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Description:	N/A
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Organization:	Metcalf Energy Center, LLC
Submitter Role:	Applicant
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Metcalf Energy Center, LLC

1 Blanchard Road
Coyote, CA 95013

August 9, 2019

Mr. Anwar Ali
Compliance Project Manager
Systems Assessment & Facility Sitting Division
California Energy Commission
1516 Ninth Street, MS-2000
Sacramento, CA 95814

Re: Metcalf Energy Center, LLC.
Docket No. 99-AFC-3
COM-7 - Annual Compliance Report for 2018

Dear Mr. Ali:

In accordance with the Conditions of Certification for the Metcalf Energy Center, LLC, this report is intended to fulfill the requirements of the Annual Compliance Report for 2018 in Condition of Certification COM-7.

Enclosed are the documents required by the Conditions of Certification. The documents are provided as appendices, as noted in the Annual Compliance Summary:

- Annual Compliance Summary
- Conditions of Certification Matrix
- Operating Data Summary
- AQ-13: Gas Turbine and HRSG Firing with Natural Gas
- AQ-14: Heat Input Hourly Limit
- AQ-15: Heat Input daily Limit
- AQ-16: Heat Input Annual Limit
- AQ-17: HRSG Duct Burners Firing
- AQ-18: S-1 and S-2 SCR Operation and Maintenance
- AQ-19: S-3 and S-4 SCR Operation and Maintenance
- AQ-20:Gas Turbine Emissions
- AQ-21: Gas Turbine Mass Emissions
- AQ-22: Gas Turbine Start-up
- AQ-24: Gas Turbine and HRSG Total Combined Daily Emissions
- AQ-25: Gas Turbine and HRSG Total Combined 12-Month Emissions
- AQ-26: Annual Toxic Air Contaminants Emissions
- AQ-27: Operation and Maintenance of Continuous Monitors
- AQ-28: Calculation and Recording of Daily Mass Emissions
- AQ-29: Projected Annual Emissions of Formaldehyde, Benzene, Specific PAHs

- AQ-36: Notification of Violations
- AQ-44: Compliance with 40 CFR Part 75
- AQ-56: Cold Start-up Hours
- BIO-2: Designated Biologist Summaries
- HAZ-1: Hazardous Materials List
- LAND-1: Trail Network Connection
- PUBLIC HEALTH-1: Cooling Tower Inspection
- SOIL & WATER-1: Water Use Summary
- TLSN-2: Radio and TV Interference
- TLSN-4: Transmission Right-of-Way
- TRANS-3: Permits or Licenses for Hazardous Material Transport
- VIS-1: Treatment of Project Structures
- VIS-10: Visible Plumes
- WASTE-3: Waste Management Comparison

If you have any additional questions, please feel free to contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Sincerely,

Terry Mahoney
General Manager
Metcalf Energy Center, LLC.

Enclosures: Via Email

California Energy Commission
2018 Annual Compliance Report
Metcalf Energy Center – 99-AFC-3

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Appendix 1

Metcalf Energy Center – 99-AFC-3
2018 Annual Compliance Report

Project Status

The Metcalf Energy Center, LLC (MEC) declared commercial operation (COD) on May 29, 2005. MEC is dispatched into the merchant market by Calpine Energy Services (CES) and participates in the Ancillary Services market with the California ISO.

The Annual Compliance Report has been prepared in accordance with the General Conditions of the Compliance Plan.

1. **An updated compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed).**

   The compliance matrix is included as an attachment. See Appendix 2.

2. **A summary of the current project operating status and an explanation of any significant changes to facility operations during the year.**

   The facility is currently operating in a normal status. There have been no significant changes to facility operations during the reporting year. See Appendix 3

3. **Documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report.**

   The documents required by specific conditions are included in this report as attachments and are identified in the transmittal letter.

4. **A cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM.**

   - Petition to maintain the facility's post-commissioning daily and annual emission limits amendment. Order number 05-0316—03, approved on March 16, 2005.

5. **An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided.**

   There are currently no outstanding submittals for the 2017 reporting period.

6. **A listing of filings made to, or permits issued by, other governmental agencies during the year.**

   - Annual compliance report submitted to CEC
     - Monthly Plume Abatement Status Reports
   - Annual Permit to Operate BAAQMD
     - Monthly Air Reports
   - Annual Title V Compliance Certification Report submitted to BAAQMD and EPA.

- Annual Hazardous Material Permit City of San Jose
    - Annual Hazardous Materials Business Plan Update and Certification
- Annual Fire Safety Permit City of San Jose
- Annual Business License City of San Jose.
- Annual Storm Water Report to the State Water Resources Control Board
- Annual EIA-923S and EIA-860A to the U.S. Department of Energy
- Quarterly Electronic Data Reporting to the EPA (40 CFR 75)
- Semi-Annual NSPS Report to the EPA
- Semi-Annual Title V Monitoring Reports
- Semi-Annual Waste Water Self-Monitoring Report to the City of San Jose
- Monthly EIA-923M to the U.S. Department of Energy
- All submittals, except as noted above, required under our permits have been made on time to include, for the 2017 reporting year.

7. **A projection of project compliance activities scheduled during the next year.**

   Currently there is no compliance activities scheduled.

8. **A listing of the year's additions to the on-site compliance file.**

   No additions have been made to the on-site compliance files as required by the Decision.

9. **An evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date.**

   An evaluation to the on-site contingency plan for unexpected facility closure was conducted with no modifications.

   In addition, insurance coverage for the site remains current. Currently the site major equipment warranties have expired.

10. **A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.**

    There were no complaints, notices of violations, official warnings or citations during the reporting period.

CONDITIONS OF CERTIFICATION SPECIFIC REQUIREMENTS

AQ-13 **The Gas Turbines and the Heat Recovery Steam Generators shall be fired exclusively on natural gas.**

No violation of this condition occurred for the 2018 reporting year

AQ-14 **The combined heat input rate to each power train shall not exceed 2,124 mmBTU per hour, averaged over any rolling 3-hour period.**

No violation of this condition occurred for the 2018 reporting year

AQ-15 **The combined heat input rate to each power train shall not exceed 49,908 mmBTU per calendar day.**

No violation of this condition occurred for the 2018 reporting year.

AQ-16 **The combined cumulative heat input rate for the Gas Turbines and HRSGs shall not exceed 35,274,060 mmBTU per year.**

No violation of this condition occurred for the 2018 reporting year.

AQ-17 **The HRSG duct burners shall not be fired unless its associated gas turbine is in operation.**

No violation of this condition occurred for the 2018 reporting year.

AQ-18 **S-1 Gas Turbine and S-2 HRSG shall be abated by the properly operated and properly maintained A-1 Selective Catalytic Reduction (SCR) system whenever fuel is combusted at those sources and the A-1 catalyst bed has reached minimum operating temperature.**

No violation of this condition occurred for the 2018 reporting year.

AQ-19 **S-3 Gas Turbine and S-4 HRSG shall be abated by the properly operated and properly maintained A-2 Selective Catalytic Reduction (SCR) system whenever fuel is combusted at those sources and the A-2 catalyst bed has reached minimum operating temperature.**

No violation of this condition occurred for the 2018 reporting year.

AQ-20 **The Gas Turbines and HRSGs shall comply emission requirements (a) through (h) under all operating scenarios, including duct burner firing mode and steam injection power augmentation mode. Requirements (a) through (h) do not apply during a gas turbine start-up or shutdown.**

No violation of this condition occurred for the 2018 reporting year.

AQ-21 **The regulated air pollutant mass emission rates from each of the Gas Turbines during a start-up or a shutdown shall not exceed the limits.**

- No violation of this condition occurred for the 2018 reporting year.

AQ-22 **The Gas Turbines shall not be in start-up mode simultaneously.**

No violation of this condition occurred for the 2018 reporting year.

AQ-24 **Total combined emissions from the Gas Turbines and HRSGs including emissions generated from the cooling tower and during Gas Turbine start-ups and shutdowns shall not exceed the following limits during any calendar day.**

No violation of this condition occurred for the 2018 reporting year.

AQ-25 **Combined emissions from the gas turbines and HRSGs, including emissions generated from cooling towers and during gas turbine startups, shutdowns and tuning shall not exceed permit limits during any consecutive twelve (12) month period.**

No violation of this condition occurred for the 2018 reporting year.

AQ-26 **Maximum projected annual toxic air contaminants emissions from the gas turbines shall not exceed permit limits.**

No violation of this condition occurred for the 2018 reporting year.

AQ-27 **Properly operated and maintained continuous monitors.**

Continuous monitors are properly operated and maintained.

AQ-28 **To demonstrate compliance with conditions 20(f), 20(g), 20(h), 21, 24(c') through 24(e), and 25('c) through 25(e) the owner/operator shall calculate and record on a daily basis the POC, PM10, and SO2 mass emissions from each power train.**

No violation of this condition occurred for the 2018 reporting year.

AQ-29 **Calculate and record on an annual basis the maximum projected annual emissions of formaldehyde, benzene and specific PAHs.**

No violation of this condition occurred for the 2018 reporting year.

AQ-36 **Notification to the District and CPM of any violations of permit conditions.**

No violations occurred during the 2018 reporting year.

AQ-44 **Compliance with the continuous emission monitoring requirements of 40 CFR Part 75.**

No violation of this condition occurred for the 2018 reporting year. See Appendix 4

AQ-56 **Cold Start-up hours shall not exceed 30 hours per calendar year for each turbine.**

No violation of this condition occurred for the 2018 reporting year.

BIO-2 **The CPM approved Designated Biologist shall submit record summaries in the Annual Compliance Report:**

The Designated Biologist currently is not conducting any of the tasks as specified in the condition. He does provide an annual report regarding the preserve.

HAZ-1 **Do not use any hazardous materials in reportable quantities not listed in attachment 1 or in greater quantities or strengths than those identified unless approved in advance by Santa Clara County and the CPM.**

A hazardous material inventory is included as an attachment and is identified in the table of contents. See Appendix 5.

LAND-1 **At such time as a connection to a trail network can be made, install and maintain the portion of planned trail that would cross the site.**

No trail updates have been made at this time. MEC is awaiting direction from the City of San Jose for trail construction.

PUBLIC HEALTH-1 **Perform a visual inspection of the cooling tower drift eliminators once per calendar year.**

The inspection sheet is included as an attachment and is identified in the table of contents. See Appendix 7.

SOIL & WATER-1 **Potable water may be used for cooling purposes only in the event that SBWR recycled water service is interrupted.**

A record of water consumption has been included and identified in the table of contents. See Appendix 8.

TLSN-2 **Identify and correct any complaints of interference w/ radio and TV signals from operation of line and facilities.**

No complaints of interference were received during the 2017 reporting year. The COC states that this needs to be included for 5 years. This timeframe has expired.

TLSN-4 **Ensure that the transmission line right-of-way is kept free of combustible material.**

The transmission right-of-way has been kept free of combustibles by the site's landscaper. The COC states that this needs to be included for 5 years. This timeframe has expired.

TRANS-3 **Ensure that all federal and state regulations for the transport of hazardous materials are observed during both construction and operation of the facility.**

No permits or licenses have been acquired concerning the transport of hazardous substances. A list of the hazardous materials deliveries received in 2018 is in Appendix 6.

VIS-1 **Treat the project structures, buildings, and tanks visible to the public in a non-reflective color.**

The plant's structures, buildings, and tanks have all been treated in accordance with this condition of certification. No treatment maintenance has been necessary. A copy of the inspection is in Appendix 10.

VIS-10 **The power plant shall be designed and operated to minimize visible plume.**

The total cooling tower plume hours for 2018 were 0 hours, as noted in the December 2018 Plume Summary Log. A copy of the submitted log is in Appendix 11.

WASTE-3 Document the actual waste management methods used during the year compared to planned management methods.

No violation of this condition occurred. A waste management sheet is included as an attachment and is identified in the table of contents. See Appendix 9.

