharger conducted monthly visual observations (including authorized and unauthorized Non-Storm Water Discharges and Best Management Practices) in accordance with Section XI.A.1?

Yes No

If No, see Attachment 1, Summary of Explanation.

2. Has the Discharger conducted sampling event visual observations at each discharge location where a sample was obtained in accordance with Section XI.A.2?

Yes No

If No, see Attachment 1, Summary of Explanation.

3. Did you sample the required number of Qualifying Storm Events during the reporting year for all discharge locations, in accordance with Section XI.B?

Yes No

If No, see Attachment 1, Summary of Explanation.

4. How many storm water discharge locations are at your facility?

1

5. Has the Discharger chosen to select Alternative Discharge Locations in accordance with Section XI.C.3?

Yes No

6. Has the Discharger reduced the number of sampling locations within a drainage area in accordance with the Representative Sampling Reduction in Section XI.C.4?

Yes No

7. Permitted facilities located within an impaired watershed must assess for potential pollutants that may be present in the facility's industrial storm water discharge. Using the table below, populated based on the facility's location, indicate the presence of the potential pollutant at the facility.

The facility is not located within an impaired HUC 10 watershed. You are not required to select any Industrial Pollutants. Skip Questions 8 and 9.

8. Has the Discharger included the above pollutants in the SWPPP pollutant source assessment and assessed the need for analytical monitoring for the pollutants?

Yes No

If No, what date will the parameter(s) will be added to the SWPPP and Monitoring Implementation Plan?

9. Were all samples collected in accordance with Section XI.B.5?

Yes No

If No, see Attachment 1, Summary of Explanation.

10. Has any contained storm water been discharged from the facility this reporting year?

Yes No

If Yes, see Attachment 1, Summary of Explanation.

11. Has the Discharger conducted one (1) annual evaluation during the reporting year as required in Section XV?

Yes No

If Yes, what date was the annual evaluation conducted? 06/20/2018

If No, see Attachment 1, Summary of Explanation.

12. Has the Discharger maintained records on-site for the reporting year in accordance with XXI.J.3?

Yes No

If No, see Attachment 1, Summary of Explanation.

If your facility is subject to Effluent Limitation Guidelines in Attachment F of the Industrial General Permit, include your specific requirements as an attachment to the Annual Report (attach as file type: Supporting Documentation).

ANNUAL REPORT CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: stephen royall

Title: director

Date: 07/12/2018

2017-2018

Annual Report for WDID 5S06I022929

Summary of Explanations

Explanation Question	Explanation Text
Question 3	We only had 2 qualifying events (discharges) for the year. Samples were collected and analyzed for both events.

Summary of Attachments

Attachment Type	Attachment Title	Description	Date Uploaded	Part Number	Attachment Hash
Supporting Documentation	ELG Reporting Requirements	Explanation of ELG Reporting Requirements.	07/10/2018	1/1	816b29a7e4c291a31ad9c2e0fdc9811320b5ba8757967c23d6b7ff8e5f9c3e

2017-2018

Annual Report for WDID 5S06I022929

List of Identified Pollutants within the Impaired Watershed

Parameter	Pollutant	Present at Facility?
-----------	-----------	----------------------

2017 - 2018

AD HOC MONITORING REPORT
FOR
STORM WATER DISCHARGES ASSOCIATED
WITH INDUSTRIAL ACTIVITIES

WDID No: 5S06I022929

Operator Information:

Name: Pacific Gas Electric Co

Address: PO Box 398

City: Maxwell State: CA Zip: 95955

Contact: steve royall

E-mail: sgr8@pge.com

Phone: 530-934-9061

Facility Information:

Name: Colusa Generating Station

Address: 4780 Dirks Rd

City: Maxwell State: CA Zip: 95955

Contact: steve royall

E-mail: sgr8@pge.com

Phone: 530-934-9061

Event Information:

Event Type: Qualifying Storm Event

Event ID: 991583

Certified By:

Name: stephen royall

Date:

DATA SUMMARY

Monitoring Location	Sample Date/Time	Estimated Discharge Date/Time	Parameter	Result Qualifier	Results	Units	Analytical Method	Method Detection Limit	Reporting Limit	Analyzed By
Sediment Pond Discharge	Tue Jan 09 05:56:00 PST 2018	Tue Jan 09 04:00:00 PST 2018	Iron, Total	=	0.4	mg/L	E200.7	0.0091	0.1	LAB
Sediment Pond Discharge	Tue Jan 09 05:56:00 PST 2018	Tue Jan 09 04:00:00 PST 2018	Oil and Grease	ND		mg/L	E1664A	0.66	1	LAB
Sediment Pond Discharge	Tue Jan 09 05:56:00 PST 2018	Tue Jan 09 04:00:00 PST 2018	pH	=	8.39	SU	pH_Field	0.01	0.01	SELF
Sediment Pond Discharge	Tue Jan 09 05:56:00 PST 2018	Tue Jan 09 04:00:00 PST 2018	Total Suspended Solids (TSS)	=	5.3	mg/L	A2540D	2	2	LAB

ATTACHMENTS

Attachment Title	Description	Date Uploaded	Attachment Type	Attachment Hash	Doc Part No/Total Parts
Lab Analysis	Laboratory Analysis	2018-02-06 08:30:56.0	Laboratory Results	4596d38fa04e4d49d22c8c1323946146fdae5a69d1d03ae74374ac8c4156	1/1
pH Documentation	PDF pH Documentation for sample event.	2018-02-12 08:02:33.0	Other	47d7dbf335905a50ceaf36dd592dfc5af9b65370fdb71f2aee6969336a96719	1/1

2017 - 2018

AD HOC MONITORING REPORT
FOR
STORM WATER DISCHARGES ASSOCIATED
WITH INDUSTRIAL ACTIVITIES

WDID No: 5S06I022929

Operator Information:

Name: Pacific Gas Electric Co

Address: PO Box 398

City: Maxwell State: CA Zip: 95955

Contact: steve royall

E-mail: sgr8@pge.com

Phone: 530-934-9061

Facility Information:

Name: Colusa Generating Station

Address: 4780 Dirks Rd

City: Maxwell State: CA Zip: 95955

Contact: steve royall

E-mail: sgr8@pge.com

Phone: 530-934-9061

Event Information:

Event Type: Qualifying Storm Event

Event ID: 998429

Certified By:

Name: stephen royall

Date:

DATA SUMMARY

Monitoring Location	Sample Date/Time	Estimated Discharge Date/Time	Parameter	Result Qualifier	Results	Units	Analytical Method	Method Detection Limit	Reporting Limit	Analyzed By
Sediment Pond Discharge	Fri Apr 06 11:10:00 PDT 2018	Fri Apr 06 10:00:00 PDT 2018	Iron, Total	=	0.78	mg/L	E200.7	0.0091	0.1	LAB
Sediment Pond Discharge	Fri Apr 06 11:10:00 PDT 2018	Fri Apr 06 10:00:00 PDT 2018	Oil and Grease	ND		mg/L	E1664A	0.73	1.1	LAB
Sediment Pond Discharge	Fri Apr 06 11:10:00 PDT 2018	Fri Apr 06 10:00:00 PDT 2018	pH	=	7.88	SU	pH_Field	0.01		SELF
Sediment Pond Discharge	Fri Apr 06 11:10:00 PDT 2018	Fri Apr 06 10:00:00 PDT 2018	Total Suspended Solids (TSS)	=	9.5	mg/L	A2540D	2	2	LAB

ATTACHMENTS

Attachment Title	Description	Date Uploaded	Attachment Type	Attachment Hash	Doc Part No/Total Parts
pH Results and Visual Observation	pH results, visual observation form, pH pen calibration documentation	2018-04-30 07:03:40.0	Supporting Documentation	a68826b9b6488eb479845c24e36317f43083efe5a4e2ef55deaf2e13be0	1/1
Lab Results	Lab Analysis for sample discharged 4-6-18	2018-04-19 07:59:46.0	Laboratory Results	ba88299fe876d60f3a8b6838163578227345516b36125ffa5235a849d7d9b36	1/1

EXCEEDANCE RESPONSE ACTION LEVEL 2 TECHNICAL REPORT

December 30, 2018

Prepared for

Pacific Gas and Electric Company – Colusa Generating Station
4780 Dirks Road
Maxwell, California 95955

Waste Discharge Identification

5S06I022929

Prepared by

Terraphase Engineering Inc.
1404 Franklin Street, Suite 600
Oakland, California

QISP

Hans Kramer, QISP # 00153

Project Number 0234.002.001



CONTENTS

CERTIFICATION	III
1.0 INTRODUCTION AND OVERVIEW	1
1.1 Introduction and Demonstration Selection	1
1.2 Facility Information	1
1.3 Summary of Response Actions.....	1
2.0 NAL EXCEEDANCES AND POLLUTANT SOURCES	2
2.1 NAL Exceedances	2
2.2 Industrial Pollutants and Sources	2
3.0 LEVEL 2 ERA ACTIONS – BMP IMPLEMENTATION	3
3.1 Previous BMP and ERA Analysis.....	3
3.2 ERA Level 2 BMP Implementation	3
3.2.1 Outfall CGS-01 BMP Installation	3
3.2.2 Outfall CGS-01 BMP Evaluation	4
TABLES	
1 NAL Exceedances	
2 Industrial Pollutant Sources Potentially Contributing to NAL Exceedance	
3 Outfall Monitoring Results	
FIGURES	
1 Storm Water Flow and BMPs	

CERTIFICATION

Approval and Certification of the Level 2 ERA Technical Report:

Facility Name:

Pacific Gas and Electric Company

Waste Discharge Identification
(WDID):

5S06I022929

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Steve Royall, Duly Authorized Representative

Date

1.0 INTRODUCTION AND OVERVIEW

1.1 Introduction and Demonstration Selection

This Exceedance Response Action (ERA) Level 2 Technical Report (Report) has been prepared to discuss responses to Numeric Action Level (NAL) exceedances at the Pacific Gas and Electric Company (PG&E) Colusa Generating Station (Facility) in Maxwell, California. This Plan addresses all parameters entering Level 2 ERA exceedance status for the 2017-2018 reporting year at the Facility.

This Report includes an Industrial Activity Best Management Practices (BMP) Demonstration addressing implementation of BMPs first presented in the preceding ERA Level 2 Action Plan (Action Plan) dated December 22, 2017. This Report has been prepared in accordance with the 2015 California General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit) by a registered Qualified Industrial Stormwater Practitioner (QISP).

1.2 Facility Information

The Facility is located at 4780 Dirks Road, Maxwell, California and is owned and operated by PG&E. The Facility produces electricity through the use of two natural-gas-fired combustion turbines and a steam powered generator. The operating portion of the site is approximately 19 acres and is located within a 100-acre parcel leased from Holthouse Ranch. The Facility consists of 26% impervious surfaces (buildings/equipment and pavement/concrete), while the remaining area is gravel and a stormwater detention basin.

A Site Plan provided as Figure 1 shows the Facility layout, drainage areas, and storm water controls.

1.3 Summary of Response Actions

A new stormwater BMP was installed on 12/20/2017 inside the detention basin to reduce sediment discharge from the basin as well as ionically adsorb Iron particulates as storm water passes through the BMP. The BMP consists of Filtrexx SiltSoxx wattles with metal-absorbent Metalloxx material included. The wattles are placed as a check dam on top of the gravel berm to remove sediment and Iron prior to storm water discharge from the basin.

2.0 NAL EXCEEDANCES AND POLLUTANT SOURCES

2.1 NAL Exceedances

This Report addresses responses to the exceedances listed in Table 1.

Table 1: NAL Exceedances

Constituent	Reporting Year(s) and ERA Level
Iron	2016-2017: Level 1 2017-2018: Level 2

The average annual NAL for Iron was exceeded during the 2015-2016 and 2016-2017 reporting years. Beginning in 2017, after installation of the BMPs described in the Level 2 Action Plan, iron results were reduced below the NAL for all samples (there had been three), until November 29, 2018. Due to the result from November 29, 2018, the Facility is not yet eligible to return to Baseline status. It should be noted that the November 29, 2018 event exceeded the 85th percentile 24-hour event precipitation depth, based on the Sacramento State California Phase II LID Sizing Tool (based on climate station "COLUSA 2 SSW").

No other constituents have entered ERA Level 1 or 2 at the Facility at any time.

2.2 Industrial Pollutants and Sources

The iron NAL exceedances are likely caused by the industrial operations and pollutant sources listed in Table 2.