Appendix 2

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION	5/29/2005						
THROUGH YEAR END OF 2018	12/31/2018						
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-13	GTs (S-1, S-3) and HRSG (S-2, S-4) shall be fired exclusively on natural gas. (BACT for SO2 and PM10)	As part of the semiannual Air Quality Reports, indicate the date, time, and duration of any violation of this condition	Semiannual Air Quality Reports	Ongoing	Monthly and Semi-Annually		Ongoing
AQ-14	Combined heat input rate of each power train (S-1 & S-2, S-3 & S-4) shall not exceed 2,124 MMBtu/hr (3-hour rolling average) (PSD for NOx)	As part of the Air Quality monthly Reports, include information on the date and time when the hourly fuel consumption exceed this hourly limit	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-15	Combined heat input rate of each power train (S-1 & S-2 and S-3 & S-4) shall not exceed 49,908 MMBtu/day (PSD for PM10)	As part of the Air Quality monthly Reports, include information on the date and time when the hourly fuel consumption exceed this daily limit	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-16	Combined cumulative heat input rate of GTs (S-1, S-3) and HRSGs(S-2, S-4) shall not exceed 35,274,060 MMBtu/yr. (Offsets)	As part of the Air Quality annual Reports, include information on the date and time when the annual cumulative fuel consumption exceed this annual limit	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-17	HRSGs (S-2, S-4) duct burners shall not be fired unless associated GTs (S-1, S-3) are in operation. (BACT for NOx)	As part of the Air Quality Reports, include information on the date, time, and duration of any violation of this permit condition.	Air Quality Reports	Ongoing			Ongoing
AQ-18	GT/HRSG (S-1/S-2) shall be abated by the A-1 SCR system whenever fuel is combusted in these units and the A-1 catalyst bed has reached min. operating temperature.	As part of the Air Quality Reports, provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSG's.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-19	GT/HRSG (S-3/S-4) shall be abated by the A-2 SCR system whenever fuel is combusted in these units and the A-2 catalyst bed has reached min. operating temperature.	As part of the Air Quality Reports, provide info. on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(a)	Emission requirements: Emission Point P-1 NOx = 19.2 lbs/hr [0.00904 lbs/MMBtu (HHV) of nat. gas fired] ; Emission Point P-2 NOx = 19.2 lbs/hr [0.00904 lbs/MMBtu (HHV) of nat. gas fired] .	As part of the Semi-Annual Air Quality Reports, indicate the date, time, and duration of any violation. Include quantitative info. on the severity of the violation.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(b)	NOx Emission concentration = 2.5 ppmvd (corrected to 15% O2), 1-hr average {Emission Point P-1, P-2} (BACT for NOx).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(c)	CO mass emission = 28.07 lbs/hr (at any 3-hour rolling avg.) (Emission Point P-1, P-2).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(d)	When the heat input to a CT exceeds 1700 MMBTU/hr (HHV), the CO emission concentration shall not exceed 6.0 ppmvd on dry basis and the CO mass emission rate shall not exceed 0.0132 lb/MMBTU at any 3-hr rolling average.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(e)	Ammonia (NH3) emission concentration shall not exceed 5 ppmvd on dry basis, at any 3-hour rolling avg. Ammonia injection rate to A-1, A-2 to be verified through continuous recording of rate.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION		5/29/2005					
THROUGH YEAR END OF 2018		12/31/2018					
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-20(f)	Precursor organic compounds (POC) mass emissions (as CH4) shall not exceed 2.7 lbs/hr or 0.00126 lbs/MMBTU of natural gas fired. (Emission points P-1, P-2).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(g)	Sulfur dioxide (SO 2) mass emissions at P-1 ,P-2 each shall not exceed 1.28 pounds per hour or 0 .0006 lb /MM BTU of natural gas fired. (BACT)	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(h)	PM10 mass emission s at P-1 ,P-2 each shall not exceed 9 pounds per hour or 0.00452 lb PM10/MM BTU. Particulate matter (PM10) mass emissions at P-1 ,P-2 each shall not exceed 12 pounds per hour or 0.00565 lb PM10/MM BTU, when HRSG duct burners are in operation.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(i)	Testing to confirm the PM10 emissions levels shall occur at least three (3) times per year during each of the first two (2) years of operation. Each year. at least one (1) monitoring test shall occur during winter months.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-21	GT (S-1, S-3) Start-up and Shutdown emission rates.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-22	Not more than one GT (S-1, S-2) shall be in start-up mode at any one time.	In the monthly compliance report the owner/operator shall indicate any violations of this condition.	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-24	Total combined emissions in lbs/day, from GTs and HRSGs (S-1, S-2, S-3, S-4), including start-up and shutdown.	As part of the Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-25	Cumulative combined emissions in tons/any consecutive 12-month period, from GTs and HRSGs shall not exceed Nox = 123.4 (offsets), CO=586, POC=28 (offsets), PM10=91.3 (offsets), SO2=10.6 (cumulative increase).	As part of the Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-26	Maximum projected combined annual toxic air contaminant emissions from GTs and HRSGs (S-1, S-2, S-3, S-4). (a) formaldehyde = 3,796 lbs/yr (b) Benzene = 480 lbs/yr (c) PAHs=22.8 lbs/yr	As part of the annual Air Quality Reports, indicate the date, duration, and severity of any violation including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-26	Perform health risk assessment using emission rates per BAAQMD approved procedures and submit risk analysis to District and CPM.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation or submit risk analysis to District and CPM.	Within 60 days of source test date	Ongoing	Monthly/Annual		Ongoing
AQ-27 (a-d)	Demonstrate compliance with conditions 14-17, 20(a-d), 21, 22, 24(a), 24(b), 25(a), 25(b) by using continuous monitors during all operating hours for the following parameters.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION		5/29/2005					
THROUGH YEAR END OF 2018		12/31/2018					
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-27(e-f)	Use parameters in condition 27(a-d) and District approved methods to calculate the following. (e) Heat input rate for S-1 & S-2 combined, and S-3 & S-4 combined (f) Corrected NOx and CO concentrations and mass emissions at each exhaust point (P-1, P-2)	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-27(g-l)	For each source, source grouping, or exhaust point record parameters at least once every 15 minutes and calculate and record for the following. Refer to AQ-27 for further details.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-28(a-b)	Demonstrate compliance with conditions 20, 21, 24, 25 by calculating and recording on a daily basis POC, PM10, and SO2 mass emissions fine PM10 and SO2 from each power train.	As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation including quantitative information on the severity of the violation.	Monthly Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-29	Calculate and record on annual basis the max. projected annual emissions of formaldenyde, benzene, Specified Poly-Aromatic Hydrocarbons (PAH's).	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Annual		Ongoing
AQ-35	Maintain records and reports on site for a minimum of 5 years.	During site inspection, make all records and reports available to the District, California Air Resources Board, and CEC staffs.	AQ Inspection per AQ-35		Ongoing		Ongoing
AQ-36	Notify District and CPM of any violations of these permit conditions.	Submittal of these notifications as required by this condition is the verification of these permit conditions.	Violation of Permit Conditions		Ongoing		Ongoing
AQ-44	MEC shall comply with the continuous emission monitoring requirements of 40 CFR Part 75			Ongoing	Ongoing		Ongoing
AQ-45	Take monthly samples of natural gas combusted at MEC and analyze these samples for sulfur content using District-approved lab methods.	Maintain on site the records of all the guarantees received from its natural gas suppliers indicating that the fuel delivered to MEC complies with the 40 CFR Part 60,Subpart GG	On-site Compliance Inspections	Ongoing	Monthly		Ongoing
AQ-47a	Perform visual inspection of cooling tower drift eliminators once per calendar year and repair or replace any drift eliminators which are broken or missing.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition.	Air Quality Reports	Ongoing	Annual		Ongoing
AQ-53	The heat input to the fire pump diesel engine shall not exceed 211 MM BTU totaled over any consecutive twelve month period	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-54	The total hours of operation of the emergency generator shall not exceed 200 hours per calendar year, plus an additional 100 hours per calendar year for the purposes of maintenance and testing.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Annual		Ongoing
AQ-56	Cold Start-up hours shall not exceed 30 hours per calendar year for each Gas Turbine.	Provide dates and durations of any violation of this Condition to the CPM.	Air Quality Reports	Ongoing	Annual		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION	5/29/2005						
THROUGH YEAR END OF 2018	12/31/2018						
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
AQ-57	Record start time, end time, and duration of Gas Turbine Cold Startup and Combustor Tuning Periods.	Make all records available to Agencies during inspection.	Ongoing		Ongoing		Ongoing
BIO-12	Incorporate into closure plan measures that address the local biological resources and incorporate into the BRMIMP.	Address all biological resource-related issues associated with facility closure.	12 months prior to facility closure	Ongoing	12 months Prior to Closure		Ongoing
HAZ-1	Do not use any hazardous material in reportable quantities, not listed in Attachment 1 or in greater quantities or strengths than those identified unless approved in advance by Santa Clara County and the CPM.	Provide to the CPM and Santa Clara County, in the Annual Compliance Report, a list of hazardous materials contained at the facility in reportable quantities.	Annual Compliance Report	Ongoing	Annual		Ongoing
LAND-1	At such time as a connection to a trail network can be made, install and maintain the portion of the planned trail that would cross the site.	In the Annual Compliance Reports provide updates on trail developments in the area around the site.	Annual Compliance Report	Ongoing	Annual		Ongoing
NOISE-2	Throughout the construction and operation, document, investigate, evaluate and attempt to resolve all project related noise complaints.	File a copy of the Noise Complaint Resolution Form with City of San Jose and with the CPM documenting the resolution of the complaint.	30 days after receiving a noise complaint	Ongoing	Within 30 Days		Ongoing
PAL-7	Include in the facility closure plan a description regarding facility closure activity's potential to impact paleontological resources.	Include a description of closure activities in the facility closure plan.	12 months prior to facility closure	Ongoing	12 months Prior to Closure		Ongoing
Public Health-1	Perform a visual inspection of the cooling tower drift eliminators once per calendar year. Prior to initial operation of the project, have the cooling tower vendor's field representative inspect the cooling tower drift eliminator and certify that the installation was performed in a satisfactory manner.	The project owner shall include the results of the annual inspection of the cooling tower drift eliminators and a description of any repairs performed in the next required compliance report.	Annual Compliance Report	Ongoing	Annual		Ongoing
SOIL & WATER-1	Potable water may be used for cooling purposes only in the event that SBWR recycled water service is interrupted.	Provide a record of water consumption for the MEC.	Annual Compliance Report	Ongoing	Annual		Ongoing
TRANS-3	Ensure that all federal and state regulations for the transport of hazardous materials are observed.	Copies of all permits and licenses acquired concerning the transport of hazardous substances.	Annual Compliance Report	Ongoing	Annual		Ongoing
VIS-1	Treat the project structures, buildings, and tanks visible to the public in a non-reflective color.	The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.	Annual Compliance Report	Ongoing	Annual		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	The project owner shall submit to the City of San Jose and the County of Santa Clara Parks and Recreation Department for review and comment a specific plan.	Start of construction of the trail between Blanchard Road and railroad tracks	Ongoing	Ongoing		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Submit to the CPM for review and approval a specific plan describing its landscape plan.	Start of construction of the trail between Blanchard Road and railroad tracks	Ongoing	Ongoing		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Submit any required revisions	Within 30 days of notification by the CPM.	Ongoing	Within 30 days		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Notify the CPM, City of San Jose and County of Santa Clara Parks and Recreation Department that the planting installation is ready for	7 days after completion of planting installation	Ongoing	Within 7 days		Ongoing

METCALF ENERGY CENTER - COMPLIANCE MATRIX							
START OF COMERCIAL OPERATION		5/29/2005					
THROUGH YEAR END OF 2018		12/31/2018					
Condition No.	**Requirements & Task Summary**	**Action required**	**Event**	**Required Submittal Date**	**Date submitted to CPM**	**Date approved by CPM**	**Status/ Comments**
WASTE-2	Upon becoming aware of any impending waste management-related enforcement action notify the CPM of any such enforcement action.	Notify the CPM in writing within 10 days of becoming aware of an impending enforcement action.	Within 10 days of becoming aware of an impending enforcement action	Ongoing	Within 10 Days		Ongoing
WASTE-3	Prepare and submit to the CPM a waste management plan for all wastes generated during construction and operation of the facility.	In the Annual Compliance Reports, document the actual waste management methods used during the year compared to planned management methods.	Annual Compliance Report	8/1/06	Annual		Ongoing
Compliance matrix	A compliance matrix shall be submitted by along with each annual compliance report.	Submit compliance matrix to CPM	Annual Compliance Report	Ongoing	Annual		Ongoing

Appendix 3

Operating Data Summary January 2018 - December 2018

Metcalf CT1			Metcalf CT2			Metcalf ST1		
Date	Total Net MWh	Total Primary Fuel Quantity Burned (MMcf GG)	Date	Total Net MWh	Total Primary Fuel Quantity Burned (MMcf GG)	Date	Total Net MWh	Total Secondary Fuel Quantity Burned (MMcf GG)
January	-	-	January	-	-	January	-	-
February	-	-	February	-	-	February	-	-
March	-	-	March	-	-	March	-	-
April	12,040	144.0	April	6,244	84.1	April	10,237	2.28
May	28,979	349.4	May	29,106	353.0	May	31,947	3.03
June	69,035	826.1	June	61,563	736.8	June	81,751	21.99
July	109,110	1,266.5	July	108,907	1,273.7	July	142,070	101.92
August	99,585	1,137.5	August	107,572	1,241.2	August	140,139	168.49
September	81,318	942.4	September	80,909	945.9	September	97,106	23.69
October	42,624	494.1	October	44,088	514.6	October	54,922	34.89
November	94,663	1,070.0	November	93,008	1,066.9	November	116,529	58.72
December	101,548	1,161.5	December	105,512	1,214.8	December	129,320	67.51

Appendix 4

ECMPS Client Tool

Version 1.* 2018 Q4

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

January 30, 2019 03:43 PM

Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your QA and Certification Data using the U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your QA and Certification Data for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA's receipt (Date, Time, etc.) of your submission. Table 2 lists the tests, certification events, and QA extensions and exemptions that were included in this submission. Prior to submission ECMPS evaluated your data and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1).

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	QA
Feedback Status Level:	No Errors
Submission Date/Time:	01/30/2019 3:43:53 PM
Submitter User ID:	rsilva
Submission ID:	1229123
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your QA/Certification Data submission. ECMPS detected no errors in your data based on the checks performed.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with revising the QA/Certification Test data for this facility, please send an e-mail to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit QA/Certification Test data, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. NOTE: if the resubmission also affects related Emissions data, be prepared to request resubmission of the revised Emissions report(s) as well. Support staff will review your request and notify you via e-mail once the necessary database access has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: https://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA's website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: List of Tests, Certification Events, and Extension/Exemptions

QA/Cert Test List

Unit/Stack/ Pipe	Test Type	Test Number	Sys / Comp ID / Type	End Date/ Quarter
1	LINE	011-LINH18101010	011/NOX H	10/10/2018 11:24
		021-LINH18101007	021/O2 H	10/10/2018 08:39

ECMPS Client Tool

Version 1.* 2018 Q4

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

January 30, 2019 03:52 PM

Re: Metcalf Energy Center (55393) - 2

Dear Certifying Official:

Thank you for submitting your QA and Certification Data using the U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your QA and Certification Data for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA's receipt (Date, Time, etc.) of your submission. Table 2 lists the tests, certification events, and QA extensions and exemptions that were included in this submission. Prior to submission ECMPS evaluated your data and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1).

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	QA
Feedback Status Level:	No Errors
Submission Date/Time:	01/30/2019 3:52:16 PM
Submitter User ID:	rsilva
Submission ID:	1229128
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your QA/Certification Data submission. ECMPS detected no errors in your data based on the checks performed.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with revising the QA/Certification Test data for this facility, please send an e-mail to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit QA/Certification Test data, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. NOTE: if the resubmission also affects related Emissions data, be prepared to request resubmission of the revised Emissions report(s) as well. Support staff will review your request and notify you via e-mail once the necessary database access has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: https://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA's website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: List of Tests, Certification Events, and Extension/Exemptions

QA/Cert Test List

Unit/Stack/ Pipe	Test Type	Test Number	Sys / Comp ID / Type	End Date/ Quarter
2	LINE	111-LINH18101107	111/NOX H	10/11/2018 08:31
		121-LINH18101108	121/O2 H	10/11/2018 09:19

ECMPS Client Tool

Version 1.* 2018 Q4

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

January 30, 2019 03:44 PM

Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA's receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2018 QTR 4
Feedback Status Level:	No Errors
Submission Date/Time:	01/30/2019 3:43:53 PM
Submitter User ID:	rsilva
Submission ID:	1229124
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

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If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	0	930	1,944	1,614		4,488
Operating Time (hrs)	0.00	881.21	1,934.56	1,592.93		4,408.70
SO2 Mass (tons)	0.0	0.4	1.0	0.8		2.2
CO2 Mass (tons)	0.0	78,499.7	205,630.5	168,276.0		452,406.2
Heat Input (mmBtu)	0	1,320,939	3,460,143	2,831,622		7,612,704
NOx Emission Rate (lb/mmBtu)	0.000	0.013	0.008	0.008		0.009

ECMPS Client Tool

Version 1.* 2018 Q4

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback

January 30, 2019 03:52 PM

Re: Metcalf Energy Center (55393) - 2

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA`s Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA`s receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Feedback Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Feedback Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2018 QTR 4
Feedback Status Level:	No Errors
Submission Date/Time:	01/30/2019 3:52:16 PM
Submitter User ID:	rsilva
Submission ID:	1229129
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR FEEDBACK STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calender quarters, please complete the ECMPS Data Resubmission Request Form located at: https://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

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ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA`s website at: https://www.epa.gov/airmarkets/clean-air-markets-ecmps-reporting-instructions.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 2

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	0	837	2,011	1,635		4,483
Operating Time (hrs)	0.00	787.79	2,002.62	1,616.83		4,407.24
SO2 Mass (tons)	0.0	0.4	1.1	0.9		2.4
CO2 Mass (tons)	0.0	69,920.4	212,707.0	172,298.3		454,925.7
Heat Input (mmBtu)	0	1,176,580	3,579,193	2,899,309		7,655,082
NOx Emission Rate (lb/mmBtu)	0.000	0.014	0.007	0.008		0.009

Appendix 5

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
Aqueous Ammonia Storage Area

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**AMMONIA** CAS No ✓EHS 7664-41-7 Map: 1 Grid: 4G	**Pounds** State Liquid Type Mixture	**27527.7** Storage Container Aboveground Tank Days on Site: 365	**32382**	27527.7 Pressure Ambient Temperature Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Ammonia	28 %	✓	7664-41-7

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **AUXILLARY TRANSFORMERS**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 9 - Misc. Hazardous Materials	**HYTRANS 61** CAS No Map: 1 Grid: 5D, 3D, D1, 5E	**Gallons** State: Liquid Type: Mixture	**1956** Storage Container: Other Days on Site: 365	**489**	1956 Pressure: < Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Serious Eye Damage Eye Irritation	OIL, HYDRO LIGHT NAPH DIST 2, 6-DI-T-BUTYL-P-CRESOL (BHT)	99 % 1 %		64742-53-6 128-37-0
DOT: 2.2 - Nonflammable Gases	**NITROGEN, COMPRESSED** CAS No 7727-37-9 Map: 1 Grid: 2D, 3D, 5E, 5D	**Cu. Feet** State: Gas Type: Pure	**920** Storage Container: Cylinder Days on Site: 365	**230**	920 Pressue Temperature	Waste Code	- Physical Gas Under Pressure - Health Respiratory Skin Sensitization				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
BALANCE OF PLANT

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids)	**LEAD-ACID BATTERY**	**Gallons**	**865**	**14.4**	865			LEAD, LEAD COMPONENTS	60 %		7439-92-1
	CAS No	State: Liquid	Storage Container: Other		Pressure: Ambient	Waste Code		SULFURIC ACID	30 %	✓	7664-93-9
Corrosive	Map: 1 Grid: 2E	Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **BOILER FEED PUMPS**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No
DOT: 9 - Misc. Hazardous Materials	**CONOCO PHILLIPS MEGA FLOW 32** CAS No Map: 1 Grid: 2H, 3H	**Gallons** State: Liquid Type: Mixture	**520** Storage Container: Other Days on Site: 365	**130**	520 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **Boiler Water Chemical Treatment Area**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	CHEMTREAT BL-152 CAS No Map: 1 Grid: 2G	**Gallons** State: Liquid Type: Mixture	**800** Storage Container: Tote Bin Days on Site: 365	**400**	680 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	AMMONIUM HYDROXIDE ETHANOLAMINE	30 % 10 %		1336-21-6 141-43-5
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**CHEMTREAT BL1795** CAS No Map: 1 Grid: 2G	**Gallons** State: Liquid Type: Mixture	**400** Storage Container: Tote Bin Days on Site: 365	**400**	340 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	SODIUM HYDROXIDE TRISODIUM PHOSPHATE			1310-73-2 7601-54-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **COMBUSTION TURBINE #1**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids)	**LEAD-ACID BATTERY**	**Gallons**	**324**	**2.7**	324			LEAD, LEAD COMPONENTS	60 %		7439-92-1
	CAS No	State: Liquid	Storage Container: Other		Pressue: Ambient	Waste Code		SULFURIC ACID	30 %	✓	7664-93-9
Corrosive	Map: 1 Grid: 4E	Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **COMBUSTION TURBINE #2**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids)	**LEAD-ACID BATTERY**	**Gallons**	**324**	**2.7**	324			LEAD, LEAD COMPONENTS	60 %		7439-92-1
	CAS No	State: Liquid	Storage Container: Other		Pressure: Ambient	Waste Code		SULFURIC ACID	30 %	✓	7664-93-9
Corrosive	Map: 1 Grid: 2E	Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
Combustion Turbine Lube Oil

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No
DOT: 3 - Flammable and Combustible Liquids Combustible Liquid, Class III-B	**76 TURBINE OIL 68** CAS No Map: 1 Grid: 2E, 4E	**Gallons** State: Solid Type: Mixture	**7200** Storage Container: Other Days on Site: 365	**3600**	7200 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Health Serious Eye Damage Eye irritation				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
Connex Near Storm Water Pond

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Sodium Carbonate CAS No 497-19-8 Map: 1 Grid: 6K	**Pounds** State Solid Type Pure	**300** Storage Container Bag Days on Site: 365	**50**	300 Pressure Ambient Temperature Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Respiratory Skin Sensitization				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **Cooling Tower Chemical Treatment Area**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 9 - Misc. Hazardous Materials	**CHEMTREAT CL240** CAS No NA Map: 1 Grid: 5D	**Gallons** State Liquid Type Mixture	**1500** Storage Container Aboveground Tank Days on Site: 365	**1500**	1350 Pressure Ambient Temperature Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Hazard Not Otherwise Classified				
DOT: 9 - Misc. Hazardous Materials	**CHEMTREAT CL4500** CAS No Map: 1 Grid: 5D	**Gallons** State Liquid Type Mixture	**1500** Storage Container Aboveground Tank Days on Site: 365	**1500**	750 Pressure Ambient Temperature Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization - Health Aspiration Hazard				
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**SODIUM HYPOCHLORITE 12.5%** CAS No Map: 1 Grid: 5D	**Gallons** State Liquid Type Mixture	**8000** Storage Container Aboveground Tank Days on Site: 365	**8000**	6800 Pressure Ambient Temperature Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	SODIUM HYDROXIDE SODIUM HYPOCHLORITE >12.5%-15% SODIUM CHLORIDE WATER	1 % 13 %		1310-73-2 7681-52-9 7647-14-5 7732-18-5
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 1	**SULFURIC ACID 93%** CAS No ✓EHS 7664-93-9 Map: 1 Grid: 5D	**Pounds** State Liquid Type Pure	**42762.8** Storage Container Aboveground Tank Days on Site: 365	**85526**	42762.8 Pressure Ambient Temperature Ambient	Waste Code	- Physical Corrosive To Metal - Physical Contact Water Emits Flammable Gas - Health Skin Corrosion Irritation				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **CT CONTROL OIL TANK**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 3 - Flammable and Combustible Liquids	**MOBIL DTE 26**	**Gallons**	**200**	**100**	200		- Physical Flammable - Health Respiratory Skin Sensitization				
	CAS No	State: Liquid	Storage Container: Other		Pressure: Ambient	Waste Code					
	Map: 1 Grid: 2F, 3F	Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
CT WASH WATER SUMP

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 9 - Misc. Hazardous Materials	**CT WATER WASH**	**Gallons**	**3200**	**1600**	3200						
	CAS No	State: Liquid	Storage Container: Other		Pressue: Ambient	Waste Code					
	Map: F2 Grid: F3	Type: Mixture	Days on Site: 365		Temperature: < Ambient						