Table 2: Industrial Pollutant Sources Potentially Contributing to NAL Exceedance

Constituent	Location	Industrial Activity	Industrial Pollutant
Iron	Combustion Turbines (Main power plant area)	Power Plant Operations	Iron Particulates
Iron	Material storage area located at the south side of the facility west of the warehouse	Material storage, specifically pipe and other steel products	Iron Particulates/oxidation
Iron	Air Cooled Condenser (west of combustion turbines)	Steam Cooling	Iron/oxidation (Large exposed metal surfaces)

Outfall CGS-01 is located at the southwest corner of the Facility and is the only discharge location for runoff from the Facility. A stormwater detention basin and outflow weir is located in the southwest corner prior to Outfall CGS-01.

3.0 LEVEL 2 ERA ACTIONS - BMP IMPLEMENTATION

3.1 Previous BMP and ERA Analysis

Minimum mandatory BMPs required by the General Permit were previously implemented at the Facility but were unable to adequately control Iron at Outfall CGS-01. BMPs implemented prior to the ERA Level 1 assessment included drain inlet filters, storm-resistant shelters, vegetated swale, oil/water separators, gravel caps, the detention basin, regular sweeping, secondary containment, and spill kits, among others.

The ERA Level 1 assessment for the Facility determined additional sweeping, coating steel material racks, and removing accumulated sediments within the basin was warranted. These improvements reduced the total Iron load but were not successful at reducing total Iron levels below the NAL.

The Level 2 Action Plan suggested Filtrexx Siltsoxx with Metalloxx wattles be installed at the detention basin discharge, which did control iron levels and maintain them below the NAL, until the greater-than-85th-percentile, 24-hour precipitation event on November 29th.

3.2 ERA Level 2 BMP Implementation

BMP improvements proposed in the Level 2 Action Plan included the installation of Filtrexx SiltSoxx with Metallox wattles as a filtration weir at the discharge of the detention basin.

3.2.1 Outfall CGS-01 BMP Installation

PG&E completed installation of the Filtrexx Siltsoxx at Outfall CGS-01 on December 20, 2017. The BMPs were installed according to manufacturer standards and industry best practices. Applicable BMP product documents were included with the Level 2 Action Plan.

The BMP includes four Filtrexx 8-inch-diameter wattles containing Metallox media for sediment and metals removal. The wattle was cut into four equal-length pieces and stacked in a diamond shape. One is placed directly in the soil, three more are placed on top, and wooden stakes are installed to hold all wattles in place. The wattles were staked to an existing gravel berm prior to the discharge point.

The wattles were installed surrounding the discharge weir, as shown in Figure 1 Storm Water Flows and BMPs. Wattles were installed according to the *Filtrexx Section 1: Construction SWPPP Cut Sheet for Filtrexx Check Dams – Siltsoxx (Cut Sheet)* (included in the Level 2 Action Plan). Wattles were positioned so flow must pass through stacked wattles prior to entering the basin outfall weir.

3.2.2 Outfall CGS-01 BMP Evaluation

Following installation Iron has been reduced to below the NAL in site discharges in all but the latest results, presented in the table below. In October 2018 the originally-installed wattles were replaced with a new set.

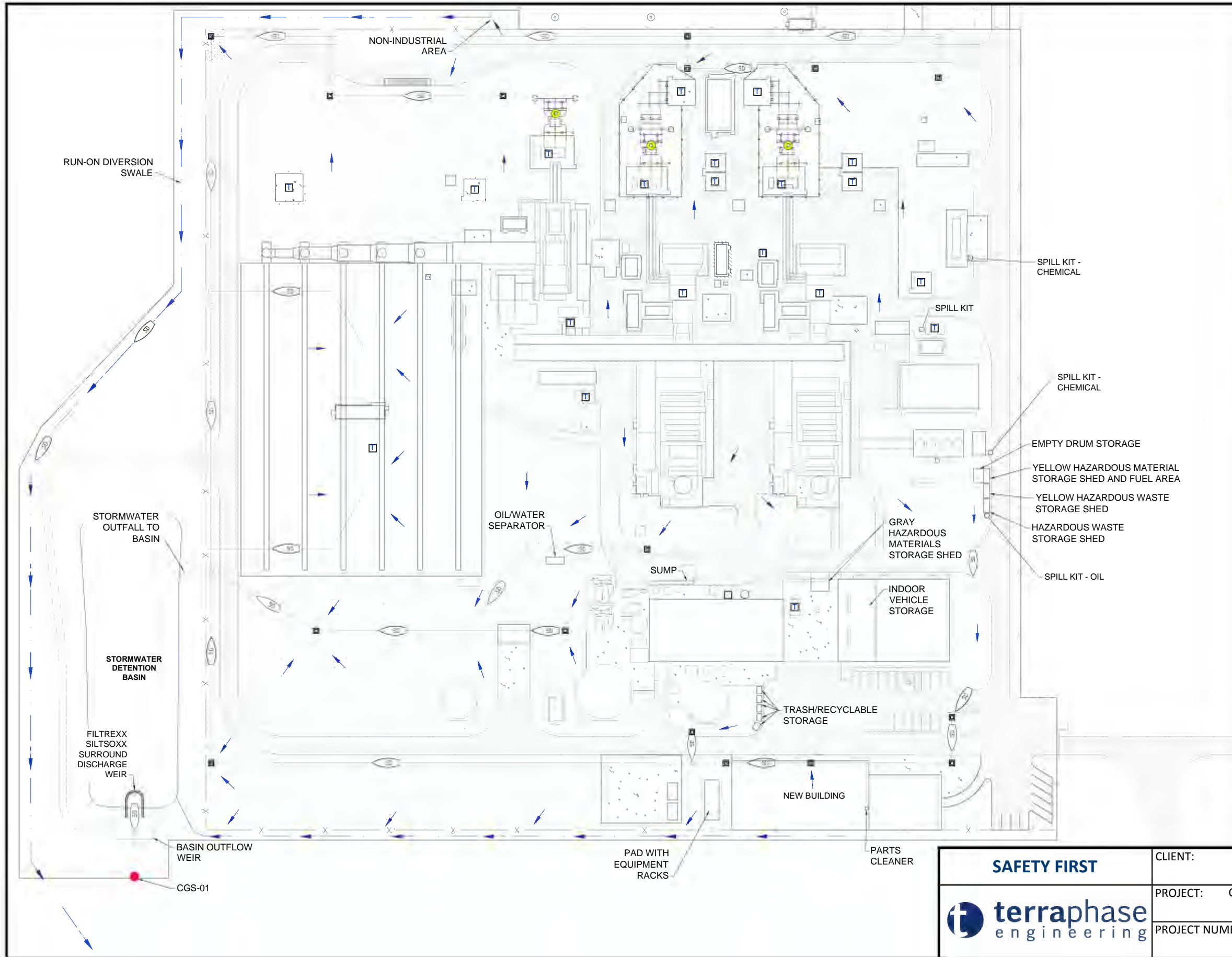
Date	Iron (mg/l)
2/2/2017	0.79
1/9/2018	0.40
4/6/2018	0.78
11/29/2018	2.20