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **CYLINDER GAS STORAGE**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**ARGON, COMPRESSED** CAS No 7440-37-1 Map: 1 Grid: H3	**Cu. Feet**	**357**	**336**	357		- Physical Gas Under Pressure - Health Hazard Not Otherwise Classified				
		State: Gas	Storage Container: Cylinder		Pressure	Waste Code					
		Type: Pure	Days on Site: 365		Temperature						
DOT: 2.2 - Nonflammable Gases	**CALIBRATION GAS (NITROGEN, CARBON MONOXIDE)** CAS No Map: 1 Grid: 3H	**Cu. Feet**	**580**	**145**	580		- Physical Gas Under Pressure - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation - Health Simple Asphyxiant	NITROGEN OXYGEN CARBON MONOXIDE	83 % 12 % 5 %		7727-37-9 7782-44-7 124-38-9
		State: Gas	Storage Container: Cylinder		Pressure: < Ambient	Waste Code					
		Type: Mixture	Days on Site: 365		Temperature: Ambient						
DOT: 2.2 - Nonflammable Gases	**HELIUM** CAS No 7440-59-7 Map: 1 Grid: 3H	**Cu. Feet**	**292**	**292**	292		- Physical Gas Under Pressure - Health Aspiration Hazard				
		State: Gas	Storage Container: Cylinder		Pressure	Waste Code					
		Type: Pure			Temperature						
DOT: 2.2 - Nonflammable Gases	**NITROGEN** CAS No 7727-37-9 Map: 1 Grid: 3H	**Cu. Feet**	**8050**	**230**	8050		- Physical Gas Under Pressure - Health Serious Eye Damage Eye Irritation				
		State: Gas	Storage Container: Cylinder		Pressure: < Ambient	Waste Code					
		Type: Pure	Days on Site: 365		Temperature: Ambient						
DOT: 2.2 - Nonflammable Gases	**NITROGEN / NITRIC OXIDE CALIBRATION GAS** CAS No Map: 1 Grid: 3H	**Cu. Feet**	**1450**	**145**	1160		- Physical Gas Under Pressure - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity	NITRIC OXIDE NITROGEN	0 % 99 %	✓	10102-43-9 7727-37-9
		State: Gas	Storage Container: Cylinder		Pressure: Ambient	Waste Code					
		Type: Mixture	Days on Site: 365		Temperature: Ambient						
DOT: 2.2 - Nonflammable Gases	**NITROGEN / OXYGEN CALIBRATION GAS** CAS No Map: 1 Grid: 3H	**Cu. Feet**	**870**	**145**	870		- Physical Gas Under Pressure - Health Acute Toxicity - Health Serious Eye Damage Eye Irritation - Health Simple Asphyxiant				
		State: Gas	Storage Container: Cylinder		Pressure: Ambient	Waste Code					
		Type:	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **DIESEL FIRE PUMP HOUSE**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**LEAD-ACID BATTERY** CAS No Map: 1 Grid: 5I	**Gallons** State Liquid Type Mixture	**12** Storage Container Other Days on Site: 365	**6**	12 Pressure Ambient Temperature Ambient	Waste Code 792	- Physical Flammable - Physical Explosive - Physical Corrosive To Metal - Health Carcinogenicity - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity	Sulfuric Acid Lead, Lead Components	40 % 60 %	✓	7664-93-9 7439-92-1

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **Fire Pump House**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 3 - Flammable and Combustible Liquids Flammable Liquid, Class I-B	**DIESEL** CAS No. 68334-30-5 Map: 1 Grid: 5I	**Gallons** State Liquid Type Mixture	**572** Storage Container Aboveground Tank Days on Site: 365	**572**	550 Pressure Ambient Temperature Ambient	Waste Code	- Physical Flammable - Health Acute Toxicity - Health Respiratory Skin Sensitization - Health Aspiration Hazard	FUELS, DIESEL, NO. 2 GAS OIL, LIGHT HYDRODESULFURIZED MIDDLE DISTILLATE	100 % 0 % 0 %		 64741-44-2 64742-80-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
FUEL GAS COMPRESSORS

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS CAS No.
DOT: 9 - Misc. Hazardous Materials	**LUBRICATING OIL** CAS No Map: 1 Grid: 5J, 6J	**Gallons** State: Liquid Type: Mixture	**135** Storage Container: Other Days on Site: 365	**45**	135 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization			

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **GSU Transformers**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No
DOT: 3 - Flammable and Combustible Liquids	**HYTRANS 61**	**Gallons**	**47883**	**18345**	47883		- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation	OIL, HYDRO LIGHT NAPH DIST	99 %		64742-53-6
	CAS No	State: Liquid	Storage Container: Other		Pressure: < Ambient	Waste Code		2, 6-DI-T-BUTYL-P-CRESOL (BHT)	1 %		128-37-0
	Map: 1 Grid: 2D, 3D, 4E	Type: Mixture	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **Hazardous Material Storage Area**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No
DOT: 4.1 - Flammable Solids Flammable Liquid, Class I-C	**DEBRIS/RAGS CONTAMINATED WITH PETROLEUM/OIL** CAS No Map: 1 Grid: 5G, 5H	**Pounds** State: Solid Type: Waste	**100** Storage Container: Steel Drum Days on Site: 365	**55**	25 Pressue: Ambient Temperature: Ambient	500 Waste Code: 352	- Physical Flammable - Health Hazard Not Otherwise Classified				
	USED OIL CAS No NA Map: 1 Grid: 5G, 5H	**Gallons** State: Liquid Type: Waste	**400** Storage Container: Tote Bin Days on Site: 365	**400**	200 Pressue: Ambient Temperature: Ambient	660 Waste Code: 221	- Physical Combustible Dust - Health Hazard Not Otherwise Classified				
Flammable Solid	**USED OIL FILTERS** CAS No Map: 1 Grid: 5G, 5H	**Pounds** State: Solid Type: Waste	**100** Storage Container: Steel Drum Days on Site: 365	**100**	25 Pressue: Ambient Temperature: Ambient	200 Waste Code:	- Physical Flammable - Health Hazard Not Otherwise Classified				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **Lube Oil Storage**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 3 - Flammable and Combustible Liquids	**76 TURBINE OIL 68** CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Mixture	**220** Storage Container: Steel Drum Days on Site: 365	**55**	220 Pressure: Ambient Temperature: Ambient	Waste Code					
Flammable Liquid, Class I-A	**Megaflow AW HVI Hydraulic Oil** CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Mixture	**55** Storage Container: Steel Drum Days on Site: 365	**55**	55 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Physical Hazard Not Otherwise Classified - Health Hazard Not Otherwise Classified				
DOT: 3 - Flammable and Combustible Liquids	**MISCELLANEOUS LUBE OIL** CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Mixture	**90** Storage Container: Carboy Days on Site: 365	**5**	90 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Health Respiratory Skin Sensitization				
Flammable Liquid, Class I-B	**MOBIL DTE 26** CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Pure	**110** Storage Container: Steel Drum Days on Site: 365	**55**	110 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Hazard Not Otherwise Classified				
Flammable Liquid, Class I-B	**MULTIPURPOSE R+O OIL 220** CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Mixture	**165** Storage Container: Steel Drum Days on Site: 365	**55**	165 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Hazard Not Otherwise Classified	LUBRICANT BASE OIL ADDITIVES	99 % 1 %		
DOT: 9 - Misc. Hazardous Materials	**Release Number 1 VOC** CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Mixture	**55** Storage Container: Steel Drum Days on Site: 365	**55**	55 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Respiratory Skin Sensitization				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **Lube Oil Storage**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	SHELL TELLUS OIL CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Pure	**110** Storage Container: Steel Drum Days on Site: 365	**55**	110 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Serious Eye Damage Eye Irritation				
DOT: 9 - Misc. Hazardous Materials	**Shell Turbo Oil DR 46** CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Mixture	**55** Storage Container: Steel Drum Days on Site: 365	**55**	55 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Carcinogenicity - Health Reproductive Toxicity - Health Respiratory Skin Sensitization - Health Specific Target Organ Toxicity - Health Aspiration Hazard				
	TURBO T OIL 32 CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Pure	**330** Storage Container: Steel Drum Days on Site: 365	**55**	330 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Hazard Not Otherwise Classified				
	Vaprotec Light CAS No Map: 1 Grid: 5H	**Gallons** State: Liquid Type: Mixture	**55** Storage Container: Steel Drum Days on Site: 365	**55**	55 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Hazard Not Otherwise Classified				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **MAINTENANCE SHOP**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No
DOT: 3 - Flammable and Combustible Liquids Flammable Liquid, Class I-B	***MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB** CAS No Map: 1 Grid: 3J	**Gallons** State: Liquid Type: Pure	**65** Storage Container: Can, Glass Bottle or Jug, Plastic Bottle or Jug Days on Site: 365	**1**	65 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation				
DOT: 2.1 - Flammable Gases Unstable (Reactive), Class 2, Flammable Gas	**ACETYLENE** CAS No 74-86-2 Map: 1 Grid: 3J	**Cu. Feet** State: Gas Type: Pure	**185** Storage Container: Cylinder Days on Site: 365	**185**	185 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Physical Gas Under Pressure - Health Aspiration Hazard				
DOT: 2.2 - Nonflammable Gases	**ARGON / CARBON DIOXIDE** CAS No Map: 1 Grid: 3J	**Cu. Feet** State: Gas Type: Mixture	**501** Storage Container: Cylinder Days on Site: 365	**376**	501 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Simple Asphyxiant				
DOT: 2.2 - Nonflammable Gases	**ARGON, COMPRESSED** CAS No 7440-37-1 Map: 1 Grid: 3J	**Cu. Feet** State: Gas Type: Pure	**250** Storage Container: Cylinder Days on Site: 365	**250**	250 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Hazard Not Otherwise Classified				
DOT: 2.2 - Nonflammable Gases Oxidizing, Class 2	**OXYGEN** CAS No 7782-44-7 Map: 1 Grid: 3J	**Cu. Feet** State: Gas Type: Pure	**281** Storage Container: Cylinder Days on Site: 365	**281**	281 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Oxidizer - Health Hazard Not Otherwise Classified				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **OIL/WATER SEPARATOR**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 9 - Misc. Hazardous Materials Toxic	**USED OIL** CAS No 70514-12-4 Map: 5 Grid: C	**Gallons** State Liquid Type Waste	**600** Storage Container Aboveground Tank Days on Site: 365	**600**	600 Pressue Ambient Temperature Ambient	500 Waste Code 352	- Physical Flammable - Health Respiratory Skin Sensitization				

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **PROPANE STORAGE**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 3 - Flammable and Combustible Liquids Flammable Liquid, Class I-B	***MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB** CAS No Map: 1 Grid: 3H	**Gallons** State: Liquid Type: Pure	**55** Storage Container: Can, Plastic Bottle or Jug Days on Site: 365	**1**	55 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Health Acute Toxicity - Health Serious Eye Damage Eye Irritation				
DOT: 2.1 - Flammable Gases Unstable (Reactive), Class 2, Flammable Gas	**Acetylene** CAS No 74-86-2 Map: 1 Grid: 3H	**Cu. Feet** State: Gas Type: Pure	**428** Storage Container: Cylinder Days on Site: 365	**107**	378 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Physical Gas Under Pressure - Health Simple Asphyxiant				
DOT: 2.1 - Flammable Gases Flammable Gas	**Liquefied Petroleum Gas** CAS No 68476-85-7 Map: 1 Grid: 3H	**Gallons** State: Liquid Type: Pure	**57** Storage Container: Cylinder Days on Site: 365	**57**	57 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Health Skin Corrosion Irritation - Health Simple Asphyxiant				
DOT: 2.1 - Flammable Gases Flammable Liquid, Class I-A	**PROPANE** CAS No 74-98-6 Map: 1 Grid: 3H	**Cu. Feet** State: Gas Type: Pure	**110** Storage Container: Cylinder Days on Site: 365	**10**	60 Pressure: < Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Physical Gas Under Pressure - Health Aspiration Hazard				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **PROPANE STORAGE**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**Sulfur Hexafluoride - SF6**	**Cu. Feet**	**236**	**236**	236		- Physical Hazard Not Otherwise Classified - Health Acute Toxicity				
	CAS No	State: Gas	Storage Container: Cylinder		Pressure: Ambient	Waste Code					
	Map: 1 Grid: 3H	Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
STATION SERVICE TRANSFORMERS

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS CAS No.
DOT: 9 - Misc. Hazardous Materials	**HYTRANS 61**	**Galions**	**7038**	**3519**	7038		- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization	OIL, HYDRO LIGHT NAPH DIST	99 %	64742-53-6
	CAS No.	State: Liquid	Storage Container: Other		Pressure: < Ambient	Waste Code		2, 6-DI-T-BUTYL-P-CRESOL (BHT)	1 %	128-37-0
	Map: 1 Grid: 2D, 3D	Type: Mixture	Days on Site: 365		Temperature: Ambient					

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
STEAM TURBINE CONTROL OIL TANK

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 9 - Misc. Hazardous Materials	**Shell Turbo Oil DR 46**	**Gallons**	**200**	**200**	200		- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization				
	CAS No	State: Liquid	Storage Container: Other		Pressue: Ambient	Waste Code					
	Map: 1 Grid: 4F	Type: Mixture	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
Steam Turbine Flammable Locker

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 3 - Flammable and Combustible Liquids Flammable Liquid, Class I-B	***MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB** CAS No Map: 1 Grid: 4E	**Gallons** State: Liquid Type: Pure	**210** Storage Container: Can, Glass Bottle or Jug, Plastic Bottle or Jug Days on Site: 365	**1**	210 Pressure: Ambient Temperature: Ambient	Waste Code					
DOT: 3 - Flammable and Combustible Liquids Combustible Liquid, Class II	**Diesel Fuel** CAS No 68334-30-5 Map: 1 Grid: 4F	**Gallons** State: Liquid Type: Pure	**20** Storage Container: Can, Cylinder Days on Site: 365	**5**	10 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Health Skin Corrosion Irritation - Health Respiratory Skin Sensitization				
DOT: 3 - Flammable and Combustible Liquids Flammable Liquid, Class I-B	**GASOLINE** CAS No 8006-61-9 Map: 1 Grid: 4F	**Gallons** State: Liquid Type: Pure	**70** Storage Container: Can Days on Site: 365	**5**	70 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Flammable - Health Carcinogenicity - Health Reproductive Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity - Health Aspiration Hazard - Health Germ Cell Mutagenicity			

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org: **METCALF ENGERGY CENTER**
Facility Name: **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location: **STEAM TURBINE PACKAGE**

CERS ID: **10097278**
Facility ID: **43-060-409545**
Status: **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 3 - Flammable and Combustible Liquids	**CONOCO PHILLIPS TURBINE OIL 32**	**Gallons**	**6850**	**6650**	6850		- Physical Flammable	TERT-BUTYLATED TRIPHENYL PHOSPHATES			68937406
	CAS No	State: Liquid	Storage Container: Other		Pressure: Ambient	Waste Code	- Health Hazard Not Otherwise Classified	TRIPHENYL PHOSPHATE			115-86-6
	Map: 1 Grid: 4G	Type: Mixture	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location
Steam Turbine Under Deck

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No
DOT: 9 - Misc. Hazardous Materials	**Shell Turbo Oil DR 46** CAS No Map: 1 Grid: H5	**Gallons** State: Liquid Type: Mixture	**55** Storage Container: Steel Drum Days on Site: 365	**55**	55 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization				
DOT: 3 - Flammable and Combustible Liquids Combustible Liquid, Class II	**USED OIL** CAS No: NA Map: 1 Grid: F4	**Gallons** State: Liquid Type: Waste	**200** Storage Container: Tote Bin Days on Site: 365	**300**	100 Pressure: Ambient Temperature: Ambient	660 Waste Code: 221	- Physical Hazard Not Otherwise Classified - Health Respiratory Skin Sensitization				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **SWITCH YARD**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**FLOODED LEAD-CALCIUM BATTERY** CAS No Map: 1 Grid: 4B	**Gallons** **9** State: Liquid Type: Pure Storage Container: Other Days on Site: 365	**0.6**	9 Pressue: Ambient Temperature: Ambient	Waste Code		LEAD, LEAD COMPONENTS SULFURIC ACID	65 % 8 %	 ✓	7439-92-1 7664-93-9
DOT: 2.2 - Nonflammable Gases	**SULFUR HEXAFLUORIDE** CAS No 2551-62-4 Map: 1 Grid: 4B	**Cu. Feet** **2970** State: Gas Type: Pure Storage Container: Other Days on Site: 365	**594**	2970 Pressue: < Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Simple Asphyxiant				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **UNIT 1 CEMS GASES**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**NITROGEN / NITRIC OXIDE CALIBRATION GAS** CAS No Map: 1 Grid: 4H	**Cu. Feet** State: Gas Type: Mixture	**725** Storage Container: Cylinder Days on Site: 365	**145**	435 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity	NITRIC OXIDE NITROGEN	0 % 99 %	✓	10102-43-9 7727-37-9
DOT: 2.2 - Nonflammable Gases	**NITROGEN / OXYGEN CALIBRATION GAS** CAS No Map: 1 Grid: 4H	**Cu. Feet** State: Gas Type:	**580** Storage Container: Cylinder Days on Site: 365	**145**	580 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Acute Toxicity - Health Serious Eye Damage Eye Irritation - Health Simple Asphyxiant				
DOT: 2.2 - Nonflammable Gases	**NITROGEN/CARBON MONOXIDE CALIBRATION GAS** CAS No Map: 1 Grid: 4H	**Cu. Feet** State: Gas Type: Mixture	**280** Storage Container: Cylinder Days on Site: 365	**145**	280 Pressue: < Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation - Health Simple Asphyxiant	NITROGEN OXYGEN CARBON MONOXIDE	83 % 12 % 5 %		7727-37-9 7782-44-7 124-38-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **UNIT 1 NITROGEN STORAGE**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**NITROGEN**	**Cu. Feet**	**1380**	**230**	1380		- Physical Gas Under Pressure - Health Serious Eye Damage Eye Irritation				
	CAS No: 7727-37-9	State: Gas	Storage Container: Cylinder		Pressue: < Ambient	Waste Code					
	Map: 1 Grid: 3E	Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **UNIT 2 CEMS GASES**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Quantities Largest Cont.	Quantities Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**NITROGEN / NITRIC OXIDE CALIBRATION GAS** CAS No Map: 1 Grid: 2H	**Cu. Feet** State: Gas Type: Mixture	**725** Storage Container: Cylinder Days on Site: 365	**145**	725 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity	NITRIC OXIDE NITROGEN	0 % 99 %	✓	10102-43-9 7727-37-9
DOT: 2.2 - Nonflammable Gases	**NITROGEN / OXYGEN CALIBRATION GAS** CAS No Map: 1 Grid: 2H	**Cu. Feet** State: Gas Type:	**580** Storage Container: Cylinder Days on Site: 365	**145**	580 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Acute Toxicity - Health Serious Eye Damage Eye Irritation - Health Simple Asphyxiant				
DOT: 2.2 - Nonflammable Gases	**NITROGEN/CARBON MONOXIDE CALIBRATION GAS** CAS No Map: 1 Grid: 2H	**Cu. Feet** State: Gas Type: Mixture	**280** Storage Container: Cylinder Days on Site: 365	**145**	280 Pressue: < Ambient Temperature: Ambient	Waste Code	- Physical Gas Under Pressure - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation - Health Simple Asphyxiant	NITROGEN OXYGEN CARBON MONOXIDE	83 % 12 % 5 %		7727-37-9 7782-44-7 124-38-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **UNIT 2 NITROGEN STORAGE**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No
DOT: 2.2 - Nonflammable Gases	**NITROGEN**	**Cu. Feet**	**1380**	**230**	1380		- Physical Gas Under Pressure - Health Serious Eye Damage Eye Irritation				
	CAS No 7727-37-9	State Gas	Storage Container Cylinder		Pressure < Ambient	Waste Code					
	Map: 1 Grid: 2E	Type Pure	Days on Site: 365		Temperature Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **VARIOUS**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted** on 2/13/2019 3:15 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**Carbon Dioxide**	**Cu. Feet**	**1320**	**220**	1320		- Physical Gas Under Pressure - Health Acute Toxicity - Health Aspiration Hazard				
	CAS No 124-38-9 Map: F4 Grid: F2; F3	State Gas	Storage Container Cylinder		Pressue Ambient	Waste Code					
		Type Pure	Days on Site: 365		Temperature Ambient						

CERS Business/Org. **METCALF ENERGY CENTER** | Chemical Location **WATER TREATMENT BUILDING** | CERS ID **10097278**

Facility Name **METCALF ENERGY CENTER** | Facility ID **43-060-409545**

1 BLANCHARD RD, SAN JOSE 95013 | Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**CHEMTREAT BL-152** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**55** Storage Container: Plastic/Non-metalic Drum	**55**	55 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	AMMONIUM HYDROXIDE Ethanolamine	30 % 10 %		1336-21-6 141-43-5
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**CHEMTREAT CL-206** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**20** Storage Container: Other Days on Site: 365	**5**	10 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation				
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**CHEMTREAT CL2250** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**20** Storage Container: Carboy Days on Site: 365	**5**	20 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	5-chloro-2-methyl-4-isothiazolin-3-one 2-methyl-4-isothiazolin-3-one	1 % 0 %		26172-55-4 2682-20-4
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**CHEMTREAT CL-2875** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**60** Storage Container: Plastic/Non-metalic Drum, Other Days on Site: 365	**55**	40 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **WATER TREATMENT BUILDING**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	CHEMTREAT P873L CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**400** Storage Container: Aboveground Tank, Other Days on Site: 365	**400**	400 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Hazard Not Otherwise Classified	Poly(dimethyldiallylammonium chloride)	30 %		26062-79-3
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**CHEMTREAT RL1245** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**565** Storage Container: Tank Inside Building Days on Site: 365	**400**	565 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation	SODIUM BISULFITE			7631-90-5
DOT: 9 - Misc. Hazardous Materials	**CHEMTREAT RL9007** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**510** Storage Container: Tank Inside Building Days on Site: 365	**400**	510 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Hazard Not Otherwise Classified - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Diethylenetriamine penta methylene phosphonic acid	30 %		22042-96-2
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**CHEMTREAT-BL-1795** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**110** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	110 Pressure: Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	SODIUM PHOSPHATE, TRIBASTIC SODIUM HYDROXIDE	5 % 5 %		7601-54-9 1310-73-2
DOT: 9 - Misc. Hazardous Materials	**CONNTECT 6000** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**110** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	110 Pressure: Temperature:	Waste Code	- Physical Hazard Not Otherwise Classified - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Ethylene Glycol Monobutyl Ether Ethoxylated Alcohols, C9 - C11	20 % 40 %		111-76-2 68439-46-3

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **METCALF ENGERGY CENTER**
Facility Name **METCALF ENERGY CENTER**
1 BLANCHARD RD, SAN JOSE 95013

Chemical Location **WATER TREATMENT BUILDING**

CERS ID **10097278**
Facility ID **43-060-409545**
Status **Submitted on 2/13/2019 3:15 PM**

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS CAS No
DOT: 8 - Corrosives (Liquids and Solids)	**FERROQUEST FQ7101** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**5** Storage Container: Carboy Days on Site: 365	**5**	5 Pressure: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity			
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**FERROQUEST FQ7102** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**5** Storage Container: Carboy Days on Site: 365	**5**	5 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity	PHOSPHONIC ACID,(1-HYDROXYETHYLIDINE)BIS FORMIC ACID GLYCOLIC ACID	20 % 13 % 5 %	2809-21-4 64-18-6 79-14-1
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**FERROQUEST LP7200** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**5** Storage Container: Carboy Days on Site: 365	**5**	5 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity - Health Germ Cell Mutagenicity			
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**SODIUM HYPOCHLORITE 12.5%** CAS No Map: 1 Grid: 4J	**Gallons** State: Liquid Type: Mixture	**300** Storage Container: Tank Inside Building Days on Site: 365	**400**	150 Pressue: Ambient Temperature: Ambient	Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	SODIUM HYDROXIDE 10-60% SODIUM HYPOCHLORITE >12.5%-15% SODIUM CHLORIDE WATER	1 % 13 %	1310-73-2 7681-52-9 7647-14-5 7732-18-5

Appendix 6

METCALF ENERGY CENTER, LLC

TRANS-3 HAZARDOUS MATERIAL DELIVERIES

JANUARY

VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM

No Chemical Deliveries

FEBRUARY

VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM

No Chemical Deliveries

MARCH

VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM

No Chemical Deliveries

APRIL

VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM

No Chemical Deliveries

MAY

VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	5/8/2018	43,990	LBS
AIRGAS	AMMONIA	5/29/2019	45,460	LBS
CHEMTREAT	CL240	5/10/2018	4,396	LBS
CHEMTREAT	CL4500	5/10/2018	5,065	LBS
CHEMTREAT	CL240	5/24/2018	1,050	LBS
CHEMTREAT	BL152	5/9/2018	2,388	LBS
CHEMTREAT	BL1795	5/25/2018	1,012	LBS
UNIVAR	SULFURIC ACID	5/1/2018	29,860	LBS
UNIVAR	BLEACH	5/1/2018	45,892	LBS

JUNE

VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	6/17/2018	45,480	LBS
AIRGAS	AMMONIA	6/12/2018	44,160	LBS
AIRGAS	AMMONIA	6/25/2018	45,160	LBS
AIRGAS	AMMONIA	6/30/2018	39,790	LBS
CHEMTREAT	BL152	6/13/2018	1,990	LBS
UNIVAR	SULFURIC ACID	6/21/2018	29,840	LBS