Given the most recent result exceeds the NAL, additional BMPs being considered for implementation in 2019 include the following:

- Install geotextile fabric on the pond floor between the existing weir formed by the Filtrexx wattles and the existing outlet riser, to reduce potential for disturbance of sediment in the area immediately behind the weir.
- Attach a lateral pipe to the discharge riser low-flow orifice, extending into the annular space between the existing Filtrexx wattles and discharge riser, with slits cut in the pipe wall and additional Filtrexx wattles and/or fabric coating the slits and pipe entrance.
- Install additional Filtrexx wattle between the existing wattles and the discharge riser.
- Install a silt curtain in the basin.

These options will be evaluated and the chosen BMP(s) will be implemented in 2019.

FIGURES

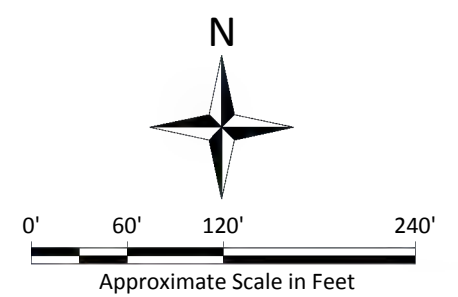


LEGEND

- DRAIN INLET WITH SEDIMENT FILTER
- STORM WATER DISCHARGE/SAMPLING POINT
- FACILITY BOUNDARY
- PORTABLE RESTROOM
- TRANSFORMER
- SULFUR HEXAFLUORIDE BREAKER
- ASPHALT CONCRETE
- CONCRETE
- GRAVEL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.



 	CLIENT:	PG&E	Storm Water Flow and BMPs
	PROJECT:	Colusa Generating Station Maxwell, California	
	PROJECT NUMBER:	0234.002.001	

Figure 1

Appendix 5, SOIL & WATER-7

Per Soil & Water 7 the following is required:” the project owner shall submit any related monitoring required by the agreement to the CPM in the annual compliance report. The project owner shall submit any notice if violations from the Glenn Colusa Irrigation District to the CPM within 10 days of receipt and fully explain the corrective actions taken in the next annual compliance report.”

There is no reporting or monitoring requirement in the water agreement with the Glenn Colusa Irrigation District.

No notice of violations issued by GCID in the 2018 year.

Appendix 6, SOIL & WATER-8

Appendix 6, SOIL & WATER-8

All water used during 2018 was supplied by the Glenn Colusa Irrigation district. The total amount of water used during 2018 was 18,577,494 gallons.



Year	2018
CEC Plant ID	06-AFC-9
EIA Plant ID	

Section 1. Power Plant Water Supply								
1a	Primary Water Supply Source	Agricultural Canal			1e	Backup Water Supply Source	NA	
1b	Name of Primary Water Purveyor, Wastewater Supplier, or Well ID(s)	Tehema Colusa Canal Authority/Glenn Colusa Irrigation District			1f	Name of Backup Water Purveyor, Wastewater Supplier, or Well ID(s)	NA	
1c	Primary Water Supply Average Total Dissolved Solids (mg/l)	90			1g	Backup Water Supply Average Total Dissolved Solids (mg/l)	NA	
1d	Regional Water Quality Control Board	Central Valley Region Water Quality Control Board						
Section 2. Power Plant Water Use								
2a	Check this box if water use at the power plant is not metered and cannot reasonably be estimated.							
2b	Volume of Water Required (in gallons)	Check the boxes below if the categorized water use is not metered and cannot reasonably be estimated or is not applicable.						
		Sanitation	Landscaping	Solar Mirror Washing	Dust Suppression	Other Water Use	Daily Maximum	
	January		0			273,922		
	February		0			318,684		
	March		0			261,582		
	April		0			655,568		
	May		0			185,526		
	June		1332			1,403,366		
	July		434			4,349,628		
	August		48			3,171,162		
	September		804			3,140,648		
	October		326			3,744,308		
	November		0			845,424		
December		0			227,676			
2c	Metering Frequency	Recorded Daily		Metering Technology		Inline Analog Meter		
Section 3. Power Plant Wastewater Disposal								
3a	Check box if wastewater is not metered and cannot reasonably be estimated.				3i	Volume of Discharged Waste (in gallons)	Daily Maximum	Monthly Total
3b	Wastewater Disposal Method	Zero Liquid Discharge/Septic Tank		January		NA		
3c	Average Total Dissolved Solids (mg/l)	NA		February		NA		
3d	Equipment Manufacturer	Aquatech		March		NA		
3e	Year of Installation	2010		April		NA		
3f	Waste Reduction Equipment or Measures Taken	Zero Liquid Discharges		May		NA		
				June		NA		
				July		NA		
				August		NA		
3g	Name of the Facility or Water Body Receiving the Wastewater	NA		September		NA		
3h	Notes: Process water is run through a crystallizer to remove solids and vaporize liquid					October	NA	
						November	NA	
					December	NA		

Appendix 7, SOIL & WATER-9

Per Soil & Water 9, in regards to the Septic System, the following is required: “Any testing results or correspondence exchanged between the project owner and the California Department of Health Services or the Colusa County Environmental Health Division.”

There is no testing required for the Septic System at the Colusa Generating Station and there was no formal correspondence with the Colusa County Department of Environmental Health. In 2012 we signed a maintenance contract with Hydrotec Solutions Inc., to provide quarterly maintenance of our septic system in accordance with our O&M manual. This company was recommended to us by the Colusa County Department of Environmental Health. They began their quarterly maintenance in the third quarter of 2012 and have continued through the present.

Attached is their 2018 report.