JULY				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	7/5/2018	45,480	LBS
AIRGAS	AMMONIA	7/9/2018	45,140	LBS
AIRGAS	AMMONIA	7/13/2018	43,770	LBS
AIRGAS	AMMONIA	7/18/2018	43,890	LBS
AIRGAS	AMMONIA	7/22/2018	44,880	LBS
AIRGAS	AMMONIA	7/28/2018	43,910	LBS
CHEMTREAT	BL1795	7/9/2018	966	LBS
CHEMTREAT	BL152	7/11/2018	1,592	LBS
CHEMTREAT	BL152	7/1/2018	4,378	LBS
CHEMTREAT	BL152	7/27/2018	4,631	LBS
UNIVAR	SULFURIC ACID	7/6/2018	29,620	LBS
UNIVAR	SULFURIC ACID	7/24/2018	49,320	LBS
UNIVAR	BLEACH	7/27/2018	45,874	LBS

AUGUST				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	8/1/2018	43,700	LBS
AIRGAS	AMMONIA	8/22/2018	43,960	LBS
AIRGAS	AMMONIA	8/17/2018	43,950	LBS
AIRGAS	AMMONIA	8/29/2018	43,840	LBS
AIRGAS	AMMONIA	8/13/2018	43,860	LBS
AIRGAS	AMMONIA	8/4/2018	45,200	LBS
AIRGAS	AMMONIA	8/9/2018	43,900	LBS
CHEMTREAT	BL152	8/3/2018	3,184	LBS
UNIVAR	SULFURIC ACID	8/20/2018	48,760	LBS
UNIVAR	SULFURIC ACID	8/6/2018	48,740	LBS
UNIVAR	BLEACH	8/10/2018	45,001	LBS
UNIVAR	BLEACH	8/26/2018	44,897	LBS

SEPTEMBER				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	9/4/2018	41,960	LBS
AIRGAS	AMMONIA	9/7/2018	45,400	LBS
AIRGAS	AMMONIA	9/13/2018	44,260	LBS
AIRGAS	AMMONIA	9/20/2018	45,300	LBS
AIRGAS	AMMONIA	9/26/2018	44,000	LBS
UNIVAR	SULFURIC ACID	9/6/2018	29,600	LBS
UNIVAR	BLEACH	9/18/2018	44,987	LBS

OCTOBER				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	10/10/2018	45,100	LBS
AIRGAS	AMMONIA	10/4/2018	43,850	LBS
AIRGAS	AMMONIA	10/13/2018	45,300	LBS
UNIVAR	SULFURIC ACID	10/1/2018	30,140	LBS

NOVEMBER				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	11/11/2018	45,000	LBS
AIRGAS	AMMONIA	11/6/2018	43,760	LBS
AIRGAS	AMMONIA	11/15/2018	46,620	LBS
AIRGAS	AMMONIA	11/20/2018	44,740	LBS
AIRGAS	AMMONIA	11/26/2018	45,040	LBS
UNIVAR	SULFURIC ACID	11/12/2018	43,880	LBS
UNIVAR	BLEACH	11/28/2018	44,978	LBS

DECEMBER				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM
AIRGAS	AMMONIA	12/6/2018	44,920	LBS
AIRGAS	AMMONIA	12/1/2018	46,220	LBS
HILL BROTHERS	AMMONIA	12/29/2018	50,320	LBS
HILL BROTHERS	AMMONIA	12/17/2018	50,332	LBS
HILL BROTHERS	AMMONIA	12/11/2018	50,317	LBS
HILL BROTHERS	AMMONIA	12/22/2018	50,317	LBS
CHEMTREAT	CL2250	12/11/2018	172	LBS
CHEMTREAT	CL206	12/11/2018	102	LBS
CHEMTREAT	RL1245	12/6/2018	2,670	LBS
UNIVAR	SULFURIC ACID	12/3/2018	47,020	LBS
UNIVAR	SULFURIC ACID	12/19/2018	48,180	LBS
UNIVAR	BLEACH	12/20/2018	45,026	LBS
UNIVAR	BLEACH	12/3/2018	45,893	LBS

Appendix 7

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location: METCALF
Date Inspected: 10·16·19
Owner/Company:
Inspected by: MAX MALSBARY
Company Contact:
Inspector:
Signature:
Signature: Max Malsbary
Owner's Tower Designation:
Tower Manufacturer: MARLEY
Model No.: E4BBA-40-10
Serial No.: 223647
Process Served by Tower:
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐
Design Conditions: GPM 133400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No.: 1 Number of Fan Cells: 10 Tower Type: Crossflow ☐ Counterflow ☒
Date Tower was installed:

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material: CORRUGATED	X			
Structural Material: FIBERGLASS	X			
Fan Deck Material: FIBERGLASS	X			
Stairway ☐ Material: FIBERGLASS	X			
Ladder ☐ Material: FIBERGLASS	X			
Handrail ☐ Material: FIBERGLASS	X			
Interior Walkway ☐ Material:	X			
Cold Water Basin Material: CONCRETE	X			
Silt, Debris Buildup:		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material: CONCRETE	X			
Inlet Pipe Material: CARBON STEEL	X			
Inlet Manifold Material: FIBERGLASS	X			
Flow Control Valves: BUTTERFLY Size	X			
Nozzles–Orifice Diameter: 3" Size	X			
Silt, Algae, Debris:		X		
Spray Type System				
Header Pipe Material: ABS	X			
Branch Pipe Material: PVC	X			
Nozzles–Orifice Diameter: 3" Size		X		
Up spray ☐ Down spray ☐				
Heat Transfer System				
Fill–Type & Material: PVC	X			
Eliminators–Type & Material:	X			
Louvers–Type & Material:		X		
Biological Fouling:		X		

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐

Belt Drive Unit

Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84/1

Oil Level: Full ☒ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☐ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 220

Seals	X			
Backlash	X			
Fan Shaft Endplay	X			

Unusual Noises? No ☒ Yes ☐ Action Required

Drive Shaft

Manufacturer REXNORD Material COMPOSITE

	X			

Fan

Fan Type: Propeller ☐ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" Number of Blades 10

Blade Material FIBERGLASS	X			
Hub Material	X			
Hub Cover Material	X			
Blade Assembly Hardware	X			
Tip Clearance ____" min ____" max	X			
Vibration Level	X			
Fan Cylinder Height	X			
Mechanical Equipment Support	X			
Oil Fill and Drain Line	X			
Oil Level Sight Glass	X			
Vibration Limit Switch	X			

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame 5009 S F 1.15 Special Info.

Last Lubrication—Date 76 POLYTAC - 2

Grease Used—Type

Unusual Noises? No ☒ Yes ☐ Action Required

Unusual Vibration? No ☒ Yes ☐ Action Required

Unusual Heat Build-up? No ☒ Yes ☐ Action Required

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Date Inspected 10-16-18
Owner/Company
Inspected by MAX MAISBARY
Company Contact
Inspector
Signature
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Model No.
Serial No. 223647
Process Served by Tower
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐
Design Conditions: GPM 133400 HW 89.8 °F CW 72.1 °F WB 54 °F
Cell No. 2 Number of Fan Cells 10 Tower Type: Crossflow ☐ Counterflow ☐
Date Tower was installed

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	X			
Fan Deck Material FIBERGLASS	X			
Stairway ☐ Material FIBERGLASS	X			
Ladder ☐ Material FIBERGLASS	X			
Handrail ☐ Material FIBERGLASS	X			
Interior Walkway ☐ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON STEEL	X			
Inlet Manifold Material FIBERGLASS	X			
Flow Control Valves BUTTERFLY Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris		X		
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☒				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material GALV	X			
Biological Fouling		X		

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐

Belt Drive Unit

Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84:1

Oil Level: Full ☒ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☒ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used 76 TURBINE 220

Seals	X			
Backlash	X			
Fan Shaft Endplay	X			

Unusual Noises? No ☒ Yes ☐ Action Required

Drive Shaft

Manufacturer REXNORD Material COMPOSITE

	X			

Fan

Fan Type: Propeller ☐ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" Number of Blades 10

Blade Material FIBERGLASS	X			
Hub Material	X			
Hub Cover Material	X			
Blade Assembly Hardware	X			
Tip Clearance ____" min ____" max	X			
Vibration Level	X			
Fan Cylinder Height	X			
Mechanical Equipment Support	X			
Oil Fill and Drain Line	X			
Oil Level Sight Glass	X			
Vibration Limit Switch	X			

Motor

Manufacturer TECO WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 36.5 Frame 5009 S F 1.15 Special Info.

Last Lubrication—Date 76 POLYTAC-2

Grease Used—Type

Unusual Noises? No ☑ Yes ☐ Action Required

Unusual Vibration? No ☑ Yes ☐ Action Required

Unusual Heat Build-up? No ☑ Yes ☐ Action Required

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location MECALF
Owner/Company
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer MARLEY
Process Served by Tower
Design Conditions: GPM 133400 HW 89.8 °F CW 72.1 °F WB 54 °F
Cell No. 3 Number of Fan Cells 10 Tower Type: Crossflow ☐ Counterflow ☒
Date Tower was installed

Date Inspected 10·16·18
Inspected by MAE MALSBARY
Inspector
Signature
Model No. Serial No. 223647
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	X			
Fan Deck Material FIBERGLASS	X			
Stairway ☐ Material FIBERGLASS	X			
Ladder ☐ Material FIBERGLASS	X			
Handrail ☐ Material FIBERGLASS	X			
Interior Walkway ☐ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material	X			
Inlet Manifold Material FIBERGLASS	X			
Flow Control Valves BUTTERFLY Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris		X		
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☐				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling	X			

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments
Speed Reducer Type: Belt ☐ Gear ☐ Direct Drive ☐				
Belt Drive Unit				
Belt Designation _____				
Fan Sheave Designation _____				
Motor Sheave Designation _____				
Gear Drive Unit				
Manufacturer MARLEY Model 4000 Ratio 15.84:1				
Oil Level: Full ☐ Add immediately ☐ Low, check again soon ☐				
Oil Condition: Good ☒ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐				
Oil Type Used 76 TURBINE 220				
Seals _____	X			
Backlash _____	X			
Fan Shaft Endplay _____	X			
Unusual Noises? No ☐ Yes ☐ Action Required _____				
Drive Shaft				
Manufacturer ADDAX Material _____	X			
Fan				
Fan Type: Propeller ☐ Blower ☐				
Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐				
Diameter 384" Number of Blades 10				
Blade Material FIBERGLASS	X			
Hub Material _____	X			
Hub Cover Material _____	X			
Blade Assembly Hardware _____	X			
Tip Clearance _____" min _____" max	X			
Vibration Level _____	X			
Fan Cylinder Height _____	X			
Mechanical Equipment Support _____	X			
Oil Fill and Drain Line _____	X			
Oil Level Sight Glass _____	X			
Vibration Limit Switch _____	X			
Motor				
Manufacturer TECO WESTINGHOUSE				
Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160				
F L Amps 31.5 Frame _____ S F 1.15 Special Info. _____				
Last Lubrication—Date _____				
Grease Used—Type _____				
Unusual Noises? No ☑ Yes ☐ Action Required _____				
Unusual Vibration? No ☑ Yes ☐ Action Required _____				
Unusual Heat Build-up? No ☑ Yes ☐ Action Required _____				
Make-up Valve _____				
Other Component _____				
Other Component _____				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer
Process Served by Tower
Design Conditions: GPM HW °F CW °F WB °F
Cell No. 4 Number of Fan Cells 10
Date Tower was installed

Date Inspected 10·17·18
Inspected by MAX MACSBARY
Inspector
Signature
Model No. Serial No.
Operation: Continuous ❑ Intermittent ❑ Seasonal ❑
Tower Type: Crossflow ❑ Counterflow ❑

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	X			
Fan Deck Material FIBER GLASS	X			
Stairway ❑ Material FIBERGLASS	X			
Ladder ❑ Material FIBERGLASS	X			
Handrail ❑ Material FIBERGLASS	X			
Interior Walkway ❑ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material	X			
Inlet Manifold Material FIBERGLASS	X			
Flow Control Valves Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris		X		
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ❑ Down spray ❑				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling	X			

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs Immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐

Belt Drive Unit

Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.84:1

Oil Level: Full ☒ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☒ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used _____

Seals	X			
Backlash	X			
Fan Shaft Endplay	X			

Unusual Noises? No ☐ Yes ☐ Action Required _____

Drive Shaft

Manufacturer REXNORD Material COMPOSITE

	X			

Fan

Fan Type: Propeller ☐ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" Number of Blades 10

Blade Material FIBERGLASS	X			
Hub Material	X			
Hub Cover Material	X			
Blade Assembly Hardware	X			
Tip Clearance ____" min ____" max	X			
Vibration Level	X			
Fan Cylinder Height	X			
Mechanical Equipment Support	X			
Oil Fill and Drain Line	X			
Oil Level Sight Glass	X			
Vibration Limit Switch	X			

Motor

Manufacturer WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.1 Frame _____ S F 1.15 Special Info. _____

Last Lubrication—Date _____

Grease Used—Type _____

Unusual Noises? No ☒ Yes ☐ Action Required _____

Unusual Vibration? No ☐ Yes ☐ Action Required _____

Unusual Heat Build-up? No ☐ Yes ☐ Action Required _____

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location MESCALE
Owner/Company
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer
Process Served by Tower
Design Conditions: GPM 133400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 5 Number of Fan Cells 10 Tower Type: Crossflow ☐ Counterflow ☒
Date Tower was installed

Date Inspected 10.17.18
Inspected by MAX MALSBARY
Inspector
Signature
Model No. Serial No.
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBER	X			
Fan Deck Material FG	X			
Stairway ☐ Material FG	X			
Ladder ☐ Material FG	X			
Handrail ☐ Material FG	X			
Interior Walkway ☐ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material	X			
Inlet Manifold Material	X			
Flow Control Valves Size	X			
Nozzles–Orifice Diameter Size	X			
Silt, Algae, Debris	X			
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☒				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling	X			

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments
Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐				
Belt Drive Unit				
Belt Designation _____				
Fan Sheave Designation _____				
Motor Sheave Designation _____				
Gear Drive Unit				
Manufacturer MARLEY Model 4000 Ratio 15.84:1				
Oil Level: Full ☒ Add Immediately ☐ Low, check again soon ☐				
Oil Condition: Good ☒ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐				
Oil Type Used _____				
Seals _____		X		
Backlash _____	X			
Fan Shaft Endplay _____	X			
Unusual Noises? No ☐ Yes ☐ Action Required _____				
Drive Shaft				
Manufacturer _____ Material COMPOSITE	X			
Fan				
Fan Type: Propeller ☐ Blower ☐				
Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐				
Diameter 384" Number of Blades 10				
Blade Material FG	X			
Hub Material STEEL	X			
Hub Cover Material S/S	X			
Blade Assembly Hardware _____	X			
Tip Clearance _____" min _____" max	X			
Vibration Level _____	X			
Fan Cylinder Height 14"	X			
Mechanical Equipment Support GALV	X			
Oil Fill and Drain Line S/S	X			
Oil Level Sight Glass _____	X			
Vibration Limit Switch _____	X			
Motor				
Manufacturer WESTINGHOUSE				
Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160				
F L Amps 31.5 Frame _____ S F _____ Special Info. _____				
Last Lubrication—Date _____				
Grease Used—Type _____				
Unusual Noises? No ☑ Yes ☐ Action Required _____				
Unusual Vibration? No ☑ Yes ☐ Action Required _____				
Unusual Heat Build-up? No ☑ Yes ☐ Action Required _____				
Make-up Valve _____				
Other Component _____				
Other Component _____				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Owner/Company
Company Contact
Signature
Owner's Tower Designation
Tower Manufacturer
Process Served by Tower
Design Conditions: GPM 133400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 6 Number of Fan Cells 10
Date Tower was installed

Date Inspected 10-17-18
Inspected by MAX MALSBARY
Inspector
Signature
Model No. Serial No.
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐
Tower Type: Crossflow ☐ Counterflow ☐

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	X			
Fan Deck Material FG	X			
Stairway ☐ Material FG	X			
Ladder ☐ Material FG	X			
Handrail ☐ Material FG	X			
Interior Walkway ☐ Material FG	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material STEEL	X			
Inlet Manifold Material FG	X			
Flow Control Valves Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris		X		
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray X				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling		X		

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments
Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐				
Belt Drive Unit				
Belt Designation _____				
Fan Sheave Designation _____				
Motor Sheave Designation _____				
Gear Drive Unit				
Manufacturer MARLEY Model 4800 Ratio 15.84:1				
Oil Level: Full ☐ Add Immediately ☐ Low, check again soon ☐				
Oil Condition: Good ☐ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐				
Oil Type Used _____				
Seals _____		X		
Backlash _____	X			
Fan Shaft Endplay _____	X			
Unusual Noises? No ☐ Yes ☐ Action Required _____				
Drive Shaft				
Manufacturer _____ Material _____	X			
Fan				
Fan Type: Propeller ☐ Blower ☐				
Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐				
Diameter 384" Number of Blades 10				
Blade Material FG	X			
Hub Material STEEL	X			
Hub Cover Material SS	X			
Blade Assembly Hardware _____	X			
Tip Clearance _____" min _____" max	X			
Vibration Level _____	X			
Fan Cylinder Height 14"	X			
Mechanical Equipment Support _____	X			
Oil Fill and Drain Line SS	X			
Oil Level Sight Glass _____	X			
Vibration Limit Switch _____	X			
Motor				
Manufacturer WESTINGHOUSE				
Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160				
F L Amps 31.5 Frame _____ S F _____ Special Info. _____				
Last Lubrication—Date _____				
Grease Used—Type _____				
Unusual Noises? No ☒ Yes ☐ Action Required _____				
Unusual Vibration? No ☒ Yes ☐ Action Required _____				
Unusual Heat Build-up? No ☒ Yes ☐ Action Required _____				
Make-up Valve _____				
Other Component _____				
Other Component _____				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Date Inspected 10.17.18
Owner/Company
Inspected by MAX MAISBARY
Company Contact
Inspector
Signature
Signature
Owner's Tower Designation
Tower Manufacturer
Model No.
Serial No.
Process Served by Tower
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐
Design Conditions: GPM 133400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 7 Number of Fan Cells 10 Tower Type: Crossflow ☐ Counterflow ☐
Date Tower was installed

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material				
Structural Material FIBERGLASS	X			
Fan Deck Material FG	X			
Stairway ☐ Material FG	X			
Ladder ☐ Material FG	X			
Handrail ☐ Material FG	X			
Interior Walkway ☐ Material FG	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material	X			
Inlet Pipe Material FIBERGLASS	X			
Inlet Manifold Material	X			
Flow Control Valves Size	X			
Nozzles–Orifice Diameter Size	X			
Silt, Algae, Debris		X		
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material	X			
Nozzles–Orifice Diameter Size	X			
Up spray ☐ Down spray X				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling	X			

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs Immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☐ Direct Drive ☐

Belt Drive Unit

Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.64:1

Oil Level: Full ☑ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☑ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used _____

Seals		X		
Backlash	X			
Fan Shaft Endplay	X			

Unusual Noises? No ☐ Yes ☐ Action Required _____

Drive Shaft

Manufacturer _____ Material _____

	X			

Fan

Fan Type: Propeller ☐ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" Number of Blades 10

Blade Material FG	X			
Hub Material STEEL	X			
Hub Cover Material SS	X			
Blade Assembly Hardware	X			
Tip Clearance ____" min ____" max	X			
Vibration Level	X			
Fan Cylinder Height 14"	X			
Mechanical Equipment Support	X			
Oil Fill and Drain Line SS	X			
Oil Level Sight Glass	X			
Vibration Limit Switch	X			

Motor

Manufacturer WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 460

F L Amps _____ Frame _____ S F _____ Special Info. _____

Last Lubrication—Date _____

Grease Used—Type _____

Unusual Noises? No ☑ Yes ☐ Action Required _____

Unusual Vibration? No ☑ Yes ☐ Action Required _____

Unusual Heat Build-up? No ☑ Yes ☐ Action Required _____

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location MEDICALE
Date Inspected 10.17.18
Owner/Company
Inspected by MAX MAUSBACH
Company Contact
Inspector
Signature
Signature
Owner's Tower Designation
Tower Manufacturer
Model No.
Serial No.
Process Served by Tower
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐
Design Conditions: GPM 123400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 8 Number of Fan Cells 10 Tower Type: Crossflow ☐ Counterflow ☐
Date Tower was installed

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	X			
Fan Deck Material FG	X			
Stairway ☐ Material FG	X			
Ladder ☐ Material FG	X			
Handrail ☐ Material FG	X			
Interior Walkway ☐ Material FG	X			
Cold Water Basin Material	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material STEEL	X			
Inlet Manifold Material FG	X			
Flow Control Valves Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris		X		
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray X				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling		X		

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐

Belt Drive Unit

Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4100 Ratio 15.84:1

Oil Level: Full ☒ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☒ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used _____

Seals	X			
Backlash	X			
Fan Shaft Endplay	X			

Unusual Noises? No ☐ Yes ☐ Action Required _____

Drive Shaft

Manufacturer ADAX Material _____

	X			

Fan

Fan Type: Propeller ☐ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" Number of Blades 10

Blade Material FG	X			
Hub Material STEEL	X			
Hub Cover Material SS	X			
Blade Assembly Hardware	X			
Tip Clearance _____" min _____" max	X			
Vibration Level	X			
Fan Cylinder Height 14"	X			
Mechanical Equipment Support	X			
Oil Fill and Drain Line SS	X			
Oil Level Sight Glass	X			
Vibration Limit Switch	X			

Motor

Manufacturer WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame _____ S F _____ Special Info. _____

Last Lubrication—Date _____

Grease Used—Type _____

Unusual Noises? No ☒ Yes ☐ Action Required _____

Unusual Vibration? No ☒ Yes ☐ Action Required _____

Unusual Heat Build-up? No ☒ Yes ☐ Action Required _____

Make-up Valve _____				
Other Component _____				
Other Component _____				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Date Inspected 10.17.18
Owner/Company
Inspected by MAX MALSBARY
Company Contact
Inspector
Signature
Signature
Owner's Tower Designation
Tower Manufacturer
Model No.
Serial No.
Process Served by Tower
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐
Design Conditions: GPM 172000 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 9 Number of Fan Cells 10 Tower Type: Crossflow ☐ Counterflow ☐
Date Tower was installed

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FG	X			
Fan Deck Material FG	X			
Stairway ☐ Material FG	X			
Ladder ☐ Material FG	X			
Handrail ☐ Material FG	X			
Interior Walkway ☐ Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material STEEL	X			
Inlet Manifold Material FG	X			
Flow Control Valves Size	X			
Nozzles–Orifice Diameter 3" Size	X			
Silt, Algae, Debris		X		
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3" Size	X			
Up spray ☐ Down spray ☐				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling		X		

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐

Belt Drive Unit

Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4800 Ratio 15.84:1

Oil Level: Full ☒ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☒ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used _____

Seals	X			
Backlash		Y		
Fan Shaft Endplay	X			

Unusual Noises? No ☐ Yes ☐ Action Required _____

Drive Shaft

Manufacturer _____ Material COMPOSITE

	X			

Fan

Fan Type: Propeller ☐ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" Number of Blades 10

Blade Material FG	X			
Hub Material STEEL	X			
Hub Cover Material SS	X			
Blade Assembly Hardware	X			
Tip Clearance ____" min ____" max	X			
Vibration Level	X			
Fan Cylinder Height 14"	X			
Mechanical Equipment Support	X			
Oil Fill and Drain Line	X			
Oil Level Sight Glass	X			
Vibration Limit Switch	X			

Motor

Manufacturer WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame _____ S F _____ Special Info. _____

Last Lubrication—Date _____

Grease Used—Type _____

Unusual Noises? No ☑ Yes ☐ Action Required _____

Unusual Vibration? No ☑ Yes ☐ Action Required _____

Unusual Heat Build-up? No ☑ Yes ☐ Action Required _____

Make-up Valve				
Other Component				
Other Component				

Marley

Cooling Tower Inspection Checklist

SM-CKLIST

Tower Location METCALF
Date Inspected 10.17.18
Owner/Company
Inspected by MAX MALSBARY
Company Contact
Inspector
Signature
Signature
Owner's Tower Designation
Tower Manufacturer
Model No.
Serial No.
Process Served by Tower
Operation: Continuous ☐ Intermittent ☐ Seasonal ☐
Design Conditions: GPM 133400 HW 89.8 °F CW 72.1 °F WB 59 °F
Cell No. 10 Number of Fan Cells 10 Tower Type: Crossflow ☐ Counterflow ☐
Date Tower was installed

Condition: 1–Good 2–Keep an eye on it 3–Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FG	X			
Fan Deck Material FG	X			
Stairway ☐ Material FG	X			
Ladder ☐ Material FG	X			
Handrail ☐ Material FG	X			
Interior Walkway ☐ Material FG	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		X		
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material FIBERGLASS	X			
Inlet Manifold Material	X			
Flow Control Valves Size	X			
Nozzles–Orifice Diameter 3/4 Size	X			
Silt, Algae, Debris	X			
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material PVC	X			
Nozzles–Orifice Diameter 3/4 Size	X			
Up spray ☐ Down spray ☒				
Heat Transfer System				
Fill–Type & Material PVC	X			
Eliminators–Type & Material PVC	X			
Louvers–Type & Material	X			
Biological Fouling		X		