PGE Colusa Generating Station

1ST QTR. 2018 REPORT

COMPLETED: **3/6/18**

2018 PG&E Colusa Generating Station

	Date		STEP Tank			STEP Tank		
	Date	# days	EC (dose ct.)	Net Cycles	ADC	ETM (hrs/min)	Net Run Time	ADRT
4th	12/5/17	69	3892	255	3.70	211:47:03	13:29:21	0:11:44
1st	3/7/18	92	4022	130	1.41	228:43:11	16:56:08	0:11:03
2nd								
3rd								
4th								

KEY:	
ADC	Ave. Daily Cycle
ADRT	Ave. Daily Run Time
EC	Event Counter
ETM	Elapsed Time Meter
NET	Month Total

PIEZOMETER MEASUREMENTS

3/7/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.47'	DRY
Piez #2	2.50'	DRY
Piez #3	2.68'	2.30'

SCUM & SLUDGE MEASUREMENTS

3/7/18

SEPTIC

DOSING

	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	1"	0"	0"	0"
SLUDGE	3"	3"	0"	0"

PGE Colusa Generating Station

2ND QTR., 2018

REPORT

COMPLETED:

6/25/18

2018 PG&E Colusa Generating Station

	Date		STEP Tank			STEP Tank		
	Date	# days	EC (dose ct.)	Net Cycles	ADC	ETM (hrs/min)	Net Run Time	ADRT
4th	12/5/17	69	3892	255	3.70	211:47:03	13:29:21	0:11:44
1st	3/7/18	92	4022	130	1.41	228:43:11	16:56:08	0:11:03
2nd	5/31/18	85	4338	316	3.72	238:47:56	10:04:45	0:07:07
3rd								
4th								

KEY:

- ADC Ave. Daily Cycle
- ADRT Ave. Daily Run Time
- EC Event Counter
- ETM Elapsed Time Meter
- NET Month Total

PIEZOMETER MEASUREMENTS

3/7/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.47'	DRY
Piez #2	2.50'	DRY
Piez #3	2.68'	2.30'

5/31/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.58'	DRY
Piez #2	2.51'	DRY
Piez #3	2.72'	1.70'

SCUM & SLUDGE MEASUREMENTS

3/7/18

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	1"	0"	0"	0"
SLUDGE	3"	3"	0"	0"

5/31/18

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	0"	0"	0"	0"
SLUDGE	8"	10"	1"	1"

PGE Colusa Generating Station

3RD QTR., 2018 REPORT

COMPLETED: **11/2/18**

2018 PG&E Colusa Generating Station

	Date		STEP Tank			STEP Tank		
	Date	# days	EC (dose ct.)	Net Cycles	ADC	ETM (hrs/min)	Net Run Time	ADRT
4th	12/5/17	69	3892	255	3.70	211:47:03	13:29:21	0:11:44
1st	3/7/18	92	4022	130	1.41	228:43:11	16:56:08	0:11:03
2nd	5/31/18	85	4338	316	3.72	238:47:56	10:04:45	0:07:07
*3rd	8/22/18	83	15		0.00	0:48:49		0:00:00
4th								

KEY:	
ADC	Ave. Daily Cycle
ADRT	Ave. Daily Run Time
EC	Event Counter
ETM	Elapsed Time Meter
NET	Month Total

* 8/22/18: It appears panel was somehow reset and what you see is the only numbers we could get.

PIEZOMETER MEASUREMENTS

3/7/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.47'	DRY
Piez #2	2.50'	DRY
Piez #3	2.68'	2.30'

5/31/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.58'	DRY
Piez #2	2.51'	DRY
Piez #3	2.72'	1.70'

8/22/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1		
Piez #2		
Piez #3		

*Could not read; weren't allowed in that area by personnel.

SCUM & SLUDGE MEASUREMENTS

3/7/18

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	1"	0"	0"	0"
SLUDGE	3"	3"	0"	0"

5/31/18

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	0"	0"	0"	0"
SLUDGE	8"	10"	1"	1"

8/22/18

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	1"	0"	0"	0"
SLUDGE	6"	4"	2"	2"

PGE Colusa Generating Station

4TH QTR., 2018

REPORT

COMPLETED:

12/13/18

2018 PG&E Colusa Generating Station

	Date	# days	STEP Tank			STEP Tank		
			EC (dose ct.)	Net Cycles	ADC	ETM (hrs/min)	Net Run Time	ADRT
4th	12/5/17	69	3892	255	3.70	211:47:03	13:29:21	0:11:44
1st	3/7/18	92	4022	130	1.41	228:43:11	16:56:08	0:11:03
2nd	5/31/18	85	4338	316	3.72	238:47:56	10:04:45	0:07:07
*3rd	8/22/18	83	15		0.00	0:48:49		0:00:00
4th	12/6/18	106	375	360	3.40	20:20:58	19:32:09	0:11:03

KEY:

ADC Ave. Daily Cycle
 ADRT Ave. Daily Run Time
 EC Event Counter
 ETM Elapsed Time Meter
 NET Month Total

* 8/22/18: It appears panel was somehow reset and what you see is the only numbers we could get.

PIEZOMETER MEASUREMENTS

3/7/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.47'	DRY
Piez #2	2.50'	DRY
Piez #3	2.68'	2.30'

5/31/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.58'	DRY
Piez #2	2.51'	DRY
Piez #3	2.72'	1.70'

8/22/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1		
Piez #2		
Piez #3		

*Could not read; weren't allowed in that area by personnel.

12/6/18	<u>TOTAL DEPTH</u>	<u>DEPTH TO H2O</u>
Piez #1	2.55'	DRY
Piez #2	2.50'	DRY
Piez #3	2.70'	1.75'

SCUM & SLUDGE MEASUREMENTS

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	1"	0"	0"	0"
SLUDGE	3"	3"	0"	0"

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	0"	0"	0"	0"
SLUDGE	8"	10"	1"	1"

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	1"	0"	0"	0"
SLUDGE	6"	4"	2"	2"

	<u>SEPTIC</u>		<u>DOSING</u>	
	<u>INLET</u>	<u>OUTLET</u>	<u>INLET</u>	<u>OUTLET</u>
SCUM	3"	0"	0"	1"
SLUDGE	3"	6"	0"	1"

Appendix 8, TLSN-3

Per TLSN-3, the following is required: “Any reports of line-related complaints shall be summarized along with related mitigation measures for the first five years and provided in an annual report to the CPM.”

There were no line related complaints in 2018.

Per VIS-1, the following is required: “The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify:

- a) the condition of the surfaces of all structures and buildings at the end of the reporting year; b) major maintenance activities that occurred during the reporting year; and**
- c) the schedule of major maintenance activities for the next year.**

Surface coating applications for the most part remain in excellent condition after their completion in March 2011, as a result no maintenance activities occurred in 2018.

There is a possibility that some touch up painting may occur on the steam turbine duct where some heat issues effected the coatings. This is in an area that is not visible to the public.

Per VIS-3, the following is required: The project owner shall report landscaping maintenance activities, including of dead or dying vegetation, for the previous year of operation in each annual compliance report.”

During 2018 maintenance was completed by Sierra Integrated Services Inc. All vegetation is healthy and there is no dying vegetation. Sierra recommends continuing to water 5 minutes every other day for the summer months. Quarterly Landscape Inspection Reports are attached.



Daryl Sattelberg
Pacific Gas & Electric Company
Colusa Generating Station
4780 Dirks Road
Colusa, CA 94509

March 30, 2018

First Quarter Landscape Tree & Shrub Maintenance Report

An inspection was performed on the landscape trees and shrubs bordering the entrance of the facility. The trees were visually inspected for signs of structural issues, moisture/irrigation issues, and pest and diseases. Based on the observations most trees did not appear to have any of the above listed issues, however, there was one small oak tree at the entrance near the gate that did not appear to be leafing out and had some bark cracking on the east side of the trunk. It will need to be monitored through spring to see if is viable and produces leaves. If not, it will need to be removed. Additionally, there is another small Eucalyptus that has some die back towards the top. There were no obvious signs of stress, however, some leaves did have a slight discoloration and spotting. This tree will need to be monitored through the spring as well. There was also a lot of weed growth around the drip canopy of the trees.

Recommendations

Continue to inspect and test irrigation system to ensure it is properly working and adequately supplying water to each tree. This will be especially important once the spring rains cease to provide soil moisture.

A weed free zone needs to be maintained around each tree as currently there is significant growth. Weeds can compete for nutrients and moisture and can create harborage and protection for rodents that can damage the tree bark.

Anne-Marie Patterson
President
Pest Control Advisor/QAL
Sierra Integrated Services Inc.
916-717-9631



Daryl Sattelberg
Pacific Gas & Electric Company
Colusa Generating Station
4780 Dirks Road
Colusa, CA 94509

July 1, 2018

Second Quarter Landscape Tree & Shrub Maintenance Report

An inspection was performed on the landscape trees and shrubs bordering the entrance of the facility. The trees were visually inspected for signs of structural issues, moisture/irrigation issues, and pest and diseases. Based on the observations most trees did not appear to have any of the above listed issues. As noted in the Q1 report, there was one small oak tree at the entrance near the gate that did not appear to be leafing out and had some bark cracking on the east side of the trunk. The tree produced a nice canopy of leaves this spring and does not appear to have any additional issues. There was also another small Eucalyptus that has some die back towards the top. There continue to be no obvious signs of stress, however, some leaves did have a slight discoloration and spotting. This tree will continue to be monitored. There is also one small pine that has significant interior needle shed. This will be monitored again in the Q3 inspection to see if there is further decline. The weedy vegetation surrounding the trunks of the trees was removed and there is good clearance.

Recommendations

Continue to inspect and test irrigation system to ensure it is properly working and adequately supplying water to each tree. The irrigation heads all looked to be in good shape and none of the trees appeared to be under water stress.

Continue to maintain a weed free zone around the trunks of the trees. Weeds can compete for nutrients and moisture and can create harborage and protection for rodents that can damage the tree bark.

Anne-Marie Patterson
President
Pest Control Advisor/QAL
Sierra Integrated Services Inc.
916-717-9631



Daryl Sattelberg
Pacific Gas & Electric Company
Colusa Generating Station
4780 Dirks Road
Colusa, CA 94509

September 30, 2018

Third Quarter Landscape Tree & Shrub Maintenance Report

An inspection was performed on the landscape trees and shrubs bordering the entrance of the facility. The trees were visually inspected for signs of structural issues, moisture/irrigation issues, and pest and diseases. Based on the observations most trees did not appear to have any of the above listed issues. There continues to be a small Eucalyptus that has some die back towards the top. There appears to be no obvious signs of stress, however, some leaves did have a slight discoloration and spotting. This tree along with a small pine exhibiting significant needle shed will be monitored again in Q4. The weedy vegetation surrounding the trunks continues to have good clearance.

Recommendations

Continue to inspect and test irrigation system to ensure it is properly working and adequately supplying water to each tree. The irrigation heads all looked to be in good shape and none of the trees appeared to be under water stress.

Continue to maintain a weed free zone around the trunks of the trees. Weeds can compete for nutrients and moisture and can create harborage and protection for rodents that can damage the tree bark.

Anne-Marie Patterson
President
Pest Control Advisor/QAL
Sierra Integrated Services Inc.
916-717-9631



Daryl Sattelberg
Pacific Gas & Electric Company
Colusa Generating Station
4780 Dirks Road
Colusa, CA 94509

December 5, 2018

Fourth Quarter Landscape Tree & Shrub Maintenance Report

An inspection was performed on the landscape trees and shrubs bordering the entrance of the facility. The trees were visually inspected for signs of structural issues, moisture/irrigation issues, and pest and diseases. Based on the observations most trees did not appear to have any of the above listed issues. There continues to be a small Eucalyptus that has some die back towards the top. The small pine exhibiting significant needle shed did not show additional signs of concern. The weedy vegetation surrounding the trunks continues to have good clearance. Two shrubs to the left of the entrance gate are showing signs of significant leaf die back which almost appears to be leaf burn. This may need to be cut back and removed if re-sprouting does not occur in the spring. Monitoring during Q1 will occur.

Recommendations

Continue to inspect and test irrigation system to ensure it is properly working and adequately supplying water to each tree. Irrigation should be turned off during the winter rainy season unless a prolonged dry spell warrants an irrigation.

Continue to maintain a weed free zone around the trunks of the trees. Weeds can compete for nutrients and moisture and can create harborage and protection for rodents that can damage the tree bark.