Use this space to list specific items needing attention:

Condition: 1—Good 2—Keep an eye on it 3—Needs immediate attention

Mechanical Equipment	1	2	3	Comments

Speed Reducer Type: Belt ☐ Gear ☒ Direct Drive ☐

Belt Drive Unit

Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				

Gear Drive Unit

Manufacturer MARLEY Model 4000 Ratio 15.041

Oil Level: Full ☒ Add Immediately ☐ Low, check again soon ☐

Oil Condition: Good ☒ Contains Water ☐ Contains Metal ☐ Contains Sludge ☐

Oil Type Used _____

Seals	X			
Backlash		X		
Fan Shaft Endplay	X			

Unusual Noises? No ☒ Yes ☐ Action Required _____

Drive Shaft

Manufacturer _____ Material [illegible] X

Fan

Fan Type: Propeller ☐ Blower ☐

Manufacturer MARLEY Fixed Pitch ☐ Adjustable Pitch ☐

Diameter 384" Number of Blades 10

Blade Material FG	X			
Hub Material STEEL	X			
Hub Cover Material SS	X			
Blade Assembly Hardware	X			
Tip Clearance ____" min ____" max	X			
Vibration Level	X			
Fan Cylinder Height 14"	X			
Mechanical Equipment Support	X			
Oil Fill and Drain Line	X			
Oil Level Sight Glass	X			
Vibration Limit Switch	X			

Motor

Manufacturer WESTINGHOUSE

Name Plate Data: HP 250 RPM 1780 Phase 3 Hz 60 Volts 4160

F L Amps 31.5 Frame _____ S F 1.15 Special Info. _____

Last Lubrication—Date _____

Grease Used—Type _____

Unusual Noises? No ☒ Yes ☐ Action Required _____

Unusual Vibration? No ☒ Yes ☐ Action Required _____

Unusual Heat Build-up? No ☒ Yes ☐ Action Required _____

Make-up Valve				
Other Component				
Other Component				

Appendix 8

Metcalf Energy Center

Annual Compliance Report 2018

Water Usage Summary

Recycled Water

month	consumption (gal)
January	575,212
February	430,848
March	532,576
April	4,789,444
May	17,400,724
June	46,861,452
July	80,960,528
August	77,363,396
September	53,648,804
October	28,627,456
November	60,900,664
December	61,352,456
Total	**433,443,560**

Potable Water

month	consumption (gal)
January	1,159,400
February	1,093,576
March	1.178,848
April	4,342,888
May	8,379,844
June	9,539,992
July	13,683,912
August	14,167,120
September	9,127,096
October	6,342,292
November	7,711,132
December	6,752,944
Total	**83,479,044**

Metcalf Energy Center

Annual Compliance Report 2018

Water Usage Summary

Condition of Certification S&W-1

Recycled Water	
Cooling Tower for Steam Cycle Cooling	433,443,560
Total Gallons 2017	**433,443,560**
Potable Water	
Condenser Make-Up	30,262,881
Steam Attemperation	28,622,527
Inlet Air Cooling	7,763,682
Domestic	643,765
RO Reject	12,813,177
Filter Backwash	2,562,635
CT Wash Water	412,967
Plant Wash Down	589,953
Total Gallons 2017	**83,479,044**

Appendix 9

METCALF ENERGY CENTER
2018 ANNUAL COMPLIANCE REPORT
WASTE-3

In accordance with **Waste-3**, the Metcalf Energy Facility is required to document actual waste management methods used during the year compared to planned management methods. The facility is currently using the planned waste management methods for all of the waste streams generated within the facility, as listed in the table below.

Waste Stream	Type	Planned	Actual
Non-hazardous Solid Waste	Recyclables	Recycle (Off-site)	Recycle (Off-site)
	Non-Recyclables	Landfill	Landfill
Non-hazardous Liquid Waste	Sanitary Waste	Sewage Treatment Plant	Sewage Treatment Plant
	Process Waste Water	Sewage Treatment Plant	Sewage Treatment Plant
Hazardous Liquid Waste	Used Oil	Recycle (Off-site)	Recycle (Off-site)
	Oily Water	Off-site disposal company	Off-site disposal company
	Corrosive Liquid	Off-site disposal company	Off-site disposal company
Hazardous Solid Waste	Used Oil Filters	Recycle (Off-site)	Recycle (Off-site)
	Oily Rags	Off-site disposal company	Off-site disposal company
	Universal Waste	Recycle (Off-site)	Recycle (Off-site)

Appendix 10

NV" 2007 1989
8/10/18

California Energy Commission's Condition of Certification

VISUAL RESOURCES-1

METCALF ENERGY CENTER, LLC
STATUS REPORT REGARDING THE ARCHITECTURAL DESIGN TREATMENT MAINTENANCE

California Energy Commission Condition of Certification Visual Resources – 1 requires the Metcalf Energy Center to submit in its Annual Compliance Report a status report regarding the treatment maintenance of the project structures. The project structures, which are visible to the public, have been painted with CPM-approved and City of San Jose-approved non-reflective colors with a low-gloss finish.

The Metcalf Energy Center Maintenance Department has procedures to address all aspects for maintaining the power plant efficiently. Issues such as coating or painting are captured by staff's surveillance and utilization of checklists. Once an item is deemed in need of maintenance, Plant Management schedule and prioritizes the maintenance through a work order process. Outside contractors are also utilized at Metcalf Energy Center. Plant Management inspects and signs off on the work once it is fully complete.

A copy of the checklists used to survey the architectural screen as well as the other painted surfaces visible from offsite is attached to this summary.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Steam Turbine

	TURBINE / GENERATOR ENCLOSURE	GENERATOR / CONDENSER SOUND WALL
Chalking	1	1
Erosion	1	1
Discoloration	1	1
Fading	2	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Cooling Tower

	SUPERSTRUCTURE
Chalking	1
Erosion/Corrosion	2
Discoloration	1
Fading	2
Loss of Gloss	1
Mildew Defacement	1
Moisture Blushing	1
Orange Peel	1
Wrinkling	1
Chemical Attack	2
High Temperature Attack	1
Mottling	1
Crackling	1
Saponification	1
Disbanding {peel/blister)	1
Crawling (fish eye)	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: HRSG & Gas Turbine 1

	INLET AIR FILTER HOUSE	TURBINE/ GENERATOR	STACK	SCREENING
Chalking	1	1	1	1
Erosion/Corrosion	1	1	1	1
Discoloration	1	2	1	1
FadinQ	1	1	1	1
Loss of Gloss	2	1	1	1
Mildew Defacement	1	1	1	1
Moisture Blushing	1	1	1	1
Orange Peel	1	1	1	1
Wrinkling	1	1	1	1
Chemical Attack	1	1	1	1
High Temperature Attack	1	1	1	1
Mottling	1	1	1	1
Crackling	1	1	1	1
Saponification	1	1	1	1
Disbanding (peel/blister)	1	1	1	1
Crawling (fish eye)	1	1	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: HRSG & Gas Turbine 2

	INLET AIR FILTER HOUSE	TURBINE/ GENERATOR	STACK	SCREENING
Chalking	1	1	1	1
Erosion/Corrosion	1	1	1	1
Discoloration	1	1	1	1
Fading	1	1	1	1
Loss of Gloss	1	1	1	1
Mildew Defacement	1	1	1	1
Moisture Blushing	1	1	1	1
Orange Peel	1	1	1	1
Wrinkling	1	1	1	1
Chemical Attack	1	1	1	1
High Temperature Attack	1	1	1	1
Mottling	1	1	1	1
Crackling	1	1	1	1
Saponification	1	1	1	1
Disbanding (peel/blister)	1	1	1	1
Crawling (fish eye)	1	1	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Water Tanks

	SERVICE/FIRE WATER	DEMINERALIZED WATER
Chalking	1	1
Erosion/Corrosion	1	1
Discoloration	2	2
Fading	1	1
Loss of Gloss	2	2
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL DESIGN TREATMENT INSPECTION METCALF ENERGY CENTER

UNIT: Buildings

	ADMINISTRATION	WAREHOUSE
Chalking	1	1
Erosion/Corrosion	1	1
Discoloration	1	1
Fading	1	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments: Grass in gutters

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating:
1 = No Problems; 2 = Minor Problems; 3 =Average Problems; 4 = Increased Problems; 5 = Major Problems.

ARCHITECTURAL TREATMENT INSPECTION DEFINITIONS

Chalking - To powder from weathering.

Erosion - State of being eroded.

Discoloration - A discolored marking or area; stain.

Fading - To lose brightness or vividness of color.

Loss of Gloss - A paint defect in which a dried film of paint loses gloss, usually over a period of time.

Mildew Defacement - Any of similar coatings or discolorations, caused by fungi, as that which appears when exposed to moisture.

Moisture Blushing - Blushing takes place when moisture goes through condensation on a coated surface during the process of curing. At times, the moisture may be generated from porous substrates. Blushing manifests as milky or white patches, with hazy effects in clear types of coatings. In pigmented coatings, blushing may produce defects in its gloss. Blushing is also known as water spotting.

Orange Peel - Orange peel occurs when paint is applied over an area with oil on the surface. Something as small as a fingerprint can leave enough oil on the surface to show up as orange peel in a completed paint job.

Wrinkling - A temporary slight ridge or furrow on a surface, due to contraction, folding, crushing, or the like.

Chemical Attack – Decomposition of a coating due to chemical exposure.

High Temperature Attack - Decomposition of a coating due to exposure to high temperatures.

Mottling - To color with streaks or blotches of different shades.

Crackling - To form a network of fine cracks on the surface.

Saponification - A reaction in which an ester is heated with an alkali, such as sodium hydroxide, producing a free alcohol and an acid salt.

Disbanding (peel/blister) - To break up or dissolve the coating.

Crawling (fish eye) - To raise or contract because of an imperfect bond with the underlying surface. A surface defect having the form of a spot.

Appendix 11

Metcalf Energy Center Plume Log

Cooling Tower Plumes

Date	Start Time	End time	Total Time	Event	Relative Humidity	Temperature	Supplemental Firing (On/Off)	Plume Abatement In Service (Louvers Open)

No Plume Events in December 2018.

Total Cooling Tower Plume Hours: **0:00**

Remedial Actions To Be Taken

1. The Operator will verify that the plume abatement was in service.
2. The Operator will verify that the louvers were completely opened.
3. Curtail supplementary firing in the HRSG.

Stack Plumes

Date	Start Time	End time	Total Time	Event	Relative Humidity	Temperature	Supplemental Firing (On/Off)	Steam Injection (On/Off)	Economizer By-Pass Valve Position

No Plume Events in December 2018.

Total Stack Plume Hours: **0:00**

Remedial Actions Taken

1. The Operator will operate the economizer bypass valve.
2. Curtail steam injection to the combustion turbine (called PAG steam).
3. Curtail supplementary firing in the HRSG.

Total Combined Plume Hours: **0:00**

Metcalf Energy Center Plume Log

Cooling Tower Plumes

Date	Start Time	End time	Total Time	Event	Relative Humidity	Temperature	Supplemental Firing (On/Off)	Plume Abatement In Service (Louvers Open)
No Plume Events in January 2018.								
No Plume Events in February 2018.								
No Plume Events in March 2018.								
No Plume Events in April 2018.								
No Plume Events in May 2018.								
No Plume Events in June 2018.								
No Plume Events in July 2018.								
No Plume Events in August 2018.								
No Plume Events in September 2018.								
No Plume Events in October 2018.								
No Plume Events in November 2018.								
No Plume Events in December 2018.								
Total Cooling Tower Plume Hours YTD:			**0:00**					

Remedial Actions To Be Taken

1. The Operator will verify that the plume abatement was in service.
2. The Operator will verify that the louvers were completely opened.
3. Curtail supplementary firing in the HRSG.

Stack Plumes

Date	Start Time	End time	Total Time	Event	Relative Humidity	Temperature	Supplemental Firing (On/Off)	Steam Injection (On/Off)
No Plume Events in January 2018.								
No Plume Events in February 2018.								
No Plume Events in March 2018.								
No Plume Events in April 2018.								
No Plume Events in May 2018.								
No Plume Events in June 2018.								
No Plume Events in July 2018.								
No Plume Events in August 2018.								
No Plume Events in September 2018.								
No Plume Events in October 2018.								
No Plume Events in November 2018.								
No Plume Events in December 2018.								
Total Stack Plume Hours YTD:			**0:00**					

Remedial Actions Taken

1. The Operator will operate the economizer bypass valve.
2. Curtail steam injection to the combustion turbine (called PAG steam).
3. Curtail supplementary firing in the HRSG.

Total Combined Year-to-Date **0:00**