Anne-Marie Patterson
President
Pest Control Advisor/QAL
Sierra Integrated Services Inc.
916-717-9631

Appendix 11, Waste-5

The Waste Management Plan was followed during 2018. The following pages reflect the practices that were utilized throughout the year.

TABLE 2-1
 Characterization of Waste Streams at the Colusa Generating Station
Waste Management Plan, PG&E Colusa Generating Station

Waste Stream	Characteristics	Classification	Disposal	Analysis Required
General Wastes				
Non-recyclable non-hazardous office and lunchroom waste	Waste paper, metal, plastic, cardboard, wood	Non-hazardous solid waste, based on waste management practices and staff training.	Commercial waste bins	Not required
Recyclable office materials	Waste paper, metal, plastic, cardboard	Not a waste, based on waste management practices and staff training.	Commercial recycling bins	Not required
Janitorial products and waste from their use	Janitorial products (e.g., window cleaner, floor stripper, wax, drain cleaners, etc.) may contain chemicals that are hazardous. These chemicals are consumed during normal use.	Use according to instructions on product labels does not constitute disposal. Discarded full-strength products may exhibit characteristics of ignitability, corrosivity, reactivity, or toxicity.	Empty containers of 5 gallons or less (meeting the definition of an empty container) can be disposed of in commercial waste bins. Discarded unused products will be characterized based on review of product labels and MSDSs and disposed of appropriately.	Not required
Used consumer electronic products and components	Cell phones, personal computers, computer peripherals (e.g., printers), pagers, personal digital assistants, process control system components	Universal hazardous waste	Universal waste destination facility to be identified	Not required
Light tubes	Includes fluorescent light tubes, high-pressure sodium lamps, and other lamps that exhibit a characteristic of a hazardous waste.	Universal hazardous waste	Universal waste destination facility to be identified	Not required
Batteries	Rechargeable nickel-cadmium batteries, lithium batteries, alkaline batteries,	Universal hazardous waste	Universal waste destination facility to be identified	Not required

TABLE 2-1
 Characterization of Waste Streams at the Colusa Generating Station
Waste Management Plan, PG&E Colusa Generating Station

Waste Stream	Characteristics	Classification	Disposal	Analysis Required
	silver button batteries, mercury batteries, small sealed lead-acid batteries, carbon-zinc batteries, and any other batteries that exhibit a characteristic of a hazardous waste			
Lead acid batteries – automotive or large industrial	Contain lead and sulfuric acid	Recyclable hazardous waste	Destination facility to be identified	Not required
Off-specification chemicals	Unusable new products, materials that cannot be returned to the vendor, and expired materials (shelf-life exceeded)	Chemical products may be non-hazardous, listed hazardous wastes, or characteristic waste.	Non-hazardous waste will be discarded in commercial waste bins. Hazardous waste will be disposed appropriately following characterization based on product labels and MSDSs.	Not required; management to be determined based on product label and MSDS.
Spent sorbent	Varies with wastes absorbed. May contain oil, solvents, coolant, or diesel fuel. Listed solvents are not expected to be used at the facility.	Non-hazardous waste if used to absorb a non-hazardous liquid; non-RCRA hazardous waste if used to absorb oil; RCRA hazardous waste if used to absorb a listed solvent or material that causes the sorbent to become a characteristic or listed hazardous waste	Non-hazardous waste will be discarded in commercial waste bins. Oil-contaminated sorbent will be disposed as a non-RCRA hazardous waste based on generator knowledge. Other hazardous waste sorbent will be disposed based on either generator knowledge if the material absorbed is known or analysis if it is not known.	Not required except when the material being absorbed is not known.
Aerosol cans	Aerosol cleaners and lubricants may contain listed chemicals. In addition, aerosol propellants and materials may be ignitable. Materials may also be	Universal hazardous waste	Empty, expired unused, or partially used aerosol cans	Not required; management can to be determined based on product label and MSDS.

TABLE 2-1
 Characterization of Waste Streams at the Colusa Generating Station
Waste Management Plan, PG&E Colusa Generating Station

Waste Stream	Characteristics	Classification	Disposal	Analysis Required
	corrosive or reactive.			
Used oil	Used oil includes lubricating oil, gearbox oil, compressor oil, bearing oil, transformer oil, metal working oil, and hydraulic oil that is not mixed with solvents.	Non-RCRA hazardous waste	Evergreen Oil or similar used oil recycler	Testing to confirm total halogen concentration is less than 1,000 parts per million. Testing is typically provided as a service by the oil recycler.
Painting wastes	Large-scale work is contracted out. Paint wastes include cans of unused or partially used paint, empty paint cans, and paint contaminated materials (brushes, rollers, tarps, and wipes).	It is assumed that waist paints are hazardous wastes. Paint-contaminated material is typically non-hazardous unless disposed when the paint is still wet.	Discarded unused or partially used paint will be characterized based on review of product labels and MSDSs and will be disposed of appropriately.	None required
Biohazard wastes	Biohazard waste may result from first air operations.	Biohazard	Transport to a local hospital for disposal by incineration	None required
Sanitary wastewater	Wastewater from toilets, sinks, showers, and janitorial closets.	Non-hazardous. Waste management provisions include posting signs at sinks and training employees regarding materials prohibited from draining at sinks.	Delta Diablo Sanitation District treatment plant	Monitoring per Industrial Waste Permit
Used oil filters	Used oil filters are hazardous based on oil content and may exhibit hazardous characteristics for lead and other heavy metals.	Used oil filters are classified as recyclable hazardous wastes provided that they are managed per requirements including draining of free-flowing oil	Drained oil filters may be transported to an approved destination such as Evergreen Oil under a bill of lading, provided that requirements for used oil filter management have been met.	None required

TABLE 2-1
 Characterization of Waste Streams at the Colusa Generating Station
Waste Management Plan, PG&E Colusa Generating Station

Waste Stream	Characteristics	Classification	Disposal	Analysis Required
Reusable soiled textiles (shop towels)	Varies with material absorbed. May contain oil, solvents, or other chemicals.	May be managed as a recyclable material excluded from classification as a waste if managed in accordance with requirements for reusable soiled textiles.	Recycle at facility that is compliant with requirements for reusable soiled textiles.	None required
Empty product containers	Empty containers may contain residues that have hazardous characteristics. Care should be taken in handling empty containers previously holding ignitable materials as they may contain ignitable vapors.	Empty containers meeting the regulatory definition of empty (e.g. all contents have been poured out) may be disposed of as non-hazardous waste provided they also meet empty container management requirements.	Empty containers of 5 gallons or less may be disposed with commercial waste. Empty containers of greater than 5 gallons need to be labeled with the word "empty" and the date they were emptied and either sent for reconditioning or for scrap within one year of becoming empty.	None required
Scrap metal	Used metal parts	Recyclable materials (22 CCR 66261.6(a)(3))	Place in scrap metal bins for transportation to a scrap metal recycler.	None
Compressed gas cylinders	Cylinders containing pressurized oxygen, acetylene, argon, nitrogen, and calibration gas blends; may contain residual pressure.	Non-hazardous solid waste when empty	Return refillable cylinders to vendors. Dispose of non-refillable cylinders as non-hazardous waste.	None
Spent solvent, sludge, and filters from parts washers.	Water-based and hydrocarbon based spent solvent, sludge, and filters.	Hydrocarbon-based solvent is typically hazardous and is collected and recycled.	Contract a parts washer service to recycle parts washer spent solvent in accordance with regulation.	None required unless operations change or solvent changes.
Used blasting grit	Used blasting grit may contain metal from the parts processed as well as coating	The material will be collected for characterization prior to	Manage as a hazardous waste. The material will be disposed at an approved	The analysis to be performed will be based on the waste profiling requirements of the

TABLE 2-1
 Characterization of Waste Streams at the Colusa Generating Station
Waste Management Plan, PG&E Colusa Generating Station

Waste Stream	Characteristics	Classification	Disposal	Analysis Required
	residue.	disposal.	disposal facility in accordance with federal, state, and local regulations.	disposal facility.
Oil/water separator sludge	Material collecting on the bottom of the oil/water separator may include oil-contaminated metals and other solids.	The material will be managed as a hazardous waste based on waste analysis.	Manage as a hazardous waste. The material will be disposed at an approved disposal facility in accordance with federal, state, and local regulations.	The analysis to be performed will be based on the waste profiling requirements of the disposal facility.
Used engine coolant	Used engine coolants are mixtures of water and organic compounds such as ethylene glycol.	Spent coolants are typically non-RCRA hazardous wastes.	Recycle at Evergreen Oil or similar facility.	None required
Wet Surface Air Cooler (WSAC) Sludge	WSAC sludge is a mixture of ambient particulate matter and water.	Dependent on samples—likely non-hazardous. Class II/III landfill if nonhazardous; Class I if hazardous.	Store in bins. Bins are to be covered if rain is predicted. Storage is allowed until container is full. Waste will be transported off-site weekly.	Perform total analysis (i.e. TCLP, TTLP, WET, etc.) to characterize the waste. If process remains consistent through year, perform characterization 1x/year
Salt Cake	Residual concentrated brine solution	Dependent on samples—likely non-hazardous. Class II/III landfill if nonhazardous; Class I if hazardous.	Store in bins. Bins are to be covered if rain is predicted. Storage is allowed until container is full. Waste will be transported off-site weekly.	Perform total analysis (i.e. TCLP, TTLP, WET, etc.) to characterize the waste. If process remains consistent through year, perform characterization 1x/year.

MSDS = Material Safety Data Sheet.

Table 2-1

Characterization of Waste Streams at the Colusa Generating
Station Waste Management Plan, PG&E Colusa Generating Station

Waste Stream	Characteristics	Classification	Disposal	Analysis Required
Soil & Rock	Excavated soil/rock From Oil spills	Depends on sample likely non-hazardous Class II/III if nonhazardous Class I if hazardous	Manage as a hazardous Waste. The material will disposed at an approved facility. In accordance with federal,state and local regulation	Preform total analysis (i.e., TPH,CAM17) to characterize the waste.

Attachment D

Post-Certification Changes



Per Com-7 Item 4 we are to provide; “A Summary of the current project operating status and an explanation of any significant changes to the facility operations during the year.”

No significant changes were made at CGS in 2018.

Attachment E

Summary of Missed Deadlines



Per Com-7 Item 5 we are to provide: “An explanation for any submittal deadlines that have been missed, accompanied by an estimate of when the information will be provided”

The Title V Annual Compliance Certification is due to the CCAPCD (Colusa County Air Pollution Control District) by February 1 of each year. This report was provided to the CCAPCD on July 3, 2018. Human error caused the missed deadline. Steps have been taken to install a task reminder into the PG&E Work Management Tool to help prevent this error from happening again.

Attachment F

Governmental Agency Submittals and Issuances

The following is a listing of filings submitted to, or permits issued by, other governmental agencies during the year;

CGS Agency Submittals; January 1, 2018 – December 31, 2018

Colusa County Air Pollution Control District

Quarterly Operating Report (Permit Condition 17) – January 2018, April 2018, July 2018, October 2018

Annual RATA/Source Test – December 24, 2018

Title V Annual Certification of Compliance – July 3, 2018 (missed deadline listed above in Com-7, Item 5)

EPA

Semi Annual CEMs Report (X.G.5) – January 2018, July 2018

CUPA

Revised Hazardous Materials Business Plan via CERS – February 2018

State Water Resources Control Board

Annual Stormwater Report – July 12, 2018

Exceedance Response Action Level 2 Technical Report – December 31, 2018

Attachment G

Projected Compliance Activities 2019

Per Com-7 Item 7 we are to provide; “A projection of project compliance activities scheduled during the next year.”

In 2019 PG&E intends to continue reporting on the standard required compliance items. These include but are not limited to:

- Quarterly CEMS Reports/Operations Reports
- Annual Compliance Reports
- Notifications of Source Testing and Associated Source Test Reports
- Annual Storm Water Report

Attachment H

Additions to On-Site Compliance Files

Per Com-7 Item 8 we are to provide; “A listing of this year’s additions to the on-site compliance files.”

All the above noted items in Attachment F which were submitted to agencies other than the CEC, as well as those items submitted to the CEC have been added to the site compliance files.

Attachment I

Contingency Plan Evaluation

Per Com-7 Item 9 we are to provide; “An Evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions for bringing the plan up to date.”

Upon Review of the Site Contingency Plan there have been no changes in operations or company business practices to warrant changing of the on-site contingency plan for unplanned facility closure.

Attachment J

Complaints / NOV's / Citations

Per Com-7 Item 10 we are to provide: “A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters”

In 2018, CGS did not receive any notices or warnings of violation from any agencies.